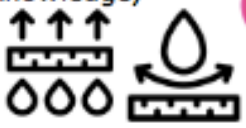
TMS Science Launchpad- Year 2023/2024
Year 3 - Chemistry : Materials (Rocks)

Substantive knowledge:

There are different types of rock with different properties - *(build on year 1 and 2 knowledge)*
Some are **permeable** (sandstone) and allow water to pass through.
Some are **impermeable** (slate) so water cannot pass through them.
Some are **hard** (granite), some are **softer** (chalk).
Some rocks come from **volcanoes,** some build up with layers and have **fossils** in them and some change from one type to another. They may have **grains or crystals.**



Fossils are formed when things that have lived are trapped within layers of **sediment** over a long period of time and under extreme pressure.
They are then found within the rock that is formed.
Fossils tell us what has happened before.
Fossils provide evidence that living things have changed over time.

Rocks break down over time to become part of the soil mixture.

Soil is made from rocks and **organic matter.**
Half of soil is air and water. In soil you can find sand, small stones, bits of leaves and roots. There are also millions of microorganisms in the soil which help break down the matter and make the soil healthy and full of life.

Vocabulary:
Rocks, igneous, metamorphic, sedimentary, NB the children do not need to know this vocabulary but it can be useful to refer to it
permeable, impermeable, extinct, organic matter, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil, sediment, marble, chalk, granite, sandstone, slate, limestone, volcanoes *(other possible rocks to introduce: pumice, basalt, shale, conglomerate) NB - erosion can be referred to as there is a link to geography in y4. The main point is the link between rocks and soil.*

Disciplinary knowledge

Identify and classify	Pattern seeking	Observation over time	Comparative tests	Observation over time	Identify and classify
Can rocks be grouped according to their properties? - check names using identification key (observe closely)	Is there a pattern in where we find fossils on planet Earth? (interpret results and draw conclusions)	How does tumbling **change a** rock over time? (to ask scientific questions)	How does adding different amounts of sand to soil affect how quickly water drains through it? (gather/record results) (to interpret results and draw conclusions)	What happens to organic matter over time? (composting) (observe closely)	How are different types of soil made up? (observe closely)

Research

Who was Mary Anning and what did she discover?