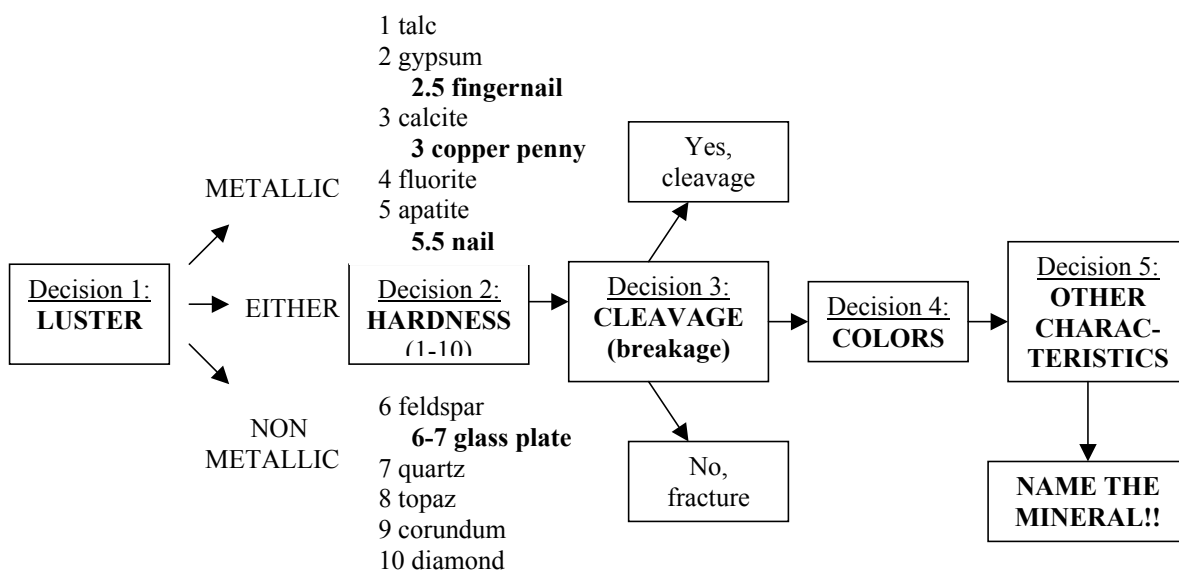


Mineral Identification lab

As you now know, a mineral is a naturally occurring, inorganic solid with a definite crystalline structure. The easiest way to identify different minerals is to compare a variety of physical (and sometimes chemical) characteristics using your senses and some simple tools. In this lab, you will follow the Mineral Identification Chart to classify then identify a variety of different minerals.

PROCEDURE

1. First, take some time to familiarize yourself with the flow of the identification chart. The chart is read from LEFT to RIGHT. You should not proceed to the next step until you have reached a decision about the physical property you are examining.



2. Practice: Use the chart to find the physical properties of the mineral FUORITE.

Luster: _____ Hardness: _____ Cleavage (Y /N)? _____ Color: _____
 Streak (if any): _____ Other Characteristics: _____

3. Before going on, be certain that you know how to read the chart. Also, make sure you know how to use the tools available to you: (Streak Plate, Fingernail, Penny, Glass)










NAME THE MINERAL!!

4. Use the Mineral ID Chart to identify each of the minerals on your table. DETERMINE THE PROPERTIES FIRST and THEN DECIDE WHICH MINERAL IT IS! Ask for help when necessary.

Name _____

Date _____

Properties of Common Minerals

LUSTER	HARD- NESS	CLEAVAGE FRACTURE	COMMON COLORS	DISTINGUISHING CHARACTERISTICS	USE(S)	MINERAL NAME	COMPOSITION*
Metallic Luster	1-2	✓	silver to gray	black streak, greasy feel	pencil lead, lubricants	Graphite	C
	2.5	✓	metallic silver	very dense (7.6 g/cm ³), gray-black streak 	ore of lead	Galena	PbS
	5.5-6.5	✓	black to silver	attracted by magnet, black streak	ore of iron	Magnetite	Fe ₃ O ₄
	6.5	✓	brassy yellow	green-black streak, cubic crystals 	ore of sulfur	Pyrite	FeS ₂
Either	1-6.5	✓	metallic silver or earthy red	red-brown streak	ore of iron	Hematite	Fe ₂ O ₃
Nonmetallic Luster	1	✓	white to green	greasy feel	talcum powder, soapstone	Talc	Mg ₃ Si ₄ O ₁₀ (OH) ₂
	2	✓	yellow to amber	easily melted, may smell	vulcanize rubber, sulfuric acid	Sulfur	S
	2	✓	white to pink or gray	easily scratched by fingernail	plaster of paris and drywall	Gypsum (Selenite)	CaSO ₄ •2H ₂ O
	2-2.5	✓	colorless to yellow	flexible in thin sheets 	electrical insulator	Muscovite Mica	KAl ₃ Si ₃ O ₁₀ (OH) ₂
	2.5	✓	colorless to white	cubic cleavage, salty taste 	food additive, melts ice	Halite	NaCl
	2.5-3	✓	black to dark brown	flexible in thin sheets 	electrical insulator	Biotite Mica	K(Mg,Fe) ₃ AlSi ₃ O ₁₀ (OH) ₂
	3	✓	colorless or variable	bubbles with acid 	cement, polarizing prisms	Calcite	CaCO ₃
	3.5	✓	colorless or variable	bubbles with acid when powdered	source of magnesium	Dolomite	CaMg(CO ₃) ₂
	4	✓	colorless or variable	cleaves in 4 directions	hydrofluoric acid	Fluorite	CaF ₂
	5-6	✓	black to dark green	cleaves in 2 directions at 90° 	mineral collections	Pyroxene (commonly Augite)	(Ca,Na)(Mg,Fe,Al)(Si,Al) ₂ O ₆
	5.5	✓	black to dark green	cleaves at 56° and 124° 	mineral collections	Amphiboles (commonly Hornblende)	CaNa(Mg,Fe) ₄ (Al,Fe,Ti) ₃ Si ₆ O ₂₂ (OH) ₂
	6	✓	white to pink	cleaves in 2 directions at 90°	ceramics and glass	Potassium Feldspar (Orthoclase)	KAlSi ₃ O ₈
	6	✓	white to gray	cleaves in 2 directions, striations visible	ceramics and glass	Plagioclase Feldspar (Na-Ca Feldspar)	(Na,Ca)AlSi ₃ O ₈
	6.5	✓	green to gray or brown	commonly light green and granular	furnace bricks and jewelry	Olivine	(Fe,Mg) ₂ SiO ₄
	7	✓	colorless or variable	glassy luster, may form hexagonal crystals 	glass, jewelry, and electronics	Quartz	SiO ₂
7	✓	dark red to green	glassy luster, often seen as red grains in NYS metamorphic rocks	jewelry and abrasives	Garnet (commonly Almandine)	Fe ₃ Al ₂ Si ₃ O ₁₂	

*Chemical Symbols: Al = aluminum Cl = chlorine H = hydrogen Na = sodium S = sulfur
 C = carbon F = fluorine K = potassium O = oxygen Si = silicon
 Ca = calcium Fe = iron Mg = magnesium Pb = lead Ti = titanium

✓ = dominant form of breakage