GCSE (9-1)

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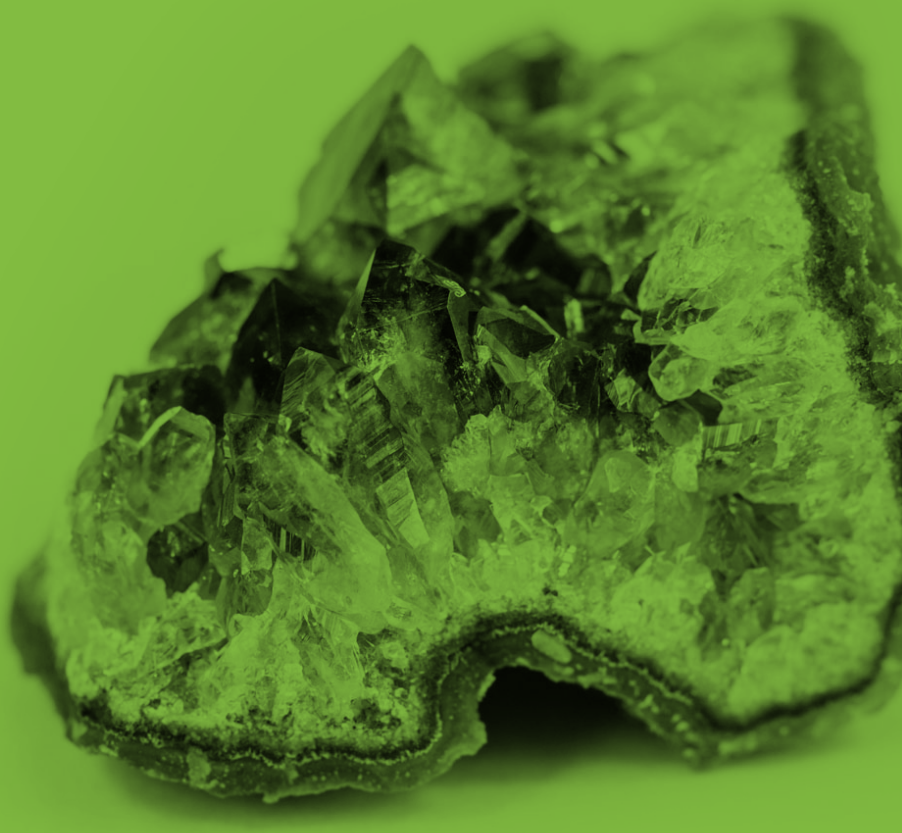
GEOLOGY

Practical Guidance Sheet 12



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GCSE Geology Practical Guidance Sheet 12

Title: Constructing geological maps

Specification reference: Appendix B. The requirement to construct geological maps is stated in Appendix B.

Aim: To construct geological maps.

Apparatus:
Tape measure
Compass-Clinometer
Hand lens
Field notebook
Base map of area to be mapped e.g. school/college grounds, area of field site

Method (in the field):
An area of well exposed geology such as a wave cut platform should be selected to be mapped. It is important that the area to be mapped is not too large. A few tens of meters in one or more dimensions would be recommended.
The area should contain at least two geological features of interest such as an igneous body, fault, fold, unconformity, dipping beds of varying lithologies.
Learners should spend time investigating the "layout" of the features of the area before producing a rough sketch map onto the base map showing how the features relate to each other.

Detailed records of their observations should be recorded to include where relevant:

- dip and strike of planar structures e.g. bedding planes, faults, edges of igneous bodies
- widths of features e.g. of outcrops of lithologies, width of igneous bodies
- rock descriptions of the main lithologies

The map should be drawn up on return to the classroom.

Method (in the classroom/school or college grounds):
In preparation for, or as an alternative to field mapping if a field mapping site is not available, an area of geology can be "mocked up" on the classroom floor or school/college grounds.
e.g. a series of dipping beds of varying lithology can be represented by propping up trays/books/ planar surfaces with rock samples next to them. In this way folds and unconformities can be modelled across the classroom floor and the rock samples described.
A dyke may be represented by a sample of basalt and vertical edge or even a written description of the outcrop.
Unseen faults can be simulated by "displacement" of features such as a dyke.

Learners should spend time investigating the "layout" of the features of the area before producing a rough sketch map showing how the features relate to each other.

Detailed records of their observations should be recorded to include where relevant:

- Dip and strike of planar structures e.g. bedding planes, faults, edges of igneous bodies
- Widths of features e.g. of outcrops of lithologies, width of igneous bodies
- Rock descriptions of the main lithologies

The map should then be drawn up.