

Alignment with the Australian Curriculum: Science

This *What's it made of?* unit embeds all three strands of the Australian Curriculum: Science. The table below lists sub-strands and their content for Foundation Year. This unit is designed to be taught in conjunction with other Foundation units to cover the full range of the Australian Curriculum: Science content for Foundation.

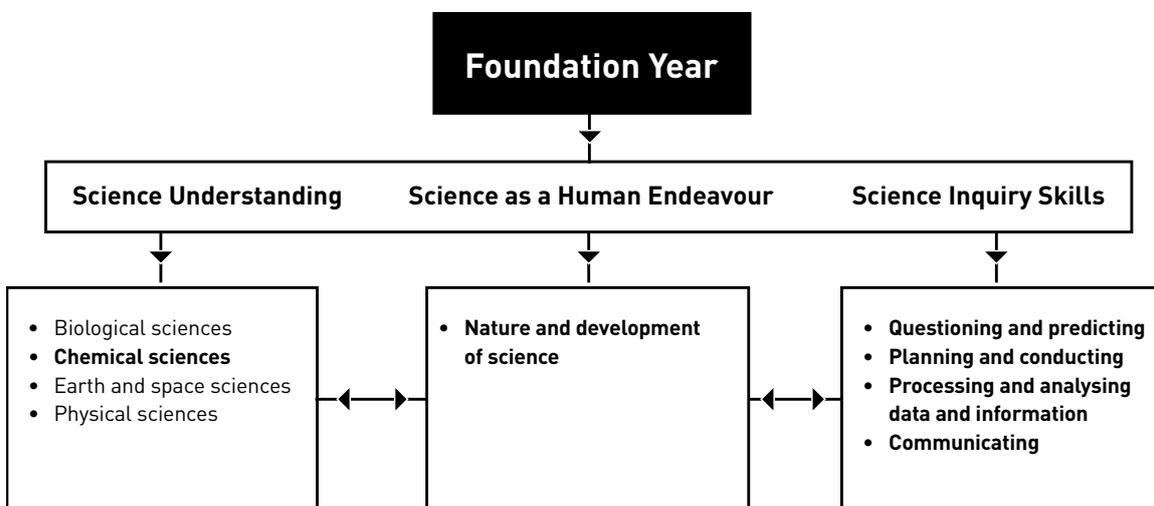
For ease of assessment the table below outlines the sub-strands and their aligned lessons.

| Strand | Sub-strand | Code | Foundation Year content descriptions | Lessons |
|---|--|-----------|---|---------------|
| Science Understanding (SU) | Chemical sciences | ACSSU003 | Objects are made of materials that have observable properties | 1–6 |
| Science as a Human Endeavour (SHE) | Nature and development of science | ACSHE013 | Science involves exploring and observing the world using the senses | 1–6 |
| Science Inquiry Skills (SIS) | Questioning and predicting | AC SIS014 | Respond to questions about familiar objects and events | 1–6 |
| | Planning and conducting | AC SIS011 | Explore and make observations by using the senses | 1, 2, 3, 4, 5 |
| | Processing and analysing data and information | AC SIS233 | Engage in discussions about observations and use methods such as drawing to represent ideas | 1–6 |
| | Communicating | AC SIS012 | Share observations and ideas | 1–6 |

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Interrelationship of the science strands

The interrelationship between the three strands—Science Understanding, Science as a Human Endeavour and Science Inquiry Skills—and their sub-strands is shown below. Sub-strands covered in this unit are in bold.



Relationship to overarching ideas

In the Australian Curriculum: Science, six overarching ideas support the coherence and developmental sequence of science knowledge within and across year levels.

In *What's it made of?*, these overarching ideas are represented by:

| Overarching idea | Incorporation in <i>What's it made of?</i> |
|---|--|
| Patterns, order and organisation | Students observe and describe a range of objects in their school and class environments. They look for patterns and order in the properties of the materials the objects are made of and compare the similarities and differences. |
| Form and function | Students use their senses to observe and describe the form and function of different objects made from different materials for different purposes. They test different materials for water resistance properties and relate their findings to the uses of objects made from these materials. |
| Stability and change | Students observe and describe what happens when materials get wet, whether they change or remain the same. They make decisions about appropriate materials for the design of an outdoor object exposed to weather. |
| Scale and measurement | Students observe everyday objects and use informal language to describe colour, size, feel and composition. They use drawings and maps to represent objects and their locations in the school and class environments. They compare the relative size and scale of objects and distances in real life and on a map. |
| Matter and energy | Using appropriate language about matter, students compare different materials, their observable properties and the objects from which they are made. |
| Systems | Students explore and map the systems represented by their school and class environments and identify some components of these systems in the form and location of familiar objects. |

Curriculum focus

The Australian Curriculum: Science is described by year level, but provides advice across four year groupings on the nature of learners. Each year grouping has a relevant curriculum focus.

| Curriculum focus Foundation–Year 2 | Incorporation in <i>What's it made of?</i> |
|---|--|
| <p>Awareness of self and the local world</p> | <p>Students explore familiar objects in their school and classroom environments. They use their senses to observe, describe and draw objects using everyday language to describe shape, size, colour and feel. They compare materials from which objects are made, observe their properties and explain how these are appropriate or inappropriate for particular purposes. They test different materials for water resistance and use their growing knowledge about materials and their properties to design outdoor weather-resistant objects.</p> |

Achievement standards

The achievement standards of the Australian Curriculum: Science indicates the quality of learning that students typically demonstrate by a particular point in their schooling, for example, at the end of a year level. These standards will be reviewed regularly by ACARA and are available from the ACARA website.

By the end of the unit, teachers will be able to make evidence-based judgments on whether the students are achieving below, at or above the Australian Curriculum: Science Foundation Year achievement standard. Rubrics to help teachers make these judgments will be available on the website (www.science.org.au/primaryconnections/curriculum-resources).

General capabilities

The skills, behaviours and attributes that students need to succeed in life and work in the 21st century have been identified in the Australian Curriculum as general capabilities. There are seven general capabilities and they are embedded throughout the curriculum. For further information see: www.australiancurriculum.edu.au

For examples of our unit-specific general capabilities information see the next page.

What's it made of?—Australian Curriculum general capabilities

| General capabilities | Australian Curriculum description | <i>What's it made of?</i> examples |
|--|---|---|
| Literacy | <p>Literacy knowledge specific to the study of science develops along with scientific understanding and skills.</p> <p>Primary Connections learning activities explicitly introduce literacy focuses and provide students with the opportunity to use them as they think about, reason and represent their understanding of science.</p> | <p>In <i>What's it made of?</i> the literacy focuses are:</p> <ul style="list-style-type: none"> • picture maps • science journals • word walls • drawings • tables. |
|  Numeracy | <p>Elements of numeracy are particularly evident in Science Inquiry Skills. These include practical measurement and the collection, representation and interpretation of data.</p> | <p>Students:</p> <ul style="list-style-type: none"> • draw maps and count and place objects in position on the maps • collect, interpret and represent data through tables. |
| Information and communication technology (ICT) competence | <p>ICT competence is particularly evident in Science Inquiry Skills. Students use digital technologies to investigate, create, communicate, and share ideas and results.</p> | <p>Students are given optional opportunities to:</p> <ul style="list-style-type: none"> • use internet mapping programs to gain a bird's eye view of their school. |
|  Critical and creative thinking | <p>Students develop critical and creative thinking as they speculate and solve problems through investigations, make evidence-based decisions, and analyse and evaluate information sources to draw conclusions. They develop creative questions and suggest novel solutions.</p> | <p>Students:</p> <ul style="list-style-type: none"> • formulate, pose and respond to questions • compare and analyse data from tests • develop evidence-based claims • use reasoning to solve a design problem. |
| Ethical behaviour | <p>Students develop ethical behaviour as they explore ethical principles and guidelines in gathering evidence and consider the ethical implications of their investigations on others and the environment.</p> | <p>Students:</p> <ul style="list-style-type: none"> • ask questions respecting each other's point of view. |
|  Personal and social competence | <p>Students develop personal and social competence as they learn to work effectively in teams, develop collaborative methods of inquiry, work safely, and use their scientific knowledge to make informed choices.</p> | <p>Students:</p> <ul style="list-style-type: none"> • work collaboratively in teams • listen to and follow safety instructions when handling materials • participate in discussions. |
|  Intercultural understanding | <p>Intercultural understanding is particularly evident in Science as a Human Endeavour. Students learn about the influence of people from a variety of cultures on the development of scientific understanding.</p> | <ul style="list-style-type: none"> • 'Cultural perspectives' opportunities are highlighted where relevant • Important contributions made to science by people from a range of cultures are highlighted where relevant. |

Cross-curriculum priorities

There are three cross-curriculum priorities identified by the Australian Curriculum:

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

For further information see: www.australiancurriculum.edu.au



Aboriginal and Torres Strait Islander histories and cultures

The PrimaryConnections Indigenous perspectives framework supports teachers' implementation of Aboriginal and Torres Strait Islander histories and cultures in science. The framework can be accessed at: www.science.org.au/primaryconnections

What's it made of? focuses on the Western science way of making evidence-based claims about familiar objects and the materials they are made of, the properties of which make them suitable for particular uses.

Aboriginal and Torres Strait Islander Peoples might have other explanations for the observed phenomenon of materials, their properties and uses.

PrimaryConnections recommends working with Aboriginal and Torres Strait Islander community members to access local and relevant cultural perspectives. Protocols for engaging with Aboriginal and Torres Strait Islander community members are provided in state and territory education guidelines. Links to these are provided on the PrimaryConnections website.

Sustainability

The *What's it made of?* unit provides opportunities for students to investigate the properties of materials and relate them to how they are used for a particular purpose. This has direct application in understanding that all objects used in everyday life are made from either natural or processed materials with particular properties. Through their investigations students become aware of the importance of conservation of resources by choosing materials with properties suitable for a particular purpose. This enables students to develop the knowledge, skills and values for making decisions about individual and community actions that contribute to sustainable patterns of use of the Earth's natural resources.

Alignment with the Australian Curriculum: English and Mathematics

| Strand | Sub-strand | Code | Foundation Year content descriptions | Lessons |
|--|---|-----------|--|------------|
| English– Language | Text structure and organisation | ACELA1430 | 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 film) and that stories and informative texts have different purposes | 4 |
| | | ACELA1431 | Understand that some language in written texts is unlike everyday spoken language | 5 |
| | Expressing and developing ideas | ACELA1786 | Explore the different contribution of words and images to meaning in stories and informative texts | 1, 2 |
| | | ACELA1434 | Recognise that texts are made up of words and groups of words that make meaning | 1–6 |
| | | ACELA1437 | Understand the use of vocabulary in familiar contexts related to everyday experiences, personal interests and topics taught at school | 1–6 |
| English– Literacy | Interacting with others | ACELY1646 | Listen to and respond orally to texts and to the communication of others in informal and structured classroom situations | 1–6 |
| | | ACELY1784 | Use interaction skills including listening while others speak, using appropriate voice levels, articulation and body language, gestures and eye contact | 1–6 |
| | Interpreting, analysing, evaluating | ACELY1648 | Identify some differences between imaginative and informative texts | 4 |
| | Creating texts | ACELY1651 | Create short texts to explore, record and report ideas and events using familiar words and beginning writing knowledge | 2, 3 |
| Mathematics– Number and Algebra | Patterns and algebra | ACMNA005 | Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings | 2, 3 |
| Mathematics– Measurement and Geometry | Using units of measurement | ACMMG006 | Use direct and indirect comparisons to decide which is longer, heavier or holds more, and explain reasoning in everyday language | 1 |
| | Location and transformation | ACMMG010 | Describe position and movement | 1, 2, 5, 6 |
| Mathematics– Statistics and Probability | Data representation and interpretation | ACMSP011 | Answer yes/no questions to collect information | 5 |

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Other links are highlighted at the end of lessons where possible. These links will be revised and updated on the website (www.science.org.au/primaryconnections).