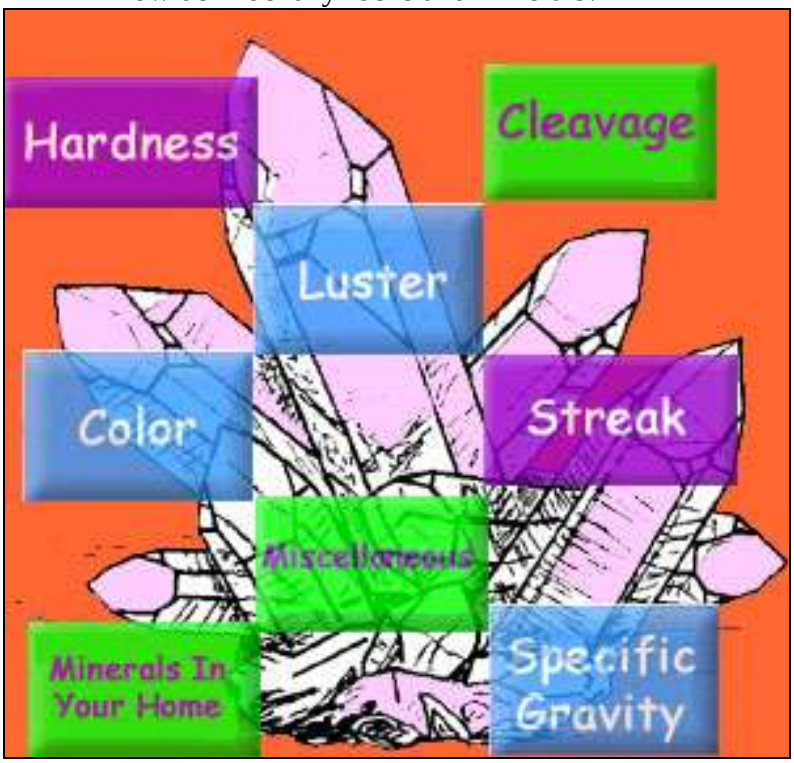
Rock and Mineral Identification:

How do you know what a rock is when you find one? Please look at the steps below to identify your rock. A streak kit is a helpful tool to have.

A streak kit includes the following: coin, vinegar, magnifying glass, glass, tile (white and black) and a penknife.

1. Rock- A combination of minerals. Rocks may be solid or loose masses of particles.
2. Mineral- A naturally formed non-biological element or combination of elements. Minerals have a definite structure both physically and chemically.
3. Gemstone- A semiprecious or precious stone. Gemstones are valued because of their beauty, color, or rarity.

How do I identify rocks and minerals?



1. Color- the most obvious property. The color may not be dependable because just a trace of a chemical can change a mineral to a completely different color. (minerals containing copper are green, those containing iron are red)

2. Streak-more definite clue than color. The surface color of a mineral may vary from one specimen to another, but when they are powdered, they have the same color if they are the same mineral. To try the streak test, run the mineral against a piece of tile. (Iron Pyrite is yellow, but leaves a black streak)
3. Luster- Another property that is easy to tell by looking at the mineral. Luster is the way a mineral shines in the light. (luster will be one of the following:

- Vitreous –a surface like glass, very shiny (quartz)
- Metallic—Like the surface of metal, such as steel. (pyrite)
- Greasy—Like the surface of margarine or butter, shiny but not as bright as glass. (halite)
- Silky—With a surface like silk, shimmering. (malachite)
- Dull—No reflection. (chalk)

4. Hardness- Does not mean how easily a mineral can break, but is a measure of how easily it can be scratched. Harder material leaves a scratch on a softer one. Moh's hardness scale (named after Frederick Mohs who discovered it in 1812):

   Hardness rating
   Softest = Talc & Hardest = Diamond
   1. Talc 2.Gypsum 1.5 Coin 2. Fluorite 3. Apatite 3.5 Penknife blade
   6. Orthoclase 7. Quartz 8. Topaz 9. Corundum 10. Diamond

5. Cleavage or Fracture- Describe the ways a mineral can break. Most minerals fracture in an irregular way instead of cleaving smoothly along a flat, even surface. Some minerals such as quartz show a rounded fracture. Minerals can cleave in one direction or several directions. Pieces of mica, for example, split easily into flat sheets in only one direction. Feldspar splits in two directions that meet at nearly right angles.
6. Other Properties- May help in identifying one or another mineral. For example, a magnet attracts some minerals such as magnetite. Others such as willemite will glow or fluoresce in different colors when exposed to ultraviolet light. Certain minerals have a definite taste while others may have an odor.
7. Specific Gravity – Minerals also differ in their specific gravity, or their weight compared to the weight of an equal volume of water. A piece of gold, for example, has a specific gravity of about 19. That means it is about 19 times heavier than an equal volume of water. It is not necessary to measure specific gravity exactly. Hold a mineral in your hand and bounce it up and down. The heftier it feels compared to others the same size, the higher is its specific gravity.
8. Others- Other ways include the shape of crystals by chemical tests. The properties listed above are enough to help you identify common minerals.