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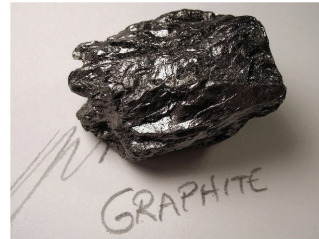
Iron is extracted from rocks such as **hematite** (eastern PA). Iron was used to make steel.

IRON



Iron is extracted from rocks such as **limonite** (central PA). Iron was used to make steel.

IRON



Graphite is made of carbon and is sort of an ultra-hard type of coal. It is used in pencils and can also be used as a lubricant.

GRAPHITE



Pyrite is known as "fools gold" and has little commercial value. It is made of iron and sulfur.

PYRITE



Salt is an important nutrient our bodies need. It is also used to melt winter ice on PA roads.

SALT



Aggregate is used to make roads. It is mostly limestone with sand mixed into it.

AGGREGATE (sand and gravel)



Gravel is used to make roads and for landscaping. It is made of crushed limestone.

GRAVEL



Amethyst is a type of quartz, SiO_2 . The color comes from small amounts of iron and from radiation during formation.

AMETHYST



PA was never a huge source of gold. However, tiny gold flakes can still be found in streams in Lancaster and York counties.

GOLD



Silver is usually found as ore (in rocks) which must be heated to extract the silver. Galena can contain silver as well as lead.

SILVER



Lead in PA is found in the mineral **galena** (PbS). Galena was mined during the 1700s (to make musket shot) at Ft. Roberdeau near Altoona.

LEAD



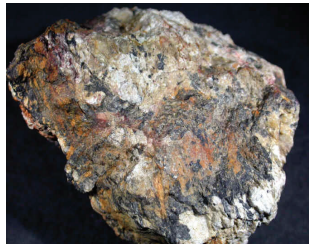
Beryl is a mineral made of the elements beryllium, aluminum and silicon. Pure beryl is clear. Colored beryl has trace elements.

BERYL



Garnet is a type of gemstone made of silicon (like quartz).

GARNET



Nickel is almost always found embedded in rock (ore), often in rock that also contains iron.

NICKEL



Shale is one of PA's most abundant rocks. It is made of ancient mud that turned to rock.

SHALE



Calcite is made of calcium, carbon and oxygen. It is a major component of limestone, and of stalactites that form in caves.

CALCITE



Malachite is highly prized by rock collectors. The green color comes from the mineral copper.

MALACHITE



Magnetite has a high iron content, making it magnetic. Magnetite used to be called lodestone.

MAGNETITE



Rutile contains titanium. It does not have commercial value but is prized by mineral collectors.

RUTILE



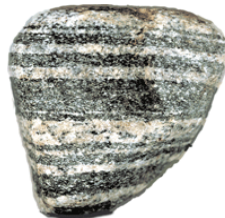
Copper is one of the most useful metals on the planet. It's usually found in ore (in rocks) and must be melted out of the rock.

COPPER



Feldspar is one of the mineral building blocks of igneous rocks like granite. Tiny fragments of feldspar can be seen in sand.

FELDSPAR



Gneiss is classified as a metamorphic rock. It is thought that gneiss started out as granite.

GNEISS



The tiny dots in oölitic chert might look like eggs ("oö" is Greek for "egg") but they were formed by chemistry, not biology. This rock is found in only a few places in the world. Lucky PA!

OÖLITIC CHERT



Diabase is an igneous rock believed to have formed from cooling lava. It is mined for use in construction. The miners of Chester County called it "black granite."

DIABASE

NOTE: This is NOT a complete list of all the minerals found in PA. If you would like to see a very nice virtual museum of PA minerals, do an Internet search with key words: "John Betts mineral gallery Pennsylvania." (This site has mineral specimens for collectors. It does not include things like limestone, coal and shale.)