

Alignment with the Australian Curriculum: Science

This *Feathers, fur or leaves?* unit embeds all three strands of the Australian Curriculum: Science. The table below lists sub-strands and their content for Year 3. This unit is designed to be taught in conjunction with other Year 3 units to cover the full range of the Australian Curriculum: Science content for Year 3.

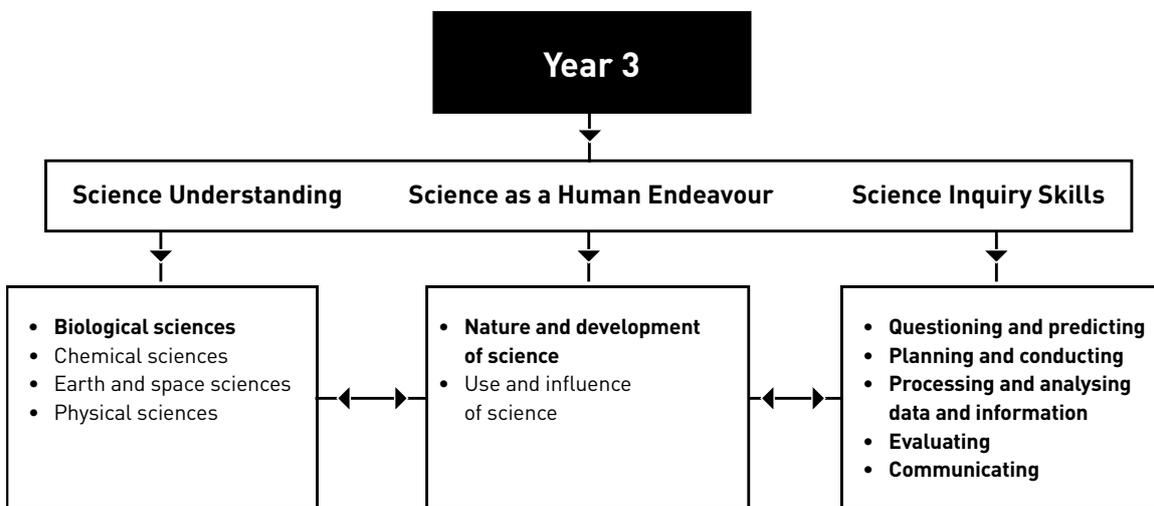
For ease of assessment the table below outlines the sub-strands and their aligned lessons.

Strand	Sub-strand	Code	Year 3 content descriptions	Lessons
Science Understanding	Biological sciences	ACSSU044	Living things can be grouped on the basis of observable features and can be distinguished from non-living things	1–7
Science as a Human Endeavour	Nature and development of science	ACSHE050	Science involves making predictions and describing patterns and relationships	1–7
Science Inquiry Skills	Questioning and predicting	AC SIS053	With guidance, identify questions in familiar contexts that can be investigated scientifically and predict what might happen based on prior knowledge	6
	Planning and conducting	AC SIS054	Suggest ways to plan and conduct investigations to find answers to questions	6
	Processing and analysing data and information	AC SIS055	Safely use appropriate materials, tools or equipment to make and record observations, using formal measurements and digital technologies as appropriate	4–6
		AC SIS057	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends	2–4, 6, 7
	Evaluating	AC SIS215	Compare results with predictions, suggesting possible reasons for findings	6
		AC SIS058	Reflect on the investigation, including whether a test was fair or not	6
	Communicating	AC SIS060	Represent and communicate ideas and findings in a variety of ways such as diagrams, physical representations and simple reports	1–4, 6, 7

 All the material in the first four columns of this table is sourced from the Australian Curriculum.

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.



AC All the terms in this diagram are sourced from the Australian Curriculum.

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 *Feathers, fur or leaves?* these overarching ideas are represented by:

Overarching idea	Incorporation in <i>Feathers, fur or leaves?</i>
Patterns, order and organisation	Students make observations and discuss patterns of similarity. Through the branching key, they discover scientific criteria for grouping.
Form and function	Students learn to recognise key features of living things and patterns of similarity between them.
Stability and change	Students learn to recognise key features of living things that remain constant over long periods of time, and appreciate their use in identification.
Scale and measurement	Students learn to recognise and compare the size of living things according to scale diagrams, using formal units of measurement.
Matter and energy	Students learn to identify and compare living and non-living matter.
Systems	Students learn to correctly identify different components of living and non-living systems, and discover a system with hierarchical classification of living things.

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 Years 3–6	Incorporation in <i>Feathers, fur or leaves?</i>
<p>Recognising questions that can be investigated scientifically and investigating them</p>	<p>Students detect similarities between objects and living things and learn how science organises them into a system. They discuss questions for investigation and respond to at least one question through a structured science inquiry.</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 3 achievement standard.

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

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

Feathers, fur or leaves?—Australian Curriculum general capabilities

General capabilities	Australian Curriculum description	<i>Feathers, fur or leaves?</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>Feathers, fur or leaves?</i> the literacy focuses are:</p> <ul style="list-style-type: none"> • science chat-boards • science journals • word walls • labelled diagrams • tables • T-charts • branching keys • procedural texts • line drawings • graphs.
 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"> • collect, interpret and represent data through tallies, tables and graphs • use measurement to understand the size of a specimen.
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 digital cameras to record specimens • use digital microscopes to observe specimens • use interactive resource technology to view, record and analyse information • use the internet to research further information on animals and plants.
 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"> • use reasoning to develop questions for inquiry • use a beliefs continuum • formulate, pose and respond to questions • consider different ways of thinking about classification and definitions • develop evidence-based claims.
Ethical behaviour	<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"> • develop and use a 'Code for Caring' when collecting and observing plant and animal specimens.
 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 • follow a procedural text for working safely • 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.

 All the material in the first two columns of this table is sourced from the Australian Curriculum.

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.primaryconnections.org.au

Feathers, fur or leaves? focuses on the Western science criteria for grouping animals based on their observable features. Indigenous cultures may group things in the world using different criteria. For example:

'I watched bemused as students made two piles that I could not identify. Their Yolngu teacher was quite pleased. Her explanation to me afterwards was that the shells were sorted by moieties, Dhuwa and Yirritja, the two halves into which Yolngu people place just about everything: people, plants, animals, landforms and physical phenomena.'

Linkson, Mark. (1999). *Some issues in providing culturally appropriate science curriculum support for Indigenous students*. Australian Science Teachers' Journal, 45(1), 41-48.

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

Through the classification of many different animals students are made aware of some of the diversity of life, in particular, smaller invertebrates (animals without a backbone). They start to discover the ecosystem of the leaf litter and soil, which is a crucial, and often little known, component of the biosphere. *Feathers, fur or leaves?* therefore provides building blocks for students to better understand environments and how human activity can impact upon them.

Alignment with the Australian Curriculum: English and Mathematics

Strand	Sub-strand	Code	Year 3 content descriptions	Lessons
English– Language	Language variation and change	ACELA1475	Understand that languages have different written and visual communication systems, different oral traditions and different ways of constructing meaning	1, 4, 5
	Language for interaction	ACELA1476	Understand that successful cooperation with others depends on shared use of social conventions, including turn-taking patterns, and forms of address that vary according to the degree of formality in social situations	1–7
	Expressing and developing ideas	ACELA1484	Learn extended and technical vocabulary and ways of expressing opinion including modal verbs and adverbs	1–7
	Text structure and organisation	ACELA1478	Understand how different types of texts vary in use of language choices, depending on their purpose (for example, tense and types of sentences)	1, 5, 6
English– Literacy	Interacting with others	ACELY1676	Listen to and contribute to conversations and discussions to share information and ideas and negotiate in collaborative situations	1–7
		ACELY1792	Use interaction skills, including active listening behaviours and communicate in a clear, coherent manner using a variety of everyday and learned vocabulary and appropriate tone, pace, pitch and volume	1–7
	Interpreting, analysing and evaluating	ACELY1680	Use comprehension strategies to build literal and inferred meaning and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features	1, 5
Mathematics– Number and Algebra	Number and place value	ACMNA052	Recognise, model, represent and order numbers to at least 10 000	6
Mathematics– Measurement and Geometry	Using units of measurement	ACMMG061	Measure, order and compare objects using familiar metric units of length, mass and capacity	3, 6
Mathematics– Statistics and Probability	Data representation and interpretation	ACMSP069	Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies	2–4, 6
		ACMSP070	Interpret and compare data displays	2, 3, 6

 All the material in the first four columns of this table is sourced from the Australian Curriculum.

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