

EDINBURGH'S ROCKS AND PEOPLE

IGNEOUS ROCKS



Igneous rocks are rough rocks formed in volcanoes and underground intrusions of magma. These rocks erode more slowly than sedimentary rocks and so they form Edinburgh's hills. In the past, people lived on the high ground – it was easier to defend, and the well-drained slopes were good for farming. Today, these are an important part of the city's landscape and green space.



Igneous rocks are quarried for aggregate, which is used in road building and as a component of concrete.



METAMORPHIC ROCKS



Metamorphic rocks are formed deep in the crust by the action of heat and pressure on existing rock. These are not found naturally in Edinburgh, but one

particular rock, slate, has been brought to the city from the Highlands – it makes an ideal roofing material.

JAMES HUTTON



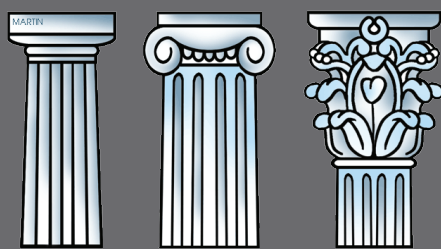
Hmm...the Rock Cycle

The Edinburgh geologist James Hutton (1726-1797) discovered the rock cycle! He proposed that the Earth operated as a machine, where natural processes acted over immense time scales to erode the land and create new rocks. He understood the connections between different rock types and the immense age of the Earth.

SEDIMENTARY ROCKS

Edinburgh's sedimentary rocks are mostly formed of sediment created by erosion of the mountains to the north. This sediment was transported south by rivers and deposited in the low ground and on the sea bed.

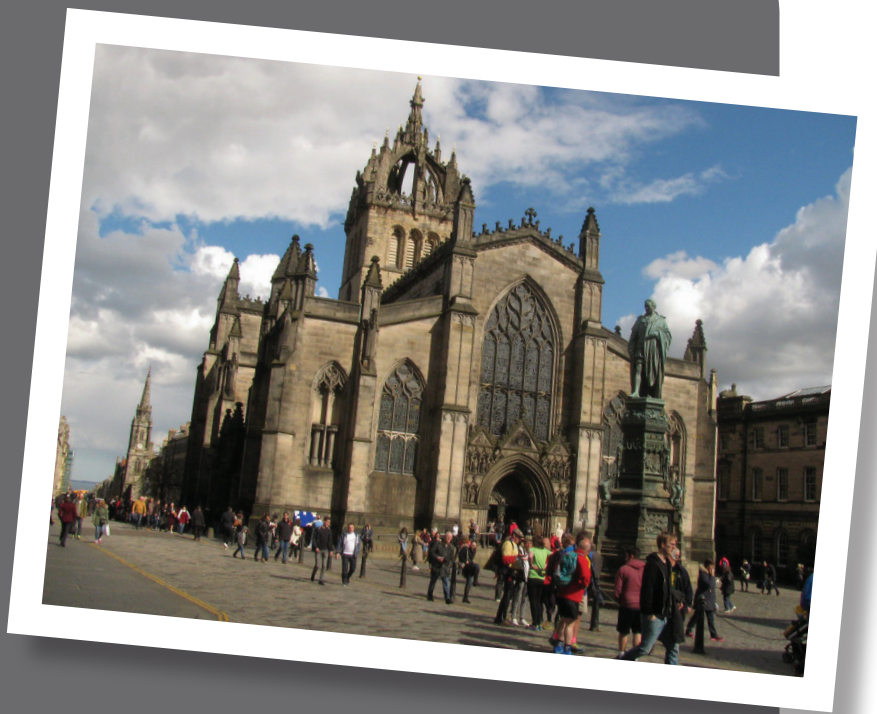
One of these sedimentary rocks, sandstone, is ideal for building: strong and chemically stable but soft enough to be carved into blocks. Edinburgh's Old and New Towns are mostly built of sandstone from quarries such as Craighleith.



Can you spot these different column designs in Edinburgh's buildings?

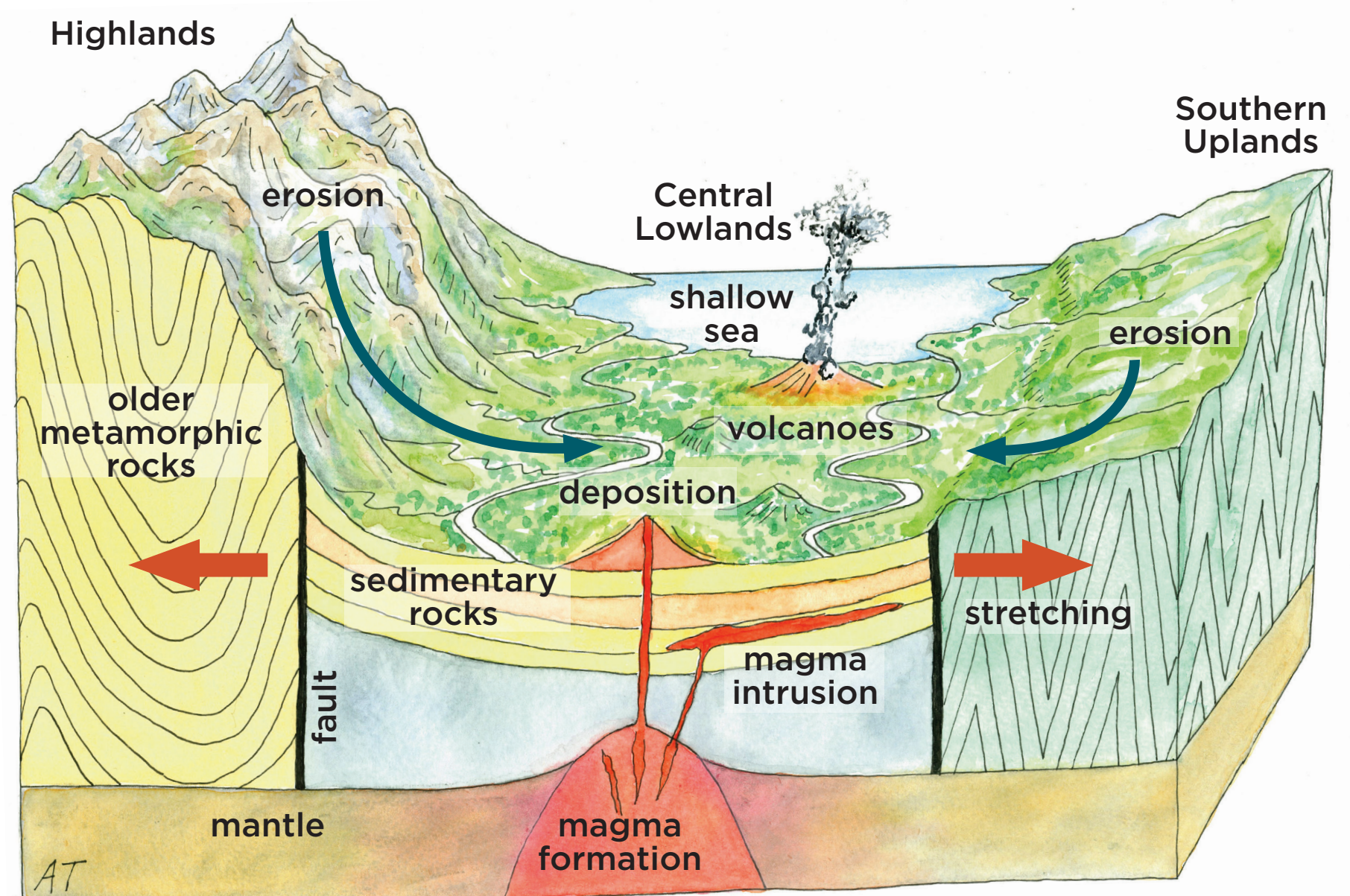
The city also used sedimentary rocks as a source for energy. For many centuries coal was extracted from the Midlothian Coalfield and used to heat Edinburgh's homes. Oil for lighting and transport came from oil shale in West Lothian.

Local limestone was crushed and burned in lime kilns, then spread on the fields to reduce acidity and improve the soil. It was also used to create lime mortar for building.



HOW EDINBURGH'S ROCKS WERE FORMED

Central Scotland 350 million years ago



DID YOU KNOW?

- 20,000 years ago Edinburgh was buried under a huge ice sheet.
- Craighleith Quarry was 100 metres deep. That's where most of the sandstone used to build the New Town came from.
- James Hutton started studying at Edinburgh University when he was just 14.
- Edinburgh Castle is built on the plug of a volcano that erupted 340 million years ago.
- Monktonhall, the last coal mine in Midlothian, closed in 1997.



Find out more
www.edinburghgeolsoc.org/learning