

CHEMISTRY

YEAR 3 and 4: AUTUMN 1

How can we classify rocks?

COVERAGE: Why do we use different materials for different things?
The children will be observing the appearance and physical properties of rocks, comparing and grouping different rock samples, learning about fossil and soil formation and recording soil drainage rates in a bar chart.

- Define the term rock.
- Describe the appearance of different rocks, identifying both crystals and grains.
- Group rocks by their absorbency, hardness and reaction to acid rain (vinegar).
- List the different factors that break down rocks.
- Describe fossil formation and identify fossils in rocks.
- Describe the work of a palaeontologist.
- Name, describe and compare some different categories of soil.
- List some of the benefits of earthworms to the soil.
- Identify and describe the comparative size and weight of the layers in a sedimentation jar.

Working Scientifically

- Use a magnifying glass correctly to observe the appearance of a rock in detail.
- Use results to choose the appropriate rock type for a specific use, suggest a better choice of rock for a specific use and predict how a rock will be affected by the weather.
- Research and present information on fossil formation using a single source.
- Use a model of the fossil record to determine the relative age of a fossil, to suggest how a living thing has changed over time and to suggest what living things were around in a certain era.
- Draw and label the bars on a bar chart.
- Accurately draw and label the layers of sediment in a sedimentation jar.

KEY LANGUAGE AND VOCABULARY:

bar chart
 conclusion
 crystal
 diagram (Y1)
 fossil
 grain
 group (Y1)
 hard
 hardness
 observe (Y1)
 predict (Y2)
 record
 research (Y2)
 rock
 sediment
 sedimentary rock
 sedimentation
 soft
 soil

KNOWLEDGE AND FACT SHEET



KEY QUESTIONS:

1. How can we develop our understanding of a rocks appearance?
2. What are a rocks physical properties?
3. How are fossils created?
4. What is the study of fossils and palaeontology?
5. How is soil formed?
6. How do earthworms help with soil formation?

KEY SKILLS AND KNOWLEDGE

Knowledge

- Rocks can be grouped based on appearance or properties (e.g. colour, texture, hardness and permeability).
- Rocks may contain grains, crystals or fossils.
- Grains and crystals appear differently and can be used to classify rocks.
- Soils are made from rocks and dead matter.
- The relationship between the properties of rocks and their uses.
- Fossils can form from the remains of living things.
- Rocks can change over time (e.g. erosion and weathering).

Skills <u>Observing</u> - Using their senses to describe, in more detail and with simple scientific vocabulary, what they notice or what has changed. <u>Researching</u> - Gathering specific information from a source. <u>Recording</u> Beginning to draw more scientific diagrams by: - Drawing in 2D to produce simple line diagrams. - Labelling with more scientific vocabulary. <u>Grouping and classifying</u> - Grouping based on visible characteristics and measurable properties. <u>Graphing</u> - Representing data using bar charts. <u>Analysing and drawing conclusions</u> - Beginning to suggest how one variable may have affected another. - Beginning to quote results as evidence of relationships. - Beginning to use identified patterns to predict new values or trends.	
ENRICHMENT: Children will be doing experiments on different types of rocks. Visits: -	Previous Learning: Future Learning: The children will be developing their knowledge of shadows and reflections. They will also look at famous scientists.
School Drivers to Examine Children will look at: - Care of the Environment = children will look at the importance of rock formations to the environment and what we can learn from the study of them for the care of our environment. -	