

© UKRIGS Education Project: Earth Science On-Site

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SITE: TEDBURY CAMP, SOMERSET.

AUDIENCE: KEYSTAGE 4 SCIENCE.

SYLLABUS LINKS (May 2006)

AQA (GCSE Science A and B)

Biology 1b Evolution and Environment:

Using skills & understanding of how science works to:

- Interpret evidence relating to evolutionary theory.

Substantive contexts:

- Fossils provide evidence of how much (or how little) different organisms have changed since life developed on Earth.

Chemistry 1a Products from Rocks:

Substantive contexts:

- Limestone, metal ores and fuels, and the environmental, social and economic effects of exploration.
- Products made from Geological resources.

Chemistry 1b Oils, Earth and Atmosphere:

Using skills & understanding of how science works to:

- Explain why the theory of crustal movement was not generally accepted for many years after it was proposed.

Substantive contexts:

- The Earth consists of a core, mantle and crust.
- The earth's crust and upper mantle (lithosphere) are cracked into tectonic plates caused by convection currents in the mantle to move at relative speed of a few centimetres per year.
- Earthquakes and / or volcanic eruptions can occur at the boundaries between tectonic plates.

Edexcel (GCSE Science)

B1a: Topic 1, Environment:

- Explain that fossils provide evidence for evolution.

OCR – GCSE (Gateway) Science

B2: Understanding Our Environment

- State that fossils can provide evidence for living organisms from a long time ago.
- Explain that animals and plants can change over long periods of time and that fossils provide evidence for this.
- Describe how the relative positions of fossils in rock layers can be used to show evolutionary changes during long periods of time.
- Describe how organisms may have become fossilised: (hard body parts buried and gradually replaced by minerals; casts / impressions; preservation in amber, peat, tar, ice.
- Explain that the fossil record is incomplete: some body parts are rarely fossilised; fossilisation is rare; many fossils have not yet been discovered.
- Explain that when environments change some animal and plant species survive or evolve, but many become extinct.

C2: Rocks And Metals

- Construction materials, including those manufactured from rocks in the earth's crust.
- State that some rocks are used to construct buildings: granite, limestone, marble.
- Describe that marble is much harder than limestone and that granite is harder than marble.
- Explain why granite, marble and limestone have different hardnesses.
- Limestone is a sedimentary rock.
- Marble is a metamorphic rock made by the action of high pressures and temperatures on limestone.
- Granite is an igneous rock.
- State that limestone and marble are both forms of calcium carbonate.
- Environmental problems resulting from quarrying.

C2: Rocks And Metals

- State that the movement of tectonic plates results in volcanic activity and earthquakes.
- Describe the lithosphere as the (relatively) cold rigid outer part of the earth that includes the crust and outer part of the mantle.
- Explain that tectonic plates are found on top of the mantle because they are less dense.

P2 Living For The Future:

- Describe the shape of the Earth's magnetic field (and describe that) a plotting compass shows the direction of a magnetic field.

OCR – 21st Century Science

P1 The Earth In The Universe:

- Recall that rocks provide evidence for changes in the earth (erosion and sedimentation, fossils, folding, radioactive dating, craters).
- Understand that continents would be worn down to sea level if mountains were not being continuously formed.
- Understand that the rock processes seen today can account for past changes.
- Recall that earthquakes, volcanoes, and mountain building generally occur at the edges of tectonic plates.
- Understand how the movement of tectonic plates causes earthquakes, volcanoes, mountain building and contributes to the rock cycle.

B3 Life On Earth:

- Understand that evidence for evolution is provided by fossils and from analysis of similarities and differences in DNA of organisms.

Welsh Board – GCSE Science.

B1: Topic 3, Evolution:

- Examine evidence and interpret data about how organisms and species have changed over time. Suggest reasons why species may become extinct.

C1 Topic 3, Using Chemical Reactions To Make New Materials.

- Useful products from raw materials from the earth, sea and air.

C1 Topic 8, Geological Processes.

- (know that the slow movement of tectonic plates) drives the rock cycle.

WJEC – GCSE Chemistry (Separate Subject)

C3 Topic, Limestone.

- Uses of limestone and the social, economic and environmental effects of limestone quarrying