**Regions of the Earth**

* **The Earth is made up of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, like an apple:**
1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (like the skin)
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (like the flesh of the fruit)
3. \_\_\_\_\_\_\_\_\_\_\_ (like the core and seeds)

**Earth can be further divided into more layers!**

1. **The Crust(0-35km)**
* The crust is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ surface layer of the Earth

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_crust is the crust under oceans, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ crust is the crust under the continents

The crust can range from \_\_\_\_\_\_\_\_\_\_\_\_ thick (oceanic) to \_\_\_\_\_\_\_\_\_\_\_\_\_ thick (continental)

**Plate Tectonics**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is where we find the plates. The crust is attached to the plates

The crust and the plates are both \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

We can give the Crust and the Plates a special name= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**LITHOS= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Tectonic plates make up the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ most region of a layer called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**The Mantle: (35-2900km)**

The mantle is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer directly below the crust.

It contains 70% of the Earth’s volume. It can itself be broken into 2 distinct parts:

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (35- 670 km)
1. The Transition Zone (300- 700km)
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (670- 2900km)
2. **The Upper Mantle:(35 - 670 km)**
* 660 km think
* Separated into 2 layers
	1. The layer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the solid rock layer that makes up the tectonic plates
	2. The layer below the plates is the semi-solid molten layer called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Asthenosphere**

The molten rock layer, with a consistency of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the asthenosphere are partly responsible for the movement of the plates

The majority of the heat comes from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ within the mantle

**ASTHENES= \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. **The Lower Mantle: (670 - 2900km)**

The lower mantle comprises nearly 50 percent of the Earth’s Interior

 It is made of solid rock, but has \_\_\_\_\_\_\_\_\_\_\_\_\_ of liquid magma that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ heat from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. **The Outer Core: (2900 - 5200km)**

The outer core consists of flowing, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. This movement creates the Earth’s main magnetic field.

It is composed of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

It is somewhere between 3700-5500 K

1. **The Inner Core: (5200-6371km)**
* While most of the core is liquid, the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Nickel and Iron
* The inner core is 6000K



**Earth’s Layers and Plate Movement**

We care about the layers of the Earth because they can help us to explain \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the Earth’s tectonic plates \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the mantle (asthenosphere), thermal heat form the core, gravity and plate interaction all affect plate movement!

1. Tectonic plates, which slowly move over the surface of Earth, form the lithosphere. What is the lithosphere composed of?
2. The solid crust
3. The solid mantle, and the uppermost parts of the crust
4. The solid crust, and the uppermost parts of the mantle
5. The solid crust and the mantle
6. Earth's tectonic plates "float" on a layer of molten rock like cookies floating in boiling milk. The continents are embedded in the tectonic plates like chocolate chips in the cookie. What is the name of the process that allows this movement to occur, and where does the process take place?
7. Convection currents in the lower mantle, known as the lithosphere
8. Mantle convection currents in the upper mantle, known as the asthenosphere
9. Mantle conduction currents in the upper mantle, known as the asthenosphere
10. Convection currents in the crust, known as the lithosphere
11. How do the physical properties of the lithosphere and the asthenosphere differ?
12. Why is the difference between the physical properties of the asthenosphere and the lithosphere important to plate tectonic theory?

*Match the correct term to each of the following descriptions. Each term may be used only once.*

a. spreading ridge d. lithosphere

b. continental drift theory e. asthenosphere

c. plate tectonic theory

5. \_\_\_\_\_ point on Earth’s surface where two plates are forced apart

6. \_\_\_\_\_ theory that Earth’s surface is broken up into large, solid, but moveable chunks of rock

7. \_\_\_\_\_ partially molten layer of the upper mantle

8. \_\_\_\_\_ theory that the continents were all once joined together but have moved to their present positions

9. \_\_\_\_\_ solid part of the crust and the upper mantle that forms tectonic plates

10. Draw and label a cross-section of the Earth (cut the Earth in half). Include the words: continental crust, oceanic crust, lithosphere, tectonic plates, upper mantle, asthenosphere, lower mantle, outer core, inner core. Try to do it without looking at your notes or textbook! ☺