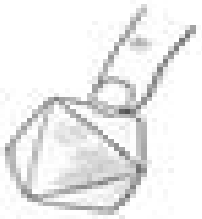
How hard is it?

Background knowledge
Minerals are natural materials found on our planet. Scientists classify these materials according to how hard they are. They use a scale that compares the hardness of 10 different minerals, each numbered from 1 to 10. The lower the number, the softer the mineral. Talc is the softest, while diamond is the hardest. Each mineral on the scale is able to scratch a mineral with a lower number rating. For example, calcite can scratch gypsum but gypsum cannot scratch calcite. All solids can be given a hardness rating by comparing them to the minerals on the hardness scale.



Science activity
Use the hardness scale below to answer the questions.

1. Talc 
2. Gypsum 
3. Calcite 
4. Fluorite 
5. Apatite 
6. Feldspar 
7. Quartz 
8. Topaz 
9. Corundum 
10. Diamond 

Your fingernail is 2.5 on the hardness scale. Which minerals will your fingernail scratch? Explain.

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A steak knife is 5.5 on the hardness scale. Which minerals will scratch the steak knife? Explain.

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Science investigation

Gather small objects in your home that can be scratched. Design and conduct an experiment to arrange the objects in order of their hardness, based on their ability to be scratched by a steel nail or the graphite tip of a pencil. Ask an adult to help you.