

## Alignment with the Australian Curriculum: Science

This *Water works* unit embeds all three strands of the Australian Curriculum: Science. The table below lists sub-strands and their content for Year 2. This unit is designed to be taught in conjunction with other Year 2 units to cover the full range of the Australian Curriculum: Science content for Year 2.

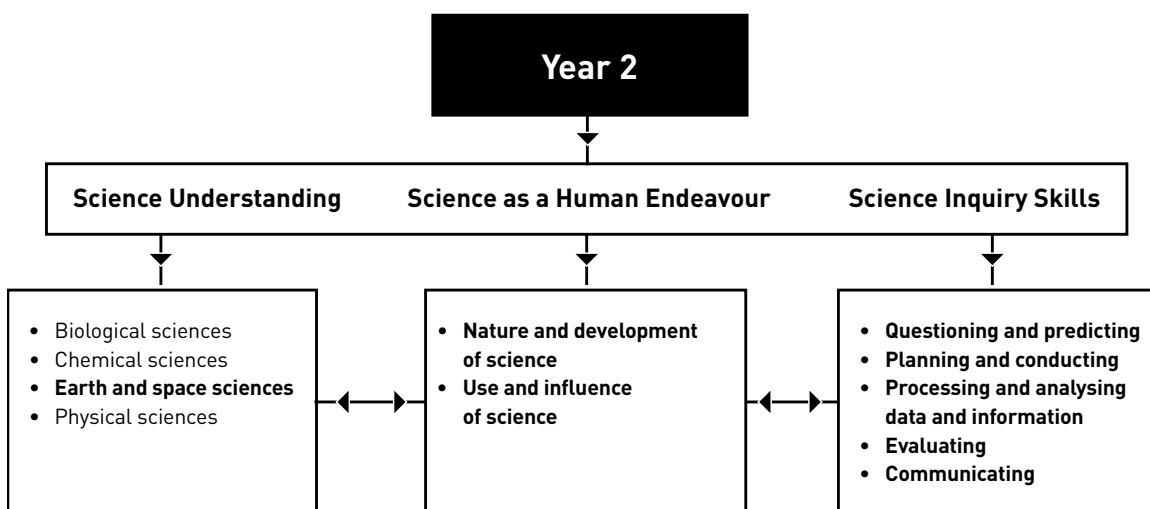
For ease of assessment the table below outlines the sub-strands and their aligned lessons.

Strand	Sub-strand	Code	Year 2 content descriptions	Lessons
<b>Science Understanding (SU)</b>	<b>Earth and space sciences</b>	ACSSU032	Earth's resources, including water, are used in a variety of ways	1–8
<b>Science as a Human Endeavour (SHE)</b>	<b>Nature and development of science</b>	ACSHE034	Science involves asking questions about, and describing changes in, objects and events	1, 3, 4, 5, 6
	<b>Use and influence of science</b>	ASCHE035	People use science in their daily lives, including when caring for their environment and living things	7, 8
<b>Science Inquiry Skills (SIS)</b>	<b>Questioning and predicting</b>	ACSIS037	Respond to and pose questions, and make predictions about familiar objects and events	1–6
	<b>Planning and conducting</b>	ACSIS038	Participate in different types of guided investigations to explore and answer questions, such as manipulating materials, testing ideas, and accessing information sources	1, 3, 4, 6
		ACSIS039	Use informal measurements in the collection and recording of observations, with the assistance of digital technologies as appropriate	6
	<b>Processing and analysing data and information</b>	ACSIS040	Use a range of methods to sort information, including drawings and provided tables	3, 6
		ACSIS214	Through discussion, compare observations with predictions	2, 3
	<b>Evaluating</b>	ACSIS041	Compare observations with those of others	3, 4, 6, 8
	<b>Communicating</b>	ACSIS042	Represent and communicate observations and ideas in a variety of ways such as oral and written language, drawing and role play	1–8

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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 *Water works*, these overarching ideas are represented by:

Overarching idea	Incorporation in <i>Water works</i>
<b>Patterns, order and organisation</b>	Students observe and describe responsible use of water. They identify patterns of similarity and difference in how water is used at school, at home and in the community.
<b>Form and function</b>	Students observe some physical properties of water that determine its use. They explore how water is used at school, at home and in the community.
<b>Stability and change</b>	Students observe that rain falls periodically but is relatively stable over a yearly cycle. They explore how it collects in creeks, rivers, lakes, dams and as ground water, and that people can transfer it from a source to a point of use.
<b>Scale and measurement</b>	Students compare observations of water use at home. They collect data (using a survey), represent the activity categories (using a graph) and then analyse the data.
<b>Matter and energy</b>	Students model how water moves across the landscape and how it can be contained. They explore the piped delivery of water from storage to the tap.
<b>Systems</b>	Students explore natural and man-made systems associated with water. They explore the behaviour of rainwater on different surfaces and they investigate systems of water collection, transportation, access and use.

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## 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>Water works</i>
<p><b>Awareness of self and the local world</b></p>	<p>Students explore how they and others use water. They investigate where it comes from, how it is collected, transported and accessed at school, at home and in the community and how to use it responsibly. They observe, investigate and gather information to describe how water is an essential resource for life.</p>

## Achievement standards

The achievement standards of the Australian Curriculum: Science indicate 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 this unit, teachers will be able to make evidence-based judgments on whether the students are achieving below, at or above the Australian Curriculum: Science Year 2 achievement standard. Rubrics to help teachers make these judgments will be available on the website ([www.science.org.au/primaryconnections](http://www.science.org.au/primaryconnections)).

## 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 units. For further information see: [www.australiancurriculum.edu.au](http://www.australiancurriculum.edu.au)

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

## Water works—Australian Curriculum general capabilities

General capabilities	Australian Curriculum description	Water works examples
<b>Literacy</b>	<p>Literacy knowledge specific to the study of science develops along with scientific understanding and skills.</p> <p>Primary <b>Connections</b> 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>Water works</i> the literacy focuses are:</p> <ul style="list-style-type: none"> <li>• science journals</li> <li>• word walls</li> <li>• maps</li> <li>• labelled diagrams</li> <li>• role-plays</li> <li>• storyboards</li> <li>• factual texts (optional)</li> <li>• graphs</li> <li>• interviews</li> <li>• factual recounts.</li> </ul>
 <b>Numeracy</b>	<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"> <li>• collect, represent and interpret data from investigations</li> </ul>
<b>Information and communication technology (ICT) competence</b>	<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"> <li>• use interactive resource technology to view, record and analyse information</li> <li>• use ICT to create presentations to communicate ideas, including digital animation.</li> </ul>
 <b>Critical and creative thinking</b>	<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"> <li>• use reasoning to develop questions for inquiry</li> <li>• formulate, pose and respond to questions</li> <li>• predict how and where and what might happen</li> <li>• consider different ways of thinking about water use.</li> </ul>
<b>Ethical behaviour</b>	<p>Students develop ethical behaviour as they explore principles and guidelines in gathering evidence and consider the implications of their investigations on others and the environment.</p>	<p>Students:</p> <ul style="list-style-type: none"> <li>• ask questions of others, respecting each other's point of view.</li> </ul>
 <b>Personal and social competence</b>	<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"> <li>• work effectively in collaborative learning teams</li> <li>• take turns and role-play effectively</li> <li>• use appropriate oral communication skills.</li> </ul>
 <b>Intercultural understanding</b>	<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"> <li>• 'Cultural perspectives' opportunities are highlighted where relevant.</li> <li>• Important contributions made to science by people from a range of cultures are highlighted where relevant.</li> </ul>

## 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](http://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](http://www.science.org.au/primaryconnections)

*Water works* focuses on the Western science way of exploring their environment systematically. Students are introduced to investigation methods including surveys and to making claims based on evidence about how water is used.

Aboriginal and Torres Strait Islander Peoples traditionally have different patterns of water use in their lives, as well as different distribution and management systems.

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 *Water works* unit provides opportunities for students to develop an understanding and appreciation of water as a precious resource that is essential to their lives. This can assist them to develop knowledge, skills and values to act in ways that contribute to more sustainable living. Students also explore methods of water distribution and patterns of use. This can assist them in making decisions about individual and community actions that contribute to sustainable patterns of use of the Earth's natural resources such as water.

## Alignment with the Australian Curriculum: English and Mathematics

Strand	Sub-strand	Code	Year 2 content descriptions	Lessons
<b>English– Language</b>	<b>Language for interaction</b>	ACELA1461	Understand that language varies when people take on different roles in social and classroom interactions and how the use of key interpersonal language resources varies depending on the context	1–8
	<b>Expressing and developing ideas</b>	ACELA1467	Understand that simple connections can be made between ideas by using a compound sentence with two or more clauses usually linked by a coordinating conjunction	2
		ACELA1470	Understand the use of vocabulary about familiar and new topics and experiment with and begin to make conscious choices of vocabulary to suit audience and purpose	1–8
<b>English– Literacy</b>	<b>Interacting with others</b>	ACELY1666	Listen for specific purposes and information, including instructions, and extend students' own and others' ideas in discussions	1–8
		ACELY1789	Use interactive skills including initiating topics, making positive statements and voicing disagreement in an appropriate manner, speaking clearly and varying tone, volume and pace appropriately	1–8
		ACELY1667	Rehearse and deliver short presentations on familiar and new topics	5, 8
	<b>Creating texts</b>	ACELY1671	Create short imaginative, informative and persuasive texts using growing knowledge of text structures and language features for familiar and some less familiar audiences, selecting print and multimodal elements appropriate to the audience and purpose	5, 8
<b>Mathematics– Measurement and Geometry</b>	<b>Location and transformation</b>	ACMMG044	Interpret simple maps of familiar locations and identify the relative positions of key features	2
<b>Mathematics– Statistics and Probability</b>	<b>Data representation and interpretation</b>	ACMSP050	Create displays of data using lists, table and picture graphs and interpret them	3, 6

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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](http://www.science.org.au/primaryconnections)).