

# Grouping Rocks



Using your notes from the Properties of Rocks Activity Sheet, group the rocks based on whether they were permeable or impermeable.

**Permeable**

**Impermeable**

Now choose another category and group the rocks based on what you found. Label each box first and then add the rocks.

# 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:

\_\_\_\_\_

# Grouping Rocks



Using your notes from the Properties of Rocks Activity Sheet, group the rocks based on their properties. Next to the name, in brackets ( ), write i for igneous, s for sedimentary and m for metamorphic.

Permeable	Impermeable	High density	Low density
Hard	Soft	More durable	Less durable

# Grouping Rocks

I can group rocks based on their properties.

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**Permeable**

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**Impermeable**

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Now choose another category and group the rocks based on what you found. Label each box first and then add the rocks.

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Permeable:  
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Impermeable:  
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High density:  
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Low density:  
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Durable:  
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Not durable:  
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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

# 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 (sinks) or low density (floats)?	Hard or Soft



# Properties of Rocks

I can make systematic and careful observations.



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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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 (sinks) or low density (floats)?	Hard or Soft



# Adult Guidance

## Grouping Rocks

### Hard or Soft?

Igneous and metamorphic rocks are hard compared to sedimentary rocks which are more likely to be soft, for example clay and chalk.

### More or Less Durable?

This is obviously linked to being hard or soft in the first place. Rocks that are harder are more durable in comparison to rocks that are soft. Children should make links and connections between the two properties.

### Permeable or Non-Permeable?

Igneous and metamorphic rocks are generally less likely to be permeable than sedimentary rocks. This is due to the way they are formed. The tight interlocking grain structures have few, if any, pores. An exception is when igneous or metamorphic rocks are fractured by tectonic plates, which increases the porosity, and therefore permeability, of the rocks. Basalt for example demonstrates a large range of variation in porosity depending on how it has formed and where.

### High Density or Low Density?

Metamorphic and igneous rocks have more 'bulk' and therefore are higher in density. The density of sedimentary rocks varies and the lower down it is (the more compacted) the more dense it becomes. However, sedimentary rocks on upper layers (for example, sandstone) have much lower density. Density is also related to porosity. Therefore, the children should see a pattern emerging and linking to permeability and density.

Overall, igneous and metamorphic rocks tend to exhibit similar properties and are different to sedimentary rocks.