



Knowledge and Skills Mind Map (Science)

Year 3 Summer (Page 1)

Knowledge - 
Skill - 



1. Can I ask questions and make careful observations about different types of rocks?

- **Prior learning (last term):** The parts of a plant, how they grow and reproduce
 - **Vocab:** rock, observe, properties
 - Know that rocks are natural materials that can be found in the Earth and come in different types and appearances.
 - Know that rocks can be observed and described based on their properties, (e.g. colour, texture, size and whether they have grains or crystals).
 - Know that asking scientific questions helps us to learn more about rocks, (e.g. "Why do some rocks feel rough and others smooth?")
 - Know that careful observation helps us to notice similarities and differences between rocks.
- (note for teachers – suggested task:** provide a range of real rock samples and ask pupils to observe them closely using magnifying glasses, then record what they notice (colour, texture, grains) and generate questions about them.)
- **Asking relevant questions and using different types of scientific enquiries to answer them**
 - **Making systematic and careful observations**

4. Can I set up a simple enquiry to investigate how rocks can change over time?

- **Prior learning (last lesson):** grouped rocks based on properties
 - **Vocab:** enquiry, investigate, weathering
 - Know that rocks can change over time due to processes such as being rubbed together or exposed to water.
 - Know that these changes can make rocks smaller, smoother or break them into pieces.
 - Know that a simple enquiry can be used to investigate how rocks change by testing different conditions.
 - Know that careful observation helps us to notice and describe changes during an investigation.
- (note for teachers – suggested task:** provide small pieces of rock (e.g. chalk or sandstone) and ask pupils to rub them together or place them in water, observing and recording changes such as crumbling, smoothing or colour changes.)
- **Setting up simple practical enquiries, comparative and fair tests**
 - **Making systematic and careful observations**

Rocks

2. Can I describe and compare rocks based on their appearance and physical properties?

- **Prior learning (last lesson):** asked questions about types of rocks
 - **Vocab:** appearance, physical properties, texture, permeable
 - Know that rocks can be described by their appearance and physical properties such as colour, texture and hardness.
 - Know that some rocks are hard and strong while others are softer and can be worn away more easily.
 - Know that some rocks allow water to pass through them (permeable) while others do not (impermeable).
 - Know that comparing properties helps us to identify similarities and differences between rocks.
- (note for teachers – suggested task:** provide a range of rocks and ask pupils to test and compare them (e.g. scratch test for hardness, drop water to observe absorption), then record results and discuss similarities and differences.)
- **Identifying differences, similarities or changes related to simple scientific ideas and processes**
 - **Using straightforward scientific evidence to answer questions or to support their findings**

3. Can I group rocks based on their properties and explain my choices using evidence?

- **Prior learning (last lesson):** compared rocks based on appearance
 - **Vocab:** group, properties, evidence, compare, classify
 - Know that rocks can be grouped based on their appearance and physical properties.
 - Know that classification means sorting items into groups based on similarities and differences.
 - Know that evidence from observations can be used to explain why rocks have been grouped in a certain way, (e.g. grouped by hardness, texture or whether they are permeable).
 - Know that there is more than one way to group rocks depending on the properties chosen.
- (note for teachers – suggested task:** provide a mixed set of rocks and ask pupils to group them in their own way (e.g. by colour, texture, hardness), then explain and justify their grouping using evidence from their observations.)
- **Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions**
 - **Using straightforward scientific evidence to answer questions or to support their findings**



Knowledge and Skills Mind Map (Science)

Year 3 Summer (Page 2)

Knowledge - 
Skill - 



5. Can I recognise that soils are made from rocks and organic matter and compare different types of soil?

- **Prior learning (last lesson):** learnt how rocks can change over time
- **Vocab:** soil, organic, compare
- Know that soil is made from small pieces of rock and organic matter such as dead plants and animals.
- Know that different soils have different properties, (e.g. sandy soil feels gritty, clay soil feels sticky).
- Know that comparing soils helps us to identify similarities and differences between them.
- Know that soils are formed over time from the breakdown of rocks and living materials.

(note for teachers – suggested task: provide samples of different soils (e.g. sand, clay, garden soil) and ask pupils to observe, feel and compare them, then record similarities and differences in a table.)

- **Identifying differences, similarities or changes related to simple scientific ideas and processes**
- **Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions**

Rocks

6. Can I explain how fossils are formed and what they tell us about the past?

- **Prior learning (last lesson):** recognised soils are made from rocks, and compared types of soil
- **Vocab:** fossil, sediment,
- Know that fossils are the remains or traces of living things that lived a long time ago.
- Know that fossils are formed when plants or animals are trapped in layers of sediment that turn into rock over time.
- Know that not all living things become fossils because special conditions are needed for fossil formation.
- Know that fossils provide evidence about living things and environments from the past.

(note for teachers – suggested task: use a simple 'fossil-making' activity (e.g. pressing shells or leaves into clay) to model how impressions are formed, then link this to how real fossils develop over long periods of time.)

- **Using straightforward scientific evidence to answer questions or to support their findings**
- **Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions**