Section 7.1 Student Notes: “Earth’s structure”

What we know comes from both direct evidence, what we see, study, and from indirect evidence – studying things we cannot see directly.

4 main layers:

Crust

-like the skin of an apple.

-cracked like an egg shell, into ‘plates’

-thinnest under the oceans (approximately 5 km thick)

-thickest under continents and mountains (up to about 50 km thick)

Mantle

-most complex layer

-topped by the Moho discontinuity

-upper part is solid rock at about 1000 degrees C

-lower layer is plastic in consistency (wax,, taffy, etc.) at about 2500 degrees C

Outer Core

-probably liquid, about 4000 degrees C

-iron and nickel

Inner Core

-high pressure

-solid

-iron, silicon, carbon

-5000 – 5700 degrees C

Plates of the Lithosphere

-Crust + upper mantle = lithosphere

-12 (approximately) large parts, or plates that move and shift between each other

-movement of plates caused by convection currents

-semi-molten layer below this is the asthenosphere

Convection Currents

-caused by rising hotter material into a body of cooler material

-happens in water, air (causes thunderstorms and weather events), and in the Earth

-rocks in the asthenosphere melted by heat from below

-melted rock rises upward (convection current) into lithosphere

-cooler rocks (solid?) sink into asthenosphere and melt….

-friction of this movement pulls plates along, causing Earthquakes, mountains and volcanoes

Earth’s Magnetic Field (videos on website)

-movement of a magnet shows evidence of magnetic field

-protection for Earth from particles in space

-cause of Northern Lights