Table 1.7. GY 111 mineral catalog grouped according to luster, streak, hardness and cleavage. Minerals that display significant variation in properties (especially color) are shaded. Suite indicated the most common rock types in which these minerals occur: I: igneous; S: sedimentary; M: metamorphic; H: hydrothermal; A: all rock types. Use caution when testing for mineral hardness. Some minerals (e.g., kyanite) display distinctly different hardnesses depending upon orientation or surface condition.

			MINERAL CHARACTERISTICS AND DESCRIPTIONS	SUITE*	MINERAL NAME
METALLIC LUSTER	Grey, black, greenish-black streak		Greenish yellow color, may tarnish. H=3.5-4. S.G.=4.2. Streak greenish black. Usually massive, no visible crystal form or cleavage. May be associated with other sulfide minerals, especially pyrite.	I, H	Chalcopyrite
			Lead gray color. H=2.5. S.G.=7.6. Streak lead gray. Three directions of perfect cleavage at 90°. Cubic crystal form with a step-like appearance to broken surfaces.	I, S, H	Galena
			Gray to black color. H=1. S.G.=2. Streak black. One direction of cleavage. Marks paper and fingers. Greasy feel.	M	Graphite
			Gray to black color, occasionally with reddish highlights. H=6. S.G.=5.2. Streak black. No cleavage . Usually occurs in massive form. Rare crystals are octahedral. Strongly magnetic, a diagnostic property.	A	Magnetite
			Pyrite brass yellow color. H=6-6.5 S.G.=5. Streak greenish black. No cleavage. Cubic crystal form is common. Striations common on crystal faces.	A	Pyrite
	Copper streak		Pure specimens and fresh surfaces are metallic copper in color. Most specimens are dark brown to green in color. H=2.5 - 3. S.G.=8.9.	V, H	Copper
	Pale yellow streak		Dark brown to yellow brown color. H=3.5-4. S.G.=4. Resinous luster. Streak pale yellow. Six directions of cleavage, but seldom well developed. Powdered mineral (when streaked) smells like sulfur.	I, S, H	Sphalerite
NON-METALLIC LUSTER (DARK-COLORED)	Harder than Glass	Cleavage	Pale green to dark green to black color. H=5.5-6. S.G.=3.3. Vitreous luster. Two directions of cleavage at 124° and 56°, but not always well developed. Lineated surface due to parting.	I, M	Amphibole (Hornblende)
			Pale green to dark green to black color. H=5.5-6. S.G.=3.5. Waxy to vitreous luster. Two directions of cleavage at 90°, but not always well developed. Short blocky crystals.	I, M	Pyroxene (Augite)
			Color- gray for Ca variety (versus white for Na variety). Some Ca specimens show purple iridescence. H=6. S.G.=2.7. Vitreous luster. Cleavage in two directions at 90°. Striations common on cleavage planes.	I, M	Plagioclase (Calcium-variety)
			White to brown color, fibrous habit. H=6-7. S.G.=3.3. Luster is pearly to satiny, but is not consistent. A polymorph of kyanite.	M	Sillimanite
			Red , gray to black. H=7-7.5. S.G.=3.7. Classic cross-shaped crystals (rhombs in section). 1 poor cleavage.	M	Staurolite
	Variable hardness		Blue-Grey bladed crystals displaying variable hardness: 4-5 along the long axis of crystals; 6-7 across crystals.	M	Kyanite
	Harder than Glass	No cleavage	Color highly variable. H=7. S.G.=2.65. Waxy luster, No cleavage. Conchoidal fracture. Varieties include jasper, flint, chert, opal and agate. Most petrified wood has been replaced by cryptocrystalline quartz	A	Cryptocrystalline Quartz ("chert")
			Variable color; brown, Grey, blue, pink or purple. H=9. S.G.=4. Vitreous to adamantine luster, but commonly earthy. No cleavage, but does form six sided prismatic crystals that may resemble cleavage.	M	Corundum
			Commonly red, brown, green or pink. H=7. S.G.=3.5-4.5. Vitreous luster. No cleavage. Exhibits parting which may look like cleavage. Frequently forms classic dodecahedral crystals.	M	Garnet
	Softer than Glass	Cleavage	Dark brown to black color. H=2.5-4. S.G.=3. Vitreous luster. Perfect cleavage in one direction. Cleaves into thin flexible sheets which may be translucent.	I, M	Biotite
			Dark green, commonly with iron stains. H=2-2.5. S.G.=3. Pearly luster. Streak white-green. Perfect cleavage in one direction which results in scaly appearance. Often contaminated with other minerals (e.g., garnet).	M	Chlorite
			Green, blue, brown to yellow crystals. H=5, S.G.=3.1. Vitreous luster. White streak. Cleavage in one direction; poorly developed. Forms hexagonal crystals. Also commonly in masses of crystals.	I, M	Apatite
			Dark brown to yellow brown color. H=3.5-4. S.G.=4. Resinous luster. Streak pale yellow. Six directions of cleavage. Powdered mineral smells like sulfur.	I, S, H	Sphalerite
		No cleavage	Red color. Highly variable hardness (H=1 - 6), S.G.=5.5. Earthy luster. Streak red. No cleavage.	S	Hematite
			Brown to ocher in color. H=1-3. S.G.=3.5. Earthy luster. Streak yellow brown. No visible cleavage.	S	Limonite
			Lawn green colored, commonly fibrous or laminated aggregates of crystals. H=3.5-4. S.G.=4.0. Distinctive pale green steak. Commonly associated with blue azurite. A popular gem stone when polished	H	Malachite
NON-METALLIC LUSTER (LIGHT COLORED)	Harder than Glass	Cleavage	Color is usually pink but may be white, turquoise or green. H=6. S.G.=2.56. Vitreous luster. Cleavage in two directions at 90°. Exsolution "squiggles" common.	I, M	Orthoclase (Potassium feldspar)
			Color- white for the Na variety (versus gray for Ca variety). H=6. S.G.=2.7. Vitreous luster. Cleavage in two directions at 90°. Striations common on cleavage planes. Exsolution "squiggles" are rare to common.	I, M	Plagioclase (Sodium variety)
		No cleavage	Colorless but may be purple v. amethyst, pink v. rose, white v. milky or gray brown v. smoky quartz. H=7. S.G.=2.65. Vitreous luster. No cleavage. Conchoidal fracture on broken surfaces. Crystals- 6 sided prisms. Crystal aggregates common.	A	Quartz (many varieties)
			Olive green, yellowish-green to dark green. H= 6.5. S.G.=3.3. Vitreous luster. Occurs as an aggregate of small grains which gives a sugary appearance to the mineral.	I	Olivine
	Softer than Glass	Cleavage	Colorless to white. H=3. S.G.=2.7. Vitreous luster. Cleavage good- 3 directions not at 90°. Streak white. Effervesces in HCl. Transparent Iceland spar v. shows double refraction.	S, M	Calcite
			Pink, white or light brown in color. H=3.5-4. S.G.=2.7. Vitreous luster. Cleavage in 3 directions not at 90°. Streak white. Saddle dolomite forms pink saddle shaped crystals. Brown sugary masses are also common.	S	Dolomite
			Transparent, purple, pink, yellow, green or blue in color. H=4. S.G.=3.18. Vitreous luster. Perfect cleavage in three or four directions. Streak white. Crystals cubic.	S, H	Fluorite
			Transparent to white H=2. S.G.=2.32. One good cleavage direction, poor in two others. Streak white. Selenite gypsum is transparent with a vitreous luster. Satin spar appears fibrous and has a silky luster.	S	Gypsum
			Transparent to white. H=2.5. S.G.=2.5. Vitreous or waxy luster. Perfect cleavage in 3 directions at 90°. Streak white. Tastes salty.	S	Halite
			Transparent in thin sheets. H=2.5-4. S.G.=2.8. Vitreous luster. Perfect cleavage in one direction. Streak white. Cleaves into thin flexible sheets.	I, M	Muscovite
			Pale yellow to lemon yellow crystals. H 1.5-2.5. S.G=2.0. Perhaps the easiest mineral to identify.	I	Sulfur
			Commonly green, gray or white in color. H=1. S.G.=2.8. Pearly luster. Good cleavage in one direction. Streak white. Feels greasy or soapy.	M	Talc
		No Cleavage	White, beige, brown or reddish-yellow in color. H=1-5. S.G.=3. Earthy luster. Cleavage not visible. Forms spherical or pisolitic aggregates.	S	Bauxite
			White color, occasionally mottled with red stain. H=1 - 2. S.G.=2.6. Earthy luster with no visible cleavage. Streak white. Becomes pliable when wet. Sticks to moistened tongue.	S	Kaolinite