Investigating minerals activities

Sedgwick Museum
of Earth Sciences

Sorting, grouping and classifying rocks

1. Give the children a selection of some commonly found minerals eg quartz, feldspar, mica, calcite, iron pyrite, halite, gypsum. Try to use rough samples rather than tumbled stones if possible.
2. Ask them to think about ways in which they could sort the mineral samples.

What features (criteria) did they use to sort their fossil? Why? How else could you have grouped them?

Think about which properties are scientific (colour, texture, crystal shape) and which properties might be less useful to a scientist (eg the size of the sample is probably determined by the person who collected it!)

Hardness

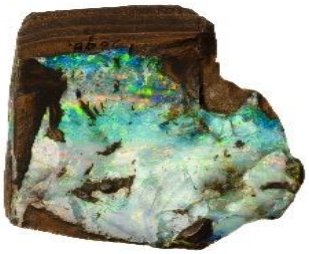
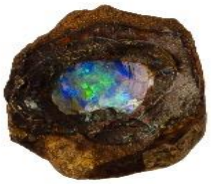
Try testing the hardness of each sample using a fingernail, copper coin and steel nail. Some minerals will be scratched by all three, some will not be scratched by any. This is a test of mineral hardness and it is one of the methods that mineralogists use to identify and classify minerals. Mohs' Scale (below) shows the relative hardeness of 10 minerals that were put into this order based on whether or not they scratched each other.

1. Encourage the children to make a table of their results.
2. Can they put the minerals into an order of hardness?

Ask the children use what they have learned to make a classification key to their selection of mineral samples. Can another group find out which mineral is which from the key?

There are lots of other properties that you can use to sort, classify and identify minerals. Look online for more information. Most basic books on rocks and minerals will include a section describing this. These include colour, crystal shape, lustre and streak (some soft minerals leave a coloured mark if rubbed across an unglazed tile)

Encourage older children to try to name the minerals by using reference book/posters as well as using some of these other properties.

Sedgwick Museum of Earth Sciences, Downing Street, Cambridge, CB2 3EQ
01223 333456 www.sedgwickmuseum.org

Moh's Scale

Mohs' Scale is used to determine the relative hardness of a mineral

Mineral Name	Hardness
Talc	1
Gypsum	2
Finger nail	2.5
Calcite	3
Copper coin	3.5
Fluorite	4
Apatite	5
Glass	5.5
Feldspar	6
Steel nail	6.5
Quartz	7
Topaz	8
Corundum	9
Diamond	10

If the mineral specimen you are investigating is scratched by any of the minerals in the Mohs' Scale set, then it is softer than the number of that mineral.

If the mineral specimen you are investigating scratches any of the minerals in the Mohs' Scale set, then it is harder than the number of that mineral.

Sample sets of Mohs' scale minerals are available to buy from educational suppliers. You can also use some simpler indicators - these are highlighted in orange with their relative hardness shown.