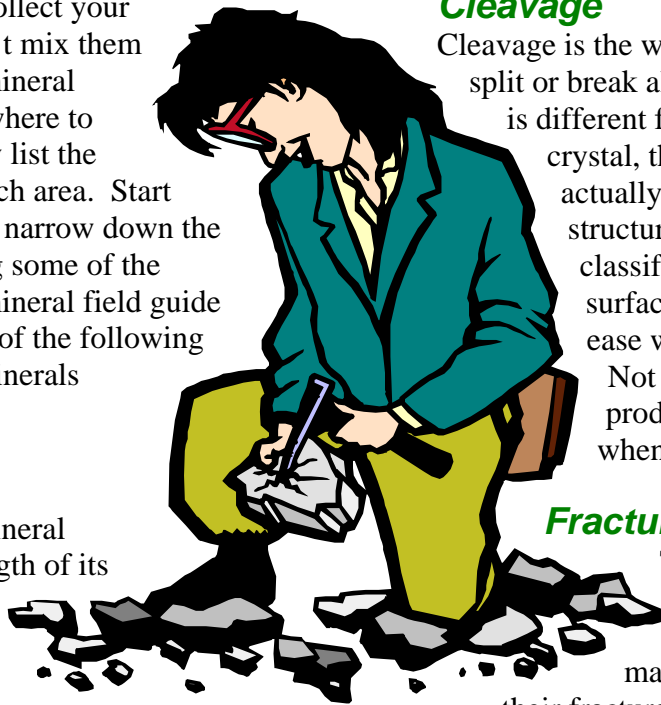


Identifying the minerals you find is pretty much like solving a mystery and can be just as much fun. It can also be frustrating. The first, and biggest clue you have is where you found it. Always make a note of the location when you collect your samples, so you don't mix them up later. Regional mineral guides can tell you where to look and will usually list the minerals found in each area. Start with those and try to narrow down the possibilities by using some of the following tests. A mineral field guide should tell you each of the following properties for the minerals listed in it.

Hardness

The hardness of a mineral depends on the strength of its chemical bonds. It may vary if your sample is weak for one reason or another, but still, hardness is something easily investigated. Check out the Moh's Scale of Relative Hardness in this brochure. Minerals are listed from the softest, #1 to the hardest, #10. You can figure out the hardness of a sample by trying to scratch it with known minerals. Also, your fingernail will scratch anything softer than 2 ½ on the scale; a penny will scratch anything



softer than 3; a knife blade will scratch anything less than 5 ½; and a steel file will scratch anything under 6 ½. Anything harder than 5 ½ will scratch glass.

Cleavage

Cleavage is the way that a mineral will split or break along a flat surface. It is different from the shape of the crystal, though both are actually determined by crystal structure. Cleavage is classified by the quality of surface produced as well as ease with which it breaks. Not all minerals will produce regular surfaces when broken.

Fracture

Those minerals which do not break along regular surfaces may be identified by their fracture rather than cleavage. Fractures may be in many shapes and appearances including conchoidal (smooth curved surfaces), fibrous, or splintery.

Luster

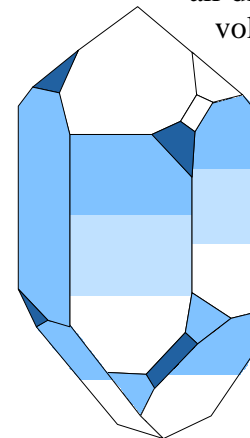
Luster is the way a surface of a mineral reflects light. It can be metallic, vitreous, resinous, greasy, pearly, silky, or adamantine.

Color

A mineral may have a distinctive color, but can also cause some confusion. The color of a sample may be the property of a pure mineral or a result of impurities within it. An additional investigation of color would include a streak test, where the color of the fine powder left behind when a mineral is scraped across and unglazed tile.

Specific Gravity / Density

Simply holding a dense mineral in one hand while holding a far less dense sample of the same dimension in the other hand quickly demonstrates that minerals have different densities or mass per unit volume. Most are too close to measure with the hands or even less sophisticated lab equipment. The specific gravity of a mineral is the standard measure. The number represents the weight of the mineral in air divided by the weight of an equal volume of pure water at 4°C.



Crystal Habit

The way a particular mineral grows as crystals are usually named after the geometric shapes they resemble. Their crystal habit is determined by atomic structure and speed with which they grow.

Moh's Scale of Relative Hardness



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

Resources

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Mineral Identification

