Lower Key Stage 2 – Elveden C of E Primary Academy
Knowledge organiser – Rocks

Know how to…

- ***Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.***
- ***Describe how fossils are formed when things that have lived are trapped within rock.***
- ***Recognise that soils are made from rock and organic matter***

Key Vocabulary

rocks	Rocks are made up of grains that are packed together
mineral	Minerals are solid chemical substances that occur naturally – examples include diamond, quartz, gypsum. Each grain that makes up the rock is made from a mineral
permeable	Allowing water to pass through it
petrologist	Someone who studies rocks
magma	Liquid rock inside a volcano
lava	Liquid rock that flows out of a volcano. Fresh lava ranges from 1300 to 2200 degrees Fahrenheit (700 to 1200 degrees centigrade) in temperature and glows red hot to white hot when it flows
molten rock	A rock that has been reduced to liquid through heating
fossils	The remains or impression of a prehistoric plant or animal embedded in rock
soil	Soil is a mixture of tiny particles of rocks, organic matter from animals and plants, as well as air and water

Rocks

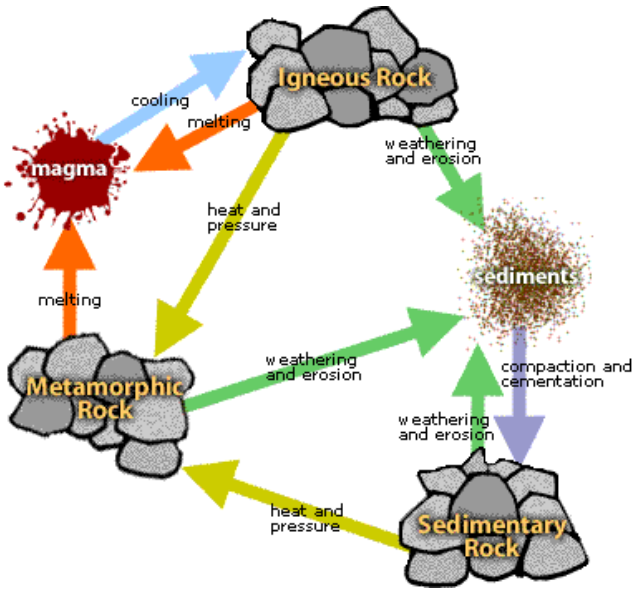
The three main types, or classes, of rock are **sedimentary**, **metamorphic**, and **igneous** and the differences among them have to do with how they are formed.

Sedimentary
Sedimentary rocks are formed from particles of sand, shells, pebbles, and other fragments of material. Together, all these particles are called sediment. Gradually, the sediment accumulates in layers and over a long period of time hardens into rock. Generally, sedimentary rock is fairly soft and may break apart or crumble easily. You can often see sand, pebbles, or stones in the rock, and it is usually the only type that contains fossils.

Metamorphic
Metamorphic rocks are formed under the surface of the earth from the change that occurs due to intense heat and pressure (squeezing). The rocks that result from these processes often have ribbonlike layers and may have shiny crystals, formed by minerals growing slowly over time, on their surface.

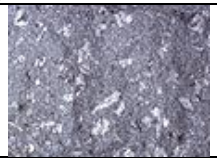
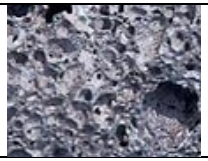
Igneous
Igneous rocks are formed when magma (molten rock deep within the earth) cools and hardens. Sometimes the magma cools inside the earth, and other times it erupts onto the surface from volcanoes (in this case, it is called lava). When lava cools very quickly, no crystals form and the rock looks shiny and glasslike. Sometimes gas bubbles are trapped in the rock during the cooling process, leaving tiny holes and spaces in the rock.

The Rock Cycle



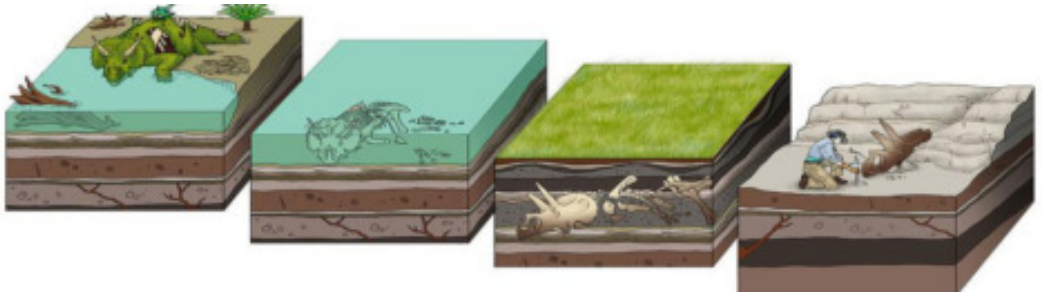
Key characteristics of different types of rocks

Here's a chart of some of the key characteristics that can help you identify the rocks within these three main classes.

Crystals Small, flat surfaces that are shiny or sparkly, like tiny mirrors.	**Fossils** Imprints of leaves, shells, insects, or other items in the rock.	**Gas bubbles** 'Holes,' like Swiss cheese in the rock
		
Glassy surface A shiny and smooth surface, like coloured glass.	**Ribbonlike layers** Straight or wavy stripes of different colours in the rock.	**Sand or pebbles** Individual stones, pebbles or sand grains in the rock.
		

How fossils are formed

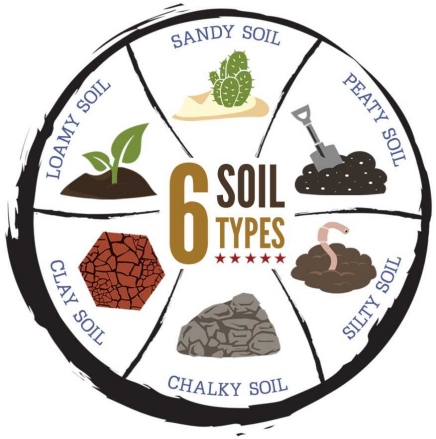
Fossils are the remains of traces of plants and animals that have previously been living. A lot of fossils are found underwater and you can see the outline of the skeleton.



- Most fossils are formed in sedimentary rock.
- When the organism dies, it begins to decompose (rot).
- If it is buried quickly by fine sediment, it can leave an imprint before complete decomposition.
- The fine sediment can seal the imprint before the sediment turns to rock.

Soil

Soil is a mixture of tiny particles of rock, dead plants and animals, air and water. Different soils have different properties depending on their composition.



Mary Anning

Mary Anning is remembered as being one of the greatest fossil hunters to ever live. She was born on 21 May 1799. She lived in the English seaside town of Lyme Regis in Dorset. Her family were very poor, which meant she didn't get to attend school much. Instead, she mainly taught herself to read and write. Mary would spend her time searching the coast looking for what she called 'curiosities'. Later in her life, as she developed a better understanding of her finds, she realised they were actually fossils. Over the course of her life she made many incredible discoveries. This made her famous among some of the most important scientists of the day. They would visit her for advice and to discuss scientific ideas about fossils.