**Identification of minerals** can be difficult, due the variety of colors and shapes exhibited by the same mineral, when formed under different environments. However,

**Crystal System** alone is usually enough for identification (when visible) and considered along with other physical properties; since it can be one of six, <u>and only six</u> mathematical possibilities.



Examples: diamond, fluorite, garnet, gold & silver, pyrite, halite (salt) and sugar! **Isometric** (cubic) - crystal axes are equal in length and at right angles to each other.



Examples: zircon, rutile, wulfenite

Tetragonal - same as cubic, except one axis is longer than the other two.



Examples: quartz, calcite, tourmaline, beryl (emerald), corundum (sapphire), hematite **Hexagonal** – a three-fold or six-fold symmetry, all at right angles to a longer axis.



Examples: aragonite (hiPress Calcite), topaz, peridot/olivine, silliminite (hiTemp) **Orthorhombic** – three axes at right angles, but all three are different lengths.



Examples: gypsum, orthoclase (K) feldspar, muscovite, epidote, hornblende, jade, sphene **Monoclinic** – two axes at right angles, with a third at some inclined angle.



Examples: plagioclase (Na-Ca) feldspar, kyanite (loTemp), turquois **Triclinic** – all three unequal axes, inclined at something other than 90 degre