Prep to Year 7 multiple year levels — Plans A and B
Australian Curriculum: Science

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum v3.0: Science for Foundation–10*, <www.australiancurriculum.edu.au/Science/Curriculum/F-10>.

|  |  |  |  |
| --- | --- | --- | --- |
| Identify curriculum | Year level descriptions (highlighted aspects indicate differences from the previous year level) | Prep | 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. |
| Year 1 | 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 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. |
| 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. |
| 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. |
| 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. |
| 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. |
| 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. |
| 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. |
| Identify curriculum | Achievement standards | Prep | By the end of the Foundation year, students describe the [properties](http://www.australiancurriculum.edu.au/Glossary?a=S&t=properties) and behaviour of familiar objects. They suggest how the [environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=environment) affects them and other living things. Students share observations of familiar objects and events. |
| Year 1 | 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](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) and objects. They identify a range of habitats. They describe changes to things in their [local environment](http://www.australiancurriculum.edu.au/Glossary?a=S&t=local+environment) and suggest how science helps people care for environments. Students make predictions, and investigate everyday phenomena. They follow instructions to record and sort their observations and share their observations with others. |
| Year 2 | By the end of Year 2, students describe changes to objects, [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) and living things. They identify that certain [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) and resources have different uses and describe examples of where science is used in people’s daily lives. Students pose questions about their experiences and predict outcomes of [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations). They use informal measurements to make and compare observations. They follow instructions to record and represent their observations and communicate their ideas to others. |
| Year 3 | By the end of Year 3, students use their understanding of the movement of the Earth, [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) and the behaviour of heat to suggest explanations for everyday observations They describe features common to living things. They describe how they can use science [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations) to respond to questions and identify where people use science knowledge in their lives.Students use their experiences to pose questions and predict the outcomes of [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations). They make formal measurements and follow procedures to collect and present observations in a way that helps to answer the [investigation](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigation) questions. Students suggest possible reasons for their findings. They describe how safety and fairness were considered in their [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations). They use diagrams and other representations to communicate their ideas. |
| Year 4 | By the end of Year 4, students apply the [observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=observable) [properties](http://www.australiancurriculum.edu.au/Glossary?a=S&t=properties) of [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) to explain how objects and [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials) can be used. They use contact and non-contact [forces](http://www.australiancurriculum.edu.au/Glossary?a=S&t=forces) to describe interactions between objects. They discuss how natural and human processes cause changes to the Earth’s surface. They describe [relationships](http://www.australiancurriculum.edu.au/Glossary?a=S&t=relationships) that assist the survival of living things and sequence key stages in the life cycle of a plant or animal. They identify when science is used to ask questions and make predictions. They describe situations where science understanding can influence their own and others’ actions.Students follow instructions to identify investigable questions about familiar contexts and predict likely outcomes from [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations). They discuss ways to conduct [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations) and safely use equipment to make and record observations. They use provided [tables](http://www.australiancurriculum.edu.au/Glossary?a=S&t=tables) and simple column [graphs](http://www.australiancurriculum.edu.au/Glossary?a=S&t=graphs) to organise their [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) and identify [patterns](http://www.australiancurriculum.edu.au/Glossary?a=S&t=patterns) in [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data). Students suggest explanations for observations and compare their findings with their predictions. They suggest reasons why their methods were fair or not. They complete simple [reports](http://www.australiancurriculum.edu.au/Glossary?a=S&t=reports) to communicate their methods and findings. |
| Year 5 | By the end of Year 5, students [classify](http://www.australiancurriculum.edu.au/Glossary?a=S&t=classify) substances according to their [observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=observable) [properties](http://www.australiancurriculum.edu.au/Glossary?a=S&t=properties) and behaviours. They explain everyday phenomena associated with the transfer of light. They describe the key features of our solar [system](http://www.australiancurriculum.edu.au/Glossary?a=S&t=system). They [analyse](http://www.australiancurriculum.edu.au/Glossary?a=S&t=analyse) how the form of living things enables them to function in their environments. Students discuss how scientific developments have affected people’s lives and how science knowledge develops from many people’s contributions. Students follow instructions to pose questions for [investigation](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigation), predict what might happen when [variables](http://www.australiancurriculum.edu.au/Glossary?a=S&t=variables) are changed, and plan [investigation](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigation) methods. They use equipment in ways that are safe and improve the accuracy of their observations. Students construct [tables](http://www.australiancurriculum.edu.au/Glossary?a=S&t=tables) and [graphs](http://www.australiancurriculum.edu.au/Glossary?a=S&t=graphs) to organise [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) and identify [patterns](http://www.australiancurriculum.edu.au/Glossary?a=S&t=patterns). They use [patterns](http://www.australiancurriculum.edu.au/Glossary?a=S&t=patterns) in their [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) to suggest explanations and refer to [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) when they [report](http://www.australiancurriculum.edu.au/Glossary?a=S&t=report) findings. They describe ways to improve the fairness of their methods and communicate their ideas, methods and findings using a range of text types. |
| Year 6 | By the end of Year 6, students compare and [classify](http://www.australiancurriculum.edu.au/Glossary?a=S&t=classify) different types of [observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=observable) changes to [materials](http://www.australiancurriculum.edu.au/Glossary?a=S&t=materials). They [analyse](http://www.australiancurriculum.edu.au/Glossary?a=S&t=analyse) requirements for the transfer of electricity and describe how energy can be transformed from one form to another to generate electricity. They explain how natural events cause rapid change to the Earth’s surface. They describe and predict the effect of environmental changes on individual living things. Students explain how scientific knowledge is used in decision making and identify contributions to the development of science by people from a range of cultures.Students follow procedures to develop investigable questions and [design](http://www.australiancurriculum.edu.au/Glossary?a=S&t=design) [investigations](http://www.australiancurriculum.edu.au/Glossary?a=S&t=investigations) into simple cause-and-effect [relationships](http://www.australiancurriculum.edu.au/Glossary?a=S&t=relationships). They identify [variables](http://www.australiancurriculum.edu.au/Glossary?a=S&t=variables) to be changed and measured and describe potential safety risks when planning methods. They collect, organise and interpret their [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data), identifying where improvements to their methods or [research](http://www.australiancurriculum.edu.au/Glossary?a=S&t=research) could improve the [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data). They describe and [analyse](http://www.australiancurriculum.edu.au/Glossary?a=S&t=analyse) [relationships](http://www.australiancurriculum.edu.au/Glossary?a=S&t=relationships) in [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) using graphic representations and construct [multi-modal texts](http://www.australiancurriculum.edu.au/Glossary?a=S&t=multi-modal+texts) to communicate ideas, methods and findings. |
| Year 7 | By the end of Year 7, students describe techniques to separate pure substances from mixtures. They represent and predict the effects of unbalanced [forces](http://www.australiancurriculum.edu.au/Glossary?a=S&t=forces), including Earth’s gravity, on motion. They explain how the relative positions of the Earth, sun and moon affect phenomena on Earth. They [analyse](http://www.australiancurriculum.edu.au/Glossary?a=S&t=analyse) how the [sustainable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=sustainable) use of resources depends on the way they are formed and cycle through Earth [systems](http://www.australiancurriculum.edu.au/Glossary?a=S&t=systems). They predict the effect of environmental changes on feeding [relationships](http://www.australiancurriculum.edu.au/Glossary?a=S&t=relationships) and [classify](http://www.australiancurriculum.edu.au/Glossary?a=S&t=classify) and organise diverse organisms based on [observable](http://www.australiancurriculum.edu.au/Glossary?a=S&t=observable) differences. Students describe situations where scientific knowledge from different science disciplines has been used to solve a real-world problem. They explain how the solution was viewed by, and impacted on, different groups in society.Students identify questions that can be investigated scientifically. They plan fair experimental methods, identifying [variables](http://www.australiancurriculum.edu.au/Glossary?a=S&t=variables) to be changed and measured. They select equipment that improves fairness and accuracy and describe how they considered safety. Students draw on [evidence](http://www.australiancurriculum.edu.au/Glossary?a=S&t=evidence) to support their [conclusions](http://www.australiancurriculum.edu.au/Glossary?a=S&t=conclusions). They summarise [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) from different sources, describe [trends](http://www.australiancurriculum.edu.au/Glossary?a=S&t=trends) and refer to the quality of their [data](http://www.australiancurriculum.edu.au/Glossary?a=S&t=data) when suggesting improvements to their methods. They communicate their ideas, methods and findings using [scientific language](http://www.australiancurriculum.edu.au/Glossary?a=S&t=scientific+language) and appropriate representations. |

Prep to Year 7 Science: Plan A

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Teaching and learning | Term overview | Term 1 | Term 2 | Term 3 | Term 4 |
| Revision | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 |
| Prep to Year 7 | Science Inquiry SkillsThrough the context chosen for any unit, students will participate in learning experiences that will give them opportunities to:* collaboratively work in groups to identify and pose questions that can be investigated safely
* make predictions and compare results with predictions
* collect information and data, record in tables and graphs, identify trends and patterns and compare observations with predictions
* use a range of representations to communicate, present and analyse information.
 |
| **Biological sciences through the conceptual thread of diversity and interdependency**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring the natural world
* appreciate that to understand the relationships between living things, data is collected and patterns and relationships are identified and analysed
* explore how science knowledge helps people to understand the effect of their actions on ecosystems
* recognise the contributions to science by people from different cultures
* investigate how knowledge about the interdependency of organisms can influence practices in fields such as industry, agriculture and resource management.

Children/students will participate in learning experiences that will give them opportunities to:* identify the needs of living things
* investigate the interdependence of animals and plants
* investigate the role of living things, including humans, within a habitat
* predict the effects of human activity on feeding relationships
 | **Earth and space sciences through the conceptual thread of Earth**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring and investigating changes to the landscape
* appreciate that science knowledge helps people to understand the effect of human activity, natural disasters and extreme weather on the Earth’s surface and resources
* appreciate that science involves gathering data to assist in detecting natural disasters and that this process is advanced by new technologies.

Children/students will participate in learning experiences that will give them opportunities to:* observe changes to the landscape, weather and seasons
* classify the Earth’s resources as renewable or non-renewable and consider what might happen if there was a change in the availability of those resources
* examine how a resource such as water cycles through the environment
* investigate a local area that has changed as a result of natural processes by collecting and recording evidence of change to landforms
 | **Chemical sciences through the conceptual thread of properties and structure**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring and investigating the properties of matter
* appreciate that science involves making predictions, collecting data, identifying and analysing patterns about the physical properties of everyday materials and that this influences the use of materials
* investigate and explore where the science of the properties of matter is used in their everyday lives.

Children/students will participate in learning experiences that will give them opportunities to:* observe and describe the properties of everyday objects and materials and explain why the materials used in these objects are suited to their use
* plan and conduct fair tests to investigate:
* the properties of a range of materials
* the best choice of materials for a specific purpose
* a particular property for a range of materials
* compare the properties of solids, liquids and gases and their ability to flow or maintain shape and volume
 | Physical sciences through the conceptual thread of forcesThrough the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring and investigating where forces are used in their everyday lives
* appreciate that science involves making predictions, collecting data, and identifying and analysing patterns to explore the role of forces in everyday objects and devices
* understand how scientific understandings, discoveries and inventions are used to solve safety issues in contexts such as sport and driver safety.

Children/students will participate in learning experiences that will give them opportunities to:* observe and compare the way different objects move on land, in water, and in the air
* explore how the size and shape of an object affects the way it moves
* plan and conduct fair tests to investigate:
* how different strengths of pushes and pulls affect the movement of objects
* the effect of forces on the behaviour of objects
* the effect of friction between surfaces
* explore different types of forces including friction, air resistance, upthrust and gravity
 |
| Teaching and learning |  | * explore the traditional knowledge of Aboriginal and Torres Strait Islander peoples about native flora and fauna
* predict the effects when living things in feeding relationships die out, are removed or the physical conditions of the environment are changed
* collect data about the physical conditions of an environment and investigate how they support the growth and survival of living things
* construct and interpret food chains and webs to show relationships between organisms in an environment.
 | * use and create models to demonstrate the effect of sudden geological events
* describe how scientists gather evidence to predict the effect of, and measure, significant geological and weather events
* propose ways to minimise the effects of human activity, natural disasters and extreme weather on the local landscape.
 | * classify everyday materials and items as solid, liquid or gas
* recognise that some materials are composite materials and cannot be easily classified
* explore the way that solids, liquids and gases change under different conditions.
 | * investigate common situations where forces are balanced, such as stationary objects or objects moving at a constant speed
* investigate common situations where forces are unbalanced, such as objects speeding up or slowing down
* represent balanced and unbalanced forces in everyday situations using force diagrams
* revisit (from Term 3) the properties of materials and make links between this and the use of materials to absorb forces.
 |
| Suggested contexts | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Our local environment and its living things
* Human interference in an environment
* Wild environment vs. domestic environment
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* The science of extreme weather and natural disasters
* How we’ve changed the planet
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Properties and structure of matter in the home
* Party time — the science of birthday parties and novelty gifts, such as balloons (and helium balloons), balls, slime, jelly, ice‑cream, candles, whistles, crazy straws, ice cubes, fizzy drinks
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Theme park science — getting a thrill from forces and motion
* **Forces exemplar unit 1: Machines**
* **Forces exemplar unit 2: Sport**
 |
| Aboriginal and Torres Strait Islander perspectives | Science provides opportunities for students to strengthen their appreciation and understanding of Aboriginal peoples and Torres Strait Islander peoples and their living cultures. Specific content and skills within relevant sections of the curriculum can be drawn upon to encourage engagement with:* Aboriginal and Torres Strait Islander frameworks of knowing and ways of learning
* Indigenous contexts in which Aboriginal and Torres Strait Islander peoples live
* Aboriginal peoples’ and Torres Strait Islander peoples’ contributions to Australian society and cultures.

Science provides opportunities to explore aspects of Australian Indigenous knowing with connection to, and guidance from, the communities who own them. Using a respectful inquiry approach, students have the opportunity to explore non-Indigenous science interpretations of Aboriginal and Torres Strait Islander lifestyles including knowledge of natural phenomena; native flora and fauna; and land, water and waste management. Using an inquiry approach enables students to learn science in contexts that are valued by Aboriginal and Torres Strait Islander students, their peers and communities, acknowledging their values and approaches to learning. |
| General capabilities and cross-curriculum priorities | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_socialDescription: Description: Description: gc_intercultural Description: Description: cc_asia Description: Description: cc_sust | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_social Description: Description: cc_asia Description: Description: cc_sust  | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_socialDescription: Description: cc_sust | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracyDescription: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethicalDescription: Description: Description: gc_personal_social |
| Key to general capabilities and cross-curriculum priorities | Description: Description: Description: Description: gc_literacy Literacy  Description: Description: Description: Description: gc_numeracy Numeracy  Description: Description: Description: Description: gc_ict ICT capability  Description: Description: Description: Description: gc_critical Critical and creative thinking  Description: Description: Description: Description: gc_ethical Ethical behaviour  Description: Description: Description: Description: gc_personal_social Personal and social capability  Description: Description: Description: Description: gc_intercultural Intercultural understanding Aboriginal and Torres Strait Islander histories and cultures  Description: Description: Description: cc_asia Asia and Australia’s engagement with Asia  Description: Description: Description: cc_sust Sustainability |
| Develop assessment | AssessmentFor advice and guidelines on assessment, see: [www.qsa.qld.edu.au](http://www.qsa.qld.edu.au/) | In P–2, an assessment folio is a targeted collection of a child’s work for ongoing review and analysis, and for reporting a child’s achievement and progress at a point in time. Administrators and teachers determine the evidence that will be collected to demonstrate a pattern of achievement within the child’s learning across the Australian Curriculum and the remaining Queensland learning areas, where applicable.In Years 3–10, a folio is a targeted selection of evidence of student learning and includes a range of responses to a variety of assessment techniques. A folio is used to make an overall on-balance judgment about student achievement and progress at appropriate points and informs the reporting process.The individual folio may contain:* notes of conversations with children/students
* anecdotal records, e.g. *spoken/signed, class discussions*
* personalised checklists with comments
* images or recordings, e.g. *photographs, video or audio recordings*
* objects or artefacts that children/students develop or make, e.g. *drawings and labels*
* notes of discussions with other partners
* oral questioning.
 |
| Develop assessment |  | Term 1 | Term 2 | Term 3 | Term 4 |
| Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument |
| 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* food chains and food webs
* science reports
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
* science reports
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
* science reports
 |
| 9 | Research: Report (Written)Examples could include:* field trip report on the investigation of organisms in a local ecosystem
* zoo design for a selection of animals, ensuring that the physical conditions of the enclosures support the survival of the animals.
 | 8 | Research: Report (Multimodal)Examples could include an oral on:* predicting significant geological and seasonal/weather events
* recommendations for preventing the effects of human activity on the Earth’s surface.
 | 9 | Experimental investigation: Scientific report (Written)Collaboratively plan and conduct a fair investigation to answer questions appropriate to the context being explored through the conceptual thread of properties and structure.Examples could include:* investigating properties and selecting the most appropriate material for a specific use
* determining the mass of a gas in an everyday item, e.g. in a balloon, soft drink.
 | 8 | Experimental investigation: Model design and explanation (Multimodal)Examples could include:* designing and constructing a machine/toy with a written description/labelled diagram of how the machine works and the forces involved, reflecting on its effectiveness and applications in everyday life
* designing a push-and-pull obstacle course or plan and conducting a fair investigation to gather quantitative data about the effectiveness of sporting safety equipment.
 |
| **QCATs:** Identify the curriculum targeted by the QCAT and schedule its implementation appropriate to the sequence of learning. |
| Make judgments and use feedback | Moderation | Teachers develop tasks and plan units.Informal moderation of child/student engagement/confidence when applying scientific concepts/methods.Teachers co-mark tasks to ensure consistency of judgments. | Teachers develop tasks and plan units.Teachers select representative folios of child/student work and meet to ensure consistency of judgments before marking tasks. | Teachers develop tasks and plan units.Teachers take opportunities to informally discuss children’s/students’ development of skills and knowledge as the term progresses.Teachers choose a selection of the QCATs to calibrate. They moderate to ensure consistency of judgments. | Teachers develop tasks and plan units.Teachers select representative folios of child/student work and meet to ensure consistency of judgments before marking tasks.Teachers participate in school and cluster moderation of the QCATs. |

Prep to Year 7 Science: Plan B

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Teaching and learning | Term overview | Term 1 | Term 2 | Term 3 | Term 4 |
| Revision | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 | Revise and consolidate concepts from:* previous terms
* previous year
* previous contexts.
 |
| Prep to Year 7 | Science Inquiry SkillsThrough the context chosen for any unit, students will participate in learning experiences that will give them opportunities to:* collaboratively work in groups to identify and pose questions that can be investigated safely
* make predictions and compare results with predictions
* collect information and data, record in tables and graphs, identify trends and patterns and compare observations with predictions
* use a range of representations to communicate, present and analyse information.
 |
| **Biological sciences through the conceptual thread of form and feature** Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring the natural world
* appreciate that to understand the features of living and non-living things, data is collected and patterns are identified and analysed
* recognise that the science of classification changes as new evidence becomes available
* recognise the contributions to science by people from different cultures.

Children/students will participate in learning experiences that will give them opportunities to:* observe growth and changes in living things
* examine how living things have offspring similar to themselves
* examine the characteristics of living things and sort them based on observable characteristics
* explore and describe living and non-living things
* explore the difference between non-living things and things that were once living
* describe and compare the stages of life cycles of different living things, including plants and animals
* describe and classify adaptations of living things and explain how the adaptations assist in their survival
 | **Earth and space sciences through the conceptual thread of space**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring and investigating the things and places around us
* appreciate that science involves gathering data to explain phenomena and that this process is advanced by new technologies
* explore how science knowledge changes as new evidence becomes available
* recognise the contributions to science by people from different cultures.

Children/students will participate in learning experiences that will give them opportunities to:* observe changes in the sky and landscape
* research and explore the place of Earth in the solar system
* explore and make links between Earth’s rotation and the causes of day and night
* model the relative positions of the sun, Earth and moon
* explore the relationships between the relative positions of the sun, Earth and moon and predictable phenomena on Earth
* research moon myths and culture, including Aboriginal and Torres Strait Islander Dreaming stories.
 | **Physical sciences through the conceptual thread of energy**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring energy in their everyday lives
* appreciate that science involves making predictions, collecting data, identifying and analysing patterns about energy and that this influences the sources of energy in their everyday lives
* explore the role of energy through light, sound, heat and electrical in everyday objects and devices
* explore how science knowledge helps people to develop sustainable practices
* examine how scientific understandings, discoveries and inventions are used to solve energy issues throughout society.

Children/students will participate in learning experiences that will give them opportunities to:* describe ways that light, sound, and heat are produced and sensed
* explore how sound, heat and electricity are transferred and transformed
* know and use safe practices when investigating sound, heat and electricity in the classroom and appreciate the implications at home
* explore how light forms shadows and can be absorbed, reflected and refracted
* investigate electrical circuits
 | **Chemical sciences through the conceptual thread of change**Through the context chosen for the unit in a given year children/students will:* recognise that asking questions and making observations are an important part of exploring and investigating matter
* appreciate that science involves making predictions, collecting data, identifying and analysing patterns about change in materials and that this influences the use and application of the materials across various areas of human activity
* investigate and explore where the science of changes to matter is used in their everyday lives to solve issues throughout society.

Children/students will participate in learning experiences that will give them opportunities to:* observe changes
* identify changes that occur in everyday situations due to heating (and cooling)
* revisit (from Term 3) how heat is transferred through solids and liquids
* describe ways that everyday materials can be physically changed and how materials can be combined
* explore the states of matter and the role of heat in changing the states of matter
* explore changes to materials and classify these changes as reversible or irreversible
* identify the differences between pure substances and mixtures
* design investigations to separate mixtures.
 |
| Teaching and learning |  | * appreciate Aboriginal and Torres Strait Islander understandings of adaptations and knowledge of the local natural environment, such as the characteristics of plants and animals
* construct and use dichotomous keys
* explore the history of classification and how it has developed over time.
 |  | * investigate how solar energy, moving air and water can be used to generate electricity
* research why sustainable sources of energy are being considered by communities
* explore the different forms of energy generation used in Australia and other countries in Asia (e.g. Japan, Indonesia, India and China).
 |  |
| Suggested contexts | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Our local environment and its living things
* Human interference in an environment
* Wild environment vs. domestic environment
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Weather, seasons and climate — looking for patterns and making predictions
* The dynamic solar system — exploring the effects of objects in the solar system on the Earth, e.g. tides, moon phases, eclipses
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Towards a sustainable future — moving away from fossil fuels
* **Energy exemplar unit 1: The sustainable home**
* **Energy exemplar unit 2: Gadgets and gizmos**
 | Schools should consider their local area as a source of contexts, e.g. a local problem, situation or issue.* Kitchen chemistry
* How does water cycle?
* All mixed up and getting separated
 |
| Aboriginal and Torres Strait Islander perspectives | Science provides opportunities for students to strengthen their appreciation and understanding of Aboriginal peoples and Torres Strait Islander peoples and their living cultures. Specific content and skills within relevant sections of the curriculum can be drawn upon to encourage engagement with:* Aboriginal and Torres Strait Islander frameworks of knowing and ways of learning
* Indigenous contexts in which Aboriginal and Torres Strait Islander peoples live
* Aboriginal peoples’ and Torres Strait Islander peoples’ contributions to Australian society and cultures.

Science provides opportunities to explore aspects of Australian Indigenous knowing with connection to, and guidance from, the communities who own them. Using a respectful inquiry approach, students have the opportunity to explore non-Indigenous science interpretations of Aboriginal and Torres Strait Islander lifestyles including knowledge of natural phenomena; native flora and fauna; and land, water and waste management. Using an inquiry approach enables students to learn science in contexts that are valued by Aboriginal and Torres Strait Islander students, their peers and communities, acknowledging their values and approaches to learning. |
| General capabilities and cross-curriculum priorities | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_socialDescription: Description: Description: gc_interculturalDescription: Description: cc_sust | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_socialDescription: Description: Description: gc_intercultural Description: Description: cc_sust | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_personal_socialDescription: Description: cc_sust | Opportunities to engage with:Description: Description: Description: gc_literacy Description: Description: Description: gc_numeracy Description: Description: Description: gc_ict Description: Description: Description: gc_critical Description: Description: Description: gc_ethical Description: Description: Description: gc_personal_socialDescription: Description: Description: gc_interculturalDescription: Description: cc_sust |
| Key to general capabilities and cross-curriculum priorities | Description: Description: Description: Description: gc_literacy Literacy  Description: Description: Description: Description: gc_numeracy Numeracy  Description: Description: Description: Description: gc_ict ICT capability  Description: Description: Description: Description: gc_critical Critical and creative thinking  Description: Description: Description: Description: gc_ethical Ethical behaviour  Description: Description: Description: Description: gc_personal_social Personal and social capability  Description: Description: Description: Description: gc_intercultural Intercultural understanding Aboriginal and Torres Strait Islander histories and cultures  Description: Description: Description: cc_asia Asia and Australia’s engagement with Asia  Description: Description: Description: cc_sust Sustainability |
| Develop assessment | AssessmentFor advice and guidelines on assessment, see [www.qsa.qld.edu.au](http://www.qsa.qld.edu.au) | In P–2, an assessment folio is a targeted collection of a child’s work for ongoing review and analysis, and for reporting a child’s achievement and progress at a point in time. Administrators and teachers determine the evidence that will be collected to demonstrate a pattern of achievement within the child’s learning across the Australian Curriculum and the remaining Queensland learning areas, where applicable.In Years 3–10, a folio is a targeted selection of evidence of student learning and includes a range of responses to a variety of assessment techniques. A folio is used to make an overall on-balance judgment about student achievement and progress at appropriate points and informs the reporting process.The individual folio may contain:* notes of conversations with children/students
* anecdotal records, e.g. *spoken/signed, class discussions*
* personalised checklists with comments
* images or recordings, e.g. *photographs, video or audio recordings*
* objects or artefacts that children/students develop or make, e.g. *drawings and labels*
* notes of discussions with other partners
* oral questioning.
 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Develop assessment |  | Term 1 | Term 2 | Term 3 | Term 4 |
| Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument | Week | Assessment instrument |
| 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
* science reports
 | 2–7 | Collection of work (Written) * science journal entries
* observations
* graphs and tables
* labelled and annotated diagrams
* written explanations
* annotated concept maps and flowcharts
* science reports
 |
| 9 | Research: Report (Written)Examples could include:* completing a checklist of the characteristics of living things found in the outdoor school environment using observable characteristics to develop a dichotomous key to identify the organisms
* using a set of specifications to create an animal or plant that has features that allow it to survive in an extreme environment, identifying and explaining the adaptations the organism has developed.
 | 8 | Research: Report (Written)Examples could include: * annotating and drawing to scale a diagram of the solar system, and Earth’s place in it
* creating a profile of a planet, other than Earth, explaining why people, plants and animals can’t live on the planet
* completing modified Assessment Bank items.
 | 9 | Experimental investigation: Model design and explanation (Multimodal)Examples could include:* creating and presenting a model of a sustainable home, explaining and justifying why the location, source of energy and the sustainable components of the home have been selected
* gathering observations and data, throughout the term, from investigations that can be used to inform the design of an energy gadget.
 | 8 | Experimental investigation: Scientific report (Written)Collaboratively plan and conduct an investigation to answer questions appropriate to the context being explored through the conceptual threads of physical and chemical changes.Examples could include:* separating a mixture
* exploring how everyday chemical and/or physical changes can be stopped, sped up and slowed down.
 |
| **QCATs:** Identify the curriculum targeted by the QCAT and schedule its implementation appropriate to the sequence of learning. |
| Make judgments and use feedback | Moderation | Teachers develop tasks and plan units.Informal moderation of child/student engagement/confidence when applying scientific concepts/methods.Teachers co-mark tasks to ensure consistency of judgments. | Teachers develop tasks and plan units.Teachers select representative folios of child/student work and meet to ensure consistency of judgments before marking tasks. | Teachers develop tasks and plan units.Teachers take opportunities to informally discuss children’s/students’ development of skills and knowledge as the term progresses.Teachers choose a selection of the QCATs to calibrate. They moderate to ensure consistency of judgments. | Teachers develop tasks and plan units.Teachers select representative folios of child/student work and meet to ensure consistency of judgments before marking tasks.Teachers participate in school and cluster moderation of the QCATs. |

Prep to Year 7 Science: Review for balance and coverage of content descriptions across: Plans A and B

| Science Understanding strand Prep to Year 3 |
| --- |
| Prep | 1 | 2 | 3 | 4 | Year 1 | 1 | 2 | 3 | 4 | Year 2 | 1 | 2 | 3 | 4 | Year 3 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Biological sciences | Biological sciences | Biological sciences | Biological sciences |
| Living things have basic needs, including food and water [(ACSSU002)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU002) | A |  |  |  | Living things have a variety of external features [(ACSSU017)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU017) | B |  |  |  | Living things grow, change and have offspring similar to themselves  [(ACSSU030)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU030) | B |  |  |  | Living things can be grouped on the basis of observable features and can be distinguished from non-living things [(ACSSU044)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU044) | B |  |  |  |
| Living things live in different places where their needs are met  [(ACSSU211)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU211) | A |  |  |  |
| Chemical sciences | Chemical sciences | Chemical sciences | Chemical sciences |
| Objects are made of materials that have observable properties [(ACSSU003)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU003) |  |  | A |  | Everyday materials can be physically changed in a variety of ways [(ACSSU018)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU018) |  |  |  | B | Different materials can be combined, including by mixing, for a particular purpose [(ACSSU031)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU031) |  |  |  | B | A change of state between solid and liquid can be caused by adding or removing heat [(ACSSU046)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU046) |  |  |  | B |
| Earth and space sciences | Earth and space sciences | Earth and space sciences | Earth and space sciences |
| Daily and seasonal changes in our environment, including the weather, affect everyday life [(ACSSU004)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU004) |  | A |  |  | Observable changes occur in the sky and landscape [(ACSSU019)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU019) |  | AB |  |  | Earth’s resources, including water, are used in a variety of ways [(ACSSU032)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU032) |  | A |  |  | Earth’s rotation on its axis causes regular changes, including night and day [(ACSSU048)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU048) |  | B |  |  |
| Physical sciences | Physical sciences | Physical sciences | Physical sciences |
| The way objects move depends on a variety of factors, including their size and shape [(ACSSU005)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU005) |  |  |  | A | Light and sound are produced by a range of sources and can be sensed  [(ACSSU020)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU020) |  |  | B |  | A push or a pull affects how an object moves or changes shape [(ACSSU033)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU033) |  |  |  | A | Heat can be produced in many ways and can move from one object to another [(ACSSU049)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU049) |  |  | B |  |

| Science Understanding strand Year 4 to Year 7 |
| --- |
| Year 4 | 1 | 2 | 3 | 4 | Year 5 | 1 | 2 | 3 | 4 | Year 6 | 1 | 2 | 3 | 4 | Year 7 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Biological sciences | Biological sciences | Biological sciences | Biological sciences |
| Living things have life cycles  [(ACSSU072)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU072) | B |  |  |  | Living things have structural features and adaptations that help them to survive in their environment [(ACSSU043)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU043) | B |  |  |  | The growth and survival of living things are affected by the physical conditions of their environment [(ACSSU094)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU094) | A |  |  |  | There are differences within and between groups of organisms; classification helps organise this diversity [(ACSSU111)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU111) | B |  |  |  |
| Living things, including plants and animals, depend on each other and the environment to survive [(ACSSU073)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU073) | A |  |  |  | Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions [(ACSSU112)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU112) | A |  |  |  |
| Chemical sciences | Chemical sciences | Chemical sciences | Chemical sciences |
| Natural and processed materials have a range of physical properties; These properties can influence their use [(ACSSU074)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU074) |  |  | A |  | Solids, liquids and gases have different observable properties and behave in different ways [(ACSSU077)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU077) |  |  | A |  | Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting [(ACSSU095)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU095) |  |  |  | B | Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques [(ACSSU113)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU113) |  |  |  | B |
| Earth and space sciences | Earth and space sciences | Earth and space sciences | Earth and space sciences |
| Earth’s surface changes over time as a result of natural processes and human activity [(ACSSU075)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU075) |  | A |  |  | The Earth is part of a system of planets orbiting around a star (the sun) [(ACSSU078)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU078)  |  | B |  |  | Sudden geological changes or extreme weather conditions can affect Earth’s surface [(ACSSU096)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU096) |  | A |  |  | Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon [(ACSSU115)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU115) |  | B |  |  |
| Some of Earth’s resources are renewable, but others are non-renewable [(ACSSU116)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU116) |  | A |  |  |
| Water is an important resource that cycles through the environment [(ACSSU222)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU222) |  | A |  |  |
| Physical sciences | Physical sciences | Physical sciences | Physical sciences |
| Forces can be exerted by one object on another through direct contact or from a distance [(ACSSU076)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU076) |  |  |  | A | Light from a source forms shadows and can be absorbed, reflected and refracted [(ACSSU080)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU080) |  |  | B |  | Electrical circuits provide a means of transferring and transforming electricity [(ACSSU097)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU097) |  |  | B |  | Change to an object’s motion is caused by unbalanced forces acting on the object [(ACSSU117)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU117) |  |  |  | A |
| Energy from a variety of sources can be used to generate electricity [(ACSSU219)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU219) |  |  | B |  | Earth’s gravity pulls objects towards the centre of the Earth [(ACSSU118)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSSU118) |  |  |  | A |

| Science as a Human Endeavour strand Prep to Year 3  |
| --- |
| Prep | 1 | 2 | 3 | 4 | Year 1 | 1 | 2 | 3 | 4 | Year 2 | 1 | 2 | 3 | 4 | Year 3 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Nature and development of science | Nature and development of science | Nature and development of science | Nature and development of science |
| Science involves exploring and observing the world using the senses  [(ACSHE013)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE013) | AB | AB | AB | AB | Science involves asking questions about, and describing changes in, objects and events [(ACSHE021)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE021) | AB | AB | AB | AB | Science involves asking questions about, and describing changes in, objects and events [(ACSHE034)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE034) | AB | AB | AB | AB | Science involves making predictions and describing patterns and relationships [(ACSHE050)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE050) | AB | B | AB | AB |
| Use and influence of science | Use and influence of science | Use and influence of science | Use and influence of science |
| Not addressed at this Year level |  |  |  |  | People use science in their daily lives, including when caring for their  environment and living things [(ACSHE022)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE022) | AB |  | AB | AB | People use science in their daily lives, including when caring for their environment and living things [(ACSHE035)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE035) | AB |  | AB | AB | Science knowledge helps people to understand the effect of their actions [(ACSHE051)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE051) | AB | A |  |  |

| Science as a Human Endeavour strand Year 4 to Year 7 |
| --- |
| Year 4 | 1 | 2 | 3 | 4 | Year 5 | 1 | 2 | 3 | 4 | Year 6 | 1 | 2 | 3 | 4 | Year 7 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Nature and development of science | Nature and development of science | Nature and development of science | Nature and development of science |
| Science involves making predictions and describing patterns and relationships [(ACSHE061)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE061) | AB | B | AB | AB | Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena [(ACSHE081)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE081) | AB | AB | AB | AB | Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena [(ACSHE098)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE098) | AB | AB | AB | AB | Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people’s understanding of the world [(ACSHE119)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE119) | AB | AB | AB | B |
| Important contributions to the advancement of science have been made by people from a range of cultures [(ACSHE082)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE082) | A | B |  |  | Important contributions to the advancement of science have been made by people from a range of cultures [(ACSHE099)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE099) | A | B |  |  | Science knowledge can develop through collaboration and connecting ideas across the disciplines of science [(ACSHE223)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE223) |  |  |  | B |
| Use and influence of science | Use and influence of science | Use and influence of science | Use and influence of science |
| Science knowledge helps people to understand the effect of their actions  [(ACSHE062)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE062) | AB | A |  |  | Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives [(ACSHE083)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE083) |  | AB | B | AB | Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples’ lives [(ACSHE100)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE100) |  | AB | B | AB | Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations [(ACSHE120)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE120) |  | AB | B | AB |
| Scientific knowledge is used to inform personal and community decisions [(ACSHE217)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE217) |  | A | B | A | Scientific knowledge is used to inform personal and community decisions [(ACSHE220)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE220) |  | A | B | A | Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management [(ACSHE121)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE121) | A |  |  |  |
| People use understanding and skills from across the disciplines of science in their occupations [(ACSHE224)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSHE224) |  | A |  |  |

| Science Inquiry Skills strand Prep to Year 3 |
| --- |
| Prep | 1 | 2 | 3 | 4 | Year 1 | 1 | 2 | 3 | 4 | Year 2 | 1 | 2 | 3 | 4 | Year 3 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Questioning and predicting | Questioning and predicting | Questioning and predicting | Questioning and predicting |
| Respond to questions about familiar objects and events [(ACSIS014)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS014) | AB | AB | AB | AB | Respond to and pose questions, and make predictions about familiar objects and events [(ACSIS024)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS024) | AB | AB | AB | AB | Respond to and pose questions, and make predictions about familiar objects and events [(ACSIS037)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS037) | AB | AB | AB | AB | With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge [(ACSIS053)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS053) | AB | AB | AB | AB |
| Planning and conducting | Planning and conducting | Planning and conducting | Planning and conducting |
| Explore and make observations by using the senses [(ACSIS011)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS011) | AB | AB | AB | AB | Participate in different types of guided investigations to explore and answer questions, such as manipulating  materials, testing ideas, and accessing information sources [(ACSIS025)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS025) | AB | AB | AB | AB | Participate in different types of guided investigations to explore and answer questions, such as manipulating  materials, testing ideas, and accessing information sources [(ACSIS038)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS038) | AB | AB | AB | AB | Suggest ways to plan and conduct investigations to find answers to questions [(ACSIS054)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS054) |  |  | AB | AB |
| Use informal measurements in the collection and recording of observations, with the assistance of digital technologies as appropriate  [(ACSIS026)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS026) |  |  | AB | AB | Use informal measurements in the collection and recording of observations, with the assistance of digital technologies as appropriate  [(ACSIS039)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS039) |  |  | AB | AB | Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate [(ACSIS055)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS055) |  |  | AB | AB |
| Processing and analysing data and information | Processing and analysing data and information | Processing and analysing data and information | Processing and analysing data and information |
| Engage in discussions about observations and use methods such as drawing to represent ideas [(ACSIS233)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS233) | AB | AB | AB | AB | Use a range of methods to sort information, including drawings and provided tables [(ACSIS027)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS027) | AB | AB | AB | AB | Use a range of methods to sort information, including drawings and provided tables [(ACSIS040)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS040) | AB | AB | AB | AB | Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends  [(ACSIS057)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS057) | AB | AB | AB | AB |
| Through discussion, compare observations with predictions [(ACSIS212)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS212) |  |  | AB | AB | Through discussion, compare observations with predictions  [(ACSIS214)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS214) |  |  | AB | AB | Compare results with predictions, suggesting possible reasons for findings [(ACSIS215)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS215) |  |  | AB | AB |
| Evaluating | Evaluating | Evaluating | Evaluating |
| Not addressed at this Year level | Compare observations with those of others [(ACSIS213)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS213) | AB | AB | AB | AB | Compare observations with those of others [(ACSIS041)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS041) | AB | AB | AB | AB | Reflect on the investigation, including whether a test was fair or not [(ACSIS058)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS058) |  |  | AB | AB |
| Communicating | Communicating | Communicating | Communicating |
| Share observations and ideas [(ACSIS012)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS012) | AB | AB | AB | AB | Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play  [(ACSIS029)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS029) | AB | AB | AB | AB | Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play [(ACSIS042)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS042) | AB | AB | AB | AB | Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports [(ACSIS060)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS060) | AB | AB | AB | AB |

| Science Inquiry Skills strand Year 4 to Year 7 |
| --- |
| Year 4 | 1 | 2 | 3 | 4 | Year 5 | 1 | 2 | 3 | 4 | Year 6 | 1 | 2 | 3 | 4 | Year 7 | 1 | 2 | 3 | 4 |
|  | Plan A or B |  | Plan A or B |  | Plan A or B |  | Plan A or B |
| Questioning and predicting | Questioning and predicting | Questioning and predicting | Questioning and predicting |
| With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge [(ACSIS064)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS064) | AB | AB | AB | AB | With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be [(ACSIS231)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS231) | AB | AB | AB | AB | With guidance, pose questions to clarify practical problems or inform a scientific investigation, and predict what the findings of an investigation might be [(ACSIS232)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS232) | AB | AB | AB | AB | Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge [(ACSIS124)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS124) | AB | AB | AB | AB |
| Planning and conducting | Planning and conducting | Planning and conducting | Planning and conducting |
| Suggest ways to plan and conduct investigations to find answers to questions [(ACSIS065)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS065) |  |  | AB | AB | With guidance, plan appropriate investigation methods to answer questions or solve problems [(ACSIS086)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS086) |  |  | AB | AB | With guidance, plan appropriate investigation methods to answer questions or solve problems [(ACSIS103)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS103) |  |  | AB | AB | Collaboratively and individually plan and conduct a range of investigation  types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed  [(ACSIS125)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS125) |  |  | AB | AB |
| Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate [(ACSIS066)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS066) |  |  | AB | AB | Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate [(ACSIS087)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS087) |  |  | AB | AB | Decide which variable should be changed and measured in fair tests and accurately observe, measure and record data, using digital technologies as appropriate [(ACSIS104)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS104) |  |  | AB | AB | In fair tests, measure and control variables, and select equipment to collect data with accuracy appropriate to the task [(ACSIS126)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS126) |  |  | AB | AB |
| Use equipment and materials safely, identifying potential risks [(ACSIS088)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS088) |  |  | AB | AB | Use equipment and materials safely, identifying potential risks [(ACSIS105)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS105) |  |  | AB | AB |
| Processing and analysing data and information | Processing and analysing data and information | Processing and analysing data and information | Processing and analysing data and information |
| Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends [(ACSIS068)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS068) | AB | AB | AB | AB | 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)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS090) | AB | AB | AB | AB | 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 [(ACSIS107)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS107) | AB | AB | AB | AB | 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 [(ACSIS129)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS129) | AB | AB | AB | AB |
| Compare results with predictions, suggesting possible reasons for findings [(ACSIS216)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS216) |  |  | AB | AB | Compare data with predictions and use as evidence in developing explanations [(ACSIS218)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS218) |  |  | AB | AB | Compare data with predictions and use as evidence in developing explanations [(ACSIS221)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS221) |  |  | AB | AB | Summarise data, from students’ own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions [(ACSIS130)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS130) | AB | AB | AB | AB |
| Evaluating | Evaluating | Evaluating | Evaluating |
| Reflect on the investigation; including whether a test was fair or not [(ACSIS069)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS069) |  |  | AB | AB | Suggest improvements to the methods used to investigate a question or solve a problem [(ACSIS091)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS091) |  |  | AB | AB | Suggest improvements to the methods used to investigate a question or solve a problem [(ACSIS108)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS108) |  |  | AB | AB | 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)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS131) |  |  | AB | AB |
| Use scientific knowledge and findings from investigations to evaluate claims [(ACSIS132)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS132) | AB | AB | AB | AB |
| Communicating | Communicating | Communicating | Communicating |
| Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports [(ACSIS071)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS071) | AB | AB | AB | AB | Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts [(ACSIS093)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS093) | AB | AB | AB | AB | Communicate ideas, explanations and processes in a variety of ways, including multi-modal texts [(ACSIS110)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS110) | AB | AB | AB | AB | Communicate ideas, findings and solutions to problems using scientific language and representations using digital technologies as appropriate [(ACSIS133)](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACSIS133) | AB | AB | AB | AB |