

# WJEC Eduqas GCE AS in GEOLOGY

P11

Use of photomicrographs to identify minerals and rock textures of metamorphic rocks to identify rock type and to deduce the temperature and pressure conditions of their formation



## Title: P11 Use of photomicrographs to identify minerals and rock textures of metamorphic rocks to identify rock type and to deduce the temperature and pressure conditions of their formation

### Specification reference 2.2g

**Aim:** To use photomicrographs to identify minerals and rock textures of metamorphic rocks to identify rock type and to deduce the temperature and pressure conditions of their formation.

### Apparatus:

Photomicrographs or drawings of photomicrographs of a range of contact and regional metamorphic rocks  
Ruler  
Mineral data sheet

### Method:

1. Select a photomicrograph of a metamorphic rock.
2. Describe the texture of the rock:
  - crystalline
  - foliated, including type of foliation (slaty cleavage, schistosity and gneissose banding) or non-foliated
  - crystal size (s)
  - porphyroblastic or granoblastic
  - crystal shape.
3. Describe and identify the minerals within the rock.

### Analysis:

1. Identify the name of the rock using the textural characteristics.
2. Refer to appropriate sources of information e.g. AS notes, internet sources to determine the temperature and pressure conditions of formation of the rock using the evidence of mineralogy and texture.

### Teacher/Technician notes:

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

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

Images should be selected to cover the suggested list of metamorphic rocks in the specification section 2.2g.