

My Knowledge Journal

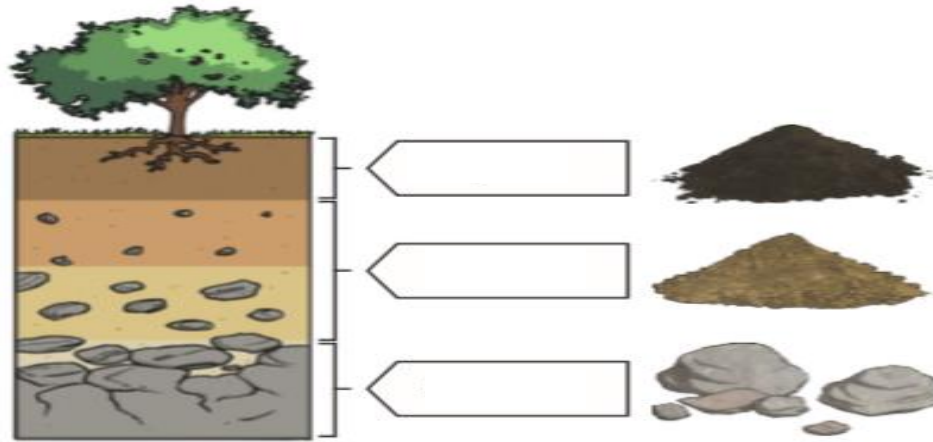


Rocks and Soil

Name: _____

Pre Knowledge Quiz

Question 1 Label the different layers:



Question 2 Which is the best definition to describe how a fossil is formed? Circle it.

Fossils come from volcanoes

Things that once lived are trapped within a rock.

Fossils are shells.

Question 3 What does permeable mean?

Question 4 Circle the human made rocks.



chalk



concrete



brick



marble



granite

Materials Knowledge Organiser

What should I already know?

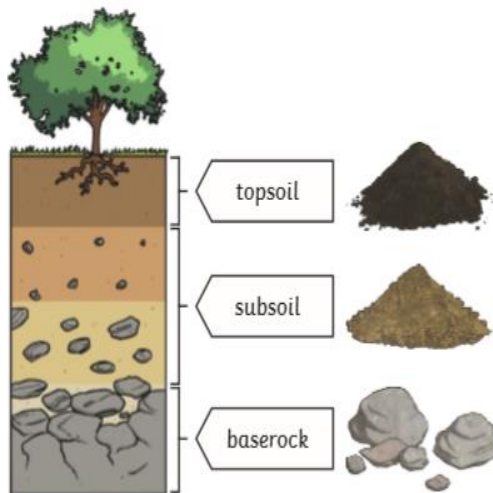
- I have Identified and compared the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses
- I can distinguish between an object and the material it is made from
- I can compare and group together a variety of everyday materials on the basis of their simple physical properties

Soil

Soil is the uppermost layer of the Earth. It is a mixture of:
-minerals, air, water, organic matter including living and dead plants and animals

Why is soil important?

1	Plants	Nutrients in soil help plants to grow & anchor roots in the ground.
2	Atmosphere	Soil releases gases such as carbon dioxide in to the air.
3	Living organisms	Many animals, fungi & bacteria live in soil.
4	Nutrient cycles	Soil is important in recycling nutrients.
5	Water	Soil helps to filter and clean water.



Glossary

Rock	A hard, solid material that is made of minerals and is found in nature.
Igneous Rock	Rock that has been formed from magma or lava.
Sedimentary Rock	Rock that has been formed by layers of sediment being pressed down hard and sticking together. You can see the layers of sediment in the rock.
Metamorphic Rock	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme pressure or heat.
Magma	Molten rocks that remain underground.
Lava	Hot molten rock that comes out of the ground.
Soil	The top layer of the ground, in which plants grow; dirt.
Bedrock	The solid rock underneath soil or loose rocks; the lowest of three main layers of soil.
Subsoil	The middle layer of soil, which contains more rocks than topsoil.
Topsoil	The top layer of soil, in which most plants have their roots.
Sediment	Natural solid material that is moved and dropped off in a new place by wind or water e.g. sand.
Permeable	Allows water to pass through it.
Impermeable	Does not allow water to pass through it.
Fossilisation	The process by which fossils are made.
Fossil	The remains or impression of a prehistoric plant or animal embedded in rock and preserved in petrified form.
Palaeontology	The study of fossils.
Erosion	When water, wind or ice wears away land.
Mineral	a naturally occurring solid substance (as diamond, gold, or quartz) that is not of plant or animal origin.

Rocks

Sedimentary - These rocks form under the sea. Rocks are broken into small pieces by wind / water (erosion). They settle and over time, layers pile up and the pressure turns the sediment to rock.



Limestone, chalk, sandstone

Igneous - Far underground the temperature is so hot, rock melts into a liquid (molten rock). When the liquid is underground it is called magma and can cool to form igneous rock. When it spills out (volcano) it is called lava.



Obsidian, granite, basalt

Metamorphic - When sedimentary or igneous rock is near magma, it heats up and chemicals change in the rock. However, it does not heat up enough to melt it. As it cools it becomes metamorphic rock.



Marble, quartzite, slate

Some words used to describe rocks:
Hard, soft, absorbent, permeable, impermeable, durable, high density, low density. Density measures how bulky the rock is (how tightly packed the molecules are).

Natural Rocks			Human-Made Rocks
Igneous	Sedimentary	Metamorphic	
Obsidian	Chalk	Marble	Brick
Granite	Sandstone	Quartzite	Concrete
Basalt	Limestone	Slate	Coade Stone

Fossilisation

An animal dies. It gets covered with sediments that eventually turn to rock.

More layers of rock cover it. Only hard parts of the creature remain e.g. shell, bones and teeth

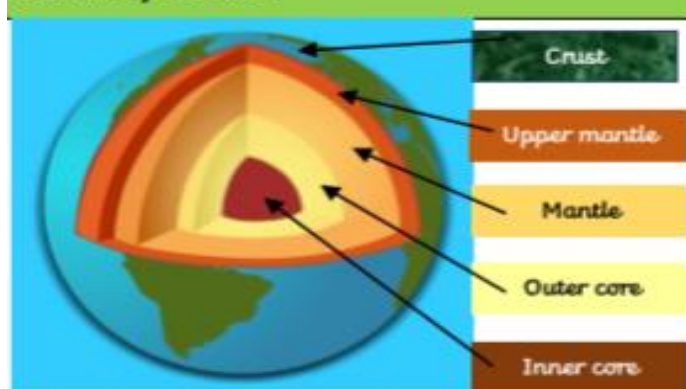
Over thousands of years sediment might enter the mould to make a cast fossil. Bones may change to mineral but stay the same shape.

Changes in sea level take place over a long period.

As erosion and weathering take place, eventually the fossil becomes exposed.

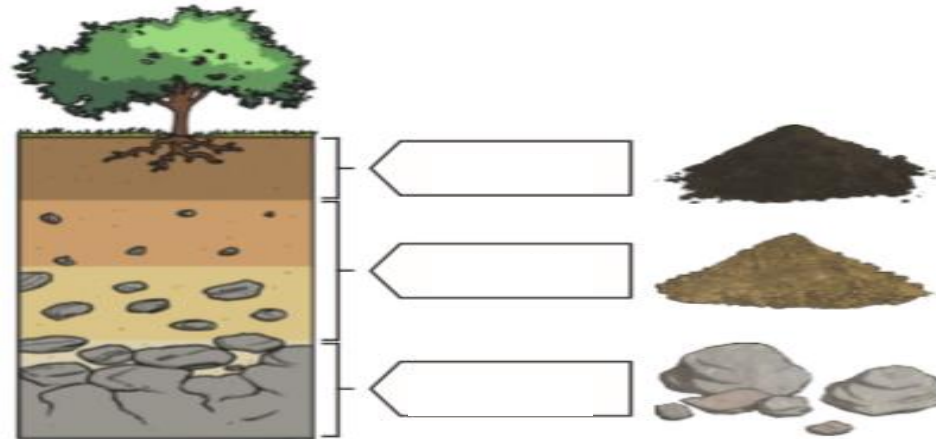


Structure of the Earth



Post Knowledge Quiz

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