Our Lady's Catholic Primary School – Knowledge Organiser

Rocks and soil | Science Summer 2 | Year Group 3

Key vocabulary

Igneous rocks	Rock that has been formed from magma or lava.
Sedimentary rocks	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 rocks	Rock that started out as igneous or sedimentary rock but changed due to being exposed to extreme heat or pressure.
magma	Molten rock that remains underground.
lava	Molten rock that comes out of the ground
sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. sand.
permeable	Allows liquids to pass through it.
impermeable	Does not allow liquids to pass through it.
fossilisation	The process by which fossils are made.
palaeontology	The study of fossils.
erosion	When water, wind or ice wears away land.

Words you might use to describe the properties of rocks

hard, soft, permeable, impermeable, durable (meaning resistant to weathering), high density, low density.
Density measures how 'bulky' the rock is (how tightly packed the molecules are).

Fossil formation

Fossils were formed millions of years ago

1. Plants and animals died and sank to the seabed.
2. The soft parts decayed away leaving the hard parts.
3. The hard parts were covered and squashed by many layers of sand and other materials.
4. The animal/plant matter dissolves and is replaced by minerals, leaving a replica of the original bone called a fossil.

Animal fossil

Plant fossil

Significant scientists

Mary Anning (1799-1847)

Mary Anning was an English palaeontologist and fossil collector. She became known around the world for important finds she made in the Jurassic fossil beds in Dorset.

Holly Betts; PhD student, University of Bristol

Holly is a palaeontologist. She is researching whether fossils are best for establishing a timescale for recent and ancient episodes in our evolutionary history.

Types of rocks

Sedimentary rocks	
Sandstone 	**Limestone** 
Chalk 	**Chalk** is used for drawing because it is crumbly and soft.
Metamorphic rocks	
Quartzite 	**Slate** 
Marble 	**Marble** is good for gravestones because it does not rub away.
Igneous rocks	
Basalt 	**Pumice** 
Granite 	**Granite** is good because it is hard and it does not absorb water.

Types of soils

The property of soils is affected by the:

- type of rock
- size of rock pieces
- amount of organic matter in it.

Peat 	Water-logged Contains decomposed plant material Soft and easily compressed
Sandy soil 	light and dry - lots of air gaps so water drains through quickly
Chalky soil 	stony and water drains through quickly - found in areas with lots of chalk
Clay soil 	very sticky when wet - a heavy soil - water does not drain through it quickly