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, pumice) 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.