

Earth & Environmental Science

General senior subject

General

Earth & Environmental Science provides opportunities for students to engage with the dynamic interactions in and between four systems: geosphere, hydrosphere, atmosphere and biosphere. In Unit 1, students examine the evidence underpinning theories of the development of Earth systems, their interactions and their components. In Unit 2, students investigate how Earth processes involve interactions of Earth systems and are interrelated through transfers and transformations of energy. In Unit 3, students examine renewable and non-renewable resources, the implications of extracting, using and consuming these resources, and associated management approaches. In Unit 4, students consider how Earth processes and human activity can contribute to Earth hazards, and the ways in which these hazards can be predicted, managed and mitigated to reduce their impact on earth environments.

Earth & Environmental Science aims to develop students’:

- interest in Earth and environmental science and their appreciation of how this multidisciplinary knowledge can be used to understand contemporary issues
- understanding of Earth as a dynamic planet consisting of four interacting systems: the geosphere, atmosphere, hydrosphere and biosphere
- appreciation of the complex interactions, involving multiple parallel processes, that continually change Earth systems over a range of timescales
- understanding that Earth and environmental science knowledge has developed over time; is used in a variety of contexts; and influences, and is influenced by, social, economic, cultural and ethical considerations

- ability to conduct a variety of field, research and laboratory investigations involving collection and analysis of qualitative and quantitative data, and interpretation of evidence
- ability to critically evaluate Earth and environmental science concepts, interpretations, claims and conclusions with reference to evidence
- ability to communicate understanding, findings, arguments and conclusions related to Earth and its environments, using appropriate representations, modes and genres.

Pathways

A course of study in Earth & Environmental Science can establish a basis for further education and employment in the fields of geoscience, soil science, agriculture, marine science, environmental rehabilitation, urban planning, ecology, natural resource management, wildlife, environmental chemistry, conservation and ecotourism.

Objectives

By the conclusion of the course of study, students will:

- describe ideas and findings
- apply understanding
- analyse data
- interpret evidence
- evaluate conclusions, claims and processes
- investigate phenomena.

Structure

Unit 1	Unit 2	Unit 3	Unit 4
Introduction to Earth systems <ul style="list-style-type: none"> • Earth systems and models • Development of the geosphere • Development of the atmosphere and hydrosphere • Development of the biosphere 	Earth processes — energy transfers and transformations <ul style="list-style-type: none"> • Energy for Earth processes • Energy for atmospheric and hydrologic processes • Energy for biogeochemical processes 	Living on Earth — extracting using and managing Earth resources <ul style="list-style-type: none"> • Use of non-renewable Earth resources • Use of renewable Earth resources 	The changing Earth — the cause and impact of Earth hazards <ul style="list-style-type: none"> • The cause and impact of Earth hazards • The cause and impact of global climate change

Assessment

Schools devise assessments in Units 1 and 2 to suit their local context.

In Units 3 and 4 students complete *four* summative assessments. The results from each of the assessments are added together to provide a subject score out of 100. Students will also receive an overall subject result (A–E).

Summative assessments

Unit 3		Unit 4	
Summative internal assessment 1 (IA1): • Data test	10%	Summative internal assessment 3 (IA3): • Research investigation	20%
Summative internal assessment 2 (IA2): • Student experiment	20%		
Summative external assessment (EA): 50% • Examination — combination response			