

Identifying Minerals

5.3

Videos

- <http://www.watchknowlearn.org/Video.aspx?VideoID=51659&CategoryID=2427>
- <http://www.watchknowlearn.org/Video.aspx?VideoID=51660&CategoryID=2427>
- <http://www.pbs.org/video/2365643312/>

Color

- Not the most accurate



Luster

- The way light interacts with the surface of a crystal, rock, or mineral
- Typically divided into metallic and non-metallic



Metallic



Submetallic



Adamantine



Resinous



Vitreous



Pearly



Greasy



Dull



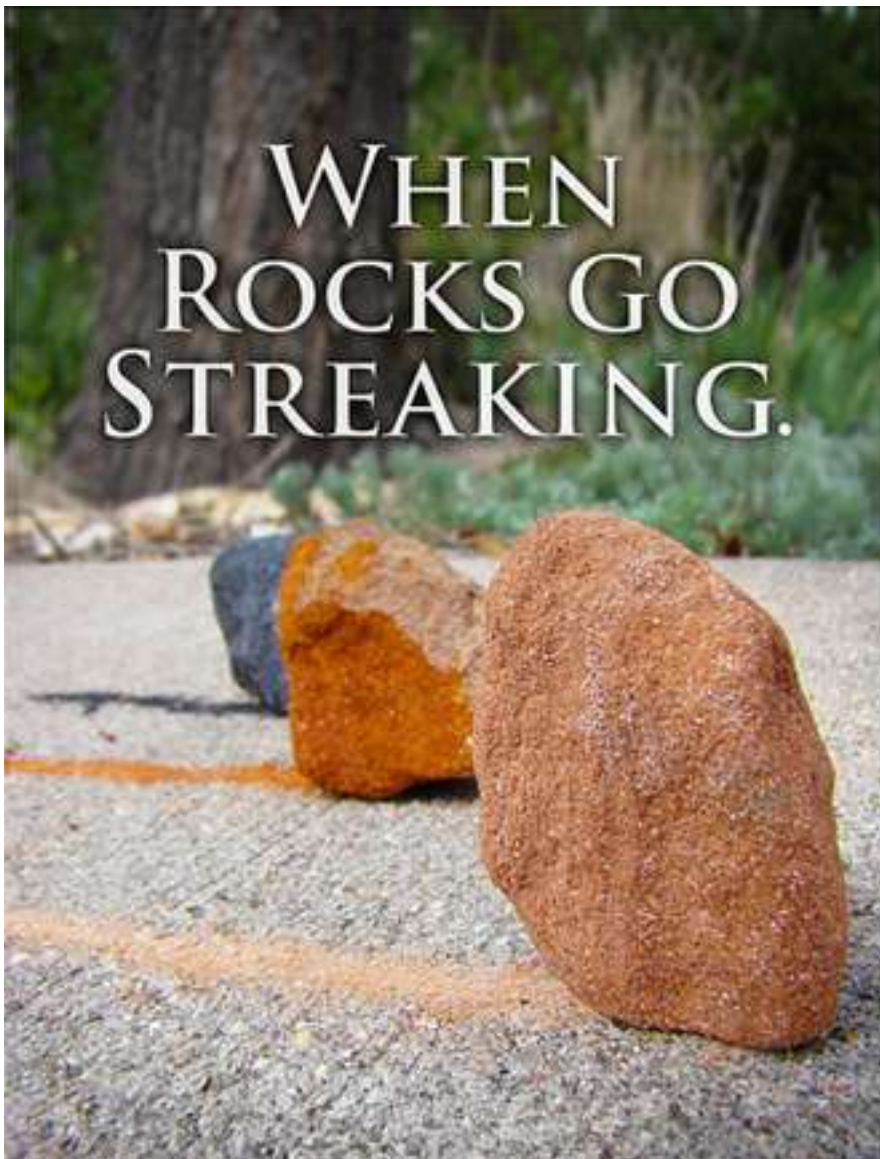
Earthy



Silky

Streak

the color of the powder produced when it is dragged across an unweathered surface (typically a ceramic plate)



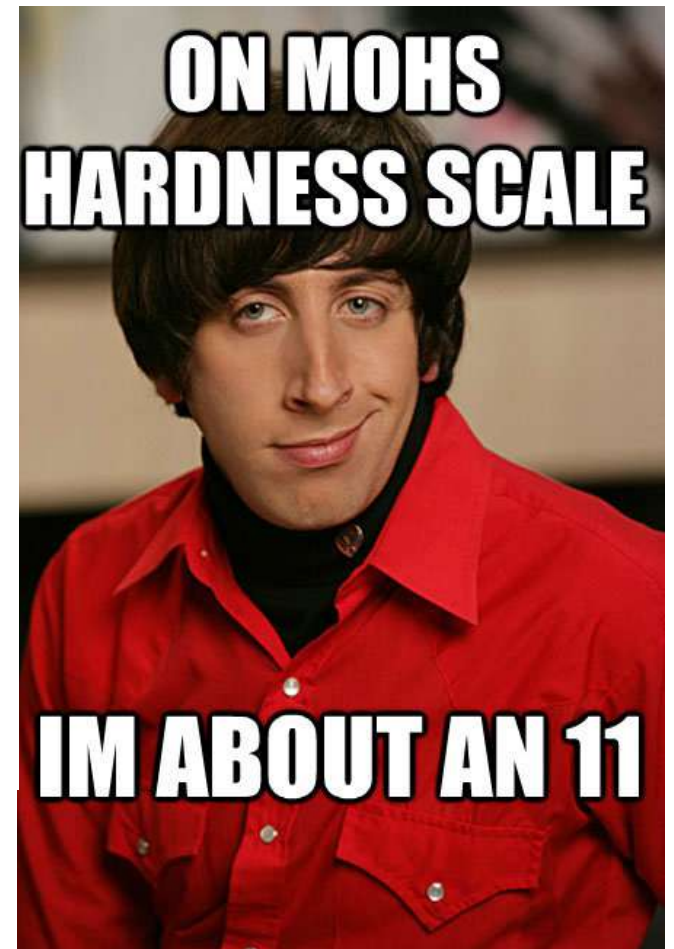
MINERAL HARDNESS

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

Approximate Hardness of Common Objects








- Fingernail (2.5)
- Copper penny (3.5)
- Iron nail (4.5)
- Glass (5.5)
- Steel file (6.5)
- Streak plate (7.0)

The ease with which the surface of a mineral can be scratched



Specific Gravity

- Similar to the Density of a mineral
- Weight of a mineral compared to the weight of an equal mass of water

SPECIFIC GRAVITY COLLECTION				
 Specific Gravity of a mineral is a comparison or ratio of the weight of the mineral to the weight of an equal amount of water. The weight of the equal amount of water is found by finding the difference between the weight of the mineral in air and the weight of the mineral in water.				
1	2	3	4	5
S.G. : < 2	S.G. : 2.3 - 3.0	S.G. : 2.6 - 2.7	S.G. : 2.63-2.65	S.G. : 2.8 - 3.2
				
BORAX	OBSIDIAN	QUARTZ	AMETHYST	BIOTITE
6	7	8	9	10
S.G. : 3.7-3.9	S.G. : 4.1 - 4.3	S.G. : 4.9 - 5.2	S.G. : 4.9 - 5.3	S.G. : 7.4 - 7.6
				
AZURITE	CHALCOPYRITE	PYRITE	HEMATITE	GALENA

Cleavage

The tendency of a mineral to break along flat planar surfaces as determined by the structure of its crystal lattice



Fracture

The way a mineral breaks other than along a cleavage plane.

Exit Ticket 1/11

- What do you think is the most reliable way to identify a mineral?
- What about the least?
- How would you rank them in terms of what order would be most efficient for accurately identifying a mineral.

- <http://www.pbs.org/wgbh/nova/earth/life-rocky-start.html>

Mineral Groups

- Silicates –more than 90 percent of the minerals in earth's crust are silicates.
- Carbonates
- Oxides
- Sulfides
- Composition, subcategories, basic building block, at least 2 examples, properties, common uses