SEDIMENTARY

Sedimentary rocks are formed over millions of years, as sediments (broken remains of other rocks) compact on the Earth's surface, under seas, lakes and oceans.

The rock debris is deposited by a river into a water source, where they join together through a process called sedimentation.

What are sedimentary rocks like?

Sedimentary rocks contain rounded grains in layers. The oldest layers are at the bottom and the youngest layers are at the top. Sedimentary rocks may contain fossils of animals and plants trapped in the sediments as the rock was formed.

METAMORPHIC

Metamorphic **rocks** are formed when other **rocks** (igneous and sedimentary) have been changed due to pressure or heat.

Characteristics of metamorphic rocks

They are formed when either igneous or sedimentary rocks are changed.

Heat and/or pressure will cause the elements in the original rock to react and re-form.

They are crystalline and often have a "squashed" (foliated or banded) texture

Metamorphic rocks are usually highly resistant to weathering and erosion, making them very hard-wearing and a popular choice for building materials.

IGNEOUS

Igneous rocks form when magma (molten rock) cools, either as volcanoes on the surface of the Earth or while the melted rock is still inside the crust.

How are they useful?

Igneous rocks have a wide variety of uses. One important use is for buildings and statues - Granite, in particular, is very popular for buildings and statues because it's very hard to damage. Because of the crystalline structure of igneous rocks, they're a lot harder to break than sedimentary rock, and they're less easily eroded by rainfall, making them a good building material for some structures.

To investigate the hardness of rocks.

Some rocks are soft and crumbly whilst others are hard and strong.

Can you scratch the with different items? Which items will scratch them and which will not?

Can you crumble them?

Can you order the from softest to hardest?

Prediction

I predict that the hardest rock will be _____ because_____.

Method

You could use sandpaper to rub the rock sample 20 times.

Then, measure the amount of dust from the rock.

Repeat for each rock sample and compare results.

Results

Compare the amount of dust that has been scratched off each rock. The softer the rock the more dust that will be collected.

How to keep a fair test

If you rubbed a rock with sandpaper for 10 times and a different rock for 20 times and then compare the amount of rock dust would this be fair?

Things to consider:

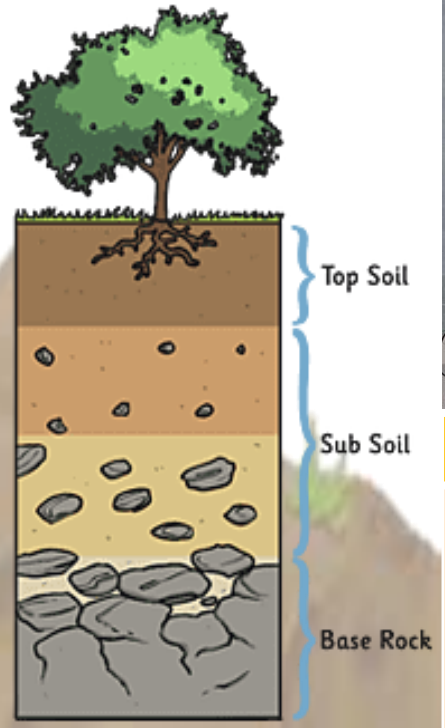
- The amount of time.
- The materials used.
- The amount of force.
- The size of rock tested.

SOIL

Soil is the top layer of the Earth's crust, made up of organic matter, minerals, and organisms that support life

Soil is the top layer of the Earth's crust, containing a mixture of minerals, chemicals, and organisms that help support plant and animal life.

Soil scientists usually study the surface of the earth to a depth of about 1.2 metres.



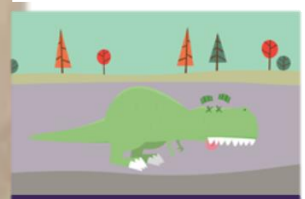
FOSSILS

Mary Anning

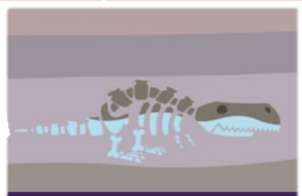
Mary Anning was an English fossil collector, dealer, and an expert of palaeontology (the study of extinct animal and plants). Mary Anning became known across the globe for the discoveries she made in Jurassic marine fossil beds in the cliffs along the English Channel, being one of the earliest fossil hunters to do so.

Key Vocabulary

Rock	Rock is a naturally occurring solid material composed of one or more minerals
Boulder	a detached and rounded or worn rock
Soil	Soil is the loose upper layer of the Earth's surface where plants grow.
Hard	Something that is hard is very firm and stiff to touch and is not easily bent, cut, or broken.
texture	The texture of a rock feels. This could be smooth or bumpy.
permeable	To let water soak through.
peat	Peat is a type of dark soil that is mainly made from partly decayed plant material.
Sandy soil	Soil that has a high proportion of sand.
fossil	Fossils are imprints of long dead plants and animals found in rocks.


Animal is buried by sediment and soft parts decay.


More sediment builds up and is compressed to form rock.


Minerals in the groundwater replace the bone forming a fossil.


The rock rises to the surface and is worn away by erosion.