

# Eycott Hill Nature Reserve: Geology answer sheet



**Cumbria**  
Wildlife Trust



## Answers

### Geology & history

1.

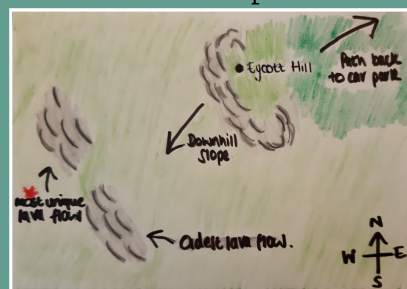


A Limestone Sedimentary    B Granite Igneous    C Marble Metamorphic    D Obsidian Igneous    E Clay Sedimentary

- Because the Eycott Volcanic Group, a unique form of rocks created million of years ago by lava flows, is named after this specific location. Eycott Hill Nature Reserve is a Site of Special Scientific Interest for Geology.
- The Skiddaw Group.
- The eroded lava landscape of Eycott Hill was covered by a warm, shallow sea. The remains of sea creatures gathered on the sea bed as a limey mud which then hardened to form limestone.
- Sinkholes—as limestone reacts with rainwater, which is very weakly acidic, it dissolves to form hollows in the ground known as sinkholes.

### Lava

- Magma is molten rock (rock that is so hot it has turned to liquid) and is within the Earth's crust. Lava is the name given to magma which has reached the surface of the Earth.
- Lava can range from 700–1,250 °C.
- A pyroclastic flow is a dense mixture of solidified lava pieces, volcanic ash, hot steam and dust. A pyroclastic flow is extremely hot, with temperatures over 400 °C, and moves down the sides of a volcano at very high speeds.
- 20.
- 2,500 metres thick.
- 450–460 million years ago there were a number of volcanic eruptions that caused lava to flow over Eycott Hill, which then formed a hard, dark rock. The ridges are the remains of these ancient lava flows. The hollows were caused as weaker layers and softer material were eroded away.
- The youngest lava flows are towards the north-east of the reserve/closest to the car park. The oldest lava flows are towards the south-west of the reserve/closest to the summit of Eycott Hill.
- The unique lava flow is past the summit of Eycott Hill on the south-west side of the nature reserve, towards the bottom of the hill. See map below.



### Crystals

- Crystals form in rocks when molten rock (magma) solidifies.
- The size of crystals depends on how quickly the molten magma solidifies. Magma that cools slowly forms rock with large crystals; lava that cools quickly forms rock with small crystals.
- Feldspar crystals, 4 cm
- Between the large white crystals are much finer crystals ('ground mass'). During a volcanic eruption the molten magma, which had these large crystals in, was forced to the surface of the Earth and spread out as a thin sheet. The liquid that was then left was able to cool much faster and form the very fine ground mass, which you can see between the large crystals.

### Volcanoes

- Volcanic eruptions are triggered by a build up of pressure in the Earth's crust. This could be due to the movement of tectonic plates or a build up of magma activity, known as a hotspot.
- Composite or Strato, Shield and Dome.
- Magma collects in magma chambers which sit inside the Earth and below the volcano. As the magma chamber experiences a high amount of pressure, due to more magma entering the chamber, rocks fracture around the chamber. Eventually, when the pressure becomes too great, rocks inside the Earth crack forming vents and fissures and the magma escapes from the volcano.
- A dormant volcano.
- The Borrowdale Volcanic Group.
- Around 450–460 million years ago, during the Ordovician Period, the continents moved together and triggered volcanic eruptions.
- Andesite.
- Eyjafjallajökull volcano is in Iceland and it last erupted between March and June 2010.

### Get creative!

There are no right or wrong answers for this section, just your interpretation of what Eycott Hill Nature Reserve might have looked like!  
We would love to see your drawings — share them on our social media channels or email Cumbria Wildlife Trust via [mail@cumbriawildlifetrust.org.uk](mailto:mail@cumbriawildlifetrust.org.uk)