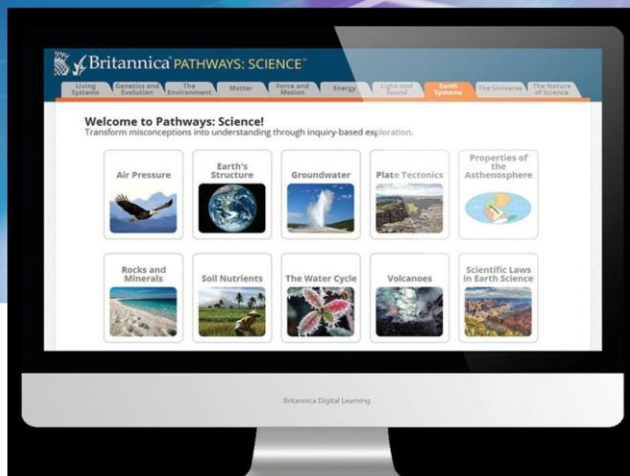


Lesson Correlation to the Australian Curriculum: Science



Learning area content and achievement standards
Years 6-10

Introduction

Britannica Digital Learning has prepared this alignment to illustrate how Britannica Pathways: Science, its online supplemental curriculum resource for middle school, supports the Australian Curriculum: Science 6-10. Using common misconceptions as the context for building science knowledge and understanding, Britannica Pathways: Science assists educators in making strong cross-curricular connections to help students meet curriculum standards and engage in meaningful learning opportunities in reading, research for evidence, vocabulary development, critical thinking and writing.

Each page of this document presents the following information:

Science Understanding: Year 7			
Substrand	Code	Content description	Pathway lessons
Biological sciences	ACSSU111	There are differences within and between groups of organisms; classification helps organise this diversity	<ul style="list-style-type: none"> Plant Diversity Animal Diversity Cellular Respiration
Biological sciences	ACSSU112	Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions	<ul style="list-style-type: none"> Sources of Plant Mass Trophic Levels Food Chains and Food Webs Matter and Decomposition Ecological Succession Soil Nutrients Photosynthesis and Food Production Photosynthesis Global Warming and the Greenhouse Effect
Chemical sciences	ACSSU113	Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques	<ul style="list-style-type: none"> The Nature of Air Solutions
Earth and space sciences	ACSSU115	Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon	<ul style="list-style-type: none"> Daytime and Nighttime Stars Earth's Seasons The Far Side of the Moon The Distance of Stars from Earth Light from Planets and Moons Solar and Lunar Eclipses The Apparent Motion of Stars The Moon and Its Phases Relative Sizes of Objects in Space Wind
Earth and space sciences	ACSSU116	Some of Earth's resources are renewable, but others are nonrenewable	<ul style="list-style-type: none"> Energy Resources Soil Nutrients Weathering and Erosion

A description of the content to be taught for that strand at that particular Year level

A list of the Pathways Science lessons that supports students to achieve this outcome

For additional information about how Britannica Pathways: Science supports the Australian Curriculum: Science 6-10, please contact

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Science Understanding: Year 6

Substrand	Code	Content description	Britannica Pathways: Science lessons
Biological sciences	ACSSU094	The growth and survival of living things are affected by the physical conditions of their environment	<ul style="list-style-type: none"> Cellular Respiration Photosynthesis and Food Production Photosynthesis Global Warming and the Greenhouse Effect Plant Stems
Chemical sciences	ACSSU095	Changes to materials can be reversible, such as melting, freezing, evaporating; or irreversible, such as burning and rusting	<ul style="list-style-type: none"> Water Molecules Properties of Matter
Earth and space sciences	ACSSU096	Sudden geological changes or extreme weather conditions can affect Earth's surface	<ul style="list-style-type: none"> Volcanoes Ocean Currents and Weather Weather and Climate Causes of Climate Weathering and Erosion Lessons from Fossil Discoveries Air Pressure Weathering Processes Wind
Physical sciences	ACSSU097	Electrical circuits provide a means of transferring and transforming electricity	<ul style="list-style-type: none"> Series Circuits Magnets and Electricity
Physical sciences	ACSSU219	Energy from a variety of sources can be used to generate electricity	<ul style="list-style-type: none"> Electric Forces

Science as a Human Endeavour: Year 6

Substrand	Code	Content description	Britannica Pathways: Science lessons
Nature and development of science	ACSHE098	Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena	<ul style="list-style-type: none"> Volcanoes Lessons from Fossil Discoveries Ocean Currents and Weather Weather and Climate Causes of Climate Wind Maps and Globes
Use and influence of	ACSHE220	Scientific knowledge is used to inform personal and	<ul style="list-style-type: none"> Global Warming and the Greenhouse Effect Volcanoes

science		community decisions	<ul style="list-style-type: none"> • Weather and Climate • Causes of Climate • Maps and Globes
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Science Understanding: Year 7

Substrand	Code	Content description	Britannica Pathways: Science lessons
Biological sciences	ACSSU111	There are differences within and between groups of organisms; classification helps organise this diversity	<ul style="list-style-type: none"> • Plant Diversity • Animal Diversity • Cellular Respiration
Biological sciences	ACSSU112	Interactions between organisms can be described in terms of food chains and food webs; human activity can affect these interactions	<ul style="list-style-type: none"> • Sources of Plant Mass • Trophic Levels • Food Chains and Food Webs • Matter and Decomposition • Ecological Succession • Soil Nutrients • Photosynthesis and Food Production • Photosynthesis • Global Warming and the Greenhouse Effect •
Chemical sciences	ACSSU113	Mixtures, including solutions, contain a combination of pure substances that can be separated using a range of techniques	<ul style="list-style-type: none"> • The Nature of Air • Solutions
Earth and space sciences	ACSSU115	Predictable phenomena on Earth, including seasons and eclipses, are caused by the relative positions of the sun, Earth and the moon	<ul style="list-style-type: none"> • Daytime and Nighttime Stars • Earth's Seasons • The Far Side of the Moon • The Distance of Stars from Earth • Light from Planets and Moons • Solar and Lunar Eclipses • The Apparent Motion of Stars • The Moon and Its Phases • Relative Sizes of Objects in Space • Wind
Earth and space sciences	ACSSU116	Some of Earth's resources are renewable, but others are non renewable	<ul style="list-style-type: none"> • Energy Resources • Soil Nutrients • Weathering and Erosion • Weathering Processes
Earth and space	ACSSU222	Water is an important resource that cycles through	<ul style="list-style-type: none"> • The Water Cycle

sciences		the environment	<ul style="list-style-type: none"> • Groundwater • Ocean Currents and Weather • Weather and Climate • Causes of Climate • Weathering and Erosion • Weathering Processes
Physical sciences	ACSSU117	Change to an object's motion is caused by unbalanced forces acting on the object	<ul style="list-style-type: none"> • Circular Motion • Velocity and Acceleration • Balanced Forces on Objects • Buoyancy •
Physical sciences	ACSSU118	Earth's gravity pulls objects towards the centre of the Earth	<ul style="list-style-type: none"> • Gravity in Space • Effects of Gravity • Acceleration and Free Fall

Science as a Human Endeavour: Year 7

Substrand	Code	Content description	Britannica Pathways: Science lessons
Nature and development of science	ACSHE119	Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people's understanding of the world	<ul style="list-style-type: none"> • The Far Side of the Moon • The Distance of Stars from Earth • Ocean Currents and Weather • Weather and Climate • Causes of Climate • Wind
Use and influence of science	ACSHE120	Science and technology contribute to finding solutions to a range of contemporary issues; these solutions may impact on other areas of society and involve ethical considerations	<ul style="list-style-type: none"> • The Water Cycle • Groundwater • Global Warming and the Greenhouse Effect • Weather and Climate • Causes of Climate • Weathering and Erosion • Weathering Processes
Use and influence of science	ACSHE121	Science understanding influences the development of practices in areas of human activity such as industry, agriculture and marine and terrestrial resource management	<ul style="list-style-type: none"> • Soil Nutrients • Energy Resources • The Water Cycle • Groundwater • Weathering and Erosion • Weathering Processes • Wind

Science Understanding: Year 8

Substrand	Code	Content description	Britannica Pathways: Science lessons
Biological sciences	ACSSU149	Cells are the basic units of living things and have specialised structures and functions	<ul style="list-style-type: none"> • Cells and Growth • Cells in Living Things • Cell Models • Body System Interactions
Biological sciences	ACSSU150	Multicellular organisms contain systems of organs that carry out specialised functions that enable them to survive and reproduce	<ul style="list-style-type: none"> • Seeing at Night • Asexual Reproduction • Sexual Reproduction • Body System Interactions
Chemical sciences	ACSSU151	The properties of the different solids, liquids, and gases can be explained in terms of the motion and arrangement of particles	<ul style="list-style-type: none"> • Conserving Mass • Effects of Temperature on Matter • Properties of Matter • The Nature of Matter • Effect of Pressure on Matter • Solids, Liquids, and Gases • The Role of Theory in Science • Theories and Hypotheses in Science
Chemical sciences	ACSSU152	Differences between elements, compounds and mixtures can be described at a particle level	<ul style="list-style-type: none"> • Water Molecules • Solids, Liquids, and Gases
Chemical sciences	ACSSU225	Chemical change involves substances reacting to form new substances	<ul style="list-style-type: none"> • Conserving Mass
Earth and space sciences	ACSSU153	Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales	<ul style="list-style-type: none"> • Rocks and Minerals • Lessons from Fossil Discoveries • Events in the Rock Cycle • The Timescale of the Rock Cycle • Weathering and Erosion • Weathering Processes
Physical sciences	ACSSU155	Energy appears in different forms including movement (kinetic energy), heat and potential and kinetic energy, and causes change within systems	<ul style="list-style-type: none"> • Heat Transfer • Potential and Kinetic Energy • Heat and Temperature

Science as a Human Endeavour: Year 8

Substrand	Code	Content description	Britannica Pathways: Science lessons
Nature and development of science	ACSHE134	Scientific knowledge changes as new evidence becomes available, and some scientific discoveries have significantly changed people's understanding of the world	<ul style="list-style-type: none"> • Solids, Liquids, and Gases • The Role of Theory in Science • Body System Interactions • Lessons from Fossil Discoveries • Events in the Rock Cycle • The Timescale of the Rock Cycle • Maps and Globes • Theories and Hypotheses in Science

Science Understanding: Year 9

Substrand	Code	Content description	Britannica Pathways: Science lessons
Biological sciences	ACSSU175	Multicellular organisms rely on coordinated and interdependent internal systems to respond to changes to their environment	<ul style="list-style-type: none"> • Cells and Growth • Body System Interactions
Biological sciences	ACSSU176	Ecosystems consist of communities of interdependent organisms and abiotic components of the environment; matter and energy flow through these systems	<ul style="list-style-type: none"> • Plant Stems • Ecosystems • Energy in Ecosystems • Predator and Prey Populations • Energy Flow in Ecosystems • Sources of Plant Mass • Trophic Levels • Food Chains and Food Webs • Matter and Decomposition • Ecological Succession • Photosynthesis and Food Production • Photosynthesis
Chemical sciences	ACSSU177	All matter is made of atoms which are composed of protons, neutrons and electrons; natural radioactivity arises from the decay of nuclei in atoms	<ul style="list-style-type: none"> • Electric Charge
Chemical sciences	ACSSU178	Chemical reactions involve rearranging atoms to form new substances; during a chemical reaction mass is not created or destroyed	<ul style="list-style-type: none"> • Conserving Mass

Chemical sciences	ACSSU179	Chemical reactions, including combustion and the reactions of acids, are important in both nonliving and living systems and involve energy transfer	<ul style="list-style-type: none"> • Global Warming and the Greenhouse Effect • Conserving Mass
Earth and space sciences	ACSSU180	The theory of plate tectonics explains global patterns of geological activity and continental movement	<ul style="list-style-type: none"> • Properties of the Asthenosphere • Plate Tectonics • Earth's Structure • Lessons from Fossil Discoveries • Laws and Theories in Science • Theories and Hypotheses in Science
Physical sciences	ACSSU182	Energy transfer through different mediums can be explained using wave and particle models	<ul style="list-style-type: none"> • Colour • Refraction of Light • White Light • Lenses and Light • Nature of Sound • How Light Travels • Reflection of Light • Heat Transfer • Radiation

Science as a Human Endeavour: Year 9

Substrand	Code	Content description	Britannica Pathways: Science lessons
Nature and development of science	ACSHE157	Scientific understanding, including models and theories, are contestable and are refined over time through a process of review by the scientific community	<ul style="list-style-type: none"> • Colour • Lenses and Light • Properties of the Asthenosphere • Plate Tectonics • Earth's Structure •
Nature and development of science	ACSHE158	Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries	<ul style="list-style-type: none"> • Radiation • Colour • Lenses and Light • Body System Interactions
Use and influence of science	ACSHE160	People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions	<ul style="list-style-type: none"> • Global Warming and the Greenhouse Effect • Lessons from Fossil Discoveries
Use and influence of science	ACSHE161	Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities	<ul style="list-style-type: none"> • Radiation

Use and influence of science	ACSHE228	The values and needs of contemporary society can influence the focus of scientific research	<ul style="list-style-type: none"> Radiation
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Science Understanding: Year 10

Substrand	Code	Content description	Britannica Pathways: Science lessons
Biological sciences	ACSSU184	The transmission of heritable characteristics from one generation to the next involves DNA and genes	<ul style="list-style-type: none"> Inheritance of Traits Mutations Genes, DNA, and Chromosomes Biotechnology and Genetic Engineering Exploring Scientific Inquiry Scientific Models Laws and Theories in Science
Biological sciences	ACSSU185	The theory of evolution by natural selection explains the diversity of living things and is supported by a range of scientific evidence	<ul style="list-style-type: none"> Natural Selection and Evolution Adaptation of Populations Cells in Living Things Theories and Hypotheses in Science
Chemical sciences	ACSSU186	The atomic structure and properties of elements are used to organise them in the Periodic Table	<ul style="list-style-type: none"> Density Scientific Models Laws and Theories in Science
Chemical sciences	ACSSU187	Different types of chemical reactions are used to produce a range of products and can occur at different rates	<ul style="list-style-type: none"> Conserving Mass
Earth and space sciences	ACSSU188	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	<ul style="list-style-type: none"> Star Magnitude The Distance of Stars from Earth Relative Sizes of Objects in Space Laws and Theories in Science Theories and Hypotheses in Science
Earth and space sciences	ACSSU189	Global systems, including the carbon cycle, rely on interactions involving the biosphere, lithosphere, hydrosphere and atmosphere	<ul style="list-style-type: none"> Global Warming and the Greenhouse Effect Ocean Currents and Weather Weather and Climate Causes of Climate Weathering and Erosion Weathering Processes Maps and Globes Scientific Models Laws and Theories in Science
Physical sciences	ACSSU190	Energy conservation in a system can be explained by describing energy transfers and transformations	<ul style="list-style-type: none"> Conservation of Energy

Physical sciences	ACSSU229	The motion of objects can be described and predicted using the laws of physics	<ul style="list-style-type: none"> • Simple Machines and Work • Newton's Third Law • Circular Motion • Velocity and Acceleration • Gravity in Space • Effects of Gravity • Balanced Forces on Objects • Buoyancy • Acceleration and Free Fall • Action and Reaction Forces • Laws and Theories in Science • Theories and Hypotheses in Science
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Science as a Human Endeavour: Year 10

Substrand	Code	Content description	Britannica Pathways: Science lessons
Nature and development of science	ACSHE191	Scientific understanding, including models and theories, are contestable and are refined over time through a process of review by the scientific community	<ul style="list-style-type: none"> • Natural Selection and Evolution • Inheritance of Traits • Mutations • Adaptation of Populations • Genes, DNA, and Chromosomes • Exploring Scientific Inquiry • Star Magnitude • Global Warming and the Greenhouse Effect • Ocean Currents and Weather • Weather and Climate • Causes of Climate • Weathering and Erosion • Weathering Processes • Maps and Globes • Scientific Models • Laws and Theories in Science • Theories and Hypotheses in Science
Nature and development of science	ACSHE192	Advances in scientific understanding often rely on developments in technology and technological advances are often linked to scientific discoveries	<ul style="list-style-type: none"> • Biotechnology and Genetic Engineering • Inheritance of Traits
Use and influence of science	ACSHE194	People can use scientific knowledge to evaluate whether they should accept claims, explanations or predictions	<ul style="list-style-type: none"> • Global Warming and the Greenhouse Effect • Weather and Climate • Causes of Climate • Maps and Globes

Use and influence of science	ACSHE195	Advances in science and emerging sciences and technologies can significantly affect people's lives, including generating new career opportunities	<ul style="list-style-type: none"> • Biotechnology and Genetic Engineering
Use and influence of science	ACSHE230	The values and needs of contemporary society can influence the focus of scientific research	<ul style="list-style-type: none"> • Biotechnology and Genetic Engineering