

SCIENCE CURRICULUM AUSTRALIA

GRADE 3 - 10



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Module Name	Grade	Standard	Description
Heat Flow	3	ACSSU.3.4.1.	Heat can be produced in many ways and can move from one object to another (ACSSU049)
		ACSSU.3.4.1.2.	Identifying changes that occur in everyday situations due to heating and cooling
		ACSSU.3.4.1.3.	Exploring how heat can be transferred through conduction
		ACSSU.3.4.1.4.	Recognising that we can feel heat and measure its effects using a thermometer
		ACSHE.3.1.1.1.	Making predictions about change and events in our environment
		ACSHE.3.1.1.3.	Considering how posing questions helps us plan for the future
		ACSHE.3.2.1.3.	Considering how materials including solids and liquids affect the environment in different ways
		AC SIS.3.1.1.1.	Choosing questions to investigate from a list of possibilities
		AC SIS.3.2.1.1.	Working with teacher guidance to plan investigations to test simple cause-and-effect relationships
		AC SIS.3.3.1.1.	Using provided tables to organise materials and objects based on observable properties
		AC SIS.3.5.1.2.	Exploring different ways to show processes and relationships through diagrams, models and role play
		AC SIS.3.2.1.	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS054)
Producing Heat Energy	3	ACSSU.3.4.1.	Heat can be produced in many ways and can move from one object to another (ACSSU049)
		ACSSU.3.4.1.1.	Describing how heat can be produced such as through friction or motion, electricity or chemically (burning)
		ACSHE.3.2.1.1.	Considering how heating affects materials used in everyday life
		ACSHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.4.1.2.	Discussing as a whole class the idea of fairness in testing

		AC SIS.3.5.1.1.	Communicating with other students carrying out similar investigations to share experiences and improve investigation skill
		AC SIS.3.5.1.	Represent and communicate observations, ideas and findings using formal and informal representations (AC SIS060)
Earth's Rotation	3	AC SSU.3.3.1.	Earth's rotation on its axis causes regular changes, including night and day (AC SSU048)
		AC SSU.3.3.1.2.	Constructing sundials and investigating how they work
		AC SSU.3.3.1.3.	Describing timescales for the rotation of the Earth
		AC SHE.3.1.1.1.	Making predictions about change and events in our environment
		AC SHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		AC SIS.3.1.1.3.	Listing shared experiences as a whole class and identifying possible investigations
		AC SIS.3.3.1.2.	Discussing how to graph data presented in a table
		AC SIS.3.3.1.3.	Identifying and discussing numerical and visual patterns in data collected from students' own investigations and from secondary sources
		AC SIS.3.4.1.1.	Describing experiences of carrying out investigations to the teacher, small group or whole class
The Sun's Energy	3	AC SIS.3.3.1.	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (AC SIS057)
		AC SSU.3.3.1.	Earth's rotation on its axis causes regular changes, including night and day (AC SSU048)
		AC SSU.3.3.1.1.	Recognising the sun as a source of light
		AC SHE.3.2.1.1.	Considering how heating affects materials used in everyday life
		AC SHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
Classifying Animals	3	AC SIS.3.2.1.	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS054)
		AC SSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (AC SSU044)

		ACSSU.3.1.1.1.	Recognising characteristics of living things such as growing, moving, sensitivity and reproducing
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.2.1.2.	Discussing as a whole class ways to investigate questions and evaluating which ways might be most successful
		AC SIS.3.3.1.2.	Discussing how to graph data presented in a table
		AC SIS.3.4.1.1.	Describing experiences of carrying out investigations to the teacher, small group or whole class
		ACSHE.3.1.1.1.	Making predictions about change and events in our environment
		AC SIS.3.4.1.	Reflect on investigations, including whether a test was fair or not (AC SIS058)
		ACSHE.3.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE050)
Objects in the Sky	3	ACSSU.3.3.1.	Earth's rotation on its axis causes regular changes, including night and day (ACSSU048)
		ACSSU.3.3.1.4.	Modeling the relative sizes and movement of the sun, Earth and moon
		ACSHE.3.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE050)
		ACSHE.3.1.1.1.	Making predictions about change and events in our environment
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.2.1.2.	Discussing as a whole class ways to investigate questions and evaluating which ways might be most successful
		AC SIS.3.3.1.2.	Discussing how to graph data presented in a table
		AC SIS.3.4.1.1.	Describing experiences of carrying out investigations to the teacher, small group or whole class
		ACSHE.3.1.1.2.	Researching how knowledge of astronomy has been used by some Aboriginal and Torres Strait Islander people
Plant and Animal Extinction	3	ACSSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
		ACSSU.3.1.1.4.	Exploring differences between living, once living and products of living things

Classifying Plants	3	ACSSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
		ACSSU.3.1.1.1.	Recognising characteristics of living things such as growing, moving, sensitivity and reproducing
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.2.1.2.	Discussing as a whole class ways to investigate questions and evaluating which ways might be most successful
		AC SIS.3.3.1.2.	Discussing how to graph data presented in a table
		AC SIS.3.4.1.1.	Describing experiences of carrying out investigations to the teacher, small group or whole class
		ACSHE.3.1.1.1.	Making predictions about change and events in our environment
		ACSHE.3.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE050)
Diversity of Living Things	3	ACSSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
		ACSSU.3.1.1.2.	Recognising the range of different living things
		ACSHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		ACSHE.3.2.1.3.	Considering how materials including solids and liquids affect the environment in different ways
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.2.1.1.	Working with teacher guidance to plan investigations to test simple cause-and-effect relationships
		AC SIS.3.5.1.1.	Communicating with other students carrying out similar investigations to share experiences and improve investigation skill
		ACSHE.3.2.1.	Science knowledge helps people to understand the effect of their actions (ACSHE051)
		ACSHE.3.1.1.3.	Considering how posing questions helps us plan for the future
		ACSHE.3.2.1.5.	Researching Aboriginal and Torres Strait Islander people's knowledge of the local natural environment, such as the characteristics of plants and animals
		ACSHE.3.2.1.4.	Deciding what characteristics make a material a pollutant

Fossils	3	ACSSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
		ACSSU.3.1.1.4.	Exploring differences between living, once living and products of living things
		ACSHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		AC SIS.3.1.1.2.	Jointly constructing questions that may form the basis for investigation
		AC SIS.3.2.2.1.	Recording measurements using familiar formal units and appropriate abbreviations, such as seconds (s), grams (g), centimetres (cm)
		AC SIS.3.2.2.2.	Using a variety of tools to make observations, such as digital cameras, thermometers, rulers and scales
		AC SIS.3.5.1.2.	Exploring different ways to show processes and relationships through diagrams, models and role play
		AC SIS.3.2.2.	Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (AC SIS055)
Living and Nonliving Things	3	ACSSU.3.1.1.	Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044)
		ACSSU.3.1.1.3.	Sorting living and non-living things based on characteristics
		ACSHE.3.2.1.2.	Investigating how science helps people such as nurses, doctors, dentists, mechanics and gardeners
		AC SIS.3.1.1.1.	Choosing questions to investigate from a list of possibilities
		AC SIS.3.1.1.4.	Working in groups to discuss things that might happen during an investigation
		AC SIS.3.3.1.1.	Using provided tables to organise materials and objects based on observable properties
		ACSHE.3.1.1.3.	Considering how posing questions helps us plan for the future
		AC SIS.3.1.1.	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (AC SIS053)
Changes from Heat	3	ACSSU.3.2.1.	A change of state between solid and liquid can be caused by adding or removing heat (ACSSU046)
		ACSSU.3.2.1.1.	Investigating how liquids and solids respond to changes in temperature, for example water changing to ice, or melting chocolate

		ACSSU.3.2.1.2.	Exploring how changes from solid to liquid and liquid to solid can help us recycle materials
		ACSSU.3.2.1.3.	Predicting the effect of heat on different materials
		ACSHE.3.2.1.1.	Considering how heating affects materials used in everyday life
		ACSHE.3.2.1.3.	Considering how materials including solids and liquids affect the environment in different ways
		AC SIS.3.1.1.2.	Jointly constructing questions that may form the basis for investigation
		AC SIS.3.1.1.3.	Listing shared experiences as a whole class and identifying possible investigations
		AC SIS.3.2.1.3.	Discussing safety rules for equipment and procedures
		AC SIS.3.3.2.1.	Discussing how well predictions matched results from an investigation and sharing ideas about what was learnt
		AC SIS.3.5.1.3.	Using simple explanations and arguments, reports or graphical representations to communicate ideas to other students
		ACSHE.3.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE050)
		AC SIS.3.3.2.	Compare results with predictions, suggesting possible reasons for findings (AC SIS215)
		ACSHE.3.2.1.	Science knowledge helps people to understand the effect of their actions (ACSHE051)

Module Name	Grade	Standard	Description
Energy and Collision	4	ACSSU.4.4.1.	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)
		ACSSU.4.4.1.2.	Exploring how non-contact forces are similar to contact forces in terms of objects pushing and pulling another object
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		ACSIS.4.2.2.2.	Recognising the elements of a fair test and using these when planning the steps and processes of an investigation
		ACSIS.4.4.1.	Reflect on investigations, including whether a test was fair or not (ACSIS069)
		ACSIS.4.4.1.2.	Discussing which aspects of the investigation helped improve fairness, and any aspects that weren't fair
Energy and Speed	4	ACSSU.4.4.1.	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)
		ACSSU.4.4.1.1.	Observing qualitatively how speed is affected by the size of a force
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		ACSIS.4.1.1.	With guidance, identify questions in familiar contexts that can be investigated scientifically and make predictions based on prior knowledge (ACSIS064)
		ACSIS.4.1.1.1.	Considering familiar situations in order to think about possible areas for investigation
		ACSIS.4.2.2.1.	Making and recording measurements using familiar formal units and appropriate abbreviations, such as seconds (s), grams (g), centimetres (cm) and millilitres (mL)
		ACSIS.4.2.2.	Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSIS066)
Friction	4	ACSSU.4.4.1.	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)

		ACSSU.4.4.1.3.	Comparing and contrasting the effect of friction on different surfaces, such as tyres and shoes on a range of surfaces
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		AC SIS.4.1.1.2.	Reflecting on familiar situations to make predictions with teacher guidance
		AC SIS.4.3.2.	Compare results with predictions, suggesting possible reasons for findings (AC SIS216)
		AC SIS.4.3.2.1.	Discussing how well predictions matched results from an investigation and proposing reasons for findings
		AC SIS.4.4.1.1.	Reflecting on investigations, identifying what went well, what was difficult or didn't work so well, and how well the investigation helped answer the question
Objects and Motion	4	ACSSU.4.4.1.4.	Investigating the effect of forces on the behaviour of an object through actions such as throwing, dropping, bouncing and rolling
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		AC SIS.4.2.1.	With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS065)
		AC SIS.4.2.1.1.	Exploring different ways to conduct investigations and connecting these to the types of questions asked with teacher guidance
		AC SIS.4.2.1.3.	Discussing and recording safety rules for equipment as a whole class
Properties of Materials	4	ACSSU.4.2.1.	Natural and processed materials have a range of physical properties that can influence their use (ACSSU074)
		ACSSU.4.2.1.1.	Describing a range of common materials, such as metals or plastics, and their uses
		ACSSU.4.2.1.2.	Investigating a particular property across a range of materials
		ACSSU.4.2.1.3.	Selecting materials for uses based on their properties

		ACSSU.4.2.1.4.	Considering how the properties of materials affect the management of waste or can lead to pollution
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		ACSHE.4.2.1.	Science knowledge helps people to understand the effect of their actions (ACSHE062)
		ACSHE.4.2.1.1.	Investigating how a range of people, such as clothing designers, builders or engineers use science to select appropriate materials for their work
		ACSHE.4.2.1.2.	Considering methods of waste management and how they can affect the environment
		AC SIS.4.1.1.3.	Choosing questions to investigate from a list of possibilities
		AC SIS.4.3.1.3.	Discussing with teacher guidance which graphic organisers will be most useful in sorting or organising data arising from investigations
		ACSHE.4.1.1.2.	Considering how scientific practices such as sorting, classification and estimation are used by Aboriginal and Torres Strait Islander people in everyday life
Magnets	4	ACSSU.4.4.1.	Forces can be exerted by one object on another through direct contact or from a distance (ACSSU076)
		ACSSU.4.4.1.5.	Exploring the forces of attraction and repulsion between magnets
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		AC SIS.4.1.1.2.	Reflecting on familiar situations to make predictions with teacher guidance
		AC SIS.4.3.1.1.	Identifying and discussing numerical and visual patterns in data collected from students' investigations and from other sources
		AC SIS.4.3.2.2.	Comparing, in small groups, proposed reasons for findings and explaining their reasoning
Properties of Soil	4	ACSSU.4.3.1.	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)
		ACSSU.4.3.1.3.	Investigating the characteristics of soils
		ACSHE.4.2.1.1.	Investigating how a range of people, such as clothing designers, builders or engineers use science to select appropriate materials for their work

		ACSHE.4.2.1.4.	Considering how to minimise the effects of erosion caused by human activity
		AC SIS.4.1.1.3.	Choosing questions to investigate from a list of possibilities
		AC SIS.4.2.1.1.	Exploring different ways to conduct investigations and connecting these to the types of questions asked with teacher guidance
		AC SIS.4.5.1.1.	Communicating with other students carrying out similar investigations to share experiences and improve investigation skills
Quick Changes to Land	4	ACSSU.4.3.1.	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)
		ACSSU.4.3.1.5.	Considering the effect of events such as floods and extreme weather on the landscape, both in Australia and in the Asia region
		ACSHE.4.2.1.3.	Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment
		ACSHE.4.2.1.4.	Considering how to minimise the effects of erosion caused by human activity
		AC SIS.4.2.1.1.	Exploring different ways to conduct investigations and connecting these to the types of questions asked with teacher guidance
		AC SIS.4.2.2.1.	Making and recording measurements using familiar formal units and appropriate abbreviations, such as seconds (s), grams (g), centimetres (cm) and millilitres (mL)
		AC SIS.4.3.2.1.	Discussing how well predictions matched results from an investigation and proposing reasons for findings
Rock Patterns	4	ACSSU.4.3.1.	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)
		ACSSU.4.3.1.1.	Collecting evidence of change from local landforms, rocks or fossils
		ACSHE.4.2.1.	Science knowledge helps people to understand the effect of their actions (ACSHE062)
		ACSHE.4.2.1.3.	Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment
		AC SIS.4.3.1.2.	Using provided graphic organisers to sort and represent information
		AC SIS.4.3.2.2.	Comparing, in small groups, proposed reasons for findings and explaining their reasoning

Slow Changes to Land	4	ACSSU.4.3.1.	Earth's surface changes over time as a result of natural processes and human activity (ACSSU075)
		ACSSU.4.3.1.2.	Exploring a local area that has changed as a result of natural processes, such as an eroded gully, sand dunes or river banks
		ACSSU.4.3.1.4.	Considering how different human activities cause erosion of the Earth's surface
		ACSHE.4.2.1.3.	Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment
		ACSHE.4.2.1.4.	Considering how to minimise the effects of erosion caused by human activity
		AC SIS.4.2.1.1.	Exploring different ways to conduct investigations and connecting these to the types of questions asked with teacher guidance
		AC SIS.4.2.2.1.	Making and recording measurements using familiar formal units and appropriate abbreviations, such as seconds (s), grams (g), centimetres (cm) and millilitres (mL)
Animal and Plant Dependence	4	ACSSU.4.1.2.	Living things depend on each other and the environment to survive (ACSSU073)
		ACSSU.4.1.2.1.	Investigating how plants provide shelter for animals
		ACSHE.4.2.1.	Science knowledge helps people to understand the effect of their actions (ACSHE062)
		ACSHE.4.2.1.3.	Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment
		AC SIS.4.1.1.1.	Considering familiar situations in order to think about possible areas for investigation
		AC SIS.4.3.1.2.	Using provided graphic organisers to sort and represent information
		AC SIS.4.5.1.2.	Using simple explanations and arguments, reports or graphical representations to communicate ideas to other students
		ACSSU.4.1.2.5.	Recognising that interactions between living things may be competitive or mutually beneficial
Life Cycles	4	ACSSU.4.1.1.	Living things have life cycles (ACSSU072)
		ACSSU.4.1.1.1.	Making and recording observations of living things as they develop through their life cycles
		ACSSU.4.1.1.2.	Describing the stages of life cycles of different living things such as insects, birds, frogs and flowering plants

		ACSSU.4.1.1.3.	Comparing life cycles of animals and plants
		ACSHE.4.1.1.	Science involves making predictions and describing patterns and relationships (ACSHE061)
		ACSHE.4.1.1.1.	Exploring ways in which scientists gather evidence for their ideas and develop explanations
		AC SIS.4.1.1.3.	Choosing questions to investigate from a list of possibilities
		AC SIS.4.3.1.	Use a range of methods including tables and simple column graphs to represent data and to identify patterns and trends (AC SIS068)
		AC SIS.4.5.1.	Represent and communicate observations, ideas and findings using formal and informal representations (AC SIS071)
Organism Interactions in Ecosystems	4	ACSSU.4.1.1.	Living things have life cycles (ACSSU072)
		ACSSU.4.1.1.4.	Recognising that environmental factors can affect life cycles such as fire and seed germination
		ACSSU.4.1.2.2.	Investigating the roles of living things in a habitat, for instance producers, consumers or decomposers
		ACSSU.4.1.2.3.	Observing and describing predator-prey relationships
		ACSSU.4.1.2.4.	Predicting the effects when living things in feeding relationships are removed or die out in an area
		ACSHE.4.2.1.1.	Investigating how a range of people, such as clothing designers, builders or engineers use science to select appropriate materials for their work
		ACSHE.4.2.1.3.	Exploring how science has contributed to a discussion about an issue such as loss of habitat for living things or how human activity has changed the local environment
		AC SIS.4.2.1.2.	Working in groups, with teacher guidance, to plan ways to investigate questions
		AC SIS.4.3.1.2.	Using provided graphic organisers to sort and represent information
		AC SIS.4.5.1.1.	Communicating with other students carrying out similar investigations to share experiences and improve investigation skills

Module Name	Grade	Standard	Description
The Solar System	5	ACSSU.5.3.1.	The Earth is part of a system of planets orbiting around a star (the sun) (ACSSU078)
		ACSSU.5.3.1.1.	Identifying the planets of the solar system and comparing how long they take to orbit the sun
		ACSSU.5.3.1.2.	Modelling the relative size of and distance between Earth, other planets in the solar system and the sun
		ACSHE.5.1.1.3.	Researching how scientists were able to develop ideas about the solar system through the gathering of evidence through space exploration
		ACSHE.5.1.1.4.	Describing how scientists from a range of cultures have improved our understanding of the solar system, such as Copernicus, Khayyám and Galileo
		ACSHE.5.1.1.5.	Researching the different types of scientists who work in teams in space exploration, and Australia's involvement in space exploration
		ACSHE.5.1.1.6.	Learning how Aboriginal and Torres Strait Islander Peoples used observation of the night sky to assist with navigation
		ACSHE.5.2.1.6.	Describing how technologies developed to aid space exploration have changed the way people live, work and communicate
		AC SIS.5.2.1.1.	Experiencing a range of ways of investigating questions, including experimental testing, Internet research, field observations and exploring simulations
		AC SIS.5.5.1.1.	Discussing how models represent scientific ideas and constructing physical models to demonstrate an aspect of scientific understanding
Light Reflection	5	ACSSU.5.4.1.	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)
		ACSSU.5.4.1.5.	Exploring the use of mirrors to demonstrate the reflection of light
		ACSSU.5.4.1.6.	Recognising the refraction of light at the surfaces of different transparent materials, such as when light travels from air to water or air to glass
		ACSHE.5.1.1.	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)
		ACSHE.5.1.1.1.	Developing an understanding of the behaviour of light by making observations of its effects

		ACSHE.5.2.1.7.	Exploring objects and devices that include parts that involve the reflection, absorption or refraction of light such as mirrors, sunglasses and prisms
		AC SIS.5.1.1.2.	Applying experience from similar situations in the past to predict what might happen in a new situation
		AC SIS.5.2.2.	Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate (AC SIS087)
		AC SIS.5.2.2.4.	Recording data in tables and diagrams or electronically as digital images and spreadsheets
The Sun	5	ACSSU.5.3.1.	The Earth is part of a system of planets orbiting around a star (the sun) (ACSSU078)
		ACSSU.5.3.1.3.	Recognising the role of the sun as a provider of energy for the Earth
		ACSHE.5.2.1.1.	Considering how best to ensure growth of plants
		ACSHE.5.2.1.2.	Considering how decisions are made to grow particular plants and crops depending on environmental conditions
		AC SIS.5.2.2.4.	Recording data in tables and diagrams or electronically as digital images and spreadsheets
		AC SIS.5.5.1.	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi- modal texts (AC SIS093)
		AC SIS.5.1.1.1.	Exploring the range of questions that can be asked about a problem or phenomena and with guidance, identifying those questions that could be investigated
Properties of Water	5	ACSSU.5.2.1.	Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)
		ACSSU.5.2.1.1.	Recognising that substances exist in different states depending on the temperature
		ACSSU.5.2.1.2.	Observing that gases have mass and take up space, demonstrated by using balloons or bubbles
		ACSSU.5.2.1.3.	Exploring the way solids, liquids and gases change under different situations such as heating and cooling
		ACSHE.5.1.1.	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)

		ACSHE.5.1.1.2.	Testing predictions relating to the behaviour of solids, liquids and gases by conducting observational experiments
		ACSHE.5.2.1.3.	Comparing the benefits of using solid, liquid or gaseous fuels to heat a home
		ACSHE.5.2.1.4.	Describing the safety aspects of using gases
		ACSHE.5.2.1.5.	Investigating how the development of materials such as plastics and synthetic fabrics have led to the production of useful products
		ACSIS.5.1.1.	With guidance, pose clarifying questions and make predictions about scientific investigations (ACSIS231)
		ACSIS.5.1.1.2.	Applying experience from similar situations in the past to predict what might happen in a new situation
		ACSIS.5.2.2.2.	Using tools to accurately measure objects and events in investigation and exploring which tools provide the most accurate measurements
		ACSIS.5.2.2.3.	Using familiar units such as grams, seconds and meters and developing the use of standard multipliers such as kilometres and millimetres
Classifying Matter	5	ACSSU.5.2.1.	Solids, liquids and gases have different observable properties and behave in different ways (ACSSU077)
		ACSSU.5.2.1.4.	Recognising that not all substances can be easily classified on the basis of their observable properties
		ACSHE.5.1.1.2.	Testing predictions relating to the behaviour of solids, liquids and gases by conducting observational experiments
		ACSIS.5.2.1.3.	Discussing the advantages of certain types of investigation for answering certain types of questions
		ACSIS.5.2.1.4.	Considering different ways to approach problem solving, including researching, using trial and error, experimental testing and creating models
		ACSIS.5.2.2.1.	Discussing in groups how investigations can be made as fair as possible
		ACSIS.5.4.1.	Reflect on and suggest improvements to scientific investigations (ACSIS091)
		ACSIS.5.4.1.1.	Working collaboratively to identify where methods could be improved, including where testing was not fair and practices could be improved

Behaviour of Light	5	ACSSU.5.4.1.	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)
		ACSSU.5.4.1.1.	Drawing simple labelled ray diagrams to show the paths of light from a source to our eyes
		ACSSU.5.4.1.2.	Comparing shadows from point and extended light sources such as torches and fluorescent tubes
		ACSHE.5.1.1.	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE081)
		ACSHE.5.1.1.1.	Developing an understanding of the behaviour of light by making observations of its effects
		ACSIS.5.2.1.	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (ACSIS086)
		ACSIS.5.2.1.2.	Explaining rules for safe processes and use of equipment
		ACSIS.5.5.1.	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS093)
		ACSIS.5.5.1.2.	Constructing multi-modal texts to communicate science ideas
		ACSIS.5.5.1.3.	Using labelled diagrams, including cross-sectional representations, to communicate ideas
		ACSIS.5.1.1.1.	Exploring the range of questions that can be asked about a problem or phenomena and with guidance, identifying those questions that could be investigated
Adaptations	5	ACSSU.5.1.1.	Living things have structural features and adaptations that help them to survive in their environment (ACSSU043)
		ACSSU.5.1.1.1.	Explaining how particular adaptations help survival such as nocturnal behaviour, silvery coloured leaves of dune plants
		ACSSU.5.1.1.2.	Describing and listing adaptations of living things suited for particular Australian environments
		ACSSU.5.1.1.3.	Exploring general adaptations for particular environments such as adaptations that aid water conservation in deserts
		ACSHE.5.2.1.	Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083)
		ACSHE.5.2.1.1.	Considering how best to ensure growth of plants

		ACSHE.5.2.1.2.	Considering how decisions are made to grow particular plants and crops depending on environmental conditions
		ACSIS.5.1.	Questioning and predicting
		ACSIS.5.1.1.2.	Applying experience from similar situations in the past to predict what might happen in a new situation
		ACSIS.5.2.1.4.	Considering different ways to approach problem solving, including researching, using trial and error, experimental testing and creating models
		ACSIS.5.3.1.	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)
		ACSIS.5.3.1.1.	Constructing tables, graphs and other graphic organisers to show trends in data
		ACSIS.5.3.1.2.	Identifying patterns in data and developing explanations that fit these patterns
		ACSIS.5.1.1.1.	Exploring the range of questions that can be asked about a problem or phenomena and with guidance, identifying those questions that could be investigated
Properties of Visible Light	5	ACSSU.5.4.1.	Light from a source forms shadows and can be absorbed, reflected and refracted (ACSSU080)
		ACSSU.5.4.1.3.	Classifying materials as transparent, opaque or translucent based on whether light passes through them or is absorbed
		ACSSU.5.4.1.4.	Recognising that the colour of an object depends on the properties of the object and the colour of the light source
		ACSHE.5.1.1.1.	Developing an understanding of the behaviour of light by making observations of its effects
		ACSHE.5.2.1.7.	Exploring objects and devices that include parts that involve the reflection, absorption or refraction of light such as mirrors, sunglasses and prisms
		ACSIS.5.2.1.4.	Considering different ways to approach problem solving, including researching, using trial and error, experimental testing and creating models
		ACSIS.5.3.1.3.	Identifying similarities and differences in qualitative data in order to group items or materials
		ACSIS.5.3.2.	Compare data with predictions and use as evidence in developing explanations (ACSIS218)
		ACSIS.5.3.2.1.	Sharing ideas as to whether observations match predictions, and discussing possible reasons for predictions being incorrect

Module Name	Grade	Standard	Description
Organisms in Extreme Environments	6	ACSSU.6.1.1.	The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)
		ACSSU.6.1.1.3.	Researching organisms that live in extreme environments such as Antarctica or a desert
		AC SIS.6.3.1.1.	Exploring how different representations can be used to show different aspects of relationships, processes or trends
		AC SIS.6.3.1.2.	Using digital technologies to construct representations, including dynamic representations
		AC SIS.6.5.1.2.	Using a variety of communication modes, such as reports, explanations, arguments, debates and procedural accounts, to communicate science ideas
Physical and Chemical Changes	6	ACSSU.6.2.1.	Changes to materials can be reversible or irreversible (ACSSU095)
		ACSSU.6.2.1.4.	Investigating irreversible changes such as rusting, burning and cooking
		ACSSU.6.2.1.5.	Exploring how reversible changes can be used to recycle materials
		AC SIS.6.1.1.2.	Asking questions to understand the scope or nature of a problem
		AC SIS.6.1.1.3.	Applying experience from previous investigations to predict the outcomes of investigations in new contexts
		AC SIS.6.2.2.	Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate (AC SIS104)
		AC SIS.6.2.2.2.	Using the idea of an independent variable (note: this terminology does not need to be used at this stage) as something that is being investigated by changing it and measuring the effect of this change
		AC SIS.6.3.2.2.	Discussing the difference between data and evidence
		AC SIS.6.3.2.3.	Referring to evidence when explaining the outcomes of an investigation
		ACSSU.6.2.1.6.	Investigate reversible reactions such as melting, freezing and evaporating
Electric Circuits	6	ACSSU.6.4.1.	Electrical energy can be transferred and transformed in electrical circuits and can be generated from a range of sources (ACSSU097)

		ACSSU.6.4.1.1.	Recognising the need for a complete circuit to allow the flow of electricity
		ACSSU.6.4.1.2.	Investigating different electrical conductors and insulators
		ACSSU.6.4.1.3.	Exploring the features of electrical devices such as switches and light globes
		ACSHE.6.1.1.	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098)
		ACSHE.6.1.1.3.	Investigating the use of electricity, including predicting the effects of changes to electric circuits
		ACSHE.6.2.1.4.	Considering how guidelines help to ensure the safe use of electrical devices
		ACSHE.6.2.1.5.	Discussing the use of electricity and the conservation of sources of energy
		ACSHE.6.2.1.7.	Investigating how electrical energy is generated in Australia and around the world
		ACSHE.6.2.1.9.	Considering how electricity and electrical appliances have changed the way some people live
		AC SIS.6.2.2.	Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy using digital technologies as appropriate (AC SIS104)
		AC SIS.6.4.1.	Reflect on and suggest improvements to scientific investigations (AC SIS108)
		AC SIS.6.4.1.1.	Discussing improvements to the methods used, and how these methods would improve the quality of the data obtained
Environmental Changes and Effects	6	ACSSU.6.1.1.	The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)
		ACSSU.6.1.1.4.	Considering the effects of physical conditions causing migration and hibernation
		AC SIS.6.3.1.1.	Exploring how different representations can be used to show different aspects of relationships, processes or trends
		AC SIS.6.3.2.1.	Sharing ideas as to whether observations match predictions, and discussing possible reasons for predictions being incorrect
		AC SIS.6.5.1.2.	Using a variety of communication modes, such as reports, explanations, arguments, debates and procedural accounts, to communicate science ideas

		AC SIS.6.3.1.	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 (AC SIS107)
		AC SHE.6.1.1.7.	Learning how Aboriginal and Torres Strait Islander knowledge, such as the medicinal and nutritional properties of Australian plants, is being used as part of the evidence base for scientific advances
Natural Processes	6	AC SSU.6.3.1.	Sudden geological changes and extreme weather events can affect Earth's surface (AC SSU096)
		AC SSU.6.3.1.1.	Investigating major geological events such as earthquakes, volcanic eruptions and tsunamis in Australia, the Asia region and throughout the world
		AC SSU.6.3.1.2.	Recognising that earthquakes can cause tsunamis
		AC SSU.6.3.1.3.	Describing how people measure significant geological events
		AC SSU.6.3.1.4.	Exploring ways that scientific understanding can assist in natural disaster management to minimise both long- and short-term effects
		AC SSU.6.3.1.5.	Considering the effect of drought on living and non-living aspects of the environment
		AC SHE.6.1.1.	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (AC SHE098)
		AC SHE.6.1.1.1.	Investigating how knowledge about the effects of using the Earth's resources has changed over time
		AC SHE.6.1.1.2.	Describing how understanding of the causes and effects of major natural events has changed as new evidence has become available
		AC SHE.6.1.1.4.	Considering how gathering evidence helps scientists to predict the effect of major geological or climatic events
		AC SHE.6.1.1.6.	Exploring institutions and locations where contemporary Australian scientists conduct research on catastrophic natural events
		AC SHE.6.1.1.8.	Investigating the development of earthquake measurements from the Chinese invention of the seismograph in the second century
		AC SHE.6.2.1.2.	Investigating how understanding of catastrophic natural events helps in planning for their early detection and minimising their impact
		AC SHE.6.2.1.3.	Recognising that science can inform choices about where people live and how they manage natural disasters

		ACSHE.6.2.1.6.	Researching the scientific work involved in global disaster alerts and communication, such as cyclone, earthquake and tsunami alerts
		AC SIS.6.5.1.2.	Using a variety of communication modes, such as reports, explanations, arguments, debates and procedural accounts, to communicate science ideas
		AC SIS.6.5.1.3.	Using labelled diagrams, including cross-sectional representations, to communicate ideas and processes within multi-modal texts
Mixtures	6	ACSSU.6.2.1.	Changes to materials can be reversible or irreversible (ACSSU095)
		ACSSU.6.2.1.1.	Describing what happens when materials are mixed
		ACSSU.6.2.1.2.	Investigating the solubility of common materials in water
		AC SIS.6.1.1.	With guidance, pose clarifying questions and make predictions about scientific investigations (AC SIS232)
		AC SIS.6.2.2.1.	Using familiar units such as grams, seconds and metres and developing the use of standard multipliers such as kilometres and millimetres
		AC SIS.6.2.2.3.	Using digital technologies to make accurate measurements and to record data
		AC SIS.6.3.2.	Compare data with predictions and use as evidence in developing explanations (AC SIS221)
		AC SIS.6.3.2.1.	Sharing ideas as to whether observations match predictions, and discussing possible reasons for predictions being incorrect
		AC SIS.6.5.1.3.	Using labelled diagrams, including cross-sectional representations, to communicate ideas and processes within multi-modal texts
Growth of Plants	6	ACSSU.6.1.1.	The growth and survival of living things are affected by physical conditions of their environment (ACSSU094)
		ACSSU.6.1.1.1.	Investigating how changing the physical conditions for plants impacts on their growth and survival such as salt water, use of fertilizers and soil types
		ACSSU.6.1.1.2.	Observing the growth of fungi such as yeast and bread mould in different conditions
		AC SIS.6.2.1.	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS103)

		AC SIS.6.2.1.1.	Following a procedure to design an experimental or field investigation
		AC SIS.6.2.1.2.	Discussing methods chosen with other students, and refining methods accordingly
		AC SIS.6.5.1.	Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (AC SIS110)
		AC SIS.6.5.1.1.	Discussing the best way to communicate science ideas and what should be considered when planning a text
Alternative Energy	6	AC SSU.6.4.1.	Electrical energy can be transferred and transformed in electrical circuits and can be generated from a range of sources (AC SSU097)
		AC SSU.6.4.1.4.	Investigating how moving air and water can turn turbines to generate electricity
		AC SSU.6.4.1.5.	Investigating the use of solar panels
		AC SSU.6.4.1.6.	Considering whether an energy source is sustainable
		AC SHE.6.1.1.5.	Investigating how people from different cultures have used sustainable sources of energy, for example water and solar power
		AC SHE.6.2.1.	Scientific knowledge is used to solve problems and inform personal and community decisions (AC SHE100)
		AC SHE.6.2.1.1.	Considering how personal and community choices influence our use of sustainable sources of energy
		AC SHE.6.2.1.5.	Discussing the use of electricity and the conservation of sources of energy
		AC SIS.6.5.1.2.	Using a variety of communication modes, such as reports, explanations, arguments, debates and procedural accounts, to communicate science ideas
		AC SIS.6.5.1.3.	Using labelled diagrams, including cross-sectional representations, to communicate ideas and processes within multi-modal texts
		AC SHE.6.2.1.8.	Researching the use of methane generators in Indonesia
Matter Changing States	6	AC SSU.6.2.1.	Changes to materials can be reversible or irreversible (AC SSU095)
		AC SSU.6.2.1.3.	Investigating the change in state caused by heating and cooling of a familiar substance
		AC SIS.6.2.1.	Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS103)

		ACSIS.6.2.1.3.	Considering which investigation methods are most suited to answer a particular question or solve a problem
		ACSIS.6.2.2.1.	Using familiar units such as grams, seconds and metres and developing the use of standard multipliers such as kilometres and millimetres
		ACSIS.6.2.2.2.	Using the idea of an independent variable (note: this terminology does not need to be used at this stage) as something that is being investigated by changing it and measuring the effect of this change
		ACSSU.6.2.1.6.	Investigate reversible reactions such as melting, freezing and evaporating

Module Name	Grade	Standard	Description
Rotation and Revolution	7	ACSSU.7.3.1.	Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon (ACSSU115)
		ACSSU.7.3.1.4.	Explaining why different regions of the Earth experience different seasonal conditions
		ACSHE.7.2.2.7.	Considering how seasonal changes affect people in a variety of activities such as farming
		AC SIS.7.3.2.2.	Comparing and contrasting data from a number of sources in order to create a summary of collected data
		AC SIS.7.3.2.1.	Using diagrammatic representations to convey abstract ideas and to simplify complex situations
Simple Machines	7	ACSSU.7.4.1.	Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object (ACSSU117)
		ACSSU.7.4.1.3.	Investigating a simple machine such as lever or pulley system
		AC SIS.7.1.1.	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (AC SIS124)
		AC SIS.7.2.1.1.	Working collaboratively to decide how to approach an investigation
		AC SIS.7.2.1.3.	Identifying whether the use of their own observations and experiments or the use of other research materials is appropriate for their investigation
		AC SIS.7.3.2.3.	Identifying data which provides evidence to support or negate the hypothesis under investigation
Separating Mixtures	7	ACSSU.7.2.1.	Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques (ACSSU113)
		ACSSU.7.2.1.3.	Investigating and using a range of physical separation techniques such as filtration, decantation, evaporation, crystallisation, chromatography and distillation
		ACSSU.7.2.1.4.	Exploring and comparing separation methods used in the home
		ACSHE.7.2.2.	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)

		ACSHE.7.2.2.1.	Investigating everyday applications of physical separation techniques such as filtering, sorting waste materials, reducing pollution, extracting products from plants, separating blood products and cleaning up oil spills
		ACSHE.7.2.2.6.	Investigating how separation techniques are used in the food and wine industries
		AC SIS.7.2.1.	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (AC SIS125)
		AC SIS.7.2.1.2.	Learning and applying specific skills and rules relating to the safe use of scientific equipment
		AC SIS.7.2.2.3.	Using specialised equipment to increase the accuracy of measurement within an investigation
		AC SIS.7.3.2.4.	Referring to relevant evidence when presenting conclusions drawn from an investigation
		AC SIS.7.2.2.2.	Using a digital camera to record observations and compare images using information technologies
Pure Substances And Mixtures	7	ACSSU.7.2.1.	Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques (ACSSU113)
		ACSSU.7.2.1.1.	Recognising the differences between pure substances and mixtures and identifying examples of each
		ACSSU.7.2.1.2.	Identifying the solvent and solute in solutions
		ACSHE.7.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)
		AC SIS.7.2.1.	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (AC SIS125)
		AC SIS.7.2.2.	Measure and control variables, select equipment appropriate to the task and collect data with accuracy (AC SIS126)
		AC SIS.7.4.1.	Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements (AC SIS131)
		AC SIS.7.4.1.1.	Discussing investigation methods with others to share ideas about the quality of the inquiry process
		AC SIS.7.4.1.2.	Identifying and considering indicators of the quality of the data when analysing results
		AC SIS.7.4.1.3.	Suggesting improvements to inquiry methods based on experience

Renewable and Non-Renewable Resources	7	ACSSU.7.3.2.	Some of Earth's resources are renewable, including water that cycles through the environment, but others are non- renewable (ACSSU116)
		ACSSU.7.3.2.1.	Considering what is meant by the term 'renewable' in relation to the Earth's resources
		ACSSU.7.3.2.2.	Considering timescales for regeneration of resources
		ACSSU.7.3.2.3.	Comparing renewable and non-renewable energy sources, including how they are used in a range of situations
		ACSHE.7.2.1.	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)
		ACSHE.7.2.2.5.	Recognising that water management plays a role in areas such as farming, land management and gardening
		AC SIS.7.1.1.2.	Recognising that the solution of some questions and problems requires consideration of social, cultural, economic or moral aspects rather than or as well as scientific investigation
		AC SIS.7.4.2.	Use scientific knowledge and findings from investigations to evaluate claims based on evidence (AC SIS132)
		AC SIS.7.4.2.1.	Using the evidence provided by scientific investigations to evaluate the claims or conclusions of their peers
		ACSHE.7.2.1.3.	Considering decisions made in relation to the recycling of greywater and blackwater
		AC SIS.7.2.2.2.	Using a digital camera to record observations and compare images using information technologies
Food Chains and Food Webs	7	ACSSU.7.1.2.	Interactions between organisms, including the effects of human activities can be represented by food chains and food webs (ACSSU112)
		ACSSU.7.1.2.1.	Using food chains to show feeding relationships in a habitat
		ACSSU.7.1.2.2.	Constructing and interpreting food webs to show relationships between organisms in an environment
		ACSSU.7.1.2.3.	Classifying organisms of an environment according to their position in a food chain
		ACSSU.7.1.2.4.	Recognising the role of microorganisms within food chains and food webs

		ACSHE.7.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)
		AC SIS.7.2.1.4.	Developing strategies and techniques for effective research using secondary sources, including use of the Internet
		AC SIS.7.3.1.	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate (AC SIS129)
		AC SIS.7.3.2.1.	Using diagrammatic representations to convey abstract ideas and to simplify complex situations
		AC SIS.7.5.1.	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (AC SIS133)
		AC SIS.7.5.1.2.	Using digital technologies to access information and to communicate and collaborate with others on and off site
		AC SIS.7.2.2.2.	Using a digital camera to record observations and compare images using information technologies
Ecosystems	7	AC SSU.7.1.2.	Interactions between organisms, including the effects of human activities can be represented by food chains and food webs (AC SSU112)
		AC SSU.7.1.2.5.	Investigating the effect of human activity on local habitats, such as deforestation, agriculture or the introduction of new species
		AC SSU.7.1.2.6.	Exploring how living things can cause changes to their environment and impact other living things, such as the effect of cane toads
		AC SSU.7.1.2.7.	Researching specific examples of human activity, such as the use of fire by traditional Aboriginal people and the effects of palm oil production in Sumatra and Borneo
		ACSHE.7.1.2.2.	Identifying the contributions of Australian scientists to the study of human impact on environments and to local environmental management projects
		ACSHE.7.1.2.5.	Recognising that traditional and Western scientific knowledge can be used in combination to care for Country/Place
		ACSHE.7.2.1.4.	Considering how human activity in the community can have positive and negative effects on the sustainability of ecosystems
		AC SIS.7.2.1.1.	Working collaboratively to decide how to approach an investigation

		ACSIS.7.3.1.3.	Describing the trends shown in collected data
		ACSIS.7.5.1.1.	Presenting the outcomes of research using effective forms of representation of data or ideas and scientific language that is appropriate for the target audience
		ACSHE.7.1.2.4.	Studying transnational collaborative research in the Antarctic
		ACSHE.7.2.1.5.	Investigating ways to control the spread of the cane toad
		ACSHE.7.2.2.4.	Researching the different scientific responses to the rabbit plagues in Australian agricultural areas
Gravity	7	ACSSU.7.4.1.	Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object (ACSSU117)
		ACSSU.7.4.1.4.	Exploring how gravity affects objects on the surface of Earth
		ACSSU.7.4.1.5.	Considering how gravity keeps planets in orbit around the sun
		ACSIS.7.1.1.	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS124)
		ACSIS.7.1.1.1.	Working collaboratively to identify a problem to investigate
		ACSIS.7.2.2.	Measure and control variables, select equipment appropriate to the task and collect data with accuracy (ACSIS126)
		ACSIS.7.2.2.1.	Recognising the differences between controlled, dependent and independent variables
		ACSIS.7.3.2.	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS130)
Balanced and Unbalanced Forces	7	ACSSU.7.4.1.	Change to an object's motion is caused by unbalanced forces, including Earth's gravitational attraction, acting on the object (ACSSU117)
		ACSSU.7.4.1.1.	Investigating the effects of applying different forces to familiar objects
		ACSSU.7.4.1.2.	Investigating common situations where forces are balanced, such as stationary objects, and unbalanced, such as falling objects
		ACSHE.7.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)

		ACSHE.7.2.1.	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)
		ACSHE.7.2.1.1.	Relating regulations about wearing seatbelts or safety helmets to knowledge of forces and motion
		ACSHE.7.2.2.8.	Considering how sports scientists apply knowledge of forces to improve performance
		AC SIS.7.1.1.3.	Using information and knowledge from previous investigations to predict the expected results from an investigation
		AC SIS.7.3.1.2.	Using spreadsheets to aid the presentation and simple analysis of data
Classification of Organisms	7	ACSSU.7.1.1.	Classification helps organise the diverse group of organisms (ACSSU111)
		ACSSU.7.1.1.1.	Considering the reasons for classifying such as identification and communication
		ACSSU.7.1.1.2.	Grouping a variety of organisms on the basis of similarities and differences in particular features
		ACSSU.7.1.1.3.	Considering how biological classifications have changed over time
		ACSSU.7.1.1.4.	Classifying using hierarchical systems such as kingdom, phylum, class, order, family, genus, species
		ACSSU.7.1.1.5.	Using scientific conventions for naming species
		ACSSU.7.1.1.6.	Using provided keys to identify organisms surveyed in a local habitat
		ACSHE.7.2.2.	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121)
		AC SIS.7.1.1.1.	Working collaboratively to identify a problem to investigate
		AC SIS.7.2.1.1.	Working collaboratively to decide how to approach an investigation
		AC SIS.7.2.1.4.	Developing strategies and techniques for effective research using secondary sources, including use of the Internet
		AC SIS.7.3.1.	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate (AC SIS129)
		AC SIS.7.3.1.1.	Understanding different types of graphical and physical representation and considering their advantages and disadvantages

		ACSIS.7.3.2.	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS130)
		ACSIS.7.3.2.1.	Using diagrammatic representations to convey abstract ideas and to simplify complex situations
		ACSIS.7.2.2.2.	Using a digital camera to record observations and compare images using information technologies
Earth, Sun, and Moon System	7	ACSSU.7.3.1.	Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon (ACSSU115)
		ACSSU.7.3.1.1.	Investigating natural phenomena such as lunar and solar eclipses, seasons and phases of the moon
		ACSSU.7.3.1.2.	Comparing times for the rotation of Earth, the sun and moon, and comparing the times for the orbits of Earth and the moon
		ACSSU.7.3.1.3.	Modelling the relative movements of the Earth, sun and moon and how natural phenomena such as solar and lunar eclipses and phases of the moon occur
		ACSHE.7.1.1.	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE119)
		ACSHE.7.1.1.1.	Investigating how advances in telescopes and space probes have provided new evidence about space
		ACSHE.7.1.1.2.	Investigating how advances in telescopes and space probes have provided new evidence researching different ideas used in the development of models of the solar system developed by scientists such as Copernicus, Khayyám and Galileo
		ACSHE.7.1.1.3.	Investigating how advances in telescopes and space probes have provided new evidence researching developments in the understanding of astronomy, such as the predictions of eclipses and the calculation of the length of the solar year by Al-Battani in the tenth century
		ACSIS.7.3.1.	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate (ACSIS129)
		ACSIS.7.3.1.1.	Understanding different types of graphical and physical representation and considering their advantages and disadvantages

		ACSHE.7.2.2.3.	Investigating how Aboriginal and Torres Strait Islander knowledge is being used to inform scientific decisions, for example care of waterways
The Water Cycle	7	ACSSU.7.3.2.	Some of Earth's resources are renewable, including water that cycles through the environment, but others are non- renewable (ACSSU116)
		ACSSU.7.3.2.4.	Considering the water cycle in terms of changes of state of water
		ACSSU.7.3.2.5.	Investigating factors that influence the water cycle in nature
		ACSSU.7.3.2.6.	Exploring how human management of water impacts on the water cycle
		ACSHE.7.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223)
		ACSHE.7.1.2.1.	Considering how water use and management relies on knowledge from different areas of science, and involves the application of technology
		ACSHE.7.2.1.	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE120)
		ACSHE.7.2.1.2.	Considering issues relating to the use and management of water within a community
		ACSHE.7.2.2.2.	Investigating how advances in science and technology have been applied to the treatment of water in industrial and household systems
		ACSHE.7.2.2.5.	Recognising that water management plays a role in areas such as farming, land management and gardening
		ACSHE.7.1.2.3.	Investigating how land management practices of Aboriginal and Torres Strait Islander peoples can help inform sustainable management of the environment

Module Name	Grade	Standard	Description
Classifying Rocks	8	ACSSU.8.3.1.	Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales (ACSSU153)
		ACSSU.8.3.1.1.	Representing the stages in the formation of igneous, metamorphic and sedimentary rocks, including indications of timescales involved
		ACSSU.8.3.1.2.	Identifying a range of common rock types using a key based on observable physical and chemical properties
		ACSSU.8.3.1.3.	Recognising that rocks are a collection of different minerals
		ACSSU.8.3.1.4.	Considering the role of forces and energy in the formation of different types of rocks and minerals
		ACSSU.8.3.1.5.	Recognising that some rocks and minerals, such as ores, provide valuable resources
		ACSHE.8.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)
		ACSHE.8.1.2.1.	Investigating how knowledge of the location and extraction of mineral resources relies on expertise from across the disciplines of science
		AC SIS.8.3.1.	Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data using digital technologies as appropriate (AC SIS144)
		AC SIS.8.4.2.	Use scientific knowledge and findings from investigations to evaluate claims based on evidence (AC SIS234)
		AC SIS.8.4.2.1.	Identifying the scientific evidence available to evaluate claims
		AC SIS.8.4.2.2.	Deciding whether or not to accept claims based on scientific evidence
		ACSHE.8.2.1.2.	Investigating strategies implemented to maintain part of the local environment, such as bushland, a beach, a lake, a desert or a shoreline
Forms and Uses of Energy	8	ACSSU.8.4.1.	Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155)

		ACSSU.8.4.1.3.	Investigating different forms of energy in terms of the effects they cause, such as gravitational potential causing objects to fall and heat energy transferred between materials that have a different temperature
		AC SIS.8.1.1.3.	Using information and knowledge from their own investigations and secondary sources to predict the expected results from an investigation
		AC SIS.8.3.1.1.	Describing measures of central tendency and identifying outliers for quantitative data
		AC SIS.8.4.1.2.	Discussing investigation methods with others to share ideas about the quality of the inquiry process
		AC SIS.8.4.2.	Use scientific knowledge and findings from investigations to evaluate claims based on evidence (AC SIS234)
		ACSSU.8.4.1.2.	Recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy
		AC SHE.8.2.1.4.	Investigating the development of vehicles over time, including the application of science to contemporary designs of solar-powered vehicles
		AC SHE.8.2.2.1.	Describing how technologies have been applied to modern farming techniques to improve yields and sustainability
Organization of Organisms	8	ACSSU.8.1.2.	Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)
		ACSSU.8.1.2.4.	Comparing similar systems in different organisms such as digestive systems in herbivores and carnivores, respiratory systems in fish and mammals
		AC SIS.8.1.1.	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (AC SIS139)
		AC SIS.8.1.1.3.	Using information and knowledge from their own investigations and secondary sources to predict the expected results from an investigation
		AC SIS.8.3.2.	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (AC SIS145)
		AC SIS.8.3.2.2.	Drawing conclusions based on a range of evidence including primary and secondary sources
		AC SHE.8.2.2.2.	Investigating how Aboriginal people recognise relationships in ecosystems by burning to promote new growth, attract animals and afford easier hunting and food gathering

Elements and Compounds	8	ACSSU.8.2.2.	Differences between elements, compounds and mixtures can be described at a particle level (ACSSU152)
		ACSSU.8.2.2.1.	Modelling the arrangement of particles in elements and compounds
		ACSSU.8.2.2.2.	Recognising that elements and simple compounds can be represented by symbols and formulas
		ACSSU.8.2.2.3.	Locating elements on the periodic table
		ACSHE.8.1.1.	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)
		ACSHE.8.1.1.3.	Considering how the idea of elements has developed over time as knowledge of the nature of matter has improved
		ACSIS.8.3.2.	Summarise data, from students' own investigations and secondary sources, and use scientific understanding to identify relationships and draw conclusions based on evidence (ACSIS145)
		ACSIS.8.3.2.1.	Constructing tables, graphs, keys and models to represent relationships and trends in collected data
Energy Transfer	8	ACSSU.8.4.1.	Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155)
		ACSSU.8.4.1.4.	Recognising that heat energy is often produced as a by- product of energy transfer, such as brakes on a car and light globes
		ACSSU.8.4.1.5.	Using flow diagrams to illustrate changes between different forms of energy
		ACSHE.8.2.1.	Solutions to contemporary issues that are found using science and technology, may impact on other areas of society and may involve ethical considerations (ACSHE135)
		ACSHE.8.2.1.3.	Investigating how energy efficiency can reduce energy consumption
		ACSHE.8.2.2.6.	Considering how engineers improve energy efficiency of a range of processes
		ACSIS.8.2.2.	Measure and control variables, select equipment appropriate to the task and collect data with accuracy (ACSIS141)
		ACSIS.8.2.2.1.	Using specialised equipment to increase the accuracy of measurement within an investigation
		ACSIS.8.2.2.2.	Identifying and explaining the differences between controlled, dependent and independent variables

		ACSSU.8.4.1.2.	Recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy
		ACSHE.8.2.2.4.	Investigating the role of science in the development of technology important to the economies and communities of the Asia-Pacific regions, for example car manufacture, earthquake prediction and electronic optics
Mitosis	8	ACSSU.8.1.1.	Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)
		ACSSU.8.1.1.6.	Describing mitosis as cell division for growth and repair
		ACSHE.8.2.2.	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)
		ACSHE.8.2.2.7.	Recognising the role of knowledge of cells and cell divisions in the area of disease treatment and control
		AC SIS.8.1.1.2.	Recognising that the solution of some questions and problems requires consideration of social, cultural, economic or moral aspects rather than or as well as scientific investigation
Structure of Matter and Heat	8	ACSSU.8.2.1.	Properties of the different states of matter can be explained in terms of the motion and arrangement of particles (ACSSU151)
		ACSSU.8.2.1.1.	Explaining why a model for the structure of matter is needed
		ACSSU.8.2.1.3.	Using the particle model to explain observed phenomena linking the energy of particles to temperature changes
		ACSHE.8.1.1.	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)
		ACSHE.8.1.1.2.	Discovering how people's understanding of the nature of matter has changed over time as evidence for particle theory has become available through developments in technology
		ACSHE.8.2.2.	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)
		AC SIS.8.3.1.2.	Explaining the strengths and limitations of representations such as physical models, diagrams and simulations in terms of the attributes of systems included or not included

Chemical Properties and Interactions	8	ACSSU.8.2.3.	Chemical change involves substances reacting to form new substances (ACSSU225)
		ACSSU.8.2.3.1.	Identifying the differences between chemical and physical changes
		ACSSU.8.2.3.2.	Identifying evidence that a chemical change has taken place
		ACSSU.8.2.3.3.	Investigating simple reactions such as combining elements to make a compound
		ACSSU.8.2.3.4.	Recognising that the chemical properties of a substance, for example its flammability and ability to corrode, will affect its use
		ACSIS.8.2.1.	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (ACSIS140)
		ACSIS.8.2.1.1.	Working collaboratively to decide how to best approach an investigation
		ACSIS.8.2.1.3.	Taking into consideration all aspects of fair testing, available equipment and safe investigation when planning investigations
		ACSIS.8.2.2.	Measure and control variables, select equipment appropriate to the task and collect data with accuracy (ACSIS141)
		ACSIS.8.2.2.1.	Using specialised equipment to increase the accuracy of measurement within an investigation
		ACSIS.8.2.2.2.	Identifying and explaining the differences between controlled, dependent and independent variables
		ACSIS.8.4.1.	Reflect on scientific investigations including evaluating the quality of the data collected, and identifying improvements (ACSIS146)
		ACSIS.8.4.1.1.	Suggesting improvements to investigation methods that would improve the accuracy of the data recorded
		ACSIS.8.4.2.3.	Identifying where science has been used to make claims relating to products and practices
Changes in Energy on the Molecular Level	8	ACSSU.8.2.1.	Properties of the different states of matter can be explained in terms of the motion and arrangement of particles (ACSSU151)
		ACSSU.8.2.1.2.	Modelling the arrangement of particles in solids, liquids and gases

		ACSHE.8.2.2.8.	Investigating how scientists have created new materials such as synthetic fibres, heat-resistant plastics and pharmaceuticals
		AC SIS.8.1.1.3.	Using information and knowledge from their own investigations and secondary sources to predict the expected results from an investigation
		AC SIS.8.2.1.1.	Working collaboratively to decide how to best approach an investigation
		AC SIS.8.2.2.1.	Using specialised equipment to increase the accuracy of measurement within an investigation
		AC SIS.8.3.1.2.	Explaining the strengths and limitations of representations such as physical models, diagrams and simulations in terms of the attributes of systems included or not included
		AC SIS.8.4.2.1.	Identifying the scientific evidence available to evaluate claims
Kinetic Energy	8	ACSSU.8.4.1.	Energy appears in different forms, including movement (kinetic energy), heat and potential energy, and energy transformations and transfers cause change within systems (ACSSU155)
		ACSSU.8.4.1.1.	Recognising that kinetic energy is the energy possessed by moving bodies
		AC SIS.8.2.1.	Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (AC SIS140)
		AC SIS.8.5.1.	Communicate ideas, findings and evidence based solutions to problems using scientific language, and representations, using digital technologies as appropriate (AC SIS148)
		AC SIS.8.5.1.1.	Using digital technologies to construct a range of text types to present science ideas
		AC SIS.8.5.1.2.	Selecting and using appropriate language and representations to communicate science ideas within a specified text type and for a specified audience
		ACSSU.8.4.1.2.	Recognising that potential energy is stored energy, such as gravitational, chemical and elastic energy
What Are Cells?	8	ACSSU.8.1.1.	Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)
		ACSSU.8.1.1.1.	Examining a variety of cells using a light microscope, by digital technology or by viewing a simulation
		ACSSU.8.1.1.2.	Distinguishing plant cells from animal or fungal cells

		ACSHE.8.1.1.	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)
		ACSHE.8.1.1.1.	Investigating developments in the understanding of cells and how this knowledge has impacted on areas such as health and medicine
		ACSHE.8.1.1.4.	Investigating the development of the microscope and the impact it has had on the understanding of cell functions and division
Anatomy of a Cell	8	ACSSU.8.1.1.	Cells are the basic units of living things; they have specialised structures and functions (ACSSU149)
		ACSSU.8.1.1.3.	Identifying structures within cells and describing their function
		ACSSU.8.1.1.4.	Recognising that some organisms consist of a single cell
		ACSSU.8.1.1.5.	Recognising that cells reproduce via cell division
		ACSHE.8.1.1.	Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE134)
		ACSHE.8.1.1.1.	Investigating developments in the understanding of cells and how this knowledge has impacted on areas such as health and medicine
		ACSHE.8.1.1.4.	Investigating the development of the microscope and the impact it has had on the understanding of cell functions and division
Bodies and Systems	8	ACSSU.8.1.2.	Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)
		ACSSU.8.1.2.1.	Identifying the organs and overall function of a system of a multicellular organism in supporting the life processes
		ACSSU.8.1.2.2.	Describing the structure of each organ in a system and relating its function to the overall function of the system
		ACSSU.8.1.2.3.	Examining the specialised cells and tissues involved in structure and function of particular organs
		ACSHE.8.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)
		ACSHE.8.1.2.2.	Considering how advances in technology, combined with scientific understanding of the functioning of body systems, has enabled medical science to replace or repair organs

		ACSHE.8.2.1.5.	Discussing ethical issues that arise from organ transplantation
		AC SIS.8.1.1.	Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (AC SIS139)
		AC SIS.8.1.1.1.	Considering whether investigation using available resources is possible when identifying questions or problems to investigate
		AC SIS.8.2.1.2.	Identifying any ethical considerations that may apply to the investigation
Reproduction and Variation	8	ACSSU.8.1.2.	Multi-cellular organisms contain systems of organs carrying out specialised functions that enable them to survive and reproduce (ACSSU150)
		ACSSU.8.1.2.5.	Distinguishing between asexual and sexual reproduction
		ACSSU.8.1.2.6.	Comparing reproductive systems of organisms
		ACSHE.8.1.2.	Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE226)
		ACSHE.8.1.2.3.	Researching the use of reproductive technologies and how developments in this field rely on scientific knowledge from different areas of science
		ACSHE.8.2.2.	People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE136)
		ACSHE.8.2.2.3.	Describing the impact of plant cloning techniques (asexual production) in agriculture such as horticulture, fruit production and vineyards
		ACSHE.8.2.2.5.	Recognising the role of knowledge of the environment and ecosystems in a number of occupations

Module Name	Grade	Standard	Description
Chemical Reactions	9	ACSSU.9.2.3.	Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)
		ACSSU.9.2.3.2.	Investigating a range of different reactions to classify them as exothermic or endothermic
		ACSSU.9.2.3.3.	Recognising the role of oxygen in combustion reactions and comparing combustion with other oxidation reactions
		ACSSU.9.2.3.4.	Comparing respiration and photosynthesis and their role in biological processes
		ACSSU.9.2.3.5.	Describing how the products of combustion reactions affect the environment
		ACSHE.9.2.1.9.	Recognising aspects of science, engineering and technology within careers such as medicine, medical technology, telecommunications, biomechanical engineering, pharmacy and physiology
		ACSHE.9.2.2.3.	Considering how choices related to the use of fuels are influenced by environmental considerations
		AC SIS.9.2.1.	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (AC SIS165)
		AC SIS.9.2.1.1.	Explaining the choice of variables to be controlled, changed and measured in an investigation
		AC SIS.9.3.1.	Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (AC SIS169)
		AC SIS.9.3.1.1.	Using spreadsheets to present data in tables and graphical forms and to carry out mathematical analyses on data
		ACSHE.9.2.2.	Values and needs of contemporary society can influence the focus of scientific research (ACSHE228)
Acids and Bases	9	ACSSU.9.2.3.	Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)
		ACSSU.9.2.3.1.	Investigating reactions of acids with metals, bases, and carbonates
		AC SIS.9.1.1.2.	Evaluating information from secondary sources as part of the research process

		AC SIS.9.1.1.3.	Revising and refining research questions to target specific information and data collection or finding a solution to the specific problem identified
		AC SIS.9.2.1.	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (AC SIS165)
		AC SIS.9.2.1.2.	Identifying the potential hazards of chemicals or biological materials used in experimental investigations
		AC SIS.9.4.1.	Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (AC SIS171)
		AC SIS.9.4.1.1.	Identifying gaps or weaknesses in conclusions (their own or those of others)
Transfer of Heat and Electricity	9	AC SSU.9.4.1.	Energy transfer through different mediums can be explained using wave and particle models (AC SSU182)
		AC SSU.9.4.1.3.	Investigating the transfer of heat in terms of convection, conduction and radiation, and identifying situations in which each occurs
		AC SSU.9.4.1.5.	Investigating factors that affect the transfer of energy through an electric circuit
		AC SIS.9.2.1.	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (AC SIS165)
		AC SIS.9.2.1.5.	Combining research using primary and secondary sources with students' own experimental investigation
		AC SIS.9.2.2.	Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately (AC SIS166)
		AC SIS.9.2.2.1.	Using probes and data loggers to record information
Systems of the Human Body	9	AC SSU.9.1.1.	Multi-cellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment (AC SSU175)
		AC SSU.9.1.1.1.	Describing how the requirements for life (for example oxygen, nutrients, water and removal of waste) are provided through the coordinated function of body systems such as the respiratory, circulatory, digestive, nervous and excretory systems

		ACSSU.9.1.1.2.	Explaining how body systems work together to maintain a functioning body using models, flow diagrams or simulations
		ACSSU.9.1.1.3.	Identifying responses using nervous and endocrine systems
		ACSSU.9.1.1.4.	Investigating the response of the body to changes as a result of the presence of micro-organisms
		ACSSU.9.1.1.5.	Investigating the effects on humans of exposure to electromagnetic radiations such as X-rays and microwaves
		ACSHE.9.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)
		ACSHE.9.1.1.3.	Considering how ideas about disease transmission have changed from medieval time to the present as knowledge has developed
		ACSHE.9.1.2.3.	Considering how the development of imaging technologies have improved our understanding of the functions and interactions of body systems
		ACSHE.9.2.1.	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE160)
		ACSHE.9.2.1.1.	Investigating how technologies using electromagnetic radiation are used in medicine, such as in the detection and treatment of cancer
		ACSHE.9.2.1.2.	Using knowledge of science to test claims made in advertising or expressed in the media
		ACSHE.9.2.1.3.	Investigating the use of nanotechnology in medicine, such as the delivery of pharmaceuticals
		ACSHE.9.2.1.6.	Considering the impact of technological advances developed in Australia, such as the cochlear implant and bionic eye
		ACSHE.9.2.2.4.	Investigating the work of Australian scientists such as Fiona Wood and Marie Stoner on artificial skin
Modeling Conservation of Matter	9	ACSSU.9.2.2.	Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed (ACSSU178)
		ACSSU.9.2.2.1.	Identifying reactants and products in chemical reactions
		ACSSU.9.2.2.2.	Modelling chemical reactions in terms of rearrangement of atoms

		ACSSU.9.2.2.3.	Describing observed reactions using word equations
		ACSSU.9.2.2.4.	Considering the role of energy in chemical reactions
		ACSSU.9.2.2.5.	Recognising that the conservation of mass in a chemical reaction can be demonstrated by simple chemical equations
		AC SIS.9.1.1.	Formulate questions or hypotheses that can be investigated scientifically (AC SIS164)
		AC SIS.9.1.1.1.	Using Internet research to identify problems that can be investigated
		AC SIS.9.1.1.4.	Developing ideas from students own or others' investigations and experiences to investigate further
		AC SIS.9.2.2.2.	Applying specific skills for the use of scientific instruments
		AC SIS.9.3.2.	Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (AC SIS170)
		AC SIS.9.3.2.1.	Comparing conclusions with earlier predictions and reviewing scientific understanding where appropriate
		AC SIS.9.3.2.2.	Suggesting more than one possible explanation of the data presented
Matter and Energy in Food Webs	9	ACSSU.9.1.2.	Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)
		ACSSU.9.1.2.1.	Exploring interactions between organisms such as predator/prey, parasites, competitors, pollinators and disease
		ACSSU.9.1.2.3.	Considering how energy flows into and out of an ecosystem via the pathways of food webs, and how it must be replaced to maintain the sustainability of the system
		ACSHE.9.2.1.7.	Considering the impacts of human activity on an ecosystem from a range of different perspectives
		AC SIS.9.1.1.2.	Evaluating information from secondary sources as part of the research process
		AC SIS.9.4.1.2.	Identifying alternative explanations that are also consistent with the evidence
		AC SIS.9.4.2.1.	Discussing what is meant by 'validity' and how we can evaluate the validity of information in secondary sources
		ACSHE.9.2.1.5.	Evaluating claims relating to products such as electrical devices, fuels, indigestion tablets

Atomic Structure and Bonding	9	ACSSU.9.2.1.	All matter is made of atoms that are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms (ACSSU177)
		ACSSU.9.2.1.1.	Describing and modelling the structure of atoms in terms of the nucleus, protons, neutrons and electrons
		ACSSU.9.2.1.2.	Comparing the mass and charge of protons, neutrons and electrons
		ACSSU.9.2.1.3.	Describing in simple terms how alpha and beta particles and gamma radiation are released from unstable atoms
		ACSHE.9.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)
		ACSHE.9.1.1.1.	Investigating the historical development of models of the structure of the atom
		ACSHE.9.1.1.4.	Investigating the work of scientists such as Ernest Rutherford, Pierre Curie and Marie Curie on radioactivity and subatomic particles
		ACSHE.9.1.2.	Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries (ACSHE158)
		ACSHE.9.1.2.1.	Considering how common properties of electromagnetic radiation relate to its uses, such as radar, medicine, mobile phone communications and microwave cooking
		AC SIS.9.2.1.4.	Using modelling and simulations, including using digital technology to investigate situations and events
The Dynamic Nature of Ecosystems	9	ACSSU.9.1.2.	Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems (ACSSU176)
		ACSSU.9.1.2.2.	Examining factors that affect population sizes such as seasonal changes, destruction of habitats, introduced species
		ACSHE.9.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)
		ACSHE.9.1.1.5.	Investigating how models can be used to predict the changes in populations due to environmental changes, such as the impact of flooding or fire on rabbit or kangaroo populations

		ACSHE.9.2.1.7.	Considering the impacts of human activity on an ecosystem from a range of different perspectives
		ACSHE.9.2.2.2.	Investigating how scientific and technological advances have been applied to minimising pollution from industry
		ACSSU.9.1.2.4.	Investigating how ecosystems change as a result of events such as bushfires, drought and flooding
		AC SIS.9.2.1.3.	Ensuring that any investigation involving or impacting on animals is justified, humane and considerate of each animal's needs
Geologic History of Earth	9	ACSSU.9.3.1.	The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)
		ACSSU.9.3.1.5.	Relating the extreme age and stability of a large part of the Australian continent to its plate tectonic history
		ACSHE.9.1.2.2.	Investigating technologies involved in the mapping of continental movement
		AC SIS.9.2.1.6.	Considering how investigation methods and equipment may influence the reliability of collected data
		AC SIS.9.2.1.1.	Explaining the choice of variables to be controlled, changed and measured in an investigation
		AC SIS.9.3.1.2.	Describing sample properties (such as mean, median, range, large gaps visible on a graph) to predict characteristics of the larger population
		AC SIS.9.3.1.3.	Designing and constructing appropriate graphs to represent data and analysing graphs for trends and patterns
		ACSHE.9.2.1.4.	Describing how science is used in the media to explain a natural event or justify actions
Seafloor Spreading	9	ACSSU.9.3.1.	The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)
		ACSSU.9.3.1.1.	Recognising the major plates on a world map
		ACSSU.9.3.1.2.	Modelling sea-floor spreading
		ACSSU.9.3.1.3.	Relating the occurrence of earthquakes and volcanic activity to constructive and destructive plate boundaries
		ACSSU.9.3.1.4.	Considering the role of heat energy and convection currents in the movement of tectonic plates
		ACSHE.9.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE157)

		ACSHE.9.1.1.2.	Investigating how the theory of plate tectonics developed, based on evidence from sea-floor spreading and occurrence of earthquakes and volcanic activity
		ACSHE.9.1.2.2.	Investigating technologies involved in the mapping of continental movement
		ACSHE.9.2.2.6.	Investigating contemporary science issues related to living in a Pacific country located near plate boundaries, for example Japan, Indonesia, New Zealand
		AC SIS.9.4.2.2.	Researching the methods used by scientists in studies reported in the media
		AC SIS.9.4.2.3.	Describing how scientific arguments are used to make decisions regarding personal and community issues
Chemical Equilibrium	9	ACSSU.9.2.3.	Chemical reactions, including combustion and the reactions of acids, are important in both non-living and living systems and involve energy transfer (ACSSU179)
		ACSSU.9.2.3.2.	Investigating a range of different reactions to classify them as exothermic or endothermic
		ACSSU.9.2.3.3.	Recognising the role of oxygen in combustion reactions and comparing combustion with other oxidation reactions
		ACSSU.9.2.3.4.	Comparing respiration and photosynthesis and their role in biological processes
		ACSSU.9.2.3.5.	Describing how the products of combustion reactions affect the environment
		ACSHE.9.2.1.9.	Recognising aspects of science, engineering and technology within careers such as medicine, medical technology, telecommunications, biomechanical engineering, pharmacy and physiology
		ACSHE.9.2.2.3.	Considering how choices related to the use of fuels are influenced by environmental considerations
		AC SIS.9.2.1.	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (AC SIS165)
		AC SIS.9.2.1.1.	Explaining the choice of variables to be controlled, changed and measured in an investigation
		AC SIS.9.3.1.	Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (AC SIS169)

		AC SIS.9.3.1.1.	Using spreadsheets to present data in tables and graphical forms and to carry out mathematical analyses on data
		AC SHE.9.2.2.	Values and needs of contemporary society can influence the focus of scientific research (AC SHE228)
Properties of Waves	9	AC SSU.9.4.1.	Energy transfer through different mediums can be explained using wave and particle models (AC SSU182)
		AC SSU.9.4.1.1.	Exploring how and why the movement of energy varies according to the medium through which it is transferred
		AC SSU.9.4.1.6.	Exploring the properties of waves, and situations where energy is transferred in the form of waves, such as sound and light
		AC SHE.9.2.2.5.	Considering safe sound levels for humans and implications in the workplace and leisure activities
		AC SIS.9.4.2.	Critically analyse the validity of information in primary and secondary sources and evaluate the approaches used to solve problems (AC SIS172)
		AC SHE.9.2.1.8.	Considering how communication methods are influenced by new mobile technologies that rely on electromagnetic radiation
		AC SHE.9.2.2.1.	Considering how technologies have been developed to meet the increasing needs for mobile communication
Wave Model vs. Particle Model	9	AC SSU.9.4.1.	Energy transfer through different mediums can be explained using wave and particle models (AC SSU182)
		AC SSU.9.4.1.2.	Discussing the wave and particle models and how they are useful for understanding aspects of phenomena
		AC SSU.9.4.1.4.	Understanding the processes underlying convection and conduction in terms of the particle model
		AC SHE.9.2.1.	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (AC SHE160)
		AC SHE.9.2.1.9.	Recognising aspects of science, engineering and technology within careers such as medicine, medical technology, telecommunications, biomechanical engineering, pharmacy and physiology

		ACSIS.9.5.1.	Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (ACSIS174)
		ACSIS.9.5.1.1.	Presenting results and ideas using formal experimental reports, oral presentations, slide shows, poster presentations and contributing to group discussions
		ACSIS.9.5.1.2.	Using secondary sources as well as students' own findings to help explain a scientific concept
		ACSIS.9.5.1.3.	Using the Internet to facilitate collaboration in joint projects and discussions

Module Name	Grade	Standard	Description
Energy Transfer in Motion	10	ACSSU.10.4.1.	Energy conservation in a system can be explained by describing energy transfers and transformations (ACSSU190)
		ACSSU.10.4.1.1.	Recognising that the Law of Conservation of Energy explains that total energy is maintained in energy transfer and transformation
		ACSSU.10.4.1.2.	Recognising that in energy transfer and transformation, a variety of processes can occur, so that the usable energy is reduced and the system is not 100% efficient
		ACSSU.10.4.1.3.	Comparing energy changes in interactions such as car crashes, pendulums, lifting and dropping
		ACSSU.10.4.1.4.	Using models to describe how energy is transferred and transformed within systems
		ACSHE.10.2.1.9.	Recognising that scientific developments in areas such as sustainable transport and low-emissions electrical generation require people working in a range of fields of science, engineering and technology
		ACSIS.10.1.1.3.	Formulating questions that can be investigated within the scope of the classroom or field with available resources
		ACSIS.10.1.1.4.	Developing ideas from students own or others' investigations and experiences to investigate further
		ACSIS.10.2.1.3.	Deciding how much data are needed to produce reliable measurements
		ACSIS.10.2.1.4.	Considering possible confounding variables or effects and ensuring these are controlled
Newton's Third Law of Motion	10	ACSSU.10.4.2.	The motion of objects can be described and predicted using the laws of physics (ACSSU229)
		ACSSU.10.4.2.4.	Recognising and applying Newton's Third Law to describe the effect of interactions between two objects
		ACSHE.10.2.1.5.	Considering how the computing requirements in many areas of modern science depend on people working in the area of information technology
		ACSIS.10.2.1.	Plan, select and use appropriate investigation types, including field work and laboratory experimentation, to collect reliable data; assess risk and address ethical issues associated with these methods (ACSIS199)

		ACSIS.10.2.1.1.	Combining research using primary and secondary sources with a student's own experimental investigation
		ACSIS.10.4.1.2.	Distinguishing between random and systematic errors and how these can affect investigation results
Inheritance	10	ACSSU.10.1.1.	Transmission of heritable characteristics from one generation to the next involves DNA and genes (ACSSU184)
		ACSSU.10.1.1.4.	Representing patterns of inheritance of a simple dominant/recessive characteristic through generations of a family
		ACSSU.10.1.1.5.	Predicting simple ratios of offspring genotypes and phenotypes in crosses involving dominant/recessive gene pairs or in genes that are sex-linked
		ACSHE.10.1.1.3.	Investigating the history and impact of developments in genetic knowledge
		ACSHE.10.2.1.7.	Investigating the applications of gene technologies such as gene therapy and genetic engineering
		ACSIS.10.5.1.3.	Presenting results and ideas using formal experimental reports, oral presentations, slide shows, poster presentations and contributing to group discussions
		ACSIS.10.5.1.4.	Using a range of representations, including mathematical and symbolic forms, to communicate science ideas
Artificial Selection	10	ACSSU.10.1.2.	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)
		ACSSU.10.1.2.3.	Investigating changes caused by natural selection in a particular population as a result of a specified selection pressure such as artificial selection in breeding for desired characteristics
		ACSHE.10.2.2.4.	Recognising that financial backing from governments or commercial organisations is required for scientific developments and that this can determine what research is carried out
		ACSHE.10.2.2.5.	Considering the use of genetic testing for decisions such as genetic counselling, embryo selection, identification of carriers of genetic mutations and the use of this information for personal use or by organisation such as insurance companies or medical facilities
		ACSIS.10.5.1.2.	Constructing evidence based arguments and engaging in debate about scientific ideas

Periodic Table and Trends	10	ACSSU.10.2.1.	The atomic structure and properties of elements are used to organise them in the Periodic Table (ACSSU186)
		ACSSU.10.2.1.1.	Recognising that elements in the same group of the periodic table have similar properties
		ACSSU.10.2.1.2.	Describing the structure of atoms in terms of electron shells
		ACSSU.10.2.1.3.	Explaining how the electronic structure of an atom determines its position in the periodic table and its properties
		ACSSU.10.2.1.4.	Investigating the chemical activity of metals
		ACSHE.10.1.1.4.	Investigating the development of the periodic table and how this was dependent on experimental evidence at the time
		ACSHE.10.2.1.2.	Predicting future applications of aspects of nanotechnology on people's lives
		ACSIS.10.3.1.2.	Describing sample properties (such as mean, median, range, large gaps visible on a graph) to predict characteristics of the larger population, acknowledging uncertainties and the effects of outliers
Reaction Rates	10	ACSSU.10.2.2.	Different types of chemical reactions are used to produce a range of products and can occur at different rates (ACSSU187)
		ACSSU.10.2.2.1.	Investigating how chemistry can be used to produce a range of useful substances such as fuels, metals and pharmaceuticals
		ACSSU.10.2.2.2.	Predicting the products of different types of simple chemical reactions
		ACSSU.10.2.2.3.	Using word or symbol equations to represent chemical reactions
		ACSSU.10.2.2.4.	Investigating the effect of a range of factors, such as temperature and catalysts, on the rate of chemical reactions
		ACSIS.10.1.1.	Formulate questions or hypotheses that can be investigated scientifically (ACSIS198)
		ACSIS.10.1.1.1.	Developing hypotheses based on well-developed models and theories
		ACSIS.10.2.1.5.	Identifying the potential hazards of chemicals or biological materials used in experimental investigations

Newton's Second Law of Motion	10	ACSSU.10.4.2.	The motion of objects can be described and predicted using the laws of physics (ACSSU229)
		ACSSU.10.4.2.1.	Gathering data to analyse everyday motions produced by forces, such as measurements of distance and time, speed, force, mass and acceleration
		ACSSU.10.4.2.2.	Recognising that a stationary object, or a moving object with constant motion, has balanced forces acting on it
		ACSSU.10.4.2.3.	Using Newton's Second Law to predict how a force affects the movement of an object
		ACSHE.10.2.2.	Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)
		ACSHE.10.2.2.2.	Considering innovative energy transfer devices, including those used in transport and communication
		AC SIS.10.2.2.1.	Selecting and using probes and data loggers to record information
		AC SIS.10.2.2.2.	Applying specific skills for the use of scientific instruments
		AC SIS.10.2.2.3.	Identifying where human error can influence the reliability of data
		AC SIS.10.2.2.	Select and use appropriate equipment, including digital technologies, to collect and record data systematically and accurately (AC SIS200)
Variation of Traits	10	ACSSU.10.1.1.	Transmission of heritable characteristics from one generation to the next involves DNA and genes (ACSSU184)
		ACSSU.10.1.1.1.	Describing the role of DNA as the blueprint for controlling the characteristics of organisms
		ACSSU.10.1.1.2.	Using models and diagrams to represent the relationship between DNA, genes and chromosomes
		ACSSU.10.1.1.3.	Recognising that genetic information passed on to offspring is from both parents by meiosis and fertilisation
		ACSSU.10.1.1.6.	Describing mutations as changes in DNA or chromosomes and outlining the factors that contribute to causing mutations
		ACSHE.10.1.1.2.	Investigating the development of the Watson and Crick double helix model for the structure of DNA
		ACSHE.10.1.2.	Advances in scientific understanding often rely on technological advances and are often linked to scientific discoveries (ACSHE192)

		ACSHE.10.1.2.1.	Recognising that the development of fast computers has made possible the analysis of DNA sequencing, radio astronomy signals and other data
		AC SIS.10.4.2.1.	Researching the methods used by scientists in studies reported in the media
		AC SIS.10.4.2.2.	Judging the validity of science-related media reports and how these reports might be interpreted by the public
		AC SIS.10.4.2.3.	Describing how scientific arguments, as well as ethical, economic and social arguments, are used to make decisions regarding personal and community issues
		AC SIS.10.4.2.	Critically analyse the validity of information in primary and secondary sources, and evaluate the approaches used to solve problems (AC SIS206)
Evidence of Common Ancestry	10	ACSSU.10.1.2.	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)
		ACSSU.10.1.2.2.	Describing biodiversity as a function of evolution
		ACSSU.10.1.2.5.	Evaluating and interpreting evidence for evolution, including the fossil record, chemical and anatomical similarities, and geographical distribution of species
		AC SIS.10.1.1.2.	Using Internet research to identify problems that can be investigated
		AC SIS.10.5.1.	Communicate scientific ideas and information for a particular purpose, including constructing evidence-based arguments and using appropriate scientific language, conventions and representations (AC SIS208)
		AC SIS.10.5.1.1.	Using the Internet to facilitate collaboration in joint projects and discussions
Natural Selection	10	ACSSU.10.1.2.	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)
		ACSSU.10.1.2.1.	Outlining processes involved in natural selection including variation, isolation and selection
		ACSSU.10.1.2.4.	Relating genetic characteristics to survival and reproductive rates
		ACSHE.10.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE191)

		ACSHE.10.1.1.1.	Considering the role of different sources of evidence including biochemical, anatomical and fossil evidence for evolution by natural selection
The Big Bang Theory	10	ACSSU.10.3.1.	The universe contains features including galaxies, stars and solar systems, and the Big Bang theory can be used to explain the origin of the universe (ACSSU188)
		ACSSU.10.3.1.1.	Identifying the evidence supporting the Big Bang theory, such as Edwin Hubble's observations and the detection of microwave radiation
		ACSSU.10.3.1.2.	Recognising that the age of the universe can be derived using knowledge of the Big Bang theory
		ACSSU.10.3.1.3.	Describing how the evolution of the universe, including the formation of galaxies and stars, has continued since the Big Bang
		ACSHE.10.2.1.3.	Recognising that the study of the universe and the exploration of space involve teams of specialists from the different branches of science, engineering and technology
		ACSIS.10.1.1.5.	Evaluating information from secondary sources as part of the research process
		ACSIS.10.3.2.	Use knowledge of scientific concepts to draw conclusions that are consistent with evidence (ACSIS204)
		ACSIS.10.3.2.1.	Using primary or secondary scientific evidence to support or refute a conclusion
		ACSIS.10.3.2.2.	Constructing a scientific argument showing how their evidence supports their claim
		ACSIS.10.4.1.3.	Identifying alternative explanations that are also consistent with the evidence
		ACSHE.10.1.1.6.	Recognising that Australian scientists such as Brian Schmidt and Penny Sackett are involved in the exploration and study of the universe
Rising Carbon Dioxide Concentrations	10	ACSSU.10.3.2.	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)
		ACSSU.10.3.2.3.	Explaining the causes and effects of the greenhouse effect
		ACSHE.10.1.2.2.	Considering how computer modelling has improved knowledge and predictability of phenomena such as climate change and atmospheric pollution
		ACSHE.10.2.1.8.	Evaluating claims relating to environmental footprints

		ACSHE.10.2.2.	Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)
		ACSHE.10.2.2.1.	Investigating technologies associated with the reduction of carbon pollution, such as carbon capture
		ACSHE.10.2.2.3.	Investigating the use and control of CFCs based on scientific studies of atmospheric ozone
Human Activities and Natural Systems	10	ACSSU.10.3.2.	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)
		ACSSU.10.3.2.1.	Investigating how human activity affects global systems
		ACSHE.10.2.1.	People use scientific knowledge to evaluate whether they accept claims, explanations or predictions, and advances in science can affect people's lives, including generating new career opportunities (ACSHE194)
		ACSHE.10.2.1.1.	Describing how science is used in the media to explain a natural event or justify people's actions
		ACSHE.10.2.2.	Values and needs of contemporary society can influence the focus of scientific research (ACSHE230)
		ACSIS.10.4.1.	Evaluate conclusions, including identifying sources of uncertainty and possible alternative explanations, and describe specific ways to improve the quality of the data (ACSIS205)
		ACSIS.10.4.1.1.	Evaluating the strength of a conclusion that can be inferred from a particular data set
Changes in Climate	10	ACSSU.10.3.2.	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)
		ACSSU.10.3.2.4.	Investigating the effect of climate change on sea levels and biodiversity
		ACSSU.10.3.2.6.	Investigating currently occurring changes to permafrost and sea ice and the impacts of these changes
		ACSSU.10.3.2.7.	Examining the factors that drive the deep ocean currents, their role in regulating global climate, and their effects on marine life
		ACSHE.10.1.1.5.	Considering the role of science in identifying and explaining the causes of climate change
		ACSHE.10.1.2.2.	Considering how computer modelling has improved knowledge and predictability of phenomena such as climate change and atmospheric pollution

		ACSHE.10.2.1.4.	Using knowledge of science to test claims made in advertising
		ACSHE.10.2.1.6.	Considering the scientific knowledge used in discussions relating to climate change
Natural Selection and Populations	10	ACSSU.10.1.2.	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence (ACSSU185)
		ACSSU.10.1.2.1.	Outlining processes involved in natural selection including variation, isolation and selection
		ACSSU.10.1.2.4.	Relating genetic characteristics to survival and reproductive rates
		ACSHE.10.1.1.	Scientific understanding, including models and theories, is contestable and is refined over time through a process of review by the scientific community (ACSHE191)
		ACSHE.10.1.1.1.	Considering the role of different sources of evidence including biochemical, anatomical and fossil evidence for evolution by natural selection
Ocean, Atmosphere, and Biosphere Interactions	10	ACSSU.10.3.2.	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere (ACSSU189)
		ACSSU.10.3.2.2.	Modelling a cycle, such as the water, carbon, nitrogen or phosphorus cycle within the biosphere
		ACSSU.10.3.2.5.	Considering the long-term effects of loss of biodiversity
		ACSHE.10.2.1.8.	Evaluating claims relating to environmental footprints
		ACSIS.10.2.1.2.	Using modelling and simulations, including using digital technology, to investigate situations and events
		ACSIS.10.3.1.	Analyse patterns and trends in data, including describing relationships between variables and identifying inconsistencies (ACSIS203)
		ACSIS.10.3.1.1.	Using spreadsheets to present data in tables and graphical forms and to carry out mathematical analyses on data
		ACSIS.10.3.1.3.	Exploring relationships between variables using spreadsheets, databases, tables, charts, graphs and statistics
		ACSHE.10.1.2.3.	Researching examples of major international scientific projects, for example the Large Hadron Collider and the International Space Station

		ACSHE.10.1.2.4.	Considering how information technology can be applied to different areas of science such as bioinformatics and the Square Kilometre Array
		ACSIS.10.2.1.6.	Identifying safety risks and impacts on animal welfare and ensuring these are effectively managed within the investigation

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