Sholing Junior School - Science

Topic: Rocks	Year: 3	Strand: Chemistry

What I Need to Know

I will:

- compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter.

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
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
palaeontology	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, especial- ly 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
volcano	A mountain from which hot melted rock, **gas**, steam, and ash from inside the Earth sometimes burst.
weathered	Affected by the weather

Investigate!

We will work scientifically by:

- observing rocks, including those used in buildings and gravestones, and exploring how and why they might have changed over time;
- use a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.
- We might research and discuss the different kinds of living things whose fossils are found in sedimentary rock and explore how fossils are formed.
- We will explore different soils and identify similarities and differences between them and investigate what happens when rocks are rubbed together or what changes occur when they are in water.
- They can raise and answer questions about the way soils are formed.

Knowledge of Rock

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:**

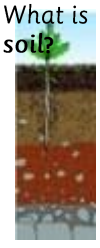
When some **igneous** and **sedimentary** rocks are heated and squeezed **(pressured)**, they form **metamorphic rocks.**
Examples include slate and marble.
Metamorphic rocks are strong

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.

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