How can we teach geology more effectively?

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Where in the World am I?
Why is teaching geology important?

Geology is the study of the Earth

vs

Geography is the study of the physical features of the earth and its atmosphere, and of human activity as it affects and is affected by these.

• Landscapes (rivers, coasts and glaciation)

• Natural Resources (fossil fuels)

• Climate Change (the carbon cycle)
Why is teaching geology important?

**KS3 Geography National Curriculum**
- **Rocks**, weathering and soils.

**KS3 Science National Curriculum**
- The rock cycle and the formation of igneous, sedimentary and metamorphic rocks.

**KS4 Geography National Curriculum**
How *geomorphic processes* at different scales, operating in combination with *geology*, climate and human activity have influenced and continue to influence *the landscapes of the UK*.

**KS5 Geography National Curriculum**
Landscape systems
- *Materials within a landscapes*
- Sediment supply
- *Carbon sequestration* in oceans and sediments
- Weathering
(c) CASE STUDY – UK river landscape

Name of chosen river basin in the UK

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Discuss the influence of geology in the formation of river landforms within your chosen river basin

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How can we improve our confidence in teaching geology?

- Get samples
- Pick case studies and resources carefully
- Drip feed across the curriculum

Be need to be the experts in the room!
Get samples ...

- Boulder Clay
- Chalk
- Limestone
- Granite
- Sandstone
- Marble
- Slate

Granite
Granite was formed when magma (molten rock) cooled. This cooling took place below the Earth’s surface and slowly enough to permit formation of crystals.

Boulder Clay
Boulder Clay is formed when clay is scraped from the top layer of older rock by the movement of a glacier. As the glacier melts, all the clay and rock fragments it was carrying are left behind.

Sandstone
Sandstone is a type of rock that forms when grains of sand are compacted together over long periods of time.

Metamorphic
Sedimentary
Igneous
Curriculum Planning

UK

What processes shape physical landscapes?

- Weathering
- Erosion
- Influence of geology (hard and soft rock) on upland and lowland.

Africa

How does The Nile change from source to mouth?

- Overview of river landforms
- Formation of a waterfall in more detail.

UK in the 21st Century

What is the physical landscape of the UK?

- Upland vs lowland
- Glaciation

Distinctive Landscapes

How do rock types differ?
- Igneous, metamorphic and sedimentary

What landforms are formed through erosion?
- Formation of a bay and headland at the Holderness coast.

What river landforms are formed in the upper course?
- Formation of the High Force Waterfall and interlocking spurs.

Year 7

Year 8

Year 9

Year 10
Further Help

The Geological Society
serving science & profession

https://www.geolsoc.org.uk/KS3Resources

The Geology of Britain:
An Introduction by Peter Toghill

Science Prep Room