Streak

When a mineral is rubbed firmly across an unglazed tile of white porcelain (a streak plate), it leaves a line of white powder. This is called the streak. The color of the streak varies from mineral to mineral. However, different colored samples of the same mineral always have the same color streak. For example, violet, pink and brown quartz all leave a white streak.

TRY IT:

1. Rub your rock samples firmly across a white streak plate.

2. Record the color of the streak on your identification notebook page.

3. Rub your rock samples firmly across a black streak plate.

4. Does the streak show up better?

5. Is the streak the same color as the rock?

5. Record results on your identification notebook page.

Magnetism

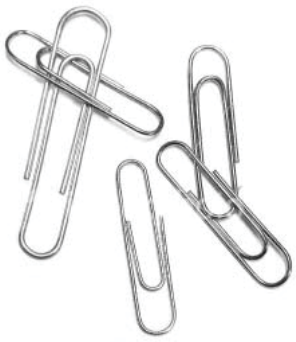
If a mineral is magnetic, a magnet will stick to the mineral. Magnetism is caused by the presence of iron and is useful in identifying iron oxides.

TRY IT:

1. Place your sample near a magnet. Do they attract?

2. Try to pick up a paper clip with your sample. Does it work?

3. Record your results in your identification notebook.



Hardness

A mineral's hardness can be measured through the ability of a harder material to scratch a softer material. For example, Talc is so soft, you can scratch it with your fingernail. A diamond is so hard, it will scratch all other materials. The Mohs' hardness scale places ten common minerals on a scale from one to ten. One is the softest mineral and ten is the hardest.

Mohs' Hardness Scale

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

TRY IT:

1. Use the tools at this station and the charts shown here to determine the hardness of your samples.

Object	 Fingernail	 Penny	 Glass	 Nail	 Emory Cloth
Hardness	2.5	3.5	5.5	6.5	8.5

Ex: If an unknown sample cannot be scratched by your fingernail (2.5), but can be scratched by a penny (3.5), then it's hardness is between 2.5 and 3.5.

2. Record the hardness of your samples in your identification notebook.

Optical Properties

A. We can identify some minerals by looking at how they interact with light.

TRY IT:

1. Hold your sample up to the light. It is *transparent* if you can see through it. It is *translucent* if light can get through, but you can't see through it. It is *opaque* if no light can get through it.
2. Record on your identification notebook page whether your sample is opaque, translucent or transparent.

B. Different materials, including minerals, "bend" light differently. This is called refraction. Magnifying glasses, telescopes and microscopes all use this principle.

TRY IT:

1. If you sample is transparent, place it on the print samples provided.
2. Record any observations in your identification notebook.

C. A mineral is sometimes characterized by its luster. Luster refers to how much light the sample reflects.

TRY IT:

1. Shine the flashlight on your sample. Does it reflect a lot of light (i.e. is it shiny)? Or is the surface of your sample dull?
2. Record observations in your identification notebook.

Chemical Properties

Rocks and minerals are made up of different chemical compounds that will react in predictable ways that can help us identify them.

TRY IT:

1. Put a drop of weak acid on your sample. What happens?

If you sample reacts by “fizzing,” that fizz is actually CO_2 (the same fizz that is in soda). This means you sample is a **carbonate mineral**.

2. Look at your sample under a black light (in the dark). Does it glow?

3. Leaving your sample in the dark, turn off the black light. Does your sample continue to glow?

4. Record all observations in your identification notebook.