



Living things have life cycles (ACSSU072) AC		Pages
Living things depend on each other and the environment to survive (ACSSU073) AC		
Lesson 1 What is an ecosystem? What is the Daintree Rainforest ecosystem?	Students use their prior knowledge to explore what an ecosystem is through focusing on the Daintree Rainforest. Students answer questions about what kinds of living things exist there, why they exist there and how they might interact with each other, using an application like Popplet.	4-6
Lesson 2 What role does the cassowary play in the Daintree Rainforest? What is a mutually-beneficial relationship?	Students explore the relationships between living things, focusing on the mutual relationship between the cassowary and plants in the Daintree Rainforest and conducting research using QR codes. Students present their research using PowToon.	7-9
Lesson 3 What is a producer, consumer and decomposer and why are they important to each other?	Students research to find definitions for <i>producer</i> , <i>consumer</i> and <i>decomposer</i> . Students practise sorting living things into these categories using a pyramid and an online game, and also sort living things from the Daintree Rainforest.	10-15
Lesson 4 What is the life cycle of a cassowary?	Students act as biologists and research the life cycle of a cassowary and one other animal from the Daintree Rainforest. They then compare the life cycles using a Venn diagram.	16-20
Lesson 5 What is the life cycle of the cassowary plum? How does the life cycle of a fruiting tree compare to that of an animal?	Students research the life cycle of a cassowary plum using the internet. Students present their life cycle by either drawing it or using a digital application. They then discuss questions about the similarities and differences between plant and animal life cycles.	21-24
Lesson 6 How does human activity impact an ecosystem like the Daintree Rainforest?	Students conduct online research to find out how human activity impacts the Daintree ecosystem and present their findings using a digital application.	25-27
Summative assessment	Students complete a written assessment covering what a mutually beneficial relationship is; offering examples of producers, consumers and decomposers; drawing life cycle diagrams of a cassowary and a fruiting plant; and describing human activities that have an impact on the Daintree Rainforest.	28-30
STEM project A web page for the Daintree	Students work in pairs to design and create a simple web page to raise awareness about the endangered Daintree Rainforest ecosystem. The web page will include a survey to obtain information about which way people are willing to offer assistance to this cause.	31-39



Curriculum scope and sequence

	Lesson							
	1	2	3	4	5	6	Assessment	STEM project
SCIENCE UNDERSTANDING								
Living things have life cycles (ACSSU072) AC				✓	✓		✓	✓
Living things depend on each other and the environment to survive (ACSSU073) AC	✓	✓	✓	✓	✓	✓	✓	✓
SCIENCE AS A HUMAN ENDEAVOUR								
Science involves making predictions and describing patterns and relationships (ACSHE061) AC	✓	✓	✓	✓	✓	✓		✓
Science knowledge helps people to understand the effect of their actions (ACSHE062) AC			✓	✓				✓
SCIENCE INQUIRY SKILLS								
Questioning and predicting								
With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSI064) AC	✓	✓	✓	✓	✓	✓		
Planning and conducting								
With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACSI065) AC	✓	✓	✓	✓	✓	✓		✓
Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSI066) AC								
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 (ACSI068) AC	✓	✓	✓	✓	✓	✓	✓	
Compare results with predictions, suggesting possible reasons for findings (ACSI216) AC					✓	✓		
Evaluating								
Reflect on investigations, including whether a test was fair or not (ACSI069) AC						✓		
Communicating								
Represent and communicate observations, ideas and findings using formal and informal representations (ACSI071) AC		✓	✓	✓	✓	✓	✓	✓



Natural and processed materials have a range of physical properties that can influence their use (ACSSU074) AC		Pages
Lesson 1 What are natural and processed materials?	Students explore examples of natural and processed materials and take digital photographs of examples in the school grounds to classify.	44-47
Lesson 2 What are the properties and uses of a natural material like wool?	This focuses on wool—a natural material. Students discuss how wool and other natural materials are used, then conduct tests to confirm the properties of wool, including flexibility, elasticity, water resistance/absorption, keeping warm and keeping cool.	48-52
Lesson 3 What are the properties and uses of a synthetic material like polyester? How does this compare to the properties and uses of a natural material like cotton?	Students explore a synthetic material like polyester and compare it to cotton through testing various properties such as elasticity, water resistance/absorption, static and strength. Students think of the properties in terms of what gym clothes should be made of and read a science article about a study in this area.	53-55
Lesson 4 What are the properties and uses of other common materials?	Students explore materials used to create designed solutions such as metal, PVC, glass, cardboard, ceramic, rubber and concrete and note their properties. Students then match a material to a specific task based on the required properties and the purpose.	56-58
Lesson 5 What is biodegradable material and why is it important to waste management?	This lesson explores waste management and how rubbish ends up in landfill where it is left to biodegrade. Students conduct an experiment to test which materials biodegrade in soil over a two-week period, and discuss the implications of the biodegradability of materials.	59-61
Lesson 6 How does plastic contribute to ocean pollution? What properties make plastic harmful?	The focus is on plastic, a synthetic material, which is used to create many products. Students investigate the properties of different plastic types and what makes them harmful to marine life and oceans. Students are introduced to the Great Pacific Garbage Patch and consider what can be done to manage plastic waste better, considering its inability to biodegrade.	62-65
Summative assessment	Students complete a written assessment that covers the concepts of natural and processed materials, their properties and their uses, and how this applies to waste management.	66-68
STEM project Bioplastics	Students create a bioplastic as an alternative to synthetic plastic, and design and create a product with the bioplastic material. Students then film a TV advertisement to persuade others of the benefits of their product and bioplastic.	69-76



Curriculum scope and sequence

	Lesson							
	1	2	3	4	5	6	Assessment	STEM project
SCIENCE UNDERSTANDING								
Natural and processed materials have a range of physical properties that can influence their use (ACSSU074) AC	✓	✓	✓	✓	✓	✓	✓	✓
SCIENCE AS A HUMAN ENDEAVOUR								
Science involves making predictions and describing patterns and relationships (ACSHE061) AC	✓	✓	✓	✓	✓	✓		✓
Science knowledge helps people to understand the effect of their actions (ACSHE062) AC			✓	✓	✓	✓		✓
SCIENCE INQUIRY SKILLS								
Questioning and predicting								
With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACIS064) AC	✓	✓	✓	✓	✓	✓		✓
Planning and conducting								
With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACIS065) AC	✓	✓	✓	✓	✓	✓		✓
Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACIS066) AC		✓	✓	✓				
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 (ACIS068) AC	✓	✓	✓	✓	✓	✓	✓	✓
Compare results with predictions, suggesting possible reasons for findings (ACIS216) AC					✓			✓
Evaluating								
Reflect on investigations, including whether a test was fair or not (ACIS069) AC		✓			✓			
Communicating								
Represent and communicate observations, ideas and findings using formal and informal representations (ACIS071) AC	✓	✓	✓	✓	✓	✓	✓	✓




Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)		Pages
Lesson 1 How does a geologist use rocks and fossils to understand how the Earth's surface has changed over time?	Students explore what a geologist is and how they examine rocks to understand what changes Earth's surface has gone through. Students conduct their own dig in the school yard, and photograph and examine rocks, in an attempt to classify them.	80-83
Lesson 2 What is in soil? Is soil the same everywhere?	Students explore what soil is made up of and the three types—sand, silt and clay. Students investigate actual soil samples to record information about colour, texture, grain size and ability to absorb water, as well as conduct an experiment to separate soil into its components.	84-87
Lesson 3 What is weathering? How does weathering make soil?	Students conduct online research to determine what weathering is and represent the information in a graphic organiser of their choice. Students then demonstrate the weathering process of freeze-thaw by creating a rock from modelling clay, filling the inside with water, freezing and photographing the results.	88-91
Lesson 4 What is erosion? How is it different to weathering?	Students look at examples of landforms and predict how these were formed. Students then conduct online research by watching a video that explains the difference between weathering and erosion. Students then demonstrate erosion by wind, water and ice (glaciers) and compare their demonstrations to videos online.	92-96
Lesson 5 How does extreme weather change Earth's coastlines? How can storm erosion be slowed down?	Students explore the effects of extreme weather, such as floods and storms, on coastlines or areas surrounding natural waterways. Students conduct an experiment to test the effects of erosion when only sand is present, when there are plants in the sand, and one other variable of their choice that is added to the sand. Students recreate storm waves and film the results, in order to offer the best solution to protect the coastline from erosion.	97-99
Lesson 6 How does human activity contribute to erosion? How can humans help reduce erosion?	Students use internet research to understand how humans contribute to erosion through deforestation, mining, construction and agricultural practices. After watching a video of school students investigating a local area subject to erosion, students explore their own local area and create a short documentary about the way humans have contributed to erosion and how they may be able to help.	100-101
Summative assessment	Students answer questions relating to what rocks and fossils can reveal about Earth's past, the components of soil and how sand is created, what weathering and erosion are, and the effects of extreme weather and humans on erosion.	102-104
STEM project Form the landforms	Students use their knowledge of how landforms are created and change over time, to demonstrate the process using gelatin/sand landforms and warm water. A video is then created by adding sound effects, music and a voice over, as well a table of measurements taken of the various landforms.	105-112



Curriculum scope and sequence

	Lesson							
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SCIENCE UNDERSTANDING								
Earth's surface changes over time as a result of natural processes and human activity (ACSSU075) AC	✓	✓	✓	✓	✓	✓	✓	✓
SCIENCE AS A HUMAN ENDEAVOUR								
Science involves making predictions and describing patterns and relationships (ACSHE061) AC	✓	✓	✓		✓	✓	✓	✓
Science knowledge helps people to understand the effect of their actions (ACSHE062) AC	✓	✓		✓		✓	✓	
SCIENCE INQUIRY SKILLS								
Questioning and predicting								
With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSI064) AC	✓	✓	✓	✓	✓	✓		
Planning and conducting								
With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACSI065) AC	✓	✓	✓	✓	✓	✓		✓
Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSI066) AC		✓	✓					✓
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 (ACSI068) AC	✓	✓	✓	✓	✓	✓	✓	✓
Compare results with predictions, suggesting possible reasons for findings (ACSI216) AC	✓	✓	✓		✓			
Evaluating								
Reflect on investigations, including whether a test was fair or not (ACSI058) AC	✓	✓		✓				
Communicating								
Represent and communicate observations, ideas and findings using formal and informal representations (ACSI071) AC	✓	✓	✓	✓	✓	✓	✓	✓



Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076) 		Pages
<p>Lesson 1</p> <p>What is a push and a pull force? How does the amount of direct force applied to an object affect its movement?</p>	<p>Students define and revise what a push and pull force is before conducting an investigation into how the amount of force affects the motion of an object based on an Angry birds concept and using a catapult.</p>	116-119
<p>Lesson 2</p> <p>What kind of force is friction? Which direction does the force of friction act on an object?</p>	<p>Students explore the direct force of friction and conduct an experiment using shoes with different types of surfaces and how these affect the performance in a tug-of-war game.</p>	120-124
<p>Lesson 3</p> <p>What kind of force is gravity?</p>	<p>This lesson focuses on gravity—one of the forces that acts from a distance. Students conduct four short experiments by rotating stations, including how different ramp heights affect how a ball rolls, how the distance at which a marble is dropped affects the force with which it drops, how a cup of water with a hole in it drops and how two equal-sized objects with different weights drop.</p>	125-129
<p>Lesson 4</p> <p>Is there more than one force acting on an object? What is air resistance?</p>	<p>This lesson focuses on two opposing forces of gravity and air resistance, which is a type of friction, by exploring how to make a parachute that will allow an egg to drop to the ground safely from a height.</p>	130-132
<p>Lesson 5</p> <p>What is magnetic force? How can it move objects?</p>	<p>This lesson focuses on magnets—another force that acts from a distance. Students rotate through four magnetic challenges that demonstrate how magnets can act as a force that either repels or attracts objects.</p>	133-136
<p>Lesson 6</p> <p>What is static electricity? How does it move objects?</p>	<p>This lesson focuses on static electricity—the final force students will explore that acts from a distance. Students rotate through six stations that demonstrate the force in action, either as a force that repels or a force that attracts.</p>	137-141
<p>Summative assessment</p>	<p>Students answer questions, write information in a table and draw force diagrams to communicate what they have learnt.</p>	142-144
<p>STEM project</p> <p>Alien forces</p>	<p>Students use their knowledge of how forces work from a distance to build a UFO, a hover base for it to move across, and a skyscape, to serve as a scene for a short movie.</p>	145-151



Curriculum scope and sequence

	Lesson							
	1	2	3	4	5	6	Assessment	STEM project
SCIENCE UNDERSTANDING								
Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076) AC	✓	✓	✓	✓	✓	✓	✓	✓
SCIENCE AS A HUMAN ENDEAVOUR								
Science involves making predictions and describing patterns and relationships (ACSHE061) AC	✓	✓	✓	✓	✓	✓		
Science knowledge helps people to understand the effect of their actions (ACSHE062) AC		✓	✓	✓		✓		✓
SCIENCE INQUIRY SKILLS								
Questioning and predicting								
With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSI064) AC	✓	✓	✓	✓	✓	✓		
Planning and conducting								
With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (ACSI065) AC	✓	✓	✓	✓	✓	✓		✓
Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSI066) AC		✓	✓	✓	✓			
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 (ACSI068) AC	✓	✓	✓	✓	✓	✓		
Compare results with predictions, suggesting possible reasons for findings (ACSI216) AC		✓	✓	✓	✓	✓		
Evaluating								
Reflect on investigations, including whether a test was fair or not (ACSI069) AC		✓	✓	✓	✓	✓		
Communicating								
Represent and communicate observations, ideas and findings using formal and informal representations (ACSI071) AC	✓	✓	✓	✓	✓	✓	✓	✓