Gunthorpe Primary School – Knowledge Organiser

Science Focus:	Rocks – What makes up the ground we walk on?	**Year 3:**	Autumn Term 2

Prior Knowledge

Year 1	You named, described and compared a variety of everyday materials on the basis of their simple physical properties.
Year 2	You learnt more about the properties, purpose and uses of a wider variety of everyday materials. You investigated which materials can be squashed, stretched, twisted and bent.

Key Knowledge

Types of rocks

There are 3 types of rock.	• Igneous rock • Sedimentary rock • Metamorphic rock
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 heat or pressure.

How to identify each type of rock

Igneous rock	• Very hard. • Contain crystals.
Sedimentary rock	• Usually crumbly and allow water through them. • Made of layers and stuck together with mineral crystals. • They can contain **fossils** within their layers.
Metamorphic rock	• Usually hard. • May contain tiny crystals or **fossils**.

How fossils are formed

How are fossils formed?	• An animal dies, its skeleton settles on the sea floor and is buried by **sediment**. • The **sediment** surrounding the • skeleton thickens and begins to turn to stone. • The skeleton dissolves and a mould is formed. • Minerals crystallise inside the mould and a cast is formed. • The **fossil** is exposed on the Earth's surface.

Key Vocabulary

Spelling	Definition
dissolve	To become part of a liquid.
erosion	When water, wind or ice wears away land.
fossil	Preserved remains of ancient plants and animals, which are at least 10,000 years old.
fossilisation	The process by which fossils are made.
impermeable	Does not allow liquids to pass through it.
lava	Molten (liquid) rock that comes out of the ground.
magma	Molten (liquid) rock that remains underground.
palaeontology	The study of fossils.
permeable	Allows liquids to pass through it.
sediment	Natural solid material that is moved and dropped off in a new place by water or wind, e.g. sand.
solidify	To become hard or solid.

What soil is made from

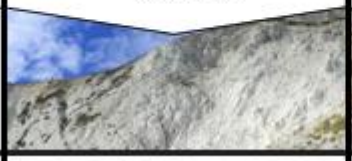
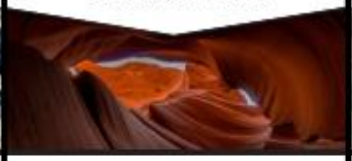
Minerals	Small stone fragments, clay, silt or sand.
Organic matter	Decaying plants and animals.
Water	The nutrients in the minerals and organic matter dissolve into this.
Air	Fills the gaps between mineral and organic matter.

Types of soil

Sandy	Pale in colour with lots of air gaps. Water drains through easily so it feels dry.
Clay	Orange or blue-ish sticky soil with very few air gaps. Water does not drain through it easily.
Chalky	Light brown in colour. Water drains through quickly.
Peat	This is different to other soils because it does not contain any rock particles. Made from very old decayed plants and very dark, crumbly and rich in nutrients.

Diagrams and images

Rocks

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

Fossilisation Process

An animal dies. It gets covered with **sediments** which eventually become rock.

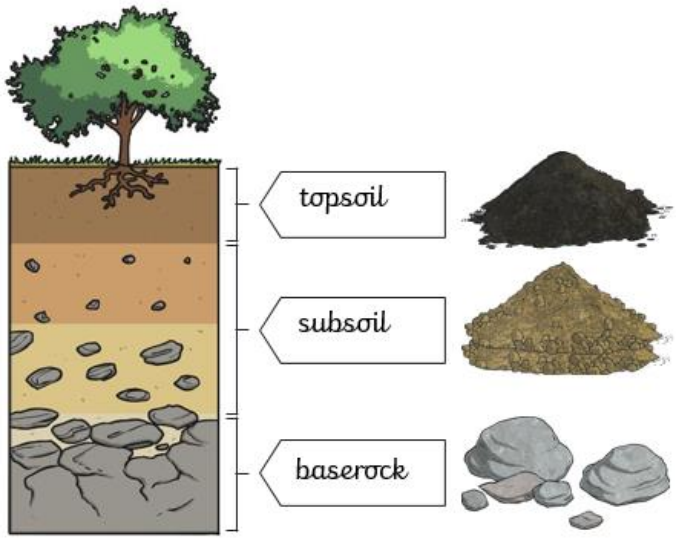
More layers of rock cover it. Only hard parts of the creature remain, e.g. bones, shells and teeth.

Over thousands of years, **sediment** might enter the mould to make a **cast fossil**. Bones may change to mineral but will 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.

Soil Layers



Famous Scientist

Mary Anning (17799-1847) is remembered as being one of the greatest fossil hunters to ever live. She lived in the English seaside town of Lyme Regis in Dorset. Over the course of her life she made many incredible discoveries, even though she wasn't acknowledged for them for many years because she was a woman!