

Planning for fieldwork Preparing your pupils before setting out to “ask questions for any rock face”

This activity provides indoor preparation for your class, before they go out to study a local exposure of rocks, as outlined in the suite of Earthlearningidea activities titled, “Questions for any rock face”. The pupils should already have studied rocks and photographs of sequences of rocks in the classroom so that they are now ready to put this experience into practice. Rather than telling the class what they will need when they go out, ask them the following questions, aided by some of the photographs below. Some answers are given in the “Context” section below.

- Why are we going outside? Can't we just look at rocks in the nice warm classroom?
- What hazards might we meet on the walk from school, and what should we do to be safe and comfortable?
- What dangers might we meet at the rock face? How can we stay safe?
- What are we going to do when we get there?
- What equipment do we need to take with us?



Road traffic (Sheffield), UK.



Exposure – very wet! (Isle of Kerrera, Scotland, UK).



Landslide (at Barton-on-Sea, UK).



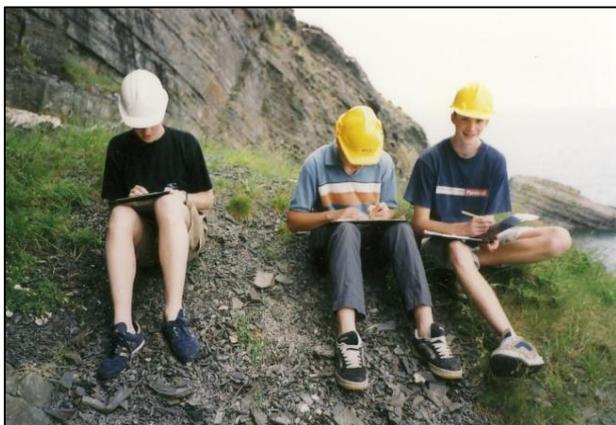
Overhanging rocks, Dolyhir Quarry, Wales, UK



Rising tide, (Torbay, UK).



The leader's rucksack, with contents



Recording in the field, (Newquay, Wales, UK).



Measuring dip, (Ecton, Peak District, UK).

The back up

Title: Planning for fieldwork

Subtitle:

Preparing your pupils before setting out to “ask questions for any rock face”

Topic: Indoor preparation for pupils before setting off to examine a local exposure of rocks and soil.

Age range of pupils: 7 – 16 years

Time needed to complete activity: 20 minutes

Pupil learning outcomes: Pupils can:

- state why it is necessary to investigate real rocks in the field and not in the classroom alone;
- explain that the conditions of fieldwork outdoors are different from inside;
- explain the need for orderly, safe behaviour when off-site.

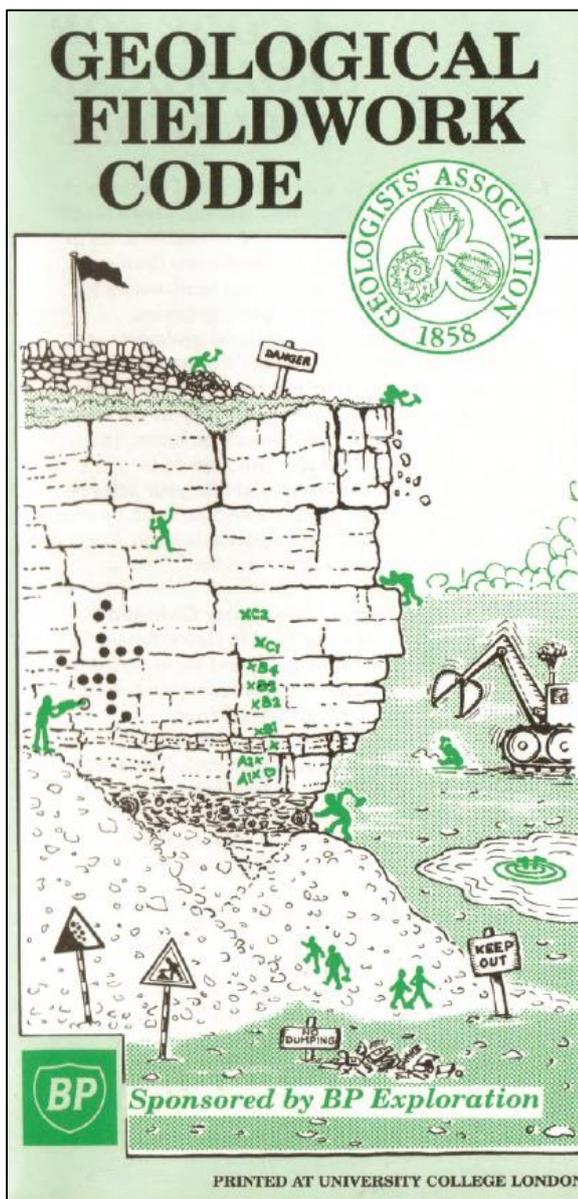
Context:

- Why are we going outside? Can't we just look at rocks in the nice warm classroom? *Rock samples, taken out of context, may be interesting in their own right, but this is of little value until their field relationships can be studied. It is particularly important to see how a rock fits into the overall sequence. Only then can the evidence it contains be used to interpret past environments, the relative sequencing of events, structural history of the area, or even economic potential.*
- What hazards might we meet on the walk from school, and what should we do to be safe and comfortable? *Traffic hazards – walk in an orderly fashion and only cross roads where and when instructed by the teacher. Other people – treat others courteously and ensure that neither they, nor the pupils, are crowded off the pavement. The weather – bring appropriate clothing to school once the field trip is announced, e.g. warm, waterproof clothing for rain and cold: loose clothing and sunblock for hot weather, strong shoes.*

- What dangers might we meet at the rock face? How can we stay safe? *Always check the face visually before approaching too close. Do not stand beneath loose blocks. Watch out for slumping or slipping of the face. Only work where instructed by the teacher. Do not clamber about on the rock face. Wear a hard hat if the face is more than two or three metres high. Watch out for rising tide on the coast.*
- What are we going to do when we get there? *The answer will depend on which of the “Questions for any rock face” activities you are undertaking. Usually, however, pupils will be recording the thickness of beds, structural data such as the amount and direction of dip of the beds, or of joints and faults. Most sections are best recorded by scaled diagrams and photographs, e.g. on mobile phones. Specimens may be collected, if appropriate. It is unlikely that hammers will be needed, but if so, then only the teacher should carry one, and should ensure that s/he has eye protection and that pupils are not standing too close.*
- What equipment do we need to take with us? *Any or all of the following: clipboard and paper (or notebook); pencils; eraser; pencil sharpener; compass; clinometer; tape measure; hand lens; camera or mobile phone; (teacher only - dropper bottle of dilute hydrochloric acid; geologist's hammer, eye protection).*

Following up the activity: Go outside! Use any of the Earthlearningidea activities headed “Questions for any rock face”, judging which ones are most suitable according to your local geological opportunities.

If you are going further afield, ask the pupils to use this drawing from the ‘Geological Fieldwork Guide’ (Geologists’ Association), to spot any other potential fieldwork dangers. You should prepare a risk assessment for any off-site visit and file a copy with the school office, as well as carrying it with you.



(Reproduced with thanks to the Geologists' Association)

Underlying principles:

- These are mostly stated under “Context” above.
- Outdoor fieldwork enables pupils to bring together several disparate strands of the Earth science that they have experienced so far in the classroom.
- Many geological principles and laws can be applied in the field, e.g. the law of cross-cutting relationships and the principles of superposition and original horizontality.

Thinking skill development: Pupils relate their theoretical and classroom practical experience to the natural occurrence of rock sequences – a good example of the use of bridging skills.

Resource list:

- the photographs from these sheets, preferably projected onto a screen;
- familiarise pupils with the equipment which will be needed for their visit(s) to exposures of rocks in the vicinity, after this introductory lesson, i.e. clipboard and paper (or notebook); pencils; eraser; pencil sharpener; compass; clinometer; tape measure; hand lens; camera or mobile phone; (teacher only - dropper bottle of dilute hydrochloric acid; geologist's hammer; eye protection).

Useful links: Use the Earthlearningidea activity *Rocks from the big screen: indoor preparation for outdoor fieldwork, using a picture and specimens*, preferably before this activity.

Consult the 'Geological Fieldwork Code' prepared by the Geologists' Association at:

<http://www.geologistsassociation.org.uk/download/Code%20of%20conduct/Code%20for%20fieldwork%20combined.pdf>

Source: Written by Peter Kennett of the Earthlearningidea Team. All photographs by Peter Kennett.

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