The Australian Curriculum

Learning areas: English, History, Mathematics and Science
Year levels: Foundation Year, 1, 2, 3, 4, 5, 6 and 7
Curriculum version: Version 1.2
Dated: Tuesday, 8 March 2011
The Australian Curriculum
Mathematics

Statistics and probability
Measurement and geometry
Number and algebra

acara
AUSTRALIAN CURRICULUM, ASSESSMENT AND REPORTING AUTHORITY
## Mathematics

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### Glossary

**ACARA | The Australian Curriculum | Version 1.2 dated Tuesday, 8 March 2011**
Rationale

Learning mathematics creates opportunities for and enriches the lives of all Australians. The Australian Curriculum: Mathematics provides students with essential mathematical skills and knowledge in Number and Algebra, Measurement and Geometry, and Statistics and Probability. It develops the numeracy capabilities that all students need in their personal, work and civic life, and provides the fundamentals on which mathematical specialties and professional applications of mathematics are built.

Mathematics has its own value and beauty and the Australian Curriculum: Mathematics aims to instil in students an appreciation of the elegance and power of mathematical reasoning. Mathematical ideas have evolved across all cultures over thousands of years, and are constantly developing. Digital technologies are facilitating this expansion of ideas and providing access to new tools for continuing mathematical exploration and invention. The curriculum focuses on developing increasingly sophisticated and refined mathematical understanding, fluency, logical reasoning, analytical thought and problem-solving skills. These capabilities enable students to respond to familiar and unfamiliar situations by employing mathematical strategies to make informed decisions and solve problems efficiently.

The Australian Curriculum: Mathematics ensures that the links between the various components of mathematics, as well as the relationship between mathematics and other disciplines, are made clear. Mathematics is composed of multiple but interrelated and interdependent concepts and systems which students apply beyond the mathematics classroom. In science, for example, understanding sources of error and their impact on the confidence of conclusions is vital, as is the use of mathematical models in other disciplines. In geography, interpretation of data underpins the study of human populations and their physical environments; in history, students need to be able to imagine timelines and time frames to reconcile related events; and in English, deriving quantitative and spatial information is an important aspect of making meaning of texts.

The curriculum anticipates that schools will ensure all students benefit from access to the power of mathematical reasoning and learn to apply their mathematical understanding creatively and efficiently. The mathematics curriculum provides students with carefully paced, in-depth study of critical skills and concepts. It encourages teachers to help students become self-motivated, confident learners through inquiry and active participation in challenging and engaging experiences.

Aims

The Australian Curriculum: Mathematics aims to ensure that students:

- are confident, creative users and communicators of mathematics, able to investigate, represent and interpret situations in their personal and work lives and as active citizens
- develop an increasingly sophisticated understanding of mathematical concepts and fluency with processes, and are able to pose and solve problems and reason in Number and Algebra, Measurement and Geometry, and Statistics and Probability
- recognise connections between the areas of mathematics and other disciplines and appreciate mathematics as an accessible and enjoyable discipline to study.
Content structure

The Australian Curriculum: Mathematics is organised around the interaction of three content strands and four proficiency strands.

The content strands are Number and Algebra, Measurement and Geometry, and Statistics and Probability. They describe what is to be taught and learnt.

The proficiency strands are Understanding, Fluency, Problem Solving, and Reasoning. They describe how content is explored or developed, that is, the thinking and doing of mathematics. They provide the language to build in the developmental aspects of the learning of mathematics and have been incorporated into the content descriptions of the three content strands described above. This approach has been adopted to ensure students’ proficiency in mathematical skills develops throughout the curriculum and becomes increasingly sophisticated over the years of schooling.

Content strands

Number and Algebra

Number and Algebra are developed together, as each enriches the study of the other. Students apply number sense and strategies for counting and representing numbers. They explore the magnitude and properties of numbers. They apply a range of strategies for computation and understand the connections between operations. They recognise patterns and understand the concepts of variable and function. They build on their understanding of the number system to describe relationships and formulate generalisations. They recognise equivalence and solve equations and inequalities. They apply their number and algebra skills to conduct investigations, solve problems and communicate their reasoning.

Measurement and Geometry

Measurement and Geometry are presented together to emphasise their relationship to each other, enhancing their practical relevance. Students develop an increasingly sophisticated understanding of size, shape, relative position and movement of two-dimensional figures in the plane and three-dimensional objects in space. They investigate properties and apply their understanding of them to define, compare and construct figures and objects. They learn to develop geometric arguments. They make meaningful measurements of quantities, choosing appropriate metric units of measurement. They build an understanding of the connections between units and calculate derived measures such as area, speed and density.

Statistics and Probability

Statistics and Probability initially develop in parallel and the curriculum then progressively builds the links between them. Students recognise and analyse data and draw inferences. They represent, summarise and interpret data and undertake purposeful investigations involving the collection and interpretation of data. They assess likelihood and assign probabilities using experimental and theoretical approaches. They develop an increasingly sophisticated ability to critically evaluate chance and data concepts and make reasoned judgments and decisions, as well as building skills to critically evaluate statistical information and develop intuitions about data.

Proficiency strands

The proficiency strands describe the actions in which students can engage when learning and using the content. While not all proficiency strands apply to every content description, they indicate the breadth of mathematical actions that teachers can emphasise.
Understanding

Students build a robust knowledge of adaptable and transferable mathematical concepts. They make connections between related concepts and progressively apply the familiar to develop new ideas. They develop an understanding of the relationship between the ‘why’ and the ‘how’ of mathematics. Students build understanding when they connect related ideas, when they represent concepts in different ways, when they identify commonalities and differences between aspects of content, when they describe their thinking mathematically and when they interpret mathematical information.

Fluency

Students develop skills in choosing appropriate procedures, carrying out procedures flexibly, accurately, efficiently and appropriately, and recalling factual knowledge and concepts readily. Students are fluent when they calculate answers efficiently, when they recognise robust ways of answering questions, when they choose appropriate methods and approximations, when they recall definitions and regularly use facts, and when they can manipulate expressions and equations to find solutions.

Problem Solving

Students develop the ability to make choices, interpret, formulate, model and investigate problem situations, and communicate solutions effectively. Students formulate and solve problems when they use mathematics to represent unfamiliar or meaningful situations, when they design investigations and plan their approaches, when they apply their existing strategies to seek solutions, and when they verify that their answers are reasonable.

Reasoning

Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalising. Students are reasoning mathematically when they explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown, when they transfer learning from one context to another, when they prove that something is true or false and when they compare and contrast related ideas and explain their choices.

Content descriptions

The mathematics curriculum includes content descriptions at each year level. These describe the knowledge, concepts, skills and processes that teachers are expected to teach and students are expected to learn. However, they do not prescribe approaches to teaching. The content descriptions are intended to ensure that learning is appropriately ordered and that unnecessary repetition is avoided. However, a concept or skill introduced at one year level may be revisited, strengthened and extended at later year levels as needed.

Sub-strands

Content descriptions are grouped into sub-strands to illustrate the clarity and sequence of development of concepts through and across the year levels. They support the ability to see the connections across strands and the sequential development of concepts from Foundation to Year 10.
Year level descriptions

Year level descriptions emphasise the importance of working mathematically within the content. They provide an overview of the relationship between the proficiencies (Understanding, Fluency, Problem Solving and Reasoning) and the content for each year level.

Content elaborations

Content elaborations are provided for Foundation to Year 10 to illustrate and exemplify content and assist teachers to develop a common understanding of the content descriptions. They are not intended to be comprehensive content points that all students need to be taught.

Glossary

A glossary is provided to support the common understanding of key terms in the content descriptions. This support document contains additional information to support the glossary.

Mathematics across Foundation to Year 12

Although the curriculum is described year by year, this document provides advice across four year groupings on the nature of learners and the relevant curriculum:

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• Foundation – Year 2: typically students from 5 to 8 years of age
• Years 3–6: typically students from 8 to 12 years of age
• Years 7–10: typically students from 12 to 15 years of age
• Senior secondary years: typically students from 15 to 18 years of age.

Foundation – Year 2

The early years (5–8 years of age) lay the foundation for learning mathematics. Students at this level can access powerful mathematical ideas relevant to their current lives and learn the language of mathematics, which is vital to future progression.

Children have the opportunity to access mathematical ideas by developing a sense of number, order, sequence and pattern; by understanding quantities and their representations; by learning about attributes of objects and collections, position, movement and direction, and by developing an awareness of the collection, presentation and variation of data and a capacity to make predictions about chance events.

Understanding and experiencing these concepts in the early years provides a foundation for algebraic, statistical and multiplicative thinking, that will develop in subsequent years. These foundations also enable children to pose basic mathematical questions about their world, to identify simple strategies to investigate solutions, and to strengthen their reasoning to solve personally meaningful problems.

Years 3–6

These years emphasise the importance of students studying coherent, meaningful and purposeful mathematics that is relevant to their lives. Students still require active experiences that allow them to construct key mathematical ideas, but also gradually move to using models, pictures and symbols to represent these ideas.

The curriculum develops key understandings by extending the number, measurement, geometric and statistical learning from the early years; by building foundations for future studies through an emphasis on patterns that lead to generalisations; by describing relationships from data collected and represented; by making predictions; and by introducing topics that represent a key challenge in these years, such as fractions and decimals.

In these years of schooling, it is particularly important for students to develop a deep understanding of whole numbers to build reasoning in fractions and decimals and to develop a conceptual understanding of place value. These concepts allow students to develop proportional reasoning and flexibility with number through mental computation skills, and to extend their number sense and statistical fluency.

Years 7–10

These years of school mark a shift in mathematics learning to more abstract ideas. Through key activities such as the exploration, recognition and application of patterns, the capacity for abstract thought can be developed and the ways of thinking associated with abstract ideas can be illustrated.

The foundations built in previous years prepare students for this change. Previously established mathematical ideas can be drawn upon in unfamiliar sequences and combinations to solve non-routine problems and to consequently develop more complex mathematical ideas. However, students of this age also need an understanding of the connections between mathematical concepts and their application in their world as a motivation to learn. This means using contexts directly related to topics of relevance and interest to this age group.

During these years, students need to be able to represent numbers in a variety of ways; to develop an understanding of the benefits of algebra, through building algebraic models and applications and the various applications of geometry; to estimate and select appropriate units of measure; to explore ways of working with data to allow a variety of representations; and to make predictions about events based on their observations.
The intent of the curriculum is to encourage the development of important ideas in more depth, and to promote the interconnectedness of mathematical concepts. An obvious concern is the preparation of students intending to continue studying mathematics in the senior secondary years. Teachers will, in implementing the curriculum, extend the more mathematically able students by using appropriate challenges and extensions within available topics. A deeper understanding of mathematics in the curriculum enhances a student’s potential to use this knowledge to solve non-routine problems, both at this level of study and at later stages.

The 10A content is optional and is intended for students who require more content to enrich their mathematical study whilst completing the common Year 10 content. It is NOT anticipated that all students will attempt the 10A content, but doing so would be advantageous for students intending to pursue Mathematical Methods (Course C) or Specialist Mathematics (Course D) in the senior secondary years. A selection of topics from the 10A curriculum can be completed according to the needs of the students.

It is anticipated that all students will study the Australian Curriculum: Mathematics up to the end of Year 10. From Year 10, the curriculum should provide pathway options suitable for students of differing abilities and interests, and with a range of future career and study plans.

Senior secondary years

Four mathematics courses have been designed for the senior secondary years. They have been designed to allow flexibility for students, taking into account a range of future pathways and the reality that some students reassess their choice of mathematics program part way through the senior secondary years.

The elements of the content strands from Foundation to Year 10 are evident in the senior secondary curriculum, but are not used as the major organisers. The proficiency strands of Understanding, Fluency, Reasoning and Problem Solving are integrated into the content descriptions as in the Foundation to Year 10 curriculum.

Achievement Standards

Across Foundation to Year 10, achievement standards indicate the quality of learning that students should typically demonstrate by a particular point in their schooling. Achievement standards comprise a written description and student work samples.

An achievement standard describes the quality of learning (the extent of knowledge, the depth of understanding, and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The sequence of achievement standards across Foundation to Year 10 describes progress in the learning area. This sequence provides teachers with a framework of growth and development in the learning area.

Student work samples play a key role in communicating expectations described in the achievement standards. Each work sample includes the relevant assessment task, the student’s response, and annotations identifying the quality of learning evident in the student’s response in relation to relevant parts of the achievement standard.

Together, the description of the achievement standard and the accompanying set of annotated work samples help teachers to make judgments about whether students have achieved the standard.

Diversity of Learners
The Australian Curriculum has been developed to ensure that curriculum content and achievement standards establish high expectations for all students. Every student is entitled to enriching learning experiences across all areas of the curriculum. Students in Australian classrooms have multiple, diverse and changing needs that are shaped by individual learning histories and abilities as well as cultural language backgrounds and socio-economic factors.

**Special education needs**

The objectives of the Australian Curriculum are the same for all students. The curriculum offers flexibility for teachers to tailor their teaching in ways that provide rigorous, relevant and engaging learning and assessment opportunities for students with special education needs.

Most students with special education needs can engage with the curriculum provided the necessary adjustments are made to the complexity of the curriculum content and to the means through which students demonstrate their knowledge, skills and understanding.

For some learners, making adjustments to instructional processes and to assessment strategies enables students to achieve educational standards commensurate with their peers.

For other students, teachers will need to make appropriate adjustments to the complexity of the curriculum content, focusing instruction on content different to that taught to others in their age group. It follows that adjustments will also need to be made to how the student’s progress is monitored, assessed and reported.

For a small percentage of students, the Foundation to Year 10 curriculum content and achievement standards may not be appropriate nor meaningful, even with adjustments. Most of these students have a significant intellectual disability. During 2011, ACARA will develop additional curriculum content and achievement standards for this group of students in order to provide an Australian Curriculum that is inclusive of every learner.

Further advice and guidance are available about how to use each learning area and the curriculum generally for these students.

**English as an additional language or dialect**

Many students in Australian schools are learners of English as an additional language or dialect (EAL/D). Learners of EAL/D are students whose first language is a language other than Standard Australian English and who require additional support to assist them to develop English language proficiency. While many EAL/D learners do well in school, there is a significant group of these learners who leave school without achieving their potential.

EAL/D students come from diverse backgrounds and may include:

- overseas- and Australian-born children whose first language is a language other than English
- Aboriginal and Torres Strait Islander students whose first language is an Indigenous language, including traditional languages, creoles and related varieties, or Aboriginal English.

EAL/D learners enter Australian schools at different ages and at different stages of English language learning and have various educational backgrounds in their first languages. For some, school is the only place they use English.

The aims of the Australian Curriculum: Mathematics are ultimately the same for all students. However, EAL/D learners are simultaneously learning a new language and the knowledge, understanding and skills of the mathematics curriculum through that new language. They require additional time and support, along with informed teaching that explicitly addresses their language needs, and assessments that take into account their developing language proficiency.
A national EAL/D document is being produced that will support the Australian Curriculum. It will provide a description of how language proficiency develops, and will be a valuable reference for all teachers. It will allow mathematics teachers to identify the language levels of the EAL/D learners in their classrooms and to address their specific learning requirements when teaching, ensuring equity of access to the mathematics learning area for all.

General capabilities

The skills, behaviours and attributes that students need to succeed in life and work in the twenty-first century have been identified in the Australian Curriculum as general capabilities. There are seven general capabilities:

- literacy
- numeracy
- competence in information and communication technology (ICT)
- critical and creative thinking
- ethical behaviour
- personal and social competence
- intercultural understanding.

Over the course of their schooling, students develop and use these general capabilities within and across learning areas and in their lives outside school. General capabilities and learning areas have a reciprocal relationship. Learning areas provide opportunities for students to develop and use general capabilities. Similarly, wherever general capabilities are made explicit in learning areas, they can enrich and deepen learning. In the Australian Curriculum: Mathematics, each of the seven general capabilities is embedded (where appropriate) in the content descriptions or elaborations. There are further opportunities to develop the general capabilities through appropriate teaching activities.

Literacy

Students become literate as they develop the skills to learn and communicate confidently at school and to become effective individuals, community members, workers and citizens. These skills include listening, reading and viewing, writing, speaking and creating print, visual and digital materials accurately and purposefully within and across all learning areas.

Literacy is an important aspect of mathematics. Students need to understand written problems and instructions; ellipsis (for example, ‘convert your age to days, then hours, minutes and finally seconds’); synonyms (for example, ‘subtract’, ‘take away’, ‘minus’); imperatives (for example, ‘circle the correct answer’); the passive voice (for example, ‘if 7 is taken from 10…’); nominalisations (for example, ‘product’, ‘quotient’); technical terminology (for example, ‘digits’, ‘lowest common denominator’), including the use of common words with a specific meaning in a mathematical context (for example ‘find the value of x’ requires more than searching, it implies problem solving), and metaphorical language used to express mathematics concepts and processes.

Numeracy

Students become numerate as they develop the capacity to recognise and understand the role of mathematics in the world around them and the confidence, willingness and ability to apply mathematics to their lives in ways that are constructive and meaningful.

Mathematics makes a special contribution to the development of numeracy in a manner that is more explicit and foregrounded than is the case in other learning areas. It is important that the mathematics curriculum provides the opportunity to apply mathematical understanding and skills in context, both in other learning areas...
and in real world contexts. A particularly important context for the application of Number and Algebra is financial mathematics. In Measurement and Geometry, there is an opportunity to apply understanding to design. The twenty-first century world is information driven, and through Statistics and Probability students can interpret data and make informed judgments about events involving chance.

Information and communication technology (ICT) competence

Students develop ICT competence as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information at school, at home, at work and in their communities. ICT competence allows students to solve problems and readily perform previously onerous tasks. Calculators of all types, from the simple four-operations versions to more complex graphical and CAS calculators, can be used to make calculations, draw graphs and interpret data in ways that have previously not been possible. Digital technologies, such as spreadsheets, dynamic geometry software and computer algebra software, can engage students and promote understanding of key concepts. However, there will be occasions where teachers will ask students to undertake tasks without using technology.

Critical and creative thinking

Students develop critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities, and use them when seeking new pathways or solutions. In the context of schooling, critical and creative thinking are integral to activities that require reason, logic, imagination and divergence.

Critical and creative thinking is key to the development of mathematical understanding. Critical thinking is used in the proficiency strands of Reasoning and Problem Solving. Engaging students in reasoning and thinking about solutions to problems, and the strategies needed to find these solutions, are core parts of the mathematics curriculum. For example, students are encouraged to be critical thinkers in justifying their choice of a particular calculation strategy or in identifying the questions that need to be answered when undertaking a statistical investigation.

Creative thinking is essential to mathematical problem solving. The mathematics curriculum encourages students to look for alternative ways to approach problems. For example, identifying when a problem is similar to a previous one or drawing diagrams or simplifying a problem to control some variables, are strategies students will develop to find solutions.

Ethical behaviour

Students develop ethical behaviour as they learn to understand and act in accordance with ethical principles. This includes understanding the role of ethical principles, values and virtues in human life; acting with moral integrity; acting with regard for others, and having a desire and capacity to work for the common good.

There are opportunities in the mathematics curriculum to develop and apply ethical behaviour in a range of contexts; for example, in the selection and interpretation of data and statistics for different purposes.

Personal and social competence

Students develop personal and social competence as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. This involves recognising and regulating their emotions, developing concern and understanding of others, establishing positive relationships, making responsible decisions, working effectively in teams and handling challenging situations constructively.

The elements of personal and social competence relevant to mathematics include the application of mathematical skills for personal purposes, such as the use of timetables, budgeting and personal problem solving, which are all important skills in self-management.
Students’ capacities to work in teams in undertaking explorations and investigations are another important part of learning to be mathematicians.

**Intercultural understanding**

Students develop intercultural understanding as they learn to understand themselves in relation to others. This involves students valuing their own cultures and beliefs and those of others, and engaging with people of diverse cultures in ways that recognise commonalities and differences, create connections and cultivate respect between people.

Intercultural understanding can be enhanced if students are exposed to a range of cultural traditions in mathematics. For example, through examining Aboriginal and Torres Strait Islander people’s perceptions of time and weather patterns, the networks embedded in family relationships and the algebraic concepts inherent in storytelling students’ broader cultural knowledge is enriched. It is also important for mathematics classes to explore the influences of many cultures in the development of mathematical thinking.

**Cross-curriculum priorities**

There are three cross curriculum priorities in the Australian Curriculum:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability.

The cross curriculum priorities are embedded in the curriculum and will have a strong but varying presence depending on their relevance to each of the learning areas.

**Aboriginal and Torres Strait Islander histories and cultures**

Aboriginal and Torres Strait Islander communities are strong, rich and diverse. Aboriginal and Torres Strait Islander Identity is central to this priority and is intrinsically linked to living, learning Aboriginal and Torres Strait Islander communities, deep knowledge traditions and holistic world view.

A conceptual framework based on Aboriginal and Torres Strait Islander Peoples’ unique sense of Identity has been developed as a structural tool for the embedding of Aboriginal and Torres Strait Islander histories and cultures within the Australian curriculum. This sense of Identity is approached through the interconnected aspects of Country/Place, People and Culture. Embracing these elements enhances all areas of the curriculum.

The Aboriginal and Torres Strait Islander priority provides opportunities for all learners to deepen their knowledge of Australia by engaging with the world’s oldest continuous living cultures. This knowledge and understanding will enrich their ability to participate positively in the ongoing development of Australia.

The Australian Curriculum: mathematics values Aboriginal and Torres Strait Islander histories and cultures. It provides opportunities for students to appreciate that Aboriginal and Torres Strait Islander societies have sophisticated applications of mathematical concepts.

Students will explore connections between representations of number and pattern and how they relate to aspects of Aboriginal and Torres Strait Islander cultures. They will investigate time, place, relationships and measurement concepts in Aboriginal and Torres Strait Islander contexts. Students will deepen their understanding of the lives of Aboriginal and Torres Strait Islander Peoples through the application and evaluation of statistical data.
Asia and Australia’s engagement with Asia

The Asia and Australia’s engagement with Asia priority provides a regional context for learning in all areas of the curriculum. China, India and other Asian nations are growing rapidly and the power and influence they have in all areas of global endeavour is extensive. An understanding of Asia underpins the capacity of Australian students to be active and informed citizens working together to build harmonious local, regional and global communities, and build Australia’s social, intellectual and creative capital.

This priority is concerned with Asia literacy for all Australian students. Asia literacy develops knowledge, skills and understanding about the histories, geographies, cultures, arts, literatures and languages of the diverse countries of our region. It fosters social inclusion in the Australian community. It enables students to communicate and engage with the peoples of Asia so they can effectively live, work and learn in the region. Australia now has extensive engagement with Asia in areas such as trade, investment, immigration, tourism, education and humanitarian assistance and this engagement is vital to the prosperity of all Australians.

The Australian Curriculum: mathematics provides opportunities for students to learn about the understandings and applications of mathematics in Asia. In the past, mathematicians from the Asia region have made significant contributions to the development of the human understanding of number, algebra and trigonometry. Mathematicians from Asia continue to contribute to the ongoing development of mathematical understanding.

In this learning area, students investigate the concept of chance using Asian games. They explore the way Asian societies apply other mathematical concepts such as patterns and symmetry in art and architecture. Investigations involving data collection and representation can be used to examine issues pertinent to the Asia region.

Sustainability

Sustainability addresses the ongoing capacity of Earth to maintain all life.

Sustainable patterns of living meet the needs of the present without compromising the ability of future generations to meet their needs. Actions to improve sustainability are both individual and collective endeavours shared across local and global communities. They necessitate a renewed and balanced approach to the way humans interact with each other and the environment.

Education for sustainability develops the knowledge, skills and values necessary for people to act in ways that contribute to more sustainable patterns of living. It is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through action that recognises the relevance and interdependence of environmental, social, cultural and economic considerations.

The Australian Curriculum: mathematics provides the foundation for the exploration of issues of sustainability. It equips students with the skills of measurement, mathematical modelling, and data collection, representation and analysis. These skills are needed to investigate data, evaluate and communicate findings and to make predictions based on those findings.

Mathematical understandings and skills are necessary to monitor and quantify both the impact of human activity on ecosystems and changes to conditions in the biosphere. Actions to improve sustainability involve students in processes such as auditing, reading measures and gauges, and interpreting data on invoices and accounts. Mathematical and statistical analysis enables informed decision making about present and future action.

Learning in mathematics involves the use of knowledge and skills learnt in other areas, particularly in English, science and history.
The Australian National Numeracy Review Report (2008) identified numeracy as requiring an across-the-school commitment, including mathematical, strategic and contextual aspects. This across-the-school commitment can be managed by including specific references to other curriculum areas in the mathematics curriculum, and the identification of key numeracy capacities in the descriptions of other curriculum areas being developed. For example, the following are some of the numeracy perspectives that could be relevant to English, science and history.

**English**

One aspect of the link with English and literacy is that, along with other elements of study, numeracy can be understood and acquired only within the context of the social, cultural, political, economic and historical practices to which it is integral. Students need to be able to draw on quantitative and spatial information to derive meaning from certain types of texts encountered in the subject of English.

**Science**

Practical work and problem solving across all the sciences require the capacity to organise and represent data in a range of forms; plot, interpret and extrapolate graphs; estimate and solve ratio problems; use formulas flexibly in a range of situations; perform unit conversions; and use and interpret rates including concentrations, sampling, scientific notation, and significant figures.

**History**

Learning in history includes interpreting and representing large numbers and a range of data such as those associated with population statistics and growth, financial data, figures for exports and imports, immigration statistics, mortality rates, war enlistments and casualty figures; chance events, correlation and causation; imagining timelines and time frames to reconcile related events; and the perception and spatial visualisation required for geopolitical considerations, such as changes in borders of states and in ecology.

**Implications for teaching, assessment and reporting**

In mathematics, challenging problems can be posed using basic age-appropriate content. Accelerating students by using content beyond their year level may not be the best way to extend proficient mathematicians. Choosing engaging experiences as contexts for a variety of tasks assists in making mathematics inclusive, and these tasks can be effectively differentiated both for students experiencing difficulty and those who complete tasks easily. The proficiency strands apply expectations of the range and nature of how mathematical content is enacted, and can help focus teaching.

Teachers use the Australian Curriculum content and achievement standards first to identify current levels of learning and achievement and then to select the most appropriate content (possibly from across several year levels) to teach individual students and/or groups of students. This takes into account that in each class there may be students with a range of prior achievement (below, at, and above the year level expectations) and that teachers plan to build on current learning.

Teachers also use the achievement standards, at the end of a period of teaching, to make on-balance judgments about the quality of learning demonstrated by the students – that is whether they have achieved below, at, or above the standard. To make these judgments, teachers draw on assessment data that they have collected as evidence during the course of the teaching period. These judgments about the quality of learning are one source of feedback to students and their parents and inform formal reporting processes.

If a teacher judges that a student’s achievement is below the expected standard, this suggests that the teaching programs and practice should be reviewed to better assist individual students in their learning in the
future. It also suggests that additional support and targeted teaching will be needed to ensure that the student does not fall behind.

Assessment of the Australian Curriculum takes place in different levels and for different purposes, including:

- ongoing formative assessment within classrooms for the purposes of monitoring learning and providing feedback, to teachers to inform their teaching, and for students to inform their learning
- summative assessment for the purposes of twice-yearly reporting by schools to parents and carers on the progress and achievement of students
- annual testing of Years 3, 5, 7 and 9 students’ levels of achievement in aspects of literacy and numeracy, conducted as part of the National Assessment Program – Literacy and Numeracy (NAPLAN)
- periodic sample testing of specific learning areas within the Australian Curriculum as part of the National Assessment Program (NAP).
Foundation Year

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

**Understanding** includes connecting names, numerals and quantities

**Fluency** includes counting numbers in sequences readily, continuing patterns, and comparing the lengths of objects directly

**Problem Solving** includes using materials to model authentic problems, sorting objects, using familiar counting sequences to solve unfamiliar problems, and discussing the reasonableness of the answer

**Reasoning** includes explaining comparisons of quantities, creating patterns, and explaining processes for indirect comparison of length

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<td>Number and place value</td>
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<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point (ACMNA001)</td>
<td>Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language (ACMMG006)</td>
<td>Answer yes/no questions to collect information (ACMSP011)</td>
</tr>
<tr>
<td>Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond (ACMNA002)</td>
<td>Compare and order the duration of events using the everyday language of time (ACMMG007)</td>
<td></td>
</tr>
<tr>
<td>Subitise small collections of objects (ACMNA003)</td>
<td>Connect days of the week to familiar events and actions (ACMMG008)</td>
<td></td>
</tr>
<tr>
<td>Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289)</td>
<td>Shape</td>
<td></td>
</tr>
<tr>
<td>Represent practical situations to model addition and sharing (ACMNA004)</td>
<td>Sort, describe and name familiar two-dimensional shapes and three-dimensional objects in the environment (ACMMG009)</td>
<td></td>
</tr>
<tr>
<td>Patterns and algebra</td>
<td>Location and transformation</td>
<td></td>
</tr>
<tr>
<td>Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings (ACMNA005)</td>
<td>Describe position and movement (ACMMG010)</td>
<td></td>
</tr>
</tbody>
</table>

**Foundation Year achievement standard**

By the end of the Foundation Year, students make the connections between number names, numerals and quantities up to 10. Students are able to compare and sort shapes and objects. They make connections between events and the days of the week.
Year 1

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level: Understanding includes connecting names, numerals and quantities, and partitioning numbers in various ways.

Fluency includes counting number in sequences readily forward and backwards, locating numbers on a line, and naming the days of the week.

Problem Solving includes using materials to model authentic problems, giving and receiving directions to unfamiliar places, and using familiar counting sequences to solve unfamiliar problems and discussing the reasonableness of the answer.

Reasoning includes explaining direct and indirect comparisons of length using uniform informal units, justifying representations of data, and explaining patterns that have been created.

### Number and Algebra

**Number and place value**
- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero (ACMNA012)
- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line (ACMNA013)
- Count collections to 100 by partitioning numbers using place value (ACMNA014)
- Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts (ACMNA015)

**Fractions and decimals**
- Recognise and describe one-half as one of two equal parts of a whole (ACMNA016)

**Money and financial mathematics**
- Recognise, describe and order Australian coins according to their value (ACMNA017)

**Patterns and algebra**
- Investigate and describe number patterns formed by skip counting and patterns with objects (ACMNA018)

### Measurement and Geometry

**Using units of measurement**
- Measure and compare the lengths and capacities of pairs of objects using uniform informal units (ACMMG019)
- Tell time to the half-hour (ACMMG020)
- Describe duration using months, weeks, days and hours (ACMMG021)

**Shape**
- Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features (ACMMG022)
- Give and follow directions to familiar locations (ACMMG023)

**Location and transformation**

### Statistics and Probability

**Chance**
- Identify outcomes of familiar events involving chance and describe them using everyday language such as ‘will happen’, ‘won’t happen’ or ‘might happen’ (ACMSP024)

**Data representation and interpretation**
- Choose simple questions and gather responses (ACMSP262)
- Represent data with objects and drawings where one object or drawing represents one data value. Describe the displays (ACMSP263)

### Year 1 achievement standard

By the end of Year 1, students recognise and communicate number sequences. They solve simple addition and subtraction problems, and are familiar with Australian coins. They describe a representation of a half. Students collect data from questions to draw and describe simple data displays. Students compare lengths and describe two-dimensional shapes and three-dimensional objects. They...
communicate time duration and can follow simple directions.
Year 2

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:
Understanding includes connecting number calculations with counting sequences, partitioning and combining numbers flexibly, identifying and describing the relationship between addition and subtraction and between multiplication and division

Fluency includes counting numbers in sequences readily, using units iteratively to compare measurements, listing possible outcomes of chance events, and describing and comparing time durations

Problem Solving includes formulating problems from authentic situations, making models and using number sentences that represent problem situations, planning routes on maps, and matching transformations with their original shape

Reasoning includes using known facts to derive strategies for unfamiliar calculations, comparing and contrasting related models of operations, describing connections between 2-D and 3-D representations, and creating and interpreting simple representations of data

<table>
<thead>
<tr>
<th>Number and Algebra</th>
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</thead>
<tbody>
<tr>
<td>Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and ten from any starting point, then moving to other sequences. (ACMNA026)</td>
<td>Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units (ACMMG037)</td>
<td>Identify practical activities and everyday events that involve chance. Describe outcomes as 'likely' or 'unlikely' and identify some events as 'certain' or 'impossible' (ACMSP047)</td>
</tr>
<tr>
<td>Recognise, model, represent and order numbers to at least 1000 (ACMNA027)</td>
<td>Compare masses of objects using balance scales (ACMMG038)</td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting (ACMNA028)</td>
<td>Tell time to the quarter-hour, using the language of 'past' and 'to' (ACMMG039)</td>
<td>Identify a question of interest based on one categorical variable. Gather data relevant to the question (ACMSP048)</td>
</tr>
<tr>
<td>Explore the connection between addition and subtraction (ACMNA029)</td>
<td>Name and order months and seasons (ACMMG040)</td>
<td>Collect, check and classify data (ACMSP049)</td>
</tr>
<tr>
<td>Solve simple addition and subtraction problems using a range of efficient mental and written strategies (ACMNA030)</td>
<td>Use a calendar to identify the date and determine the number of days in each month (ACMMG041)</td>
<td>Create displays of data using lists, table and picture graphs and interpret them (ACMSP050)</td>
</tr>
<tr>
<td>Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)</td>
<td>Describe and draw two-dimensional shapes, with and without digital technologies (ACMMG042)</td>
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</tr>
<tr>
<td>Recognise and represent division as grouping into equal sets and solve simple problems using these representations (ACMNA032)</td>
<td>Describe the features of three-dimensional objects (ACMMG043)</td>
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</tr>
<tr>
<td>Fractions and decimals</td>
<td>Location and transformation</td>
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</tr>
<tr>
<td>Recognise and interpret common uses of halves, quarters and eighths of shapes and collections (ACMNA033)</td>
<td>Interpret simple maps of familiar locations and identify the relative positions of key features (ACMMG044)</td>
<td></td>
</tr>
<tr>
<td>Money and financial mathematics</td>
<td>Investigate the effect of one-step slides and flips with and without digital technologies (ACMMG045)</td>
<td>Identify and describe half and quarter turns</td>
</tr>
</tbody>
</table>
Mathematics
Curriculum F–10

Count and order small collections of Australian coins and notes according to their value (ACMNA034)

Patterns and algebra

Describe patterns with numbers and identify missing elements (ACMNA035)

Solve problems by using number sentences for addition or subtraction (ACMNA036)

Year 2 achievement standard

By the end of Year 2, students recognise and communicate number sequences involving twos, threes, and fives. They are familiar with collections up to 1000 and recognise the connection between addition and subtraction. Students describe patterns with numbers and represent problems involving addition and subtraction by number sentences. They understand the value of collections of Australian coins. Students collect information and create data displays and interpret the information. They describe outcomes for everyday events. Students compare and order different shapes and objects using informal units. They use calendars to identify dates and seasons. They draw two-dimensional shapes and describe one-step transformations.
Mathematics

Curriculum F–10

Year 3

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

Understanding includes connecting number representations with number sequences, partitioning and combining numbers flexibly, representing unit fractions, using appropriate language to communicate times, and identifying environmental symmetry

Fluency includes recalling multiplication facts, using familiar metric units to order and compare objects, identifying and describing outcomes of chance experiments, interpreting maps and communicating positions

Problem Solving includes formulating and modelling authentic situations involving planning methods of data collection and representation, making models of three-dimensional objects and using number properties to continue number patterns

Reasoning includes using generalising from number properties and results of calculations, comparing angles, creating and interpreting variations in the results of data collections and data displays

<table>
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<tr>
<th>Number and Algebra</th>
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<tbody>
<tr>
<td>Investigate the conditions required for a number to be odd or even and identify odd and even numbers (ACMNA051)</td>
<td>Measure, order and compare objects using familiar metric units of length, mass and capacity (ACMMG061)</td>
<td>Conduct chance experiments, identify and describe possible outcomes and recognise variation in results (ACMSP067)</td>
</tr>
<tr>
<td>Recognise, model, represent and order numbers to at least 10 000 (ACMNA052)</td>
<td>Tell time to the minute and investigate the relationship between units of time (ACMMG062)</td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems (ACMNA053)</td>
<td>Make models of three-dimensional objects and describe key features (ACMMG063)</td>
<td>Identify questions or issues for categorical variables. Identify data sources and plan methods of data collection and recording (ACMSP068)</td>
</tr>
<tr>
<td>Recognise and explain the connection between addition and subtraction (ACMNA054)</td>
<td>Location and transformation</td>
<td>Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMSP069)</td>
</tr>
<tr>
<td>Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (ACMNA055)</td>
<td>Create and interpret simple grid maps to show position and pathways (ACMMG065)</td>
<td>Interpret and compare data displays (ACMSP070)</td>
</tr>
<tr>
<td>Recall multiplication facts of two, three, five and ten and related division facts (ACMNA056)</td>
<td>Identify symmetry in the environment (ACMMG066)</td>
<td>Geometric reasoning</td>
</tr>
<tr>
<td>Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies (ACMNA057)</td>
<td>Identify angles as measures of turn and compare angle sizes in everyday situations (ACMMG064)</td>
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</tr>
<tr>
<td>Fractions and decimals</td>
<td>Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole (ACMNA058)</td>
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<tr>
<td>Money and financial mathematics</td>
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</tr>
</tbody>
</table>

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Mathematics

Curriculum F–10

Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA059)

Patterns and algebra

Describe, continue, and create number patterns resulting from performing addition or subtraction (ACMNA060)

Year 3 achievement standard

By the end of Year 3 students recall number facts for single digit numbers and are familiar with collections up to 10,000. They describe number patterns involving addition and subtraction and recognise the connection between multiplication and division. They model and represent unit fractions. They count the change required and represent money values in various ways. Students conduct chance experiments and describe the possible outcomes. They create, interpret and compare data displays. Students compare objects using familiar units. They compare angle sizes and identify symmetry. They tell the time and interpret positions and pathways on maps.
Year 4

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

Understanding includes making connections between representations of numbers, partitioning and combining numbers flexibly, extending place value to decimals, using appropriate language to communicate times, using informal units for comparing, and describing properties of symmetrical shapes.

Fluency includes recalling multiplication tables, communicating sequences of simple fractions, using instruments to measure accurately, creating patterns with shapes and their transformations, and collecting and recording data.

Problem Solving includes formulating, modelling and recording authentic situations involving operations, comparing large numbers and time durations, and using properties of numbers to continue patterns.

Reasoning includes using generalising from number properties and results of calculations, deriving strategies for unfamiliar multiplication and division tasks, comparing angles, communicating information using graphical displays and evaluating the appropriateness of different displays.

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<tbody>
<tr>
<td>Number and place value</td>
<td>Using units of measurement</td>
<td>Chance</td>
</tr>
<tr>
<td>Recognise, represent and order numbers to at least tens of thousands (ACMNA072)</td>
<td>Compare objects using familiar metric units of area and volume (ACMMG290)</td>
<td>Identify everyday events where one cannot happen if the other happens (ACMSP093)</td>
</tr>
<tr>
<td>Investigate number sequences involving multiples of 3, 4, 6, 7, 8, and 9 (ACMNA074)</td>
<td>Use am and pm notation and solve simple time problems (ACMMG086)</td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Recall multiplication facts up to 10 x 10 and related division facts (ACMNA075)</td>
<td>Compare the areas of regular and irregular shapes by informal means (ACMMG087)</td>
<td></td>
</tr>
<tr>
<td>Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder (ACMNA076)</td>
<td>Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies (ACMMG088)</td>
<td></td>
</tr>
<tr>
<td>Fractions and decimals</td>
<td>Location and transformation</td>
<td>Evaluate the effectiveness of different displays in illustrating data features including variability (ACMSP097)</td>
</tr>
<tr>
<td>Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line (ACMNA078)</td>
<td>Create symmetrical patterns, pictures and shapes with and without digital technologies (ACMMG091)</td>
<td></td>
</tr>
</tbody>
</table>
be extended to tenths and hundredths. Make connections between fractions and decimal notation (ACMNA079)

<table>
<thead>
<tr>
<th>Compare angles and classify them as equal to, greater than or less than a right angle (ACMMG089)</th>
</tr>
</thead>
</table>

Money and financial mathematics

<table>
<thead>
<tr>
<th>Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (ACMNA080)</th>
</tr>
</thead>
</table>

Patterns and algebra

<table>
<thead>
<tr>
<th>Explore and describe number patterns resulting from performing multiplication (ACMNA081)</th>
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</table>

<table>
<thead>
<tr>
<th>Solve word problems by using number sentences involving multiplication or division where there is no remainder (ACMNA082)</th>
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<table>
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<tr>
<th>Use equivalent number sentences involving addition and subtraction to find unknown quantities (ACMNA083)</th>
</tr>
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</table>

### Year 4 achievement standard

By the end of Year 4 students recall multiplication facts up to 10 x 10 and the related division facts. They are familiar with collections up to 100 000. Students recognise and locate familiar fractions on a number line and make connections between fraction and decimal notations. They solve problems by using relevant number sentences involving the four operations. Students describe the probabilities of everyday events. They investigate different methods for data collection, construct data displays and evaluate their effectiveness. Students convert between units of time and solve problems involving time duration. They compare areas of regular and irregular shapes and classify angles. They create symmetrical patterns and interpret the information contained in maps.
Year 5

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

Understanding includes making connections between representations of numbers, using fractions to represent probabilities, comparing and ordering fractions and decimals and representing them in various ways

Fluency includes choosing appropriate units of measurement for calculation of perimeter and area, using estimation to check the reasonableness of answers to calculations and using instruments to measure angles

Problem Solving includes formulating and solving authentic problems using numbers and measurements, creating transformations and identifying line and rotational symmetries

Reasoning includes investigating strategies to perform calculations efficiently, creating financial plans, interpreting results of chance experiments and interpreting data sets

<table>
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<tbody>
<tr>
<td>Number and place value</td>
<td>Using units of measurement</td>
<td>Chance</td>
</tr>
<tr>
<td>Identify and describe factors and multiples of whole numbers and use them to solve problems (ACMNA098)</td>
<td>Choose appropriate units of measurement for length, area, volume, capacity and mass (ACMMG108)</td>
<td>List outcomes of chance experiments involving equally likely outcomes and represent probabilities of those outcomes using fractions (ACMSP116)</td>
</tr>
<tr>
<td>Use estimation and rounding to check the reasonableness of answers to calculations (ACMNA099)</td>
<td>Calculate the perimeter and area of rectangles using familiar metric units (ACMMG109)</td>
<td>Recognise that probabilities range from 0 to 1 (ACMSP117)</td>
</tr>
<tr>
<td>Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies (ACMNA100)</td>
<td>Compare 12- and 24-hour time systems and convert between them (ACMMG110)</td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Solve problems involving division by a one digit number, including those that result in a remainder (ACMNA101)</td>
<td>Connect three-dimensional objects with their nets and other two-dimensional representations (ACMMG111)</td>
<td>Pose questions and collect categorical or numerical data by observation or survey (ACMSP118)</td>
</tr>
<tr>
<td>Use efficient mental and written strategies and apply appropriate digital technologies to solve problems (ACMNA291)</td>
<td>Use a grid reference system to describe locations. Describe routes using landmarks and directional language (ACMMG113)</td>
<td>Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (ACMSP119)</td>
</tr>
<tr>
<td>Fractions and decimals</td>
<td>Describe translations, reflections and rotations of two-dimensional shapes. Identify line and rotational symmetries (ACMMG114)</td>
<td>Describe and interpret different data sets in context (ACMSP120)</td>
</tr>
<tr>
<td>Compare and order common unit fractions and locate and represent them on a number line (ACMNA102)</td>
<td>Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original (ACMMG115)</td>
<td></td>
</tr>
<tr>
<td>Investigate strategies to solve problems involving addition and subtraction of fractions with the same denominator (ACMNA103)</td>
<td>Recognise that the number system can be extended beyond hundredths (ACMNA104)</td>
<td>Geometric reasoning</td>
</tr>
<tr>
<td>Compare, order and represent decimals</td>
<td>Estimate, measure and compare angles</td>
<td></td>
</tr>
</tbody>
</table>
(ACMNA105) Money and financial mathematics Create simple financial plans (ACMNA106)

Patterns and algebra
Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction (ACMNA107)
Use equivalent number sentences involving multiplication and division to find unknown quantities (ACMNA121)

**Year 5 achievement standard**

By the end of Year 5 students identify and describe factors and multiples and use estimation and rounding to check the reasonableness of answers. They solve multiplication and division problems and compare, order and represent decimals. Students perform addition and subtraction of fractions with the same denominator and continue patterns with fractions and decimals. They plan simple budgets. Students list the outcomes of chance experiments as fractions. They pose questions to gather data and construct, describe and interpret different data sets. Students calculate perimeter and area of rectangles using appropriate units. They connect three dimensional objects with two dimensional representations. They measure and construct different angles and describe transformations of two-dimensional shapes, including the enlargement transformation. They identify line and rotational symmetry.
Year 6

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

Understanding includes describing properties of different sets of numbers, using fractions and decimals to describe probabilities, representing fractions and decimals in various ways and describing connections between them, and making reasonable estimations.

Fluency includes representing negative numbers on a number line, calculating simple percentages, using brackets appropriately, converting between fractions and decimals, using operations with fractions, decimals and percentages, measuring using metric units, and interpreting timetables.

Problem Solving includes formulating and solving authentic problems using numbers and measurements, creating similar shapes through enlargements, representing secondary data, and calculating angles.

Reasoning includes explaining mental strategies for performing calculations, describing results for continuing number sequences, investigating new situations using known properties of angles, explaining the transformation of one shape into another, and inferring from the results of experiments.

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<tr>
<th>Number and Algebra</th>
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</thead>
<tbody>
<tr>
<td>Identify and describe properties of prime, composite, square and triangular numbers (ACMNA122)</td>
<td>Connect decimal representations to the metric system (ACMMG135)</td>
<td>Describe probabilities using fractions, decimals and percentages (ACMSP144)</td>
</tr>
<tr>
<td>Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123)</td>
<td>Convert between common metric units of length, mass and capacity (ACMMG136)</td>
<td>Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies (ACMSP145)</td>
</tr>
<tr>
<td>Investigate everyday situations that use positive and negative whole numbers and zero. Locate and represent these numbers on a number line (ACMNA124)</td>
<td>Solve problems involving the comparison of lengths and areas using appropriate units (ACMMG137)</td>
<td>Compare observed frequencies across experiments with expected frequencies (ACMSP146)</td>
</tr>
<tr>
<td>Compare fractions with related denominators and locate and represent them on a number line (ACMNA125)</td>
<td>Connect volume and capacity and their units of measurement (ACMMG138)</td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Solve problems involving addition and subtraction of fractions with the same or related denominators (ACMNA126)</td>
<td>Interpret and use timetables (ACMMG139)</td>
<td>Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables (ACMSP147)</td>
</tr>
<tr>
<td>Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies (ACMNA127)</td>
<td>Construct simple prisms and pyramids (ACMMG140)</td>
<td>Interpret secondary data presented in digital media and elsewhere (ACMSP148)</td>
</tr>
<tr>
<td>Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers (ACMNA128)</td>
<td>Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies (ACMMG142)</td>
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<td></td>
<td>Introduce the Cartesian coordinate system using all four quadrants (ACMMG143)</td>
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<td></td>
<td>Geometric reasoning</td>
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</tr>
<tr>
<td></td>
<td>Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles</td>
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</tr>
</tbody>
</table>
Multiply decimals by whole numbers and perform divisions that result in terminating decimals, with and without digital technologies (ACMNA129)

Multiply and divide decimals by powers of 10 (ACMNA130)

Make connections between equivalent fractions, decimals and percentages (ACMNA131)

Money and financial mathematics

Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies (ACMNA132)

Patterns and algebra

Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence (ACMNA133)

Explore the use of brackets and order of operations to write number sentences (ACMNA134)

Year 6 achievement standard

By the end of Year 6, students recognise the properties of special numbers. They connect fractions, decimals and percentages as different representations of the same number and solve associated problems. They write correct number sentences. Students predict and communicate probabilities using simple fractions, decimals and percentages and construct and interpret a range of data displays. Students connect decimal representations to the metric system and choose appropriate units of measurement to solve problems. They interpret and use timetables. Students investigate angles. They investigate combinations of transformations and apply the enlargement transformation.
Year 7

The proficiency strands Understanding, Fluency, Problem Solving and Reasoning are an integral part of mathematics content across the three content strands: Number and Algebra, Measurement and Geometry, and Statistics and Probability. The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

At this year level:

**Understanding** includes describing patterns in uses of indices with whole numbers, recognising commonalities between fractions, decimals, percentages and ratios, plotting points on the Cartesian plane, identifying angles formed by a transversal crossing a pair of parallel lines, and connecting the laws and properties of numbers to algebraic terms and expressions

**Fluency** includes calculating accurately with integers, representing fractions and decimals in various ways, investigating best buys, evaluating measures of central tendency and calculating areas of shapes and volumes of prisms

**Problem Solving** includes formulating and solving authentic problems using numbers and measurements, creating transformations and identifying symmetry, calculating angles and interpreting sets of data collected through chance experiments

**Reasoning** includes applying the number laws to calculations, applying known geometric facts to draw conclusions about shapes, applying an understanding of ratio and interpreting data displays

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<tbody>
<tr>
<td>Investigate index notation and represent whole numbers as products of powers of prime numbers (ACMNA149)</td>
<td>Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving (ACMMG159)</td>
<td>Construct sample spaces for single-step experiments with equally likely outcomes (ACMSP167)</td>
</tr>
<tr>
<td>Investigate and use square roots of perfect square numbers (ACMNA150)</td>
<td>Calculate volumes of rectangular prisms (ACMMG160)</td>
<td>Assign probabilities to the outcomes of events and determine probabilities for events (ACMSP168)</td>
</tr>
<tr>
<td>Apply the associative, commutative and distributive laws to aid mental and written computation (ACMNA151)</td>
<td></td>
<td>Data representation and interpretation</td>
</tr>
<tr>
<td>Compare, order, add and subtract integers (ACMNA280)</td>
<td>Draw different views of prisms and solids formed from combinations of prisms (ACMMG161)</td>
<td>Identify and investigate issues involving continuous or large count data collected from primary and secondary sources (ACMSP169)</td>
</tr>
<tr>
<td>Real numbers</td>
<td>Location and transformation</td>
<td>Construct and compare a range of data displays including stem-and-leaf plots and dot plots (ACMSP170)</td>
</tr>
<tr>
<td>Compare fractions using equivalence. Locate and represent fractions and mixed numerals on a number line (ACMNA152)</td>
<td>Describe translations, reflections in an axis, and rotations of multiples of 90° on the Cartesian plane using coordinates. Identify line and rotational symmetries (ACMMG181)</td>
<td>Calculate mean, median, mode and range for sets of data. Interpret these statistics in the context of data (ACMSP171)</td>
</tr>
<tr>
<td>Solve problems involving addition and subtraction of fractions, including those with unrelated denominators (ACMNA153)</td>
<td>Classify triangles according to their side and angle properties and describe quadrilaterals (ACMMG165)</td>
<td>Describe and interpret data displays and the relationship between the median and mean (ACMSP172)</td>
</tr>
<tr>
<td>Multiply and divide fractions and decimals using efficient written strategies and digital technologies (ACMNA154)</td>
<td>Demonstrate that the angle sum of a triangle is 180° and use this to find the angle sum of a quadrilateral (ACMMG166)</td>
<td></td>
</tr>
<tr>
<td>Express one quantity as a fraction of another, with and without the use of digital technologies (ACMNA155)</td>
<td>Identify corresponding, alternate and co-interior angles when two parallel straight lines are crossed by a transversal (ACMMG163)</td>
<td></td>
</tr>
<tr>
<td>Round decimals to a specified number of decimal places (ACMNA156)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connect fractions, decimals and</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
percentages and carry out simple conversions (ACMNA157)

Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. (ACMNA158)

Recognise and solve problems involving simple ratios (ACMNA173)

Money and financial mathematics

Investigate and calculate 'best buys', with and without digital technologies (ACMNA174)

Patterns and algebra

Introduce the concept of variables as a way of representing numbers using letters (ACMNA175)

Create algebraic expressions and evaluate them by substituting a given value for each variable (ACMNA176)

Extend and apply the laws and properties of arithmetic to algebraic terms and expressions (ACMNA177)

Linear and non-linear relationships

Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point (ACMNA178)

Solve simple linear equations (ACMNA179)

Investigate, interpret and analyse graphs from authentic data (ACMNA180)

Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning (ACMMG164)

**Year 7 achievement standard**

By the end of Year 7, students interpret integers in real world contexts. They make connections between whole numbers and index notation. They move flexibly between representations of fractions, decimals and percentages. Students generalise using variables, solve simple linear equations and identify points on the Cartesian plane. They compare costs of items to make financial decisions. Students investigate questions involving the collection of a range of data. They calculate mean, mode, median and range for sets of data and describe the relationship between median and mode in data displays. Students classify triangles and quadrilaterals and establish the formulas for the area and perimeter of rectangles. They calculate the volume of rectangular prisms and draw and build three dimensional objects. They identify angles formed by a transversal through parallel lines and describe transformations on the Cartesian plane.
Algebraic expression

An algebraic expression is formed by combining numbers and algebraic symbols using arithmetic operations. The expression must be constructed unambiguously according to the rules of algebra.

For example, $x^2 + 3x - 2x^2$, and $(x + 1)x^2$ are algebraic expressions, but $2x + 3y$ is not because it is incomplete.

Algebraic fraction

An algebraic fraction is a fraction in which both the numerator and denominator are algebraic expressions.

Algebraic term

An algebraic term is an algebraic expression that forms a ‘separable’ part of some other algebraic expression. For example, $x^2$ and $5x^{-1}$ are terms in the inequality $x^2 \leq 5x^{-1}$; and 2, $3x, 5x^2$ are terms of the polynomial $2 + 3x + 5x^2$.

Alternate

In each diagram below, the two marked angles are called alternate angles (since they are on alternate sides of the transversal).

If the lines $AB$ and $CD$ are parallel, then each pair of alternate angles are equal.

Angle

An angle is the figure formed by two rays sharing a common endpoint, called the vertex of the angle.
### The size of an angle

Imagine that the ray $OB$ is rotated about the point $O$ until it lies along $OA$. The amount of turning is called the size of the angle $AOB$.

![Diagram of an angle](image)

A revolution is the amount of turning required to rotate a ray about its endpoint until it falls back onto itself. The size of 1 revolution is $360^\circ$.

![Diagram of a revolution](image)

A straight angle is the angle formed by taking a ray and its opposite ray. A straight angle is half of a revolution, and so has size equal to $180^\circ$.

![Diagram of a straight angle](image)

#### Right angle

Let $AOB$ be a line, and let $OX$ be a ray making equal angles with the ray $OA$ and the ray $OB$. Then the equal angles $\angle AOX$ and $\angle BOX$ are called right angles.

![Diagram of a right angle](image)

A right angle is half of a straight angle, and so is equal to $90^\circ$.

### Classification of angles

Angles are classified according to their size.

We say that
- An angle with size $\alpha$ is **acute** if $0^\circ < \alpha < 90^\circ$.
- An angle with size $\alpha$ is **obtuse** if $90^\circ < \alpha < 180^\circ$.
- An angle with size $\alpha$ is **reflex** if $180^\circ < \alpha < 360^\circ$.
Adjacent angles

Two angles at a point are called adjacent if they share a common ray and a common vertex.

Hence, in the diagram,
- \( \angle AOC \) and \( \angle BOC \) are adjacent, and
- \( \angle AOB \) and \( \angle AOC \) are adjacent.

Two angles that add to 90\(^o\) are called complementary. For example, 23\(^o\) and 67\(^o\) are complementary angles.

In each diagram the two marked angles are called corresponding angles.

If the lines are parallel, then each pair of corresponding angles are equal.

Conversely, if a pair of corresponding angles are equal, then the lines are parallel.

Two angles that add to 180\(^o\) are called supplementary angles. For example, 45\(^o\) and 135\(^o\) are supplementary angles.

Angles of elevation and depression

When an observer looks at an object that is lower than ‘the eye of’ the observer, the angle between the line of sight and the horizontal is called the angle of depression.
When an observer looks at an object that is higher than ‘the eye of’ the observer, the angle between the line of sight and the horizontal is called the **angle of elevation**.

![Diagram of angle of elevation](image)

**Array**

An array is an ordered collection of objects or numbers. Rectangular arrays are commonly used in primary mathematics.

**Associative**

A method of combining two numbers or algebraic expressions is **associative** if the result of the combination of three objects does not depend on the way in which the objects are grouped.

For example, addition of numbers is associative and the corresponding **associative law** is:

\[(a + b) + c = a + (b + c)\]

for all numbers \(a, b,\) and \(c\).

Multiplication is also associative: \((ab)c = a(bc)\) for all numbers \(a, b,\) and \(c\), but subtraction and division are not, because, for example,

\[(7 - 4) - 3 \neq 7 - (4 - 3)\] and \[(12 + 6) - 2 \neq 12 + (6 - 2)\].

**Back-to-back stem-and-leaf plot**

A **back-to-back stem-and-leaf plot** is a method for comparing two data distributions by attaching two sets of ‘leaves’ to the same ‘stem’ in a stem-and-leaf plot.

For example, the stem-and-leaf plot below displays the distribution of pulse rates of 19 students before and after gentle exercise.

<table>
<thead>
<tr>
<th>Pulse rate</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>988</td>
<td>86</td>
<td>6</td>
</tr>
<tr>
<td>988</td>
<td>6641</td>
<td>107</td>
</tr>
<tr>
<td>8862</td>
<td>86</td>
<td>6788</td>
</tr>
<tr>
<td>60</td>
<td>9</td>
<td>02245899</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>044</td>
</tr>
<tr>
<td>0</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>12</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Bi modal**


Bi modal data is data whose distribution has two modes.

Bivariate data

Bivariate data is data relating to two variables, for example, the arm spans and heights of 16 year olds, the sex of primary school students and their attitude to playing sport.

Bivariate numerical data

Bivariate numerical data is data relating to two numerical variables, for example height and weight.

Box plot

The term box plot is a synonym for a box-and-whisker plot

A box-and-whisker plot is a graphical display of a five-number summary.

In a box-and-whisker plot, the ‘box’ covers the interquartile range (IQR), with ‘whiskers’ reaching out from each end of the box to indicate maximum and minimum values in the data set. A vertical line in the box is used to indicate the location of the median.

The box-and-whisker plot below has been constructed from the five-number summary of the resting pulse rates of 17 students.

![Box plot example]

The term ‘box-and-whisker plot’ is commonly abbreviated to ‘box plot’.

A five-number-summary is a method for summarising a data set using five statistics, the minimum value, the lower quartile, the median, the upper quartile and the maximum value.

Capacity

Capacity is a term used to describe how much a container will hold. It is often used in relation to the volume of fluids. Units of capacity (volume of fluids or gases) include litres and millilitres.

Cartesian coordinate system

Two intersecting number lines are taken intersecting at right angles at their origins to form the axes of the coordinate system.

The plane is divided into four quadrants by these perpendicular axes called the x-axis (horizontal line) and the y-axis (vertical line).

The position of any point in the plane can be represented by an ordered pair of numbers \((x, y)\). These ordered are called the coordinates of the point. This is called the Cartesian coordinate system. The plane is called the Cartesian plane.
The point with coordinates \((4, 2)\) has been plotted on the Cartesian plane shown. The coordinates of the origin are \((0, 0)\).

**Categorical variable**

A **categorical variable** is a variable whose values are categories.

Examples: blood group is a categorical variable; its values are: A, B, AB or O. So too is construction type of a house; its values might be brick, concrete, timber, or steel.

Categories may have numerical labels, for example, for the variable postcode the category labels would be numbers like 3787, 5623, 2016, etc., but these labels have no numerical significance. For example, it makes no sense to use these numerical labels to calculate the average postcode in Australia.

**Census**

A **census** is an attempt to collect information about the whole population.

A **population** is the complete set of individuals, objects, places, etc. that we want information about.

**Chord**

A **chord** is a line segment (interval) joining two points on a circle.

A **diameter** is a chord passing through the centre.

The word diameter is also used for the length of the diameter.

**Circle**
The circle with centre $O$ and radius $r$ is the set of all points in the plane whose distance from $O$ is $r$.

The line segment $OA$ (interval $OA$) is also called a radius of the circle.

Putting the point of a pair of compasses at the centre and opening the arms to the radius can draw a circle.

$\pi$ is the name of the Greek letter $\pi$ that is used to denote the ratio of the circumference of any circle to its diameter. The number $\pi$ is irrational, but $22/7$ is a rational approximation accurate to 2 decimal places. The decimal expansion of $\pi$ begins

$$\pi = 3.14159265358979 \ldots$$

There is a very long history of attempts to estimate $\pi$ accurately. One of the early successes was due to Archimedes (287–212 BC) who showed that $3\frac{10}{71} < \pi < 3\frac{1}{7}$.

The decimal expansion of $\pi$ has now been calculated to at least the first $10^{13}$ places.

**Cointerior angles**

In each diagram the two marked angles are called co-interior angles and lie on the same side of the transversal.

If the lines $AB$ and $CD$ are parallel then $a + b = 180^\circ$.
Cointerior angles formed by parallel lines are supplementary.

Conversely, if a pair of cointerior angles is supplementary then the lines are parallel.

**Column graph**

A column graph is a graph used in statistics for organising and displaying categorical data.

To construct a column graph, equal width rectangular bars are constructed for each category with height equal to the observed frequency of the category as shown in the example below which displays the hair colours of 27 students.

![Column Graph Example](image)

Column graphs are frequently called bar graphs or bar charts. In a bar graph or chart, the bars can be either vertical or horizontal.

A histogram is a statistical graph for displaying the frequency distribution of continuous data.

A histogram is a graphical representation of the information contained in a frequency table. In a histogram, class frequencies are represented by the areas of rectangles centred on each class interval. The class frequency is proportional to the rectangle’s height when the class intervals are all of equal width.

The histogram below displays the frequency distribution of the heights (in cm) of a sample of 42 people with class intervals of width 5 cm.
Common factor

A **common factor** (or **common divisor**) of a set of numbers or algebraic expression is a factor of each element of that set.

For example, 6 is a common factor of 24, 54, and 66, and $x + 1$ is a common factor of $x^2 - 1$ and $x^2 + 5x + 4$.

Commutative

A method of combining two numbers or algebraic expressions is **commutative** if the result of the combination does not depend on the order in which the objects are given.

For example, addition of numbers is commutative, and the corresponding **commutative law** is:

$$a + b = b + a$$

for all numbers $a$ and $b$.

Multiplication is also commutative: $ab = ba$ for all numbers $a$ and $b$, but subtraction and division are not, because, for example, $5 - 3 \neq 3 - 5$ and $12 ÷ 4 \neq 4 ÷ 12$.

Complementary events

Events $A$ and $B$ are **complementary** events, if $A$ and $B$ are mutually exclusive and $\Pr(A) + \Pr(B) = 1$.

Composite number

A natural number that has a factor other than 1 and itself is a **composite number**.

Compound interest

The interest earned by investing a sum of money (the principal) is **compound interest** if each successive interest payment is added to the principal for the purpose of calculating the next interest payment.

For example, if the principal $P$ earns compound interest at the rate of $r$ per period, then after $n$ periods the principal plus interest is $P(1 + r)^n$.

Congruence
Two plane figures are called **congruent** if one can be moved by a sequence of translations, rotations and reflections so that it fits exactly on top of the other figure.

Two figures are congruent when we can match every part of one figure with the corresponding part of the other figure. For example, the two figures below are congruent.

Matching intervals have the same length, and matching angles have the same size.

![Congruent figures](image)

**Congruent triangles**

The four standard congruence tests for triangles.

Two triangles are congruent if:

- **SSS**: the three sides of one triangle are respectively equal to the three sides of the other triangle, or
- **SAS**: two sides and the included angle of one triangle are respectively equal to two sides and the included angle of the other triangle, or
- **AAS**: two angles and one side of one triangle are respectively equal to two angles and the matching side of the other triangle, or
- **RHS**: the hypotenuse and one side of one right-angled triangle are respectively equal to the hypotenuse and one side of the other right-angled triangle.

**Continuous variable**

A **continuous variable** is a numerical variable that can take any value that lies within an interval. In practice, the values taken are subject to the accuracy of the measurement instrument used to obtain these values.

Examples include height, reaction time to a stimulus and systolic blood pressure.

**Cosine**

In any right-angled triangle,

\[ \cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}} \text{ where } 0^\circ < \theta < 90^\circ \]
In any triangle $ABC$,

$$c^2 = a^2 + b^2 - 2ab \cos C$$

**Counting number**

The **counting numbers** are the non-negative integers, that is, one of the numbers $0, 1, 2, 3, \ldots$

Sometimes it is taken to mean only a positive integer.

A **natural number** is a positive integer or counting number. The natural numbers are $1, 2, 3, \ldots$. The set of natural numbers is usually denoted by $\mathbb{N}$.

**Counting on**

Counting a collection, or reciting a sequence of number words, from a point beyond the beginning of the sequence.

For example, when a child has counted to establish that there are 6 objects in a collection and is then asked “How Many?” after several more are added might count on from 6 saying “7, 8, 9, …” to reach the total. This is considered a more sophisticated strategy than counting the whole collection from 1.

**Cylinder**

A **cylinder** is a solid that has parallel circular discs of equal radius at the ends. Each cross-section parallel to the ends is a circle with the same radius, and the centres of these circular cross-sections lie on a straight line, called the **axis of the cylinder**.

**Data**

**Data** is a general term for a set of observations and measurements collected during any type of systematic investigation.

**Primary data** is data collected by the user. **Secondary data** is data collected by others. Sources of secondary data include, web-based data sets, the media, books, scientific papers, etc.

**Univariate data** is data relating to a single variable, for example, hair colour or the number of errors in a test.
Data display

A **data display** is a visual format for organising and summarising data.

Examples include, box plots, column graphs, frequency tables and stem plots.

Decimal

A **decimal** is a numeral in the decimal number system.

For example, the decimal expansion of $\frac{3}{5}$ is 0.6. The integer part is 0 and the fractional part is 0.6.

A decimal is terminating if the fractional part has only finitely many decimal digits. It is non-terminating if it has infinitely digits.

For example, 6.75 is a terminating decimal, whereas 0.3161616... where the pattern 16 repeats indefinitely, is non-terminating.

Non-terminating decimals may be recurring, that is, contain a pattern of digits that repeats indefinitely after a certain number of places.

For example, 0.3161616... is a recurring decimal, whereas 0.10101010010001... where the number of 0's between the 1's increases indefinitely, is not recurring.

It is common practice to indicate the repeating part of a recurring decimal by using dots or lines as superscripts.

For example, 0.3161616... could be written as $0.\overline{316}$ or $0.3\overline{3}$.

The **decimal number system** is the base 10, place-value system most commonly used for representing real numbers. In this system positive numbers are expressed as sequences of Arabic numerals 0 to 9, in which each successive digit to the left or right of the decimal point indicates a multiple of successive powers (respectively positive or negative) of 10.

For example, the number represented by the decimal 12.345 is the sum $1 \times 10^1 + 2 \times 10^0 + 3 \times 10^{-1} + 4 \times 10^{-2} + 5 \times 10^{-3}$.

Denominator

In the fraction $\frac{a}{b}$, $b$ is the **denominator**. It is the number of equal parts into which the whole is divided in order to obtain fractional parts. For example, if a line segment is divided into 5 equal parts, each of those parts is one fifth of the whole and corresponds to the unit fraction $\frac{1}{5}$.

Dependent variable

Two events are **independent** if knowing the outcome of one event tells us nothing about the outcome of the other event.

Difference

A difference is the result of subtraction one number or algebraic quantity from another.

Distributive

Multiplication of numbers is **distributive** over addition because the product of one number with the sum of two others equals the sum of the products of the first number with each of the others. This means that we can multiply two numbers by expressing one (or both) as a sum and then multiplying each part of the sum by the other number (or each part of its sum.)

For example,
This distributive law is expressed algebraically as follows:

\[ a(b + c) = ab + ac, \text{ for all numbers } a, b \text{ and } c \]

**Divisible**

In general, a number or algebraic expression \( x \) is divisible by another \( y \) if there exists a number or algebraic expression \( q \) of a specified type for which \( x = yq \).

A natural number \( m \) is divisible by a natural number \( n \) if there is a natural number \( q \) such that \( m = nq \).

For example, 12 is divisible by 4 because \( 12 = 3 \times 4 \).

**Dot plot**

A dot plot is a graph used in statistics for organising and displaying numerical data.

Using a number line, a dot plot displays a dot for each observation. Where there is more than one observation, or observations are close in value, the dots are stacked vertically. If there are a large number of observations, dots can represent more than one observation. Dot plots are ideally suited for organising and displaying discrete numerical data.

The dot plot below displays the number of passengers observed in 32 cars stopped at a traffic light.

Dot plots can also be used to display categorical data, with the numbers on the number line replaced by category labels.

**Element**

An element of a set is a member of that set. For example, the elements of the set \( \{2,3,4,6,8\} \) are the numbers 2, 3, 4, 6 and 8. We write \( x \in S \) to indicate that \( x \) is a member of the set \( S \).

**Enlargement (Dilation)**

An enlargement is a scaled up (or down) version of a figure in which the transformed figure is in proportion to the original figure. The relative positions of points are unchanged and the two figures are similar.

In the diagram below triangle \( A'B'C' \) is the image of triangle \( ABC \) under the enlargement with enlargement factor 2 and centre of enlargement \( O \).
Equally Likely outcomes

Equally likely outcomes occur with the same probability.

For example, in tossing a fair coin, the outcome ‘head’ and the outcome ‘tail’ are equally likely.

In this situation, \( \Pr(\text{head}) = \Pr(\text{tail}) = 0.5 \)

Equation

An equation is a statement that asserts that two numbers or algebraic expressions are equal in value. An equation must include an equal sign. For example, \( 3 + 14 = 11 + 6 \).

An identity is an equation involving algebraic expressions that is true for all values of the variables involved.

For example, \( x^2 - 4 = (x - 2)(x + 2) \).

An identity is an equation that is true for all values of the variables involved.

Example: \( x^2 - y^2 = (x - y)(x + y) \)

An inequality is a statement that one number or algebraic expression is less than (or greater than) another. There are four types of inequalities:

- The relation \( a \) is less than \( b \) is written \( a < b \).
- \( a \) is greater than \( b \) is written \( a > b \).
- \( a \) is less than or equal to \( b \) is written \( a \leq b \), and
- \( a \) is greater than or equal to \( b \) is written \( a \geq b \).

Equivalent fractions

Two fractions \( \frac{a}{b} \) and \( \frac{c}{d} \) are equivalent if they are equal, that is, \( ad = bc \).

Equivalent fractions are alternative ways of writing the same fraction.

For example, \( \frac{1}{2} = \frac{2}{4} = \frac{3}{6} = \ldots \)

Estimate

In statistical terms, an estimate is information about a population extrapolated from a sample of the population.

For example, the mean number of decayed teeth in a randomly selected group of eight-year old children is an estimate of the mean number of decayed teeth in eight-year old children in Australia.
Even number

A whole number is even if it is divisible by 2. The even whole numbers are 0, 2, 4, 6, ...

Event

An event is a subset of the sample space for a random experiment.

For example, the set of outcomes from tossing two coins is \{HH, HT, TH, TT\}, where H represents a ‘head’ and T a ‘tail’.

For example, if A is the event ‘at least one head is obtained’, then \(A = \{HT, TH, HH\}\).

Two events A and B are mutually exclusive if one is incompatible with the other; that is, if they cannot be simultaneous outcomes in the same chance experiment.

For example, when a fair coin is tossed twice, the events ‘HH’ and ‘TT’ cannot occur at the same time and are, therefore, mutually exclusive.

In a Venn diagram, as shown below, mutually exclusive events do not overlap.

Expression

Two or more numbers or variables connected by operations. For example, 17 – 9, 8 x (2 + 3), 2a + 3b are all expressions. Expressions do not include an equal sign.

Factor

In general, a number or algebraic expression \(x\) is a factor (or divisor) of another \(y\) if there exists a number or algebraic expression \(q\) of a specified type for which \(y = xq\).

A natural number \(m\) is a factor of a natural number \(n\) if there is a natural number \(q\) such that \(n = mq\).

For example, 4 is a factor of 12 because \(12 = 3 \times 4\).

A polynomial \(a(x)\) is divisible by a polynomial \(b(x)\) if there is a polynomial \(q(x)\) for which \(a(x) = b(x)q(x)\).

For example, \(x - 2\) is a factor \(x^2 - 6x + 8\) because \(x^2 - 6x + 8 = (x - 4)(x - 2)\).

A prime factor of a natural number \(n\) is a factor of \(n\) that is a prime number.

For example, the prime factors of 330 are 2, 3, 5 and 11.
Factor and remainder theorem

According to the factor theorem, if \( p(x) \) is a polynomial and \( p(a) = 0 \) for some number \( a \), then \( p(x) \) is divisible by \( x - a \).

This follows easily from the remainder theorem, because for \( p(x) = (x - a) \) the remainder is \( p(a) \). So if \( p(a) = 0 \), the remainder is 0 and \( p(x) \) is divisible by \( x - a \).

The factor theorem can be used to obtain factors of a polynomial.

For example, if \( p(x) = x^3 - 3x^2 + 5x - 6 \), then it is easy to check that \( p(2) = 8 - 3 	imes 4 + 10 - 6 = 0 \). So by the factor theorem \( x - 2 \) is a factor of \( x^3 - 3x^2 + 5x - 6 \).

According to the remainder theorem, if a polynomial \( p(x) \) is divided by \( x - a \) where \( a \) is any real number, the remainder is \( p(a) \). That is, \( p(x) = q(x)(x - a) + p(a) \), for some polynomial \( q(x) \).

Factorise

To factorise a number or algebraic expression is to express it as a product.

For example, 15 is factorised when expressed as a product: \( 15 = 3 	imes 5 \), and \( x^2 - 3x + 2 \) is factorised when written as a product:

\[
x^2 - 3x + 2 = (x - 1)(x - 2).
\]

Fraction

The fraction \( \frac{a}{b} \) (written alternatively as \( a/b \)), where \( a \) is a non negative integer and \( b \) is a positive integer, was historically obtained by dividing a unit length into \( b \) equal parts and taking \( a \) of these parts.

For example, \( \frac{3}{5} \) refers to 3 of 5 equal parts of the whole, taken together.

In the fraction \( \frac{a}{b} \), the number \( a \) is the numerator and the number \( b \) is the denominator.

It is a proper fraction if \( a < b \) and an improper fraction otherwise.

Frequencies

Frequency, or observed frequency, is the number of times that a particular value occurs in a data set.

For grouped data, it is the number of observations that lie in that group or class interval.

An expected frequency is the number of times that a particular event is expected to occur when a chance experiment is repeated a number of times. For example, if the experiment is repeated \( n \) times, and on each of those times the probability that the event occurs is \( p \), then the expected frequency of the event is \( np \).

For example, suppose that a fair coin is tossed 5 times and the number of heads showing recorded. Then the expected frequency of "heads" is 5/2.

This example shows that the expected frequency is not necessarily an observed frequency, which in this case is one of the numbers 0,1,2,3,4 or 5.

A frequency table lists the frequency (number of occurrences) of observations in different ranges, called class intervals.
The frequency distribution of the heights (in cm) of a sample of 42 people is displayed in the frequency table below.

### Height (cm)

<table>
<thead>
<tr>
<th>Class interval</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>155–&lt;160</td>
<td>3</td>
</tr>
<tr>
<td>160–&lt;165</td>
<td>2</td>
</tr>
<tr>
<td>165–&lt;170</td>
<td>9</td>
</tr>
<tr>
<td>170–&lt;175</td>
<td>7</td>
</tr>
<tr>
<td>175–&lt;180</td>
<td>10</td>
</tr>
<tr>
<td>180–&lt;185</td>
<td>5</td>
</tr>
<tr>
<td>185–&lt;190</td>
<td>5</td>
</tr>
</tbody>
</table>

A frequency distribution is the division of a set of observations into a number of classes, together with a listing of the number of observations (the frequency) in that class.

Frequency distributions can be displayed in tabular or graphical form.

Frequency, or observed frequency, is the number of times that a particular value occurs in a data set.

For grouped data, it is the number of observations that lie in that group or class interval.

Relative frequency is given by the ratio \( \frac{f}{n} \), where \( f \) is the frequency of occurrence of a particular data value or group of data values in a data set and \( n \) is the number of data values in the data set.

### Frequency table

A two-way frequency table is commonly used to for displaying the two-way frequency distribution that arises when a group of individuals or things are categorised according to two criteria.

For example, the two-way table below displays the two-way frequency distribution that arises when 27 children are categorised according to hair type (straight or curly) and hair colour (red, brown, blonde, black).

<table>
<thead>
<tr>
<th>Hair colour</th>
<th>Hair type</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>red</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>brown</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>blonde</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>black</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>27</strong></td>
</tr>
</tbody>
</table>

The information in a two-way frequency table can also be displayed graphically using a side-by-side column graph.

### Function
A function \( f \) assigns to each element of one set \( S \) precisely one element of a second set \( T \).

The functions most commonly encountered in elementary mathematics are real functions of real variables. For such functions, the domain and codomain are sets of real numbers.

Functions are usually defined by a formula for \( f(x) \) in terms of \( x \). For example, the formula \( f(x) = x^2 \) defines the ‘squaring function’ that maps each real number \( x \) to its square \( x^2 \).

### Gradient

If \( A(x_1, y_1) \) and points \( B(x_2, y_2) \) are points in the plane, \( x_2 - x_1 \neq 0 \), the gradient of the line segment (interval) \( AB = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1} \).

The gradient of a line is the gradient of any line segment (interval) within the line.

### Greatest common divisor

The greatest common divisor (gcd), greatest common factor (gcf) or highest common factor (hcf), of a given set of natural numbers is the common divisor of the set that is greater than each of the other common divisors.

For example, 1, 3, 5 and 15 are the common factors of 24, 54 and 66 and 6 is the greatest common divisor.

### Histogram

A histogram is a statistical graph for displaying the frequency distribution of continuous data.

A histogram is a graphical representation of the information contained in a frequency table. In a histogram, class frequencies are represented by the areas of rectangles centred on each class interval. The class frequency is proportional to the rectangle’s height when the class intervals are all of equal width.

The histogram below displays the frequency distribution of the heights (in cm) of a sample of 42 people with class intervals of width 5 cm.
Independent event

Two events are independent if knowing the outcome of one event tells us nothing about the outcome of the other event.

Independent variable

When investigating relationships in bivariate data, the explanatory variable is the variable that may explain or cause a difference in the response variable.

For example, when investigating the relationship between the temperature of a loaf of bread and the time it has spent in a hot oven, temperature is the response variable and time is the explanatory variable.

With numerical bivariate data it is common to attempt to model such relationships with a mathematic equation and to call the response variable the dependent variable and the explanatory variable the independent variable.

When graphing numerical data, the convention is to display the response (dependent) variable on the vertical axis and the explanatory (independent) variable on the horizontal axis.

When there is no clear causal link between the events, the classification of the variables as either the dependent or independent variable is quite arbitrary.

Index

Index is synonymous with exponent.

The exponent or index of a number or algebraic expression is the power to which the latter is be raised. The exponent is written as a superscript. Positive integral exponents indicate the number of times a term is to be multiplied by itself. For example, \(a^3 = a \times a \times a\).

Index law

Index laws are rules for manipulating indices (exponents). They include

\[ x^a \times x^b = x^{a+b}; \quad (x^a)^b = x^{ab}; \quad \text{and} \quad x^a y^b = (xy)^a \]

and
Informal unit

Informal units are not part of a standardised system of units for measurement. For example, an informal unit for length could be paperclips of uniform length. An informal unit for area could be uniform paper squares of any size. Informal units are sometimes referred to as non-standard units.

Integer

The integers are the ‘whole numbers’ \(\ldots, -3, -2, -1, 0, 1, 2, 3, \ldots\). The set of integers is usually denoted by \(\mathbb{Z}\). Integers are basic building blocks in mathematics.

Interquartile range

The interquartile range (IQR) is a measure of the spread within a numerical data set. It is equal to the upper quartile \((Q_3)\) minus the lower quartiles \((Q_1)\); that is, \(IQR = Q_3 - Q_1\).

The IQR is the width of an interval that contains the middle 50% (approximately) of the data values. To be exactly 50%, the sample size must be a multiple of four.

Interval

An interval is a certain type of subset of the number line.

A finite interval is the set of all real numbers between two given real numbers called the end points of the interval. The end points may or may not be included in the interval.

Irrational number

An irrational number is a real number that is not rational. Some commonly used irrational numbers are \(\pi\), \(e\) and \(\sqrt{2}\).

The Euler number is an irrational real number whose decimal expansion begins

\[ e = 2.7182818283 \ldots \]

Irregular shape

An irregular shape can be a polygon. A polygon that is not regular is irregular.

Kite

A kite is a quadrilateral with two pairs of adjacent sides equal.
A kite may be convex as shown in the diagram above to the left or non-convex as shown above to the right. The **axis** of the kite is shown.

**Line segment (Interval)**

If A and B are two points on a line, the part of the line between and including A and B is called a line segment or interval.

The distance $AB$ is a measure of the size or length of $AB$.

Any point $A$ on a line divides the line into two pieces called rays. The ray $AP$ is that ray which contains the point $P$ (and the point $A$). The point $A$ is called the vertex of the ray and it lies on the ray.

**Linear equation**

A **linear equation** is an equation involving just linear terms, that is, polynomials of degree 1. The general form of a linear equation in one variable is $ax + b = 0$.

**Location (statistics)**

A measure of location is a single number that can be used to indicate a central or ‘typical value’ within a set of data.

The most commonly used measures of location are the mean and the median although the mode is also sometimes used for this purpose.

**Logarithm**

The **logarithm** of a positive number $x$ is the power to which a given number $b$, called the base, must be raised in order to produce the number $x$. The logarithm of $x$, to the base $b$, is denoted by $\log_b x$. Algebraically: $\log_b x = y \iff b^y = x$. 


**Many-to-one correspondence**

A **many-to-one correspondence** is a function or mapping that takes the same value for at least two different elements of its domain. For example, the squaring function \( y = x^2 \) is many-to-one because \( x^2 = (-x)^2 \) for all real numbers \( x \).

**Mean**

The arithmetic **mean** of a list of numbers is the sum of the data values divided by the number of numbers in the list.

In everyday language, the arithmetic mean is commonly called the **average**.

For example, for the following list of five numbers \( \{ 2, 3, 3, 6, 8 \} \) the mean equals

\[
\frac{2 + 3 + 3 + 6 + 8}{5} = \frac{22}{5} = 4.4
\]

**Median**

The **median** is the value in a set of ordered data that divides the data into two parts. It is frequently called the ‘middle value’.

Where the number of observations is odd, the median is the middle value.

For example, for the following ordered data set with an **odd** number of observations, the median value is five.

\[1 \ 3 \ 3 \ 4 \ 5 \ 6 \ 8 \ 9 \ 9\]

Where the number of observations is **even**, the median is calculated as the mean of the two central values.

For example, in the following ordered data set, the two central values are 5 and 6, and median value is the mean of these two values, 5.5

\[1 \ 3 \ 3 \ 4 \ 5 \ 6 \ 8 \ 9 \ 9 \ 10\]

The median provides a measure of location of a data set that is suitable for both symmetric and skewed distributions and is also relatively insensitive to outliers.

**Midpoint**

The **midpoint** \( M \) of a line segment (interval) \( AB \) is the point that divides the segment into two equal parts.

Let \( A(x_1, y_1) \) be points in the Cartesian plane. Then the **midpoint** \( M \) of line segment \( AB \) has coordinates \(( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} )\).

This can be seen from the congruent triangles below.
Mode

The **mode** is the most frequently occurring value in a set of data. There can be more than one mode. When there are two modes, the data set is said to be **bimodal**.

The mode is sometimes used as a measure of location.

Monic

A **monic** polynomial is one in which the coefficient of the leading term is 1. For example, \( x^2 + 2x - 7 \) is monic, but \( 4x^2 - x + 1 \) is not.

Multiple

A multiple of a number is the product of that number and an integer.

A multiple of a real number \( x \) is any number that is a product of \( x \) and an integer. For example, 4.5 and -13.5 are multiples of 1.5 because \( 4.5 = 3 \times 1.5 \) and \( -13.5 = -7 \times 1.5 \).

Multiplication

Multiplicative situations are problems or contexts that involve multiplication (or division). Calculating the number of seats in a theatre that has 30 rows of 24 seats, finding equivalent fractions, and working with ratios and percentages are all multiplicative situations.

Net

A **net** is a plane figure that can be folded to form a polyhedron.

One possible net for a cube is shown below.

Number
A real number is rational if it can be expressed as a quotient of integers. It is irrational otherwise.

**Number line**

A number line gives a pictorial representation of real numbers.

**Numeral**

A figure or symbol used to represent a number. For example, -3, 0, 45, IX

**Numerator**

In the fraction \( \frac{a}{b} \), \( a \) is the numerator. If an object is divided into \( k \) equal parts, then the fraction \( \frac{a}{b} \) represents \( \frac{a}{k} \) of these parts taken together. For example, if a line segment is divided into 5 equal parts, each of those parts is one fifth of the whole and 3 of these parts taken together corresponds to the fraction \( \frac{3}{5} \).

**Numerical data**

Numerical data is data associated with a numerical variable.

Numerical variables are variables whose values are numbers, and for which arithmetic processes such as adding and subtracting, or calculating an average, make sense.

**Odd and even number**

A whole number is even if it is divisible by 2. The even whole numbers are 0, 2, 4, 6, ...

An odd number is an integer that is not divisible by 2. The odd numbers are \( \ldots, -5, -3, -1, 1, 3, 5, \ldots \).

**One-to-one correspondence**

In early counting development one-to-one correspondence refers to the matching of one and only one number word to each element of a collection.

More generally it refers to a relationship between two sets such that every element of the first set corresponds to one and only one element of the second set.

**Operation**

The process of combining numbers or expressions. In the primary years operations include addition, subtraction, multiplication and division. In later years operations include substitution and differentiation.

**Order of operations**

A convention for simplifying expressions that stipulates that multiplication and division are performed before addition and subtraction and in order from left to right. For example, in \( 5 - 6 \div 2 + 7 \), the division is performed first and the expression becomes \( 5 - 3 + 7 = 9 \). If the convention is ignored and the operations are performed in order, the incorrect result, 6.5 is obtained.

**Outlier**
An outlier is a data value that appears to stand out from the other members of the data set by being unusually high or low. The most effective way of identifying outliers in a data set is to graph the data.

For example, in the following list of ages of a group of 10 people, \{12, 12, 13, 13, 13, 13, 13, 14, 14, 14, 24\}, the 24 would be considered to be a possible outlier.

**Parabola**

**Definition 1**

The graph of \(y = x^2\) is called a parabola. The point \((0, 0)\) is called the vertex of the parabola and the \(y\) axis is the axis of symmetry of the parabola called simply the axis.

Some other parabolas are the graphs of \(y = ax^2 + bx + c\) where \(a \neq 0\).

More generally, every parabola is similar to the graph of \(y = x^2\).

**Definition 2**

A parabola is the locus of all points \(P\) such that the distance from \(P\) to a fixed point \(F\) is equal to the distance from \(P\) to a fixed line \(l\).

**Parallel box plots**

Parallel box-and-whisker-plots are used to visually compare the five-number summaries of two or more data sets.

For example, box-and-whisker-plots below can be used to compare the five-number summaries for the pulse rates of 19 students before and after gentle exercise.
Note that the box plot for pulse rates after exercise shows the pulse rate of 146 as a possible outlier (.). This is because the distance of this data point above the upper quartile 42 (146-104) is more than 21 (1.5 \times \text{IQRs} = 1.5 \times (104 - 90) = 1.5 \times 14 = 21).

The term ‘parallel box-and-whisker plots’ is commonly abbreviated to ‘parallel boxplots’.

**Parallelogram**

A parallelogram is a quadrilateral whose opposite sides are parallel.

Thus the quadrilateral $ABCD$ shown below is a parallelogram because $AB \parallel DC$ and $DA \parallel CB$.

![Parallelogram Diagram]

**Properties of a parallelogram**

- The opposite angles of a parallelogram are equal.
- The opposite sides of a parallelogram are equal.
- The diagonals of a parallelogram bisect each other.

**Partitioning**

Dividing a quantity into parts. In the early years it commonly refers to the ability to think about numbers as made up of two parts, for example, 10 is 8 and 2. In later years it refers to dividing both continuous and discrete quantities into equal parts.

**Percentage**

A percentage is a fraction whose denominator is 100.

For example, $6\%$ (written as $\%$) is the percentage whose value is $\frac{6}{100}$.

Similarly, 40 as a percentage of 250 is $\frac{40}{250} \times 100 = 16\%$.

**Perimeter**

The perimeter of a plane figure is the length of its boundary.
Picture graphs

A **picture graph** is a statistical graph for organising and displaying categorical data.

![Picture graph example]

**Key** 🏝 = 10 Students

Place value

The value of digit as determined by its position in a number relative to the ones (or units) place. For integers the ones place is occupied by the rightmost digit in the number.

For example in the number 2 594.6 the 4 denotes 4 ones, the 9 denotes 90 ones or 9 tens, the 5 denotes 500 ones or 5 hundreds, the 2 denotes 2000 ones or 2 thousands, and the 6 denotes 6 of a one or 6 tenths.

Point

A **point** marks a position, but has no size.

Polynomial

A polynomial in one variable \( x \) (simply called a **polynomial**) is a finite sum of terms of the form \( \alpha x^{\kappa} \), where \( \alpha \) is a number and \( \kappa \) is a non-negative integer.

A non-zero polynomial can be written in the form \( \alpha_{n} x^{n} + \alpha_{n-1} x^{n-1} + \cdots + \alpha_{1} x + \alpha_{0} \), where \( n \) is a non-negative integer and \( \alpha_{n} \neq 0 \).

Population

A **population** is the complete set of individuals, objects, places, etc, that we want information about.

A **census** is an attempt to collect information about the whole population.

Prime number

A prime number is a natural number greater than 1 that has no factor other 1 and itself.

Prism

A **prism** is a convex polyhedron that has two congruent and parallel faces and all its remaining faces are parallelograms.

A right **prism** is a convex polyhedron that has two congruent and parallel faces and all its remaining faces are rectangles. A prism that is not a right prism is often called an **oblique prism**.
Some examples of prisms are shown below.

![Prisms](image1.png)

**Probability**

The probability of an event is a number between 0 and 1 that indicates the chance of something happening.

For example, the probability that the sun will come up tomorrow is 1, the probability that a fair coin will come up ‘heads’ when tossed is 0.5, while the probability of someone being physically present in Adelaide and Brisbane at exactly the same time is zero.

**Product**

A **product** is the result of multiplying together two or more numbers or algebraic expressions.

For example, $36$ is the product of $9$ and $4$, and $x^2 - y^2$ is product of $x - y$ and $x + y$.

**Proportion**

Corresponding elements of two sets are in proportion if there is a constant ratio. For example, the circumference and diameter of a circle are in proportion because for any circle the ratio of their lengths is the constant $\pi$.

**Pyramid**

A **pyramid** is a convex polyhedron with a polygonal base and triangular sides that meet at a point called the vertex. The pyramid is named according to the shape of its base.

![Pyramids](image2.png)

**Pythagoras’ theorem**

**Pythagoras’ theorem**

For a right-angled triangle

- The square of the hypotenuse of a right-angled triangle equals the sum of the squares of the lengths of the other two sides.
- In symbols, $c^2 = a^2 + b^2$. 
The converse

If \( c^2 = a^2 + b^2 \) in a triangle \( ABC \), then \( \angle C \) is a right angle.

Quadratic equation

The general quadratic equation in one variable is \( ax^2 + bx + c = 0 \), where \( a \neq 0 \).

The roots are given by the quadratic formula

\[
x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}
\]

Quadratic expression

A quadratic expression or function contains one or more of the terms in which the variable is raised to the second power, but no variable is raised to a higher power. Examples of quadratic expressions include \( 3x^2 + 7 \) and \( x^2 + 2xy + y^2 - 2x + y + 5 \).

Quartile

Quartiles are the values that divide an ordered data set into four (approximately) equal parts. It is only possible to divide a data set into exactly four equal parts when the number of data of values is a multiple of four.

There are three quartiles. The first, the lower quartile (\( Q_1 \)) divides off (approximately) the lower 25% of data values. The second quartile (\( Q_2 \)) is the median. The third quartile, the upper quartile (\( Q_3 \)), divides off (approximately) the upper 25% of data values.

Percentiles are the values that divide an ordered data set into 100 (approximately) equal parts. It is only possible to divide a data set into exactly 100 equal parts when the number of data values is a multiple of one hundred.

There are 99 percentiles. Within the above limitations, the first percentile divides off the lower 1% of data values. The second, the lower 2% and so on. In particular, the lower quartile (\( Q_1 \)) is the 25th percentile, the median is the 50th percentile and the upper quartile is the 75th percentile.

Quotient

A quotient is the result of dividing one number or algebraic expression by another. See also remainder.

Random number

A random number is one whose value is governed by chance; for example, the number of dots showing when a fair die is tossed. The value of a random number cannot be predicted in advance.
Range (statistics)

The range is the difference between the largest and smallest observations in a data set.

The range can be used as a measure of spread in a data set, but it is extremely sensitive to the presence of outliers and should only be used with care.

Rate

A rate is a particular kind of ratio in which the two quantities are measured in different units. For example, the ratio of distance to time, known as speed is a rate because distance and time are measured in different units (such as kilometres and hours). The value of the rate depends on the units in which the quantities are expressed.

Ratio

A ratio is a quotient or proportion of two numbers, magnitudes or algebraic expressions. It is often used as a measure of the relative size of two objects. For example, the ratio of the length of a side of a square to the length of a diagonal is $\frac{1}{\sqrt{2}}$ that is, $\frac{\sqrt{2}}{2}$.

Real numbers

The numbers generally used in mathematics, in scientific work and in everyday life are the real numbers. They can be pictured as points on a number line, with the integers evenly spaced along the line, and a real number $b$ to the right of a real number $a$ if $a < b$.

A real number is either rational or irrational.

Every real number has a decimal expansion. Rational numbers are the ones whose decimal expansions are either terminating or recurring.

Rectangle

A rectangle is a quadrilateral in which all angles are right angles.

Rectangular Hyperbola

The graph of $y = \frac{1}{x}$ is called a rectangular hyperbola. The $x$ and $y$ axes are asymptotes as the curve gets as close as we like to them.
Recurring decimal

A recurring decimal is a decimal that contains a pattern of digits that repeats indefinitely after a certain number of places.

For example,

\[ 0.1\overline{07} = 0.1070707\ldots, \]

and this is the decimal expansion of the rational number

\[
\frac{1}{10} + \frac{7}{1000} + \frac{7}{100000} + \frac{7}{10000000} + \ldots = \frac{1}{10} + \left( \frac{7}{1000} \right) \left( 1 - \frac{1}{100} \right) = \frac{1}{10} + \frac{7}{990} = \frac{106}{990}
\]

Every recurring decimal is the decimal expansion of a rational number.

Reflection

To reflect the point A in an axis of reflection, a line has been drawn at right angles to the axis of reflection and the point A' is marked at the same distance from the axis of reflection as A, but on the other side.

The point A' is called the reflection image of A.

A reflection is a transformation that moves each point to its reflection image.

Related denominators

Denominators are related when one is a multiple of the other. For example, the fractions \( \frac{5}{3} \) and \( \frac{5}{9} \) have related denominators because 9 is a multiple of 3.
Fractions with related denominators are more easily added and subtracted than fractions with unrelated denominators because only one needs to be renamed. For example to add \( \frac{3}{4} \) and \( \frac{2}{3} \) we can rename \( \frac{2}{3} \) as \( \frac{6}{9} \) and then compute \( \frac{3}{4} + \frac{2}{3} = \frac{8}{9} \).

**Remainder**

A **remainder** is the amount left over when one number or algebraic quantity \( a \) is divided by another \( b \). If \( a \) is divisible by \( b \) then the remainder is 0.

For example, when 68 is divided by 11, the remainder is 2, because 68 can be expressed as \( 68 = 6 \times 11 + 2 \).

**Rhombus**

A rhombus is a quadrilateral with all sides equal.

**Right Cone**

A **cone** is a solid that is formed by taking a circle called the base and a point not in the plane of the circle, called the vertex, which lies above or below the circle and joining the vertex to each point on the circle.

If the vertex is directly above or below the centre of the circular base, we call the cone a **right cone**.

The **height of the cone** is the distance from the vertex to the centre of the circular base.

The **slant height** of a cone is the distance from any point on the circle to the vertex to the circle.

**Rotation**

A **rotation** turns a figure about a fixed point, called the **centre of rotation**.

A rotation is specified by:

- the centre of rotation \( O \)
- the angle of rotation
• the direction of rotation (clockwise or anticlockwise).

In the first diagram below, the point A is rotated through $120^\circ$ clockwise about O. In the second diagram, it is rotated through $60^\circ$ anticlockwise about O.

A rotation is a transformation that moves each point to its rotation image.

Rounding

The decimal expansion of a real number is rounded when it is approximated by a terminating decimal that has a given number of decimal digits to the right of the decimal point.

Rounding to $n$ decimal places is achieved by removing all decimal digits beyond (to the right of) the $n^{th}$ digit to the right of the decimal place, and adjusting the remaining digits where necessary.

If the first digit removed (the $(n+1)^{th}$ digit) is less than 5 the preceding digit is not changed.

For example, $4.82749$ becomes $4.827$ when rounded to 3 decimal places.

If the first digit removed is greater than 5, or 5 and some succeeding digit is non-zero, the preceding digit is increased by 1. For example, $6.1234568$ becomes $6.12346$ when rounded to 5 decimal places.

Sample

A sample is part of a population. It is a subset of the population, often randomly selected for the purpose of estimating the value of a characteristic of the population as a whole.

For instance, a randomly selected group of eight-year old children (the sample) might be selected to estimate the incidence of tooth decay in eight-year old children in Australia (the population).

Sample space

A sample space is the set of all possible outcomes of a chance experiment. For example, the set of outcomes (also called sample points) from tossing two heads is \{ HH, HT, TH, TT \}, where H represents a ‘head’ and T a ‘tail’.

Scientific notation

A positive real number is expressed in scientific notation when it is written as the product of a power of 10 and a decimal that has just one digit to the left of the decimal point.

For example, the scientific notation for 3459 is $3.459 \times 10^3$, and the scientific notation for 0.000004567 is $4.567 \times 10^{-6}$.

Many electronic calculators will show these as $3.459E3$ and $4.567E-6$.

Secondary data set
**Primary data** is data collected by the user. **Secondary data** is data collected by others. Sources of secondary data include, web-based data sets, the media, books, scientific papers, etc.

**Shape (statistics)**

The shape of a numerical data distribution is mostly simply described as **symmetric** if it is roughly evenly spread around some central point or **skewed**, if it is not. If a distribution is skewed, it can be further described as **positively skewed** (“tailing-off” to the upper end of the distribution) or **negatively skewed** (“tailing-off” to the lower end of the distribution).

These three distribution shapes are illustrated in the parallel dot plot display below.

![Parallel dot plot showing distribution shapes](image)

Dot plots, histograms and stem plots can all be used to investigate the shape of a data distribution.

**Shapes (geometry)**

A **polygon** is plane figure bounded by line segments.

The figure shown above is a **regular pentagon**. It is a convex five-sided polygon. It is called a **pentagon** because it has five sides. It is called **regular** because all sides have equal length and all interior angles are equal.

![Regular pentagon](image)

A **polyhedron** is a solid figure bounded by plane polygonal faces. Two adjacent faces intersect at an edge and each edge joins two vertices.
The polyhedron shown above is a pyramid with a square base. It has 5 vertices, 8 edges and 5 faces. It is a convex polyhedron.

![Pyramid Diagram](image)

The figure above is a non-convex polyhedron.

A **convex polyhedron** is a finite region bounded by planes, in the sense that the region lies entirely on one side of the plane.

A regular shape can be a polygon. A polygon is regular if all of its sides are the same length and all of its angles have the same measure.

**Side-by-side column graph**

A side-by-side **column graph** can be used to organise and display the data that arises when a group of individuals or things are categorised according to two or more criteria.

For example, the side-by-side column graph below displays the data obtained when 27 children are categorised according to **hair type** (straight or curly) and **hair colour** (red, brown, blonde, black). The legend indicates that blue columns represent children with straight hair and red columns children with curly hair.

![Side-by-Side Column Graph](image)

Side-by-side column graphs are frequently called **side-by-side bar graphs** or **bar charts**. In a bar graph or chart, the bars can be either vertical or horizontal.

**Similar**

**The four standard tests for two triangles to be similar.**

**AAA**: If two angles of one triangle are respectively equal to two angles of another triangle, then the two triangles are similar.

**SAS**: If the ratio of the lengths of two sides of one triangle is equal to the ratio of the lengths of two sides of another triangle, and the included angles are equal, then the two triangles are similar.

**SSS**: If we can match up the sides of one triangle with the sides of another so that the ratios of matching sides are equal, then the two triangles are similar.

**RHS**: If the ratio of the hypotenuse and one side of a right-angled triangle is equal to the ratio of the hypotenuse and one side of another right-angled triangle, then the two triangles are similar.
Two plane figures are called **similar** if an enlargement of one figure is congruent to the other.

That is, if one can be mapped to the other by a sequence of translations, rotations, reflections and enlargements.

Similar figures thus have the same shape, but not necessarily the same size.

**Simple interest**

**Simple interest** is the interest accumulated when the interest payment in each period is a fixed fraction of the principal. For example, if the principal $P$ earns simple interest at the rate of $r\%$ per period, then after $n$ periods the accumulated simple interest is $\frac{Pn r}{100}$.

**Sine**

In any right-angled triangle,

\[
sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}, \text{ where } 0^\circ < \theta < 90^\circ
\]

In any triangle $ABC$,

\[
\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}
\]

In words it says:

Any side of a triangle over the sine of the opposite angle equals any other side of the triangle over the sine of its opposite angle.

**Square**

A **square** is a quadrilateral that is both a rectangle and a rhombus.
A square thus has all the properties of a rectangle, and all the properties of a rhombus.

**Standard deviation**

*Standard deviation* is a measure of the variability or spread of a data set. It gives an indication of the degree to which the individual data values are spread around their mean.

**Stem and leaf plot**

A *stem-and-leaf plot* is a method of organising and displaying numerical data in which each data value is split into two parts, a “stem” and a “leaf”.

For example, the stem-and-leaf plot below displays the resting pulse rates of 19 students.

<table>
<thead>
<tr>
<th>Pulse rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>68</td>
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<td>68</td>
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<td>68</td>
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<td>80</td>
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<tr>
<td>80</td>
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<tr>
<td>104</td>
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<tr>
<td>110</td>
</tr>
<tr>
<td>110</td>
</tr>
</tbody>
</table>

In this plot, the stem unit is ‘10’ and the leaf unit is ‘1’. Thus the top row in the plot 68 8 8 9 displays pulse rates of 68, 68, 68 and 69.

*Stemplot* is a synonym for stem-and-leaf plot.

**Subitising**

Recognising the number of objects in a collection without consciously counting

**Sum**

A *sum* is the result of adding together two or more numbers or algebraic expressions.

**Surd**

A *surd* is a numerical expression involving one or more irrational roots of numbers. Examples of surds include $\sqrt{2}$, $\frac{1}{\sqrt{2}}$ and $\sqrt{3} + 7\sqrt{3}$

**Symmetrical**

**Line symmetry**

A plane figure F has line symmetry in a line m if the image of F under the reflection in m is F itself. The line m is called the axis of symmetry.
Rotational symmetry

A plane figure $F$ has rotational symmetry about a point $O$ if there is a non-trivial rotation such that the image of $F$ under the rotation is $F$ itself.

A rotation of $120^\circ$ around $O$ moves the equilateral triangle onto itself.

Tangent

A tangent to a circle is a line that intersects a circle at just one point. It touches the circle at that point of contact, but does not pass inside it.

Tangent

In any right-angled triangle, 
\[ \tan \theta = \frac{\text{opposite}}{\text{adjacent}}, \text{ where } 0^\circ < \theta < 90^\circ. \]

Terminating decimal

A terminating decimal is a decimal that contains only finitely many decimal digits.

Every terminating decimal represents a rational number $\frac{a}{b}$ where the denominator is a power of 10. For example, $54.121$ is the decimal expansion of the sum
Mathematics

Glossary

Transformation

The transformations included in this glossary are enlargements, reflections, rotations and translations.

Translation

Shifting a figure in the plane without turning it is called translation. To describe a translation, it is enough to say how far left or right and how far up or down the figure is moved.

A translation is a transformation that moves each point to its translation image.

Transversal

A transversal is a line that meets two or more other lines in a plane.

Trapezium

A trapezium is a quadrilateral with one pair of opposite sides parallel.

Tree diagram

A tree diagram is a diagram that can be used to enumerate the outcomes of a multi-step random experiment.

The diagram below shows a tree diagram that has been used to enumerate all of the possible outcomes when a coin is tossed twice. This is an example of a two-step random experiment.
Triangular number

A triangular number is the number of dots required to make a triangular array of dots in which the top row consists of just one dot, and each of the other rows contains one more dot than the row above it. So the first triangular number is 1, the second is 3 (= 1 + 2), the third is 6 (= 1 + 2 + 3) and so on.

Trigonometric ratios

Sine, Cosine, Tangent

Unit fraction

A unit fraction is a simple fraction whose numerator is 1, that is, a fraction of the form $\frac{1}{n}$ where $n$ is a natural number.

Variable

Numerical variables are variables whose values are numbers, and for which arithmetic processes such as adding and subtracting, or calculating an average, make sense.

A discrete numerical variable is a numerical variable, each of whose possible values is separated from the next by a definite ‘gap’. The most common numerical variables have the counting numbers 0, 1, 2, 3, … as possible values. Others are prices, measured in dollars and cents.

Examples include the number of children in a family or the number of days in a month.

Variable (algebra)

A variable is a symbol, such as $x$, $y$ or $z$, used to represent an unspecified member of some set. For example, the variable $x$ could represent an unspecified real number.

Variable (statistics)

A variable is something measurable or observable that is expected to either change over time or between individual observations.

Examples of variables in statistics include the age of students, their hair colour or a playing field’s length or its shape.

Venn diagram

A Venn diagram is a graphical representation of the extent to which two or more events, for example $A$ and $B$, are mutually inclusive (overlap) or mutually exclusive (do not overlap).

Vertically opposite angle
When two lines intersect, four angles are formed at the point of intersection. In the diagram, the angles marked $\angle AOX$ and $\angle BOY$ are called vertically opposite.

Vertically opposite angles are equal.

**Volume**

The volume of a solid region is a measure of the size of a region.

For a rectangular prism, $Volume = Length \times Width \times Height$

**Whole number**

A whole number is a non-negative integer, that is, one of the numbers $0, 1, 2, 3, \ldots$.

Sometimes it is taken to mean only a positive integer, or any integer.
## Mathematics Scope and Sequence: Foundation to Year 6

### Number and place value

<table>
<thead>
<tr>
<th>Foundation Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop confidence with</td>
<td>Investigate number sequences, initially those increasing and decreasing by twos,</td>
<td>Investigate the conditions required for a</td>
<td>Recall multiplication facts up to</td>
<td>Identify and describe factors</td>
<td>Identify and describe properties of prime,</td>
<td></td>
</tr>
<tr>
<td>the language and processes</td>
<td>investigating and representing</td>
<td>decreasing by threes, fives and tens</td>
<td>10, 10 and related division facts</td>
<td>and multiples of whole numbers</td>
<td>composite, square and triangular numbers</td>
<td></td>
</tr>
<tr>
<td>of counting by naming</td>
<td>numbers to 100 by ones from</td>
<td>and even numbers</td>
<td>Investigate and use the properties</td>
<td>Select and apply efficient mental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>numbers in sequences,</td>
<td>any starting point, skip</td>
<td>to 1000</td>
<td>of odd and even numbers</td>
<td>and written strategies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>initially to 10 and from</td>
<td>count by twos, fives and</td>
<td></td>
<td>Apply place value to partition, rearrange and</td>
<td>to solve problems involving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20, moving from any starting</td>
<td>tens starting from zero</td>
<td></td>
<td>regroup numbers to at least 10 000 to assist</td>
<td>all four operations with whole numbers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>point</td>
<td>Recognise, model, represent and order numbers to at least 1000</td>
<td></td>
<td>calculations and solve problems</td>
<td>investigate everyday situations that use</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connect number names, numerals and quantities,</td>
<td>Group, partition and rearrange collections</td>
<td>Recognise, model, represent and order</td>
<td>Recognise and explain the connection</td>
<td>positive and negative whole numbers and</td>
<td></td>
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</tr>
<tr>
<td>including zero, initially up to 10 and then beyond</td>
<td>up to 1000 in hundreds, tens and ones to</td>
<td>numbers to at least 1000</td>
<td>between addition and subtraction</td>
<td>zero. Locate and represent these numbers on</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subitise small collections of objects</td>
<td>facilitate more efficient counting</td>
<td></td>
<td>Solve simple addition and subtraction</td>
<td>a number line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Represent practical situations to model addition and sharing</td>
<td>Explore the connection between addition and subtraction</td>
<td></td>
<td>Solve simple addition and subtraction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compare, order and make correspondences between collections, initially to 20, and explain reasoning</td>
<td>Solve simple addition and subtraction problems using a range of efficient mental and written strategies</td>
<td></td>
<td>problems using a range of efficient mental and written strategies for computation</td>
<td></td>
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</tr>
<tr>
<td>Count collections to 100</td>
<td>Recognise and represent multiplication as repeated addition, groups and arrays</td>
<td></td>
<td>Recall multiplication facts of two, three, five and ten and related division facts</td>
<td></td>
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</tr>
<tr>
<td>Recognise and describe one-half as one of two equal parts of a whole.</td>
<td>Recognise and represent division as grouping into equal sets and solve simple problems using these representations</td>
<td></td>
<td>Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Recognise and interpret common uses of halves, quarters and eighths of shapes and collections</td>
<td></td>
<td></td>
<td>Develop efficient mental and written strategies and use appropriate digital technologies for multiplication and for division where there is no remainder</td>
<td></td>
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<tr>
<td>Model and represent unit fractions including</td>
<td></td>
<td>Investigate and use the properties of odd and even numbers</td>
<td></td>
<td>Identify and describe factors and multiples of whole numbers and use them to solve problems</td>
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<tr>
<td>fractions, decimals and percentages</td>
<td></td>
<td>and even numbers</td>
<td></td>
<td>Use estimation and rounding to check the reasonableness of answers to calculations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigate equivalent fractions used in contexts</td>
<td>Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line</td>
<td></td>
<td>Apply place value to partition, regroup and rearrange numbers to at least tens of thousands</td>
<td>Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental, written strategies and appropriate digital technologies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Investigate strategies to solve problems involving addition and subtraction of fractions with the same or related denominators</td>
<td>Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation</td>
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<td></td>
<td>Solve problems involving division by a one-digit number, including those that result in a remainder</td>
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<td></td>
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<tr>
<td>Investigating the number system can be extended beyond hundredths</td>
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<td></td>
<td></td>
<td>Use efficient mental and written strategies and apply appropriate digital technologies to solve problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compare, order and represent decimals</td>
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</tr>
</tbody>
</table>

### Fractions and decimals

- Recognise and describe one-half as one of two equal parts of a whole.
- Recognise and interpret common uses of halves, quarters and eighths of shapes and collections.
- Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole.
- Investigate equivalent fractions used in contexts.
- Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line.
- Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation.
- Investigate strategies to solve problems involving addition and subtraction of fractions with the same or related denominators.
- Investigate the number system can be extended beyond hundredths.
- Compare, order and represent decimals.

### Real numbers

- Recognise and describe one-half as one of two equal parts of a whole.
- Recognise and interpret common uses of halves, quarters and eighths of shapes and collections.
- Model and represent unit fractions including 1/2, 1/4, 1/3, 1/5 and their multiples to a complete whole.
- Investigate equivalent fractions used in contexts.
- Count by quarters halves and thirds, including with mixed numerals. Locate and represent these fractions on a number line.
- Recognise that the place value system can be extended to tenths and hundredths. Make connections between fractions and decimal notation.
- Investigate strategies to solve problems involving addition and subtraction of fractions with the same or related denominators.
- Investigate the number system can be extended beyond hundredths.
- Compare, order and represent decimals.
- This sequence starts at this year level.

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<table>
<thead>
<tr>
<th>Number and place value</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Year 10 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify and describe properties of prime, composite, square and triangular numbers</td>
<td>Investigate index notation and represent whole numbers as products of powers of prime numbers</td>
<td>Investigate and use square roots of perfect square numbers</td>
<td>Use index notation with numbers to establish the index laws with positive integral indices and the zero index</td>
<td>This sequence ends at this year level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Select and apply efficient mental and written strategies and appropriate digital technologies to solve problems involving all four operations with whole numbers</td>
<td>Apply the associative, commutative and distributive laws to aid mental and written computation</td>
<td>Compare, order, add and subtract integers</td>
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<tr>
<td>Investigate everyday situations that use positive and negative whole numbers and zero. Locate and represent these numbers on a number line</td>
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<tr>
<th>Fractions and decimals</th>
<th>Year 6</th>
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<th>Year 9</th>
<th>Year 10</th>
<th>Year 10 A</th>
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</thead>
<tbody>
<tr>
<td>Compare fractions with related denominators and locate and represent them on a number line</td>
<td>This sequence ends at this year level</td>
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<tr>
<td>Solve problems involving addition and subtraction of fractions with the same or related denominators</td>
<td>Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies</td>
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<tr>
<td>Find a simple fraction of a quantity where the result is a whole number, with and without digital technologies</td>
<td>Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers</td>
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<tr>
<td>Add and subtract decimals, with and without digital technologies, and use estimation and rounding to check the reasonableness of answers</td>
<td>Multiply decimals by whole numbers and perform divisions that result in terminating decimals, with and without digital technologies</td>
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<tr>
<td>Multiply decimals by whole numbers and perform divisions that result in terminating decimals, with and without digital technologies</td>
<td>Multiply and divide decimals by powers of 10</td>
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<tr>
<td>Make connections between equivalent fractions, decimals and percentages</td>
<td>Make connections between equivalent fractions, decimals and percentages</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Real numbers</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Year 10 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>This sequence starts at this year level</td>
<td></td>
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</tr>
<tr>
<td>Compare fractions using equivalence. Locate and represent fractions and mixed numerals on a number line</td>
<td>Compare fractions using equivalence. Locate and represent fractions and mixed numerals on a number line</td>
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<tr>
<td>Solve problems involving addition and subtraction of fractions, including those with unrelated denominators</td>
<td>Solve problems involving addition and subtraction of fractions, including those with unrelated denominators</td>
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<tr>
<td>Multiply and divide fractions and decimals using efficient written strategies and digital technologies</td>
<td>Multiply and divide fractions and decimals using efficient written strategies and digital technologies</td>
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<tr>
<td>Express one quantity as a fraction of another, with and without the use of digital technologies</td>
<td>Express one quantity as a fraction of another, with and without the use of digital technologies</td>
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<tr>
<td>Round decimals to a specified number of decimal places</td>
<td>Round decimals to a specified number of decimal places</td>
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</tr>
<tr>
<td>Connect fractions, decimals and percentages and carry out simple conversions</td>
<td>Connect fractions, decimals and percentages and carry out simple conversions</td>
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</tr>
<tr>
<td>Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. Recognise and solve problems involving simple ratios</td>
<td>Find percentages of quantities and express one quantity as a percentage of another, with and without digital technologies. Recognise and solve problems involving simple ratios</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Number and Algebra</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Year 10 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigate terminating and recurring decimals</td>
<td>Investigate the concept of irrational numbers, including ( \pi )</td>
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</tr>
<tr>
<td>Solve problems involving the use of percentages, including percentage increases and decreases, with and without digital technologies</td>
<td>Solve problems involving direct proportion. Explore the relationship between graphs and equations corresponding to simple rate problems</td>
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<tr>
<td>Solve a range of problems involving rates and ratios, with and without digital technologies</td>
<td>Solve a range of problems involving rates and ratios, with and without digital technologies</td>
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<tr>
<td>Recognise and solve problems involving simple ratios</td>
<td>Recognise and solve problems involving simple ratios</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Real numbers</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Year 10 A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Define rational and irrational numbers and perform operations with surds and fractional indices</td>
<td>Define rational and irrational numbers and perform operations with surds and fractional indices</td>
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<td></td>
</tr>
<tr>
<td>Use the definition of a logarithm to establish and apply the laws of logarithms</td>
<td>Use the definition of a logarithm to establish and apply the laws of logarithms</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th></th>
<th>Foundation Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Money and financial mathematics</strong></td>
<td>Recognise, describe and order Australian coins according to their value</td>
<td>Count and order small collections of Australian coins and notes according to their value</td>
<td>Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents</td>
<td>Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies</td>
<td>Create simple financial plans</td>
<td>Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies</td>
<td></td>
</tr>
<tr>
<td><strong>Patterns and algebra</strong></td>
<td>Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings</td>
<td>Investigate and describe number patterns formed by skip counting and patterns with objects</td>
<td>Describe patterns with numbers and identify missing elements</td>
<td>Describe, continue, and create number patterns resulting from performing addition or subtraction</td>
<td>Explore and describe number patterns resulting from performing multiplication</td>
<td>Describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction</td>
<td>Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence</td>
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<tr>
<td>Money and financial mathematics</td>
<td>Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without digital technologies</td>
<td>Investigate and calculate ‘best buys’, with and without digital technologies</td>
<td>Solve problems involving profit and loss, with and without digital technologies</td>
<td>Solve problems involving simple interest</td>
<td>Connect the compound interest formula to repeated applications of simple interest using appropriate digital technologies</td>
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<tr>
<td>Patterns and algebra</td>
<td>Continue and create sequences involving whole numbers, fractions and decimals. Describe the rule used to create the sequence. Explore the use of brackets and order of operations to write number sentences</td>
<td>Introduce the concept of variables as a way of representing numbers using letters. Create algebraic expressions and evaluate them by substituting a given value for each variable. Extend and apply the laws and properties of arithmetic to algebraic terms and expressions</td>
<td>Extend and apply the distributive law to the expansion of algebraic expressions. Factorise algebraic expressions by identifying numerical factors. Simplify algebraic expressions involving the four operations</td>
<td>Extend and apply the index laws to variables, using positive integral indices and the zero index. Apply the distributive law to the expansion of algebraic expressions, including binomials, and collect like terms where appropriate</td>
<td>Factorise algebraic expressions by taking out a common algebraic factor. Simplify algebraic products and quotients using index laws. Apply the four operations to simple algebraic fractions with numerical denominators. Expand binomial products and factorise monic quadratic expressions using a variety of strategies. Substitute values into formulas to determine an unknown</td>
<td>Investigate the concept of a polynomial and apply the factor and remainder theorems to solve problems</td>
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<tr>
<td>Linear and non-linear relationships</td>
<td>This sequence starts at this year level. Given coordinates, plot points on the Cartesian plane, and find coordinates for a given point. Solve simple linear equations. Investigate, interpret and analyse graphs from authentic data.</td>
<td>Plot linear relationships on the Cartesian plane with and without the use of digital technologies. Solve linear equations using algebraic and graphical techniques. Verify solutions by substitution.</td>
<td>Find the distance between two points located on a Cartesian plane using a range of strategies, including graphing software. Sketch linear graphs using the coordinates of two points. Find the midpoint and gradient of a line segment (interval) on the Cartesian plane using a range of strategies, including graphing software. Sketch simple non-linear relations with and without the use of digital technologies.</td>
<td>Solve problems involving linear equations, including those derived from formulas. Solve linear inequalities and graph their solutions on a number line. Solve linear simultaneous equations, using algebraic and graphical techniques including using digital technology. Solve problems involving parallel and perpendicular lines. Explore the connection between algebraic and graphical representations of relations such as simple quadratics, circles and exponentials using digital technology as appropriate. Solve linear equations involving simple algebraic fractions. Solve simple quadratic equations using a range of strategies.</td>
<td>Describe, interpret and sketch parabolas, hyperbolas, circles and exponential functions and their transformations. Solve simple exponential equations. Apply understanding of polynomials to sketch a range of curves and describe the features of these curves from their equation. Factorise monic and non-monic quadratic expressions and solve a wide range of quadratic equations derived from a variety of contexts.</td>
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<tr>
<td><strong>Using units of measurement</strong></td>
<td>Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language.</td>
<td>Measure and compare the lengths and capacities of pairs of objects using uniform informal units.  Tell time to the half-hour.  Describe duration using months, weeks, days and hours.</td>
<td>Compare and order several shapes and objects based on length, area, volume and capacity using appropriate uniform informal units.  Compare masses of objects using balance scales.  Tell time to the quarter-hour, using the language of &quot;past&quot; and &quot;to.&quot;  Name and order months and seasons.  Use a calendar to identify the date and determine the number of days in each month.</td>
<td>Measure, order and compare objects using familiar metric units of length, mass and capacity.  Tell time to the minute and investigate the relationship between units of time.  Compare objects using familiar metric units of area and volume.</td>
<td>Choose appropriate units of measurement for length, area, volume, capacity and mass.  Calculate the perimeter and area of rectangles using familiar metric units.  Compare 12- and 24-hour time systems and convert between them.</td>
<td>Connect decimal representations to the metric system.  Convert between common metric units of length, mass and capacity.  Solve problems involving the comparison of lengths and areas using appropriate units.  Connect volume and capacity and their units of measurement.  Interpret and use timetables.</td>
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<tr>
<td><strong>Shape</strong></td>
<td>Sort, describe and name familiar two-dimensional shapes and three-dimensional objects in the environment.</td>
<td>Recognise and classify familiar two-dimensional shapes and three-dimensional objects using obvious features.</td>
<td>Describe and draw two-dimensional shapes, with and without digital technologies.  Describe the features of three-dimensional objects.</td>
<td>Make models of three-dimensional objects and describe key features.</td>
<td>Compare the areas of regular and irregular shapes by informal means.  Compare and describe two dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies.</td>
<td>Connect three-dimensional objects with their nets and other two-dimensional representations.</td>
<td>Construct simple prisms and pyramids.</td>
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<tr>
<td><strong>Location and transformation</strong></td>
<td>Describe position and movement.</td>
<td>Give and follow directions to familiar locations.</td>
<td>Interpret simple maps of familiar locations and identify the relative positions of key features.  Investigate the effect of one-step slides and flips with and without digital technologies.  Identify and describe half and quarter turns.</td>
<td>Create and interpret simple grid maps to show position and pathways.  Identify symmetry in the environment.</td>
<td>Use simple scales, legends and directions to interpret information contained in basic maps.  Create symmetrical patterns, pictures and shapes with and without digital technologies.</td>
<td>Use a grid reference system to describe locations.  Describe routes using landmarks and directional language.  Describe translations, reflections and rotations of two-dimensional shapes.  Identify line and rotational symmetries.  Apply the enlargement transformation to familiar two dimensional shapes and explore the properties of the resulting image compared with the original.</td>
<td>Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies.  Introduce the Cartesian coordinate system using all four quadrants.</td>
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<tr>
<td><strong>Geometric reasoning</strong></td>
<td>This sequence starts at this year level.</td>
<td>Identify angles as measures of turn and compare angle sizes in everyday situations.</td>
<td>Compare angles and classify them as equal to, greater than or less than a right angle.</td>
<td>Estimate, measure and compare angles using degrees.  Construct angles using a protractor.</td>
<td>Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles.</td>
<td>This sequence starts at this year level.</td>
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<tr>
<td><strong>Pythagoras and trigonometry</strong></td>
<td>This sequence starts at this year level.</td>
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**Mathematics Scope and Sequence: Foundation to Year 6**

Version 1.2

8th March 2011
| Mathematics Scope and Sequence: Year 6 to Year 10 |
|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------------------|
| **Year 6**                                       | **Year 7**                                       | **Year 8**                                       | **Year 9**                                       | **Year 10**                                     | **Year 10 A**                                    |
| **Using units of measurement**                   | **Using units of measurement**                   | **Using units of measurement**                   | **Using units of measurement**                   | **Using units of measurement**                   | **Using units of measurement**                   |
| Connect decimal representations to the metric system | Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving | Choose appropriate units of measurement for area and volume and convert from one unit to another | Calculate the areas of composite shapes | Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids | Solve problems involving surface area and volume of right pyramids, right cones, spheres and related composite solids |
| Convert between common metric units of length, mass and capacity | Calculate volumes of rectangular prisms | Find perimeters and areas of parallelograms, rhombuses and kites | Calculate the surface area and volume of cylinders and solve related problems | Solve problems involving the surface area and volume of right prisms | Investigate very small and very large time scales and intervals |
| Solve problems involving the comparison of lengths and areas using appropriate units | Investigate the relationship between features of circles such as circumference, area, radius and diameter. Use formulas to solve problems involving circumference and area | Develop the formulas for volumes of rectangular and triangular prisms and prisms in general. Use formulas to solve problems involving volume | Investigate very small and very large time scales and intervals | Solve problems involving duration, including using 12- and 24-hour time within a single time zone | Solve problems involving duration, including using 12- and 24-hour time within a single time zone |
| Connect volume and capacity and their units of measurement | Interpret and use timetables | Solve problems involving the comparison of lengths and areas using appropriate units | Solve problems involving the comparison of lengths and areas using appropriate units | Solve problems involving the comparison of lengths and areas using appropriate units | Solve problems involving the comparison of lengths and areas using appropriate units |
| Interpret and use timetables | Connect decimal representations to the metric system | Establish the formulas for areas of rectangles, triangles and parallelograms and use these in problem solving | Choose appropriate units of measurement for area and volume and convert from one unit to another | Calculate the areas of composite shapes | Solve problems involving surface area and volume for a range of prisms, cylinders and composite solids |
| **Shape**                                         | **Shape**                                         | **Shape**                                         | **Shape**                                         | **Shape**                                         | **Shape**                                         |
| Construct simple prisms and pyramids | Draw different views of prisms and solids formed from combinations of prisms | This sequence ends at this year level | This sequence ends at this year level | This sequence ends at this year level | This sequence ends at this year level |
| **Location and transformation** | **Location and transformation** | **Location and transformation** | **Location and transformation** | **Location and transformation** | **Location and transformation** |
| Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies | Describe translations, reflections in an axis, and rotations of multiples of 90° on the Cartesian plane using coordinates. Identify line and rotational symmetries | This sequence ends at this year level | This sequence ends at this year level | This sequence ends at this year level | This sequence ends at this year level |
| Introduce the Cartesian coordinate system using all four quadrants | | | | | |
| **Geometric reasoning**                           | **Geometric reasoning**                           | **Geometric reasoning**                           | **Geometric reasoning**                           | **Geometric reasoning**                           | **Geometric reasoning**                           |
| Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles | Identify corresponding, alternate and co-interior angles when two parallel straight lines are crossed by a transversal | Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning | Define congruence of plane shapes using transformations | Use the enlargement transformation to explain similarity and develop the conditions for triangles to be similar | Formulate proofs involving congruent triangles and angle properties |
| Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning | Investigate conditions for two lines to be parallel and solve simple numerical problems using reasoning | Classify triangles according to their side and angle properties and describe quadrilaterals | Develop the conditions for congruence of triangles | Use the enlargement transformation to explain similarity and develop the conditions for triangles to be similar | Apply logical reasoning, including the use of congruence and similarity, to proofs and numerical exercises involving plane shapes |
| Classify triangles according to their side and angle properties and describe quadrilaterals | Demonstrate that the angle sum of a triangle is 180° and use this to find the angle sum of a quadrilateral | Solve related numerical problems using reasoning | Establish properties of quadrilaterals using congruent triangles and angle properties, and solve related numerical problems using reasoning | Solve problems using ratio and scale factors in similar figures | Prove and apply angle and chord properties of circles |
| Demonstrate that the angle sum of a triangle is 180° and use this to find the angle sum of a quadrilateral | | | | | |
| **Pythagoras and trigonometry**                   | **Pythagoras and trigonometry**                   | **Pythagoras and trigonometry**                   | **Pythagoras and trigonometry**                   | **Pythagoras and trigonometry**                   | **Pythagoras and trigonometry**                   |
| This sequence starts at this year level | Investigate Pythagoras' Theorem and its application to solving simple problems involving right angled triangles | Solve right-angled triangle problems including those involving direction and angles of elevation and depression | Establish the sine, cosine and area rules for any triangle and solve related problems | Use the unit circle to define trigonometric functions, and graph them with and without the use of digital technologies | Solve simple trigonometric equations |
| Investigate Pythagoras’ Theorem and its application to solving simple problems involving right angled triangles | Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles | Solve right-angled triangle problems including those involving direction and angles of elevation and depression | Use the unit circle to define trigonometric functions, and graph them with and without the use of digital technologies | Solve simple trigonometric equations | Apply Pythagoras’ theorem and trigonometry to solving three-dimensional problems in right-angled triangles |
| Use similarity to investigate the constancy of the sine, cosine and tangent ratios for a given angle in right-angled triangles | Apply trigonometry to solve right-angled triangle problems | | | | |

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8th March 2011
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**Note:** The information provided is a table from the Mathematics Scope and Sequence: Foundation to Year 6 document. The table outlines the learning outcomes for each year level from Foundation to Year 6, focusing on Chance and Statistics and Probability. The document is dated 8th March 2011.
### Chance
- Describe probabilities using fractions, decimals and percentages
- Conduct chance experiments with both small and large numbers of trials using appropriate digital technologies
- Compare observed frequencies across experiments with expected frequencies

- Construct sample spaces for single-step experiments with equally likely outcomes
- Assign probabilities to the outcomes of events and determine probabilities for events
- Identify complementary events and use the sum of probabilities to solve problems
- Describe events using language of 'at least', exclusive 'or' (A or B but not both), inclusive 'or' (A or B or both) and 'and'. Represent such events in two-way tables and Venn diagrams and solve related problems

- List all outcomes for two-step chance experiments, both with and without replacement using tree diagrams or arrays. Assign probabilities to outcomes and determine probabilities for events
- Calculate relative frequencies from given or collected data to estimate probabilities of events involving 'and' or 'or'
- Investigate reports of surveys in digital media and elsewhere for information on how data were obtained to estimate population means and medians
- Investigate reports of studies in digital media and elsewhere for information on the planning and implementation of such studies, and the reporting of variability

### Statistics and Probability

#### Data representation and interpretation
- Interpret and compare a range of data displays, including side-by-side column graphs for two categorical variables
- Interpret secondary data presented in digital media and elsewhere
- Identify and investigate issues involving continuous or large count data collected from primary and secondary sources
- Construct and compare a range of data displays including stem-and-leaf plots and dot plots
- Calculate mean, median, mode and range for sets of data. Interpret these statistics in the context of data
- Describe and interpret data displays and the relationship between the median and mean
- Explore the practicalities and implications of obtaining representative data using a variety of investigative processes
- Investigate the effect of individual data values, including outliers, on the mean and median
- Explore the variation of means and proportions in representative data
- Identify everyday questions and issues involving at least one numerical and at least one categorical variable, and collect data directly from secondary sources
- Construct back-to-back stem-and-leaf plots and histograms and describe data, using terms including 'skewed', 'symmetric' and 'bi-modal'
- Compare data displays using mean, median and range to describe and interpret numerical data sets in terms of location (centre) and spread
- Investigate techniques for collecting data, including census, sampling and observation
- Determine quantities and interquartile range
- Construct and interpret box plots and use them to compare data sets
- Compare shapes of box plots to corresponding histograms and dot plots
- Use scatter plots to investigate and comment on relationships between two continuous variables
- Investigate and describe bivariate numerical data where the independent variable is time
- Evaluate statistical reports in the media and other places by linking claims to displays, statistics and representative data
- Calculate and interpret the mean and standard deviation of data and use these to compare data sets
- Use information technologies to investigate bivariate numerical data sets. Where appropriate use a straight line to describe the relationship allowing for variation
## Rationale and Aims

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## Glossary

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Rationale

The study of English is central to the learning and development of all young Australians. It helps create confident communicators, imaginative thinkers and informed citizens. It is through the study of English that individuals learn to analyse, understand, communicate with and build relationships with others and with the world around them. The study of English helps young people develop the knowledge and skills needed for education, training and the workplace. It helps them become ethical, thoughtful, informed and active members of society. In this light it is clear that the Australian Curriculum: English plays an important part in developing the understanding, attitudes and capabilities of those who will take responsibility for Australia’s future.

Although Australia is a linguistically and culturally diverse country, participation in many aspects of Australian life depends on effective communication in Standard Australian English. In addition, proficiency in English is invaluable globally. The Australian Curriculum: English contributes both to nation-building and to internationalisation.

The Australian Curriculum: English also helps students to engage imaginatively and critically with literature to expand the scope of their experience. Aboriginal and Torres Strait Islander peoples have contributed to Australian society and to its contemporary literature and its literary heritage through their distinctive ways of representing and communicating knowledge, traditions and experience. The Australian Curriculum: English values, respects and explores this contribution. It also emphasises Australia’s links to Asia.

Aims

The Australian Curriculum: English aims to ensure that students:

- learn to listen to, read, view, speak, write, create and reflect on increasingly complex and sophisticated spoken, written and multimodal texts across a growing range of contexts with accuracy, fluency and purpose
- appreciate, enjoy and use the English language in all its variations and develop a sense of its richness and power to evoke feelings, convey information, form ideas, facilitate interaction with others, entertain, persuade and argue
- understand how Standard Australian English works in its spoken and written forms and in combination with non-linguistic forms of communication to create meaning
- develop interest and skills in inquiring into the aesthetic aspects of texts, and develop an informed appreciation of literature.
Content Structure

The Australian Curriculum: English Foundation to Year 10 is organised into three interrelated strands that support students’ growing understanding and use of Standard Australian English (English). Together the three strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking and writing. The three strands are:

- **Language**: knowing about the English language
- **Literature**: understanding, appreciating, responding to, analysing and creating literature
- **Literacy**: expanding the repertoire of English usage.

**Strands and sub-strands**

Content descriptions in each strand are grouped into sub-strands that, across the year levels, present a sequence of development of knowledge, understanding and skills. The sub-strands are:

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**Texts**

Texts provide the means for communication. They can be written, spoken or multimodal, and in print or digital/online forms. Multimodal texts combine language with other means of communication such as visual images, soundtrack or spoken word, as in film or computer presentation media. Texts provide important opportunities for learning about aspects of human experience and about aesthetic value. Many of the tasks that students undertake in and out of school involve understanding and producing imaginative, informative and persuasive texts, media texts, everyday texts and workplace texts.

The term ‘literature’ refers to past and present texts across a range of cultural contexts that are valued for their form and style and are recognised as having enduring or artistic value. While the nature of what constitutes literary texts is dynamic and evolving, they are seen as having personal, social, cultural and aesthetic value and potential for enriching students’ scope of experience. Literature includes a broad range of forms such as novels, poetry, short stories and plays; fiction for young adults and children, multimodal texts such as film, and a variety of non-fiction. Literary texts also include excerpts from longer texts. This enables a range of literary texts to be included within any one year level for close study or comparative purposes.

English educators use many ways of categorising texts. The descriptions of texts used in the Australian Curriculum: English are based on practical as well as conceptual considerations. The specific designation of a
The strand labelled ‘literature’ is aimed at encouraging teachers working at all year levels not only to use texts conventionally understood as ‘literary’, but also to engage students in examining, evaluating and discussing texts in increasingly sophisticated and informed ‘literary’ ways.

The usefulness of distinctions among types of texts relates largely to how clearly at each year level these distinctions can guide the selection of materials for students to listen to, read, view, write and create, and the kinds of purposeful activities that can be organised around these materials.

The language modes

The processes of listening, speaking, reading, viewing and writing, also known as language modes, are interrelated and the learning of one often supports and extends learning of the others. To acknowledge these interrelationships, content descriptions in each strand of the Australian Curriculum: English incorporate the processes of listening, speaking, reading, viewing and writing in an integrated and interdependent way.

Classroom contexts that address particular content descriptions will necessarily draw from more than one of these processes in order to support students’ effective learning. For example, students will learn new vocabulary through listening and reading and apply their knowledge and understanding in their speaking and writing as well as in their comprehension of both spoken and written texts.

Content descriptions can also be viewed by these processes or language modes. In this aspect, each content description has been placed in the mode in which a major focus of its learning occurs. Content descriptions can be filtered to identify all relevant processes or language modes.

Year level descriptions

Year level descriptions have three functions. First, they emphasise the interrelated nature of the three strands and the expectation that planning an English program will involve integration of content from the strands. Second, they provide information about the learning contexts that are appropriate at each year for learning across the Language, Literature and Literacy strands. Third, they provide an overview of the range of texts to be studied and an indication of their complexity and key features. They also describe differences in the texts that students create. In the early years, development in reading and writing is rapid and clear distinctions in text complexity can be made so descriptions are written for each year at Foundation, 1 and 2. In Years 3–10, the two-year description provides for greater flexibility.

Content descriptions

The Australian Curriculum: English includes content descriptions at each year level. These describe the knowledge, understanding, skills and processes that teachers are expected to teach and students are expected to learn, but do not prescribe approaches to teaching. Learning in English is recursive and cumulative, and builds on concepts, skills and processes developed in earlier years. Nevertheless, the content descriptions have been written to ensure that learning is appropriately ordered and that unnecessary repetition is avoided. However, a concept or skill introduced at one year level may be revisited, strengthened and extended at later year levels as needed.

Content elaborations

Content elaborations are provided for Foundation to Year 10 to illustrate and exemplify content and assist teachers in developing a common understanding of the content descriptions. They are not intended to be comprehensive content points that all students need to be taught.

Glossary
A glossary is provided to support a common understanding of key terms in the content descriptions.

**Language: knowing about the English language**

In the **Language** strand, students develop their knowledge of the English language and how it works. They learn that changes in English are related to historical developments and the geographical differences of its users over the centuries, and that there are many differences in dialect and accent. They learn how language enables people to interact effectively, to build and maintain relationships and to express and exchange knowledge, skills, attitudes, feelings and opinions. They discover the patterns and purposes of English usage, including spelling, grammar and punctuation at the levels of the word, sentence and extended text, and they study the connections between these levels. By developing a body of knowledge about these patterns and their connections, students learn to communicate effectively through coherent, well-structured sentences and texts. They gain a consistent way of understanding and talking about language, language-in-use and language-as-system, so they can reflect on their own speaking and writing and discuss these productively with others.

**Language**

**Language variation and change**: Students learn that languages and dialects are constantly evolving due to historical, social and cultural changes, demographic movements and technological innovations. They come to understand that these factors, along with new virtual communities and environments, continue to affect the nature and spread of English.

**Language for interaction**: Students learn that the language used by individuals varies according to their social setting and the relationships between the participants. They learn that accents and styles of speech and idiom are part of the creation and expression of personal and social identities.

**Text structure and organisation**: Students learn how texts are structured to achieve particular purposes; how language is used to create texts that are cohesive and coherent; how texts about more specialised topics contain more complex language patterns and features; and how the author guides the reader/viewer through the text through effective use of resources at the level of the whole text, the paragraph and the sentence.

**Expressing and developing ideas**: Students learn how, in a text, effective authors control and use an increasingly differentiated range of clause structures, words and word groups, as well as combinations of sound, image, movement, verbal elements and layout. They learn that the conventions, patterns and generalisations that relate to English spelling involve the origins of words, word endings, Greek and Latin roots, base words and affixes.

**Sound and letter knowledge**: Students develop knowledge about the sounds of English and learn to identify the sounds in spoken words. They learn the letters of the alphabet and how to represent spoken words by using combinations of these letters.

**Language**

The **Language** strand is based on concepts drawn largely from historical and linguistic accounts of the English language. These approaches draw attention to the ways in which languages change, and to the distinction between language-in-use and language-as-system. These approaches also acknowledge that students’ ability to use grammar will exceed their ability to explicitly reflect on grammar. Young children, for example, will use complex sentences before they can explain how these are structured. These approaches, in describing language, also pay attention to both the structure (syntax) and meaning (semantics) at the level of the word, the sentence and the text. The Australian Curriculum: English uses standard grammatical terminology within a contextual framework, in which language choices are seen to vary according to the topics at hand, the nature
and proximity of the relationships between the language users, and the modalities or channels of communication available. This strand informs the planning and conduct of teaching and learning activities in English and provides resources that connect to key concepts and skills in the other strands.

**Literature: understanding, appreciating, responding to, analysing and creating literature**

The Literature strand aims to engage students in the study of literary texts of personal, cultural, social and aesthetic value. These texts include some that are recognised as having enduring social and artistic value and some that attract contemporary attention. Texts are chosen because they are judged to have potential for enriching the lives of students, expanding the scope of their experience, and because they represent effective and interesting features of form and style. Learning to appreciate literary texts and to create their own literary texts enriches students’ understanding of human experiences and the capacity for language to deepen those experiences. It builds students’ knowledge about how language can be used for aesthetic ends, to create particular emotional, intellectual or philosophical effects. Students interpret, appreciate and create literary texts such as short stories, novels, poetry, prose, plays, film and multimodal texts, in spoken, print and digital/online forms. Texts recognised as having enduring artistic and cultural value are drawn from world and Australian literature. These include the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, texts from Asia, texts from Australia’s immigrant cultures and texts of the students’ choice.

**Literature and context:** Students learn how ideas and viewpoints about events, issues and characters that are expressed by authors in texts are drawn from and shaped by different historical, social and cultural contexts.

**Responding to literature:** Students learn to identify personal ideas, experiences and opinions about literary texts and discuss them with others. They learn how to recognise areas of agreement and difference, and how to develop and refine their interpretations through discussion and argument.

**Examining literature:** Students learn how to explain and analyse the ways in which stories, characters, settings and experiences are reflected in particular literary genres, and how to discuss the appeal of these genres. They learn how to compare and appraise the ways authors use language and literary techniques and devices to influence readers. They also learn to understand, interpret, discuss and evaluate how certain stylistic choices can create multiple layers of interpretation and effect.

**Creating literature:** Students learn how to use personal knowledge and literary texts as starting points to create imaginative writing in different forms and genres and for particular audiences. Using print, digital and online media, students develop skills that allow them to convey meaning, address significant issues and heighten engagement and impact.

**Literature**

There are many approaches to the study of literature. In the Australian Curriculum: English the sources drawn on most substantially include:

- cultural studies, with emphasis on the different ways in which literature is significant in everyday life
- structuralism, with its emphasis on close analysis of literary works and the key ideas on which they are based; for example, the detailed stylistic study of differing styles of literary work
- comparativism, with its emphasis on comparisons of works of literature from different language, ethnic and cultural backgrounds
• historicism, with its emphasis on exploring the relationships between historical, cultural and literary traditions.

The Literature strand also gives students the opportunity to study the processes by which certain literary works become ‘prized’ and ‘perennial’, the ‘valuing’ process itself, and why it is that most cultures have works they cherish. The approach to learning in this strand is not to present students with an English literary canon that is a static entity, but rather to invite their curiosity about, and develop an increasingly specialised inquiry into, the historical, cultural and aesthetic processes by which works come to be regarded as valued and cherished.

**Literacy: expanding the repertoire of English usage**

The Literacy strand aims to develop students’ ability to interpret and create texts with appropriateness, accuracy, confidence, fluency and efficacy for learning in and out of school, and for participating in Australian life more generally. Texts chosen include media texts, everyday texts and workplace texts from increasingly complex and unfamiliar settings, ranging from the everyday language of personal experience to more abstract, specialised and technical language, including the language of schooling and academic study. Students learn to adapt language to meet the demands of more general or more specialised purposes, audiences and contexts. They learn about the different ways in which knowledge and opinion are represented and developed in texts, and about how more or less abstraction and complexity can be shown through language and through multimodal representations. This means that print and digital contexts are included, and that listening, viewing, reading, speaking, writing and creating are all developed systematically and concurrently.

**Literacy**

**Texts in context:** Students learn that texts from different cultures or historical periods may reveal different patterns in how they go about narrating, informing and persuading.

**Interacting with others:** Students learn how individuals and groups use language patterns to express ideas and key concepts to develop and defend arguments. They learn how to promote a point of view by designing, rehearsing and delivering spoken and written presentations and by appropriately selecting and sequencing linguistic and multimodal elements.

**Interpreting, analysing, evaluating:** Students learn to comprehend what they read and view by applying growing contextual, semantic, grammatical and phonic knowledge. They develop more sophisticated processes for interpreting, analysing, evaluating and critiquing ideas, information and issues from a variety of sources. They explore the ways conventions and structures are used in written, digital, multimedia and cinematic texts to entertain, inform and persuade audiences, and they use their growing knowledge of textual features to explain how texts make an impact on different audiences.

**Creating texts:** Students apply knowledge they have developed in other strands and sub-strands to create with clarity, authority and novelty a range of spoken, written and multimodal texts that entertain, inform and persuade audiences. They do so by strategically selecting key aspects of a topic as well as language, visual and audio features. They learn how to edit for enhanced meaning and effect by refining ideas, reordering sentences, adding or substituting words for clarity, and removing repetition. They develop and consolidate a handwriting style that is legible, fluent and automatic, and that supports sustained writing. They learn to use a range of software programs including word processing software, selecting purposefully from a range of functions to communicate and create clear, effective, informative and innovative texts.

**Literacy**

The Literacy strand takes account of approaches to literacy learning that are based on the development of skills, social and psychological growth, and critical and cultural analysis. These approaches hold that the
technical, intellectual and cultural resources related to competence in literacy have developed to serve the big and small practical, everyday communication purposes associated with living and participating in societies such as contemporary Australia. These technical, intellectual and cultural resources include:

- fluency in the sound–letter correspondences of English
- an expanding reading, writing and speaking vocabulary and a grasp of grammatical and textual patterns sufficient to understand and learn from texts encountered in and out of school, and to create effective and innovative texts
- fluency and innovation in reading, viewing and creating texts in different settings
- the skill and disposition needed to analyse and understand the philosophical, moral, political and aesthetic bases on which many texts are built
- an interest in expanding the range of materials listened to, viewed and read, and in experimenting with innovative ways of expressing increasingly subtle and complex ideas through texts.

Relationships between the strands

Each strand contributes to the study of English its own distinctive goals, body of knowledge, history of ideas and interests, and each relates to material worth studying in its own right. Teaching, learning and assessment programs should balance and integrate the three strands in order to support the development of knowledge, understanding and skills. The key focal point for a unit of work or a learning activity may arise from any one of the strands, but the intention is that units and activities draw on all three strands in ways that are integrated and clear to learners.

English across Foundation to Year 12

Complementing the year by year description of the curriculum, this advice describes the nature of learners and the curriculum across four year-groupings:

- **Foundation – Year 2**: typically students from 5 to 8 years of age
- **Years 3–6**: typically students from 8 to 12 years of age
- **Years 7–10**: typically students from 12 to 15 years of age
- **Senior secondary years**: typically students from 15 to 18 years of age

**Foundation – Year 2**

Students bring with them to school a wide range of experiences with language and texts. These experiences are included in the curriculum as valid ways of communicating and as rich resources for further learning about language, literature and literacy. From Foundation to Year 2, students engage with purposeful listening, reading, viewing, speaking and writing activities for different purposes and contexts.

The curriculum in these years aims to extend the abilities of students prior to school learning and to provide the foundation needed for continued learning. The study of English from Foundation to Year 2 develops students’ skills and disposition to expand their knowledge of language as well as strategies to assist that growth. It aims to do this through pleasurable and varied experiences of literature and through the beginnings of a repertoire of activities involving listening, viewing, reading, speaking and writing.

**Years 3–6**

Students practise, consolidate and extend what they have learned. They develop an increasingly sophisticated understanding of grammar and language, and are increasingly able to articulate this knowledge. Gradually, more complex punctuation, clause and sentence structures, and textual purposes and patterns are introduced.
This deeper understanding includes more explicit metalanguage, as students learn to classify words, sentence structures and texts. To consolidate both ‘learning to read and write’ and ‘reading and writing to learn’, students explore the language of different types of texts, including visual texts, advertising, digital/online and media texts.

**Years 7–10**

Students continue to practise, consolidate and extend what they have learned from previous years. They also extend their understanding of how language works, and learn to transfer this knowledge to different contexts. To achieve this, students develop an understanding of the requirements of different types of texts; they are introduced to increasingly sophisticated analyses of various kinds of literary, popular culture, and everyday texts, and they are given opportunities to engage with the technical aspects of texts, including those of their own choosing – and to explain why they made that choice.

The notion of valuing certain texts as ‘literature’ is introduced. Students learn how such texts can be discussed and analysed in relation to themes, ideas and historical and cultural contexts.

Students engage with a variety of genres and modes. They re-enact, represent and describe texts in order to display their understanding of narrative, theme, purpose, context and argument and to defend their ideas in written and oral modes. Students are given further opportunities to create increasingly sophisticated and multimodal texts in groups and individually.

**Senior secondary years**

The Australian Curriculum: English in the senior secondary years allows students to use, consolidate and expand on what they have learned, and provides a range of choices from more specialised courses to meet students’ needs and interests. The three strands of Language, Literature and Literacy also underpin the senior secondary English courses.

**Achievement standards**

Across Foundation to Year 10, achievement standards indicate the quality of learning students should typically demonstrate by a particular point in their schooling. Achievement standards comprise a written description and student work samples.

An achievement standard describes the quality of learning (the extent of knowledge, the depth of understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The sequence of achievement standards across Foundation to Year 10 describes progress in the learning area. This sequence provides teachers with a framework of growth and development in the learning area.

Student work samples play a key role in communicating expectations described in the achievement standards. Each work sample includes the relevant assessment task, the student’s response, and annotations identifying the quality of learning evident in the student’s response in relation to relevant parts of the achievement standard.

Together, the description of the achievement standard and the accompanying set of annotated work samples help teachers to make judgments about whether students have achieved the standard.

**Diversity of Learners**
The Australian Curriculum has been developed to ensure that curriculum content and achievement standards establish high expectations for all students. Every student is entitled to enriching learning experiences across all areas of the curriculum. Students in Australian classrooms have multiple, diverse and changing needs that are shaped by individual learning histories and abilities as well as cultural language backgrounds and socio-economic factors.

**Special education needs**

The objectives of the Australian Curriculum are the same for all students. The curriculum offers flexibility for teachers to tailor their teaching in ways that provide rigorous, relevant and engaging learning and assessment opportunities for students with special education needs.

Most students with special education needs can engage with the curriculum provided the necessary adjustments are made to the complexity of the curriculum content and to the means through which students demonstrate their knowledge, skills and understanding.

For some learners, making adjustments to instructional processes and to assessment strategies enables students to achieve educational standards commensurate with their peers.

For other students, teachers will need to make appropriate adjustments to the complexity of the curriculum content, focusing instruction on content different to that taught to others in their age group. It follows that adjustments will also need to be made to how the student’s progress is monitored, assessed and reported.

For a small percentage of students, the Foundation to Year 10 curriculum content and achievement standards may not be appropriate nor meaningful, even with adjustments. Most of these students have a significant intellectual disability. During 2011, ACARA will develop additional curriculum content and achievement standards for this group of students in order to provide an Australian Curriculum that is inclusive of every learner.

Further advice about how to use the curriculum with students with special education needs is available here.

**English as an additional language or dialect**

Many students in Australian schools are learners of English as an additional language or dialect (EAL/D). Learners of EAL/D are students whose first language is a language other than Standard Australian English and who require additional support to assist them to develop English language proficiency. While many EAL/D learners do well in school, a significant group of these learners leave school without achieving their potential.

EAL/D students come from diverse backgrounds and may include:

- overseas- and Australian-born children whose first language is a language other than English
- Aboriginal and Torres Strait Islander students whose first language is an Indigenous language, including traditional languages, creoles and related varieties, or Aboriginal English.

EAL/D learners enter Australian schools at different ages and at different stages of English language learning and have various educational backgrounds in their first languages. For some, school is the only place they use English.

The aims of the Australian Curriculum: English are ultimately the same for all students. However, EAL/D learners are simultaneously learning a new language and the knowledge, understanding and skills of the English curriculum through that new language. They require additional time and support, along with informed teaching that explicitly addresses their language needs, and assessments that take into account their developing language proficiency.

A national EAL/D document is being produced that will support the Australian Curriculum. It will provide a description of how language proficiency develops, and will be a valuable reference for all teachers. It will allow
English teachers to identify the language levels of the EAL/D learners in their classrooms and to address their specific learning requirements when teaching, ensuring equity of access to the English learning area for all.

General capabilities

The skills, behaviours and attributes that students need to succeed in life and work in the twenty-first century have been identified in the Australian Curriculum as general capabilities. There are seven general capabilities:

- literacy
- numeracy
- information and communication technology (ICT) competence
- critical and creative thinking
- ethical behaviour
- personal and social competence
- intercultural understanding.

Over the course of their schooling, students develop and use these general capabilities within and across learning areas and in their lives outside school. General capabilities and learning areas have a reciprocal relationship. Learning areas provide opportunities for students to develop and use general capabilities. Similarly, wherever general capabilities are made explicit in learning areas, they can enrich and deepen learning. In the Australian Curriculum: English, each of the seven general capabilities is embedded (where appropriate) in the content descriptions or elaborations. There are further opportunities to develop the general capabilities through appropriate teaching activities.

Literacy

Students become literate as they develop the skills to learn and communicate confidently at school and to become effective individuals, community members, workers and citizens. These skills include listening, reading and viewing, writing, speaking and creating print, visual and digital materials accurately and purposefully within and across all learning areas.

The progressive development of literacy knowledge and skills is essential for success in all learning areas and is the responsibility of all teachers. It is important that teachers across all years of schooling and learning areas develop student understanding of the specific language and literacy demands of the various learning areas.

Relationship with the English curriculum

In English, students learn to read, write, listen and speak accurately, flexibly and critically, and to view and create increasingly complex texts in a variety of contexts. The general capability of Literacy is drawn from the content descriptions in the Language and Literacy strands of the English curriculum. The literacy knowledge and skills are developed and applied through all three strands: Language, Literature and Literacy.

The Literacy general capability has been developed for use across the curriculum in all learning areas. It is written for teachers of all years of schooling and learning areas and incorporates language and literacy demands specific to learning areas other than English. These demands may include, for example, the language structures of mathematics questions or problems, or the particular requirements of writing a report of an experiment in science.

Numeracy

Students become numerate as they develop the capacity to recognise and understand the role of mathematics in the world around them and the confidence, willingness and ability to apply mathematics to their lives in ways that are constructive and meaningful. Numeracy can be addressed in English learning contexts across all year
levels. Students select and apply numerical, measurement, spatial, graphical, statistical and algebraic concepts and skills to real-world situations and problems when they comprehend information from a range of sources and offer their ideas. When responding to or creating texts that present issues or arguments based on data, students identify, analyse and synthesise numerical information and discuss the credibility of sources and methodology.

**Information and communication technology (ICT) competence**

Students develop ICT competence as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information at school, at home, at work and in their communities.

ICT competence is an important component of the English curriculum. Students develop the skills and understanding required to use a range of contemporary technologies. In particular, they explicitly develop increasingly sophisticated word-processing skills to enhance text construction. Students also progressively develop skills in using information technology when conducting research, a range of digital technologies to create, publish and present their learning, and communication technologies to collaborate and communicate with others both within and beyond the classroom.

**Critical and creative thinking**

Students develop critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities, and use them when seeking new pathways or solutions. In learning to think broadly and deeply, students learn to use reason and imagination to direct their thinking for different purposes. In the context of schooling, critical and creative thinking are integral to activities that require reason, logic, imagination and innovation.

Critical and creative thinking is essential to developing understanding in English. Students are encouraged to be critical thinkers, to take responsibility for their own learning, and to reflect on their learning processes. They develop and employ critical thinking and reasoning through class discussion, close analysis of texts, and research and knowledge of language.

Creative thinking is vital to the English curriculum when reading, viewing, creating and presenting texts and when developing an aesthetic understanding of and engagement with literary texts. Through their reading and through interaction with others, students are encouraged to see existing situations in new ways, identify alternative explanations, and perceive connections that can assist in problem-solving. It is through the imaginative application of ideas and through flexible thinking that students come to understand the power of language, and become independent, innovative and imaginative learners.

**Ethical behaviour**

Students develop ethical behaviour as they learn to understand and act in accordance with ethical principles. This includes understanding the role of ethical principles, values and virtues in human life; acting with moral integrity; acting with regard for others; and having a desire and capacity to work for the common good.

Ethical behaviour and issues with an ethical dimension are integral to many of the texts that students encounter in English. By studying literary texts and exploring how moral principles affect characters’ behaviour and judgments, students’ own understanding and practice of ethical behaviour can be enhanced. Equally, when they study issues and arguments, students consider whether these issues are ethical issues and whether various positions held are reasonable.

**Personal and social competence**

Students develop personal and social competence as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. This involves students recognising and regulating their
emotions, developing concern for and understanding of others, establishing positive relationships, making responsible decisions, working effectively in teams, and handling challenging situations constructively.

There are many opportunities for students to develop personal and social competence in English. The study of English helps them to identify and express their own opinions, beliefs and responses and to interact confidently and appropriately in a range of social contexts. The English curriculum emphasises the development of communication skills for conversation, negotiation and the expression of viewpoints and arguments. Students work both independently and collaboratively to solve problems and make decisions.

**Intercultural understanding**

Students develop intercultural understanding as they learn to understand themselves in relation to others. This involves students valuing their own cultures and beliefs and those of others, and engaging with people of diverse cultures in ways that recognise differences, create connections and cultivate respect between people.

The study of English offers rich opportunities for intercultural understanding and exchange across all three strands. For example, in the Language strand, the study of ‘Language variation and changes’ and ‘Language for interaction’ includes consideration of diverse language and cultures. The Literature strand exposes students to world views and interests that may be different from their own and offers them the opportunity to consider a variety of viewpoints. Students experience a range of literature from different cultures including the inscriptive and oral narrative traditions of Aboriginal people and Torres Strait Islander people, as well as the contemporary literature of these two cultural groups. They also read classic and contemporary world literature including texts from and about Asia.

**Cross-curriculum priorities**

There are three cross curriculum priorities in the Australian Curriculum:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability.

The cross curriculum priorities are embedded in the curriculum and will have a strong but varying presence depending on their relevance to each of the learning areas.

**Aboriginal and Torres Strait Islander histories and cultures**

Aboriginal and Torres Strait Islander communities are strong, rich and diverse. Aboriginal and Torres Strait Islander Identity is central to this priority and is intrinsically linked to living, learning Aboriginal and Torres Strait Islander communities, deep knowledge traditions and holistic world view.

A conceptual framework based on Aboriginal and Torres Strait Islander Peoples’ unique sense of Identity has been developed as a structural tool for the embedding of Aboriginal and Torres Strait Islander histories and cultures within the Australian curriculum. This sense of Identity is approached through the interconnected aspects of Country/Place, People and Culture. Embracing these elements enhances all areas of the curriculum.

The Aboriginal and Torres Strait Islander priority provides opportunities for all learners to deepen their knowledge of Australia by engaging with the world’s oldest continuous living cultures. This knowledge and understanding will enrich their ability to participate positively in the ongoing development of Australia.

The Australian Curriculum: English values Aboriginal and Torres Strait Islander histories and cultures. It articulates relevant aspects of Aboriginal and Torres Strait Islander languages, literatures and literacies.
All students will develop an awareness and appreciation of, and respect for, the literature of Aboriginal and Torres Strait Islander Peoples, including storytelling traditions (oral narrative) as well as contemporary literature. Students will be taught to develop respectful, critical understandings of the social, historical and cultural contexts associated with different uses of language and textual features.

Students will be taught that there are many languages and dialects spoken in Australia including Aboriginal English and Yumplatok (Torres Strait Islander Creole) and that these languages may have different writing systems and oral traditions. These languages can be used to enhance enquiry and understanding of English literacy.

Asia and Australia's engagement with Asia

The Asia and Australia's engagement with Asia priority provides a regional context for learning in all areas of the curriculum. China, India and other Asian nations are growing rapidly and the power and influence they have in all areas of global endeavour is extensive. An understanding of Asia underpins the capacity of Australian students to be active and informed citizens working together to build harmonious local, regional and global communities, and build Australia's social, intellectual and creative capital.

This priority is concerned with Asia literacy for all Australian students. Asia literacy develops knowledge, skills and understanding about the histories, geographies, cultures, arts, literatures and languages of the diverse countries of our region. It fosters social inclusion in the Australian community. It enables students to communicate and engage with the peoples of Asia so they can effectively live, work and learn in the region. Australia now has extensive engagement with Asia in areas such as trade, investment, immigration, tourism, education and humanitarian assistance and this engagement is vital to the prosperity of all Australians.

The Australian Curriculum: English enables students to explore and appreciate the rich tradition of texts from and about the peoples and countries of Asia, including texts written by Asian Australians. They develop an understanding of the many languages used in Australia and how they have influenced Australian culture.

In this learning area, students develop communication skills that reflect cultural awareness and intercultural understanding. They are encouraged to draw on knowledge of the arts and literature of the Asia region to influence their own creative pursuits and to express themselves through different media and genres.

Sustainability

Sustainability addresses the ongoing capacity of Earth to maintain all life.

Sustainable patterns of living meet the needs of the present without compromising the ability of future generations to meet their needs. Actions to improve sustainability are both individual and collective endeavours shared across local and global communities. They necessitate a renewed and balanced approach to the way humans interact with each other and the environment.

Education for sustainability develops the knowledge, skills and values necessary for people to act in ways that contribute to more sustainable patterns of living. It is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through action that recognises the relevance and interdependence of environmental, social, cultural and economic considerations.

The Australian Curriculum: English provides students with the skills required to investigate and understand issues of environmental and social sustainability; communicate information about sustainability, and advocate action to improve sustainability.

If people now and into the future are to be treated fairly, action to improve sustainability needs to be informed by a world view of peoples, places and communities. Both literature and literacy are key elements in the development of each student’s world view. More sustainable patterns of living are largely shaped by people’s behaviours. English provides an important means of influencing behaviours, facilitating interaction and
expressing viewpoints through the creation of texts for a range of purposes, audiences and contexts including multimodal texts and the use of visual language.

**Links to other learning areas**

The study of English involves the development of understanding and knowledge for informed and effective participation not only in English but also in other learning areas. When knowledge, skills and comprehension from English are meaningfully applied to other learning areas, learning becomes more relevant and understanding deepens.

The relationship between the learning areas is also reciprocal. Science, history and mathematics emphasise skills in English literacy as well as students’ capacity to communicate coherently to a range of audiences. Each learning area draws upon what is taught in the language strand of English and incorporates subject-specific language knowledge as required.

**Mathematics**

The skills taught in English of communicating with others, comprehending texts, making connections within and across texts and creating new texts reinforce learning in mathematics. When reading texts, students develop an understanding of concepts such as time, number and space. They interpret numerical symbols and combine these with pictures to make meaning. When creating and responding to texts, students draw on an understanding of spatial features. Understanding statistical reasoning, graphical representations, quantitative data and numerical scale and proportion is an invaluable skill for analysing argument in English. Being able to present quantitative evidence as part of an argument is a persuasive tool. Deriving quantitative and spatial information can also be an important aspect of understanding a range of texts.

**Science**

The skills of communicating with others, problem solving, comprehending and using texts and creating new texts reinforce learning in science. In English, as in science, students base their discussions on the objective analysis of evidence, justifying points of view, drawing conclusions and making presentations in a variety of media. The abilities to plan investigations; think objectively about evidence; analyse data; describe objects and events; interpret descriptions; read and give instructions; explain ideas to others; write clear reports and recommendations; and participate in group discussions are all important in both disciplines.

**History**

The skills taught in English of communicating with others, comprehending and researching texts and creating new texts reinforce learning in history. Literature, with its emphasis on studying texts from a range of historical and cultural contexts, helps students understand the perspectives and contributions of people from around the world and from both the past and present. In history, students use their English skills to undertake research, read texts with critical discernment and create texts that present the results of historical understanding clearly and logically.

The Australian Curriculum: English takes account of what students have learned in these areas so their learning in English is supported and their learning in other areas is enhanced.

**Implications for teaching, assessment and reporting**
In the Australian Curriculum: English, the three strands of Language, Literature and Literacy are interrelated and inform and support each other. While the amount of time devoted to each strand may vary, each strand is of equal importance and each focuses on developing skills in listening, speaking, reading, viewing, writing and creating. Teachers combine aspects of the strands in different ways to provide students with learning experiences that meet their needs and interests.

In Year 3, for example, students might select a favourite poem and share it with the class, explaining why they chose it (Literature). They might explain the way particular grammatical choices affect meaning, for example the use of verbs, adjectives and adverbs in the poem (Language). Students might then create their own poems and present them to the class (Literacy). In Year 8, a teacher who wishes to develop a unit focusing on humour might have students begin by selecting and analysing a variety of humorous texts (Literature), considering structure and vocabulary choices that create particular effects or nuance (Language). They might then change some of the words to create different effects in the text (Literacy).

While content descriptions do not repeat key skills, it should be noted that many aspects of the English curriculum are recursive, and teachers need to provide ample opportunity for revision, ongoing practice and consolidation of previously introduced knowledge and skills.

Students learn at different rates and in different stages. Depending on each student’s rate of learning, not all of the content descriptions for a particular year level may be relevant to a student in that year level. Some students may have already learned a concept or skill, in which case it will not have to be explicitly taught to them in the year level stipulated. Other students may need to be taught concepts or skills stipulated for earlier year levels.

The content descriptions in the Australian Curriculum: English enable teachers to develop a variety of learning experiences that are relevant, rigorous and meaningful and allow for different rates of development, in particular for younger students and for those who require additional support.

Some students will require additional support to develop their skills in listening, speaking, reading, viewing and creating. In the Australian Curriculum: English it is expected that appropriate adjustments will be made for some students to enable them to access and participate in meaningful learning, and demonstrate their knowledge, understanding and skills across the three English strands. To provide the required flexibility teachers need to consider expanded interpretations of terms used in the content descriptions and content elaborations. Terms such as ‘read’, ‘listen’ and ‘write’ could be expanded and interpreted as ‘read using text to speech software or Braille’; ‘listen using signed communication’; and ‘write using computer software’.

Teachers use the Australian Curriculum content and achievement standards first to identify current levels of learning and achievement and then to select the most appropriate content (possibly from across several year levels) to teach individual students and/or groups of students. This takes into account that in each class there may be students with a range of prior achievement (below, at and above the year level expectations) and that teachers plan to build on current learning.

Teachers also use the achievement standards, at the end of a period of teaching, to make on-balance judgments about the quality of learning demonstrated by the students – that is, whether they have achieved below, at or above the standard. To make these judgments, teachers draw on assessment data that they have collected as evidence during the course of the teaching period. These judgments about the quality of learning are one source of feedback to students and their parents and inform formal reporting processes.

If a teacher judges that a student’s achievement is below the expected standard, this suggests that the teaching programs and practice should be reviewed to better assist individual students in their learning in the future. It also suggests that additional support and targeted teaching will be needed to ensure that the student does not fall behind.

Assessment of the Australian Curriculum takes place in different levels and for different purposes, including:
• ongoing formative assessment within classrooms for the purposes of monitoring learning and providing feedback, to teachers to inform their teaching, and for students to inform their learning
• summative assessment for the purposes of twice-yearly reporting by schools to parents and carers on the progress and achievement of students
• annual testing of Years 3, 5, 7 and 9 students’ levels of achievement in aspects of literacy and numeracy, conducted as part of the National Assessment Program – Literacy and Numeracy (NAPLAN)
• periodic sample testing of specific learning areas within the Australian Curriculum as part of the National Assessment Program (NAP).
Foundation Year

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the three strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit, strengthen and develop these as needed.

In the Foundation year, students communicate with peers, teachers, known adults, and students from other classes.

Students engage with a variety of texts for enjoyment. They listen to, read and view spoken, written and multimodal texts in which the primary purpose is to entertain, as well as some texts designed to inform. These include traditional oral texts, picture books, various types of stories, rhyming verse, poetry, non-fiction, film, multimodal texts and dramatic performances. They participate in shared reading, viewing and storytelling using a range of literary texts, and recognise the entertaining nature of literature.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend Foundation students as beginner readers include predictable texts that range from caption books to books with one or more sentences per page. These texts involve straightforward sequences of events and everyday happenings with recognisable, realistic or imaginary characters. Informative texts present a small amount of new content about familiar topics of interest; a small range of language features, including simple and compound sentences; mostly familiar vocabulary, known high-frequency words and single-syllable words that can be decoded phonically, and illustrations that strongly support the printed text.

Students create a range of imaginative, informative and persuasive texts including pictorial representations, short statements, performances, recounts and poetry.

<table>
<thead>
<tr>
<th>Language</th>
<th>Literature</th>
<th>Literacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language variation and change</td>
<td>Recognise that texts are created by authors who tell stories and share experiences that may be similar or different to students’ own experiences (ACELT1575)</td>
<td>Identify some familiar texts and the contexts in which they are used (ACELY1645)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Respond to texts, identifying favourite stories, authors and illustrators (ACELT1577)</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Explore how language is used differently at home and school depending on the relationships between people (ACELA1428)</td>
<td>Share feelings and thoughts about the events and characters in texts (ACELT1783)</td>
<td>Listen to and respond orally to texts and to the communication of others in informal and structured classroom situations (ACELY1646)</td>
</tr>
<tr>
<td>Understand that language can be used to explore ways of expressing needs, likes and dislikes (ACELA1429)</td>
<td>Examining literature</td>
<td>Use interaction skills including listening while others speak, using appropriate voice levels, articulation and body language, gestures and eye contact (ACELY1784)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Identify some features of texts including events and characters and retell events from a text (ACELT1578)</td>
<td>Deliver short oral presentations to peers (ACELY1647)</td>
</tr>
<tr>
<td>Understand that texts can take many forms, can be very short (for example an exit sign) or quite long (for example an information book or a film) and that stories and informative texts have different purposes (ACELA1430)</td>
<td>Recognise some different types of literary texts and identify some characteristic features of literary texts, for example beginnings and endings of traditional texts and rhyme in poetry (ACELT1785)</td>
<td>Interpreting, analysing, evaluating</td>
</tr>
<tr>
<td>Understand that some language in written texts is unlike everyday spoken language (ACELA1431)</td>
<td>Replicate the rhythms and sound patterns in stories, rhymes, songs and poems from a range of cultures (ACELT1579)</td>
<td>Identify some differences between imaginative and informative texts (ACELY1648)</td>
</tr>
<tr>
<td>Understand that punctuation is a feature</td>
<td></td>
<td>Read predictable texts, practising phrasing and fluency, and monitor meaning using concepts about print and emerging contextual, semantic, grammatical and phonetic knowledge (ACELY1649)</td>
</tr>
</tbody>
</table>
written text different from letters; recognise how capital letters are used for names, and that capital letters and full stops signal the beginning and end of sentences (ACELA1432)

Understand concepts about print and screen, including how books, film and simple digital texts work, and know some features of print, for example directionality (ACELA1433)

Expressing and developing ideas

Recognise that sentences are key units for expressing ideas (ACELA1435)

Recognise that texts are made up of words and groups of words that make meaning (ACELA1434)

Explore the different contribution of words and images to meaning in stories and informative texts (ACELA1786)

Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics taught at school (ACELA1437)

Know that spoken sounds and words can be written down using letters of the alphabet and how to write some high-frequency sight words and known words (ACELA1758)

Know how to use onset and rime to spell words (ACELA1438)

Sound and letter knowledge

Recognise rhymes, syllables and sounds (phonemes) in spoken words (ACELA1439)

Recognise the letters of the alphabet and know there are lower and upper case letters (ACELA1440)

Creating literature

Retell familiar literary texts through performance, use of illustrations and images (ACELT1580)

Use comprehension strategies to understand and discuss texts listened to, viewed or read independently (ACELY1650)

Creating texts

Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge (ACELY1651)

Participate in shared editing of students’ own texts for meaning, spelling, capital letters and full stops (ACELY1652)

Produce some lower case and upper case letters using learned letter formations (ACELY1653)

Construct texts using software including word processing programs (ACELY1654)

Foundation Year achievement standard

By the end of the Foundation year, students listen to, read and view a range of spoken, written and multimodal texts from familiar contexts. They interpret and provide relevant explanations of characters and main events in imaginative texts, and key ideas and visual features in short informative texts, making connections to personal experience. They demonstrate understanding by retelling orally one or two ideas and events from short texts listened to or viewed. They accurately identify the letters of the English alphabet, and know the sounds represented by most letters. They read short, predictable texts aloud with some fluency and accuracy, drawing support from their developing sound and letter knowledge. They effectively use predicting and questioning strategies to make meaning from texts.

Students write one or more simple sentences to retell events and experiences for a known audience. Their writing is connected appropriately to illustrations and images produced as part of the text. They link two or more ideas or events in written and spoken texts. They use and understand familiar vocabulary, predictable text structures and common visual patterns. The short texts they produce show understanding of concepts about print including letters, words and sentences. They use left to right directionality, return sweep and spaces between words. They handwrite most lower case and some upper case letters, and use some capital letters and full stops. Their
writing shows some evidence of the use of sound–letter knowledge. In informal classroom settings students communicate clearly and purposefully and engage in pair, group and class discussions, and participate actively in group tasks.
Year 1

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Year 1, students communicate with peers, teachers, known adults and students from other classes.

Students engage with a variety of texts for enjoyment. They listen to, read, view and interpret spoken, written and multimodal texts designed to entertain and inform. These encompass traditional oral texts including Aboriginal stories, picture books, various types of stories, rhyming verse, poetry, non-fiction, film, dramatic performances, and texts used by students as models for constructing their own texts.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend Year 1 students as independent readers involve straightforward sequences of events and everyday happenings with recognisably realistic or imaginary characters. Informative texts present a small amount of new content about familiar topics of interest and topics being studied in other areas of the curriculum. These texts also present a small range of language features, including simple and compound sentences, some unfamiliar vocabulary, a small number of high-frequency words and words that need to be decoded phonically, and sentence boundary punctuation, as well as illustrations and diagrams that support the printed text.

Students create a variety of imaginative, informative and persuasive texts including recounts, procedures, performances, literary retellings and poetry.

<table>
<thead>
<tr>
<th>Language</th>
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<tbody>
<tr>
<td>Language variation and change</td>
<td>Literature and context</td>
<td>Texts in context</td>
</tr>
<tr>
<td>Understand that people use different systems of communication to cater to different needs and purposes and that many people may use sign systems to communicate with others (ACELA1443)</td>
<td>Discuss how authors create characters using language and images (ACELT1581)</td>
<td>Respond to texts drawn from a range of cultures and experiences (ACELY1655)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Understand that language is used in combination with other means of communication, for example facial expressions and gestures to interact with others (ACELA1444)</td>
<td>Discuss characters and events in a range of literary texts and share personal responses to these texts, making connections with students’ own experiences (ACELT1582)</td>
<td>Engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions (ACELY1656)</td>
</tr>
<tr>
<td>Understand that there are different ways of asking for information, making offers and giving commands (ACELA1446)</td>
<td>Express preferences for specific texts and authors and listen to the opinions of others (ACELT1583)</td>
<td>Use interaction skills including turn-taking, recognising the contributions of others, speaking clearly and using appropriate volume and pace (ACELY1788)</td>
</tr>
<tr>
<td>Explore different ways of expressing emotions, including verbal, visual, body language and facial expressions (ACELA1787)</td>
<td>Examining literature</td>
<td></td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Discuss features of plot, character and setting in different types of literature and explore some features of characters in different texts (ACELT1584)</td>
<td>Make short presentations using some introduced text structures and language, for example opening statements (ACELY1657)</td>
</tr>
<tr>
<td>Understand that the purposes texts serve shape their structure in predictable ways (ACELA1447)</td>
<td>Listen to, recite and perform poems, chants, rhymes and songs, imitating and inventing sound patterns including alliteration and rhyme (ACELT1585)</td>
<td>Interpreting, analysing, evaluating</td>
</tr>
<tr>
<td>Understand patterns of repetition and contrast in simple texts (ACELA1448)</td>
<td>Creating literature</td>
<td>Describe some differences between imaginative informative and persuasive texts (ACELY1658)</td>
</tr>
<tr>
<td></td>
<td>Recreate texts imaginatively using drawing, writing, performance and digital forms of communication (ACELT1586)</td>
<td>Read supportive texts using developing phrasing, fluency, contextual, semantic, grammatical and phonics knowledge and emerging text processing strategies, for example prediction, monitoring meaning</td>
</tr>
</tbody>
</table>
Recognise that different types of punctuation, including full stops, question marks and exclamation marks, signal sentences that make statements, ask questions, express emotion or give commands (ACELA1449)

Understand concepts about print and screen, including how different types of texts are organised using page numbering, tables of content, headings and titles, navigation buttons, bars and links (ACELA1450)

Expressing and developing ideas

Identify the parts of a simple sentence that represent ‘What’s happening?’, ‘Who or what is doing or receiving the action?’ and the circumstances surrounding the action (ACELA1451)

Explore differences in words that represent people, places and things (nouns and pronouns), actions (verbs), qualities (adjectives) and details like when, where and how (adverbs) (ACELA1452)

Compare different kinds of images in narrative and informative texts and discuss how they contribute to meaning (ACELA1453)

Understand the use of vocabulary in everyday contexts as well as a growing number of school contexts, including appropriate use of formal and informal terms of address in different contexts (ACELA1454)

Know that regular one-syllable words are made up of letters and common letter clusters that correspond to the sounds heard, and how to use visual memory to write high-frequency words (ACELA1778)

Recognise and know how to use morphemes in word families for example ‘play’ in ‘played’ and ‘playing’ (ACELA1455)

Sound and letter knowledge

Manipulate sounds in spoken words including phoneme deletion and substitution (ACELA1457)

Recognise sound --- letter matches including common vowel and consonant digraphs and consonant blends (ACELA1458)

Use comprehension strategies to build literal and inferred meaning about key events, ideas and information in texts that they listen to, view and read by drawing on growing knowledge of context, text structures and language features (ACELY1660)

Creating texts

Create short imaginative and informative texts that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams (ACELY1661)

Reread student’s own texts and discuss possible changes to improve meaning, spelling and punctuation (ACELY1662)

Write using unjoined lower case and upper case letters (ACELY1663)

Construct texts that incorporate supporting images using software including word processing programs (ACELY1664)
Understand the variability of sound --- letter matches (ACELA1459)

Year 1 achievement standard

By the end of Year 1 students listen to, read and view a range of spoken, written and multimodal texts, recognising the different purposes of these texts. They accurately use knowledge of text structure, letters, words, sentences and directionality to read different kinds of short texts. They retell the main ideas in texts in logical sequence. They understand literal and some inferred meanings in imaginative and informative texts and accurately recall some key ideas. They display sustained interest in longer texts listened to and viewed. They know the sounds represented by all letters, and the purpose of capital letters and full stops. They read short, predictable imaginative and informative texts aloud with some fluency and intonation, and use sentence boundary punctuation appropriately to support meaning.

Students create short imaginative, informative and persuasive spoken and written texts for a limited range of purposes. They include several related ideas on familiar topics, use visual features to support meaning, and include beginnings and endings to indicate sequence. They select vocabulary to enhance meaning, and use relevant vocabulary related to the topic and content of texts to discuss ideas and to share responses. They use capital letters and full stops appropriately. They accurately spell many words with regular spelling patterns and a growing number of irregularly spelled words. They use different interaction conventions including asking questions and making comments, adjusting communication to suit their audience and purpose. They interact in pair, group and class discussions and make short presentations of a few connected sentences on familiar and learned topics.
Year 2

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Year 2, students communicate with peers, teachers, students from other classes, and community members.

Students engage with a variety of texts for enjoyment. They listen to, read, view and interpret spoken, written and multimodal texts in which the primary purpose is to entertain, as well as texts designed to inform and persuade. These encompass traditional oral texts, picture books, various types of print and digital stories, simple chapter books, rhyming verse, poetry, non-fiction, film, multimodal texts, dramatic performances, and texts used by students as models for constructing their own work.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend Year 2 students as independent readers involve sequences of events that span several pages and present unusual happenings within a framework of familiar experiences. Informative texts present new content about topics of interest and topics being studied in other areas of the curriculum. These texts include language features such as varied sentence structures, some unfamiliar vocabulary, a significant number of high-frequency sight words and words that need to be decoded phonically, and a range of punctuation conventions, as well as illustrations and diagrams that both support and extend the printed text.

Students create a range of imaginative, informative and persuasive texts including imaginative retellings, reports, performances, poetry and expositions.

<table>
<thead>
<tr>
<th>Language</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Language variation and change</td>
<td>Discuss how depictions of characters in print, sound and images reflect the contexts in which they were created (ACELT1587)</td>
<td>Discuss different texts on a similar topic, identifying similarities and differences between the texts (ACELY1665)</td>
</tr>
<tr>
<td>Understand that spoken, visual and written forms of language are different modes of communication with different features and their use varies according to the audience, purpose, context and cultural background (ACELA1460)</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Compare opinions about characters, events and settings in and between texts (ACELT1589)</td>
<td>Listen for specific purposes and information, including instructions, and extend students’ own and others’ ideas in discussions (ACELY1666)</td>
</tr>
<tr>
<td>Understand that language varies when people take on different roles in social and classroom interactions and how the use of key interpersonal language resources varies depending on context (ACELA1461)</td>
<td>Identify aspects of different types of literary texts that entertain, and give reasons for personal preferences (ACELT1590)</td>
<td>Use interaction skills including initiating topics, making positive statements and voicing disagreement in an appropriate manner, speaking clearly and varying tone, volume and pace appropriately (ACELY1789)</td>
</tr>
<tr>
<td>Identify language that can be used for appreciating texts and the qualities of people and things (ACELA1462)</td>
<td>Examining literature</td>
<td>Rehearse and deliver short presentations on familiar and new topics (ACELY1667)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Discuss the characters and settings of different texts and explore how language is used to present these features in different ways (ACELT1591)</td>
<td>Interpreting, analysing, evaluating</td>
</tr>
<tr>
<td>Understand that different types of texts have identifiable text structures and language features that help the text serve its purpose (ACELA1463)</td>
<td>Identify, reproduce and experiment with rhythmic, sound and word patterns in poems, chants, rhymes and songs (ACELT1592)</td>
<td>Identify the audience of imaginative, informative and persuasive texts (ACELY1668)</td>
</tr>
<tr>
<td>Understand how texts are made cohesive through resources, for example word associations, synonyms, and antonyms (ACELA1464)</td>
<td>Creating literature</td>
<td>Read less predictable texts with phrasing and fluency by combining contextual, semantic, grammatical and phonic</td>
</tr>
</tbody>
</table>
Recognise that capital letters signal proper nouns and commas are used to separate items in lists (ACELA1465)

Know some features of text organisation including page and screen layouts, alphabetical order, and different types of diagrams, for example timelines (ACELA1466)

Expressing and developing ideas

Understand that simple connections can be made between ideas by using a compound sentence with two or more clauses and coordinating conjunctions (ACELA1467)

Understand that nouns represent people, places, things and ideas and can be, for example, common, proper, concrete and abstract, and that noun groups can be expanded using articles and adjectives (ACELA1468)

Identify visual representations of characters' actions, reactions, speech and thought processes in narratives, and consider how these images add to or contradict or multiply the meaning of accompanying words (ACELA1469)

Understand the use of vocabulary about familiar and new topics and experiment with and begin to make conscious choices of vocabulary to suit audience and purpose (ACELA1470)

Understand how to use digraphs, long vowels, blends and silent letters to spell words, and use morphemes and syllabification to break up simple words and use visual memory to write irregular words (ACELA1471)

Recognise common prefixes and suffixes and how they change a word’s meaning (ACELA1472)

Sound and letter knowledge

Recognise most sound–letter matches including silent letters, vowel/consonant digraphs and many less common sound–letter combinations (ACELA1474)

Year 2 achievement standard

By the end of Year 2 students listen to, read and view a range of spoken, written and multimodal texts, recalling details and some main ideas and key facts. They begin to compare the content and purposes of different texts on similar topics. They locate literal information in written texts, and refer to features of language and images to make inferences about characters’ actions and motivations. They discuss possible meanings in narratives, and predict likely future events. They sustain interest in characters and events in imaginative texts, seek
books by favourite authors and give reasons for personal preferences. They relate information, ideas and events in texts to their own lives and to other texts. They locate information on a variety of topics in texts with some complex language, ideas, images and vocabulary. They read, monitoring meaning and self-correcting using context, prior knowledge, grammar and phonics knowledge.

Students create imaginative, informative and persuasive written, spoken and multimodal texts for different purposes and audiences, drawing on their own experiences, their imagination and ideas they have learned. They create texts that appropriately include writing and images to support the meaning of the text. They organise texts in predictable ways using a small range of text and sentence structures. They use common punctuation accurately, including sentence boundary punctuation. They use sound-letter correspondence to help spell words correctly in their writing. They use everyday language and topic-specific vocabulary to discuss ideas about areas of interest with peers. They engage effectively in group and class discussions, and ask questions to clarify and extend others’ ideas. They express their opinions on topics of interest, providing some supporting evidence for their points of view. They discuss how to interact appropriately with audiences in the classroom and other familiar contexts.
Year 3

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Years 3 and 4, students communicate with peers and teachers from other classes and schools in a range of face-to-face and online/virtual environments.

Students engage with a variety of texts for enjoyment. They listen to, read, view and interpret spoken, written and multimodal texts in which the primary purpose is to entertain, as well as texts designed to inform and persuade. These encompass traditional oral texts including picture books, various types of print and digital texts, simple chapter books, rhyming verse, poetry, non-fiction film, multimodal texts, dramatic performances, and texts used by students as models for constructing their own work.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend students in Years 3 and 4 as independent readers describe complex sequences of events that extend over several pages and involve unusual happenings within a framework of familiar experiences. Informative texts present new content about topics of interest and topics being studied in other areas of the curriculum. These texts use complex language features, including varied sentence structures, some unfamiliar vocabulary, a significant number of high-frequency sight words and words that need to be decoded phonically, and a range of punctuation conventions, as well as illustrations and diagrams that both support and extend the printed text.

Students create a range of imaginative, informative and persuasive types of texts including narratives, procedures, performances, reports, reviews, poetry and expositions.

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<tbody>
<tr>
<td>Language variation and change</td>
<td>Literature and context</td>
<td>Texts in context</td>
</tr>
<tr>
<td>Understand that languages have different written and visual communication systems, different oral traditions and different ways of constructing meaning (ACELA1475)</td>
<td>Discuss texts in which characters, events and settings are portrayed in different ways, and speculate on the authors’ reasons (ACELT1594)</td>
<td>Identify the point of view in a text and suggest alternative points of view (ACELY1675)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Understand that successful cooperation with others depends on shared use of social conventions, including turn-taking patterns, and forms of address that vary according to the degree of formality in social situations (ACELA1476)</td>
<td>Draw connections between personal experiences and the worlds of texts, and share responses with others (ACELT1596)</td>
<td>Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations (ACELY1676)</td>
</tr>
<tr>
<td>Examine how evaluative language can be varied to be more or less forceful (ACELA1477)</td>
<td>Develop criteria for establishing personal preferences for literature (ACELT1598)</td>
<td>Plan and deliver short presentations, providing some key details in logical sequence (ACELY1677)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Examining literature</td>
<td>Use interaction skills, including active listening behaviours and communicate in a clear, coherent manner using a variety of everyday and learned vocabulary and appropriate tone, pace, pitch and volume (ACELY1792)</td>
</tr>
<tr>
<td>Understand how different types of texts vary in use of language choices, depending on their function and purpose, for example tense, mood, and types of sentences (ACELA1478)</td>
<td>Discuss how language is used to describe the settings in texts, and explore how the settings shape the events and influence the mood of the narrative (ACELT1599)</td>
<td>Interpreting, analysing, evaluating</td>
</tr>
<tr>
<td>Understand that paragraphs are a key organisational feature of written texts (ACELA1479)</td>
<td>Discuss the nature and effects of some language devices used to enhance meaning and shape the reader’s reaction, including rhythm and onomatopoeia in poetry and prose (ACELT1600)</td>
<td>Identify the audience and purpose of imaginative, informative and persuasive texts (ACELY1678)</td>
</tr>
<tr>
<td>Create imaginative texts based on</td>
<td></td>
<td>Read an increasing range of different types</td>
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</tbody>
</table>
Know that word contractions are a feature of informal language and that apostrophes of contraction are used to signal missing letters (ACELA1480)

Identify the features of online texts that enhance navigation (ACELA1790)

Expressing and developing ideas

Understand that a clause is a unit of meaning usually containing a subject and a verb and that these need to be in agreement (ACELA1481)

Understand that verbs represent different processes (doing, thinking, saying, and relating) and that these processes are anchored in time through tense (ACELA1482)

Identify the effect on audiences of techniques, for example shot size, vertical camera angle and layout in picture books, advertisements and film segments (ACELA1483)

Learn extended and technical vocabulary and ways of expressing opinion including modal verbs and adverbs (ACELA1484)

Understand how to use sound–letter relationships and knowledge of spelling rules, compound words, prefixes, suffixes, morphemes and less common letter combinations, for example ‘tion’ (ACELA1485)

Recognise high frequency sight words (ACELA1486)

Characters, settings and events from students’ own and other cultures using visual features, for example perspective, distance and angle (ACELT1601)

Create texts that adapt language features and patterns encountered in literary texts, for example characterisation, rhyme, rhythm, mood, music, sound effects and dialogue (ACELT1791)

Use comprehension strategies to build literal and inferred meaning and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features (ACELY1680)

Creating texts

Plan, draft and publish imaginative, informative and persuasive texts demonstrating increasing control over text structures and language features and selecting print, and multimodal elements appropriate to the audience and purpose (ACELY1682)

Reread and edit texts for meaning, appropriate structure, grammatical choices and punctuation (ACELY1683)

Write using joined letters that are clearly formed and consistent in size (ACELY1684)

Use software including word processing programs with growing speed and efficiency to construct and edit texts featuring visual, print and audio elements (ACELY1685)

Year 3 achievement standard

By the end of Year 3 students listen to, read and view a range of spoken, written and multimodal texts, identifying their different purposes. They attend to others’ views and respond appropriately. They use monitoring and self-correcting strategies to clarify meaning when reading, viewing and listening to an increasing range of types of texts. They retrieve literal information in texts, and can also make appropriate inferences. They explain ideas, events and actions, referring closely to selected detail. They share personal responses to and opinions about texts, providing relevant supporting information and detail. They recognise the representation of characters, settings and events in imaginative texts and also start to evaluate point of view. They make relevant connections between visual and written elements in multimodal texts.

Students create a range of imaginative, informative and persuasive written, spoken and multimodal texts for familiar and unfamiliar audiences. They contribute actively to group discussions, asking relevant questions and building on others’ ideas and providing useful feedback. They communicate expressively and clearly about familiar ideas and information to known small audiences, in mostly informal situations. They order ideas in sequence, and provide relevant details to support ideas. They create imaginative texts based on characters and situations encountered in their reading and viewing. In these texts they express and develop experiences, events, information, ideas and characters in some detail. They organise texts in paragraphs composed of logically grouped and sequenced sentences. Short sentences are meaningful and correctly structured, and some complex sentences are used appropriately. They choose vocabulary appropriate to the purpose and context of their writing. They use simple punctuation correctly, and use a variety of spelling strategies to spell high frequency words correctly.
Year 4

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Years 3 and 4, students experience learning in familiar contexts and a range of contexts that relate to study in other areas of the curriculum. They interact with peers and teachers from other classes and schools in a range of face-to-face and online/virtual environments.

Students engage with a variety of texts for enjoyment. They listen to, read, view and interpret spoken, written and multimodal texts in which the primary purpose is aesthetic, as well as texts designed to inform and persuade. These encompass traditional oral texts including Aboriginal stories, picture books, various types of print and digital texts, simple chapter books, rhyming verse, poetry, non-fiction, film, multimodal texts, dramatic performances, and texts used by students as models for constructing their own work.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend students in Years 3 and 4 as independent readers describe complex sequences of events that extend over several pages and involve unusual happenings within a framework of familiar experiences. Informative texts present new content about topics of interest and topics being studied in other areas of the curriculum. These texts use complex language features, including varied sentence structures, some unfamiliar vocabulary, a significant number of high-frequency sight words and words that need to be decoded phonically, and a variety of punctuation conventions, as well as illustrations and diagrams that both support and extend the printed text.

Students create a range of imaginative, informative and persuasive types of texts including narratives, procedures, performances, reports, reviews, poetry and expositions.

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<tr>
<th>Language</th>
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<tr>
<td>Language variation and change</td>
<td>Literature and context</td>
<td>Texts in context</td>
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<tr>
<td>Understand that Standard Australian English is one of many social dialects used in Australia, and that while it originated in England it has been influenced by many other languages (ACELA1487)</td>
<td>Make connections between the ways different authors may represent similar storylines, ideas and relationships (ACELT1602)</td>
<td>Identify and explain language features of texts from earlier times and compare with the vocabulary, images, layout and content of contemporary texts (ACELY1686)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
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<tr>
<td>Understand that social interactions influence the way people engage with ideas and respond to others for example when exploring and clarifying the ideas of others, summarising students’ own views and reporting them to a larger group (ACELA1488)</td>
<td>Discuss literary experiences with others, sharing responses and expressing a point of view (ACELT1603)</td>
<td>Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and information (ACELY1687)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Examining literature</td>
<td>Use interaction skills such as acknowledging another’s point of view and linking students’ response to the topic, using familiar and new vocabulary and a range of vocal effects such as tone, pace, pitch and volume to speak clearly and coherently (ACELY1688)</td>
</tr>
<tr>
<td>Understand how texts vary in complexity and technicality depending on the approach to the topic, the purpose and the intended audience (ACELA1490)</td>
<td>Discuss how authors and illustrators make stories exciting, moving and absorbing and hold readers’ interest by using various techniques, for example character development and plot tension (ACELT1605)</td>
<td>Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences (ACELY1689)</td>
</tr>
<tr>
<td>Understand how texts are made cohesive</td>
<td>Understand, interpret and experiment with a range of devices and deliberate word play in poetry and other literary texts, for example nonsense words, spoonerisms, neologisms and puns (ACELT1606)</td>
<td>Interpreting, analysing, evaluating</td>
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<td></td>
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<td>Identify characteristic features used in</td>
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through the use of linking devices including pronoun reference and text connectives (ACELA1491)

Recognise how quotation marks are used in texts to signal dialogue, titles and reported speech (ACELA1492)

Identify features of online texts that enhance readability including text, navigation, links, graphics and layout (ACELA1793)

Expressing and developing ideas

Understand that the meaning of sentences can be enriched through the use of noun and verb groups and prepositional phrases (ACELA1493)

Investigate how quoted (direct) and reported (indirect) speech work in different types of text (ACELA1494)

Understand how adverbials (adverbs and prepositional phrases) work in different ways to provide circumstantial details about an activity (ACELA1495)

Explore the effect of choices when framing an image, placement of elements in the image, and salience on composition of still and moving images in a range of types of texts (ACELA1496)

Incorporate new vocabulary from a range of sources into students’ own texts including vocabulary encountered in research (ACELA1498)

Understand how to use strategies for spelling words, including spelling rules, knowledge of morphemic word families, spelling generalisations, and letter combinations including double letters (ACELA1779)

Recognise homophones and know how to use context to identify correct spelling (ACELA1780)

Creating literature

Create literary texts that explore students’ own experiences and imagining (ACELT1607)

Create literary texts by developing storylines, characters and settings (ACELT1794)

imagineative, informative and persuasive texts to meet the purpose of the text (ACELY1690)

Read different types of texts by combining contextual, semantic, grammatical and phonic knowledge using text processing strategies for example monitoring meaning, cross checking and reviewing (ACELY1691)

Use comprehension strategies to build literal and inferred meaning to expand content knowledge, integrating and linking ideas and analysing and evaluating texts (ACELY1692)

Creating texts

Plan, draft and publish imaginative, informative and persuasive texts containing key information and supporting details for a widening range of audiences, demonstrating increasing control over text structures and language features (ACELY1694)

Reread and edit for meaning by adding, deleting or moving words or word groups to improve content and structure (ACELY1695)

Write using clearly-formed joined letters, and develop increased fluency and automaticity (ACELY1696)

Use a range of software including word processing programs to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1697)

Year 4 achievement standard

By the end of Year 4 students listen to, read and view a range of spoken, written and multimodal texts, describing connections between their own experiences and those presented in the texts. They listen for key points in spoken texts including presentations and discussions. They recognise the function of text purpose in shaping a text and describe characteristic differences between imaginative and informative texts. They identify literal information in texts and make inferences, integrating and linking ideas and asking questions to clarify understanding. They explain some ways in which speakers, authors and illustrators engage the interest of audiences. They share their own judgments and preferences about texts, and respond to others’ viewpoints, selecting some relevant textual evidence to support their opinions. They compare ways in which their own and others’ opinions about texts are shaped by individual experiences, and expand their own understanding by taking account of different opinions and interpretations.
Students create structured spoken, visual and written texts for imaginative, informative and persuasive purposes. They contribute actively to group discussions of ideas and present opinions, understanding how language is used differently when giving opinions or reporting information. They make planned individual oral presentations about researched topics in informal and some more formal contexts, using learned content and considering the needs of audiences. They select vocabulary to provide specific detail about people, things and ideas and draw ideas from personal, literary and researched resources. Individually and collaboratively, they create imaginative texts based on favourite plots, events and characters, and informative and persuasive texts that present ideas in a planned sequence. They use simple and complex sentences, consistent tenses and appropriate punctuation to support meaning.
Year 5

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Years 5 and 6, students communicate with peers and teachers from other classes and schools, community members, and individuals and groups, in a range of face-to-face and online/virtual environments.

Students engage with a variety of texts for enjoyment. They listen to, read, view, interpret and evaluate spoken, written and multimodal texts in which the primary purpose is aesthetic, as well as texts designed to inform and persuade. These include various types of media texts including newspapers, film and digital texts, junior and early adolescent novels, poetry, non-fiction, and dramatic performances.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend students in Years 5 and 6 as independent readers describe complex sequences, a range of non-stereotypical characters and elaborated events including flashbacks and shifts in time. These texts explore themes of interpersonal relationships and ethical dilemmas within real-world and fantasy settings. Informative texts supply technical and content information about a wide range of topics of interest as well as topics being studied in other areas of the curriculum. Text structures include chapters, headings and subheadings, tables of contents, indexes and glossaries. Language features include complex sentences, unfamiliar technical vocabulary, figurative language, and information presented in various types of graphics.

Students create a range of imaginative, informative and persuasive types of texts including narratives, procedures, performances, reports, reviews, explanations and discussions.

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</tr>
<tr>
<td>Understand that the pronunciation, spelling and meanings of words have histories and change over time (ACELA1500)</td>
<td>Identify aspects of literary texts that convey details or information about particular social, cultural and historical contexts (ACELT1608)</td>
<td>Show how ideas and points of view in texts are conveyed through the use of vocabulary, including idiomatic expressions, objective and subjective language, and that these can change according to context (ACELY1698)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Understand that patterns of language interaction vary across social contexts and types of texts and that they help to signal social roles and relationships (ACELA1501)</td>
<td>Present a point of view about particular literary texts using appropriate metalanguage, and reflecting on the viewpoints of others (ACELT1609)</td>
<td>Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students’ own experiences and present and justify a point of view (ACELY1699)</td>
</tr>
<tr>
<td>Understand how to move beyond making bare assertions and take account of differing perspectives and points of view (ACELA1502)</td>
<td>Use metalanguage to describe the effects of ideas, text structures and language features on particular audiences (ACELT1795)</td>
<td>Use interaction skills, for example paraphrasing, questioning and interpreting non-verbal cues and choose vocabulary and vocal effects appropriate for different audiences and purposes (ACELY1796)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Examining literature</td>
<td>Plan, rehearse and deliver presentations for defined audiences and purposes incorporating accurate and sequenced content and multimodal elements (ACELY1700)</td>
</tr>
<tr>
<td>Understand how texts vary in purpose, structure and topic as well as the degree of formality (ACELA1504)</td>
<td>Recognise that ideas in literary texts can be conveyed from different viewpoints, which can lead to different kinds of interpretations and responses (ACELT1610)</td>
<td>Interpreting, analysing, evaluating</td>
</tr>
<tr>
<td>Understand that the starting point of a sentence gives prominence to the message in the text and allows for prediction of how the text will unfold (ACELA1505)</td>
<td>Understand, interpret and experiment with sound devices and imagery, including simile, metaphor and personification, in narratives, shape poetry, songs, anthems and odes (ACELT1611)</td>
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<tr>
<td>Understand how possession is signalled through apostrophes and how to use</td>
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apostrophes of possession for common and proper nouns (ACELA1506)

Investigate how the organisation of texts into chapters, headings, subheadings, home pages and sub pages for online texts and according to chronology or topic can be used to predict content and assist navigation (ACELA1797)

Expressing and developing ideas

Understand the difference between main and subordinate clauses and how these can be combined to create complex sentences through subordinating conjunctions to develop and expand ideas (ACELA1507)

Understand how noun and adjective groups can be expanded in a variety of ways to provide a fuller description of the person, thing or idea (ACELA1508)

Explain sequences of images in print texts and compare these to the ways hyperlinked digital texts are organised, explaining their effect on viewers’ interpretations (ACELA1511)

Understand the use of vocabulary to express greater precision of meaning, and know that words can have different meanings in different contexts (ACELA1512)

Understand how to use banks of known words as well as word origins, prefixes, suffixes and morphemes to learn and spell new words (ACELA1513)

Recognise uncommon plurals, for example ‘foci’ (ACELA1514)

Creating literature

Create literary texts using realistic and fantasy settings and characters that draw on the worlds represented in texts students have experienced (ACELT1612)

Create literary texts that experiment with structures, ideas and stylistic features of selected authors (ACELT1798)

Identify and explain characteristic text structures and language features used in imaginative, informative and persuasive texts to meet the purpose of the text (ACELY1701)

Navigate and read texts for specific purposes applying appropriate text processing strategies, for example predicting and confirming, monitoring meaning, skimming and scanning (ACELY1702)

Use comprehension strategies to interpret and analyse information, integrating and linking ideas from a variety of print and digital sources (ACELY1703)

Creating texts

Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features, images and sound appropriate to purpose and audience (ACELY1704)

Reread and edit student’s own and others’ work using agreed criteria for text structures and language features (ACELY1705)

Develop a handwriting style that is becoming legible, fluent and automatic (ACELY1706)

Use a range of software including word processing programs with fluency to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1707)

Year 5 achievement standard

By the end of Year 5 students make links between information and ideas from a number of different sources to understand experiences, ideas and information beyond their immediate experience. They accurately identify key ideas and details in short presentations, and summarise these ideas clearly for others. They discuss the connections between particular structures, language features, simple literary devices, and the purposes of texts. They identify literal and implied information in texts, and develop and clearly express ideas and opinions about texts. They select relevant textual evidence to support opinions about texts, and recognise that narratives and experiences in texts are shaped by different viewpoints. They describe how sound and imagery influence interpretations of characters, settings and events in texts. They compare ways in which their own and others’ viewpoints about texts are shaped by individual values and experiences, and expand their own understanding by taking account of different opinions and interpretations.

Students create a variety of sequenced written, spoken and multimodal texts for different purposes and audiences. They select information and ideas from personal, literary and researched resources, and adapt imaginative ideas and situations from literature. They predict readers’ needs when organising ideas and develop coherent texts by varying sentences and paragraphs for specific effect and linking related ideas. They select specific vocabulary to express and develop ideas, to engage and persuade readers and to convey emotions. They write clear, well-structured sentences and paragraphs and use punctuation to provide structure and meaning in their writing. Individually and in groups they present oral reports of findings from investigations on various topics to peers. They consider the
needs of audiences and adjust spoken language for impact in informative or imaginative presentations. They employ a variety of techniques of spoken language to engage audiences and emphasise meaning, including variations in volume and pace, and pauses for effect.
Year 6

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Years 5 and 6, students communicate with peers and teachers from other classes and schools, community members, and individuals and groups, in a range of face-to-face and online/virtual environments.

Students engage with a variety of texts for enjoyment. They listen to, read, view, interpret and evaluate spoken, written and multimodal texts in which the primary purpose is aesthetic, as well as texts designed to inform and persuade. These include various types of media texts including newspapers, film and digital texts, junior and early adolescent novels, poetry, non-fiction and dramatic performances. Students develop their understanding of how texts, including media texts, are influenced by context, purpose and audience.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend students in Years 5 and 6 as independent readers describe complex sequences, a range of non-stereotypical characters and elaborated events including flashbacks and shifts in time. These texts explore themes of interpersonal relationships and ethical dilemmas within real-world and fantasy settings. Informative texts supply technical and content information about a wide range of topics of interest as well as topics being studied in other areas of the curriculum. Text structures include chapters, headings and subheadings, tables of contents, indexes and glossaries. Language features include complex sentences, unfamiliar technical vocabulary, figurative language, and information presented in various types of graphics.

Students create a range of imaginative, informative and persuasive types of texts such as narratives, procedures, performances, reports, reviews, explanations and discussions.

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<td>Texts in context</td>
</tr>
<tr>
<td>Understand that different social and geographical dialects or accents are used in Australia in addition to Standard Australian English (ACELA1515)</td>
<td>Make connections between students’ own experiences and those of characters and events represented in texts drawn from different historical, social and cultural contexts (ACELT1613)</td>
<td>Compare texts including media texts that represent ideas and events in different ways, explaining the effects of the different approaches (ACELY1708)</td>
</tr>
<tr>
<td>Language for interaction</td>
<td>Responding to literature</td>
<td>Interacting with others</td>
</tr>
<tr>
<td>Understand that strategies for interaction become more complex and demanding as levels of formality and social distance increase (ACELA1516)</td>
<td>Analyse and evaluate similarities and differences in texts on similar topics, themes or plots (ACELT1614)</td>
<td>Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions (ACELY1709)</td>
</tr>
<tr>
<td>Understand the uses of objective and subjective language and bias (ACELA1517)</td>
<td>Identify and explain how choices in language, for example modality, emphasis, repetition and metaphor, influence personal response to different texts (ACELT1615)</td>
<td>Use interaction skills, varying conventions of spoken interactions such as voice volume, tone, pitch and pace, according to group size, formality of interaction and needs and expertise of the audience (ACELY1816)</td>
</tr>
<tr>
<td>Text structure and organisation</td>
<td>Examining literature</td>
<td>Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis (ACELY1710)</td>
</tr>
<tr>
<td>Understand how authors often innovate on text structures and play with language features to achieve particular aesthetic, humorous and persuasive purposes and effects (ACELA1518)</td>
<td>Identify, describe, and discuss similarities and differences between texts, including those by the same author or illustrator, and evaluate characteristics that define an author’s individual style (ACELT1616)</td>
<td>Interpreting, analysing, evaluating</td>
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Year 6 achievement standard

By the end of Year 6 students explore connections between their own experiences and those of characters in a variety of contexts in literature. In discussion and in writing they share key characteristics of texts by different authors, and the variations in ways authors represent ideas, characters and events. They analyse and explain how specific structures, language features, and simple literary devices contribute to the main purposes of texts and their effects on readers and viewers. They identify and record key points to clarify meaning, and distinguish between relevant and irrelevant supporting detail. They listen to and respond constructively to others’ opinions by offering alternative viewpoints and information. They select relevant evidence from texts to support personal responses and to develop reasoned viewpoints. They compare and accurately summarise information on a particular topic from different texts, and make well-supported generalisations about the topic.

Students create well-structured written, spoken and multimodal texts for a range of imaginative, informative and persuasive purposes, for a broadening number of audiences. They make considered choices in spoken and written texts from an expanding vocabulary, and growing knowledge of grammatical patterns, complex sentence structures, cohesive links, and literary devices. They use some complex sentences to connect and develop ideas in written texts. They select specific details to sustain a point of view. They organise longer written texts by using paragraphs on particular aspects of the topic. They clarify and explain how choices of language and literary features were designed to influence the meaning communicated in their texts. They plan and deliver presentations, considering the needs and interests of intended audiences and purposes. They collaborate with others to share and evaluate ideas and opinions, and to develop different points of view. They discuss and compare personal opinions about literary texts, and respond constructively to others’
opinions.
## Year 7

The English curriculum is built around the three interrelated strands of Language, Literature and Literacy. Teaching and learning programs should balance and integrate all three strands. Together the strands focus on developing students’ knowledge, understanding and skills in listening, reading, viewing, speaking, writing and creating. Learning in English builds on concepts, skills and processes developed in earlier years, and teachers will revisit and strengthen these as needed.

In Years 7 and 8, students communicate with peers, teachers, individuals, groups and community members in a range of face-to-face and online/virtual environments. They experience learning in both familiar and unfamiliar contexts that relate to the school curriculum, local community, regional and global contexts.

Students engage with a variety of texts for enjoyment. They listen to, read, view, interpret, evaluate and perform a range of spoken, written and multimodal texts in which the primary purpose is aesthetic, as well as texts designed to inform and persuade. These include various types of media texts including newspapers, magazines and digital texts, early adolescent novels, non-fiction, poetry and dramatic performances. Students develop their understanding of how texts, including media texts, are influenced by context, purpose and audience.

The range of literary texts for Foundation to Year 10 comprises Australian literature, including the oral narrative traditions of Aboriginal and Torres Strait Islander peoples, as well as the contemporary literature of these two cultural groups, and classic and contemporary world literature, including texts from and about Asia.

Literary texts that support and extend students in Years 7 and 8 as independent readers are drawn from a range of realistic, fantasy, speculative fiction and historical genres and involve some challenging and unpredictable plot sequences and a range of non-stereotypical characters. These texts explore themes of interpersonal relationships and ethical dilemmas within real-world and fictional settings and represent a variety of perspectives. Informative texts present technical and content information from various sources about specialised topics. Text structures are more complex including chapters, headings and subheadings, tables of contents, indexes and glossaries. Language features include successive complex sentences with embedded clauses, unfamiliar technical vocabulary, figurative and rhetorical devices, and various types of graphics presented in visual form.

Students create a range of imaginative, informative and persuasive types of texts, for example narratives, procedures, performances, reports and discussions, and are beginning to create literary analyses and transformations of texts.

### Language

| Understand the way language evolves to reflect a changing world, particularly in response to the use of new technology for presenting texts and communicating (ACELA1528) |
| Language variation and change |
| Understand how language is used to evaluate texts and how evaluations about a text can be substantiated by reference to the text and other sources (ACELA1782) |
| Text structure and organisation |
| Understand how accents, styles of speech and idioms express and create personal and social identities (ACELA1529) |
| Language for interaction |

### Literature

| Identify and explore ideas and viewpoints about events, issues and characters represented in texts drawn from different historical, social and cultural contexts (ACELT1619) |
| Literature and context |
| Reflect on ideas and opinions about characters, settings and events in literary texts, identifying areas of agreement and difference with others and justifying a point of view (ACELT1620) |
| Responding to literature |
| Compare the ways that language and images are used to create character, and to influence emotions and opinions in different types of texts (ACELT1621) |
| Examining literature |
| Discuss aspects of texts, for example their aesthetic and social value, using relevant and appropriate metatext (ACELT1803) |

### Literacy

| Analyse and explain the effect of technological innovations on texts, particularly media texts (ACELY1765) |
| Texts in context |
| Use interaction skills when discussing and presenting ideas and information, selecting body language, voice qualities and other elements, (for example music and sound) to add interest and meaning (ACELY1804) |
| Interacting with others |
| Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements to promote a point of view or enable a new way of seeing (ACELY1720) |
| Interpreting, analysing, evaluating |
Understand that the coherence of more complex texts relies on devices that signal text structure and guide readers, for example overviews, initial and concluding paragraphs and topic sentences, indexes or site maps or breadcrumb trails for online texts (ACELA1763)

Understand the use of punctuation to support meaning in complex sentences with prepositional phrases and embedded clauses (ACELA1532)

Recognise and understand that embedded clauses are a common feature of sentence structures and contribute additional information to a sentence (ACELA1534)

Understand how modality is achieved through discriminating choices in modal verbs, adverbs, adjectives and nouns (ACELA1536)

Analysing how point of view is generated in visual texts by means of choices, for example gaze, angle and social distance (ACELA1764)

Investigate vocabulary typical of extended and more academic texts and the role of abstract nouns, classification, description and generalisation in building specialised knowledge through language (ACELA1537)

Understand how to use spelling rules and word origins, for example Greek and Latin roots, base words, suffixes, prefixes, spelling patterns and generalisations to learn new words and how to spell them (ACELA1539)

Recognise and analyse the ways that characterisation, events and settings are combined in narratives, and discuss the purposes and appeal of different approaches (ACELT1622)

Understand, interpret and discuss how language is compressed to produce a dramatic effect in film or drama, and to create layers of meaning in poetry, for example haiku, tankas, couplets, free verse and verse novels (ACELT1623)

Experiment with text structures and language features and their effects in creating literary texts, for example, using rhythm, sound effects, monologue, layout, navigation and colour (ACELT1805)

Create literary texts that adapt stylistic features encountered in other texts, for example, narrative viewpoint, structure of stanzas, contrast and juxtaposition (ACELT1625)

Comparing the text structures and language features of multimodal texts, explaining how they combine to influence audiences (ACELY1724)

Creating literature

Create literary texts that adapt stylistic features encountered in other texts, for example, narrative viewpoint, structure of stanzas, contrast and juxtaposition (ACELT1625)

Experiment with text structures and language features and their effects in creating literary texts, for example, using rhythm, sound effects, monologue, layout, navigation and colour (ACELT1805)

Compare the text structures and language features of multimodal texts, explaining how they combine to influence audiences (ACELY1724)

Creating texts

Comparing the text structures and language features of multimodal texts, explaining how they combine to influence audiences (ACELY1724)

Comparing the text structures and language features of multimodal texts, explaining how they combine to influence audiences (ACELY1724)

Edit for meaning by removing repetition, refining ideas, reordering sentences and adding or substituting words for impact (ACELY1726)

Consolidate a personal handwriting style that is legible, fluent and automatic and supports writing for extended periods (ACELY1727)

Use a range of software, including word processing programs, to confidently create, edit and publish written and multimodal texts (ACELY1728)

Year 7 achievement standard

By the end of Year 7 students listen to, read and view a range of spoken, written and multimodal texts, analysing and comparing text structures and language features and vocabulary choices, to show how these shape meaning and influence readers. They identify and explore representations of events, characters and settings in literary texts, and express their own responses to these representations. They interpret and explain key ideas and issues. They make inferences, drawing on textual evidence, increasing their awareness of purpose, audience and context, and their knowledge of a growing range of literary techniques. They synthesise information, ideas and viewpoints from a variety of texts to draw reasoned conclusions. They use their increasing vocabulary, and accumulated knowledge of text structures and language features, to support their interpretation and evaluation.

Students create well-constructed spoken, written and multimodal texts to inform, entertain, persuade and narrate in which meaning is supported by planned structures and organisation. They interact with others in groups to exchange, debate and substantiate ideas and opinions. As individuals and in groups, they make oral presentations to share and promote points of view, supporting these presentations with selected evidence. They select appropriate vocabulary to show shades of meaning, feeling and opinion, to express ideas clearly and to engage and elicit a response from the audience. In expressing or challenging a point of view, they draw appropriately on personal knowledge, textual analysis, and other relevant texts they have experienced. They effectively use a variety of clause and sentence structures, paragraphing and punctuation to sustain meaning and to support the structural coherence of the text.
adverb

A word class that may modify a verb (for example, ‘beautifully’ in ‘She sings beautifully’), an adjective (for example ‘really’ in ‘He is really interesting’) or another adverb (for example ‘very’ in ‘She walks very slowly’). In English many adverbs have an –ly ending.

adverbial

A word or group of words that contributes additional but non-essential information to the larger structure of a clause.

An adverbial can contribute circumstantial information to a clause (for example about place, ‘outside’ in ‘I spoke with him outside’; when or how, ‘quickly’ in ‘She responded quickly’). It can also contribute evaluative interpersonal meaning to a clause (for example ‘frankly’ in ‘Frankly, I don’t care’).

Adverbs, adverb groups, prepositional phrases, nouns and noun groups can function as an adverbial in a clause (for example ‘tentatively’ in ‘They opened the letter tentatively’, ‘...on the beach’ in ‘The dog was running on the beach’. An alternative term for ‘adverbial’ is adjunct.

euristic

Relates to a sense of beauty or an appreciation of artistic expression. The selection of texts that are recognised as having aesthetic or artistic value is an important focus of the literature strand.

alliteration

The recurrence of the same consonant sounds at the beginning of words in close succession, for example ripe, red raspberry.

apposition

When one noun group immediately follows another with the same reference, they are said to be in apposition, for example ‘our neighbour, Mr Grasso...’, ‘Canberra, the capital of Australia...’

appreciation

The act of discerning quality and value of literary texts.

audience

The intended group of readers, listeners or viewers that the writer, designer, filmmaker or speaker is addressing.

author

The composer or originator of a work (for example a novel, film, website, speech, essay, autobiography).

camera angle

The angle at which the camera is pointed at the subject. Vertical angle can be low, level or high. Horizontal angle can be oblique (side on) or frontal.
**clause**

A clause creates a message through the combination of a subject (the element being identified for comment) and its predicate (the comment about the subject which contains a verb), for example ‘I (subject) shall eat my dinner (predicate).’

There are different kinds of clauses. The clause that is essential to any sentence is an independent (or main) clause. Compound and complex sentences contain more than one clause.

A clause that provides additional information to the main clause but cannot stand alone is a dependent (or subordinate) clause. For example:

- ‘When the sun goes down (dependent), I shall eat my dinner (main).’
- ‘My time is limited (main) because I am reading Shakespeare (dependent).

An embedded clause occurs within the structure of another clause often as a qualifier to a noun group, for example:

- ‘The man who came to dinner (embedded) is my brother.’

**cohesion**

Grammatical or lexical relationships that bind different parts of a text together and give it unity. Cohesion is achieved through various devices such as connectives, ellipses and word associations (sometimes called lexical cohesion). These associations include synonyms, antonyms (words opposite in meaning, for example ‘study/laze about’, ‘ugly/beautiful’), repetition (‘work, work, work – that’s all we do!’), word sets (for example class-sub-class or part-whole sets), and collocation (using words that go with each other, for example ‘friend’ and ‘pal’ in, ‘My friend did me a big favour last week. She’s been a real pal.’)

**collocation**

Those words that commonly occur in close association with one another (for example ‘blonde’ goes with ‘hair’, butter is ‘rancid’ not ‘rotten’, ‘salt and pepper’ not ‘pepper and salt’)

**colon**

A punctuation convention used to separate a general statement from one or more statements that provide additional information, explanation or illustration. The statements that follow the colon do not have to be complete sentences

**complex sentence**

Contains an independent (or main) clause and one or more dependent (or subordinate) clauses. The dependent clause is joined to the independent clause through subordinating conjunctions like ‘when’, ‘while’, and ‘before’. A complex sentence will not make sense without an independent clause. In the following example, the dependent clause is underlined and the conjunction is in bold: ‘When the sun came out, we all went outside.’

**compound sentence**

A sentence consisting of two or more independent (main) clauses joined by co-ordinating conjunctions like ‘and’, ‘or’ ‘but’ and ‘so’. Each clause is coordinated or linked so as to give each one equal status as a message. In the following example, the co-ordinating conjunction is underlined and verbs are highlighted: ‘The sun emerged and we all went outside’.

**comprehension strategies**

Strategies and processes used by readers to make meaning from texts. Key comprehension strategies include:

- Activating and using prior knowledge
- Identifying literal information explicitly stated in the text
- Making inferences based on information in the text and their own prior knowledge
• predicting likely future events in a text
• visualising by creating mental images of elements in a text
• summarising and organising information from a text
• integrating ideas and information in texts
• critically reflecting on content, structure, language and images used to construct meaning in a text

concepts about print

concepts about how English print works. They include information about where to start reading and how the print travels from left to right across the page. Concepts about print are essential for beginning reading

conjunction

a word that joins other words, phrases or clauses together in logical relationships such as addition, time, cause or comparison. There are two major types of conjunctions for linking messages: coordinating conjunctions and subordinating conjunctions.

• coordinating conjunctions are words that link words, phrases and clauses in such a way that the elements have equal status in meaning. They include conjunctions like ‘and’, ‘or’, ‘but’:
  • ‘Mum and dad are here’ (joining words)
  • ‘We visited some of our friends but not all of them’ (joining noun groups)
  • ‘Did I fall asleep and miss my dinner?’ (joining clauses)

• subordinating conjunctions introduce certain kinds of dependent clauses;
  • ‘that’ simply marks declaratives, for example ‘I know that he is ill’
  • ‘whether’ (or ‘if’ in the sense in which it is equivalent to whether) marks interrogatives, ‘I wonder whether/if she’s right’
  • ‘while’, ‘after’, ‘when’, ‘because’, ‘if’ (in the conditional sense) serve to mark the kind of dependent clause it introduces: for example one of time, reason, condition, ‘We went home after/when the meeting ended’, ‘They stayed in because it was raining’, ‘I’ll do it if you pay me’

connective

words which link paragraphs and sentences in logical relationships of time, cause and effect, comparison or addition. Connectives relate ideas to one another and help to show the logic of the information. Connectives are important resources for creating cohesion in texts. The logical relationships can be grouped as follows:

• temporal – to indicate time or sequence ideas (for example ‘first’, ‘second’, ‘next’)
• causal – to show cause and effect (for example ‘because’, ‘for’, ‘so’)
• additive – to add information (for example ‘also’, ‘besides’, ‘furthermore’)
• comparative – for example ‘rather’, ‘alternatively’
• conditional/concessive – to make conditions or concession (for example ‘yet’, ‘although’)
• clarifying – for example ‘in fact’, ‘for example’

context

the environment in which a text is responded to or created. Context can include the general social, historical and cultural conditions in which a text is responded to and created (the context of culture) or the specific features of its immediate environment (context of situation). The term is also used to refer to the wording surrounding an unfamiliar word that a reader or listener uses to understand its meaning

convention

an accepted language practice that has developed over time and is generally used and understood, for example use of punctuation

coordinating conjunctions

words that link phrases and clauses in such a way that the elements have equal status in meaning. They include conjunctions like ‘and’, ‘or’, ‘either/neither’, ‘but’, ‘so’ and ‘then’
create

develop and/or produce spoken, written or multimodal texts in print or digital forms

creating

creating refers to the development and/or production of spoken, written or multimodal texts in print or digital forms

decode

the process of working out the meaning of words in a text. In decoding, readers draw on contextual, vocabulary, grammatical and phonic knowledge. Readers who decode effectively combine these forms of knowledge fluently and automatically, using meaning to recognise when they make an error, and self-correct

dependent clause

a clause that cannot make complete sense on its own. It needs to be combined with an independent clause to form a complete sentence. The dependent clause can be introduced by a finite verb like ‘goes’ in the following sentence: *When* the sun goes down, I shall eat my dinner.” But it can also be introduced by non-finite verbs, as in ‘going’ in the following sentence: “From 1966 to 2001 the total population decreased, going from 11,800 down to 11,077”

design

the way particular elements are selected and used in the process of text construction for particular purposes. These elements might be linguistic (words); visual (images); audio (sounds); gestural (body language); spatial (arrangement on the page, screen or 3D), and multimodal (a combination of more than one)

digital texts

audio, visual or multimodal texts produced through digital or electronic technology which may be interactive and include animations and/or hyperlinks. Examples of digital texts include DVDs, websites, e-literature

digraph

two letters that represent a single sound. Vowel digraphs are two vowels (‘oo’, ‘ea’). Consonant digraphs have two consonants (‘sh’, ‘th’). Vowel/consonant digraphs have one vowel and one consonant (‘er’, ‘ow’)

e-literature

the electronic publication of literature using the multimedia capabilities of digital technologies to create interactive and possibly non-linear texts, through combining written text, movement, visual, audio and spatial elements. It may include hypertext fiction, computer art installations, kinetic poetry and collaborative writing projects allowing readers to contribute to a work. E-literature also includes texts where print meanings are enhanced through digital images and/or sound and literature that is reconstituted from print texts (for example online versions of The Little Prince or Alice in Wonderland)

ellipsis

• the omission of words that repeat what has gone before; these terms are simply understood (for example ‘The project will be innovative. To be involved will be exciting.’ – “in the project” is ellipsed in the second sentence)
• through a related resource called substitution, a word like ‘one’ is substituted for a noun or noun group as in ‘There are lots of apples in the bowl. Can I have one?” (“of them”)
• a cohesive resource that binds text together and is commonly used in dialogue for speed of response and economy of effort, for example (do you) “Want a drink?” / “Thanks, I would.” (like a drink)
• the use of three dots. This form of punctuation (also known as points of ellipsis) can be used to indicate such things as surprise or suspense in a narrative text or that there is more to come in an on-screen menu

etymological knowledge

knowledge of the origins and development of the form and meanings of words and how the meanings and forms have changed over time

evaluative language

positive or negative language that judges the worth of something. It includes language to express feelings and opinions, to make judgments about aspects of people such as their behaviour, and to assess the quality of objects such as literary works. Evaluations can be made explicit (for example through the use of adjectives as in: ‘She’s a lovely girl’, ‘He’s an awful man’, or ‘How wonderful!’), however, they can be left implicit (for example ‘He dropped the ball when he was tackled’, or ‘Mary put her arm round the child while she wept.’)

figurative language

words or phrases used in a way that differs from the expected or everyday usage. They are used in a non-literal way for particular effect (eg simile, metaphor, personification)

framing

the way in which elements in a still or moving image are arranged to create a specific interpretation of the whole. Strong framing creates a sense of enclosure around elements while weak framing creates a sense of openness

genre

the categories into which texts are grouped. The term has a complex history within literary theory and is often used to distinguish texts on the basis of their subject matter (detective fiction, romance, science fiction, fantasy fiction), form and structure (poetry, novels, short stories)

grammar

the language we use and the description of language as a system. In describing language, attention is paid to both structure (form) and meaning (function) at the level of the word, the sentence and the text

graphophonic knowledge

the knowledge of how letters in printed English relate to the sounds of the language

handwriting

the production of legible, correctly formed letters by hand or with the assistance of writing tools, for example pencil grip or assistive technology

high frequency sight words

the most common words used in written English text. They are sometimes called ‘irregular words’ or ‘sight words’. Many common or ‘high-frequency’ words in English are not able to be decoded using sound–letter correspondence because they do not use regular or common letter patterns. These words need to be learnt by sight, for example ‘come’, ‘was’, ‘were’, ‘one’, ‘they’, ‘watch’, ‘many’

homophone
a word identical in pronunciation with another but different in meaning, for example ‘bear’ and ‘bear’, ‘air’ and ‘heir’

hybrid texts

composite texts resulting from a mixing of elements from different sources or genres (for example info-tainment). Email is an example of a hybrid text, combining the immediacy of talk and the expectation of a reply with the permanence of print

idiomatic expressions

a group of (more or less) fixed words having a meaning not deducible from the individual words. Idioms are typically informal expressions used by particular social groups and need to be explained as one unit (for example ‘I am over the moon’, ‘on thin ice’, ‘a fish out of water’, ‘fed up to the back teeth’)

independent clause

a clause that makes sense on its own whereas a dependent clause needs to be added to an independent clause for the sentence to make sense

intertextuality

the associations or connections between one text and other texts. Intertextual references can be more or less explicit and self-conscious. They can take the form of direct quotation, parody, allusion or structural borrowing

juxtaposition

the placement of two or more ideas, characters, actions, settings, phrases, or words side-by-side for a particular purpose for example to highlight contrast or for rhetorical effect

language features

the features of language that support meaning, eg sentence structure, vocabulary, illustrations, diagrams, graphics, punctuation, figurative language. Choices in language features and text structures together define a type of text and shape its meaning. These choices vary according to the purpose of a text, its subject matter, audience and mode or medium of production

language patterns

the arrangement of identifiable repeated or corresponding elements in a text. These include patterns of repetition or similarity (for example the repeated use of verbs at the beginning of each step in a recipe, or the repetition of a chorus after each verse in a song). The patterns may alternate (for example the call and response pattern of some games, or the to and fro of a dialogue). Other patterns may contrast (for example opposing viewpoints in a discussion, or contrasting patterns of imagery in a poem). The language patterns of a text contribute to the distinctive nature of its overall organisation and shape its meaning

layout

the spatial arrangement of print and graphics on a page or screen including size of font, positioning of illustrations, inclusion of captions, labels, headings, bullet points, borders and text boxes

lexical cohesion

the use of word associations to create links in texts. Links can be made through the use of repetition of words, synonyms, antonyms and words that are related such as by class and subclass
listen
the use of the sense of hearing as well as a range of active behaviours to comprehend information received through gesture, body language and other sensory systems

media texts
spoken, print, graphic or electronic communications with a public audience. They often involve numerous people in their construction and are usually shaped by the technology used in their production. The media texts studied in English can be found in newspapers, magazines and on television, film, radio, computer software and the internet

medium
the resources used in the production of texts including the tools and materials used (for example digital text and the computer, writing and the pen or the typewriter)

metalanguage
a language used to discuss language conventions and use

metonymy
the use of the name of one thing or attribute of something to represent something larger or related (for example using the word ‘crown’ to represent a monarch of a country; referring to a place for an event as in ‘Chernobyl’ when referring to changed attitudes to nuclear power, or a time for an event as in ‘9/11’ when referring to changed global relations)

modal verb
a verb that expresses a degree of probability attached by a speaker to a statement (for example ‘I might come home’) or a degree of obligation (for example ‘You must give it to me’, ‘You are not permitted to smoke in here’).

modality
aspects of language that suggest a particular angle on events, a speaker or writer’s assessment of possibility, probability, obligation and conditionality. It is expressed linguistically in choices for modal verbs (for example can, may, must, should), modal adverbs (for example possibly, probably, certainly) and modal nouns (possibility, probability, certainty)

mode
the various processes of communication – listening, speaking, reading/viewing and writing/creating. Modes are also used to refer to the semiotic (meaning making) resources associated with these communicative processes, such as sound, print, image and gesture

morpheme
the smallest meaningful or grammatical unit in language. Morphemes are not necessarily the same as words. The word ‘cat’ has one morpheme, while the word ‘cats’ has two morphemes: ‘cat’ for the animal and ‘s’ to indicate that there is more than one. Similarly ‘like’ has one morpheme, while ‘dislike’ has two: ‘like’ to describe appreciation and ‘dis’ to indicate the opposite. Morphemes are very useful in helping students work out how to read and spell words

morphemic knowledge
knowledge of morphemes, morphemic processes and the different forms and combinations of morphemes (for example the word ‘unfriendly’ is formed from the stem ‘friend’, the adjective-forming suffix ‘ly’ and the negative prefix ‘un’)

multimodal text

combination of two or more communication modes, for example print, image and spoken text as in film or computer presentations

narrative

a story of events or experiences, real or imagined. In literary theory, narrative includes the story (what is narrated) and the discourse (how it is narrated)

narrative point-of-view

the ways a narrator may be related to the story. For example, the narrator might take the role of first or third person, omniscient or restricted in knowledge of events, reliable or unreliable in interpretation of what happens

neologism

the creation of a new word or expression

nominalisation

a process for forming nouns from verbs (for example ‘reaction’ from ‘react’ or ‘departure’ from ‘depart’) or adjectives (for example ‘length’ from ‘long’, ‘eagerness’ from ‘eager’)

a process for forming noun phrases from clauses (for example ‘their destruction of the city’ from ‘they destroyed the city’)

Nominalisation is a way of making a text more compact and is often a feature of texts that contain abstract ideas and concepts

noun

a word class used to represent places, people, ideas and things. Nouns can be made plural (for example dog/dogs) and can be marked for possession (for example dog/dog’s). There are different types of nouns including:

- abstract noun refers to an idea, state or quality (for example ‘democracy’, ‘freedom’, ‘courage’, ‘doubt’, ‘success’ and ‘love’)
- concrete noun refers to something that has a physical reality. It may be seen, touched, tasted
- pronoun refers to words like ‘I’, ‘you’, ‘them’, ‘hers’ that are used in place of a noun

noun groups

a group of words building on a noun. Noun groups usually consist of an article (‘the’, ‘a’, ‘an’) plus one or more adjectives. They can also include demonstratives (for example ‘this’, ‘those’), possessives (for example ‘my’, ‘Ann’s’), quantifiers (for example ‘two’, ‘several’), or classifiers (for example ‘wooden’) before the head noun. These are called pre-modifiers after the noun, phrases and clauses act as post-modifiers following the head noun (for example ‘the girl with the red shirt who was playing soccer’)

onset and rime

the separate sounds in a syllable or in a one-syllable word. In ‘cat’ the onset is /c/ and the rime is /at/, in shop the onset is /sh/ and the rime is /op/. Word families can be constructed using common onsets such as /t/ in top, town, tar, tap, or common rimes such as /at/ in cat, pat, sat, rat. These are very useful for teaching spelling
personification
the description of an inanimate object as though it were a person or living thing

phoneme
the smallest unit of sound in a word. The word ‘is’ has two phonemes /i/ and /s/. The word ‘ship’ has three phonemes /ʃ/, /i/, /p/

phonic
the term used to refer to the ability to identify the relationships between letters and sounds when reading and spelling

phonological awareness
a broad concept that relates to the sounds of spoken language. It includes understandings about words, rhyme, syllables and onset and rime. NOTE: the term ‘sound’ relates to the sound we make when we say a letter or word, not to the letter in print. A letter may have more than one sound, such as the letter ‘a’ in ‘was’, ‘can’ or ‘father’, and a sound can be represented by more than one letter such as the sound /k/ in ‘cat’ and ‘walk’. The word ‘ship’ had three sounds /ʃ/, /i/, /p/, but has four letters ‘s’, ‘h’, ‘i’, ‘p’. Teachers should use the terms ‘sound’ and ‘letter’ accurately to help students clearly distinguish between the two items

phonological knowledge
information about the sounds of language and letter-sound relationships (when comprehending a text), for example single sounds, blends

phrase
a unit intermediate between clause and word consisting of a head word alone or accompanied by one or more dependents. The class of a phrase is determined by the head: a phrase with a noun as head is a noun phrase (e.g. men or the men who died), one with a verb as head is a verb phrase (e.g. went or had gone), and so on.

poetic devices
particular patterns and techniques of language used in poems to create particular effects

point of view

• refers to the viewpoint of an author, audience or characters in a text
• narrative point of view refers to the ways a narrator may be related to the story. The narrator, for example, might take the role of first or third person, omniscient or restricted in knowledge of events, reliable or unreliable in interpretation of what happens

predictable text
texts that are easily navigated and read by beginning readers because they contain highly regular features such as familiar subject matter, a high degree of repetition, consistent placement of text and illustrations, simple sentences, familiar vocabulary and a small number of sight words

prediction
an informed presumption about something that might happen. Predicting at the text level can include working out what a text might contain by looking at the cover, or working out what might happen next in a narrative. Predicting at the sentence level is identifying what word is likely to come next in a sentence
prefix
A prefix is a meaningful element added to the beginning of a word to change its meaning.

prepositional phrases

pun
Humorous use of a word to bring out more than one meaning; a play on words.

read
To process words, symbols or actions to derive and/or construct meaning. Reading includes interpreting, critically analysing and reflecting upon the meaning of a wide range of written and visual, print and non-print texts.

return sweep
The way English print travels from left to right and then returns to the left of the page for the next and each subsequent line.

rhetorical question
A question that is asked to provoke thought rather than require an answer.

rime and onset
The separate sounds in a syllable or in a one-syllable word. In ‘cat’ the onset is /c/ and the rime is /at/, in shop the onset is /sh/ and the rime is /op/. Word families can be constructed using common onsets such as /t/ in top, town, tar, tap, or common rimes such as /at/ in cat, pat, sat, rat. These are very useful for teaching spelling.

salience
A strategy of emphasis, highlighting what is important in a text. In images, salience is created through strategies like placement of an item in the foreground, size and contrast in tone or colour. In writing, salience can occur through placing what is important at the beginning or at the end of a sentence or paragraph or through devices such as underlining or italics.

scanning
When reading, moving the eyes quickly down the page seeking specific words and phrases. Scanning is also used when a reader first finds a resource to determine whether it will answer their questions.

semantic knowledge/information
Information related to meanings used when reading. Semantic information includes a reader’s own prior knowledge and the meanings embedded in a text. Readers use semantic information to assist in decoding and to derive meanings from a text.

semicolon
join clauses that could stand alone as sentences. In this way clauses that have a close relationship with one another may be linked together in a single sentence.

**sentence**

A unit of written language consisting of one or more clauses that are grammatically linked. A written sentence begins with a capital letter and ends with a full stop, question mark or exclamation mark. There are different types of sentences:

- **simple sentence** – has the form of a single independent clause (for example ‘Mary is beautiful.’ ‘The ground shook.’ ‘Take a seat.’)
- **compound sentence** – contains two or more clauses that are coordinated or linked in such a way as to give each clause equal status. In the following example ‘and’ is the coordinating conjunction: ‘We went to the movies and bought an ice cream.’
- **complex sentence** – contains an independent (or main) clause and one or more dependent (or subordinate) clauses. The dependent clause is joined to the independent clause through subordinating conjunctions like ‘when’, ‘while’ and ‘before’ as in the following examples: ‘We all went outside when the sun came out,’ and ‘Because I am reading Shakespeare, my time is limited.’

**simple sentence**

contains one clause and expresses a complete thought. It has a subject and a verb and may also have an object or complement.

**sound effect**

any sound, other than speech or music, used to create an effect in a text.

**sound/letter correspondence**

the relationship of spoken sounds of English to letters of the alphabet or to letter clusters.

**speak**

convey meaning and communicate with purpose. Some students participate in speaking activities using communication systems and assistive technologies to communicate wants, and needs, and to comment about the world.

**spoonerism**

a slip of the tongue where the initial sounds of a pair of words are transposed.

**Standard Australian English**

the variety of spoken and written English language in Australia used in more formal settings such as for official or public purposes, and recorded in dictionaries, style guides and grammars. While it is always dynamic and evolving, it is recognised as the ‘common language’ of Australians.

**stereotype**

when a person or thing is judged to be the same as all others of its type. Stereotypes are usually formulaic and oversimplified.

**stylistic features**

the ways aspects of texts (such as words, sentences, images) are arranged and how they affect meaning. Style can distinguish the work of individual authors (for example Jennings’ stories, Lawson’s poems) as well as the work of a particular period (for example Elizabethan drama, nineteenth century novels). Examples of stylistic features are narrative viewpoint, structure of stanzas, juxtaposition.
subject

an element in the structure of a clause usually filled by a noun group, for example ‘the dog (subject) was barking’. The normal position of the subject is before the verb group, but in most kinds of interrogative it follows the first auxiliary verb, for example ‘Was the dog barking?’, ‘Why was the dog barking?’

In independent clauses the subject is an obligatory element except in imperative clauses and casual style, for example ‘There will be no milk left’.

Most personal pronouns have a different form when the subject of a finite clause (I, he, she, etc.) than when the object (me, him, her), for example ‘She won the race’, not ‘Her won the race’. In the present tense, and the past tense with the verb ‘be’, the verb agrees with the subject in person and number, for example ‘Her son lives with her’ and ‘Her sons live with her’.

or
- subject matter refers to the topic or theme under consideration

subordinating conjunction

links a dependent clause to an independent (main) clause in a sentence. Examples include conjunctions like ‘when’ in the sentence: ‘When I went to Sydney, I met my aunt’; ‘while’ in ‘While waiting for my dinner, I fell asleep and ‘although’ in ‘Although I left my coat behind in the car, I continued on my way.’

suffix

a meaningful element added to the end of a word to change its meaning

syllabification

the process of dividing words into syllables

syllable

a unit of sound within a word

syntax

the ways words, phrases and clauses are structured in sentences. In some schools of linguistics, syntax and grammar are used interchangeably

tense

a verb form that locates the event described by the verb in time (for example ‘Sarah laughs’ is present tense, ‘Sarah laughed’ is past tense)

text

the means for communication. Their forms and conventions have developed to help us communicate effectively with a variety of audiences for a range of purposes. Texts can be written, spoken or multimodal and in print or digital/online forms. Multimodal texts combine language with other systems for communication, such as print text, visual images, soundtrack and spoken word as in film or computer presentation media

text navigation
the way readers move through text. Readers generally read novels in a linear fashion from the beginning to the end; readers of non-fiction books often use the contents page and index and move between chapters according to the information sought. Readers often read digital texts more flexibly, according to interest and purpose, using hyperlinks to move between pages and digital objects, such as videos or animations, making quick judgments about relevance of material.

**text processing strategies**

Strategies readers use to decode a text. These involve drawing on contextual, semantic, grammatical and phonetic knowledge in systematic ways to work out what a text says. They include predicting, recognising words and working out unknown words, monitoring the reading, identifying and correcting errors, reading on and re-reading.

**text structure**

The ways information is organised in different types of texts for example, chapter headings, sub headings, table of contents, indexes and glossaries, overviews, introductory and concluding paragraphs, sequencing, topic sentences, taxonomies, cause and effect. Choices in text structures and language features together define a text type and shape its meaning. See language features.

**theme**

- refers to the main idea or message of a text, or
- grammatical theme indicates importance both within a clause and across a text. In a clause the theme comes in first position and indicates what the sentence is about. Theme is important at different levels of text organisation. The topic sentence serves as the theme for the points raised in a paragraph. A pattern of themes contributes to the method of development for the text as a whole.

**types of texts**

Classifications according to the particular purposes they are designed to achieve. These purposes influence the characteristic features the texts employ. In general, in the Australian Curriculum: English, texts can be classified as belonging to one of three types: imaginative, informative or persuasive, although it is acknowledged that these distinctions are neither static nor watertight and particular texts can belong to more than one category.

Imaginative texts – texts whose primary purpose is to entertain through their imaginative use of literary elements. They are recognised for their form, style and artistic or aesthetic value. These texts include novels, traditional tales, poetry, stories, plays, fiction for young adults and children including picture books and multimodal texts such as film.

Informative texts – texts whose primary purpose is to provide information. They include texts which are culturally important in society and are valued for their informative content, as a store of knowledge and for their value as part of everyday life. These texts include explanations and descriptions of natural phenomena, recounts of events, instructions and directions, rules and laws and news bulletins.

Persuasive texts – whose primary purpose is to put forward a point of view and persuade a reader, viewer or listener. They form a significant part of modern communication in both print and digital environments. They include advertising, debates, arguments, discussions, polemics and influential essays and articles.

**verb**

tell us what kind of situation is described in a clause – in particular, whether it is a happening or a state – but they often need other elements to locate the situation in time, to indicate polarity (positive or negative), aspect (whether the situation is completed or not) or modality (the assessment of the speaker about the situation).

- doing - for example ‘She climbed the ladder’
- being - for example ‘The koala is an Australian mammal’
- having - for example ‘the house has several rooms’
- thinking - for example ‘She believes in her work’
- saying - for example ‘The prime minister spoke to the media’
Verbs are essential to clause structure and change their form according to tense (present tense or past tense), to person (first, second or third) and number (singular and plural).

**verb groups**

Groups of words that are centred on a verb and consist of one or more verbs. The main verb in a verb group often needs auxiliary (or helping) verbs to indicate features like time (past or present), polarity (positive or negative), aspect (whether the action is completed or not) and modality (the assessment of the speaker about the action). All the following verbs contribute to the meaning of the verb group as a whole: ‘the girl played soccer’, ‘the girl was playing/had been playing soccer’, ‘the girl was not playing soccer’, ‘the girl could have been playing soccer’.

**view**

Observe with purpose, understanding and critical awareness. Some students use oral, written or multimodal forms to respond to a range of text types. Other students participate in viewing activities by listening to an adult or peer describing the visual features of text, diagrams, pictures and multimedia.

**visual features**

Visual components of a text such as placement, salience, framing, representation of action or reaction, shot size, social distance and camera angle.

**visual language choices**

Choices that contribute to the meaning of an image or the visual components of a multimodal text and are selected from a range of visual features like placement, salience, framing, representation of action or reaction, shot size, social distance and camera angle.

**voice**

In English grammar voice is used to describe the contrast between such pairs of clauses as ‘The dog bit me’ (active voice) and ‘I was bitten by the dog’ (passive voice). Active and passive clauses differ in the way participant roles are associated with grammatical functions.

In clauses expressing actions, like the above examples, the subject of the active (the dog) has the role of actor, and the object (me) the role of patient, whereas in the passive the subject (I) has the role of patient and the object of the preposition by (the dog) the role of actor.

In clauses that describe situations other than actions, such as ‘Everyone admired the minister’ and ‘The minister was admired by everyone’, the same grammatical difference is found, so that the object of the active (the minister) corresponds to the subject of the passive, and the subject of the active (everyone) corresponds to the object of the preposition ‘by’.

And in the literary sense, it can be used to refer to the nature of the voice projected in a text by an author (for example ‘authorial voice’ in a literary text or ‘expert voice’ in an exposition).

**write**

Plan, compose, edit and publish texts in print or digital forms. Writing usually involves activities using pencils, pens, word processors; and/or using drawings, models, photos to represent text; and/or using a scribe to record responses or produce recorded responses.
<table>
<thead>
<tr>
<th>Sub Strand</th>
<th>Focus of thread within the sub-strand</th>
<th>Foundation Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Language variation and change</strong></td>
<td>How English varies according to context and purpose including cultural and historical contexts</td>
<td>Understand that English is one of many languages spoken in Australia and that different languages may be spoken by family, classmates and community</td>
<td>Understand that people use different systems of communication to cater to different needs and purposes and that many people may use sign systems to communicate with others</td>
<td>Understand that spoken, visual and written forms of language are different modes of communication with different features and their use varies according to the audience, purpose, context and cultural background</td>
<td>Understand that languages have different visual and written communication systems, different oral traditions and different ways of constructing meaning</td>
<td>Understand that Standard Australian English is one of many social dialects used in Australia, and that while it originated in England it has been influenced by many other languages</td>
<td>Understand that the pronunciation, spelling and meanings of words have histories and change over time</td>
<td>Understand that different social and geographical dialects or accents are used in Australia in addition to Standard Australian English</td>
</tr>
<tr>
<td><strong>Language for interaction</strong></td>
<td>How language used for different formal and informal social interactions is influenced by the purpose and audience</td>
<td>Explore how language is used differently at home and school depending on the relationships between people</td>
<td>Understand that language is used in combination with other means of communication, for example facial expressions and gestures to interact with others</td>
<td>Understand that there are different ways of asking for information, making offers and giving commands</td>
<td>Understand that language varies when people take on different roles in social and classroom interactions and how the use of key interpersonal language resources varies depending on context</td>
<td>Understand that successful cooperation with others depends on shared use of social conventions, including turn-taking patterns, and forms of address that vary according to the degree of formality in social situations</td>
<td>Understand that social interactions influence the way people engage with ideas and respond to others for example when exploring and clarifying the ideas of others, summarising students’ own views and reporting them to a larger group</td>
<td>Understand that strategies for interaction become more complex and demanding as levels of formality and social distance increase</td>
</tr>
<tr>
<td><strong>Evaluative language</strong></td>
<td>How language is used to express opinions, and make evaluative judgments about people, places, things and texts</td>
<td>Understand that language can be used to explore ways of expressing needs, likes and dislikes</td>
<td>Explore different ways of expressing emotions, including verbal, visual, body language and facial expressions</td>
<td>Identify language that can be used for appreciating texts and the qualities of people and things</td>
<td>Examine how evaluative language can be varied to be more or less forceful</td>
<td>Understand differences between the language of opinion and feeling and the language of factual reporting or recording</td>
<td>Understand how to move beyond making bare assertions and take account of differing perspectives and points of view</td>
<td>Understand the uses of objective and subjective language and bias</td>
</tr>
<tr>
<td><strong>Purpose audience and structures of different types of texts</strong></td>
<td>How texts serve different purposes and how the structures of types of texts vary according to the text purpose</td>
<td>Understand that texts can take many forms, can be very short (for example an exit sign) or quite long (for example an information book or a film) and that stories and informative texts have different purposes</td>
<td>Understand that the purposes texts serve shape their structure in predictable ways</td>
<td>Understand that different types of texts have identifiable text structures and language features that help the text serve its purpose</td>
<td>Understand how different types of texts vary in use of language choices, depending on their function and purpose, for example tense, mood, and types of sentences</td>
<td>Understand how texts vary in complexity and technically depending on the approach to the topic, the purpose and the intended audience</td>
<td>Understand how texts vary in purpose, structure and topic as well as the degree of formality</td>
<td>Understand how authors often innovate on text structures and play with language features to achieve aesthetic, humorous and persuasive purposes and effects</td>
</tr>
<tr>
<td><strong>Text cohesion</strong></td>
<td>How texts work as cohesive wholes through language features which link the parts of the text together, such as paragraphs, connectives, nouns and associated pronouns</td>
<td>Understand that some words in written texts is unlike everyday spoken language</td>
<td>Understand patterns of repetition and contrast in simple texts</td>
<td>Understand how texts are made cohesive through resources, for example word associations, synonyms, and antonyms</td>
<td>Understand how paragraphs are a key organisational feature of written texts</td>
<td>Understand how texts are made cohesive through the use of linking devices including pronoun reference and text connectives</td>
<td>Understand that the starting point of a sentence gives prominence to the message in that part and allows for prediction of how the text will unfold</td>
<td>Understand that cohesive links can be made in texts by omitting or replacing words</td>
</tr>
<tr>
<td><strong>Punctuation</strong></td>
<td>How punctuation works to perform different functions in a text.</td>
<td>Understand that punctuation is a feature of written text different from letters; recognise how capital letters are used for names, and that capital letters and full stops signal the beginning and end of sentences</td>
<td>Recognise that different types of punctuation, including full stops, question marks and exclamation marks, signal sentences that make statements, ask questions, express emotion or give commands</td>
<td>Recognise that capital letters signal proper nouns and commas are used to separate items in lists</td>
<td>Know that word contractions are a feature of informal language and that apostrophes of contraction are used to signal missing letters</td>
<td>Recognise how quotation marks are used in texts to signal dialogue, titles and reported speech</td>
<td>Understand how possession is signalled through apostrophes and how to use apostrophes of possession for common and proper nouns</td>
<td>Understand the uses of commas to separate clauses</td>
</tr>
<tr>
<td><strong>Concepts of print and screen</strong></td>
<td>The different conventions that apply to how text is presented on a page or screen</td>
<td>Understand concepts about print and screen, including how books, film and simple digital texts work, and know some features of print, for example directionality</td>
<td>Understand concepts about print and screen, including how different types of texts are organised using page numbering, tables of content, headings and titles, navigation buttons, bars and links</td>
<td>Know some features of text organisation including page and screen layouts, alphabetical order, and different types of diagrams, for example timelines</td>
<td>Identify the features of online texts that enhance navigation</td>
<td>Identify features of online texts that enhance readability including text, navigation, links, graphics and layout</td>
<td>Investigate how the organisation of texts into chapters, headings, subheadings, home pages and sub pages for online texts and according to chronology or topic can be used to predict content and assist navigation</td>
<td>This sequence ends at Year 5 level</td>
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</table>

**Language English Scope and Sequence: Foundation to Year 6**

**The Australian Curriculum**

**March 2011**
<table>
<thead>
<tr>
<th>Sub Strand</th>
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<th>Year 9</th>
<th>Year 10</th>
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</thead>
<tbody>
<tr>
<td>Language Variation and Change</td>
<td>How English varies according to context and purpose including cultural and historical contexts</td>
<td>Understand that different social and geographical dialects or accents are used in Australia in addition to Standard Australian English</td>
<td>Understand the way language evolves to reflect a changing world, particularly in response to the use of new technology for presenting texts and communicating</td>
<td>Understand the influence and impact that the English language has had on other languages or dialects and how English has been influenced in return</td>
<td>Understand that Standard Australian English is a living language within which the creation and loss of words and the evolution of usage is ongoing</td>
<td>Understand that Standard Australian English in its spoken and written forms has a history of evolution and change and continues to evolve</td>
</tr>
<tr>
<td>Language for social interactions</td>
<td>How language used for different formal and informal social interactions is influenced by the purpose and audience</td>
<td>Understand that strategies for interaction become more complex and demanding as levels of formality and social distance increase</td>
<td>Understand how accents, styles of speech and idioms express and create personal and social identities</td>
<td>Understand how conventions of speech adopted by communities influence the identities of people in those communities</td>
<td>Understand that roles and relationships are developed and challenged through language and interpersonal skills</td>
<td>Understand how language use can have inclusive and exclusive social effects, and can empower or disempower people</td>
</tr>
<tr>
<td>Language for social interactions</td>
<td>How language used for different formal and informal social interactions is influenced by the purpose and audience</td>
<td>Understand the uses of objective and subjective language and bias</td>
<td>Understand how language is used to evaluate texts and how evaluations about a text can be substantiated by reference to the text and other sources</td>
<td>Understand how rhetorical devices are used to persuade and how different layers of meaning are developed through the use of metaphor, irony and parody</td>
<td>Investigate how evaluation can be expressed directly and indirectly using devices, for example allusion, evocative vocabulary and metaphor</td>
<td>Understand that people’s evaluations of texts are influenced by their value systems, the context and the purpose and mode of communication</td>
</tr>
<tr>
<td>Purpose audience and structures of different types of texts</td>
<td>How texts serve different purposes and how the structures of types of texts vary according to the text purpose</td>
<td>Understand how authors often innovate on text structures and play with language features to achieve particular aesthetic, humorous and persuasive purposes and effects</td>
<td>Understand and explain how the text structures and language features of texts become more complex in informative and persuasive texts and identify underlying structures such as taxonomies, cause and effect, and extended metaphors</td>
<td>Analyse how the text structures and language features of persuasive texts, including media texts, vary according to the medium and mode of communication</td>
<td>Understand that authors innovate with text structures and language for specific purposes and effects</td>
<td>Compare the purposes, text structures and language features of traditional and contemporary texts in different media</td>
</tr>
<tr>
<td>Text cohesion</td>
<td>How texts work as cohesive wholes through language features which link the parts of the text together, such as paragraphs, connectives, nouns and associated pronouns</td>
<td>Understand that cohesive links can be made in texts by omitting or replacing words</td>
<td>Understand that the coherence of more complex texts relies on devices that signal text structure and guide readers, for example overviews, initial and concluding paragraphs and topic sentences, indexes or site maps or breadcrumb trails for online texts</td>
<td>Understand how cohesion in texts is improved by strengthening the internal structure of paragraphs through the use of examples, quotations and substantiation of claims</td>
<td>Compare and contrast the use of cohesive devices in texts, focusing on how they serve to signpost ideas, to make connections and to build semantic associations between ideas</td>
<td>Understand how paragraphs and images can be arranged for different purposes, audiences, perspectives and stylistic effects</td>
</tr>
<tr>
<td>Punctuation</td>
<td>How punctuation works to perform different functions in a text.</td>
<td>Understand the uses of commas to separate clauses</td>
<td>Understand the use of punctuation to support meaning in complex sentences with phrases and embedded clauses</td>
<td>Understand the use of punctuation conventions including colons, semicolons, dashes and brackets in formal and informal texts</td>
<td>Understand how punctuation is used along with layout and font variations in constructing texts for different audiences and purposes</td>
<td>Understand conventions for citing others, and how to reference these in different ways</td>
</tr>
<tr>
<td>Concepts of print and screen</td>
<td>The different conventions that apply to how text is presented on a page or screen</td>
<td>This sequence ends at Year 5 level</td>
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</table>
## Expressing and developing ideas

<table>
<thead>
<tr>
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<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sentences and clause level grammar</strong></td>
<td>Recognise that sentences are key units for expressing ideas</td>
<td>Identify the parts of a simple sentence that represent “What’s happening”? “Who or what is doing or receiving the action?” and the circumstances surrounding the action</td>
<td>Understand that simple connections can be made between ideas by using a compound sentence with two or more clauses and coordinating conjunctions</td>
<td>Understand that a clause is a unit of meaning usually containing a subject and a verb and that these need to be in agreement</td>
<td>Understand that the meaning of sentences can be enriched through the use of expanded noun and verb groups and phrases</td>
<td>Investigate how clauses can be combined in a variety of ways to elaborate, extend or explain ideas</td>
<td></td>
</tr>
<tr>
<td><strong>Word level grammar</strong></td>
<td>The different classes of words used in English (nouns, verbs etc) and the functions they perform in sentences and when they are combined in particular recognisable groups such as phrases and noun groups.</td>
<td>Recognise that texts are made up of words and groups of words that make meaning</td>
<td>Explore differences in words that represent people, places and things (nouns and pronouns), actions (verbs), qualities (adjectives) and details like when, where and how (adverbs)</td>
<td>Understand that nouns represent people, places, things and ideas and can be, for example, common, proper, concrete and abstract, and that noun groups can be expanded using articles and adjectives</td>
<td>Understand that verbs represent different processes (doing, thinking, saying, and relating) and that these processes are anchored in time through tense</td>
<td>Understand how adverbials (adverbs and prepositional phrases) work in different ways to provide circumstantial details about an activity</td>
<td></td>
</tr>
<tr>
<td><strong>Visual language</strong></td>
<td>How images work in texts to communicate meaning, especially in conjunction with other elements such as print and sound</td>
<td>Explore the different contribution of words and images to meaning in stories and informative texts</td>
<td>Compare different kinds of images in narrative and informative texts and discuss how they contribute to meaning</td>
<td>Identify visual representations of characters’ actions, reactions, speech and thought processes in narratives, and consider how these images add to or contradict or multiply the meaning of accompanying words</td>
<td>Identify the effect on audiences of techniques, for example shot size, vertical camera angle and layout in picture books, advertisements and film segments</td>
<td>Explore the effect of choices when framing an image, placement of elements in the image, and salience on composition of still and moving images in a range of types of texts</td>
<td></td>
</tr>
<tr>
<td><strong>Vocabulary</strong></td>
<td>The meanings of words including everyday and specialist meanings and how words take their meanings from the context of the text</td>
<td>Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics being taught at school</td>
<td>Understand the use of vocabulary in everyday contexts as well as a growing number of school contexts, including appropriate use of formal and informal terms of address in different contexts and purposes</td>
<td>Understand the use of vocabulary about familiar and new topics and experiment with and begin to make conscious choices of vocabulary to suit audience and purpose</td>
<td>Incorporate new vocabulary from a range of sources into students’ own texts including vocabulary encountered in research</td>
<td>Explain sequences of images in print texts and compare these to the ways hyperlinked digital texts are organised, explaining their effect on viewers’ interpretations</td>
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</tr>
<tr>
<td><strong>Spelling</strong></td>
<td>Knowledge for spelling including knowledge about how the sounds of words are represented by various letters and knowledge of irregular spellings and spelling rules.</td>
<td>Know that spoken sounds and words can be written down using letters of the alphabet and how to write some high-frequency sight words and known words</td>
<td>Know that regular one-syllable words are made up of letters and known letter clusters that correspond to the sounds heard, and how to use visual memory to write high-frequency words</td>
<td>Know how to use onset and rime to spell words</td>
<td>Understand how to use digraphs, long vowels, blends and silent letters to spell words, and use morphemes and syllabification to break up simple words and use visual memory to write irregular words</td>
<td>Investigate how vocabulary choices, including evaluative language, can express shades of meaning, feeling and opinion</td>
<td></td>
</tr>
<tr>
<td><strong>Phonemic awareness (sounds of language)</strong></td>
<td>Basic knowledge of sounds of language and how these are combined in spoken words.</td>
<td>Recognise rhymes, syllables and sounds (phonemes) in spoken words</td>
<td>Manipulate sounds in spoken words including phoneme deletion and substitution</td>
<td>Recognise most sound-letter matches including silent letters, vowel/consonant digraphs and many less common sound-letter combinations</td>
<td>This sequence ends at Year 2 level</td>
<td>Understand how to use sound-letter relationships and knowledge of spelling rules, compound words, prefixes, suffixes, morphemes and less common letter combinations, for example “ton”</td>
<td>Understand how to use vocabulary to express greater precision of meaning, and know that words can have different meanings in different contexts</td>
</tr>
<tr>
<td><strong>Alphabet knowledge</strong></td>
<td>The written code of English and how these are combined in words</td>
<td>Recognise the letters of the alphabet and know there are lower and upper case letters</td>
<td>Recognise sound-letter matches including common vowel and consonant digraphs and consonant blends</td>
<td>Understand the variability of sound-letter matches</td>
<td>This sequence ends at Year 1 level</td>
<td>Recognise uncommon plurals, for example “oct”</td>
<td>Understand how to use banks of known words, word origins, base words, suffixes and prefixes, morphemes, spelling patterns and generalisations to learn and spell new words, for example technical words and words adopted from other languages</td>
</tr>
</tbody>
</table>

**Note:**
- **First**: Version 1.2
- **Last Updated**: 8th March 2011
### English Scope and Sequence: Year 6 to Year 10

<table>
<thead>
<tr>
<th>Sub Strand</th>
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<tbody>
<tr>
<td><strong>Expressing and developing ideas</strong></td>
<td></td>
</tr>
<tr>
<td>Sentences and clause level grammar</td>
<td>Investigate how clauses can be combined in a variety of ways to elaborate, extend or explain ideas</td>
</tr>
<tr>
<td>Word level grammar</td>
<td>Understand how ideas can be expanded and sharpened through careful choice of verbs and elaborated</td>
</tr>
<tr>
<td>Visual language</td>
<td>Identify and explain how analytical images like figures, tables, diagrams, maps and graphs contribute</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Investigate vocabulary typical of extended and more academic texts and the role of abstract nouns,</td>
</tr>
<tr>
<td>Spelling</td>
<td>Understand how to use banks of known words, word origins, base words, suffixes and prefixes,</td>
</tr>
<tr>
<td>Sound and letter knowledge</td>
<td>This sequence ends at Year 2 level</td>
</tr>
<tr>
<td>Phonemic awareness (sounds of language)</td>
<td>This sequence ends at Year 1 level</td>
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</thead>
<tbody>
<tr>
<td>Investigate how clauses can be combined in a variety of ways to</td>
<td>Recognise and understand that embedded clause structures and contribute additional information to</td>
<td>Analyse and examine how effective authors control and use a variety of</td>
<td>Explain how authors experiment with the structures of sentences and</td>
<td>Analyse and evaluate the effectiveness of a wide range of clause and</td>
</tr>
<tr>
<td>elaborate, extend or explain ideas</td>
<td>a sentence</td>
<td>clause structures, including embedded clauses</td>
<td>clauses to create particular effects</td>
<td>sentence structures as authors design and craft texts</td>
</tr>
<tr>
<td>Understand how modality is achieved through discriminating choices in</td>
<td>Understand the effect of nominalisation in the writing of informative and persuasive texts</td>
<td>Understand how certain abstract nouns can be used to summarise</td>
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<tr>
<td>modal verbs, adverbs, adjectives and nouns</td>
<td>Investigate how visual and multimodal texts allude to or draw on other texts or images to enhance and</td>
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<tr>
<td>Analyse how point of view is generated in visual texts by means of</td>
<td>layer meaning</td>
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<td>choices, for example gaze, angle and social distance</td>
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<tr>
<td>Investigate vocabulary choices contribute to the specificity,</td>
<td>Identify how vocabulary choices contribute to specificity, abstraction and style of texts</td>
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<tr>
<td>Understand how to apply learned knowledge consistently in order to</td>
<td>Relfine vocabulary choices to discriminate between shades of meaning, with deliberate attention to the</td>
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<td>spell new words accurately and to learn new words including</td>
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<tr>
<td>nominalisations</td>
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<td>Understand how spelling is used creatively in texts for particular</td>
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<td>effects, for example characterisation and humour, and to represent</td>
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<tr>
<td>suffixes and prefixes, morphemes, spelling patterns and generalisations to learn and spell new words, for example technical words and words adopted from other languages</td>
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<tr>
<td>Understand how to use spelling rules and word origins, for example Greek and Latin roots, base words, suffixes, prefixes, spelling patterns and generalisations to learn new words and how to spell them</td>
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<tr>
<td>Understand how to apply learned knowledge consistently in order to spell accurately and to learn new words including nominalisations</td>
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<tr>
<td>Understand how spelling is used creatively in texts for particular effects, for example characterisation and humour, and to represent accents and styles of speech</td>
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<tr>
<td>Understand how higher order concepts are developed in complex texts through language features including nominalisation, apposition and embedding of clauses</td>
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</tr>
<tr>
<td>Literature and context</td>
<td>How texts reflect the context of culture and situation in which they are created</td>
<td>Recognise that texts are created by authors who tell stories and share experiences that may be similar or different to students' own experiences</td>
<td>Discuss how authors create characters using language and images</td>
<td>Discuss how depictions of characters in print, sound and images reflect the contexts in which they were created</td>
</tr>
<tr>
<td>Personal responses to the ideas, characters and viewpoints in texts</td>
<td>Respond to texts, identifying favourite stories, authors and illustrators</td>
<td>Share feelings and thoughts about the events and characters in texts</td>
<td>Express preferences for specific texts and authors and listen to the opinions of others</td>
<td>Identify aspects of different types of literary texts that entertain, and give reasons for personal preferences</td>
</tr>
<tr>
<td>Expressing preferences and evaluating texts</td>
<td>Expressing a personal preference for different texts and types of texts, and identifying the features of texts that influence personal preference</td>
<td>Identify some features of texts including events and characters and retell events from a text. Recognise some different types of literary texts and identify some characteristic features of literary texts, for example beginnings and endings of traditional texts and rhyme in poetry</td>
<td>Discuss features of plot, character and setting in different types of literature and explore some features of characters in different texts</td>
<td>Discuss the characters and settings of different texts and explore how language is used to present these features in different ways</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Sub Strand</th>
<th>Focus of thread within the sub-strand</th>
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<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Literature and context</td>
<td>How texts reflect the context of culture and situation in which they are created</td>
<td>Make connections between students’ own experiences and those of characters and events represented in texts drawn from different historical, social and cultural contexts</td>
<td>Identify and explore ideas and viewpoints about events, issues and characters represented in texts drawn from different historical, social and cultural contexts</td>
<td>Explore the ways that ideas and viewpoints in literary texts drawn from different historical, social and cultural contexts may reflect or challenge the values of individuals and groups</td>
<td>Interpret and compare how representations of people and culture in literary texts are drawn from different historical, social and cultural contexts</td>
<td>Compare and evaluate a range of representations of individuals and groups in different historical, social and cultural contexts</td>
</tr>
<tr>
<td>Personal responses to the ideas, characters and viewpoints in texts</td>
<td>Analyse and evaluate similarities and differences in texts on similar topics, themes or plots</td>
<td>Reflect on ideas and opinions about characters, settings and events in literary texts, identifying areas of agreement and difference with others and justifying a point of view</td>
<td>Share, reflect on, clarify and evaluate opinions and arguments about aspects of literary texts</td>
<td>Present an argument about a literary text based on initial impressions and subsequent analysis of the whole text</td>
<td>Reflect on, extend, endorse or refute others’ interpretations of and responses to literature</td>
<td></td>
</tr>
<tr>
<td>Responding to literature</td>
<td>Expressing preferences</td>
<td>Identify and explain how choices in language, for example modality, emphasis, repetition and metaphor influence personal response to different texts</td>
<td>Compare the ways that language and images are used to create character, and to influence emotions and opinions in different types of texts</td>
<td>Understand and explain how combinations of words and images in texts are used to represent particular groups in society, and how texts position readers in relation to those groups</td>
<td>Reflect on, discuss and explore notions of literary value and how and why such notions vary according to context</td>
<td>Analyse and explain how text structures, language features and visual features of texts and the context in which texts are experienced may influence audience response</td>
</tr>
<tr>
<td>Features of literary texts</td>
<td>Identify, describe, and discuss similarities and differences between texts, including those by the same author or illustrator, and evaluate characteristics that define an author’s individual style</td>
<td>Recognise and analyse the ways that literary texts draw on readers’ knowledge of other texts and enable new understandings and appreciation of aesthetic qualities</td>
<td>Analyse texts from familiar and unfamiliar contexts, and discuss and evaluate their content and the appeal of an individual author’s literary style</td>
<td>Identify, explain and discuss how narrative viewpoint, structure, characterisation and devices including analogy and satire shape different interpretations and responses to a text</td>
<td></td>
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</tr>
<tr>
<td>Sub Strand</td>
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</tr>
<tr>
<td><strong>Examining literature</strong></td>
<td>Language devices in literary texts including figurative language</td>
<td>Replicate the rhythms and sound patterns in stories, rhymes, songs and poems from a range of cultures</td>
<td>Listen to, recite and perform poems, chants, rhymes and songs, imitating and inventing sound patterns, including alliteration and rhyme</td>
<td>Identify, reproduce and experiment with rhythmic, sound and word patterns in poems, chants, rhymes and songs</td>
<td>Discuss the nature and effects of some language devices used to enhance meaning and shape the reader's reaction, including rhythm and onomatopoeia in poetry and prose</td>
<td>Understand, interpret and experiment with a range of devices and deliberate word play in poetry and other literary texts, for example nonsense words, spoonerisms, neologisms and puns</td>
</tr>
<tr>
<td></td>
<td>Creating literary texts</td>
<td>Retell familiar literary texts through performance, use of illustrations and images</td>
<td>Recreate texts imaginatively using drawing, writing, performance and digital forms of communication</td>
<td>Create events and characters using different media that develop key events and characters from literary texts</td>
<td>Create imaginative texts based on characters, settings and events from students' own and other cultures using visual features, for example perspective, distance and angle</td>
<td>Create literary texts that explore students' own experiences and imagining</td>
</tr>
<tr>
<td><strong>Creating literature</strong></td>
<td>Creating their own literary texts based on the ideas, features and structures of texts experienced</td>
<td>This sequence starts at this year level</td>
<td>Create texts that adapt language features and patterns encountered in literary texts, for example characterisation, rhyme, rhythm, mood, music, sound effects and dialogue</td>
<td>Create literary texts by developing storylines, characters and settings</td>
<td>Create literary texts that experiment with structures, ideas and stylistic features of selected authors</td>
<td>Experiment with text structures and language features and their effects in creating literary texts, for example, using imagery, sentence variation, metaphor and word choice</td>
</tr>
<tr>
<td>Sub Strand</td>
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</tr>
<tr>
<td>Examining literature</td>
<td>Language devices in literary texts including figurative language</td>
<td>Identify the relationship between words, sounds, imagery and language patterns in narratives and poetry such as ballads, limericks and free verse</td>
<td>Understand, interpret and discuss how language is compressed to produce a dramatic effect in film or drama, and to create layers of meaning in poetry, for example haiku, tankas, couplets, free verse and verse novels</td>
<td>Identify and evaluate devices that create tone, for example humour, wordplay, innuendo and parody in poetry, humorous prose, drama or visual texts</td>
<td>Investigate and experiment with the use and effect of extended metaphor, metonymy, allegory, icons, myths and symbolism in texts, for example poetry, short films, graphic novels and plays on similar themes</td>
<td>Compare and evaluate how &quot;voice&quot; as a literary device can be used in a range of different types of texts such as poetry to evoke particular emotional responses</td>
</tr>
<tr>
<td></td>
<td>Creating literary texts</td>
<td>Create literary texts that adapt or combine aspects of texts students have experienced in innovative ways</td>
<td>Create literary texts that adapt stylistic features encountered in other texts, for example, narrative viewpoint, structure of stanzas, contrast and juxtaposition</td>
<td>Create literary texts that draw upon text structures and language features of other texts for particular purposes and effects</td>
<td>Create literary texts, including hybrid texts, that innovate on aspects of other texts, for example by using parody, allusion and appropriation</td>
<td>Analyse and evaluate text structures and language features of literary texts and make relevant comparisons with other texts</td>
</tr>
<tr>
<td>Creating literature</td>
<td>Experimentation and adaptation</td>
<td>Experiment with text structures and language features and their effects in creating literary texts, for example, using imagery, sentence variation, metaphor and word choice</td>
<td>Experiment with text structures and language features and their effects in creating literary texts, for example, using rhythm, sound effects, monologue, layout, navigation and colour</td>
<td>Experiment with particular language features drawn from different types of texts, including combinations of language and visual choices to create new texts</td>
<td>Experiment with the ways that language features, image and sound can be adapted in literary texts, for example the effects of stereotypical characters and settings, the playfulness of humour and comedy, pun and hyperlink</td>
<td>Create literary texts with a sustained 'voice', selecting and adapting appropriate text structures, literary devices, language, auditory and visual structures and features and for a specific purpose and intended audience</td>
</tr>
</tbody>
</table>

Create imaginative texts that make relevant thematic and intertextual connections with other texts |
# Literacy English Scope and Sequence: Foundation to Year 6

<table>
<thead>
<tr>
<th>Sub Strand</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Texts in context</strong></td>
<td>Identify some familiar texts and the contexts in which they are used</td>
<td>Identify texts drawn from a range of cultures and experiences</td>
<td>Respond to texts drawn from a similar context, identifying similarities and differences between the texts</td>
<td>Discuss different texts on a similar topic, identifying similarities and differences between the texts</td>
<td>Identify the point of view in a text and suggest alternative points of view</td>
<td>Identify and explain language features of texts from earlier times and compare with the vocabulary, images, layout and content of contemporary texts</td>
<td>Show how ideas and points of view in texts are conveyed through the use of vocabulary, including idiomatic expressions, objective and subjective language, and that these can change according to context</td>
<td>Compare texts including media texts that represent ideas and events in different ways, explaining the effects of the different approaches</td>
</tr>
<tr>
<td><strong>Listening and speaking interactions</strong></td>
<td>The purposes and contexts through which students engage in listening and speaking interactions</td>
<td>Listen to and respond orally to texts and to the communication of others in informal and structured classroom situations</td>
<td>Engage in conversations and discussions, using active listening behaviours, showing interest, and contributing ideas, information and questions</td>
<td>Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations</td>
<td>Interpret ideas and information in spoken texts and listen for key points in order to carry out tasks and use information to share and extend ideas and information</td>
<td>Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences and present and justify a point of view</td>
<td>Participate in and contribute to discussions, clarifying and interrogating ideas, developing supporting arguments, sharing and evaluating information, experiences and opinions</td>
<td></td>
</tr>
<tr>
<td><strong>Listening and speaking interactions</strong></td>
<td>The skills students use when engaging in listening and speaking interactions</td>
<td>Use interaction skills including listening while others speak, using appropriate voice levels, articulation and body language, gestures and eye contact</td>
<td>Use interaction skills including turn-taking, recognising the contributions of others, speaking clearly and using appropriate volume and pace</td>
<td>Use interaction skills including initiating topics, making positive statements and voicing disagreement in an appropriate manner, speaking clearly and varying tone, volume and pace appropriately</td>
<td>Use interaction skills, including active listening behaviours and communicate in a clear, coherent manner using a variety of everyday and learned vocabulary and appropriate tone, pace, pitch and volume</td>
<td>Use interaction skills such as acknowledging another's point of view and linking students' response to the topic, using familiar and new vocabulary and a range of vocal effects such as tone, pace, pitch and volume to speak clearly and coherently</td>
<td>Use interaction skills, varying conventions of spoken interactions such as voice volume, tone, pitch and pace, according to group size, formality of interaction and needs and expertise of the audience</td>
<td></td>
</tr>
<tr>
<td><strong>Oral presentations</strong></td>
<td>The formal oral presentations that students engage in including presenting recounts and information, and presenting and arguing a point of view</td>
<td>Deliver short oral presentations to peers</td>
<td>Make short presentations using some introduced text structures and language, for example opening statements</td>
<td>Rehearse and deliver short presentations on familiar and new topics</td>
<td>Plan and deliver short presentations, providing some key details in logical sequence</td>
<td>Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences</td>
<td>Plan, rehearse and deliver presentations selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis</td>
<td>Plan, rehearse and deliver presentations selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis</td>
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<tbody>
<tr>
<td>Texts in context</td>
<td>Texts and the contexts in which they are used How texts relate to their contexts and reflect the society and culture in which they were created</td>
<td>Compare texts including media texts that represent ideas and events in different ways, explaining the effects of the different approaches</td>
<td>Analyse and explain the effect of technological innovations on texts, particularly media texts</td>
<td>Analyse and explain how language has evolved over time and how technology and the media have influenced language use and forms of communication</td>
<td>Analyse how the construction and interpretation of texts, including media texts, can be influenced by cultural perspectives and other texts</td>
<td>Analyse and evaluate how people, cultures, places, events, objects and concepts are represented in texts, including media texts, through language, structural and/or visual choices</td>
</tr>
<tr>
<td>Interacting with others</td>
<td>Listening and speaking interactions The purposes and contexts through which students engage in listening and speaking interactions</td>
<td>Participate in and contribute to discussions, clarifying and interrogating ideas, developing and supporting arguments, sharing and evaluating information, experiences and opinions</td>
<td>Identify and discuss main ideas, concepts and points of view in spoken texts to evaluate qualities, for example the strength of an argument or the lyrical power of a poetic rendition</td>
<td>Interpret the stated and implied meanings in spoken texts, and use evidence to support or challenge different perspectives</td>
<td>Listen to spoken texts constructed for different purposes, for example to entertain and to persuade, and analyse how language features of these texts position listeners to respond in particular ways</td>
<td>Identify and explore the purposes and effects of different text structures and language features of spoken texts, and use this knowledge to create purposeful texts that inform, persuade and engage</td>
</tr>
<tr>
<td></td>
<td>Oral presentations The formal oral presentations that students engage in including presenting recounts and information, and presenting and arguing a point of view</td>
<td>Plan, rehearse and deliver presentations selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis</td>
<td>Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements to promote a point of view or enable a new way of seeing</td>
<td>Plan, rehearse and deliver presentations, selecting and sequencing appropriate content, including multimodal elements, to reflect a diversity of viewpoints</td>
<td>Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for aesthetic and playful purposes</td>
<td>Plan, rehearse and deliver presentations selecting and sequencing appropriate content and multimodal elements to influence a course of action</td>
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<tr>
<td>Purpose and audience</td>
<td>Recognising and analysing differences between different types of texts</td>
<td>Identify some differences between imaginative and informative texts</td>
<td>Describe some differences between imaginative and informative texts</td>
<td>Identify the audience of imaginative, informative and persuasive texts</td>
<td>Identify the audience of imaginative, informative and persuasive texts</td>
<td>Identify characteristics of purpose of imaginative, informative and persuasive texts used in the text to meet the purpose of the text</td>
<td>Identify and explain characteristics of purpose of imaginative, informative and persuasive texts used in the text to meet the purpose of the text</td>
<td>Analyse how texts structures and language features work together to meet the purpose of a text</td>
</tr>
<tr>
<td>Reading processes</td>
<td>Strategies for using and combining contextual, semantic, grammatical and phonetic knowledge to decode texts, including predicting, monitoring, cross-checking, self-correcting, skimming and scanning</td>
<td>Read predictable texts, practicing phrasing and fluency, and monitor meaning using concepts appropriate to print and emerging contextual, semantic, grammatical and phonetic knowledge</td>
<td>Read supportive texts using developing phrasing, fluency, contextual, semantic, grammatical and phonetic knowledge</td>
<td>Read less predictable texts using phrasing and contextual phrasing, and monitor meaning and rereading</td>
<td>Read an increasing range of different types of texts by combining contextual, semantic, grammatical and phonetic knowledge using text processing strategies, for example monitoring, predicting, confirming, rereading, and self-correcting</td>
<td>Read different types of texts by combining contextual, semantic, grammatical and phonetic knowledge using text processing strategies, for example monitoring, predicting, confirming, rereading, and self-correcting</td>
<td>Navigate and read texts for specific purposes applying appropriate text processing strategies, for example monitoring, predicting and confirming, monitoring meaning, skimming and scanning</td>
<td>Select, navigate and read texts for a range of purposes applying appropriate text processing strategies and interpreting structural features, for example table of contents, glossary, chapters, headings and subheadings</td>
</tr>
<tr>
<td>Comprehension strategies</td>
<td>Strategies for constructing meaning from texts, including literal and inferential meaning</td>
<td>Use comprehension strategies to understand and discuss texts listened to, viewed or read independently</td>
<td>Use comprehension strategies to build literal and inferred meaning from key events, ideas and information in texts that they listen to, view and read by drawing on growing knowledge of context, text structures and language features</td>
<td>Use comprehension strategies to build literal and inferred meaning and begin to analyse texts by drawing on growing knowledge of context, text structures and language features</td>
<td>Use comprehension strategies to build literal and inferred meaning and begin to evaluate texts by drawing on growing knowledge of context, text structures and language features</td>
<td>Use comprehension strategies to interpret and analyse ideas and evaluate texts</td>
<td>Use comprehension strategies to interpret and analyse ideas and evaluate texts, comparing content from a variety of textual sources including media and digital texts</td>
<td></td>
</tr>
<tr>
<td>Analyzing and evaluating texts</td>
<td>Analysis and evaluation of how text structures and language features construct meaning and influence readers/viewers</td>
<td>Creating texts</td>
<td>Create short texts to explore, record and report ideas and events using familiar words and phrases and beginning writing knowledge</td>
<td>Create short imaginative and informative texts that show an emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams</td>
<td>Create short imaginative, informative and persuasive texts using growing knowledge of text structures and language features for familiar and some less familiar audiences, selecting print and multimodal elements appropriate to the audience and purpose</td>
<td>Plan, draft and publish imaginative, informative and persuasive texts by combining contextual, semantic, grammatical and phonetic knowledge using text processing strategies, for example monitoring, predicting, confirming, rereading, and self-correcting</td>
<td>Use comprehension strategies to interpret and analyse texts, comparing content from a variety of textual sources including media and digital texts</td>
<td></td>
</tr>
<tr>
<td>Editing</td>
<td>Editing texts for meaning, structure and grammatical features</td>
<td>Participate in shared editing of students’ own texts for meaning, spelling, capital letters and full stops</td>
<td>Reread student’s own texts and discuss possible changes to improve meaning, spelling and punctuation</td>
<td>Reread and edit texts for spelling, sentence-boundary punctuation and text structure</td>
<td>Reread and edit texts for meaning, appropriate structure, grammatical choices and punctuation</td>
<td>Reread and edit for meaning by adding, deleting or moving words or word groups to improve content and structure</td>
<td>Reread and edit student’s own and others’ work using agreed criteria for text structures and language features</td>
<td>Use comprehension strategies to interpret and analyse ideas and evaluate texts, comparing content from a variety of textual sources including media and digital texts</td>
</tr>
<tr>
<td>Handwriting</td>
<td>Developing a fluent, legible handwriting style, beginning with unjoined letters and moving to joined handwriting</td>
<td>Produce some lower case and upper case letters using learned letter formations</td>
<td>Write using unjoined lower case and upper case letters</td>
<td>Write legibly and with growing fluency using unjoined upper case and lower case letters</td>
<td>Write using joined letters that are clearly formed and consistent in size</td>
<td>Write using clearly-formed joined letters, and develop increased fluency and automatically</td>
<td>Develop a handwriting style that is legible, fluent and automatic and varies according to audience and purpose</td>
<td>Develop a handwriting style that is legible, fluent and automatic and varies according to audience and purpose</td>
</tr>
<tr>
<td>Use of software</td>
<td>Using a range of software applications to construct and edit print and multimodal texts</td>
<td>Construct texts using software including word processing programs</td>
<td>Construct texts that incorporate supporting images using software including word processing programs</td>
<td>Use software including word processing tools to construct, edit and publish written text, and select, edit and place visual, print and audio elements</td>
<td>Use software including word processing tools to construct, edit and publish written text, and select, edit and place visual, print and audio elements</td>
<td>Use a range of software including word processing tools to construct, edit and publish written text, and select, edit and place visual, print and audio elements</td>
<td>Use a range of software, including word processing programs, learning new functions as required to create texts</td>
<td>Use a range of software, including word processing programs, learning new functions as required to create texts</td>
</tr>
</tbody>
</table>

This sequence starts at this year level: Analyse strategies authors use to influence readers.
## Literacy: English Scope and Sequence: Year 6 to Year 10

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<tr>
<td><strong>Interpreting, analysing, evaluating</strong></td>
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</tr>
<tr>
<td>Reporting processes</td>
<td>Strategies for using and combining contextual, semantic, grammatical and phonetic knowledge to decode texts, including predicting, monitoring, cross-checking, self-correcting, skimming and scanning</td>
<td>Select, navigate and read texts for a range of purposes applying appropriate text processing strategies and interpreting structural features, for example table of contents, glossary, chapters, headings and subheadings</td>
<td>Use prior knowledge and text processing strategies to interpret a range of types of texts</td>
<td>Apply increasing knowledge of vocabulary, text structures and language features to understand the content of texts</td>
<td>Apply an expanding vocabulary to read increasingly complex texts with fluency and comprehension</td>
<td>Choose a reading technique and reading path appropriate for the type of text, to retrieve and connect ideas within and between texts</td>
</tr>
<tr>
<td>Comprehension strategies</td>
<td>Strategies of constructing meaning from texts, including literal and inferential meaning</td>
<td>Use comprehension strategies to interpret and analyse information and ideas comparing content from a variety of textual sources including media and digital texts</td>
<td>Use comprehension strategies to interpret, analyse and synthesise ideas and information, critiquing ideas and issues from a variety of textual sources</td>
<td>Use comprehension strategies to interpret and evaluate texts by reflecting on the validity of content and the credibility of sources, including finding evidence in the text for the author's point of view</td>
<td>Use comprehension strategies to interpret and analyse texts, comparing and evaluating representations of an event, issue, situation or character in different texts</td>
<td>Use comprehension strategies to compare and contrast information within and between texts, identifying and analysing embedded perspectives, and evaluating supporting evidence</td>
</tr>
<tr>
<td>Analysing and evaluating texts</td>
<td>Analysis and evaluation of how text structures and language features construct meaning and influence readers/viewers</td>
<td>Analyse strategies authors use to influence readers</td>
<td>Compare the text structures and language features of multimodal texts, explaining how they combine to influence audiences</td>
<td>Explore and explain the ways authors combine different modes and media in creating texts, and the impact of these choices on the viewer/listener</td>
<td>Explore and explain the combinations of language and visual choices that authors make to present information, opinions and perspectives in different texts</td>
<td></td>
</tr>
<tr>
<td>Creating texts</td>
<td>Creating different types of spoken, written and multimodal texts using knowledge of text structures and language features</td>
<td>Plan, draft and publish imaginative, informative and persuasive texts choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience</td>
<td>Plan, draft and publish imaginative, informative and persuasive texts selecting aspects of subject matter and particular language, visual, and audio features to convey information and ideas</td>
<td>Create imaginative, informative and persuasive texts that raise issues, report events, and advance opinions, using deliberate language and textual choices, and including digital elements as appropriate</td>
<td>Create imaginative, informative and persuasive texts that present a point of view and advance or illustrate arguments, including texts that integrate visual, print and/or audio features</td>
<td>Create sustained texts, including texts that combine specific digital or media content, for imaginative, informative, or persuasive purposes, and that reflect upon challenging and complex issues</td>
</tr>
<tr>
<td>Editing</td>
<td>Editing texts for meaning, structure and grammatical features</td>
<td>Reread and edit their students’ own and others’ work using agreed criteria and explaining editing choices</td>
<td>Edit for meaning by removing repetition, refining ideas, reordering sentences and adding or substituting words for impact</td>
<td>Experiment with text structures and language features to refine and clarify ideas to improve the effectiveness of students’ own texts imaginatively</td>
<td>Review and edit students’ own and others’ texts to improve clarity and control over content, organisation, paragraphing, sentence structure, vocabulary and audio/visual features.</td>
<td>Review, edit and refine students’ own and others’ texts for control of content, organisation, sentence structure, vocabulary, and/or visual features, to achieve particular purposes and effects</td>
</tr>
<tr>
<td>Handwriting</td>
<td>Developing a fluent, legible handwriting style, beginning with unjoined letters and moving to joined handwriting</td>
<td>Develop a handwriting style that is legible, fluent and automatic and varies according to audience and purpose</td>
<td>Consolidate a personal handwriting style that is legible, fluent and automatic and supports writing for extended periods</td>
<td>This sequence ends at this year level</td>
<td></td>
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</tr>
<tr>
<td>Use of software</td>
<td>Using a range of software applications to construct and edit print and multimodal texts</td>
<td>Use a range of software, including word processing programs, to confidently create, edit and publish written and multimodal texts.</td>
<td>Use a range of software, including word processing programs to create, edit and publish texts</td>
<td>Use a range of software, including word processing programs, flexibly and imaginatively to publish texts</td>
<td>Use a range of software, including word processing programs, confidently, flexibly and imaginatively to publish texts, considering the identified purpose and the characteristics of the user</td>
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8th March 2011
The Australian Curriculum
Science
Rationale and Aims

Rationale

Aims

Organisation

Content structure

The overarching ideas

Science across Foundation to Year 12

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Diversity of learners

General capabilities

Cross-curriculum priorities

Links to the other learning areas

Implications for teaching, assessment and reporting

Curriculum Foundation–10

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Glossary
Rationale

Science provides an empirical way of answering interesting and important questions about the biological, physical and technological world. The knowledge it produces has proved to be a reliable basis for action in our personal, social and economic lives. Science is a dynamic, collaborative and creative human endeavour arising from our desire to make sense of our world through exploring the unknown, investigating universal mysteries, making predictions and solving problems. Science aims to understand a large number of observations in terms of a much smaller number of broad principles. Science knowledge is contestable and is revised, refined and extended as new evidence arises.

The Australian Curriculum: Science provides opportunities for students to develop an understanding of important science concepts and processes, the practices used to develop scientific knowledge, of science’s contribution to our culture and society, and its applications in our lives. The curriculum supports students to develop the scientific knowledge, understandings and skills to make informed decisions about local, national and global issues and to participate, if they so wish, in science-related careers.

In addition to its practical applications, learning science is a valuable pursuit in its own right. Students can experience the joy of scientific discovery and nurture their natural curiosity about the world around them. In doing this, they develop critical and creative thinking skills and challenge themselves to identify questions and draw evidence-based conclusions using scientific methods. The wider benefits of this “scientific literacy” are well established, including giving students the capability to investigate the natural world and changes made to it through human activity.

The science curriculum promotes six overarching ideas that highlight certain common approaches to a scientific view of the world and which can be applied to many of the areas of science understanding. These overarching ideas are patterns, order and organisation; form and function; stability and change; systems; scale and measurement; and matter and energy.

Aims

The Australian Curriculum: Science aims to ensure that students develop:

- an interest in science as a means of expanding their curiosity and willingness to explore, ask questions about and speculate on the changing world in which they live
- an understanding of the vision that science provides of the nature of living things, of the Earth and its place in the cosmos, and of the physical and chemical processes that explain the behaviour of all material things
- an understanding of the nature of scientific inquiry and the ability to use a range of scientific inquiry methods, including questioning; planning and conducting experiments and investigations based on ethical principles; collecting and analysing data; evaluating results; and drawing critical, evidence-based conclusions
- an ability to communicate scientific understanding and findings to a range of audiences, to justify ideas on the basis of evidence, and to evaluate and debate scientific arguments and claims
- an ability to solve problems and make informed, evidence-based decisions about current and future applications of science while taking into account ethical and social implications of decisions
- an understanding of historical and cultural contributions to science as well as contemporary science issues and activities and an understanding of the diversity of careers related to science
- a solid foundation of knowledge of the biological, chemical, physical, Earth and space sciences, including being able to select and integrate the scientific knowledge and methods needed to explain and predict phenomena, to apply that understanding to new situations and events, and to appreciate the dynamic
nature of science knowledge.
Content structure

The Australian Curriculum: Science has three interrelated strands: **Science Understanding, Science as a Human Endeavour** and **Science Inquiry Skills**.

Together, the three strands of the science curriculum provide students with understanding, knowledge and skills through which they can develop a scientific view of the world. Students are challenged to explore science, its concepts, nature and uses through clearly described inquiry processes.

**Science Understanding**

Science understanding is evident when a person selects and integrates appropriate science knowledge to explain and predict phenomena, and applies that knowledge to new situations. Science knowledge refers to facts, concepts, principles, laws, theories and models that have been established by scientists over time.

The **Science Understanding** strand comprises four sub-strands. The content is described by year level.

**Biological sciences**

The biological sciences sub-strand is concerned with understanding living things. The key concepts developed within this sub-strand are that: a diverse range of living things have evolved on Earth over hundreds of millions of years; living things are interdependent and interact with each other and their environment; and the form and features of living things are related to the functions that their body systems perform. Through this sub-strand, students investigate living things, including animals, plants, and micro-organisms, and their interdependence and interactions within ecosystems. They explore their life cycles, body systems, structural adaptations and behaviours, how these features aid survival, and how their characteristics are inherited from one generation to the next. Students are introduced to the cell as the basic unit of life and the processes that are central to its function.

**Chemical sciences**

The chemical sciences sub-strand is concerned with understanding the composition and behaviour of substances. The key concepts developed within this sub-strand are that: the chemical and physical properties of substances are determined by their structure at an atomic scale; and that substances change and new substances are produced by rearranging atoms through atomic interactions and energy transfer. In this sub-strand, students classify substances based on their properties, such as solids, liquids and gases, or their composition, such as elements, compounds and mixtures. They explore physical changes such as changes of state and dissolving, and investigate how chemical reactions result in the production of new substances. Students recognise that all substances consist of atoms which can combine to form molecules, and chemical reactions involve atoms being rearranged and recombined to form new substances. They explore the relationship between the way in which atoms are arranged and the properties of substances, and the effect of energy transfers on these arrangements.

**Earth and space sciences**

The Earth and space sciences sub-strand is concerned with understanding the composition and behaviour of substances. The key concepts developed within this sub-strand are that: the chemical and physical properties of substances are determined by their structure at an atomic scale; and that substances change and new substances are produced by rearranging atoms through atomic interactions and energy transfer. In this sub-strand, students classify substances based on their properties, such as solids, liquids and gases, or their composition, such as elements, compounds and mixtures. They explore physical changes such as changes of state and dissolving, and investigate how chemical reactions result in the production of new substances. Students recognise that all substances consist of atoms which can combine to form molecules, and chemical reactions involve atoms being rearranged and recombined to form new substances. They explore the relationship between the way in which atoms are arranged and the properties of substances, and the effect of energy transfers on these arrangements.
to Earth’s surface, recognising that Earth has evolved over 4.5 billion years and that the effect of some of these processes is only evident when viewed over extremely long timescales. They explore the ways in which humans use resources from the Earth and appreciate the influence of human activity on the surface of the Earth and the atmosphere.

Physical sciences

The physical sciences sub-strand is concerned with understanding the nature of forces and motion, and matter and energy. The two key concepts developed within this sub-strand are that: forces affect the behaviour of objects; and that energy can be transferred and transformed from one form to another. Through this sub-strand students gain an understanding of how an object’s motion (direction, speed and acceleration) is influenced by a range of contact and non-contact forces such as friction, magnetism, gravity and electrostatic forces. They develop an understanding of the concept of energy and how energy transfer is associated with phenomena involving motion, heat, sound, light and electricity. They appreciate that concepts of force, motion, matter and energy apply to systems ranging in scale from atoms to the universe itself.

Science as a Human Endeavour

Through science, humans seek to improve their understanding and explanations of the natural world. Science involves the construction of explanations based on evidence and science knowledge can be changed as new evidence becomes available. Science influences society by posing, and responding to, social and ethical questions, and scientific research is itself influenced by the needs and priorities of society. This strand highlights the development of science as a unique way of knowing and doing, and the role of science in contemporary decision making and problem solving. It acknowledges that in making decisions about science practices and applications, ethical and social implications must be taken into account. This strand also recognises that science advances through the contributions of many different people from different cultures and that there are many rewarding science-based career paths.

The content in the Science as a Human Endeavour strand is described in two-year bands. There are two sub-strands of Science as a Human Endeavour. These are:

**Nature and development of science:** This sub-strand develops an appreciation of the unique nature of science and scientific knowledge, including how current knowledge has developed over time through the actions of many people.

**Use and influence of science:** This sub-strand explores how science knowledge and applications affect peoples’ lives, including their work, and how science is influenced by society and can be used to inform decisions and actions.

Science Inquiry Skills

Science inquiry involves identifying and posing questions; planning, conducting and reflecting on investigations; processing, analysing and interpreting evidence; and communicating findings. This strand is concerned with evaluating claims, investigating ideas, solving problems, drawing valid conclusions and developing evidence-based arguments.

Science investigations are activities in which ideas, predictions or hypotheses are tested and conclusions are drawn in response to a question or problem. Investigations can involve a range of activities, including experimental testing, field work, locating and using information sources, conducting surveys, and using modelling and simulations. The choice of the approach taken will depend on the context and subject of the investigation.

In science investigations, collection and analysis of data and evidence play a major role. This can involve collecting or extracting information and reorganising data in the form of tables, graphs, flow charts, diagrams,
prose, keys, spreadsheets and databases.

The content in the Science Inquiry Skills strand is described in two-year bands. There are five sub-strands of Science Inquiry Skills. These are:

- **Questioning and predicting**: Identifying and constructing questions, proposing hypotheses and suggesting possible outcomes.
- **Planning and conducting**: Making decisions regarding how to investigate or solve a problem and carrying out an investigation, including the collection of data.
- **Processing and analysing data and information**: Representing data in meaningful and useful ways; identifying trends, patterns and relationships in data, and using this evidence to justify conclusions.
- **Evaluating**: Considering the quality of available evidence and the merit or significance of a claim, proposition or conclusion with reference to that evidence.
- **Communicating**: Conveying information or ideas to others through appropriate representations, text types and modes.

### Relationship between the strands

In the practice of science, the three strands of Science Understanding, Science as a Human Endeavour and Science Inquiry Skills are closely integrated; the work of scientists reflects the nature and development of science, is built around scientific inquiry and seeks to respond to and influence society’s needs. Students’ experiences of school science should mirror and connect to this multifaceted view of science.

To achieve this, the three strands of the Australian Curriculum: Science should be taught in an integrated way. The content descriptions of the three strands have been written so that at each year this integration is possible. In the earlier years, the ‘Nature and development of science’ sub-strand within the Science as a Human Endeavour strand focuses on scientific inquiry. This enables students to make clear connections between the inquiry skills that they are learning and the work of scientists. As students progress through the curriculum they investigate how science understanding has developed, including considering some of the people and the stories behind these advances in science.

They will also recognise how this science understanding can be applied to their lives and the lives of others. As students develop a more sophisticated understanding of the knowledge and skills of science they are increasingly able to appreciate the role of science in society. The content of the Science Understanding strand will inform students’ understanding of contemporary issues, such as climate change, use of resources, medical interventions, biodiversity and the origins of the universe. The importance of these areas of science can be emphasised through the content of the Science as a Human Endeavour strand, and students can be encouraged to view contemporary science critically through aspects of the Science Inquiry Skills strand, for example by analysing, evaluating and communicating.

### Year level descriptions

Year level descriptions have three functions. Firstly, they emphasise the interrelated nature of the three strands, and the expectation that planning a science program will involve integration of content from across the strands. Secondly, they re-emphasise the overarching ideas as appropriate for that stage of schooling. Thirdly, they provide an overview of the content for the year level.

### Content descriptions

The Australian Curriculum: Science includes content descriptions at each year level. These describe the knowledge, concepts, skills and processes that teachers are expected to teach and students are expected to
learn. However, they do not prescribe approaches to teaching. While Science Understanding content is presented in year levels, when units of work are devised, attention should be given to the coverage of content from Science Inquiry Skills and Science as a Human Endeavour over the two-year band. The content descriptions ensure that learning is appropriately ordered and that unnecessary repetition is avoided. However, a concept or skill introduced at one year level may be revisited, strengthened and extended at later year levels as needed.

Content elaborations

Content elaborations are provided for Foundation to Year 10 to illustrate and exemplify content and assist teachers to develop a common understanding of the content descriptions. They are not intended to be comprehensive content points that all students need to be taught.

Glossary

A glossary is provided to support a common understanding of key terms in the content descriptions.

The Overarching Ideas

There are a number of overarching ideas that represent key aspects of a scientific view of the world and bridge knowledge and understanding across the disciplines of science.

In the Australian Curriculum: Science, six overarching ideas support the coherence and developmental sequence of science knowledge within and across year levels. The overarching ideas frame the development of concepts in the Science Understanding strand, support key aspects of the Science Inquiry Skills strand and contribute to developing students’ appreciation of the nature of science.

The six overarching ideas that frame the Australian Curriculum: Science are:

Patterns, order and organisation

An important aspect of science is recognising patterns in the world around us, and ordering and organising phenomena at different scales. As students progress from Foundation to Year 10, they build skills and understanding that will help them to observe and describe patterns at different scales, and develop and use classifications to organise events and phenomena and make predictions. Classifying objects and events into groups (such as solid/liquid/gas or living/non-living) and developing criteria for those groupings relies on making observations and identifying patterns of similarity and difference. As students progress through the primary years, they become more proficient in identifying and describing the relationships that underpin patterns, including cause and effect. Students increasingly recognise that scale plays an important role in the observation of patterns; some patterns may only be evident at certain time and spatial scales. For example, the pattern of day and night is not evident over the time scale of an hour.

Form and function

Many aspects of science are concerned with the relationships between form (the nature or make-up of an aspect of an object or organism) and function (the use of that aspect). As students progress from Foundation to Year 10, they see that the functions of both living and non-living objects rely on their forms. Their understanding of forms such as the features of living things or the nature of a range of materials, and their related functions or uses, is initially based on observable behaviours and physical properties. In later years, students recognise that function frequently relies on form and that this relationship can be examined at many scales. They apply an understanding of microscopic and atomic structures, interactions of force and flows of energy and matter to describe relationships between form and function.
Stability and change

Many areas of science involve the recognition, description and prediction of stability and change. Early in their schooling, students recognise that in their observations of the world around them, some properties and phenomena appear to remain stable or constant over time, whereas others change. As they progress from Foundation to Year 10, they also recognise that phenomena (such as properties of objects and relationships between living things) can appear to be stable at one spatial or time scale, but at a larger or smaller scale may be seen to be changing. They begin to appreciate that stability can be the result of competing, but balanced forces. Students become increasingly adept at quantifying change through measurement and looking for patterns of change by representing and analysing data in tables or graphs.

Scale and measurement

Quantification of time and spatial scale is critical to the development of science understanding as it enables the comparison of observations. Students often find it difficult to work with scales that are outside their everyday experience - these include the huge distances in space, the incredibly small size of atoms and the slow processes that occur over geological time. As students progress from Foundation to Year 10, their understanding of relative sizes and rates of change develops and they are able to conceptualise events and phenomena at a wider range of scales. They progress from working with scales related to their everyday experiences and comparing events and phenomena using relative language (such as ‘bigger’ or ‘faster’) and informal measurement, to working with scales beyond human experience and quantifying magnitudes, rates of change and comparisons using formal units of measurement.

Matter and energy

Many aspects of science involve identifying, describing and measuring transfers of energy and/or matter. As students progress through Foundation to Year 10, they become increasingly able to explain phenomena in terms of the flow of matter and energy. Initially, students focus on direct experience and observation of phenomena and materials. They are introduced to the ways in which objects and living things change and begin to recognise the role of energy and matter in these changes. In later years, they are introduced to more abstract notions of particles, forces and energy transfer and transformation. They use these understandings to describe and model phenomena and processes involving matter and energy.

Systems

Science frequently involves thinking, modelling and analysing in terms of systems in order to understand, explain and predict events and phenomena. As students progress through Foundation to Year 10, they explore, describe and analyse increasingly complex systems.

Initially, students identify the observable components of a clearly identified ‘whole’ such as features of plants and animals and parts of mixtures. Over Years 3 to 6 they learn to identify and describe relationships between components within simple systems, and they begin to appreciate that components within living and non-living systems are interdependent. In Years 7 to 10 they are introduced to the processes and underlying phenomena that structure systems such as ecosystems, body systems and the carbon cycle. They recognise that within systems, interactions between components can involve forces and changes acting in opposing directions and that for a system to be in a steady state, these factors need to be in a state of balance or equilibrium. They are increasingly aware that systems can exist as components within larger systems, and that one important part of thinking about systems is identifying boundaries, inputs and outputs.
Science across Foundation to Year 12

Although the curriculum is described year by year, this document provides advice across four year groupings on the nature of learners and the relevant curriculum:

- Foundation – Year 2: typically students from 5 to 8 years of age
- Years 3–6: typically students from 8 to 12 years of age
- Years 7–10: typically students from 12 to 15 years of age
- Senior secondary years: typically students from 15 to 18 years of age.

Foundation – Year 2

Curriculum focus: awareness of self and the local world

Young children have an intrinsic curiosity about their immediate world. Asking questions leads to speculation and the testing of ideas. Exploratory, purposeful play is a central feature of their investigations.

In this stage of schooling students’ explorations are precursors to more structured inquiry in later years. They use the senses to observe and gather information, describing, making comparisons, sorting and classifying to create an order that is meaningful. They observe and explore changes that vary in their rate and magnitude and begin to describe relationships in the world around them. Students’ questions and ideas about the world become increasingly purposeful. They are encouraged to develop explanatory ideas and test them through further exploration.

Years 3–6

Curriculum focus: recognising questions that can be investigated scientifically and investigating them

During these years students can develop ideas about science that relate to their lives, answer questions, and solve mysteries of particular interest to their age group. In this stage of schooling students tend to use a trial-and-error approach to their science investigations. As they progress, they begin to work in a more systematic way. The notion of a ‘fair test’ and the idea of variables are developed, as well as other forms of science inquiry. Understanding the importance of measurement in quantifying changes in systems is also fostered.

Through observation, students can detect similarities among objects, living things and events and these similarities can form patterns. By identifying these patterns, students develop explanations about the reasons for them. Students’ understanding of the complex natural or built world can be enhanced by considering aspects of the world as systems, and how components, or parts, within systems relate to each other. From evidence derived from observation, explanations about phenomena can be developed and tested. With new evidence, explanations may be refined or changed.

By examining living structures, Earth, changes of solids to liquids and features of light, students begin to recognise patterns in the world. The observation of aspects of astronomy, living things, heat, light and electrical circuits helps students develop the concept of a system and its interacting components, and understand the relationships, including the notion of cause and effect, between variables.

Years 7–10

Curriculum focus: explaining phenomena involving science and its applications

During these years, students continue to develop their understanding of important science concepts across the major science disciplines. It is important to include contemporary contexts in which a richer understanding of science can be enhanced. Current science research and its human application motivates and engages students.
Within the outlined curriculum, students should undertake some open investigations that will help them refine their science inquiry skills. The quantitative aspects of students’ inquiry skills are further developed to incorporate consideration of uncertainty in measurement. In teaching the outlined curriculum, it is important to provide time to build the more abstract science ideas that underpin understanding.

Students further develop their understanding of systems and how the idea of equilibrium is important in dynamic systems. They consider how a change in one of the components can affect all components of the system because of the interrelationships between the parts. They consider the idea of form and function at a range of scales in both living and non-living systems. Students move from an experiential appreciation of the effects of energy to a more abstract understanding of the nature of energy.

As students investigate the science phenomena outlined in these years, they begin to learn about major theories that underpin science, including the particle theory, atomic theory, the theory of evolution, plate tectonic theory and the Big Bang theory.

**Senior secondary years**

**Curriculum focus: disciplines of science**

The senior secondary courses for physics, chemistry, biology, and Earth and environmental science build on prior learning across these areas in Foundation to Year 10.

**Achievement standards**

Across Foundation to Year 10, achievement standards indicate the quality of learning that students should typically demonstrate by a particular point in their schooling. Achievement standards comprise a written description and student work samples.

An achievement standard describes the quality of learning (the extent of knowledge, the depth of understanding and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The sequence of achievement standards across Foundation to Year 10 describes progress in the learning area. This sequence provides teachers with a framework of growth and development in the learning area.

Student work samples play a key role in communicating expectations described in the achievement standards. Each work sample includes the relevant assessment task, the student’s response, and annotations identifying the quality of learning evident in the student’s response in relation to relevant parts of the achievement standard.

Together, the description of the achievement standard and the accompanying set of annotated work samples help teachers to make judgments about whether students have achieved the standard.

**Diversity of Learners**

The Australian Curriculum has been developed to ensure that curriculum content and achievement standards establish high expectations for all students. Every student is entitled to enriching learning experiences across all areas of the curriculum. Students in Australian classrooms have multiple, diverse and changing needs that are shaped by individual learning histories and abilities as well as cultural language backgrounds and socio-economic factors.

**Special education needs**
The objectives of the Australian Curriculum are the same for all students. The curriculum offers flexibility for teachers to tailor their teaching in ways that provide rigorous, relevant and engaging learning and assessment opportunities for students with special education needs.

Most students with special education needs can engage with the curriculum provided the necessary adjustments are made to the complexity of the curriculum content and to the means through which students demonstrate their knowledge, skills and understanding.

For some learners, making adjustments to instructional processes and to assessment strategies enables students to achieve educational standards commensurate with their peers.

For other students, teachers will need to make appropriate adjustments to the complexity of the curriculum content, focusing instruction on content different to that taught to others in their age group. It follows that adjustments will also need to be made to how the student’s progress is monitored, assessed and reported.

For a small percentage of students, the Foundation to Year 10 curriculum content and achievement standards may not be appropriate nor meaningful, even with adjustments. Most of these students have a significant intellectual disability. During 2011, ACARA will develop additional curriculum content and achievement standards for this group of students in order to provide an Australian Curriculum that is inclusive of every learner.

Further advice and guidance are available about how to use each learning area and the curriculum generally for these students.

**English as an additional language or dialect**

Many students in Australian schools are learners of English as an additional language or dialect (EAL/D). Learners of EAL/D are students whose first language is a language other than Standard Australian English and who require additional support to assist them to develop English language proficiency. While many EAL/D learners do well in school, there is a significant group of these learners who leave school without achieving their potential.

EAL/D students come from diverse backgrounds and may include:

- overseas- and Australian-born children whose first language is a language other than English
- Aboriginal and Torres Strait Islander students whose first language is an Indigenous language, including traditional languages, creoles and related varieties, or Aboriginal English.

EAL/D learners enter Australian schools at different ages and at different stages of English language learning and have various educational backgrounds in their first languages. For some, school is the only place they use English.

The aims of the Australian Curriculum: Science are ultimately the same for all students. However, EAL/D learners are simultaneously learning a new language and the knowledge, understanding and skills of the science curriculum through that new language. They require additional time and support, along with informed teaching that explicitly addresses their language needs, and assessments that take into account their developing language proficiency.

A national EAL/D document is being produced that will support the Australian Curriculum. It will provide a description of how language proficiency develops, and will be a valuable reference for all teachers. It will allow teachers of science to identify the language levels of the EAL/D learners in their classrooms and to address their specific learning requirements when teaching, ensuring equity of access to the science learning area for all.
General capabilities

The skills, behaviours and attributes that students need to succeed in life and work in the twenty-first century have been identified in the Australian Curriculum as general capabilities. There are seven general capabilities:

- literacy
- numeracy
- information and communication technology (ICT) competence
- critical and creative thinking
- ethical behaviour
- personal and social competence
- intercultural understanding.

Over the course of their schooling, students develop and use these general capabilities within and across learning areas and in their lives outside school. General capabilities and learning areas have a reciprocal relationship. Learning areas provide opportunities for students to develop and use general capabilities. Similarly, wherever general capabilities are made explicit in learning areas, they can enrich and deepen learning. In the Australian Curriculum: Science each of the seven general capabilities is embedded (where appropriate) in the content descriptions or elaborations. There are further opportunities to develop the general capabilities through appropriate teaching activities.

Literacy

Students become literate as they develop the skills to learn and communicate confidently at school and to become effective individuals, community members, workers and citizens. These skills include listening, reading and viewing, writing, speaking and creating print, visual and digital materials accurately and purposefully within and across all learning areas.

Literacy is important in science. The language and literacy knowledge specific to the study of science develops along with scientific understanding and skills. For example, students move from recognising, observing and discussing familiar phenomena in the early years to documenting and hypothesising about speculative ideas in later years.

In science, commonly encountered genres and language features include: the procedural report and the explanatory genre (for example, ‘the water cycle’); the use of the passive voice (for example, ‘clouds are formed’); nominalisation (for example ‘sedimentation’, ‘condensation’); imperatives (for example, ‘heat the test tube’), and technical terms, which include common words that have a specific meaning in a science context.

Numeracy

Students become numerate as they develop the capacity to recognise and understand the role of mathematics in the world around them and the confidence, willingness and ability to apply mathematics to their lives in ways that are constructive and meaningful.

Many elements of numeracy are evident in science, particularly in Science Inquiry Skills. These include practical measurement and the collection, representation and interpretation of data from investigations. Students are introduced to measurement using informal units in the early years, then formal units; later they consider issues of uncertainty and reliability in measurement. As students progress, both qualitative and, later, quantitative data are collected, analysed and represented in graphical forms. Students learn data analysis skills, including identifying trends and patterns from numerical data and graphs. In later years, numeracy demands include the statistical analysis of data, including issues relating to accuracy, and linear mathematical relationships to calculate and predict values.
Information and communication technology (ICT) competence

Students develop ICT competence as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information at school, at home, at work and in their communities.

ICT competence is evident in science, particularly in Science Inquiry Skills. Information technologies are used to research science concepts and applications; digital technologies such as logging and spreadsheet software are used to collect, analyse and report on data. ICT enables students to use and analyse results efficiently and develop valid conclusions, and also allows access to other potential areas for investigation. Digital aids such as animations and simulations provide opportunities to test predictions that cannot be investigated through practical experiments in the classroom and may enhance students’ understanding and engagement with science. Communication technologies facilitate a collaborative approach among students that models the methods of contemporary science and offers opportunities for the communication and sharing of students’ ideas and results both within and beyond the classroom.

Critical and creative thinking

Students develop critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities, and use them when seeking new pathways or solutions. In learning to think broadly and deeply students learn to use reason and imagination to direct their thinking for different purposes. In the context of schooling, critical and creative thinking are integral to activities that require reason, logic, imagination and innovation.

Critical and creative thinking are embedded in a range of skills taught in science, including the ability to pose questions, make predictions, speculate, solve problems through investigation, make evidence-based decisions, analyse and evaluate evidence and summarise information. Students are encouraged to develop their own understanding of concepts based on active inquiry. This involves planning and conducting practical investigations, as well as selecting appropriate information from secondary sources and evaluating the sources of information to formulate conclusions. Students also learn to evaluate claims based on science and distinguish science from non-science.

Creative thinking enables the development of ideas that are new to the individual, and this is intrinsic to the development of scientific understanding. Students are taught skills that enable them to develop creative questions, to speculate, to think in new ways about observations of the world, and to suggest novel solutions to science-based problems. By their nature, science understandings change over time. The ability to be flexible and open-minded will be developed as students’ own understanding of concepts changes and develops as they actively acquire an increasingly scientifically view of their world. Through the use of critical and creative thinking, students develop a capacity to control their own learning.

Ethical behaviour

Students develop ethical behaviour as they learn to understand and act in accordance with ethical principles. This includes understanding the role of ethical principles, values and virtues in human life; acting with moral integrity; acting with regard for others; and having a desire and capacity to work for the common good.

Ethical behaviour is relevant to experimental science and the use of scientific information. Students explore what integrity means in science, and investigate and apply ethical guidelines in the gathering of evidence, including considering the implications of their investigation on others, on the environment and on other living organisms. Students are taught to evaluate claims based on science, enabling them to make reasoned judgments about a range of social, environmental and personal issues. Students also consider the ethical implications of various applications of science.
**Personal and social competence**

Students develop personal and social competence as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. This involves students recognising and regulating their emotions, developing concern for and understanding of others, establishing positive relationships, making responsible decisions, working effectively in teams and handling challenging situations constructively.

Self-management skills are built into the scientific inquiry process, in planning effectively, following procedures and working safely. These skills become more important in later years as students are required to work more independently.

Teamwork is an important aspect of science. From the early years, students work together, sharing ideas and discussing their work. They learn that scientists often work in teams made up of people with different expertise. This collaborative method of inquiry is used in their own learning.

Students also use their scientific knowledge to make informed choices about issues that impact their lives and consider the application of science to meet a range of personal and social needs.

**Intercultural understanding**

Students develop intercultural understanding as they learn to understand themselves in relation to others. This involves students valuing their own cultures and beliefs and those of others, and engaging with people of diverse cultures in ways that recognise commonalities and differences, create connections and cultivate respect between people.

There are opportunities within science to develop intercultural understanding, particularly in relation to Science as a Human Endeavour: in the application of science in a range of cultural contexts and the influence of people from a variety of cultures on the development of scientific knowledge and understanding.

**Cross-curriculum priorities**

There are three cross-curriculum priorities in the Australian Curriculum:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability.

The cross-curriculum priorities are embedded in the curriculum and will have a strong but varying presence depending on their relevance to each of the learning areas.

**Aboriginal and Torres Strait Islander histories and cultures**

Aboriginal and Torres Strait Islander communities are strong, rich and diverse. Aboriginal and Torres Strait Islander Identity is central to this priority and is intrinsically linked to living, learning Aboriginal and Torres Strait Islander communities, deep knowledge traditions and holistic world view.

A conceptual framework based on Aboriginal and Torres Strait Islander Peoples’ unique sense of Identity has been developed as a structural tool for the embedding of Aboriginal and Torres Strait Islander histories and cultures within the Australian curriculum. This sense of Identity is approached through the interconnected aspects of Country/Place, People and Culture. Embracing these elements enhances all areas of the curriculum.

The Aboriginal and Torres Strait Islander priority provides opportunities for all learners to deepen their knowledge of Australia by engaging with the world’s oldest continuous living cultures. This knowledge and understanding will enrich their ability to participate positively in the ongoing development of Australia.
The Australian Curriculum: science values Aboriginal and Torres Strait Islander histories and cultures. It acknowledges that Aboriginal and Torres Strait Islander Peoples have longstanding scientific knowledge traditions.

Students will have opportunities to learn that Aboriginal and Torres Strait Islander Peoples have developed knowledge about the world through observation, using all the senses; through prediction and hypothesis; through testing (trial and error); and through making generalisations within specific contexts. These scientific methods have been practised and transmitted from one generation to the next. Students will develop an understanding that Aboriginal and Torres Strait Islander Peoples have particular ways of knowing the world and continue to be innovative in providing significant contributions to development in science. They will investigate examples of Aboriginal and Torres Strait Islander science and the ways traditional knowledge and western scientific knowledge can be complementary.

Asia and Australia’s engagement with Asia

The Asia and Australia’s engagement with Asia priority provides a regional context for learning in all areas of the curriculum. China, India and other Asian nations are growing rapidly and the power and influence they have in all areas of global endeavour is extensive. An understanding of Asia underpins the capacity of Australian students to be active and informed citizens working together to build harmonious local, regional and global communities, and build Australia’s social, intellectual and creative capital.

This priority is concerned with Asia literacy for all Australian students. Asia literacy develops knowledge, skills and understanding about the histories, geographies, cultures, arts, literatures and languages of the diverse countries of our region. It fosters social inclusion in the Australian community. It enables students to communicate and engage with the peoples of Asia so they can effectively live, work and learn in the region. Australia now has extensive engagement with Asia in areas such as trade, investment, immigration, tourism, education and humanitarian assistance and this engagement is vital to the prosperity of all Australians.

The Australian Curriculum: science provides opportunities for students to appreciate that the Asia region plays an important leadership role in addressing significant contemporary global challenges related to climate change, biodiversity and genetic engineering. Students recognise that people from the Asia region have made and continue to make significant contributions to the application of technology in industry and everyday life. This learning area allows students to understand that the Asia region includes diverse environments and to appreciate that interaction between human activity and these environments continues to influence the region, including Australia, and has significance for the rest of the world.

Sustainability

Sustainability addresses the ongoing capacity of Earth to maintain all life.

Sustainable patterns of living meet the needs of the present without compromising the ability of future generations to meet their needs. Actions to improve sustainability are both individual and collective endeavours shared across local and global communities. They necessitate a renewed and balanced approach to the way humans interact with each other and the environment.

Education for sustainability develops the knowledge, skills and values necessary for people to act in ways that contribute to more sustainable patterns of living. It is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through action that recognises the relevance and interdependence of environmental, social, cultural and economic considerations.

The Australian Curriculum: science provides content that, over the years of schooling, enables students to build an understanding of the biosphere as a dynamic system providing conditions that sustain life on Earth. They gain an appreciation that all life is connected through ecosystems and humans depend on ecosystems.
for their wellbeing. This understanding is based on the view that humans are part of the ecosystems that comprise the biosphere, and that human activity impacts on ecosystems and therefore on biosphere processes and biosphere sustainability.

Scientific understanding and science inquiry processes help students to appreciate how people forecast change and plan the actions necessary to shape more sustainable futures, including the design, construction and/or management of the physical and social environment. By providing a focus on change in systems, its causes and consequences, the sustainability priority assists students to relate learning across the strands of science.

Links to the other learning areas

Learning in science involves the use of knowledge and skills learnt in other areas, particularly in English, mathematics and history.

English

There is strong support in schools across Australia for linking learning in science with learning literacy skills. The science tradition places a high priority on accurate communication. The Australian Curriculum: Science is supported by and in turn reinforces the learning of literacy skills. Students need to describe objects and events, interpret descriptions, read and give instructions, explain ideas to others, write reports and procedural accounts, participate in group discussions and provide expositions.

Mathematics

The science curriculum closely complements that of mathematics. In science, students process data using simple tables, lists, picture graphs, simple column graphs and line graphs. In the mathematics curriculum they will be developing these skills at similar year levels. In mathematics, students’ data analysis skills will develop to include scatter plots, linear graphs and the gradient of graphs. This will enhance their ability to analyse patterns and trends in data as part of scientific investigations.

Students develop their use of metric units in both the mathematics and science curriculums. The ability to convert between common metric units of length and mass and their use of decimal notation in mathematics will enable them to represent and compare data in meaningful ways in science. In mathematics, students learn simple statistical methods and these skills will enable students to apply quantitative analysis of data as required in science. The concept of outliers, learnt in mathematics, will help them to identify inconsistencies in quantitative data in science.

When considering phenomena and systems at a vast range of scales in science, students use their mathematical knowledge of timescales and intervals. They use scientific notation in the representation of these values as required. Students’ mathematical ability to solve problems involving linear equations can be utilised in science when investigating quantitative relationships.

History

History provides another avenue to the understanding of how science works. Science and its discoveries are a source of historical facts and artefacts. The strand Science as a Human Endeavour is an important link to historical developments. It is important that students learn that science and technology have grown through the gradual accumulation of knowledge over many centuries; that all sorts of people, including people like themselves, use and contribute to science. Historical studies of science and technology in the early Egyptian, Greek, Chinese, Arabic and Aboriginal and Torres Strait Islander cultures extending to modern times will help students understand the contributions of people from around the world.
The Australian Curriculum: Science takes account of what students have learnt in these areas so that their science learning is supported and their learning in other areas enhanced.

**Implications for teaching, assessment and reporting**

The science curriculum emphasises inquiry-based teaching and learning. A balanced and engaging approach to teaching will typically involve context, exploration, explanation and application. This requires a context or point of relevance through which students can make sense of the ideas they are learning. Opportunities for student-led open inquiry should also be provided within each phase of schooling.

Assessment encourages longer-term understanding and provides detailed diagnostic information. It shows what students know, understand and can demonstrate. It also shows what they need to do to improve. In particular, Science Inquiry Skills and Science as a Human Endeavour require a variety of assessment approaches.

Teachers use the Australian Curriculum content and achievement standards first to identify current levels of learning and achievement and then to select the most appropriate content (possibly from across several year levels) to teach individual students and/or groups of students. This takes into account that in each class there may be students with a range of prior achievement (below, at and above the year level expectations) and that teachers plan to build on current learning.

Teachers also use the achievement standards, at the end of a period of teaching, to make on-balance judgments about the quality of learning demonstrated by the students – that is, whether they have achieved below, at or above the standard. To make these judgments, teachers draw on assessment data that they have collected as evidence during the course of the teaching period. These judgments about the quality of learning are one source of feedback to students and their parents and inform formal reporting processes.

If a teacher judges that a student’s achievement is below the expected standard, this suggests that the teaching programs and practice should be reviewed to better assist individual students in their learning in the future. It also suggests that additional support and targeted teaching will be needed to ensure that the student does not fall behind.

Assessment of the Australian Curriculum takes place in different levels and for different purposes, including:

- ongoing formative assessment within classrooms for the purposes of monitoring learning and providing feedback, to teachers to inform their teaching and for students to inform their learning
- summative assessment for the purposes of twice-yearly reporting by schools to parents and carers on the progress and achievement of students
- annual testing of Years 3, 5, 7 and 9 students’ levels of achievement in aspects of literacy and numeracy, conducted as part of the National Assessment Program – Literacy and Numeracy (NAPLAN)
- periodic sample testing of specific learning areas within the Australian Curriculum as part of the National Assessment Program (NAP).
Foundation Year

The science content includes the three strands of Science Understanding, Science Inquiry Skills and Science as a Human Endeavour. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

From Foundation to Year 2, students learn that observations can be organised to reveal patterns, and that these patterns can be used to make predictions about phenomena. In Foundation, students observe and describe the behaviours and properties of everyday objects, materials and living things. They explore change in the world around them, including changes that impact on them, such as the weather, and changes they can effect, such as making things move or change shape. They learn that seeking answers to questions and making observations is a core part of science and use their senses to gather different types of information.

### Science Understanding

<table>
<thead>
<tr>
<th>Biological sciences</th>
<th>Chemical sciences</th>
<th>Physical sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Living things have basic needs, including food and water (ACSSU002)</td>
<td>Objects are made of materials that have observable properties (ACSSU003)</td>
<td>The way objects move depends on a variety of factors, including their size and shape (ACSSU005)</td>
</tr>
<tr>
<td>Earth and space sciences</td>
<td>Daily and seasonal changes in our environment, including the weather, affect everyday life (ACSSU004)</td>
<td></td>
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<tr>
<td>Physical sciences</td>
<td></td>
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</tbody>
</table>

### Science as a Human Endeavour

- Science involves exploring and observing the world using the senses (ACSHE013)
- Respond to questions about familiar objects and events (ACSIS014)
- Explore and make observations by using the senses (ACSIS011)
- Engage in discussions about observations and use methods such as drawing to represent ideas (ACSIS233)
- Share observations and ideas (ACSIS012)

### Science Inquiry Skills

- Questioning and predicting
- Planning and conducting
- Processing and analysing data and information
- Communicating

### Foundation Year achievement standard

By the end of the Foundation year students make observations of familiar objects and materials and explore their properties and behaviour. They suggest how the environment affects them and other living things.
Year 1

The Science Inquiry Skills and Science as a Human Endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standard and also to the content of the Science Understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

From Foundation to Year 2, students learn that observations can be organised to reveal patterns, and that these patterns can be used to make predictions about phenomena. In Year 1, students infer simple cause-and-effect relationships from their observations and experiences, and begin to link events and phenomena with observable effects. They observe changes that can be large or small and happen quickly or slowly. They explore the properties of familiar objects and phenomena, identifying similarities and differences. Students begin to value counting as a means of comparing observations, and are introduced to ways of organising their observations.

<table>
<thead>
<tr>
<th>Science Understanding</th>
<th>Science as a Human Endeavour</th>
<th>Science Inquiry Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological sciences</td>
<td>Nature and development of science</td>
<td>Questioning and predicting</td>
</tr>
<tr>
<td>Living things have a variety of external</td>
<td>Science involves asking questions about, and describing changes in,</td>
<td>Respond to and pose questions, and make</td>
</tr>
<tr>
<td>features (ACSSU017)</td>
<td>objects and events (ACSHE021)</td>
<td>predictions about familiar objects and</td>
</tr>
<tr>
<td>Living things live in different places</td>
<td>Use and influence of science</td>
<td>events (ACSIS024)</td>
</tr>
<tr>
<td>where their needs are met (ACSSU211)</td>
<td></td>
<td>Planning and conducting</td>
</tr>
<tr>
<td>Chemical sciences</td>
<td>People use science in their daily lives, including when caring</td>
<td>Participate in different types of guided</td>
</tr>
<tr>
<td>Everyday materials can be physically</td>
<td>for their environment and living things (ACSHE022)</td>
<td>investigations to explore and answer</td>
</tr>
<tr>
<td>changed in a variety of ways (ACSSU018)</td>
<td></td>
<td>questions, such as manipulating materials,</td>
</tr>
<tr>
<td>Earth and space sciences</td>
<td></td>
<td>testing ideas, and accessing information</td>
</tr>
<tr>
<td>Observable changes occur in the sky and</td>
<td></td>
<td>sources (ACSIS025)</td>
</tr>
<tr>
<td>landscape (ACSSU019)</td>
<td></td>
<td>Use informal measurements in the</td>
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<tr>
<td>Physical sciences</td>
<td></td>
<td>collection and recording of observations,</td>
</tr>
<tr>
<td>Light and sound are produced by a range</td>
<td></td>
<td>with the assistance of digital technologies</td>
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<tr>
<td>of sources and can be sensed (ACSSU020)</td>
<td></td>
<td>as appropriate (ACSIS026)</td>
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<tr>
<td></td>
<td></td>
<td>Processing and analysing data and</td>
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<tr>
<td></td>
<td></td>
<td>information</td>
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<tr>
<td></td>
<td></td>
<td>Use a range of methods to sort information,</td>
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<td></td>
<td></td>
<td>including drawings and provided tables</td>
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<tr>
<td></td>
<td></td>
<td>(ACSIS027)</td>
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<tr>
<td></td>
<td></td>
<td>Through discussion, compare observations</td>
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<td></td>
<td></td>
<td>with predictions (ACSIS212)</td>
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<tr>
<td></td>
<td></td>
<td>Evaluating</td>
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<tr>
<td></td>
<td></td>
<td>Compare observations with those of others</td>
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<td></td>
<td></td>
<td>(ACSIS213)</td>
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<td></td>
<td></td>
<td>Communicating</td>
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<td></td>
<td>Represent and communicate observations and</td>
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<td>ideas in a variety of ways such as oral</td>
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<td></td>
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<td>and written language, drawing and role play</td>
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<td>(ACSIS029)</td>
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</tbody>
</table>

Year 1 achievement standard

By the end of Year 1 students describe objects and events that they encounter in their everyday lives, and the effects of interacting with materials and objects. They describe changes to things in their local environment. They share their observations with others.
Year 2

The Science Inquiry Skills and Science as a Human Endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standards and also to the content of the Science Understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

From Foundation to Year 2, students learn that observations can be organised to reveal patterns, and that these patterns can be used to make predictions about phenomena. In Year 2, students describe the components of simple systems, such as stationary objects subjected to pushes or pulls, or combinations of materials, and show how objects and materials interact through direct manipulation. They observe patterns of growth and change in living things, and describe patterns and make predictions. They explore the use of resources from Earth and are introduced to the idea of the flow of matter when considering how water is used. They use counting and informal measurements to make and compare observations and begin to recognise that organising these observations in tables makes it easier to show patterns.

<table>
<thead>
<tr>
<th>Science Understanding</th>
<th>Science as a Human Endeavour</th>
<th>Science Inquiry Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological sciences</td>
<td>Nature and development of science</td>
<td>Questioning and predicting</td>
</tr>
<tr>
<td>Living things grow, change and have</td>
<td>Science involves asking questions about, and describing changes in, objects</td>
<td>Respond to and pose questions, and make</td>
</tr>
<tr>
<td>offspring similar to themselves (ACSSU</td>
<td>and events (ACSH034)</td>
<td>predictions about familiar objects and events</td>
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<tr>
<td>030)</td>
<td></td>
<td>(ACSS037)</td>
</tr>
<tr>
<td>Chemical sciences</td>
<td>Use and influence of science</td>
<td>Planning and conducting</td>
</tr>
<tr>
<td>Different materials can be combined,</td>
<td>People use science in their daily lives, including when caring for their</td>
<td>Participate in different types of guided</td>
</tr>
<tr>
<td>including by mixing, for a particular</td>
<td>environment and living things (ACSH035)</td>
<td>investigations to explore and answer questions,</td>
</tr>
<tr>
<td>purpose (ACSSH031)</td>
<td></td>
<td>such as manipulating materials, testing ideas,</td>
</tr>
<tr>
<td>Earth and space sciences</td>
<td></td>
<td>and accessing information sources (ACSS038)</td>
</tr>
<tr>
<td>Earth’s resources, including water,</td>
<td></td>
<td>Use informal measurements in the collection</td>
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<tr>
<td>are used in a variety of ways (ACSSU032)</td>
<td></td>
<td>and recording of observations, with the</td>
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<td></td>
<td></td>
<td>assistance of digital technologies as</td>
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<td></td>
<td></td>
<td>appropriate (ACSS039)</td>
</tr>
<tr>
<td>Physical sciences</td>
<td></td>
<td>Processing and analysing data and information</td>
</tr>
<tr>
<td>A push or a pull affects how an object</td>
<td></td>
<td>Use a range of methods to sort information,</td>
</tr>
<tr>
<td>moves or changes shape (ACSSU033)</td>
<td></td>
<td>including drawings and provided tables (ACSS040)</td>
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<tr>
<td></td>
<td></td>
<td>Through discussion, compare observations</td>
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<tr>
<td></td>
<td></td>
<td>with predictions (ACSS214)</td>
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<tr>
<td></td>
<td></td>
<td>Evaluating</td>
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<tr>
<td></td>
<td></td>
<td>Compare observations with those of others</td>
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<td></td>
<td></td>
<td>(ACSS041)</td>
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<td></td>
<td></td>
<td>Communicating</td>
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<td></td>
<td></td>
<td>Represent and communicate observations and</td>
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<td></td>
<td></td>
<td>ideas in a variety of ways such as oral and</td>
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<tr>
<td></td>
<td></td>
<td>written language, drawing and role play</td>
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<td>(ACSS042)</td>
</tr>
</tbody>
</table>

Year 2 achievement standard

By the end of Year 2 students pose questions about their experiences, record and represent their observations and communicate their
ideas to others. Students describe changes to objects, materials and living things. They identify that certain materials have different uses, that resources from the Earth are required by living things and describe examples of where science is used in people’s daily lives.
Year 3

The **Science Inquiry Skills** and **Science as a Human Endeavour** strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standard and also to the content of the **Science Understanding** strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

Over Years 3 to 6, students develop their understanding of a range of systems operating at different time and geographic scales. In Year 3, students observe heat and its effects on solids and liquids and begin to develop an understanding of energy flows through simple systems. In observing day and night, they develop an appreciation of regular and predictable cycles. Students order their observations by grouping and classifying; in classifying things as living or non-living they begin to recognise that classifications are not always easy to define or apply. They begin to quantify their observations to enable comparison, and learn more sophisticated ways of identifying and representing relationships, including the use of tables and graphs to identify trends. They use their understanding of relationships between components of simple systems to make predictions.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological sciences</strong></td>
<td>Scientific understanding of science</td>
<td>Questioning and predicting</td>
</tr>
<tr>
<td>Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)</td>
<td>Science involves making predictions and describing patterns and relationships (ACSHE050)</td>
<td>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACIS053)</td>
</tr>
<tr>
<td><strong>Chemical sciences</strong></td>
<td>Use and influence of science</td>
<td>Planning and conducting</td>
</tr>
<tr>
<td>A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)</td>
<td>Science knowledge helps people to understand the effect of their actions (ACSHE051)</td>
<td>Suggest ways to plan and conduct investigations to find answers to questions (ACIS054)</td>
</tr>
<tr>
<td><strong>Earth and space sciences</strong></td>
<td></td>
<td>Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (ACIS055)</td>
</tr>
<tr>
<td>Earth’s rotation on its axis causes regular changes, including night and day (ACSSU048)</td>
<td></td>
<td>Process and analyse data and information</td>
</tr>
<tr>
<td><strong>Physical sciences</strong></td>
<td></td>
<td>Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACIS057)</td>
</tr>
<tr>
<td>Heat can be produced in many ways and can move from one object to another (ACSSU049)</td>
<td></td>
<td>Compare results with predictions, suggesting possible reasons for findings (ACIS215)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Evaluating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reflect on the investigation, including whether a test was fair or not (ACIS058)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACIS060)</td>
</tr>
</tbody>
</table>
Year 3 achievement standard

By the end of Year 3 students describe how they can use science investigations to respond to questions and identify where people use science knowledge in their lives. They collect and present data in a way that helps to answer their questions and use their experiences to make predictions. Students describe features common to living things. They use their knowledge of the movement of the Earth, materials and the behaviour of heat to suggest explanations for everyday observations.
Year 4

The Science Inquiry Skills and Science as a Human Endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standard and also to the content of the Science Understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

Over Years 3 to 6, students develop their understanding of a range of systems operating at different time and geographic scales. In Year 4, students broaden their understanding of classification and form and function through an exploration of the properties of natural and processed materials. They learn that forces include non-contact forces and begin to appreciate that some interactions result from phenomena that can’t be seen with the naked eye. They begin to appreciate that current systems, such as Earth’s surface, have characteristics that have resulted from past changes and that living things form part of systems. They understand that some systems change in predictable ways, such as through cycles. They apply their knowledge to make predictions based on interactions within systems, including those involving the actions of humans.

<table>
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<tbody>
<tr>
<td><strong>Biological sciences</strong></td>
<td>Nature and development of science</td>
<td>Questioning and predicting</td>
</tr>
<tr>
<td>Living things have life cycles (ACSSU072)</td>
<td>Science involves making predictions and describing patterns and relationships (ACSHE061)</td>
<td></td>
</tr>
<tr>
<td>Living things, including plants and animals, depend on each other and the environment to survive (ACSSU073)</td>
<td>Use and influence of science</td>
<td>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge (ACSIS064)</td>
</tr>
<tr>
<td><strong>Chemical sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural and processed materials have a range of physical properties; These properties can influence their use (ACSSU074)</td>
<td>Science knowledge helps people to understand the effect of their actions (ACSHE062)</td>
<td></td>
</tr>
<tr>
<td><strong>Earth and space sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earth’s surface changes over time as a result of natural processes and human activity (ACSSU075)</td>
<td></td>
<td>Planning and conducting</td>
</tr>
<tr>
<td><strong>Physical sciences</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)</td>
<td></td>
<td>Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate (ACSIS066)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Processing and analysing data and information</td>
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<td></td>
<td></td>
<td>Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (ACSIS068)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare results with predictions, suggesting possible reasons for findings (ACSIS216)</td>
</tr>
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<td></td>
<td>Evaluating</td>
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<tr>
<td></td>
<td></td>
<td>Reflect on the investigation; including whether a test was fair or not (ACSIS069)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Communicating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports (ACSIS071)</td>
</tr>
</tbody>
</table>
Year 4 achievement standard

By the end of Year 4 students pose questions about their world and predict possible outcomes from investigations. They describe how they and others use science to ask questions and make predictions. They record observations and measurements and identify patterns in data, including cause-and-effect relationships. They describe situations where science understanding can influence their own and others’ actions.

Students use the properties of materials to explain how objects and materials behave. They identify changes to the observable world and suggest explanations for the motion of objects. They describe how interrelationships are essential for the survival of living things and identify major changes in the life cycle of a plant or animal.
Year 5

The Science Inquiry Skills and Science as a Human Endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standard and also to the content of the Science Understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

Over Years 3 to 6, students develop their understanding of a range of systems operating at different time and geographic scales. In Year 5, students are introduced to cause and effect relationships that relate to form and function through an exploration of adaptations of living things. They explore observable phenomena associated with light and begin to appreciate that phenomena have sets of characteristic behaviours. They broaden their classification of matter to include gases and begin to see how matter structures the world around them. Students consider Earth as a component within a solar system and use models for investigating systems at astronomical scales. Students begin to identify stable and dynamic aspects of systems, and learn how to look for patterns and relationships between components of systems. They develop explanations for the patterns they observe.

<table>
<thead>
<tr>
<th>Science Understanding</th>
<th>Science as a Human Endeavour</th>
<th>Science Inquiry Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological sciences</td>
<td>Nature and development of science</td>
<td>Questioning and predicting</td>
</tr>
<tr>
<td>Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)</td>
<td>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHE081)</td>
<td>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be (ACSIS231)</td>
</tr>
<tr>
<td>Chemical sciences</td>
<td></td>
<td>Planning and conducting</td>
</tr>
<tr>
<td>Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)</td>
<td>Important contributions to the advancement of science have been made by people from a range of cultures (ACSHE082)</td>
<td>With guidance, select appropriate investigation methods to answer questions or solve problems (ACSIS086)</td>
</tr>
<tr>
<td>Earth and space sciences</td>
<td>Use and influence of science</td>
<td>Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate (ACSIS087)</td>
</tr>
<tr>
<td>The Earth is part of a system of planets orbiting around a star (the sun) (ACSSU078)</td>
<td>Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives (ACSHE083)</td>
<td>Use equipment and materials safely, identifying potential risks (ACSIS089)</td>
</tr>
<tr>
<td>Physical sciences</td>
<td>Scientific knowledge is used to inform personal and community decisions (ACSHE217)</td>
<td>Processing and analysing data and information</td>
</tr>
<tr>
<td>Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)</td>
<td></td>
<td>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSIS090)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compare data with predictions and use as evidence in developing explanations (ACSIS219)</td>
</tr>
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<td>Evaluating</td>
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<td></td>
<td></td>
<td>Suggest improvements to the methods used to investigate a question or solve a problem (ACSIS091)</td>
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<td></td>
<td></td>
<td>Communicating</td>
</tr>
</tbody>
</table>

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Year 5 achievement standard

By the end of Year 5 students pose questions relating to investigations, predict what might happen when things are changed, and assist in the planning of methods to test these predictions. When carrying out investigations they use equipment in a way that improves the accuracy of their measurements and observations. They describe patterns in their results, report on their findings and reflect on the methods that they have used.

Students describe how developments in science have improved our understanding of the world and have enabled people to make decisions based on scientific knowledge. They describe the place of Earth in space. They identify cause-and-effect relationships in the natural world and describe physical differences between solids, liquids and gases.
Year 6

The *Science Inquiry Skills* and *Science as a Human Endeavour* strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standard and also to the content of the *Science Understanding* strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

Over Years 3 to 6, students develop their understanding of a range of systems operating at different time and geographic scales. In Year 6, students explore how changes can be classified in different ways. They learn about transfer and transformations of electricity, and continue to develop an understanding of energy flows through systems. They link their experiences of electric circuits as a system at one scale, to generation of electricity from a variety of sources at another scale and begin to see links between these systems. They develop a view of Earth as a dynamic system, in which changes in one aspect of the system impact on other aspects; similarly they see that the growth and survival of living things are dependent on matter and energy flows within a larger system. Students begin to see the role of variables in measuring changes and learn how look for patterns and relationships between variables. They develop explanations for the patterns they observe, drawing on evidence.

### Science Understanding

<table>
<thead>
<tr>
<th>Biological sciences</th>
<th>Chemical sciences</th>
<th>Earth and space sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>The growth and survival of living things are affected by the physical conditions of their environment (ACSSU094)</td>
<td>Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting (ACSSU095)</td>
<td>Sudden geological changes or extreme weather conditions can affect Earth’s surface (ACSSU096)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical circuits provide a means of transferring and transforming electricity (ACSSU097)</td>
</tr>
<tr>
<td>Energy from a variety of sources can be used to generate electricity (ACSSU219)</td>
</tr>
</tbody>
</table>

### Science as a Human Endeavour

<table>
<thead>
<tr>
<th>Nature and development of science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena (ACSHIE098)</td>
</tr>
<tr>
<td>Important contributions to the advancement of science have been made by people from a range of cultures (ACSHIE099)</td>
</tr>
<tr>
<td>Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives (ACSHIE100)</td>
</tr>
<tr>
<td>Scientific knowledge is used to inform personal and community decisions (ACSHIE220)</td>
</tr>
</tbody>
</table>

### Science Inquiry Skills

<table>
<thead>
<tr>
<th>Questioning and predicting</th>
</tr>
</thead>
<tbody>
<tr>
<td>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be (ACSSIS232)</td>
</tr>
<tr>
<td>With guidance, select appropriate investigation methods to answer questions or solve problems (ACSSIS103)</td>
</tr>
<tr>
<td>Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate (ACSSIS104)</td>
</tr>
<tr>
<td>Use equipment and materials safely, identifying potential risks (ACSSIS105)</td>
</tr>
<tr>
<td>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate (ACSSIS107)</td>
</tr>
<tr>
<td>Compare data with predictions and use as evidence in developing explanations (ACSSIS221)</td>
</tr>
<tr>
<td>Suggest improvements to the methods used to investigate a question or solve a problem (ACSSIS108)</td>
</tr>
</tbody>
</table>
Year 6 achievement standard

By the end of Year 6 students plan investigations to answer questions relating to simple cause-and-effect relationships. When carrying out investigations, they collect relevant data and apply the concept of a fair test. They reflect on the processes that they have used and demonstrate an awareness of science inquiry methods in their work. They represent data and knowledge using introductory scientific language and graphical representations.

Students suggest explanations for observable changes and they predict the effect of environmental changes on living things. They compare different types of change in materials. They identify requirements for the transfer of electricity and describe one way that electricity can be generated. They describe how developments in science have affected peoples’ lives and identify examples where scientific knowledge is used in decision making.
Year 7

The Science Inquiry Skills and Science as a Human Endeavour strands are described across a two-year band. In their planning, schools and teachers refer to the expectations outlined in the Achievement Standards and also to the content of the Science Understanding strand for the relevant year level to ensure that these two strands are addressed over the two-year period. The three strands of the curriculum are interrelated and their content is taught in an integrated way. The order and detail in which the content descriptions are organised into teaching/learning programs are decisions to be made by the teacher.

Over Years 7 to 10, students develop their understanding of microscopic and atomic structures; how systems at a range of scales are shaped by flows of energy and matter and interactions due to forces, and develop the ability to quantify changes and relative amounts. In Year 7, students explore the diversity of life on Earth and continue to develop their understanding of the role of classification in ordering and organising information. They use and develop models such as food chains, food webs and the water cycle to represent and analyse the flow of energy and matter through ecosystems and explore the impact of changing components within these systems. They consider the interaction between multiple forces when explaining changes in an object’s motion. They explore the notion of renewable and non-renewable resources and consider how this classification depends on the timescale considered. They investigate relationships in the Earth, sun, moon system and use models to predict and explain events. Students make accurate measurements and control variables to analyse relationships between system components and explore and explain these relationships through increasingly complex representations.

### Science Understanding

<table>
<thead>
<tr>
<th>Biological sciences</th>
<th>Nature and development of science</th>
<th>Science Inquiry Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are differences within and between groups of organisms; classification helps organise this diversity (ACSSU111)</td>
<td>Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people’s understanding of the world (ACSHE119)</td>
<td>Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIM124)</td>
</tr>
<tr>
<td>Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions (ACSSU112)</td>
<td>Science knowledge can develop through collaboration and connecting ideas across the disciplines of science (ACSHE223)</td>
<td>Planning and conducting</td>
</tr>
</tbody>
</table>

### Chemical sciences

| Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques (ACSSU113) | Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may involve ethical considerations (ACSHE120) | Use and influence of science |

### Earth and space sciences

| Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon (ACSSU115) | Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management (ACSHE121) | Processing and analysing data and information |
| Some of Earth’s resources are renewable, but others are non-renewable (ACSSU116) | People use understanding and skills from across the disciplines of science in their occupations (ACSHE224) | Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships, including using digital technologies as appropriate (ACSIM129) |
| Water is an important resource that cycles through the environment (ACSSU222) | | Summarise data, from students’ own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions (ACSIM130) |

### Physical sciences

| Change to an object’s motion is caused by unbalanced forces acting on the object (ACSSU117) | | Evaluating |
| Earth’s gravity pulls objects towards the centre of the Earth (ACSSU118) | | Reflect on the method used to investigate a question or solve a problem, including evaluating the quality of the data collected, |
and identify improvements to the method (ACSIS131)

Use scientific knowledge and findings from investigations to evaluate claims (ACSIS132)

Communicating

Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate (ACSIS133)

Year 7 achievement standard

By the end of Year 7, students pose questions and apply scientific concepts to everyday problems and make general predictions based on their experiences. They plan procedures for investigations that take into account the need for fair testing and use equipment that improves fairness and accuracy. They communicate their observations and data clearly, summarise their data where appropriate, and suggest improvements to their methods.

Students predict the effect of single changes on systems involving living things and suggest ways to classify organisms based on observable differences. They distinguish between pure substances and mixtures and plan appropriate methods to separate mixtures. They explain why some resources are not renewable and describe changes to water during the water cycle. They describe how unbalanced forces change the motion of objects and how changes in the position of objects in space cause other observable effects. They identify where science knowledge is used to propose solutions to problems and describe examples of where people use science in their work. They describe how evidence has led to an improved understanding of a scientific idea.
Glossary

Adaptation

a physical or behavioural characteristic that is inherited and which result in an individual being more likely to survive and reproduce in its environment

Analyse

consider in detail for the purpose of finding meaning or relationships, and identifying patterns, similarities and differences

Characteristic

distinguishing aspect (including features and behaviours) of an object material, living thing or event

Classify

arrange into named categories in order to sort, group or identify

Collaborate

work with others to perform a specific task

Conclusion

a judgement based on evidence

Contemporary science

new and emerging science research and issues of current relevance and interest

Continuous data

quantitative data with a potentially infinite number of possible values along a continuum

Controlled variable

a variable that is kept constant (or changed in constant ways) during an investigation

Conventions

agreed methods of representing concepts, information and behaviours

Data

the plural of datum; the measurement of an attribute, e.g. the volume of gas or the type of rubber. This does not necessarily mean a single measurement: it may be the result of averaging several repeated measurements and these could be quantitative or qualitative
**Dependent variable**

a variable that changes in response to changes to the independent variable in an investigation

**Design**

plan and evaluate the construction of a product or process, including an investigation

**Digital technologies**

technology systems that handle digital data including hardware and software for specific purposes

**Discrete data**

quantitative data consisting of a number of separate values where intermediate values are not permissible

**Environment**

all the surroundings, both living and non-living

**Evaluate**

examine and judge the merit or significance of something, including processes, events, descriptions, relationships or data

**Evidence**

in science, evidence is data that is considered reliable and valid and which can be used to support a particular idea, conclusion or decision. Evidence gives weight or value to data by considering its credibility, acceptance, bias, status, appropriateness and reasonableness

**Experimental (investigation)**

an investigation that involves carrying out a practical activity

**Fair test**

an investigation where one variable (the independent variable) is changed and all other conditions (controlled variables) are kept the same; what is measured or observed is referred to as the dependent variable

**Field work**

observational research undertaken in the normal environment of the subject of the study

**Force**

a push or pull between objects which may cause one or both objects to change speed and/or the direction of their motion (i.e. accelerate) or change their shape. Scientists identify four fundamental forces: gravitational, electromagnetic (involving both electrostatic and magnetic forces), weak nuclear forces and strong nuclear forces. All interactions between matter can be explained as the action of one or a combination of the four fundamental forces.
**Formal measurement**

measurement based on an agreed standard unit (e.g. metre, second, gram)

**Graph**

a visual representation of the relationship between quantities plotted with reference to a set of axes

**Guided investigation**

an investigation partly directed by the teacher

**Hypothesis**

a tentative idea, based on observation, that can be supported or refuted by experiment

**Independent variable**

the variable that is changed in an investigation to see what effect it has on the dependent variable

**Informal measurement**

measurement which is not based on any agreed standard unit (e.g. hand spans, paces, cups)

**Investigation**

a scientific process of answering a question, exploring an idea or solving a problem that requires activities such as planning a course of action, collecting data, interpreting data, reaching a conclusion and communicating these activities

**Law**

statement of a relationship based on available evidence

**Local environment**

surroundings that can be considered as proximal or familiar to the subject of investigation (e.g. an organism, mountain, student)

**Material**

a substance with particular qualities or that is used for specific purposes

**Matter**

a physical substance; anything that has mass and occupies space

**Model**

a representation that describes, simplifies, clarifies or provides an explanation of the workings, structure or relationships within an object, system or idea
Multi-modal text

text that combines two or more communication modes e.g. print text, image and spoken word as in film or computer presentations

Natural materials

any product or physical matter that comes from plants, animals, or Earth and has undergone very little modification by humans e.g. minerals and the metals that can be extracted from them (without further modification) are considered natural materials

Observable

that which can be seen, heard, felt, tasted or smelled either directly by an individual or indirectly by a measuring device e.g. a ruler, camera or thermometer

Pattern

repeated occurrences or sequences

Primary source

in science, a primary source is information created by the person or persons directly involved in a study or observing an event

Processed materials

products of physical matter that have been modified from natural materials by human intervention or that do not occur at all in the natural environment, but have been designed and manufactured to fulfil a particular purpose

Property

attribute of an object or material, normally used to describe attributes common to a group

Qualitative data

information that is not numerical in nature

Quantitative data

numerical information

Reflect on

think carefully about something, such as past experiences, activities or events

Relationship

the connection or association between ideas or between components of systems and structures

Reliable data
data that has been judged to have a high level of reliability; reliability is the degree to which an assessment instrument or protocol consistently and repeatedly measures an attribute achieving similar results for the same population

Report

a written account of an investigation

Research

to locate, gather, record and analyse information in order to develop understanding

Scientific language

terminology that has specific meaning in a scientific context

Scientific literacy

the ability to use scientific knowledge, understanding, and inquiry skills to identify questions, acquire new knowledge, explain science phenomena, solve problems and draw evidence-based conclusions in making sense of the world, and to recognise how understandings of the nature, development, use and influence of science help us make responsible decisions and shape our interpretations of information

Scientist

a person who works within a recognised field of science

Secondary source

information that has been compiled from primary sources by a person or persons not directly involved in the original study or event

Senses

hearing, sight, smell, touch and taste

Simulation

a representation of a process, event or system which imitates the real situation

Survey

an investigation method involving asking questions of a range of respondents

Sustainable

supports the needs of the present without compromising the ability of future generations to support their needs

System

a group of interacting objects, materials or processes that form an integrated whole
Table

an arrangement of data or ideas in rows and columns

Technology

the development of products, services, systems and environments, using various types of knowledge, to meet human needs and wants

Theory

an explanation of a set of observations that is based on one or more proven hypotheses which has been accepted through consensus by a group of scientists

Tools

equipment used to make a task easier

Trend

general direction in which something is changing

Validity

the extent to which tests measure what was intended; the extent to which data, inferences and actions produced from tests and other processes are accurate

Variable

a factor that can be changed, kept the same or measured in an investigation e.g. time, distance, light, temperature
### Science Scope and Sequence: Foundation to Year 6

<table>
<thead>
<tr>
<th>Science Understanding</th>
<th>Foundation Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biological sciences</strong></td>
<td>Living things have basic needs, including food and water</td>
<td>Living things have a variety of external features and have offspring similar to themselves</td>
<td>Living things can be grouped on the basis of observable features and can be distinguished from non-living things</td>
<td>Living things have life cycles</td>
<td>Living things, including plants and animals, depend on each other and the environment to survive</td>
<td>The growth and survival of living things are affected by the physical conditions of their environment</td>
<td></td>
</tr>
<tr>
<td><strong>Chemical sciences</strong></td>
<td>Objects are made of materials that have observable properties</td>
<td>Everyday materials can be physically changed in a variety of ways</td>
<td>Different materials can be combined, including by mixing, for a particular purpose</td>
<td>A change of state between solid and liquid can be caused by adding or removing heat</td>
<td>Natural and processed materials have a range of physical properties; these properties can influence their use</td>
<td>Solids, liquids and gases have different observable properties and behave in different ways</td>
<td>Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting</td>
</tr>
<tr>
<td><strong>Earth and space sciences</strong></td>
<td>Daily and seasonal changes in our environment, including the weather, affect everyday life</td>
<td>Observable changes occur in the sky and landscape</td>
<td>Earth's resources, including water, are used in a variety of ways</td>
<td>Earth's rotation on its axis causes regular changes, including night and day</td>
<td>Earth's surface changes over time as a result of natural processes and human activity</td>
<td>The Earth is part of a system of planets orbiting around a star (the sun)</td>
<td>Sudden geological changes or extreme weather conditions can affect Earth's surface</td>
</tr>
<tr>
<td><strong>Physical sciences</strong></td>
<td>The way objects move depends on a variety of factors, including their size and shape</td>
<td>Light and sound are produced by a range of sources and can be sensed</td>
<td>A push or a pull affects how an object moves or changes shape</td>
<td>Heat can be produced in many ways and can move from one object to another</td>
<td>Forces can be exerted by one object on another through direct contact or from a distance</td>
<td>Light from a source forms shadows and can be absorbed, reflected and refracted</td>
<td>Electrical circuits provide a means of transferring and transforming electricity</td>
</tr>
<tr>
<td>Science Understanding</td>
<td>Year 5</td>
<td>Year 6</td>
<td>Year 7</td>
<td>Year 8</td>
<td>Year 9</td>
<td>Year 10</td>
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</tr>
<tr>
<td><strong>Biological sciences</strong></td>
<td>Living things have structural features and adaptations that help them to survive in their environment</td>
<td>The growth and survival of living things are affected by the physical conditions of their environment</td>
<td>There are differences within and between groups of organisms; classification helps organise this diversity</td>
<td>Cells are the basic units of living things and have specialised structures and functions</td>
<td>Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes in their environment</td>
<td>The transmission of heritable characteristics from one generation to the next involves DNA and genes</td>
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<tr>
<td></td>
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<td></td>
<td>Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions</td>
<td></td>
<td>Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems</td>
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</tr>
<tr>
<td><strong>Chemical sciences</strong></td>
<td>Solids, liquids and gases have different observable properties and behave in different ways</td>
<td>Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting</td>
<td>Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques</td>
<td>The properties of the different states of matter can be explained in terms of the motion and arrangement of particles</td>
<td>Differences between elements, compounds and mixtures can be described at a particle level</td>
<td>All matter is made of atoms which are composed of protons, neutrons and electrons; nuclear radioactivity arises from the decay of nuclei in atoms</td>
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</tr>
<tr>
<td><strong>Earth and space sciences</strong></td>
<td>The Earth is part of a system of planets orbiting around a star (the sun)</td>
<td>Sudden geological changes or extreme weather conditions can affect Earth’s surface</td>
<td>Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon</td>
<td>Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales</td>
<td>The theory of plate tectonics explains global patterns of geological activity and continental movement</td>
<td>The universe contains features including galaxies, stars and solar systems and the Big Bang theory can be used to explain the origin of the universe</td>
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</tr>
<tr>
<td><strong>Physical sciences</strong></td>
<td>Light from a source forms shadows and can be absorbed, reflected and refracted</td>
<td>Electrical circuits provide a means of transferring and transforming electricity</td>
<td>Change to an object’s motion is caused by unbalanced forces acting on the object</td>
<td>Energy appears in different forms including movement (kinetic energy), heat and potential energy, and causes change within systems</td>
<td>Energy conservation in a system can be explained by describing energy transfers and transformations</td>
<td>The motion of objects can be described and predicted using the laws of physics</td>
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</table>
## Science Scope and Sequence: Foundation to Year 6

### Science Inquiry Skills

<table>
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<tr>
<th>Science as a Human Endeavour</th>
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<th>Year 5</th>
<th>Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nature and development of science</td>
<td>Science involves exploring and observing the world using the senses</td>
<td>Science involves asking questions about, and describing changes in, objects and events</td>
<td>Science involves making predictions and describing patterns and relationships</td>
<td>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena</td>
<td>Important contributions to the advancement of science have been made by people from a range of cultures</td>
<td></td>
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</tr>
<tr>
<td>Use and influence of science</td>
<td>People use science in their daily lives, including when caring for their environment and living things</td>
<td>Science knowledge helps people to understand the effect of their actions</td>
<td>Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives</td>
<td>Scientific knowledge is used to inform personal and community decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Questioning and predicting</strong></td>
<td>Respond to questions about familiar objects and events</td>
<td>Respond to and pose questions, and make predictions about familiar objects and events</td>
<td>With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge</td>
<td>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be</td>
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<tr>
<td><strong>Planning and conducting</strong></td>
<td>Explore and make observations by using the senses</td>
<td>Participate in different types of guided investigations to explore and answer questions, such as manipulating materials, testing ideas, and accessing information sources</td>
<td>Suggest ways to plan and conduct investigations to find answers to questions</td>
<td>With guidance, select appropriate investigation methods to answer questions or solve problems</td>
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<tr>
<td><strong>Processing and analysing data and information</strong></td>
<td>Engage in discussions about observations and use methods such as drawing to represent ideas</td>
<td>Use a range of methods to sort information, including drawings and provided tables</td>
<td>Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends</td>
<td>Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data using digital technologies as appropriate</td>
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<tr>
<td><strong>Evaluating</strong></td>
<td>Compare observations with those of others</td>
<td>Reflect on the investigation, including whether a test was fair or not</td>
<td>Compare results with predictions, suggesting possible reasons for findings</td>
<td>Compare data with predictions and use as evidence in developing explanations</td>
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<tr>
<td><strong>Communicating</strong></td>
<td>Share observations and ideas</td>
<td>Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play</td>
<td>Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports</td>
<td>Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts</td>
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<table>
<thead>
<tr>
<th>Science Inquiry Skills</th>
<th>Science as a Human Endeavour</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
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<tbody>
<tr>
<td><strong>Science Scope and Sequence: Year 5 to Year 10</strong></td>
<td>Nature and development of science</td>
<td>Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena</td>
<td>Important contributions to the advancement of science have been made by people from a range of cultures</td>
<td>Science knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people's understanding of the world</td>
<td>Science knowledge can develop through collaboration and connecting ideas across the disciplines of science</td>
<td>Scientific understanding, including models and theories, are contestable and are refined over time through a process of review by the scientific community</td>
<td>Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries</td>
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<tr>
<td>Use and influence of science</td>
<td>Scientific understandings, discoveries and inventions are used to solve problems that directly affect people's lives</td>
<td>Scientific knowledge is used to inform personal and community decisions</td>
<td>People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions</td>
<td>Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities</td>
<td>The values and needs of contemporary society can influence the focus of scientific research</td>
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<tr>
<td>Questioning and predicting</td>
<td>With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be</td>
<td>Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge</td>
<td>Formulate questions or hypotheses that can be investigated scientifically</td>
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<tr>
<td>Planning and conducting</td>
<td>With guidance, select appropriate investigation methods to answer questions or solve problems</td>
<td>Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed</td>
<td>Plan, select and use appropriate investigation methods, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods</td>
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<tr>
<td>Processing and analysing data and information</td>
<td>Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate</td>
<td>Use equipment and materials safely, identifying potential risks</td>
<td>Select and use appropriate equipment, including digital technologies, to systematically and accurately collect and record data</td>
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<tr>
<td>Evaluating</td>
<td>Use scientific knowledge and findings from investigations to evaluate claims</td>
<td>Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies</td>
<td>Use knowledge of scientific concepts to draw conclusions that are consistent with evidence</td>
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<tr>
<td>Communicating</td>
<td>Suggest improvements to the methods used to investigate a question or solve a problem</td>
<td>Reflect on the method used to investigate a question or solve a problem, including evaluating the quality of the data collected, and identify improvements to the method</td>
<td>Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data</td>
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<tr>
<td></td>
<td>Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts</td>
<td>Use scientific knowledge and findings from investigations to evaluate claims</td>
<td>Critically analyse the validity of information in secondary sources and evaluate the approaches used to solve problems</td>
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<tr>
<td></td>
<td>Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate</td>
<td>Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations</td>
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# History

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## Glossary
Rationale

History is a disciplined process of inquiry into the past that develops students' curiosity and imagination. Awareness of history is an essential characteristic of any society, and historical knowledge is fundamental to understanding ourselves and others. It promotes the understanding of societies, events, movements and developments that have shaped humanity from earliest times. It helps students appreciate how the world and its people have changed, as well as the significant continuities that exist to the present day. History, as a discipline, has its own methods and procedures which make it different from other ways of understanding human experience. The study of history is based on evidence derived from remains of the past. It is interpretative by nature, promotes debate and encourages thinking about human values, including present and future challenges. The process of historical inquiry develops transferable skills, such as the ability to ask relevant questions; critically analyse and interpret sources; consider context; respect and explain different perspectives; develop and substantiate interpretations, and communicate effectively.

The curriculum generally takes a world history approach within which the history of Australia is taught. It does this in order to equip students for the world (local, regional and global) in which they live. An understanding of world history enhances students' appreciation of Australian history. It enables them to develop an understanding of the past and present experiences of Aboriginal and Torres Strait Islander peoples, their identity and the continuing value of their culture. It also helps students to appreciate Australia’s distinctive path of social, economic and political development, its position in the Asia-Pacific region, and its global interrelationships. This knowledge and understanding is essential for informed and active participation in Australia’s diverse society.

Aims

The Australian Curriculum: History aims to ensure that students develop:

- interest in, and enjoyment of, historical study for lifelong learning and work, including their capacity and willingness to be informed and active citizens
- knowledge, understanding and appreciation of the past and the forces that shape societies, including Australian society
- understanding and use of historical concepts, such as evidence, continuity and change, cause and effect, perspectives, empathy, significance and contestability
- capacity to undertake historical inquiry, including skills in the analysis and use of sources, and in explanation and communication.
Content Structure

The Australian Curriculum: History is organised into two interrelated strands: Historical Knowledge and Understanding and Historical Skills.

Historical Knowledge and Understanding

This strand includes personal, family, local, state or territory, national, regional and world history. There is an emphasis on Australian history in its world history context at Foundation to Year 10 and a focus on world history in the senior secondary years. The strand includes a study of societies, events, movements and developments that have shaped world history from the time of the earliest human communities to the present day.

This strand explores key concepts for developing historical understanding, such as: evidence, continuity and change, cause and effect, significance, perspectives, empathy and contestability. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

Historical Skills

This strand promotes skills used in the process of historical inquiry: chronology, terms and concepts; historical questions and research; the analysis and use of sources; perspectives and interpretations; explanation and communication. Within this strand there is an increasing emphasis on historical interpretation and the use of evidence.

Relationship between the strands

The two strands are integrated in the development of a teaching and learning program. The Historical Knowledge and Understanding strand provides the contexts through which particular skills are to be developed. Historical Skills have been described in bands of schooling (over three years at Foundation to Year 2 and at two-year intervals in subsequent year levels). The sequencing and description of the Historical Skills strand, in bands of schooling will assist in multi-age programming by providing a common focus for the teaching and learning of content in the Historical Knowledge and Understanding strand.

Inquiry questions

Each year level from Foundation to Year 10 includes key inquiry questions that provide a framework for developing students’ historical knowledge, understanding and skills.

Overviews

Historical Knowledge and Understanding includes an overview of the historical period to be covered in each year level 7–10. The overview is not intended to be taught in depth; it will constitute approximately 10% of the total teaching time for the year. The overview content identifies important features of the historical period at the relevant year level and provides an expansive chronology that helps students understand broad patterns of historical change.

Depth studies

In addition to the overview, Historical Knowledge and Understanding includes three depth-studies for the historical period at each year level 7–10. For each depth study, there are up to three electives that focus on a particular society, event, movement or development. It is expected that ONE elective is studied in detail, which will constitute approximately 30% of the total teaching time for the year. The content in each elective is
designed to allow detailed study of specific aspects of the historical period. The order and detail in which content is taught is a programming decision. Content may be integrated in ways appropriate to the specific local context; and it may be integrated with the content of other depth-study electives.

**Relationship between overviews and depth studies**

As part of a teaching and learning program, the depth-study content at each year level 7-10 may be integrated with the overview content. The overview provides the broader context for the teaching of depth-study content. This means that the overview content can provide students with an introduction to the historical period; it can make the links to and between the depth studies, and it can consolidate understanding through a review of the period.

**Concepts for developing historical understanding**

The Australian Curriculum: History includes concepts for developing historical understanding, such as: evidence, continuity and change, cause and effect, perspectives, empathy, significance and contestability.

In Foundation to Year 2, there is a particular emphasis on the concepts of continuity and change, cause and effect, and significance within the context of personal, family and local history. These concepts continue to be a focus of study in Years 3-6 with the inclusion of content related to perspectives challenging the notion that the past is a given and is unproblematic. In Years 7-10 the concepts of evidence and contestability are introduced to further develop student’s understanding of the nature of historical interpretation and argument.

**Year level descriptions**

Year level descriptions provide an overview of the content that is being studied at that year level. They also emphasise the interrelated nature of the two strands and the expectation that planning will involve integration of content from across the strands.

**Content descriptions**

The Australian Curriculum: History includes content descriptions at each year level. These set out the knowledge, understanding and skills that teachers are expected to teach and students are expected to learn. However they do not prescribe approaches to teaching. The content descriptions have been written to ensure that learning is appropriately ordered and that unnecessary repetition is avoided. However, a concept or skill introduced at one year level may be revisited, strengthened and extended at later year levels as needed.

**Content elaborations**

Content elaborations are provided for Foundation to Year 10 to illustrate and exemplify content and to assist teachers in developing a common understanding of the content descriptions. They are not intended to be comprehensive content points that all students need to be taught.

**Glossary**

A glossary is provided to support a common understanding of key terms and concepts in the content descriptions.

**History across Foundation to Year 12**

Complementing the year by year description of the curriculum, this document provides advice across the four year groupings on the nature of learners and the relevant curriculum:
• Foundation–Year 2: typically students from 5 to 8 years of age
• Years 3–6: typically students from 8 to 12 years of age
• Years 7–10: typically students from 12 to 15 years of age
• Senior secondary years: typically students from 15 to 18 years of age.

Foundation–Year 2

Curriculum focus: Awareness of family history and community heritage

Through experimentation, practice and play, children in these years use their interest in people and how things work to make sense of their world.

This history curriculum enables students in Foundation to Year 2 to learn about their own social context of family, friends and school, and the significance of the past. They engage with the remains of the past; develop a concept of time as present, past and future, and through role play use their imagination to speculate about the lives of others in the past.

Years 3–6

Curriculum focus: Local/national history and use of a range of sources

Students draw on their growing experience of family, school and the wider community to develop their understanding of the world and their relationship to others past and present. In these years, students begin to better understand and appreciate different points of view and to develop an awareness of justice and fair play.

This history curriculum seeks to target the distinct nature of learners in Years 3–6 by including content about Aboriginal and Torres Strait Islander societies, democratic concepts and rights, and the diversity of Australian society.

In this way, students develop an understanding of the heritage of their community and of their ability to contribute to it. They become aware of similarities and differences between people and become more aware of diversity in the wider community as well as the concept of change over time.

Years 7–10

Curriculum focus: World and Australian history, the analysis and use of sources and historical interpretation

As students move into adolescence, they undergo a range of important physical, cognitive, emotional and social changes. Students often begin to question established conventions, practices and values. Their interests extend well beyond their own communities and they begin to develop concerns about wider issues.

Students in this age range increasingly look for and value learning that is perceived to be relevant, is consistent with personal goals, and/or leads to important outcomes. Increasingly they are able to work with more abstract concepts and are keen to explore the nature of evidence and the contestability of ideas.

Through this history curriculum, students in Years 7–10 pursue broad questions such as: How do we know about the ancient past? What key beliefs and values emerged and how did they influence societies? How did the nature of global conflict change during the twentieth century? This curriculum also provides opportunities to engage students through contexts that are meaningful and relevant to them and through past and present debates.

Senior secondary years

Curriculum focus: World history, the evaluation of sources and historical debates

The senior secondary history curriculum consists of two courses: Ancient History and Modern History. These courses offer more opportunities for specialisation in learning, through electives.
In this curriculum, students further develop their capacity for historical inquiry and their ability to critically evaluate historians' claims by examining the sources on which those claims are based.

**Curriculum structure: Foundation–Year 6 and Years 7–10**

The curriculum structure at each year level (F–6) includes a description of the content focus and key inquiry questions. The curriculum provides opportunities for the content to be taught using specific local contexts.

The curriculum structure at each year level (7–10) includes a description of the content focus, key inquiry questions, overview of the historical period, and depth studies. The overview is designed to introduce the broad content and contexts for study. In addition, for Years 7–10 there are three depth studies that provide an opportunity to investigate aspects in greater depth and thus provide scope for the development of historical knowledge, understanding and skills. The curriculum provides opportunities for the content to be taught using specific local contexts. The study of history in Years 7–10 consists of four historical periods:

- the Year 7 curriculum focuses on history from the time of the earliest human communities to the end of the ancient period (approximately 60 000 BCE – c.650 CE); a period defined by the development of cultural practices and organised societies
- the Year 8 curriculum focuses on history from the end of the ancient period to the beginning of the modern period (c.650 – 1750); a span of human history marked by significant economic, religious and political change
- the Year 9 curriculum focuses on the making of the modern world and Australia from 1750 to 1918; an era of industrialism, nationalism and imperialism
- the Year 10 curriculum focuses on the history of the modern world and Australia from 1918 to the present;
  The twentieth century was an important period in Australia’s social, cultural, economic and political development.

The curriculum structure for the senior secondary courses in Ancient History and Modern History consists of four units for each course.

**Achievement Standards**

Across Foundation to Year 10, achievement standards indicate the quality of learning that students should typically demonstrate by a particular point in their schooling. Achievement standards comprise a written description and student work samples.

An achievement standard describes the quality of learning (the extent of knowledge, the depth of understanding, and the sophistication of skills) that would indicate the student is well placed to commence the learning required at the next level of achievement.

The sequence of achievement standards across Foundation to Year 10 describes progress in the learning area. This sequence provides teachers with a framework of growth and development in the learning area.

Student work samples play a key role in communicating expectations described in the achievement standards. Each work sample includes the relevant assessment task, the student’s response, and annotations identifying the quality of learning evident in the student’s response in relation to relevant parts of the achievement standard.

Together, the description of the achievement standard and the accompanying set of annotated work samples help teachers to make judgments about whether students have achieved the standard.
Diversity of Learners

The Australian Curriculum has been developed to ensure that curriculum content and achievement standards establish high expectations for all students. Every student is entitled to enriching learning experiences across all areas of the curriculum. Students in Australian classrooms have multiple, diverse and changing needs that are shaped by individual learning histories and abilities as well as cultural, language backgrounds and socio-economic factors.

Special education needs

The objectives of the Australian Curriculum are the same for all students. The curriculum offers flexibility for teachers to tailor their teaching in ways that provide rigorous, relevant and engaging learning and assessment opportunities for students with special education needs.

Most students with special education needs can engage with the curriculum provided the necessary adjustments are made to the complexity of the curriculum content and to the means through which students demonstrate their knowledge, understanding and skills.

For some learners, making adjustments to instructional processes and to assessment strategies enables students to achieve educational standards commensurate with their peers.

For other students, teachers will need to make appropriate adjustments to the complexity of the curriculum content, focusing instruction on content different to that taught to others in their age group. It follows that adjustments will also need to be made to how the student’s progress is monitored, assessed and reported.

For a small percentage of students, the Foundation to Year 10 curriculum content and achievement standards may not be appropriate nor meaningful, even with adjustments. Most of these students have a significant intellectual disability. During 2011, ACARA will develop additional curriculum content and achievement standards for this group of students in order to provide an Australian Curriculum that is inclusive of every learner.

Further guidance about how to use the curriculum with students with special education needs is available here

English as an additional language or dialect

Many students in Australian schools are learners of English as an additional language or dialect (EAL/D). Learners of EAL/D are students whose first language is a language other than Standard Australian English and who require additional support to assist them to develop English language proficiency. While many EAL/D learners do well in school, there is a significant group of these learners who leave school without achieving their potential.

EAL/D students come from diverse backgrounds and may include:

- overseas- and Australian-born children whose first language is a language other than English
- Aboriginal and Torres Strait Islander students whose first language is an Indigenous language, including traditional languages, creoles and related varieties, or Aboriginal English.

EAL/D learners enter Australian schools at different ages and at different stages of English language learning and have various educational backgrounds in their first languages. For some, school is the only place they use English.

The aims of the Australian Curriculum: History are ultimately the same for all students. However, EAL/D learners are simultaneously learning a new language and the knowledge, understanding and skills of the history curriculum through that new language. They require additional time and support, along with informed teaching that explicitly addresses their language needs, and assessments that take into account their developing language proficiency.
A national EAL/D document is being produced that supports the Australian Curriculum. It provides a description of how language proficiency develops, and is a valuable reference for all teachers. It allows history teachers to identify the language levels of the EAL/D learners in their classrooms and to address their specific learning requirements when teaching, ensuring equity of access to the history learning area for all.

**General capabilities**

The skills, behaviours and attributes that students need to succeed in life and work in the twenty-first century have been identified in the Australian Curriculum as general capabilities. There are seven general capabilities:

- literacy
- numeracy
- competence in information and communication technology (ICT)
- critical and creative thinking
- ethical behaviour
- personal and social competence
- intercultural understanding.

Over the course of their schooling, students develop and use these general capabilities within and across learning areas and in their lives outside school. General capabilities and learning areas have a reciprocal relationship. Learning areas provide opportunities for students to develop and use general capabilities. Similarly, wherever general capabilities are made explicit in learning areas, they can enrich and deepen learning. In the Australian Curriculum: History each of the seven general capabilities is embedded (where appropriate) in the content descriptions or elaborations. There are further opportunities to develop the general capabilities through appropriate teaching activities.

**Literacy**

Students become literate as they develop the skills to learn and communicate confidently at school and to become effective individuals, community members, workers and citizens. These skills include listening, reading and viewing, writing, speaking and creating print, visual and digital materials accurately and purposefully within and across all learning areas.

The study of history, has specific language and literacy demands. These demands change in accordance with the development of historical knowledge, understanding and skills. For example, in their early years students use personal experience to relate life-stories; in upper primary they recount events focused on places and historical periods; and in junior secondary they write more formal historical accounts, using increasingly abstract concepts such as cause and effect to explain sequences of events.

**Numeracy**

Students become numerate as they develop the capacity to recognise and understand the role of mathematics in the world around them and the confidence, willingness and ability to apply mathematics to their lives in ways that are constructive and meaningful.

Knowledge and skills in numeracy are evident in specific elements of the history curriculum. Students need to organise and interpret historical events and developments and this may require analyses of data to make meaning of the past, for example to understand cause and effect, and continuity and change. This requires skills in numeracy such as the ability to represent and interpret quantitative data.

**Information and communication technology (ICT) competence**
Students develop ICT competence as they learn to use ICT effectively and appropriately when investigating, creating and communicating ideas and information at school, at home, at work and in their communities.

Competence in ICT is most evident in historical skills associated with locating, processing and communicating historical information. This includes the use of information technologies to access a growing range of digitised online materials; spreadsheets and databases for analysing evidence and historical trends; digital technologies such as word processing, publishing and presentation software to process and represent learning; communication technologies, such as wikis and blogs, to enhance students’ analytical thinking capabilities in their study of history; and online forums and videoconferencing to discuss and debate ideas.

Critical and creative thinking

Students develop critical and creative thinking as they learn to generate and evaluate knowledge, ideas and possibilities, and use them when seeking new pathways or solutions. In learning to think broadly and deeply students learn to use reason and imagination to direct their thinking for different purposes. In the context of schooling, critical and creative thinking are integral to activities that require reason, logic, imagination and innovation.

History develops students’ critical and creative thinking. Critical thinking is essential to the historical inquiry process. Historical inquiry requires the ability to ask questions of sources; locate and select information from sources; think critically about the usefulness and reliability of sources; develop interpretations using sources from the past that are often incomplete; and develop an argument and use evidence in support of that argument. Creative thinking is important in developing new interpretations to explain aspects of the past that are contested or not well understood. It is taught in the design of historical inquiries and in the use of different approaches to represent the past.

Ethical behaviour

Students develop ethical behaviour as they learn to understand and act in accordance with ethical principles. This includes understanding the role of ethical principles, values and virtues in human life; acting with moral integrity; acting with regard for others, and having a desire and capacity to work for the common good.

In history students critically explore the character traits, actions and motivations of people in the past, while recognising that there may have been different standards and expectations then compared to the present. Students investigate the diversity of values and principles that have influenced human affairs and that continue to be influential. Examining the nature of evidence deepens students’ understanding of ethical issues.

Personal and social competence

Students develop personal and social competence as they learn to understand and manage themselves, their relationships, lives, work and learning more effectively. This involves recognising and regulating their emotions, developing concern for and understanding of others, establishing positive relationships, making responsible decisions, working effectively in teams and handling challenging situations constructively.

In the study of history there are many opportunities in the early years of schooling to develop personal and social competence, with a focus on personal awareness, through the study of personal, family and local histories. In later years, there are opportunities to develop social awareness through the study of the relationships between individuals and diverse social groups in Australian and world history.

Intercultural understanding

Students develop intercultural understanding as they learn to understand themselves in relation to others. This involves students valuing their own cultures and beliefs and those of others, and engaging with people of diverse cultures in ways that recognise commonalities and differences, create connections and cultivate respect.
between people.

Intercultural understanding is an important aspect of historical learning. Students learn about the perspectives, beliefs and values of people, past and present, and the importance of understanding their own and others' histories. Intercultural understanding is enhanced when students can relate the understanding they develop about historical perspectives and empathy to contexts and circumstances in their own lives and in the wider world.

Cross-curriculum priorities

There are three cross-curriculum priorities in the Australian Curriculum:

- Aboriginal and Torres Strait Islander histories and cultures
- Asia and Australia’s engagement with Asia
- Sustainability.

The cross-curriculum priorities are embedded in the curriculum and will have a strong but varying presence depending on their relevance to each of the learning areas.

Aboriginal and Torres Strait Islander histories and cultures

Aboriginal and Torres Strait Islander communities are strong, rich and diverse. Aboriginal and Torres Strait Islander Identity is central to this priority and is intrinsically linked to living, learning Aboriginal and Torres Strait Islander communities, deep knowledge traditions and holistic world view.

A conceptual framework based on Aboriginal and Torres Strait Islander Peoples’ unique sense of Identity has been developed as a structural tool for the embedding of Aboriginal and Torres Strait Islander histories and cultures within the Australian curriculum. This sense of Identity is approached through the interconnected aspects of Country/Place, People and Culture. Embracing these elements enhances all areas of the curriculum.

The Aboriginal and Torres Strait Islander priority provides opportunities for all learners to deepen their knowledge of Australia by engaging with the world’s oldest continuous living cultures. This knowledge and understanding will enrich their ability to participate positively in the ongoing development of Australia.

The Australian Curriculum: history values Aboriginal and Torres Strait Islander histories and cultures as part of the shared history belonging to all Australians.

Students will examine historical perspectives from an Aboriginal and Torres Strait Islander viewpoint. They will learn about Aboriginal and Torres Strait Islander Peoples prior to colonisation by the British, the ensuing contact and its impacts. They will examine key policies and political movements over the last two centuries. Students will develop an awareness of the significant roles of Aboriginal and Torres Strait Islander people in Australian society.

Asia and Australia’s engagement with Asia

The Asia and Australia’s engagement with Asia priority provides a regional context for learning in all areas of the curriculum. China, India and other Asian nations are growing rapidly and the power and influence they have in all areas of global endeavour is extensive. An understanding of Asia underpins the capacity of Australian students to be active and informed citizens working together to build harmonious local, regional and global communities, and build Australia’s social, intellectual and creative capital.
This priority is concerned with Asia literacy for all Australian students. Asia literacy develops knowledge, skills and understanding about the histories, geographies, cultures, arts, literatures and languages of the diverse countries of our region. It fosters social inclusion in the Australian community. It enables students to communicate and engage with the peoples of Asia so they can effectively live, work and learn in the region. Australia now has extensive engagement with Asia in areas such as trade, investment, immigration, tourism, education and humanitarian assistance and this engagement is vital to the prosperity of all Australians.

In the Australian Curriculum: history, students develop an understanding of the diversity of the peoples of Asia and their contributions to the region and the world, and an appreciation of the importance of the region for Australia and the world. Students understand the dynamic nature of socio-political relationships within the region over time, and the role that individuals, governments and other organisations play in shaping relationships between peoples and countries. Students develop an appreciation of the history of Australia-Asia engagement and how this influences contemporary Australian society and relationships with the countries of Asia. They understand the long history of migration to Australia by people from Asia and appreciate the contributions made over time by Asian Australians to the development of Australia’s culture and society. They also understand the ongoing role played by Australia and individual Australians in major events and developments in the Asia region.

Sustainability

Sustainability addresses the ongoing capacity of Earth to maintain all life.

Sustainable patterns of living meet the needs of the present without compromising the ability of future generations to meet their needs. Actions to improve sustainability are both individual and collective endeavours shared across local and global communities. They necessitate a renewed and balanced approach to the way humans interact with each other and the environment.

Education for sustainability develops the knowledge, skills and values necessary for people to act in ways that contribute to more sustainable patterns of living. It is futures-oriented, focusing on protecting environments and creating a more ecologically and socially just world through action that recognises the relevance and interdependence of environmental, social, cultural and economic considerations.

The Australian Curriculum: history provides content that supports the development of students’ world views, particularly in relation to actions that require judgment about past social systems and access to and use of the Earth’s resources. The curriculum provides opportunities for students to develop an historical perspective on sustainability by understanding, for example, the emergence of farming and settled communities, the development of the Industrial Revolution and the growth of population, the overuse of natural resources, the rise of environmental movements and the global energy crisis and innovative technological responses to it. Making decisions about sustainability to help shape a better future requires an understanding of how the past relates to the present, and needs to be informed by historical trends and experiences.

Links to the other learning areas

Learning in history involves the use of knowledge and skills learnt in other areas, particularly in English, mathematics and science

English

Strong connections exist between English and history, and literacy is essential to historical understanding. Through the study of history, students learn how to read texts with critical discernment and how to create their own texts that present the results of historical understanding clearly and logically. In their studies, they
encounter representations of the past that demonstrate the power of language and symbol, and they learn to extend the range of their own expression. These skills are developed across a range of textual genres and formats, including art, photography, film, music, fiction and multimedia.

Mathematics

Much of the evidence and reasoning in historical understanding is quantitative: chronology, demography, economic activity, changes in the movement of peoples and in the size and reach of institutions. All of these call for an appreciation of numerical scale and proportion.

Science

A knowledge and understanding of history provides a useful context for student learning in science. The history of invention and discovery provides students with an awareness of the pace of scientific and technological development over time and its implications for the future. An understanding of the past provides opportunities to engage in an informed manner in present debates about, for example, the ethical use of technology and the management of the environment. This is relevant to content within the strand Science as a Human Endeavour in the Australian Curriculum: Science. The study of sources of evidence and the conservation of historical sites and materials broadens students’ understanding of the various applications of science.

Implications for teaching, assessment and reporting

The Australian Curriculum: History employs a skills and inquiry-based model of teaching. The skills of historical inquiry are developed through teacher-directed and student-centred learning, enabling students to pose and investigate questions with increasing initiative, self-direction and expertise. In the teaching of history there should not be an artificial separation of content and process, nor a focus on historical method at the expense of historical knowledge. In Years 7–10 there is a particular emphasis on the use of overviews and depth studies, which draw on a range of historical contexts.

Students’ interest in and enjoyment of history is enhanced through a range of different approaches such as the use of artefacts, museums, historical sites, hands-on activities and archives. Historical narrative is used so that students experience the ‘story’ in history, and this can be extended to investigations of cause and consequence, historical significance and contestability. Connections are made where appropriate between past and present events and circumstances to make learning more meaningful for students and to help students make sense of key ideas.

Teachers use the Australian Curriculum content and achievement standards first to identify current levels of learning and achievement and then to select the most appropriate content (possibly from across several year levels) to teach individual students and/or groups of students. This takes into account that in each class there may be students with a range of prior achievement (below, at, and above the year level expectations) and that teachers plan to build on current learning.

Teachers also use the achievement standards, at the end of a period of teaching, to make on-balance judgments about the quality of learning demonstrated by the students – that is whether they have achieved below, at, or above the standard. To make these judgments, teachers draw on assessment data that they have collected as evidence during the course of the teaching period. These judgments about the quality of learning are one source of feedback to students and their parents and inform formal reporting processes.

If a teacher judges that a student’s achievement is below the expected standard, this suggests that the teaching programs and practice should be reviewed to better assist individual students in their learning in the future. It also suggests that additional support and targeted teaching will be needed to ensure that the student
does not fall behind.

Assessment of the Australian Curriculum takes place in different levels and for different purposes, including:

- ongoing formative assessment within classrooms for the purposes of monitoring learning and providing feedback, to teachers to inform their teaching, and for students to inform their learning
- summative assessment for the purposes of twice-yearly reporting by schools to parents and carers on the progress and achievement of students
- annual testing of Years 3, 5, 7 and 9 students’ levels of achievement in aspects of literacy and numeracy, conducted as part of the National Assessment Program – Literacy and Numeracy (NAPLAN)
- periodic sample testing of specific learning areas within the Australian Curriculum as part of the National Assessment Program (NAP).
Foundation Year

Personal and Family Histories

The Foundation curriculum provides a study of personal and family histories. Students learn about their own history and that of their family; this may include stories from different cultures and other parts of the world. As participants in their own history, students build on their knowledge and understanding of how the past is different from the present.

The content provides opportunities to develop historical understanding through key concepts including continuity and change, cause and effect, perspectives, empathy and significance. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions. The key inquiry questions at this year level are:

- What is my history and how do I know?
- What stories do other people tell about the past?
- How can stories of the past be told and shared?

<table>
<thead>
<tr>
<th>Historical Knowledge and Understanding</th>
<th>Historical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal and Family Histories</td>
<td>Chronology, terms and concepts</td>
</tr>
<tr>
<td>Who the people in their family are, where they were born and raised and how they are related to each other (ACHHK001)</td>
<td>Sequence familiar objects and events (ACHHS015)</td>
</tr>
<tr>
<td>The different structures of families and family groups today, and what they have in common (ACHHK002)</td>
<td>Distinguish between the past, present and future (ACHHS016)</td>
</tr>
<tr>
<td>How they, their family and friends commemorate past events that are important to them (ACHHK003)</td>
<td>Historical questions and research</td>
</tr>
<tr>
<td>How the stories of families and the past can be communicated, for example through photographs, artefacts, books, oral histories, digital media, and museums (ACHHK004)</td>
<td>Pose questions about the past using sources provided (ACHHS017)</td>
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<tr>
<td></td>
<td>Analysis and use of sources</td>
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<td></td>
<td>Explore a range of sources about the past (ACHHS018)</td>
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<td></td>
<td>Identify and compare features of objects from the past and present (ACHHS019)</td>
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<td></td>
<td>Perspectives and interpretations</td>
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<td></td>
<td>Explore a point of view (ACHHS020)</td>
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<td>Explanation and communication</td>
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<td></td>
<td>Develop a narrative about the past (ACHHS021)</td>
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<td></td>
<td>Use a range of communication forms (oral, graphic, written, role play) and digital technologies (ACHHS022)</td>
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</tbody>
</table>

Foundation Year achievement standard

By the end of the Foundation year, students identify experiences or events that are personally significant to them. Students pose questions to find out about their own past using at least one type of historical source. They identify similarities and differences between families using sources and important family events. Students relate a story about their past using different forms of communication (oral, graphic, role play).
Year 1

Present and Past Family Life

The Year 1 curriculum provides a study of present and past family life within the context of the students’ own world. Students learn about similarities and differences in family life by comparing the present with the past. They begin to explore the links, and the changes that occur, over time.

The content provides opportunities to develop historical understanding through key concepts including continuity and change, cause and effect, perspectives, empathy and significance. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge, and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions. The key inquiry questions at this year level are:

- How has family life changed or remained the same over time?
- How can we show that the present is different from or similar to the past?
- How do we describe the sequence of time?

### Historical Knowledge and Understanding

**Present and Past Family Life**

- Differences in family structures and roles today, and how these have changed or remained the same over time (ACHHK028)
- How the present, past and future are signified by terms indicating time such as ‘a long time ago’, ‘then and now’, ‘now and then’, ‘old and new’, ‘tomorrow’, as well as by dates and changes that may have personal significance, such as birthdays, celebrations and seasons (ACHHK029)
- Differences and similarities between students’ daily lives and life during their parents’ and grandparents’ childhoods, including family traditions, leisure time and communications. (ACHHK030)

### Historical Skills

- Chronology, terms and concepts
  - Sequence familiar objects and events (ACHHS031)
  - Distinguish between the past, present and future (ACHHS032)
- Historical questions and research
  - Pose questions about the past using sources provided (ACHHS033)
- Analysis and use of sources
  - Explore a range of sources about the past (ACHHS034)
  - Identify and compare features of objects from the past and present (ACHHS035)
- Perspectives and interpretations
  - Explore a point of view (ACHHS036)
- Explanation and communication
  - Develop a narrative about the past. (ACHHS037)
  - Use a range of communication forms (oral, graphic, written, role play) and digital technologies (ACHHS038)

**Year 1 achievement standard**

By the end of Year 1 students identify and place key events in their family history in sequence. Students pose questions about the past using historical sources. Students use sources about the past to compare features of objects from the past and the present and to identify how some aspects of life have changed over recent time while others have remained the same. They identify personal and family events that have significance. Students recall what happened in an event and relate stories about life in the past using different forms of communication (oral, graphic, written, role play). When telling their stories, they use familiar terms denoting time.
### Year 2
#### The Past in the Present

The Year 2 curriculum provides a study of local history. Students explore, recognise and appreciate the history of their local area by examining remains of the past and considering why they should be preserved.

The content provides opportunities to develop historical understanding through key concepts including continuity and change, cause and effect, perspectives, empathy and significance. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: **Historical Knowledge, and Understanding** and **Historical Skills**.

These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by **inquiry questions**. The key inquiry questions at this year level are:

- What aspects of the past can you see today? What do they tell us?
- What remains of the past are important to the local community? Why?
- How have changes in technology shaped our daily life?

### Historical Knowledge and Understanding

<table>
<thead>
<tr>
<th>The Past in the Present</th>
<th>Historical Skills</th>
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</thead>
<tbody>
<tr>
<td>The history of a significant person, building, site or part of the natural environment in the local community and what it reveals about the past (ACHHK044)</td>
<td>Chronology, terms and concepts</td>
</tr>
<tr>
<td>The importance today of an historical site of cultural or spiritual significance; for example, a community building, a landmark, a war memorial (ACHHK045)</td>
<td>Sequence familiar objects and events (ACHHS047)</td>
</tr>
<tr>
<td>The impact of changing technology on people’s lives (at home and in the ways they worked, travelled, communicated, and played in the past) (ACHHK046)</td>
<td>Distinguish between the past, present and future (ACHHS048)</td>
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</table>

### Historical Skills

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<tbody>
<tr>
<td>Historical questions and research</td>
<td>Pose questions about the past using sources provided (ACHHS049)</td>
</tr>
<tr>
<td>Analysis and use of sources</td>
<td>Explore a range of sources about the past. (ACHHS050)</td>
</tr>
<tr>
<td>Identify and compare features of objects from the past and present (ACHHS051)</td>
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<tr>
<td>Perspectives and interpretations</td>
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<tr>
<td>Explore a point of view (ACHHS052)</td>
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<tr>
<td>Explanation and communication</td>
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<tr>
<td>Develop a narrative about the past (ACHHS053)</td>
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<tr>
<td>Use a range of communication forms (oral, graphic, written, role play) and digital technologies (ACHHS054)</td>
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</table>

### Year 2 achievement standard

By the end of Year 2, students identify and place some of the key events, people and changes in the history of their local community within a time sequence. Students pose and answer questions about the past using different historical sources. Students use a variety of sources about the past. They recognise physical signs of the past in the present and explain how and why daily life changed over time.

Students explain the significance of a person, site or event to the development of their local community. Students describe an event or place or relate stories about their community’s past. They present their information using written, spoken and visual texts. When telling their stories, they use appropriate terms denoting time.
Year 3

Community and Remembrance

The Year 3 curriculum provides a study of identity and diversity in both a local and broader context. Moving from the heritage of their local area, students explore the historical features and diversity of their community as represented in symbols and emblems of significance, and celebrations and commemorations, both locally and in other places around the world.

The content provides opportunities to develop historical understanding through key concepts including sources, continuity and change, cause and effect, perspectives, empathy and significance. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge, and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions. The key inquiry questions at this year level are:

- Who lived here first and how do we know?
- How has our community changed? What features have been lost and what features have been retained?
- What is the nature of the contribution made by different groups and individuals in the community?
- How and why do people choose to remember significant events of the past?

<table>
<thead>
<tr>
<th>Historical Knowledge and Understanding</th>
<th>Historical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>The importance of Country and Place to Aboriginal and/or Torres Strait Islander peoples who belong to a local area. (This is intended to be a local area study with a focus on one Language group; however, if information or sources are not readily available, another representative area may be studied (ACHHK060)</td>
<td>Chronology, terms and concepts</td>
</tr>
<tr>
<td>ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory; for example, in relation to the areas of transport, work, education, natural and built environments, entertainment, daily life (ACHHK061)</td>
<td>Sequence historical people and events (ACHHS065)</td>
</tr>
<tr>
<td>The role that people of diverse backgrounds have played in the development and character of the local community (ACHHK062)</td>
<td>Use historical terms (ACHHS066)</td>
</tr>
<tr>
<td>Days and weeks celebrated or commemorated in Australia (including Australia Day, Harmony Week, ANZAC Day, NAIDOC week) and the importance of symbols and emblems (ACHHK063)</td>
<td>Historical questions and research</td>
</tr>
<tr>
<td>Celebrations and commemorations in other places around the world; for example, Bastille Day in France, Independence Day in the USA, including those that are observed in Australia such as Chinese New Year, Christmas Day, Diwali, Easter, Hanukkah, the Moon Festival and Ramadan (ACHHK064)</td>
<td>Pose a range of questions about the past (ACHHS067)</td>
</tr>
<tr>
<td>Identify different points of view (ACHHS069)</td>
<td>Analysis and use of sources</td>
</tr>
<tr>
<td>Explanation and communication</td>
<td>Locate relevant information from sources provided (ACHHS068)</td>
</tr>
<tr>
<td>Develop historical texts, particularly narratives (ACHHS070)</td>
<td>Perspectives and interpretations</td>
</tr>
<tr>
<td>Use a range of communication forms (oral, graphic, written) and digital technologies (ACHHS071)</td>
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</table>

Year 3 achievement standard

By the end of Year 3 students place some key events and people they have studied in chronological sequence using timelines. Students pose questions about the past and locate relevant information from different historical sources. They identify traces of the past in the present and can explain their significance. Students use historical sources to compare key aspects of the past with the present. They identify and explain important changes and continuities over time. Students explain the significance of people and events to the development of a community. Students compose historical texts, including narratives, using appropriate historical terms. They present their information using a range of communication forms (written, spoken, visual).
Year 4

First Contacts

The Year 4 curriculum introduces world history and the movement of peoples. Beginning with the history of Aboriginal and Torres Strait Islander peoples, students examine European exploration and colonisation in Australia and throughout the world up to the early 1800s. Students examine the impact of exploration on other societies, how these societies interacted with newcomers, and how these experiences contributed to their cultural diversity.

The content provides opportunities to develop historical understanding through key concepts including sources, continuity and change, cause and effect, perspectives, empathy and significance. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions through the use and interpretation of sources. The key inquiry questions at this year level are:

• Why did the great journeys of exploration occur?
• What was life like for Aboriginal and/or Torres Strait Islander Peoples before the arrival of the Europeans?
• Why did the Europeans settle in Australia?
• What was the nature and consequence of contact between Aboriginal and/or Torres Strait Islander Peoples and early traders, explorers and settlers?

### Historical Knowledge and Understanding

<table>
<thead>
<tr>
<th>First Contacts</th>
<th>Historical Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>The diversity and longevity of Australia’s first peoples and the ways Aboriginal and/or Torres Strait Islander peoples are connected to Country and Place (land, sea, waterways and skies) and the implications for their daily lives. (ACHHK077)</td>
<td>Chronology, terms and concepts</td>
</tr>
<tr>
<td>The journey(s) of AT LEAST ONE world navigator, explorer or trader up to the late eighteenth century, including their contacts with other societies and any impacts. (ACHHK078)</td>
<td>Sequence historical people and events (ACHHS081)</td>
</tr>
<tr>
<td>Stories of the First Fleet, including reasons for the journey, who travelled to Australia, and their experiences following arrival. (ACHHK079)</td>
<td>Use historical terms (ACHHS082)</td>
</tr>
<tr>
<td>The nature of contact between Aboriginal people and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example families and the environment (ACHHK080)</td>
<td>Historical questions and research</td>
</tr>
</tbody>
</table>

### Historical Skills

<table>
<thead>
<tr>
<th>First Contacts</th>
<th>Historical Skills</th>
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</thead>
<tbody>
<tr>
<td>Pose a range of questions about the past. (ACHHS083)</td>
<td>Locate relevant information from sources provided (ACHHS084)</td>
</tr>
<tr>
<td>Analysis and use of sources</td>
<td>Perspectives and interpretations</td>
</tr>
<tr>
<td>Identify different points of view (ACHHS085)</td>
<td>Explanation and communication</td>
</tr>
<tr>
<td>Develop historical texts, particularly narratives (ACHHS086)</td>
<td>Use a range of communication forms (oral, graphic, written) and digital technologies (ACHHS087)</td>
</tr>
</tbody>
</table>

### Year 4 achievement standard

By the end of Year 4, students place some of the key events and people they have studied in chronological sequence and they create simple timelines. Students pose questions about the past and locate relevant information from a range of historical sources. Students use a range of historical sources to examine the reasons for and impact of historical events. They use sources to identify different points of view in the past and the motivations of individuals and groups. Students explain the significance of events in bringing about change. Students compose historical texts, including narratives, using appropriate historical terms. They present their information using a range of communication forms (written, spoken, visual).
The Australian Colonies

The Year 5 curriculum provides a study of colonial Australia in the 1800s. Students look at the founding of British colonies and the development of a colony. They learn about what life was like for different groups of people in the colonial period. They examine significant events and people, political and economic developments, social structures, and settlement patterns.

The content provides opportunities to develop historical understanding through key concepts including sources, continuity and change, cause and effect, perspectives, empathy and significance.

These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions through the use and interpretation of sources. The key inquiry questions at this year level are:

- What do we know about the lives of people in Australia’s colonial past and how do we know?
- How did an Australian colony develop over time and why?
- How did colonial settlement change the environment?
- What were the significant events and who were the significant people that shaped Australian colonies?

### Historical Knowledge and Understanding

- **The Australian Colonies**
  - Reasons (economic, political and social) for the establishment of British colonies in Australia after 1800. (ACHHK093)
  - The nature of a convict or colonial settlement in Australia, including the factors that influenced patterns of settlement, aspects of the daily life of its different inhabitants, and how they changed the environment. (ACHHK094)
  - The impact of a significant development or event on a colony; for example, frontier conflict, the gold rushes, the Eureka Stockade, internal exploration, the advent of rail, the expansion of farming, drought. (ACHHK095)
  - The reasons people migrated to Australia from Europe and Asia, and the experiences and contributions of a particular migrant group within a colony. (ACHHK096)
  - The role that a significant individual or group played in shaping a colony; for example, explorers, farmers, entrepreneurs, artists, writers, humanitarians, religious and political leaders, and Aboriginal and/or Torres Strait Islander peoples. (ACHHK097)

### Historical Skills

- **Chronology, terms and concepts**
  - Sequence historical people and events (ACHHS098)
  - Use historical terms and concepts (ACHHS099)
- **Historical questions and research**
  - Identify questions to inform an historical inquiry (ACHHS100)
  - Identify and locate a range of relevant sources (ACHHS101)
- **Analysis and use of sources**
  - Locate information related to inquiry questions in a range of sources (ACHHS102)
  - Compare information from a range of sources (ACHHS103)
- **Perspectives and interpretations**
  - Identify points of view in the past and present (ACHHS104)
  - Develop historical texts, particularly narratives and descriptions, which incorporate source material (ACHHS105)
  - Use a range of communication forms (oral, graphic, written) and digital technologies (ACHHS106)

### Year 5 achievement standard

By the end of Year 5, students place some of the key people and events they have studied in chronological sequence and they create timelines with annotations referring to time and place. When researching, students develop questions about the past to inform an historical inquiry. They identify relevant sources and locate information and evidence related to their inquiry. Students compare and record relevant information from a range of sources. They examine sources to identify the views expressed and the attitudes.
represented. Students identify the causes and effects of an event or development and the feelings and motivations of individuals and groups at the time. They explain the significance of people and events in bringing about change. Students compose historical texts, particularly narratives and descriptions. When writing their texts, they incorporate source materials and use appropriate historical terms and concepts. They present their information and findings using combinations of written and spoken text, graphics and pictures and in a range of communication forms including digital technologies.
Year 6

Australia as a nation

The Year 6 curriculum moves from colonial Australia to the development of Australia as a nation, particularly after 1900. Students explore the factors that led to Federation and experiences of democracy and citizenship over time. Students understand the significance of Australia’s British heritage, the Westminster system, and other models that influenced the development of Australia’s system of government. Students learn about the way of life of people who migrated to Australia and their contributions to Australia’s economic and social development.

The content provides opportunities to develop historical understanding through key concepts including sources, continuity and change, cause and effect, perspectives, empathy and significance.

These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; they may be integrated across learning areas and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students’ historical knowledge, understanding and skills is provided by inquiry questions through the use and interpretation of sources. The key inquiry questions at this year level are:

- Why and how did Australia become a nation?
- How did Australian society change throughout the twentieth century?
- Who were the people who came to Australia? Why did they come?
- What contribution have significant individuals and groups made to the development of Australian society?

**Historical Knowledge and Understanding**

<table>
<thead>
<tr>
<th>Historical Knowledge and Understanding</th>
<th>Historical Skills</th>
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</thead>
<tbody>
<tr>
<td>Australia as a Nation</td>
<td>Chronology, terms and concepts</td>
</tr>
<tr>
<td>Key figures and events that led to Australia’s Federation, including British and American influences on Australia’s system of law and government. (ACHHK113)</td>
<td>Sequence historical people and events. (ACHHS117)</td>
</tr>
<tr>
<td>Experiences of Australian democracy and citizenship, including the status and rights of Aboriginal people and/or Torres Strait Islanders, migrants, and women. (ACHHK114)</td>
<td>Use historical terms and concepts (ACHHS118)</td>
</tr>
<tr>
<td>Stories of groups of people who migrated to Australia (including from ONE Asian country) and the reasons they migrated, such as World War II and Australian migration programs since the war. (ACHHK115)</td>
<td>Historical questions and research</td>
</tr>
<tr>
<td>The contribution of individuals and groups, including Aboriginal people and/or Torres Strait Islanders and migrants, to the development of Australian society, for example in areas such as the economy, education, science, the arts, sport. (ACHHK116)</td>
<td>Identify questions to inform an historical inquiry (ACHHS119)</td>
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<td>Identify and locate a range of relevant sources (ACHHS120)</td>
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<td>Analysis and use of sources</td>
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<td>Locate information related to inquiry questions in a range of sources. (ACHHS121)</td>
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<td>Compare information from a range of sources. (ACHHS122)</td>
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<td></td>
<td>Perspectives and interpretations</td>
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<td>Identify points of view in the past and present (ACHHS123)</td>
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<td></td>
<td>Explanation and communication</td>
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<td></td>
<td>Develop historical texts, particularly narratives and descriptions, which incorporate source material (ACHHS124)</td>
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<td>Use a range of communication forms (oral, graphic, written) and digital technologies (ACHHS125)</td>
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**Year 6 achievement standard**

By the end of Year 6, students place key people, events and ideas they have studied in chronological sequence and create timelines with annotations referring to events and changes. When researching, students develop a focused inquiry question for investigation. They
identify a range of sources and locate relevant information and evidence related to their inquiry. Students compare and record relevant historical information and ideas from a range of sources. They examine sources to identify the views being expressed and the attitudes and values represented. Students identify and describe cause and effect and significant changes and continuities over time. They identify motivations for the actions of past individuals and groups and the historical significance of an individual, group or event. Students compose historical texts, such as narratives and descriptions, which incorporate a range of relevant and supporting source materials. When composing their texts they use appropriate historical terms and concepts. Students present their information and findings using combinations of written and spoken text, graphics and pictures and in a range of communication forms including digital technologies.
Year 7

The Ancient World

The Year 7 curriculum provides a study of history from the time of the earliest human communities to the end of the ancient period (approximately 60 000 BCE – c.650 CE). It was a period defined by the development of cultural practices and organised societies. The study of the ancient world includes the discoveries (the remains of the past and what we know) and the mysteries (what we do not know) about this period of history, in a range of societies including Australia, Egypt, Greece, Rome, China and India.

The content provides opportunities to develop historical understanding through key concepts, including evidence, continuity and change, cause and effect, perspectives, empathy, significance and contestability. These concepts may be investigated within a particular historical context to facilitate an understanding of the past and to provide a focus for historical inquiries.

The history content at this year level involves two strands: Historical Knowledge and Understanding and Historical Skills. These strands are interrelated and should be taught in an integrated way; and in ways that are appropriate to specific local contexts. The order and detail in which they are taught are programming decisions.

A framework for developing students' historical knowledge, understanding and skills is provided by inquiry questions through the use and interpretation of sources. The key inquiry questions at this year level are:

- How do we know about the ancient past?
- Why and where did the earliest societies develop?
- What emerged as the defining characteristics of ancient societies?
- What have been the legacies of ancient societies?

Historical Knowledge and Understanding

Overview

The following content is to be taught as part of an overview for the historical period. It is not intended to be taught in depth. An overview will constitute approximately 10% of the total teaching time for the year. Overview content identifies important features of the period (approximately 60 000 BCE – c.650 CE) as part of an expansive chronology that helps students understand broad patterns of historical change. As such, the overview provides the broader context for the teaching of depth study content and can be built into various parts of a teaching and learning program. This means that overview content can be used to give students an introduction to the historical period; to make the links to and between the depth studies; and to consolidate understanding through a review of the period.

Overview content for the ancient world (Egypt, Mesopotamia, Persia, Greece, Rome, India, China and the Maya) includes the following:

- the theory that people moved out of Africa around 60 000 BCE and migrated to other parts of the world, including Australia
- the evidence for the emergence and establishment of ancient societies (including art, iconography, writing tools and pottery)
- key features of ancient societies (farming, trade, social classes, religion, rule of law)

Depth studies

There are three depth studies for this historical period. For each depth study, there are up to three electives that focus on a particular society, event, movement or development. It is expected that ONE elective will be studied in detail. A depth study elective will constitute approximately 30% of the total teaching time for the year. The content in each depth study elective is designed to allow detailed study of specific aspects of this historical period. As part of a teaching and learning program, depth study content can be integrated with the overview content and/or with other depth study electives.

1 Investigating the ancient past

Students build on and consolidate their understanding of historical inquiry from previous years in depth, using a range of sources for the study of the ancient past.

Investigating the ancient past

How historians and archaeologists investigate history, including excavation and archival research (ACDSEH001)

The range of sources that can be used in an historical investigation, including archaeological and written sources (ACDSEH029)

The methods and sources used to investigate at least ONE historical controversy or mystery that has challenged historians or archaeologists, such as in the analysis of unidentified human remains (ACDSEH030)
The nature of the sources for ancient Australia and what they reveal about Australia’s past in the ancient period, such as the use of resources (ACDSEH031)

The importance of conserving the remains of the past, using examples from the ancient world (ACDSEH148)

2 The Mediterranean world

Students investigate ONE of these Mediterranean societies in depth: Egypt or Greece or Rome.

**Greece**

The physical features of ancient Greece (such as its mountainous landscape) and how they influenced the civilisation that developed there (ACDSEH003)

Roles of key groups in Athenian and/or Spartan society (such as citizens, women, slaves), including the influence of law and religion (ACDSEH035)

The significant beliefs, values and practices of the ancient Greeks, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACDSEH036)

Contacts and conflicts within and/or with other societies, resulting in developments such as the expansion of trade, colonisation and war (such as the Peloponnesian and Persian wars) (ACDSEH037)

The role of a significant individual in ancient Greek history such as Leonidas or Pericles (ACDSEH130)

**OR**

**Egypt**

The physical features of ancient Egypt (such as the River Nile) and how they influenced the civilisation that developed there (ACDSEH002)

Roles of key groups in ancient Egyptian society (such as the nobility, bureaucracy, women, slaves), including the influence of law and religion (ACDSEH032)

The significant beliefs, values and practices of the ancient Egyptians, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACDSEH033)

Contacts and conflicts within and/or with other societies, resulting in developments such as the conquest of other lands, the expansion of trade, and peace treaties (ACDSEH034)

The role of a significant individual in ancient Egyptian history such as Hatshepsut or Rameses II (ACDSEH129)

**OR**

**Rome**

The physical features of ancient Rome (such as the River Tiber) and how they influenced the civilisation that developed there (ACDSEH004)

Roles of key groups in ancient Roman society (such as patricians, plebeians, women, slaves), including the influence of law and religion (ACDSEH038)

The significant beliefs, values and practices of the ancient Romans, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACDSEH039)

Contacts and conflicts within and/or with other societies, resulting in developments such as the expansion of trade, the rise of the Roman empire (including its material remains), and the spread of religious beliefs (ACDSEH040)

The role of a significant individual in ancient Rome’s history such as Julius Caesar or Augustus (ACDSEH131)

3 The Asian world

Students investigate ONE of these Asian societies in depth: China or India

**India**

The physical features of India (such as fertile river plains) and how they influenced the civilisation that developed there (ACDSEH006)

Roles of key groups in Indian society in this period (such as kings, priests, merchants, peasants), including the influence of law and religion (ACDSEH044)
The significant beliefs, values and practices of Indian society, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACDSEH045)

Contacts and conflicts within and/or with other societies, resulting in developments such as the expansion of trade, the rise of the Mauryan Empire (including its material remains), and the spread of philosophies and beliefs (ACDSEH046)

The role of a significant individual in Indian history such as Chandragupta Maurya or Ashoka (ACDSEH133)

OR

China

The physical features of China (such as the Yellow River) and how they influenced the civilisation that developed there (ACDSEH005)

Roles of key groups in Chinese society in this period (such as kings, scholars, craftsmen, women), including the influence of law and religion (ACDSEH041)

The significant beliefs, values and practices of Chinese society, with a particular emphasis on ONE of the following areas: everyday life, warfare, or death and funerary customs (ACDSEH042)

Contacts and conflicts within and/or with other societies, resulting in developments such as the expansion of trade, the rise of Imperial China (including its material remains), and the spread of philosophies and beliefs (ACDSEH043)

The role of a significant individual in ancient Chinese history such as Confucius or Qin Shi Huang (ACDSEH132)

Historical Skills

Chronology, terms and concepts

Sequence historical events and periods (ACHHS205)

Use historical terms and concepts (ACHHS206)

Historical questions and research

Identify a range of questions about the past to inform a historical inquiry (ACHHS207)

Identify and locate relevant sources, using ICT and other methods (ACHHS208)

Analysis and use of sources

Identify the origin and purpose of primary and secondary sources (ACHHS209)

Locate, select and use information from a range of sources as evidence (ACHHS210)

Draw conclusions about the usefulness of sources (ACHHS211)

Perspectives and interpretations

Identify and describe points of view, attitudes and values in primary and secondary sources (ACHHS212)

Explanation and communication

Develop historical texts, particularly descriptions and explanations that use evidence from a range of sources (ACHHS213)

Use a range of communication forms (oral, graphic, written) and digital technologies (ACHHS214)

Year 7 achievement standard

By the end of Year 7, students sequence some of the main events, people and societies they have studied. They categorise time into periods, and interpret timelines. When researching, students develop historical questions, plan an inquiry and identify relevant historical sources. They locate information from a range of sources and use it as evidence to answer inquiry questions. Students select and categorise relevant historical information from a range of sources. They examine sources to determine their origin, to identify meaning, point of view, values and attitudes. Students describe the context for people’s actions in the past and the historical significance of an individual, group or event. They describe change and continuity over time and suggest reasons for changes. Students compose historical texts, such as descriptions and explanations (incorporating analysis), which draw on evidence identified in sources. They use appropriate historical terms, concepts and referencing in their historical texts. Students present their findings in a range of forms, in particular written and visual texts, including digital technologies.
Glossary

**Ancient**

as defined in the Australian Curriculum: History, the Ancient period covers history from the development of early human communities (from 60 000 BCE) to the end of late antiquity (around 650 CE)

**Artefacts**

something made or shaped by humans for their use, such as a stone tool, a metal sword, a plastic toy

**Asia**

as defined in the Australian Curriculum: History, ‘Asia’ refers to the territorial area that extends from the western border of Pakistan, to the northern border of Mongolia, the eastern border of Japan, and that extends to the southern border of Indonesia

**BCE**

an abbreviation of ‘Before the Common Era’. It is the same dating system as the traditionally used BC, meaning ‘Before Christ’. Historical dates before the birth of Christ are classified as BCE. There is no year zero in this dating system, so the year CE 1 immediately follows the year 1 BCE. See the glossary term for CE.

**Cause and effect**

used by historians to identify chains of events and developments over time, short term and long term

**CE**

an abbreviation of ‘Common Era’. It is the same dating system as the traditionally used AD, short for the Latin phrase Anno Domini, ‘the year of our Lord’. Historical dates after the birth of Christ are classified as CE. There is no year zero in this dating system, so the year CE 1 immediately follows the year 1 BCE. See the glossary term for BCE.

**Chronology**

chronology is the study of time. In history, chronology involves the arrangement of events in order, as in a timeline.

**Concepts**

a concept refers to any general notion or idea that is used to develop an understanding of the past, such as concepts related to the process of historical inquiry (for example evidence, continuity and change, perspectives, significance) and concepts that are culturally significant to Aboriginal and Torres Strait Islander peoples, such as Country and Place

**Contestability**

occurs when particular interpretations about the past are open to debate, for example, as a result of a lack of evidence or different perspectives.

**Continuity and change**
aspects of the past that remained the same over certain periods of time are referred to as continuities. Continuity and change are evident in any given period of time and concepts such as progress and decline may be used to evaluate continuity and change.

Demography

the study of the characteristics of human populations, such as size, age profile and life expectancy

Depth study

a depth study is a detailed study of specific aspects of an historical period, for example a particular society, event, movement or development. It provides students with the opportunity to develop and apply the concepts and skills of historical inquiry. A depth study commonly employs investigation of a range of sources, and may include site and museum visits.

Empathy

empathy is an understanding of the past from the point of view of a particular individual or group, including an appreciation of the circumstances they faced, and the motivations, values and attitudes behind their actions

Empire

an empire exercises political, economic and cultural rule or control over other peoples and nations, such as the Roman Empire and the British Empire

Evidence

in History, evidence is the information obtained from sources that is valuable for a particular inquiry (for example the relative size of historical figures in an ancient painting may provide clues for an inquiry into the social structure of the society). Evidence can be used to help construct a historical narrative, to support a hypothesis or to prove or disprove a conclusion.

Historical inquiry

historical inquiry is the process of investigation undertaken in order to understand the past. Steps in the inquiry process include posing questions, locating and analysing sources and using evidence from sources to develop an informed explanation about the past.

Imperialism

imperialism is the process whereby rule or control is established and maintained over other peoples and nations

Industrialism

the introduction of machinery to produce large quantities of goods using fuel-based technology. Industrialisation involves a division of labour and the development of factories and cities

Interpretation

an interpretation is an explanation of the past, for example about a specific person, event or development. There may be more than one interpretation of a particular aspect of the past because historians may have used different sources, asked different questions and held different points of view about the topic.

Medieval
is a term used to describe the period of history between the end of the Roman Empire in the west in the fifth century CE to the end of the Renaissance around 1500 CE

Modern

as defined in the Australian Curriculum: History, the ‘modern’ period covers history from the beginning of the Industrial Revolution around 1750 CE to the present

Narrative

a way of making sense of the past based on a selection of events. There are different types of narrative such as accounts of the past that relate a story (for example personal, fictitious) and historical recounts (such as the course of events during the Second World War)

Nationalism

nationalism is the feeling of belonging to a people, a place and a common culture. When the nation becomes the primary loyalty, it gives rise to movements of national independence.

Oral histories

people’s spoken recollections of the past, recorded through an audio or video interview

Overview

an overview provides a conceptual and chronological framework for understanding a particular historical period. It can consist of key features, events, developments and broad patterns of historical change. An overview provides a context for a depth study.

Perspective

a person’s perspective is their point of view, the position from which they see and understand events going on around them. People in the past may have had different points of view about a particular event, depending on their age, gender, social position and their beliefs and values. For example a convict girl and an Aboriginal Elder would have had quite different perspectives on the arrival of the First Fleet in Australia. Historians also have perspectives and this can influence their interpretation of the past.

Primary sources

in History, primary sources are objects and documents created or written during the time being investigated, for example during an event or very soon after. Examples of primary sources include official documents, such as laws and treaties; personal documents, such as diaries and letters; photographs; film and documentaries. These original, first-hand accounts are analysed by the historian to answer questions about the past.

Quantitative

capable of being measured and expressed in numerical terms, such as the numbers of women who arrived on the First Fleet, the proportion of Australian soldiers who died in World War I, radiocarbon dating of an ancient site

Secondary sources

in History, secondary sources are accounts about the past that were created after the time being investigated and which often use or refer to primary sources and present a particular interpretation. Examples of secondary sources include writings of historians, encyclopaedia, documentaries, history textbooks, and websites.
Significance

the importance that is assigned to particular aspects of the past, e.g., events, developments, movements, and historical sites. Significance includes an examination of the principles behind the selection of what should be investigated and remembered and involves consideration of questions such as: How did people in the past view the significance of an event? How important were the consequences of an event? What was the duration of the event? How relevant is it to the contemporary world?

Source

any written or non-written materials that can be used to investigate the past, for example coins, photographs, letters, gravestones, buildings. A source becomes ‘evidence’ if it is of value to a particular inquiry.

Sustainability

supports the needs of the present without compromising the ability of future generations to meet their own needs.

Terms

a word or phrase used to describe abstract aspects of features of the past (for example colonisation, revolution, imperialism, democracy) and more specific features such as a pyramid, gladiator, temple, rock shelter
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<th>Year 6</th>
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<td><strong>Chronology, terms and concepts</strong></td>
<td>Sequence familiar objects and events</td>
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<td>Sequence historical people and events</td>
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<td>Distinguish between the past, present and future</td>
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<td>Use historical terms</td>
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<td>Use historical terms and concepts</td>
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<td><strong>Historical questions and research</strong></td>
<td>Pose questions about the past using sources provided</td>
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<td>Pose a range of questions about the past</td>
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<td>Identify questions to inform an historical inquiry</td>
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<td>Identify and locate a range of relevant sources</td>
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<td><strong>Analysis and use of sources</strong></td>
<td>Explore a range of sources about the past</td>
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<td>Locate relevant information from sources provided</td>
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<td>Locate information related to inquiry questions in a range of sources</td>
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<td>Identify and compare features of objects from the past and present</td>
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<td>Compare information from a range of sources</td>
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<tr>
<td><strong>Perspectives and interpretations</strong></td>
<td>Explore a point of view</td>
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<td>Identify different points of view</td>
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<td>Identify points of view in the past and present</td>
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<tr>
<td><strong>Explanation and communication</strong></td>
<td>Develop a narrative about the past</td>
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<td>Develop historical texts, particularly narratives</td>
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<td>Develop historical texts, particularly narratives and descriptions, which incorporate source material</td>
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<td>Use a range of communication forms (oral, graphic, written, role play) and digital technologies</td>
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## Historical Skills Scope and Sequence: Year 5 to Year 10

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<tr>
<td><strong>Chronology, terms and concepts</strong></td>
<td>Sequence historical people and events</td>
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<td>Sequence events chronologically to demonstrate the relationship between events in different periods and places</td>
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<td><strong>Historical questions and research</strong></td>
<td>Identify questions to inform an historical inquiry</td>
<td>Identify a range of questions about the past to inform a historical inquiry</td>
<td>Identify and select different kinds of questions about the past to inform historical inquiry</td>
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<td>Locate information related to inquiry questions in a range of sources</td>
<td>Identify the origin and purpose of primary and secondary sources</td>
<td>Identify and analyse the perspectives of people from the past</td>
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<td>Identify and analyse different historical interpretations (including their own)</td>
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<td>Compare information from a range of sources</td>
<td>Locate, select and use information from a range of sources as evidence</td>
<td>Draw conclusions about the usefulness of sources</td>
<td>Evaluate the reliability and usefulness of primary and secondary sources</td>
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### Year level focus

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<tr>
<td><strong>Personal and family histories</strong></td>
<td>Present and past family life</td>
<td>The past in the present</td>
<td>Community and remembrance</td>
<td>First contacts</td>
<td>The Australian colonies</td>
<td>Australia as a nation</td>
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<tr>
<td><strong>Year</strong></td>
<td><strong>Focus</strong></td>
<td><strong>What is my history and how do I know?</strong></td>
<td><strong>What stories do other people tell about the past?</strong></td>
<td><strong>How can stories of the past be told and shared?</strong></td>
<td><strong>Key questions</strong></td>
<td><strong>Knowledge and understanding</strong></td>
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<td><strong>Year 1</strong></td>
<td><strong>What aspects of the past can you see today?</strong></td>
<td><strong>What have been lost and what features have been retained?</strong></td>
<td><strong>What is the nature of the contribution made by different groups and individuals in the community?</strong></td>
<td><strong>How and why do people choose to remember significant events of the past?</strong></td>
<td><strong>Year 2</strong></td>
<td><strong>How has family life changed or remained the same over time?</strong></td>
<td><strong>Year 3</strong></td>
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<td><strong>Year 3</strong></td>
<td><strong>Who are important to the local community?</strong></td>
<td><strong>How has our community changed?</strong></td>
<td><strong>What is the nature of the community made by different groups and individuals in the community?</strong></td>
<td><strong>How and why do people choose to remember significant events of the past?</strong></td>
<td><strong>How did an Australian colony develop over time and why?</strong></td>
<td><strong>How did colonial settlement change the environment?</strong></td>
<td><strong>What were the significant events and who were the significant people that shaped Australian colonies?</strong></td>
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### Key concepts

**The content provides opportunities to develop historical understanding through key concepts including continuity and change, cause and effect, perspectives, empathy and significance.**

### Knowledge and understanding

**Who the people in their family are, where they were born and raised and how they are related to each other.**

The different structures of families and family groups today, and what they have in common.

*How they, their family and friends commemorate past events that are important to them.*

The history of a significant person, building, site or part of the natural environment in the local community and what it reveals about the past.

The importance today of an historical site of cultural or spiritual significance; for example, a community building, a landmark, a war memorial.

The impact of changing technology on people's lives (at home and in the ways they worked, travelled, communicated, and played in the past).

The significance of continuing the traditions of the past to students' daily lives and life and during their parents' and grandparents' childhoods, including family traditions, leisure time and communications.

### Key questions

**What is my history and how do I know?**

**What stories do other people tell about the past?**

**How can stories of the past be told and shared?**

**Key questions**

**Who are important to the local community?**

**How has our community changed?**

**What is the nature of the community made by different groups and individuals in the community?**

**How and why do people choose to remember significant events of the past?**

**How has family life changed or remained the same over time?**

**What aspects of the past can you see today?**

**What have been lost and what features have been retained?**

**What is the nature of the contribution made by different groups and individuals in the community?**

**How and why do people choose to remember significant events of the past?**

**The nature of contact between Aboriginal people and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example families and the environment.**

**The importance of Country and Place to Aboriginal and/or Torres Strait Islander peoples who belong to a local area. (This is intended to be a local area study with a focus on one Language group; however, if information or sources are not readily available, another representative area may be studied)**

**ONE important example of change and ONE important example of continuity over time in the local community, region or state/territory; for example, in relation to the areas of transport, work, education, natural and built environments, entertainment, daily life.**

**The role that people of diverse backgrounds have played in the development and character of the local community.**

**Days and weeks celebrated or commemorated in Australia (including Australia Day, Harmony Week, ANZAC Day, NAIDOC week) and the importance of symbols and emblems.**

**Celebrations and commemorations in other places around the world; for example, Bastille Day in France, Independence Day in the USA, including those that are observed in Australia such as Chinese New Year, Christmas Day, Diwali, Easter, Hanukkah, the Moon Festival and Ramadan.**

**The diversity and longevity of Aboriginal and Torres Strait Islander peoples is important to the local community.**

**The nature of contact between Aboriginal and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example families and the environment.**

**The contribution of individuals and groups, including Aboriginal people and/or Torres Strait Islanders and migrants, to the development of Australian society, for example in areas such as the economy, education, science, the arts, sport.**

**Reasons (economic, political and social) for the establishment of British colonies in Australia after 1800.**

**The nature of a convict or colonial settlement in Australia, including the factors that influenced patterns of settlement, aspects of the daily life of its different inhabitants, and how they changed the environment.**

**The impact of a significant development or event on a colony; for example, frontier conflict, the gold rushes, the Eureka Stockade, internal exploration, the advent of rail, the expansion of farming, drought.**

**The nature of a convict or colonial settlement in Australia, including the factors that influenced patterns of settlement, aspects of the daily life of its different inhabitants, and how they changed the environment.**

**The nature of contact between Aboriginal people and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example, families and the environment.**

**The role that a significant individual or group played in shaping a colony; for example, explorers, farmers, entrepreneurs, artists, writers, humanitarians, religious and political leaders, and Aboriginal and/or Torres Strait Islander peoples.**

**The nature of conflict between Aboriginal people and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example families and the environment.**

**The role that a significant individual or group played in shaping a colony; for example, explorers, farmers, entrepreneurs, artists, writers, humanitarians, religious and political leaders, and Aboriginal and/or Torres Strait Islander peoples.**

**The nature of conflict between Aboriginal people and/or Torres Strait Islanders and others, for example, the Macassans and the Europeans, and the effects of these interactions on, for example families and the environment.**
<table>
<thead>
<tr>
<th>Year level focus</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
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<tr>
<td><strong>Overview</strong></td>
<td>The ancient world&lt;br&gt;The Year 7 curriculum provides a study of history from the time of the earliest human communities to the end of the ancient period (approximately 60 000 BCE – c.1750 CE).</td>
<td>The ancient to the modern world&lt;br&gt;The Year 8 curriculum provides a study of history from the end of the ancient period to the beginning of the modern period (c.650 CE – c.1750).</td>
<td>The making of the modern world&lt;br&gt;The Year 9 curriculum provides a study of the history of the making of the modern world from 1750 to 1918.</td>
<td>The modern world and Australia&lt;br&gt;The Year 10 curriculum provides a study of the history of the modern world and Australia from 1918 to the present, with an emphasis on Australia in its global context.</td>
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<tr>
<td><strong>Depth studies</strong></td>
<td>The depth studies for this year level include: &lt;br&gt;1. Investigating the ancient past &lt;br&gt;2. The Mediterranean world (ONE of Egypt, Greece, Rome) &lt;br&gt;3. The Asian world (ONE of China, India)</td>
<td>The depth studies for this year level include: &lt;br&gt;1. The Western and Islamic World (ONE of The Vikings, Renaissance Italy, Medieval Europe, The Ottoman Empire) &lt;br&gt;2. The Asia-Pacific World (ONE of Angkor/Khmer Empire, Shogunate Japan, The Polynesian expansion across the Pacific) &lt;br&gt;3. Expanding contacts (ONE of Mongol Expansion, The Spanish Conquest of the Americas, The Black Death in Asia, Europe and Africa)</td>
<td>The depth studies for this year level include: &lt;br&gt;1. Making a Better World? (ONE of Progressive ideas and movements, The Industrial Revolution, Movement of peoples) &lt;br&gt;2. Australia and Asia (ONE of Asia and the world, Making a nation) &lt;br&gt;3. World War I</td>
<td>The depth studies for this year level include: &lt;br&gt;1. World War II &lt;br&gt;2. Rights and freedoms &lt;br&gt;3. The globalising world (ONE of Popular culture, The environment movement, Migration experiences)</td>
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<tr>
<td><strong>Key concepts</strong></td>
<td>The content provides opportunities to develop historical understanding through key concepts, including evidence, continuity and change, cause and effect, perspectives, empathy, significance and contestability.</td>
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