

Mohs Hardness Test

5th Grade

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Benchmark:

SLC 12: Students will observe and test rocks for hardness.

Objectives:

Students will learn about the Mohs hardness scale and test several minerals of different ratings on the Mohs hardness scale.

Materials:

- Fingernail
- Penny
- Glass microscope slide
- Knife blade
- Metal file
- Several different unknown minerals or rocks
- Mohs hardness scale sheet

Initial Demonstration:

Show minerals from either extreme of the hardness scale (i.e. talc and quartz). Have several students feel the minerals and give observations.

Target Observations:

- The talc is much softer than the quartz.

Target Model:

-Rocks can come in several different hardness's

Procedure:

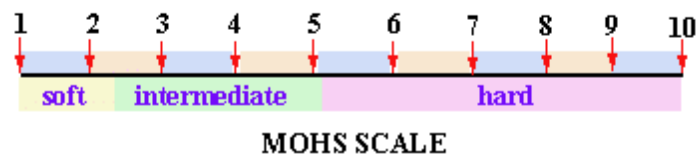
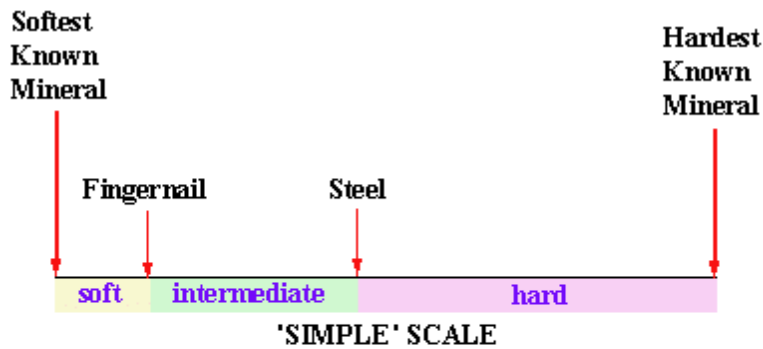
Have the class break up into groups of 4 or 5. Give each group a penny, a glass microscope slide and a file. One person from the group should be in charge of one of these scratching tools while the other student will use his fingernail and will record the results of the test. Begin by giving every group the same mineral to test. Have the students record their observations informally on a piece of paper. After everyone has finished, move on to another mineral and continue as time allows. Once the class has had a chance to test several different minerals, hand them the Mohs hardness scale sheet. Explain the scale and then explain how they should figure out the relative hardness of each of the minerals they tested. Have the groups record the hardness of their minerals. Discuss how hard each mineral is and how they determined the rating. Explain that this is only one scale available to scientists and that there are other tests available to determine hardness of minerals.

Target Revised Model:

-Rocks can come in several different hardness's

- The relative hardness of a rock may be determined by scratching the mineral with an object and seeing if it leaves a mark.*
- The Mohs scale is one way to measure the hardness of minerals and it goes from 1 – softest to 10 – hardest.*

Mineral Hardness	Scale Number
Can be rubbed off on the fingers	1
Can be scratched with a fingernail	2
Can be scratched with a penny	3
Can be scratched easily with a knife blade	4
Hard to scratch with a knife blade	5
Can be scratched with a file but will not scratch glass	6
Can easily be used to scratch glass	7
Too hard to be tested on this scale	8-10



Mohs Hardness Scale	
1. Talc	6. Microcline Steel tool
2. Gypsum Fingemal	7. Quartz
3. Calcite Copper coin	8. Topaz
4. Fluorite	9. Corundum
5. Apatite Knife-Glass	10. Diamond