

Year 8: Earth and Space- The Changing Earth

	Check	Date
Revise assumed knowledge: SC4-12ES describes the dynamic nature of models, theories and laws in developing scientific understanding of the Earth and solar system SC4-13ES explains how advances in scientific understanding of processes that occur within and on the Earth, influence the choices people make about resource use and management	<input type="checkbox"/>	
ES1 Sedimentary, igneous and metamorphic rocks contain minerals and are formed by processes that occur within Earth over a variety of timescales. (ACSSU153)		
UNDERSTANDING THE EARTH		
<i>4ES1a. describe the <u>structure</u> of the Earth in terms of core, mantle, crust and lithosphere</i>	<input type="checkbox"/>	
Identify the key layers of the Earth	<input type="checkbox"/>	
Describe the structure of the Earth including inner core, outer core, mantle, crust and lithosphere (depth and composition)	<input type="checkbox"/>	
<i>4ES1c. outline the origins of and relationships between sedimentary, igneous and metamorphic rocks</i>	<input type="checkbox"/>	
Identify the three main rock types; sedimentary, igneous and metamorphic	<input type="checkbox"/>	
Describe the rock cycle	<input type="checkbox"/>	
Identify two examples of each rock type	<input type="checkbox"/>	
CODE: 8ES1 First-Hand Investigation: Effect of temperature on crystal size (Oxford pg264)	<input type="checkbox"/>	
CODE: 8ES2 First-Hand Investigation: Making sedimentary rocks (Oxford pg266)	<input type="checkbox"/>	
CODE: 8ES3 First-Hand Investigation: Making metamorphic rocks (Oxford pg267)	<input type="checkbox"/>	
<i>4ES1b. relate the formation of a range of landforms to physical and chemical weathering, erosion and deposition</i>	<input type="checkbox"/>	
Define the terms physical weathering, chemical weathering, erosion and deposition	<input type="checkbox"/>	
Provide examples of each: <ul style="list-style-type: none"> • physical weathering: Frost wedging, thermal expansion, tree root growth • chemical weathering: Oxidation, hydration, carbonation • erosion: Wind, running water, glaciers, waves • deposition: Particle size, shape, density, velocity 	<input type="checkbox"/>	
CODE: 8ES4 First-Hand Investigation: Effects of chemical weathering (Oxford pg271)	<input type="checkbox"/>	
Relate the role of physical weathering, chemical weathering, erosion and deposition to the formation of different landforms	<input type="checkbox"/>	
<i>4ESadd3 investigate the role of forces and energy in the formation of different types of rocks and minerals</i>	<input type="checkbox"/>	
Investigate the role of forces and energy in the formation of different types of rocks and minerals	<input type="checkbox"/>	
LITERACY SET 1: COSMOS ARTICLE	<input type="checkbox"/>	
Assessment: Oxford online test- Understanding the Earth. Students to achieve 100% in Support and Consolidate OR Consolidate and Extend	<input type="checkbox"/>	

PROPERTIES OF ROCKS AND MINERALS

4ES1d. identify that sedimentary, igneous and metamorphic rocks contain minerals	<input type="checkbox"/>	
4ES1e. classify a variety of common rocks and minerals into groups according to their observable properties 🗺️	<input type="checkbox"/>	
Define the term mineral	<input type="checkbox"/>	
Identify the minerals found in a range of sedimentary, igneous and metamorphic rocks	<input type="checkbox"/>	
Identify the observable properties used by geologists to classify rocks and minerals (Colour, Lustre, Streak, Hardness)	<input type="checkbox"/>	
CODE: 8ES5 First-Hand Investigation: Rock and crystal classification In groups, observe physically and under microscope, a range of common rocks and minerals. Group them according to their observable properties. Compare to other groups. Discuss.	<input type="checkbox"/>	
Describe the Mohs scale of hardness	<input type="checkbox"/>	
CODE: 8ES6 First-Hand Investigation: Hardness. Compare a range of common products for hardness by using the scratch test (iron nail, glass slide, plastic petri dish, piece of copper sheet, chalk stick). Relate to rocks and minerals	<input type="checkbox"/>	
CODE: 8ES7 First-Hand Investigation: Rock and crystal classification. In groups, observe physically and under a hand lens, a range of common rocks and minerals. Use hand lens and the internet and/or Oxford table to identify them by name. Group them according to their observable properties. Compare to other groups. Discuss	<input type="checkbox"/>	
4ES1h. describe examples to show how people use understanding and skills from across the disciplines of science in occupations related to the exploration, mining or processing of minerals in Australia (ACSHE224, ACSHE227) 🌟🇺🇦	<input type="checkbox"/>	
Define the term ore	<input type="checkbox"/>	
Identify a range of ores mined in Australia	<input type="checkbox"/>	
Describe the main types of mines (open cut, underground and leach)	<input type="checkbox"/>	
Describe how scientists locate minerals (Magnetic surveys, Gravity surveys, Seismic surveys, Geochemical surveys)	<input type="checkbox"/>	
Describe the role of the following occupations related to the exploration, mining or processing of minerals <ul style="list-style-type: none"> • Underground mine geologist • Exploration geologist • Metallurgist • Geotechnical engineer • Mining engineer • Human resources • Environmental engineer 	<input type="checkbox"/>	
4ESadd5 debate the economic and environmental impacts of mining and resource exploration 🌟👥	<input type="checkbox"/>	
Debate the economic and environmental impacts of mining and resource exploration	<input type="checkbox"/>	
LITERACY SET 2: MIXED ACTIVITIES	<input type="checkbox"/>	
Assessment: Oxford online test- Properties of rocks and minerals Students to achieve 100% in Support and Consolidate OR Consolidate and Extend	<input type="checkbox"/>	

