**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