ROCK PROPERTIES ANSWER SHEET

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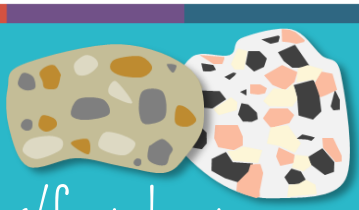

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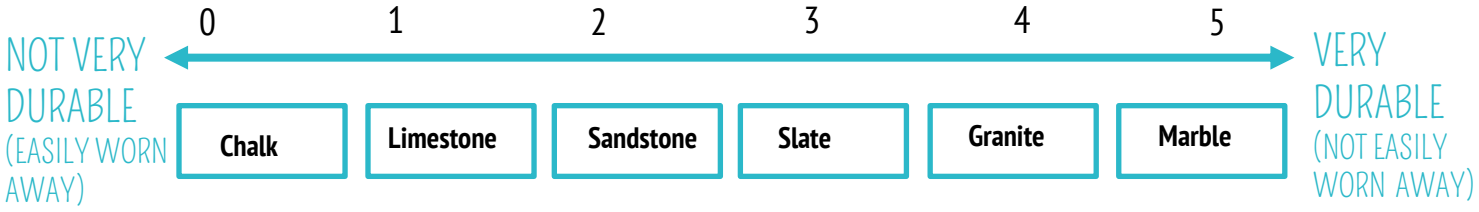
1: PROPERTIES OF DIFFERENT ROCKS

a) Chose six different types of rock and fill in the table below with their **properties**.

Will depend on rocks chosen:

ROCKS	COLOUR(S)	ROCKS GRAINS OR CRYSTALS	SIZE OF GRAINS OR CRYSTALS	DENSITY (HEAVY OR LIGHT)	TYPE OF ROCK (SEDIMENTARY, IGNEOUS, METAMORPHIC)
Granite	Depends on chosen rocks	**Crystals**	**Large**	**Heavy**	**Igneous**
Sandstone		**Grains**	Depends on chosen rock	Depends on chosen rock (lighter than granite)	**Sedimentary**
Marble		**Crystals**	**Large**	**Heavy**	**Metamophic**
Slate		**Crystals**	**Small**	**Light**	**Metamorphic**
Chalk		**Grains**	**Small**	**Light**	**Sedimentary**
Basalt		**Crystals**	**Small**	Depends on amount of vesicles (gas bubbles)	**Igneous**

b) Rank these six rocks in order of their **durability** (how easily worn away they are) – sandstone, limestone, marble, slate, chalk, granite
Depends on rocks chosen but possible sequence:



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

SLATE	**Slate splits into layers and is waterproof (impermeable) so is good for making roof tiles**
GRANITE	**Granite is durable and attractive when polished so is good for making building stones**
CHALK	**Chalk is soft and not durable. It breaks away easily which makes it good for writing on blackboards**

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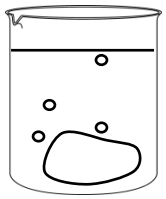
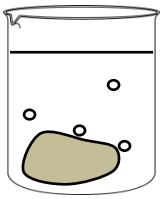
2: PERMEABLE OR IMPERMEABLE?

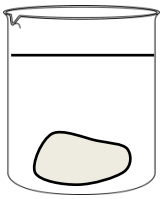
a) Permeable rocks can absorb water and impermeable rocks cannot absorb water.
To test rock permeability place sandstone, granite, chalk and marble in separate beakers of water. Look closely at the rocks, does anything happen? Draw your results below and use your observations to label whether the rocks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



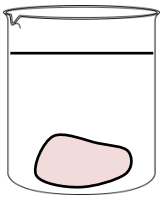
Chalk
Permeable



Sandstone
Permeable



Marble
Impermeable



Granite
Impermeable

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

Pore spaces will completely fill with water (saturate) and no more air bubbles will be given off.

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?

Pumice floats, obsidian sinks

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

OBSIDIAN PUMICE

ii) What do you think could have happened to make this rock less dense?
Tip – use the magnifying glass to look closely at the two rocks.

When the pumice cooled gas bubbled were trapped in the rock and these bubbles makes it less dense than obsidian which contains no gas bubbles.

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

- **Shiny**
- **Glassy**
- **Hard**
- **Black**
- **Sharp edges**

- **Dull**
- **Gas bubbles**
- **Lightweight**
- **Soft edges**