



Mohs Scale – Teacher Notes

Friedrich Mohs created a scale called the Mohs Scale of Hardness to describe how hard a mineral is relative to some other common minerals. By comparing the ability of one mineral to scratch another, we can identify the hardness of a mineral.

Mineral	Mohs Scale of Hardness	Relative hardness
Talc	1	very soft – can be scratched by a fingernail
Gypsum	2	
Calcite	3	pretty soft – a piece of glass is harder than this
Fluorite	4	
Apatite	5	about the same hardness as a knife blade
Feldspar	6	
Quartz	7	pretty hard – scratches most things
Topaz	8	
Corundum	9	very hard
Diamond	10	the hardest – nothing can scratch diamond

Quartz was used to make Stone Age tools such as this Dutch hand axe which dates to the Upper Palaeolithic. Why do you think people used quartz to make this axe?

It was relatively easy to find, was hard, broke into flakes with sharp edges and was easy to keep sharp. It could penetrate animal skins and cut bone and wood.



I use the hand axe to try to scratch some other minerals: gypsum, corundum, fluorite, and topaz. On which of these minerals would the axe be able to scrape a line? Why?

Only gypsum and fluorite would be scratched as they are softer than quartz. On Mohs' scale of hardness gypsum is 2, fluorite is 4, quartz is 7, topaz is 8 and corundum is 9.



Crystal drinking glasses used to be carefully carved out of a single quartz crystal. They took a long time to make and were very expensive. What mineral(s) could you use to carve the crystal?

Diamond, corundum or topaz. Artificial diamonds or poor quality diamond dust is now used to engrave glass and quartz.

Beware! Fake gem stones

Fake jewels can be made from ground glass or heated quartz crystals, with colouring chemicals added to make these inexpensive materials look like sapphires or amethysts.

How could you test to see if a pink 'diamond' really was a diamond and not artificially-coloured quartz or corundum?

Test for hardness. A real diamond can scratch both quartz and corundum. A real diamond has a different crystalline shape to either quartz or corundum.

