















Rocks: Grouping Rocks

<p>Aim: Group together different kinds of rocks on the basis of their simple physical properties in the context of natural rocks. I can group rocks based on their properties.</p> <p>Making systematic and careful observations by examining different types of rocks. I can make systematic and careful observations.</p>	<p>Success Criteria: I can name the different types of rocks. I can identify features of different rocks. I can group rocks by specific criteria. I can handle and examine rocks carefully. I can use systematic observations to identify the properties of rocks.</p>	<p>Resources: Lesson Pack A selection of igneous, sedimentary and metamorphic rocks A selection of books on rocks Computers /Laptops / Tablets Sandpaper Pipette A large container or plastic box</p>
	<p>Key/New Words: Igneous, sedimentary, metamorphic, rocks, group, properties, permeable, impermeable, hard, soft, durable, buoyancy, split.</p>	<p>Preparation: Properties of Rocks Activity Sheet - 1 per child Grouping Rocks Activity Sheet - 1 per child (A3 copies for HA)</p>

Prior Learning: Children will have learnt the three different types of rocks in lesson 1.

Learning Sequence

	<p>Types of Rocks: What are the three types of rocks? Why causes them to be different? Children need to demonstrate they understand the difference occurs in the formation of the rocks. Show the types of rocks on the Lesson Presentation and use this to address any misconceptions or errors.</p>	
	<p>Describing Rocks: In talk partners, children discuss the adjectives they would use to describe rocks. Children feedback to class and ideas to be written on the IWB. Select one of the properties such as 'hard' – Are all rocks hard? What about clay? Discuss how different rocks have different properties.</p>	
	<p>Properties of Rocks: Introduce children to the scientific terms they will be using to describe the properties of rocks.</p>	
 	<p>Carousel of Activities: Children record observations and make notes from each activity on the differentiated Properties of Rocks Activity Sheets. Permeability and Durability Group: This should be a teacher led activity. Using a selection of different rocks, children to make observation in relation to their permeability and durability. To test permeability add a few drops of water using the pipette onto the rock and ask the children to observe whether it is absorbed. Use a small square of sandpaper to test how durable the rocks are. Children record their observations. Books Group: Using a selection of age-appropriate books on rocks, children to make notes about the properties of rocks. Density Group: Children test the buoyancy of different rocks using a large container full of water to decide which rocks have higher and which have lower density and take notes. Conduct a mini-plenary to check and assess the children's understanding based on the activities they have completed. Address any misconceptions or errors.</p>	
	<p>Grouping Rocks: Children use their notes on the differentiated Properties of Rocks Activity Sheets to group rocks based on their properties on the differentiated Grouping Rocks Activity Sheets.</p> <div style="display: flex; justify-content: space-around;"> <div>  <p>Children group rocks based on permeability and one other property of their choice.</p> </div> <div>  <p>Children group rocks based on two properties of their choice and then answer questions.</p> </div> <div>  <p>Children group rocks based on all four properties. Children label the rocks by their type and then write a paragraph on the relationship between rock type and the various properties. If children have not already identified the type of rock allow them to do so using books or the Internet while grouping the rocks on their activity sheet.</p> </div> </div>	

Taskit

Posterit: Children select a rock and create a poster adding factual information about the type of rock it is, its properties and its uses.





Science

Rocks



Grouping Rocks





Aim

- I can group rocks based on their properties.
- I can make systematic and careful observations.

Success Criteria

- I can name the different types of rocks.
- I can identify features of different rocks.
- I can group rocks by specific criteria.

- I can handle and examine rocks carefully.
- I can use a systematic approach to recognise similar features of different rocks.

Types of Rocks



What are the three types of rocks? What causes them to be different?

Igneous



Formed from magma or lava.



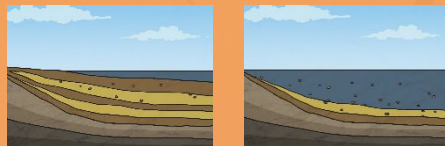
Sedimentary



Formed under the sea as a result of sedimentation,



compaction and cementation.



Metamorphic



Metamorphic rocks are igneous or sedimentary or rocks that change chemically due to proximity to magma, huge pressure from burial or changes in tectonic plates.





Describing Rocks



What adjectives would you use to describe rocks?

Discuss with your talk partner.



Properties of Rocks

The following are a list of common properties of rocks:

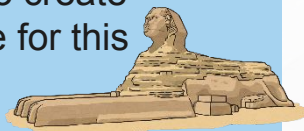
Hard or Soft

Some rocks, like granite, are incredibly hard and can only be cut or split with specialist tools. On the other hand, some rocks are soft and can be easily moulded.



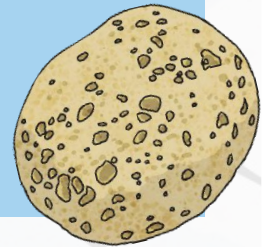
Durable

Rocks that are durable are more resistant to weathering (being eroded – that is broken down – by rain and wind). More durable rocks, such as marble, have been chosen to create buildings and for outside use for this reason.



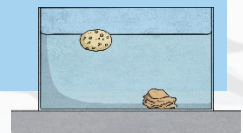
Permeable or Impermeable

If a rock is permeable, for example pumice, this means it allows water to pass through it. Rocks that are impermeable do not allow water to pass through.



Density

Density measures how 'bulky' the rock is (how tightly packed the molecules are), not how heavy. Density can be checked by testing the buoyancy (whether they float in water) of rocks. High density rocks sink whereas low density rocks float.



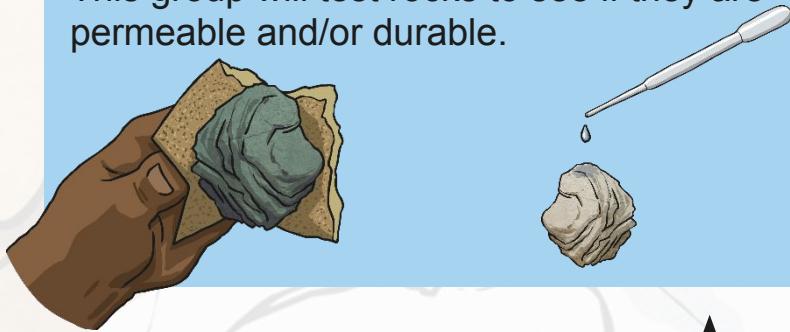


Carousel of Activities



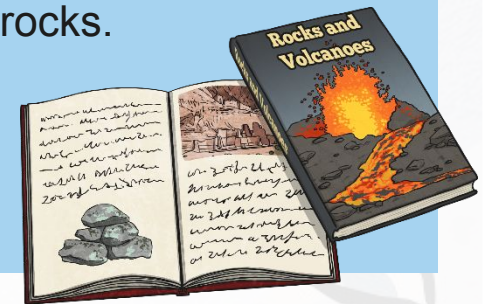
Permeability and Durability Group

This group will test rocks to see if they are permeable and/or durable.



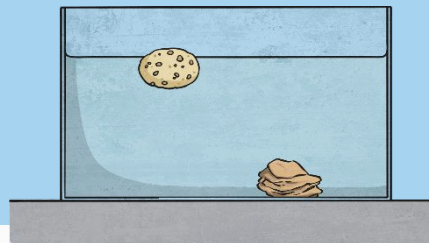
Books Group

You will use books to find out about the properties of rocks.



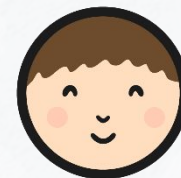
Density Group

You will be testing the buoyancy of different rocks to find out how dense they are.





Grouping Rocks



Record your observations and take notes on your Properties of Rocks Activity Sheet.

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Properties of Rocks

Do each activity in turn and add your notes or record your observations on the following table.

Name of Rock	Type of Rock Is it igneous, sedimentary or metamorphic?	Permeable Does it allow water to pass through?	Durable Is it hard wearing?	Density Is it high density or low density?

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Properties of Rocks

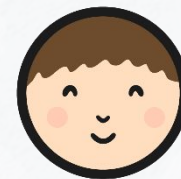
Do each activity in turn and add your notes or record your observations on the following table.

Name of Rock	Permeable Does it allow water to pass through?	Durable Is it hard wearing?	Density Is it high density (sinks) or low density (floats)?	Hard or Soft

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Grouping Rocks



You will now use the notes you have taken on the Properties of Rocks Activity Sheet to group rocks based on their properties.



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Grouping Rocks

Using your notes from the Properties of Rocks Activity Sheet, group the rocks based on two properties of your choice. Remember to label the boxes first and then add in the names of the rocks.

Questions:

Name one rock that was:
Permeable: _____

Impermeable: _____

High density: _____

Low density: _____

Durable: _____

Not durable: _____

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