

STATION 1: Chalcopyrite

This mineral is easily identified because of its blue, green, gold, & purple colors.

It is also known as “Peacock Pyrite” since those colors resemble a peacock.

Chalcopyrite is the ore for copper. Copper has many uses, including the coating on pennies. Since copper is now so expensive, they do not use it for the entire penny. Rather, the inside of pennies is now zinc.



STATION 2: Quartz

Quartz is the most common mineral on Earth.

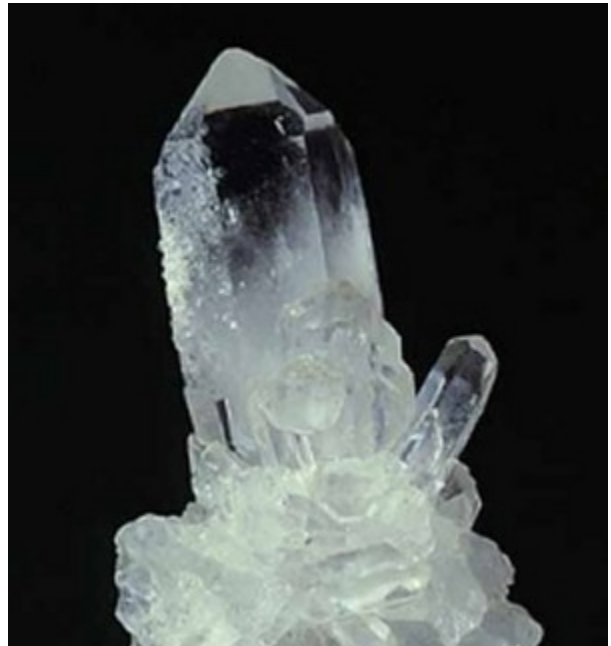
It has a hardness of 7 on the Mohs Hardness Scale. Since it's hardness is 7, it will not leave a streak on a streak plate. Remember, that streak plates have a hardness of 7 as well.

The shape of this mineral is a 6 sided structure called "hexagonal." You will also observe a 6 sided pyramid on top of each piece of quartz.

If you were to drop quartz, it would fracture, and does not exhibit cleavage.

Quartz may be found as clear, pink, or opaque.

Quartz is a mineral that has many uses: quartz crystals in watches, optics, and has been linked to some healing properties.



STATION 3: Sphalerite

Sphalerite is best identified by its many flat surfaces that are quite reflective. It has a very dark greenish/black hue.

Sphalerite is the ore for zinc.

Zinc has many uses. As a powder, zinc is often used to make white paint. It is also used for the interior of pennies since it is readily available and low in cost to extract.



STATION 4: Topaz

Topaz is a crystal that may appear as yellow, green, or blue. Generally it is found in yellow form. The samples we have in class are all light yellow. It is usually found as a conglomerate, with some cement like lime adhered to it.

It is one of the items on the Mohs hardness Scale—8. This means it will not leave a streak and corundum and/or diamond will scratch topaz.

If you were born in November, Topaz is your birthstone.



STATION 5: Bauxite

Bauxite is one of the most common minerals on the planet. It is the ore for Aluminum. Since Aluminum is 8% of the earth's crust, bauxite must also be common.

Bauxite is easily identified by the orange, white, brown colors. You may see some specks of metal in the ore, and you will certainly see circles in the ore samples.

Uses include: aluminum cans



STATION 6: Calcite

Calcite has many forms. The two forms we have in class include:

- 1) Optical Calcite—you can see through this sample
- 2) The more common form, non-optical calcite (usually white)

Calcite can be yellow, white, or clear.

Calcite has a hardness of 3.

It contains calcium and therefore will react with Hydrochloric Acid during an acid test.

The shape of Calcite is a rhombus. If you take a sample of optical calcite and put it over some writing, you will see a double image. This helps to distinguish it from halite and quartz.

Uses: optics, TUMS (acid indigestion), chalk



STATION 7: Sulfur

Sulfur is one of the few minerals you will learn that is chemically one element—sulfur.

It is best identified by its bright yellow color. Also, it has the smell of rotten eggs.

Uses for this mineral include: gun power, fire works (pyrotechnics), & matches.

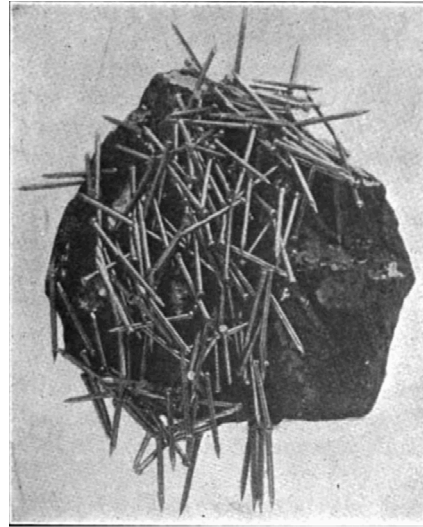


STATION 8: Magnetite

Magnetite exhibits polarity. It is famous for its natural magnetism.

When polished it can be very shiny.

Some animals have magnetite in their bodies and use it for migration such as bats and monarch butterflies.



STATION 9: MUSCOVITE MICA

STATION 10: BIOTITE MICA

These minerals are most easily identified by their perfect cleavage. They are able to separate into perfect, thin, transparent sheets.

These minerals are some of the most common rock forming minerals on Earth.

Interesting properties besides cleavage, include high heat tolerance. In other words a high melting point.

Muscovite Mica is colorless, yellow, or brown.

Biotite Mica is black.

Uses for Mica include: windows (1600's in Russia), insulation, potassium argon dating rocks, decorative treatment in concrete surfaces, potting mix.



Muscovite Mica



Biotite Mica



STATION 11: Graphite

Graphite is most known for pencil lead. But, it has uses as a dry lubricant as well (e.g. pine wood derby cars)

The luster is dull metallic with a black color and streak.



STATION 12: Beryl

Beryl is short for beryllium aluminum silicate (Don't worry, we will just call it Beryl).

The primary use for beryl is gemstones....particularly emeralds when found as a deep green. It also is known as aquamarine when a blue color.

Beryl is hexagonal in shape. Generally the color is a pale green or yellow.

Not, it doesn't have a pyramid on top, which would otherwise easily confuse it with quartz.



STATION 13: Galena

Galena is one of the primary ores of lead. Make sure you wash your hands after handling it.

Lead can cause problems with the nervous system.

The taste is sweet (since lead is sweet). WARNING: don't taste, it can cause severe neurological problems. It also may contain Silver.

This mineral is always found in a cubic form.

Uses include: pipes (in the old days), solder, batteries, & shot (for guns)

It used to be used for making pain, but the use for lead paint is no longer allowed in homes.

It is very metallic.



STATION 14: Corundum

Uses: emery boards, abrasives, & sand paper. It's hardness is 9, only diamond is harder than corundum.

In it's red crystalline form, it forms rubies (July's birthstone). In it's blue crystalline form, it forms sapphires (September's birthstone).

It's hexagonal in shape.



STATION 15: Apatite

Apatite is the mineral most similar to your teeth. The chemical name for most of what makes up your teeth is called hydroxylapatite.

Apatite has a hardness of 5 on the Mohs Hardness Scale.

A common use for this mineral is for fertilizer.

This mineral is occasionally used as a gem stone.

This mineral is very reflective, but obviously non-metallic.



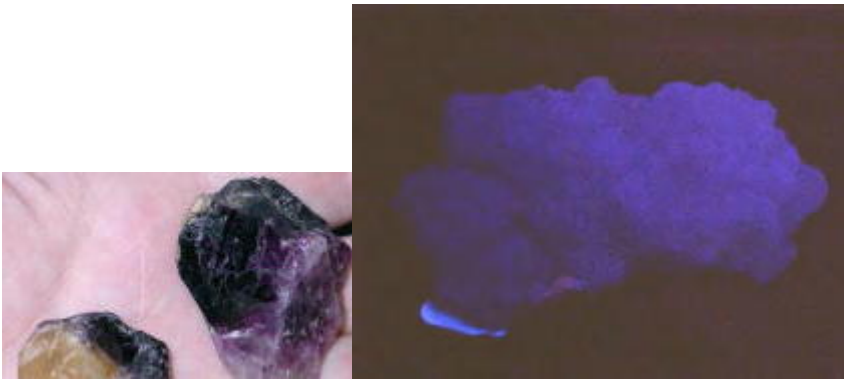
STATION 16: Fluorite

Fluorite is many uses: drinking water (helps to strengthen teeth), flux, and ornamental stone.

Fluorite has a hardness of 4 on the Mohs Hardness Scale.

The shape is octahedral.

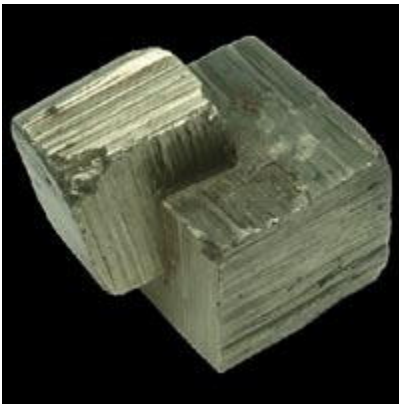
Fluorite is best known for its fluorescence properties. Under a black light it is generally fluorescent purple.



STATION 17: Pyrite

Pyrite is also known as “fools gold.” It is gold, however, it’s streak is greenish black to brownish black. Where, gold has a gold streak.

You can see why people confused it with gold, it has a similar metallic luster.



STATION 18: Talc

Talc, is most known for it being the softest mineral. It has a hardness of 1 on the Mohs Hardness Scale. It's most common use is Talcum Powder. Talc is easy to identify because it feels so silky.



STATION 19: Hematite

Hematite's name comes from the Greek, which means "blood like." In fact Hemoglobin is why blood is red. Actually, Heme (the Iron portion of Hemoglobin) is why blood is red.

Hematite is the most important iron ore.

Other uses for hematite are for coloring pigments such as in paint.

Hematite may be found in metallic and non-metallic forms.

Although Hematite is magnetic, it is not a natural magnet.

Hematite, no matter what color, always has a reddish brown streak.



STATION 20: Halite

Halite is best known for being NaCl or Table Salt. It is naturally found as a cube, and obviously tastes salty.

This mineral has perfect cleavage. If you drop a cube of it, it will break into other cubes. Uses of this mineral include food supplements.

Colors vary from clear, to yellow, to white.

This mineral does not bend light.



STATION 21: Garnet

Garnet is a reddish brown color. It is a very dark crystalline mineral. It is best known for being the birthstone for January. It doesn't react with acid and has no cleavage. So be careful with this one, it will fracture.



STATION 22: Amethyst

Amethyst is very common throughout the world. However, it is probably best known for its sources in Thunder Bay Canada.

It is purple because of manganese. It is similar to quartz, other than the manganese present. Since it basically is colored quartz, it has the same hardness of quartz—7.

Since its hardness is 7, what streak will it leave? It also has the same shape as quartz.

It is the birthstone for February.



STATION 23: Dolomite

Dolomite has many uses. One of its most important uses is for human diet as a supplement. It's a great source for magnesium.

If powdered will react with acid. Don't confuse this with calcite.

This mineral is generally gray to white.

It is much harder than calcite. (Hardness of 3.5 to 4)



STATION 24: Gypsum

Gypsum is most known for dry wall. Dry wall is also known as gypsum board.

This mineral can be found in two forms. The more ornate form is called a desert rose.

It is also used for plaster of Paris. Gypsum is one of the softest minerals and can be scratched with your finger nail. It has a hardness of 2 on the Mohs hardness Scale.

