Section 7.2; “Minerals and Mineral Resources”

Mineral = chemical element or compound that is naturally occurring and has a crystalline structure

Minerals that are one element: sulfur, gold, diamonds, copper, iron, lithium,…

Minerals that are made up of a compound: quartz, magnetite, peridot, garnet, coal,…

Rock = natural material that is made from one or more minerals. Can contain fossils

Mineral resource = rock or mineral mined and used for one or more purposes; includes petroleum….

Precious minerals = gemstones used for jewelry, other things….

**Identifying Minerals**

Crystal Structure

-straight edges, flat sides, and regular angles (repeated in every crystal)

-6 families of crystal shapes (table 7.1):

cubic (a cub shape),

tetragonal (rectangular prism, box),

hexagonal (hexa=6 sides),

orthorhombic (rhrombic, rhombus 2 D shape),

monoclinic (slanted with rectangular base),

triclinic (like 2 rhombus).

-size of crystals depend on how slowly the molten mineral solidified

Hardness

Mohs scale (p. 206), softest = talc, hardest = diamond

Lustre

-shiny/dull, ‘shininess’

-table 7.3

Colour

-may be a clue to identity (pyrite and gold very similar….)

-impurities change colour, create ‘semi-precious stones’ corundum can be ‘white, blue (sapphire), red (ruby)

Streak

-colour left when scratched across a streak plate.

-powdered form of the mineral

Cleavage/fracture

-how the crystals naturally break apart (see crystal shape)

-break along ‘planes’, or flat surfaces like mica ‘cleavage’

-fracture into uneven chunks