GCE A LEVEL

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GEOLOGY

SP8 Production of full rock description of macro and micro features from hand specimens and/or unfamiliar field exposures of igneous rocks in order to interpret component composition, colour and textures, to identify rock type and to deduce their cooling history

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Title: SP8 Production of full rock description of macro and micro features from hand specimens and/or unfamiliar field exposures of igneous rocks in order to interpret component composition, colour and textures, to identify rock type and to deduce their cooling history

Specification reference: F2.2.b

Aim: To produce full rock description of macro and micro features from hand specimens and/or unfamiliar field exposures of igneous rocks in order to interpret component composition, colour and textures, to identify rock type and to deduce their cooling history.

Apparatus:
Hand lens or light microscope
Ruler
A range of igneous rocks

Method:
1. Select a hand specimen of an igneous rock (or an unfamiliar field exposure of 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
4. Observe any macro features from the igneous rock specimen/field exposure e.g. pillow structures, aa/pahoehoe surfaces, columnar joints.

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:
H. Produce full rock descriptions of macro and micro features from conserved hand samples and unfamiliar field exposures.
J. Use appropriate apparatus to record a range of quantitative measurements (to include mass, time, volume, temperature and length).

Specimens should be selected to cover the suggested list of igneous rocks in the specification section F2.2b. Other specimens may be used.