**Unit 4**

**Ch. 9 Earth’s Interior**

Guiding Question: What and how have geologists learned about Earth’s interior

structure?

* Geologists have used two main types of evidence to learn about Earth’s interior
  + Direct evidence from rock samples – rocks drilled from deep inside Earth allow geologists to make inferences about conditions inside the earth
  + Indirect evidence from seismic waves – seismic waves produced by earthquakes allow scientists to measure the speed in which they travel giving clues to the structure of the planet.
* Three main layers of the Earth vary greatly in size, composition, temperature and pressure. They are:
  + THE CRUST
    - Layer of solid rock that forms Earth’s outer skin
    - Includes both dry land and ocean floor
    - Less dense than mantle and core
      * Ocean crust –
        + crust under the oceans
        + made mostly of basalt (rock)
      * Continental crust –
        + Crust that forms the continents
        + Made mostly of granite (rock)
  + THE MANTLE
    - layer of solid hot rock 40 Km beneath the surface
    - divided into layers
    - more dense that crust, less dense than core
      * lithosphere
        + uppermost part of mantle and the crust for
        + form a ridge layer about 100 Km thick
      * asthenosphere
        + softer part of mantle
        + below the lithosphere
        + material is hotter and under more pressure
      * lower mantle
        + solid material extending all the way to the Earth’s core
  + THE CORE
    - Made mostly of iron and nickel
    - Made of two parts
    - More dense than mantle and crust
      * Outer core
        + Layer of molten metal that surrounds inner core
        + Movement of liquid here creates Earth’s magnetic field
      * Inner core -
        + Dense ball of solid metal