

Earth Science

Subject guide 2000

This subject guide relates to courses developed from the Earth Science Senior Syllabus 2000.

Why study Earth Science?

A study of Earth Science at senior level fosters a knowledge of planet earth, its systems, and its geological processes as well as an understanding of human interaction with earth's systems.

The subject aims to develop an awareness of how the effects of natural hazards such as floods, cyclones, landslides, earthquakes, and beach erosion can be minimised. Students become aware that a knowledge of earth science is crucial in the planning of buildings, highways, dams, harbours, and canals.

They develop an understanding of environmental problems such as global warming, ozone holes, resource depletion and the disposal of hazardous wastes. They realise that a knowledge of earth science affects decisions ranging from those as big as choosing a nuclear power site to those as small as selecting an aesthetic and functional rock material for a retaining wall.

What do students study?

Earth Science is concerned with the study of the origin, development, and functioning of earth systems and the consequences of human interaction with those systems. The subject comprises a number of major topics that specify core areas of study and offer suggestions for elective areas of study. The major topics in Earth Science are:

- Introduction to earth science
- Our earth and its systems
- Hazardous earth processes and materials
- Earth resources and human impact on the environment
- Our earth in space and time

What do students do?

Earth Science is designed to encourage and challenge students and to develop their sense of inquiry and investigation. The subject allows for different learning styles and encourages a variety of teaching styles to meet student needs. Students participate in a wide range of activities in their investigation of issues related to the environment and from human interaction with the environment. Students will typically be engaged in such learning experiences as:

- learning collaboratively
- conducting laboratory investigations and experiments
- participating in excursion-based and field-based activities
- collecting, analysing and organising information in library research
- conducting case studies and surveys

- working on assignments
- constructing models
- participating in classroom debates, role-plays and simulation games
- responding to teacher exposition and questioning viewing videos and films
- using computers and other technology
- preparing media presentations
- conducting research required for independent studies
- communicating ideas and information in a variety of forms

How do students learn?

Earth Science is designed to encourage and challenge students and to develop their sense of inquiry and investigation. The subject allows for different learning styles and encourages a variety of teaching styles to meet student needs. Students participate in a wide range of activities in their investigation of issues related to the environment and from human interaction with the environment. Students will typically be engaged in such learning experiences as:

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How are students assessed?

Schools use a wide range of assessment techniques to judge student achievement. These include written tests and both short and extended investigations, some of which would be based on field studies or laboratory activities. Assessment tasks may include the production of case studies, written reports, oral presentations, the development of models, videos, posters and computer simulations, and the interpretation and analysis of maps, charts and field or laboratory data.

Achievement in the theoretical and the practical aspects of Earth Science is judged by matching a student's achievement in the assessment tasks with the exit criteria of the subject. These criteria

are: 'Knowledge, conceptual understanding and application', 'Working scientifically' and 'Using information scientifically'.

How can parents help?

Parents can help children in their study of Earth Science by showing an interest in the subject and by encouraging them to read widely. As the subject relates to environmental concerns and current issues, discussion in the family can provide a range of valuable perspectives. Students can be encouraged to discuss television programs, radio programs, newspapers and journals that may help them to consider a variety of opinions on relevant issues. Parents can help by:

- reading the Earth Science syllabus on which schools base their work programs
- reading the school work program for the subject and discussing this with the teacher
- discussing the child's progress with the teacher
- encouraging good study habits
- providing access to relevant television and radio programs, and newspaper and journal articles
- expressing personal and social views about relevant earth science issues and situations, debating alternative propositions and points of view, and openly discussing the implications of these.

More information

If you would like more information, please email senior.syllabuses@qcaa.qld.edu.au. You can also visit the QCAA website www.qcaa.qld.edu.au and search for 'Earth Science'.