



SAMPLE COURSE OUTLINE

EARTH AND ENVIRONMENTAL SCIENCE
GENERAL YEAR 12

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Sample course outline

Earth and Environmental Science – General Year 12

Unit 3 and Unit 4

Semester 1 – Unit 3 – Earth’s resources

Week	Key teaching points
1–2	<ul style="list-style-type: none"> exploration methods for locating ore deposits and energy resources, such as seismic survey, magnetic survey, gravity survey, soil and stream sampling, geological mapping
3–4	<ul style="list-style-type: none"> the type of mining used is related to the depth, size and grade of the ore body <p>Task 1: Experiment – Extraction of metal from ore</p>
5–6	<ul style="list-style-type: none"> social and environmental guidelines need to be adhered to in order to responsibly manage a mining operation Barrow Island oil and gas field is managed according to environmental and cultural guidelines <p>Task 2: Extended task – Case study of a resource site</p>
7–8	<ul style="list-style-type: none"> environmental strategies are employed to rehabilitate an area after extraction operations have ceased <p>Task 3: Test – Exploration methods, mining operations, rehabilitation</p> <p>Task 4: Investigation – Rehabilitation techniques: effect of smoke water on germination of native plants</p>
9–11	<ul style="list-style-type: none"> the formation of fossils the study of fossils and their distribution provides information about paleoecology <p>Task 5: Investigation – Fossil identification</p>
12–13	<ul style="list-style-type: none"> the formation of fossil fuels the unsustainable use of Earth’s resources <p>Externally set task</p>
14–15	<ul style="list-style-type: none"> the Western Australian resources industry makes an important contribution to Australia’s economy <p>Task 6: Test – Fossils, fossil fuels, WA resources industry</p>

Semester 2 – Unit 4 – Sustainable Earth

Week	Key teaching points
1–3	<ul style="list-style-type: none"> natural hazards, including cyclones, floods, drought, earthquakes, tsunamis and volcanic eruptions; planning for natural hazards
4	<ul style="list-style-type: none"> climatic events: El Niño and La Niña
5–6	<ul style="list-style-type: none"> the enhanced greenhouse effect; the causes and effects of climate change; strategies to adapt to climate change effects <p>Task 7: Investigation – Effects of carbon dioxide on temperature change</p>
7–8	<ul style="list-style-type: none"> the climate change debate – scientific evidence for and against <p>Task 8: Test – Natural hazards, La Niña, El Niño, greenhouse effect</p>
9–11	<ul style="list-style-type: none"> the effects of climate change on biodiversity and industries, such as fisheries, viticulture, agriculture a Western Australian example of a biotic resources development, including possible future impacts due to climate change <p>Task 9: Extended task – The impact of climate change on a WA biotic resource</p>
12–15	<ul style="list-style-type: none"> renewable energy resources, including geothermal, wave, tidal, biofuels, solar or wind. Sites for alternative energy sources in Western Australia can be identified renewable energy research and development in Western Australia, such as solar farms, geothermal cooling <p>Task 10: Investigation – Design, construct and test a solar oven</p> <p>Task 11: Test – Climate change, renewable energy</p>