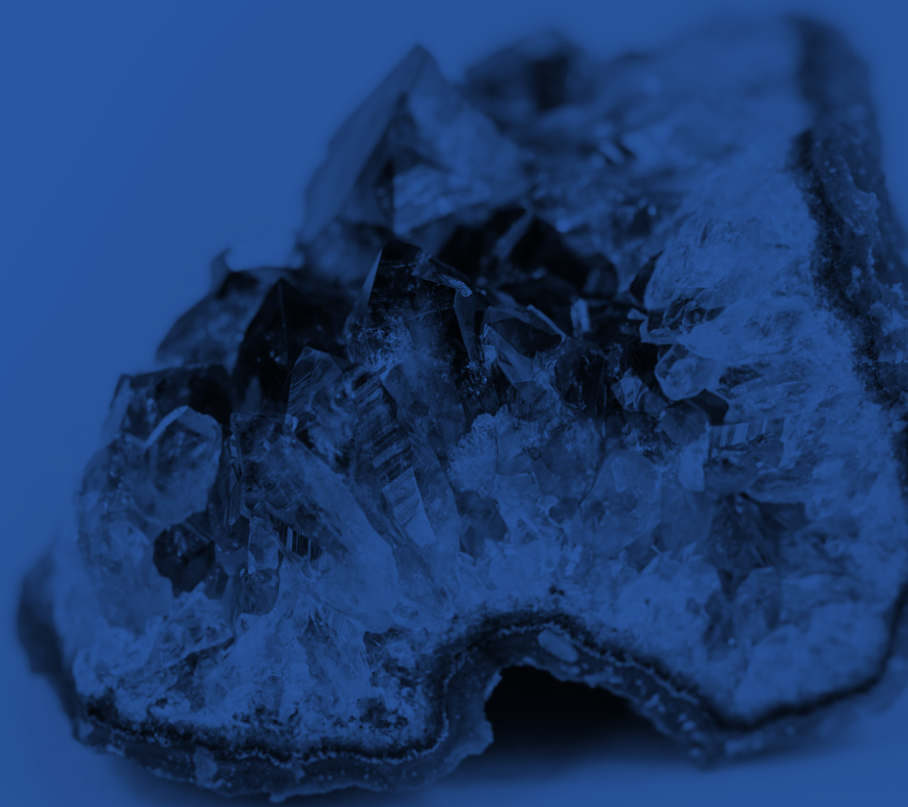


WJEC Eduqas GCE A LEVEL in GEOLOGY

SP9 Use of photomicrographs to identify minerals and rock textures of igneous rocks to identify rock type and to deduce their cooling history



Title: SP9 Use of photomicrographs to identify minerals and rock textures of igneous rocks to identify rock type and to deduce their cooling history

Specification reference: F2.2.b

Aim: To use photomicrographs to identify minerals and rock textures of igneous rocks to identify rock type and to deduce their cooling history.

Apparatus:

Photomicrographs or drawings of photomicrographs of a range of igneous rocks
Ruler
Mineral data sheet

Method:

1. Select a photomicrograph of an igneous rock.
2. Describe the texture of the rock:
 - crystalline
 - crystal size (s): coarse (>3mm), medium (1-3mm), fine (<1mm)
 - other textural features: equicrystalline, porphyritic, vesicular, glassy, fragmental
 - crystal shape: euhedral, subhedral, anhedral
3. Describe and identify the minerals within the rock.

Analysis:

1. Identify the name of the rock using the textural characteristics and mineralogy.
2. Refer to appropriate sources of information e.g. A level notes, internet sources to determine the cooling history of the rock using the evidence from the texture.

Teacher/Technician notes:

Practical techniques which may be assessed:

- I. Use of photomicrographs to identify minerals and rock textures.
- J. Use appropriate apparatus to record a range of quantitative measurements (to include mass, time, volume, temperature and length).

If petrological microscopes are available learners could be provided with thin sections of a variety of rock types which could be drawn and annotated.

Alternatively learners could draw and annotate images of thin sections using internet sources or learners could be provided with copies of images for annotation.

Websites containing thin section images of a variety of rocks include:

http://www.earthscienceeducation.com/virtual_rock_kit/DOUBLE%20CLICK%20TO%20START.htm

<https://wwwf.imperial.ac.uk/earthscienceandengineering/rocklibrary/identify.php?itype=4&step=1>

Images should be selected to cover the suggested list of igneous rocks in the specification section F2.2b.