Year 3
Topic: Rocks
Strand: Chemistry

What I should already know.

- Soil contains nutrients and these help plants to grow.
- The meaning of the word absorb.
- That magma is molten rock that is formed in very hot conditions inside the Earth.
- Why some materials are used for certain purposes because of their properties.

Investigate!

- Explain why **rocks** are used for different purposes based on their **properties.**
- Research the different living things whose **fossils** are found.
- Explore the different kinds of **soils**, including those you can find in the local environment.
- Investigate how metamorphic rocks are formed through making volcanoes and erupting them.
- What is soil made of? Create own soil cocktail.
- Sort different types of rocks based on how rough or smooth they are, whether they have **grains** or crystals, how **permeable** they are, how easily they can break down, how strong they are and what they look like.

Vocabulary

Absorb	Soak up or take in.
Bedrock	The solid rock in the ground which supports all the soil above it.
Decaying	Gradually being destroyed by a natural **process.**
Grain	A **grain** of something such as sand or salt is a tiny hard piece of it.
Igneous	**Rocks** that are formed by volcanic action or intense heat.
Imprint	A mark or outline made by the **pressure** of one object on another.
Leaf litter	**Decaying** leaves.
Magma	**Molten** rock that is formed in very hot conditions inside the earth.
Man-made	Things are created by people.
Metamorphic	**Rocks** that have had their original structure changed by **pressure** and heat.
Mineral	Something that is formed naturally in **rocks** and in the Earth.
Molten	**Molten** rock, metal, or glass has been heated to a very high temperature and has become a hot, thick liquid.
Natural	Things that exist in nature and are not made by people.
Nutrients	Substances that help plants and animals to grow.
Paleontology	The study of **fossils** as a guide to the history of life on Earth.
Permeable	If a substance is permeable, something such as water or gas can pass through it or soak into it.
Porous	Something that is porous has many small holes in it, which water and air can pass through.
Prehistoric	The time in history before any information was written down.
Preserve	To protect from **decay.**
Pressure	Force that you produce when you press hard on something.
Properties	The qualities or features that belong to something and make it recognisable.
Rock	A solid mass made up of **minerals**. Rock forms much of the earth's outer layer, including cliffs and mountains.
Sediment	Solid material that settles at the bottom of a liquid, especially earth and pieces of **rock** that have been carried along and then left somewhere by water, ice, or wind.
Soil	The substance on the **surface** of the earth in which plants grow.
Surface	The flat top part of something or the outside of it.
Surrounding	To be present all around.
Volcano	A mountain from which hot melted rock, **gas**, steam, and ash from inside the Earth sometimes burst.
Weathered	Affected by the weather.

What will I know by the end of the unit?

What are the different types of rocks?

There are three types of **rocks** that are formed **naturally.**

- **Igneous:**

When **molten magma** cools, **igneous rocks** are formed. This either cools and forms **rocks** under the earth's **surface**, or flows out of erupting **volcanoes** as lava and may mix with other **minerals**. Examples include granite and bas- alt. This type of rock is strong, hard- wearing and **non-porous.**

- **Sedimentary:**

Sometimes, little pieces of **rocks** that have been **weathered** can be found at the bottom of lakes, seas and rivers This is called **sediment**. Over millions of years, layers of this **sediment** builds up forming **sedimentary rocks**. Examples include limestone and chalk. Sedimentary rocks are **porous** and can easily be worn down .

- **Metamorphic:**

When some **igneous** and**sedimentary** rocks are heated and squeezed (**pressured**), they form **metamorphic rocks.** Examples include slate and marble. **Metamorphic rocks** are strong. Bricks and concrete are not **rocks** because they are **man-made.**

What are fossils?

- **Fossils** are the remains of **prehistoric** life.
- They are usually formed when a living thing (plant or animal) dies and the body is covered up or buried by **sediment** over tens of thousands of years.
- Some **fossils** are formed when the tough bones and teeth in animals, and the woody part of plants are **preserved.**
- Other **fossils** are made from **imprints** in **surrounding sedimentary rock** such as footprints or **imprints** from shells.
- **Fossils** tell us about the Earth and about life that existed hundreds of thousands and millions of years ago.

What is soil?

- **Soil** is made from pieces of rock, **minerals, decaying** plants and water.
- When **rock** is broken down into small **grains, soil** is formed.
- There are layers of **soil**:
  - above the soil is **leaf litter** and recently **decaying** plants.
  - as the **soil** becomes deeper, the **rock grains** become larger until **bedrock** is reached.