Rock Forming

Minerals
There are 3 types of rocks

igneous

sedimentary

metamorphic
Quartz  \( \text{SiO}_2 \)

- hardness (7)
- conchoidal fracture
- clear to white
- used as a gemstone, mortar, scientific apparatus, electronic industry

**important:** metamorphic, igneous sedimentary
**Feldspar Group**

\[(Na, K, Ca)(Al)Si_2O_8\]

cleavage

hardness (<7)

white to pink

ceramics, ornamental

**important:** igneous, metamorphic, sedimentary (clastic)
**Amphibole Group**

\[ \text{Ca}_2(\text{Mg}, \text{Fe}, \text{Al})_5(\text{Al}, \text{Si})_8 \text{O}_{22}(\text{OH})_2 \]

Tremolite

- cleavage (56° and 124°)
- green to black
- some forms are used as asbestos

**Important:** igneous, metamorphic (hornblende most common)

Actinolite
Pyroxene Group

\[(\text{Mg,Fe})_2\text{SiO}_4(\text{Ca,Na})(\text{Mg,Fe,Al})(\text{Al,Si})_2\text{O}_6\]

cleavage (87° and 93°)
short prisms
dark
used as specimens, some gemstones

important: igneous, metamorphic
(augite most common)
**Mica Group**

\[ K(Fe, Mg, Al)_{3}AlSi_{3}O_{10}(F, OH)_{2} \]

- perfect cleavage
- thin sheets flexible
- clear to black
- used in electrical, fireproofing, lubricant, wall paper

**important:** metamorphic, igneous

**accessory:** sedimentary

- muscovite
- lepidolite
Olivine \((\text{Mg,Fe})_2\text{SiO}_4\)

green
conchoidal fracture
vitreous look
some used as a gem, abrasives.

*important: igneous*
Calcite $\text{CaCO}_3$

Dolomite $\text{CaMgCO}_3$

- rhombohedral crystals
- effervesces with acid
- used in manufacture of cement, fertilizer

**important:** sedimentary

metamorphic
Web Sites of Interest

http://mineral.galleries.com
  minerals by chemical group, name

http://minerals.er.usgs.gov/minerals

  U.S. Geological Survey, minerals in U.S.

http://www.kgs.ukans.edu/AASG
  Link to all state geological surveys