

NSW Stage 4-5 Science and Geography Outcomes for Earth Quest

Stage 4 Science Outcomes

Outcome 4.8 describes features of living things		EARTH QUEST EXHIBITS
Students learn about: 4.8.1 cell theory	Students learn to: a) identify that living things are made of cells d) distinguish between unicellular and multicellular organisms.	Living Cells
4.8.2 classification	a) classify living things according to structural features and identify that they have patterns of similarities and differences	Living Cells Plants in Place
Outcome 4.9 describes the dynamic structure of Earth and its relationship to other parts of our solar system and universe		
Students learn about: 4.9.1 the Newtonian model of the solar system	a) describe qualitatively relative sizes, distances and movements of components of our solar system b) describe relative movements of the planets, moons and sun d) explain the seasons in terms of the tilt of Earth's axis and its revolution around the sun	Seasons in a Spin Size of Planets Spinning Sun The Solar System
4.9.2 components of the universe	a) describe some major features of the universe, including galaxies, stars, nebulae and solar systems	Galaxy Gaze Size of Planets Spinning Sun The Solar System
4.9.3 the structure of Earth	a) describe the inner structure of Earth in terms of core, mantle, crust, lithosphere and asthenosphere	Exploring Earth Surface to Core Tectonic Plates
4.9.4 the atmosphere	a) identify gases that comprise the greater percentage of air and explain the difference between atmosphere and space b) describe the importance of atmospheric gases, including ozone and greenhouse gases, to life on Earth	Air Pressure Ozone The Air Up There What's in the Air?
Outcome 4.10 identifies the factors affecting survival of organisms in an ecosystem		
4.10 ecosystems	a) describe some adaptations of living things to factors in their environment b) describe how producers, consumers and decomposers in Australian ecosystems are related, using food chains and food webs	Deep Sea Glow Evolution Food Pyramids Plants in Place
Outcome 4.12 identifies, using examples, common simple devices and explains why they are used		
4.12 technology	a) discuss technological developments that have extended the ability of scientists to collect information about, and monitor events in, the natural and physical worlds	Core Samples Dig a Hole Exploring Earth

Stage 4 Geography Focus Area 4G1 Investigating the World

Focus: An introduction to the discipline of Geography and the nature of geographical inquiry.

A student:

4.1 identifies and gathers geographical information

4.2 organises and interprets geographical information

4.3 uses a range of written, oral and graphic forms to communicate geographical information

4.5 demonstrates a sense of place about global environments

4.6 describes the geographical processes that form and transform environments

<p>Students learn about:</p> <p>The nature of Geography</p> <ul style="list-style-type: none">• the physical elements of environments:<ul style="list-style-type: none">- air- flora and fauna- soil- solar energy (heat and light)- water• the human elements of environments:<ul style="list-style-type: none">- agricultural- industrial- settlements• the interaction of the physical and human elements	<p>Students learn to:</p> <ul style="list-style-type: none">• classify features of the environment as physical or human elements• record patterns of physical and human elements of environments• identify patterns resulting from the interaction of the physical and human environments	<p>EARTH QUEST EXHIBITS</p> <p>Evolution Landscape Journey Ozone Plants in Place Seasons in a Spin Swirled World The Air Up There Urban Jungle</p>
<p>Students learn about:</p> <p>Our world</p> <ul style="list-style-type: none">• global representation using maps• the importance and use of latitude	<p>Students learn to:</p> <ul style="list-style-type: none">• use latitude to describe the global pattern of climate, including the spatial and seasonal change in insolation	<p>Seasons in a Spin</p>

Stage 4 Geography Focus Area 4G2 Global Environments

Focus: The geographical processes that form and transform global environments and human interactions with environments.

A student:

4.1 identifies and gathers geographical information

4.2 organises and interprets geographical information

4.6 describes the geographical processes that form and transform environments

4.8 describes the interrelationships between people and environments.

<p>Students learn about:</p> <p>Global environments</p> <p>Types of global environments and their location</p> <p>The major geographical processes that operate within the chosen environment:</p> <ul style="list-style-type: none">- atmospheric processes- biotic processes- geomorphic processes- hydrologic processes <ul style="list-style-type: none">• the way humans, including indigenous groups, interact with the environment	<p>Students learn to:</p> <ul style="list-style-type: none">• describe the geographical processes that shape the selected environment • describe the interaction of humans with the environment	<p>EARTH QUEST EXHIBITS</p> <p>Earthquake Food Pyramids Hidden Depths How Deep? Exploring Earth Tectonic Plates The Air Up There Urban Jungle Volcanoes</p>
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Stage 4 Geography Elective Outcomes

A student:

E4.5 describes the geographical processes that form and transform environments

E4.6 describes the importance of the world's environments and issues associated with them.

Stage 5 Science Outcomes

Outcome 5.8 relates the structure and function of living things to models, theories and laws		EARTH QUEST EXHIBITS
5.8.3 the theory of evolution and natural selection	<ul style="list-style-type: none"> a) discuss evidence that present-day organisms have developed from different organisms in the distant past b) relate natural selection to the theory of evolution 	Deep Sea Glow Evolution
Outcome 5.9 relates the development of the universe and the dynamic structure of Earth to models, theories and laws and the influence of time		
5.9.2 the theory of plate tectonics	<ul style="list-style-type: none"> a) discuss evidence that suggests crustal plates move over time 	Earthquake Tectonic Plates
5.9.4 natural events	<ul style="list-style-type: none"> a) identify that geological history can be interpreted from the formation, by sediments, of horizontal layers in which the oldest are at the base and the youngest at the top b) describe conditions under which fossils form c) relate the fossil record to the age of Earth and the time over which life has been evolving e) explain how earthquakes, volcanic activity and new landforms result from interactions at plate boundaries f) explain some impacts of natural events including cyclones, volcanic eruptions and earthquakes on the atmosphere, hydrosphere, lithosphere and/or biosphere 	Earthquakes Fossil Finder Hidden Depths Making Mountains Swirled World The Air Up There Volcanoes
Outcome 5.10 assesses human impacts on the interaction of biotic and abiotic features of the environment		
5.10 ecosystems	<ul style="list-style-type: none"> d) describe some impacts of human activities on ecosystems e) discuss strategies used to balance human activities and needs in ecosystems with conserving, protecting and maintaining the quality of the environment 	Ozone Urban Jungle

Stage 5 Geography Focus Area 5A1 Investigating Australia's Physical Environments

Focus: The unique characteristics of Australia's physical environments and the responses of people to the challenges they present.

A student:

5.1 identifies, gathers and evaluates geographical information

5.5 demonstrates a sense of place about Australian environments

5.6 explains the geographical processes that form and transform Australian environments.

The Australian continent		EARTH QUEST EXHIBITS
<p>Students learn about:</p> <ul style="list-style-type: none">• Australia's geographical dimensions:<ul style="list-style-type: none">- relative size and shape- latitude and longitude <p>Physical characteristics that make Australia unique</p> <ul style="list-style-type: none">• Patterns of:<ul style="list-style-type: none">- climate- weather- vegetation• unique flora and fauna• natural hazards in Australia including:<ul style="list-style-type: none">- earthquakes	<p>Students learn to:</p> <ul style="list-style-type: none">○ compare Australia's size and shape with other continents and countries.○ locate and recognise Australia on a world map using latitude and longitude○ explain the interrelationships that exist in the physical environment of Australia ○ explain adaptations of flora and fauna to the Australian environment	<p>Dig a Hole Evolution Landscape Journey Plants in Place Tectonic Plates</p>

Stage 5 Geography Elective Outcomes

A student:

E5.5 explains the geographical processes that form and transform environments.

E5.6 analyses the importance of the world's environments and issues associated with them.