

Science – Year 3

Materials

How can rocks be identified based on how they are created?

NC objectives - areas of study	End point of area of study	Vocabulary		
<p>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>recognise that soils are made from rocks and organic matter.</p>	<p>Children identify and name different types of rock according to their appearance and properties. They understand how fossils are formed in rock over time and explain how this happens. They understand that soils are rocks are made from organic matter.</p> <p>Children explain who Mary Anning was and how her finds have helped people all around the world learn more about animals in the past.</p>	Basic	Adventurous	Technical
		Rocks, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorbs water, bone, flesh, extinct, minerals, marble, chalk, granite, sandstone, slate, types of soil (e.g. peaty, sandy, chalky, clay)		igneous, metamorphic, sedimentary, permeable, impermeable, fossil,

Knowledge

Substantive Knowledge	Disciplinary Knowledge
<ul style="list-style-type: none"> ● Retrieval- work in year 3 build on the prior knowledge of pupils from y1 and y2 ● In KS1 children name objects and the materials they are made from. They begin to choose materials for a particular purpose and know how some materials can be changed and recycled. They know who John Boyd Dunlop is. ● ● Lesson 1 ● To know how to group and compare different types of rock. ● rock, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, ● Know that rock is a type of solid material. (Retrieval) ● Know that applying forces to objects can change their shape, by squeezing, stretching, bending and twisting (retrieval) 	<p>Working as Chemists children apply key skills of working as palaeontologist through-</p> <p>Use of evidence</p> <p>Children explore rocks and soils first hand using magnifiers to identify how the different types of rock and soil are formed. They learn to name the rocks because of their properties and key features, classifying them according to their properties. By conducting simple fair tests, they are able to explore the properties of different soils and rocks, answering questions posed to them and suggesting other questions they can begin to answer. They gather evidence, recording through notes, drawings and annotated photos to answer questions.</p>

- Know that the Earth has a solid crust made up of tectonic plates with molten rock beneath
- Know that there are three kinds of rocks: igneous, sedimentary and metamorphic
- Lesson 2
- To know examples of different types of rock.
- **marble, chalk, granite, sandstone, slate,**
- Know that granite and basalt are types of igneous rock and that igneous rocks form from molten rock below the Earth's crust
- Know that limestone and sandstone are types of sedimentary rock which form when small, weathered fragments of rock or shell settle and stick together, often in layers
- Know that marble and slate are types of metamorphic rock which form when rocks in Earth's crust get squashed and heated in processes such as when tectonic plates press against each other
- To be able to understand and give meaning to how different rocks are formed.
- Lesson 3
- LO To know how fossils are formed.
- **fossil, bone, flesh,**
- Know that fossils form when a plant or animal dies and is quickly covered with silt or mud so that it cannot be rotted by microbes or eaten by scavenging animals; in time layers of sediment build, squashing the mud and turning it to stone around the dead plant or animal; the materials in the body are replaced by minerals that flow in water through the rock, leaving a rock in the shape of the animal or plant that was once there
- Know that fossils can help us learn about things that lived long ago
- How do we know what came before us?
- Lesson 4
- LO TO know how soil is formed.
- **types of soil (e.g. peaty, sandy, chalky, clay)**
- Know that soil is made from tiny particles of rock broken down by the action of weather (weathering)
- Lesson 5

Answering questions about fossils, they can create their own, applying layers to show the process.

Similarities and Differences

Exploring the different rocks, children compare their properties, discovering similarities and differences between them, using scientific vocabulary to describe them. They use results to draw conclusions about different rocks and their suitable uses- drawing upon knowledge of prior learning about materials and their uses in year 2. Further research using texts can be carried out to find out some of the uses of different materials and why they are suitable for that purpose.

- LO To know Mary Anning is a famous palaeontologist,
- fossil, bone, flesh,
- Know that Mary Anning was a famous English Palaeontologist who became known around the world because of her finds made in fossil beds on the south coast of England.

Concepts

Biology

Chemistry

Physics

SKILLS

1. Compare

2. Explore

3. Identify

4. describe

5. classify

6. Question

7. observe

8. test

9. record

10. research

ASSESSMENT

KNOW MORE, REMEMBER MORE, DO MORE...

In this unit of learning, progress has been made when a learner knows more. This 'distance travelled' from the starting point is evidenced through them remembering more and doing more: in books, low stakes quizzes, retrieval, use of mind maps, answering the big question and being able to feel more confident about this unit.