



Earth and Environmental Science General Course Year 12

Selected Unit 3 syllabus content for the Externally set task 2023

This document is an extract from the *Earth and Environmental Science General Course Year 12 syllabus*, featuring all of the content for Unit 3. The content that has been highlighted in the document is the content on which the Externally set task (EST) for 2023 will be based.

All students enrolled in the course are required to complete an EST. The EST is an assessment task which is set by the Authority and distributed to schools for administering to students. The EST will be administered in schools during Term 2, 2023 under standard test conditions. The EST will take 50 minutes.

The EST will be marked by teachers in each school using a marking key provided by the Authority. The EST is included in the assessment table in the syllabus as a separate assessment type with a weighting of 15% for the pair of units.

Unit 3 – Earth’s resources

Unit description

Students gain an understanding of the timescales over which geological processes occur and methods for determining the relative ages of rock strata. They learn about the importance of the resources industry to the economy of Western Australia.

Students learn how resource deposits are located and extracted. They discuss the effect of resource use on society and look at ways to use resources more efficiently.

Unit content

An understanding of the Year 11 content is assumed knowledge for students in Year 12. It is recommended that students studying Unit 3 and Unit 4 have completed Unit 1 and Unit 2.

This unit includes the knowledge, understandings and skills described below.

Science Inquiry Skills

- follow sets of written or verbal instruction accurately
- construct questions for investigation, propose hypotheses, identify variables and predict possible outcomes
- plan, select and use appropriate investigation methods, including field work, sampling techniques, laboratory experimentation and control variables to collect reliable data
- assess risk and address ethical issues associated with these methods
- organise and clearly represent data in tables and graphs to identify trends, patterns and relationships
- describe sources of experimental error
- use evidence to make and justify conclusions
- interpret a range of texts, and evaluate the conclusions by considering the quality of available evidence
- use appropriate representations, including classification keys, tables, diagrams, maps and images to communicate understanding, solve problems and make predictions
- communicate scientific ideas and information for a particular purpose, using appropriate scientific language, conventions and representations

Science as a Human Endeavour

- the Western Australian resources industry makes an important contribution to Australia’s economy and employment opportunities
- Barrow Island oil and gas field is managed according to environmental and cultural guidelines

Science Understanding

- exploration methods for locating ore deposits and energy resources, such as seismic survey, magnetic survey, gravity survey, soil and stream sampling, geological mapping
- the type of mining used is related to the depth, size and grade of the ore body, and the application of underground and surface methods of extraction reflects this
- social and environmental guidelines need to be adhered to in order to responsibly manage a mining operation
- environmental strategies are employed to rehabilitate an area after extraction operations have ceased
- the formation and preservation of fossils
- the study of fossils and their distribution provides information about our understanding of paleoecology and the changes that have taken place during Earth's history, such as meteorite impacts, climate change, volcanic eruptions
- the formation and accumulation of fossil fuels
- the unsustainable use of Earth's resources has environmental implications