**Class Notes 3.1**

Vocabulary 3.1

1. **Seismic Waves-** Vibrations that travel through Earth carrying the energy released during an earthquake.
2. **Pressure-**  The force pushing on a surface divided by the area of that surface.
3. **Crust** The layer of rock that forms Earth’s outer surface.
4. **Basalt-** A dark, dense, igneous rock with a fine texture, found in oceanic crust.
5. **Granite-** A usually light-colored igneous rock that is found in continental crust.
6. **Mantle-**  The layer of hot, solid material between Earth’s crust and core.
7. **Lithosphere-** A rigid layer made up of the uppermost part of the mantle and the crust.
8. **Asthenosphere-** the soft layer of the mantle on which the lithosphere floats.
9. **Outer core-** a layer of molten iron and nickel that surrounds the inner core of Earth.
10. **Inner Core-** a dense sphere of solid iron and nickel at the center of Earth.

How Do Geologists Learn About Earth’s Interior? Pgs. 98-99

**Geologists have used 2 main types of evidence to learn about Earth’s interior:**

1. **Direct Evidence From Rock Samples**
2. **Indirect Evidence From Seismic Waves.**

1. Evidence From Rock Samples

* Geologists have drilled holes as deep as 12.3 kilometers into Earth.
* The drills bring up samples of rock.
* These rocks give geologists clues about ***Earth’s structure*** and ***conditions deep inside Earth.***

 **Example of a cylindrical whole rock core.**

2. Evidence From Seismic Waves

When ***earthquakes occur*** they produce **seismic waves**.

**Geologists** *record* the seismic waves and *study* how they travel through Earth.

Infer: Geologists have found that the paths of

seismic waves change When the waves reach

 specific depths Inside Earth.

What can you infer about the Earth’s

 structure from this Observation?

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 Paths of the ocean waves

 change when the waves reach an island.

 Paths of ocean waves change

 when the waves reach an island.

Assess Your Understanding

What Are The Features of Earth’s Crust, Mantle, and Core? Pg. 100

 the crust

The **three main layers of Earth** are: the mantle,

 the core.

**These layers vary greatly in *size*, *composition*, *temperature*, and *pressure.***

**Pressure** results from a force pressing on an area.

 **The Deeper Down Inside Earth,**

**The Greater the Pressure and the greater the Temperature!**

Earth’s Crust pg. 101

**Earth’s crust is the layer of rock that forms Earth’s outer skin.**

* *The crust is a layer of solid rock* that includes both **dry land** and the **ocean floor.**
* **The composition of oceanic crust** is much like ***basalt-*** a dark rock that has fine grains.
* **The composition of continental crust** is much like ***granite-*** a rock that usually is a light color and has coarse grains.

Earth’s Mantle pg. 102

**Earth’s Mantle *Is the solid material of the mantle is a layer of hot rock.***

* **Earth’s mantle is made of** *rock that is very hot, but solid.*
* Overall, the mantle is nearly 3,000 kilometers thick.
* Scientists ***divide the mantle into layers*** based on *the physical characteristics of those layers.*

Mantle’s Layers

**Layers**

* the **Lithosphere** is the ***crust and uppermost mantle.***
* Just beneath the lithosphere the **Asthenosphere**- Is the soft layer.
* Beneath is a layer called the **Mesosphere**- which is hot but more rigid.

Earth’s Core pg. 103

**The core** is made mostly of the ***metals iron*** and ***nickel.***

 **The Core** consists of 2 parts:

1.  **a liquid outer core-** The outer core is a layer of molten metal surrounding the inner core.

1. **a solid inner core-** The inner core is a dense ball of solid metal.

**Scientists think that movements in the liquid outer core create Earth’s magnetic field**

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