Mineral Mania

Description: Students will prepare charts and learn to identify some common minerals. Competitors will identify physical properties of specific minerals and their economic importance.

Number of Participants: 1 to 2

Approximate Time: 20-30 minutes

The Competition: 1. Contestants will be allowed 20-30 minutes to identify mineral specimens from a select group of minerals that include: calcite, copper, corundum, feldspar, fluorite, galena, gold, graphite, gypsum (satin spar), halite, hematite, magnetite, mica (biotite or muscovite), pyrite, quartz (agate), quartz (amethyst), quartz (crystal), silver, sulfur, talc
2. Competitors will be asked to identify the physical properties of the minerals listed Including: hardness, crystal system, specific gravity, streak, color.
3. Competitors will be asked to list economic uses of particular minerals listed.
4. Competitors may compile a chart of information as a resource for the competition. They may use this resource when they compete. *See below.*

Mineral Chart

Mineral Name	Color	Density	Streak	Crystal System	Hardness	Economic use
cotonite	beige	1.4	none	monoclinic	0.6	T-shirts, socks

Useful Links

http://www.galleries.com/Minerals

https://www.minerals.net/

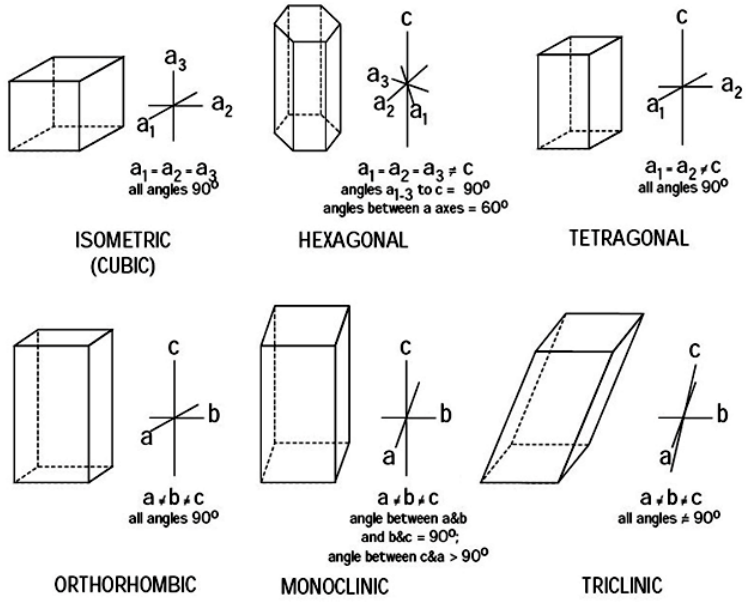
https://geology.com/

Other Resources

DK/Smithsonian Handbooks: Rocks and Minerals, by Chris Pellant, (out of print but available used through amazon or barnes&noble)

Mohs Hardness Scale (below left) and mineral crystal systems (below right)

Mineral	Hardness	
Talc	1	← Piece of plastic, 1
Gypsum	2	
Calcite	3	← Fingernail, 2.5
Fluorite	4	
Apatite	5	← Copper coin, 4.5
Orthoclase	6	← Glass plate, 5.5
Quartz	7	← Steel file, 6.5
Topaz	8	
Corundum	9	
Diamond	10	



Determining Specific Gravity (SG)

Specific gravity is a comparison of the mass of a volume of material compared to the mass of an equal volume of water. This is easily determined using an electric digital balance/scale.

You will first need to weigh a sample of the mineral. Then you will take that same specimen and weigh it while suspended in a beaker of water.

Use a 50ml beaker filled with enough water to suspend the sample completely beneath the water surface. Tare the balance/scale with the beaker of water on it and then suspend the specimen in the beaker noting the mass registered by the scale. Then plug your numbers into the following formula to get your answer.

$$\frac{\text{Dry Weight}}{\text{(Dry Weight – Weight in Water)}} = \text{Specific Gravity}$$