ROCK PROPERTIES

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Rocks and minerals are used all around us in everyday objects such as building stones, glass, roof tiles, electronics, different types of plastics and even in our food! Rocks can have different properties which make them useful for different jobs. Find out more about the properties of rocks by conducting these simple experiments in the classroom or at home.

YOU WILL NEED:

- A selection of different rock samples (suggested: granite, basalt, slate, chalk, sandstone, pumice, obsidian, marble & limestone)
- Magnifying glass or hand lens
- Plastic beakers or tubs (4)
- Water
- Iron nail for scratch test

1: PROPERTIES OF DIFFERENT ROCKS

a) Chose six different types of rock and fill in the table below with their **properties**.
Tip - use the magnifying glass or hand lens to look closely at the rocks to see whether they have grains or crystals.

ROCKS	COLOUR(S)	GRAINS OR CRYSTALS	SIZE OF GRAINS OR CRYSTALS	DENSITY (HEAVY OR LIGHT)	TYPE OF ROCK (SEDIMENTARY, IGNEOUS, METAMORPHIC)

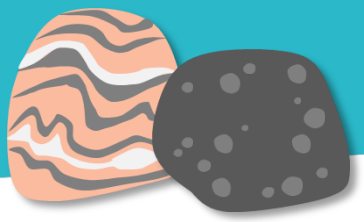
b) Rank these six rocks in order of their **durability** (how easily worn away they are) – sandstone, limestone, marble, slate, chalk, granite
Tip: carefully use an iron nail to try and scratch the surface of the rocks to see how easily they wear away (this is called a scratch test).

NOT VERY DURABLE (EASILY WORN AWAY) 0 1 2 3 4 5 VERY DURABLE (NOT EASILY WORN AWAY)

c) The different **properties** of rocks mean that they can be used for different things. Can you think of any properties that make these different rocks useful?

SLATE	
GRANITE	
CHALK	

ROCK PROPERTIES



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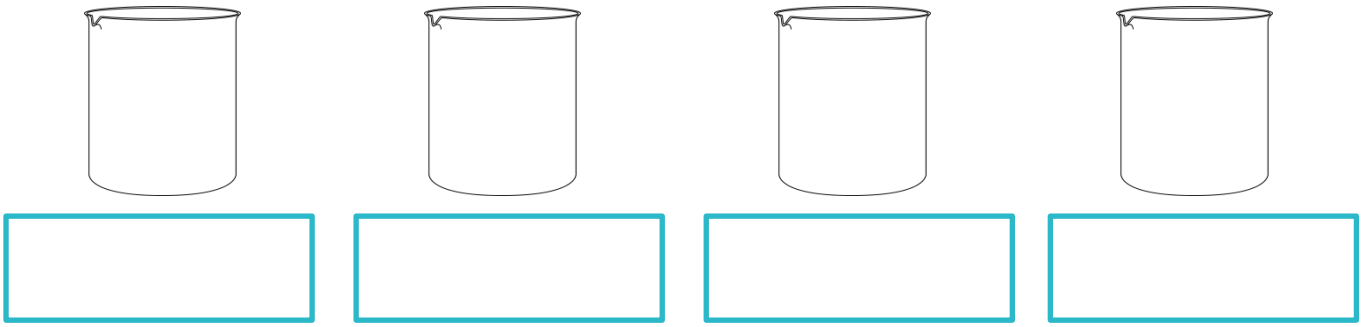
2: PERMEABLE OR IMPERMEABLE?

a) Permeable rocks can absorb water and impermeable rocks cannot absorb water.
To test rock permeability place sandstone, granite, chalk and marble in separate beakers of water for 30 seconds. Look closely at the rocks, does anything happen? Draw your results below and use your observations to label whether the rocks are **permeable** or **impermeable**.



b) What do you think will happen if you leave a permeable rock in water for a long time?

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3:OBSIDIAN & PUMICE

Obsidian and pumice are both igneous rocks that form from cooling lava however they have very different properties.
a) Place the obsidian and pumice rock samples in carefully beakers of water. What do you observe?

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b) i) Which of the two rocks is **less dense**? Circle the correct rock. OBSIDIAN PUMICE

ii) Look back at your observations. Why do you think this happens?
Tip – use a magnifying glass to look closely at the two rocks.

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c) Sketch the obsidian and pumice rocks in the two spaces below. Look closely at the different colours and textures.