

© UKRIGS Education Project: Earth Science On-Site

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SITE: BOULMER FORESHORE, NORTHUMBERLAND

AUDIENCE: KEY STAGE 3 SCIENCE.

LINKS TO KS3 NATIONAL CURRICULUM SCIENCE:

This **Earth-Science On-Site** exercise is presented in three parts: a pre-visit homework exercise; the visit itself; and a post-visit homework exercise.

The documentation files provide support information for staff, and suggested homework and exercise sheets for pupils.

They can be used to teach, revise, or apply any or all of the following elements of the National Curriculum.

Scientific Enquiry:

- to use observations, measurements and other data to draw conclusions.

Geological changes:

- pupils should be taught about the formation of rocks by processes that take place over different timescales, and that the mode of formation determines their texture and the minerals they contain.

Schemes of work:

Unit 8G: Rocks and Weathering. Pupils should be taught: to:

- describe rocks as containing different grains which fit together; explain that some grain shapes are interlocking and some are not
- describe changes in rocks and building materials over time
- identify acidic rain as a cause of chemical weathering;
- explain how water absorbed by rocks expands on freezing and fragments the rock
- describe conditions where fragmentation is likely to occur, explaining that the forces arising from expansion and contraction are great enough to break off pieces of rock
- make generalisations about transport and deposition of sediment
- describe how sediments settle to form layers; identify in drawing or annotation that different layers were formed at different times
- relate the processes involved in weathering, transport and sedimentation

Unit 8H: The Rock Cycle. Pupils should be taught to:

- name some sedimentary rocks, metamorphic rocks and igneous rocks.
- describe characteristics of sedimentary rocks
- explain that sedimentary rock is formed as the grains are compacted and 'glued' together
- describe some observable differences between limestones
- generalise that rocks are mixtures and vary in composition
- describe how metamorphic rocks differ from sedimentary rocks

Unit 9G: Environmental Chemistry. Pupils should be taught to:

- describe how the appearance of landforms and/or buildings may change over time
- identify factors that favour chemical weathering
- identify that acidic rain affects some metals and carbonate-containing rocks