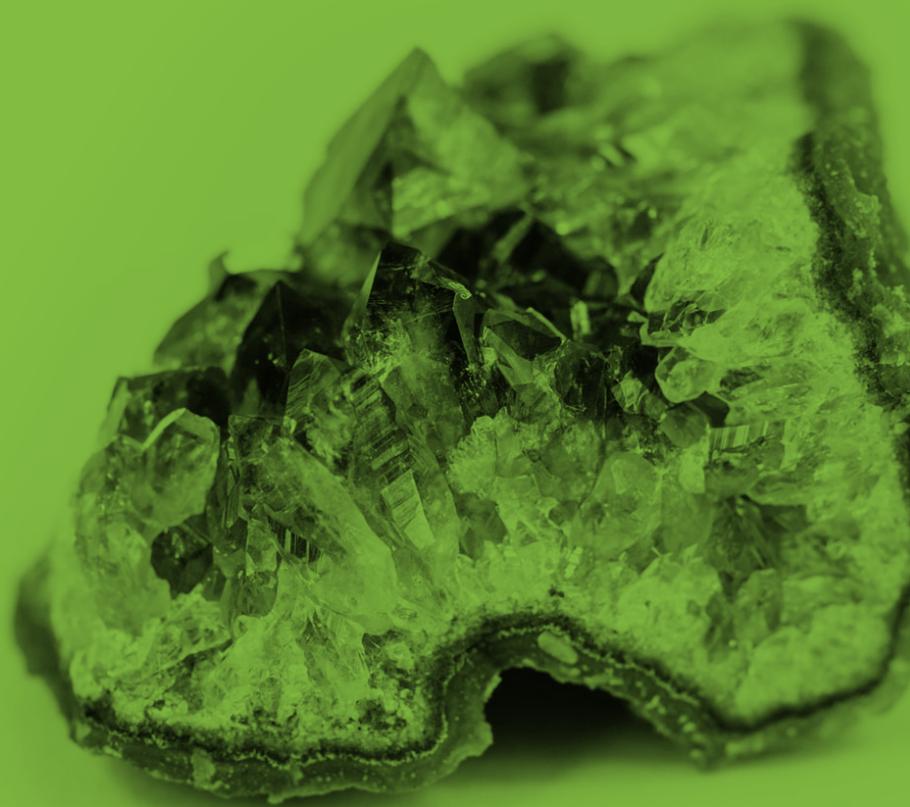


GCSE (9-1)

WJEC Eduqas GCSE (9-1) in
GEOLOGY

Practical Guidance Sheet 13



GCSE Geology Practical Guidance Sheet 13

Title: The use of a geographic information system (GIS)

Specification reference: Appendix B. The requirement to have knowledge and understanding of the compilation and analysis of geological data sets through to visualisation using a geographic information system (GIS) is stated in Appendix B.

Aim: To use GIS to compile and analyse geological data sets.

A simplified example is shown below. Alternative uses of GIS are acceptable.

Apparatus:

e.g. British Geological Survey (BGS) website 3D geological models

Method:

The British Geological Survey (BGS) website has a set of 3D geological models, found at the link below.

<http://mapapps.bgs.ac.uk/geologyofbritain/home.html?mode=groundhog>

These models can provide virtual cross-sections and virtual boreholes which learners could use to answer geological questions.

e.g.

- Select “Ingleborough” from the “choose model” menu
- Select “Draw Cross-Section”
- Draw a cross-section line running NW-SE across the map from the NW corner to the SE corner by clicking where you want to start the cross-section, dragging the mouse and double clicking where you want the cross-section to end
- Produce the cross-section by clicking on the link to open the virtual cross-section
- Using this cross section, a task could be set that requires learners to consider the suitability of the three valleys for the site of reservoirs. Alternatively a shorter cross-section line could be drawn across one valley only. Clicking on the name of the rock units indicated in the key reveals their lithology and learners may use this to inform their decisions regarding permeability, or learners may be given suitable information regarding permeability.

e.g. If York is selected, a cross section W-E or a borehole located within the map area reveals information concerning the thickness and lithology of each layer. This could provide a data set that learners could use to consider the engineering issues faced by those developing foundations for the construction of tall buildings in the York area.

e.g. If Thurrock is selected and a N-S cross section drawn, questions such as “to what extent does the geology of the area support the development of a landfill site with minimal engineering design?” could be posed.