

**** Part 1 is required by everyone then you may choose between part 2 or part 3 to complete for the remainder of the assignment.**

Explore the following websites and answer the corresponding questions below to help you figure out what is so special about the structure of our Earth!

Part I. The Layers of Earth: **EVERYONE MUST DO**

A. Structure of the Earth:

<https://www.learner.org/interactives/dynamicearth/structure.html>

<http://volcano.oregonstate.edu/earths-layers-lesson-1>

1. Label & color the layers of the Earth

Key

Crust -brown

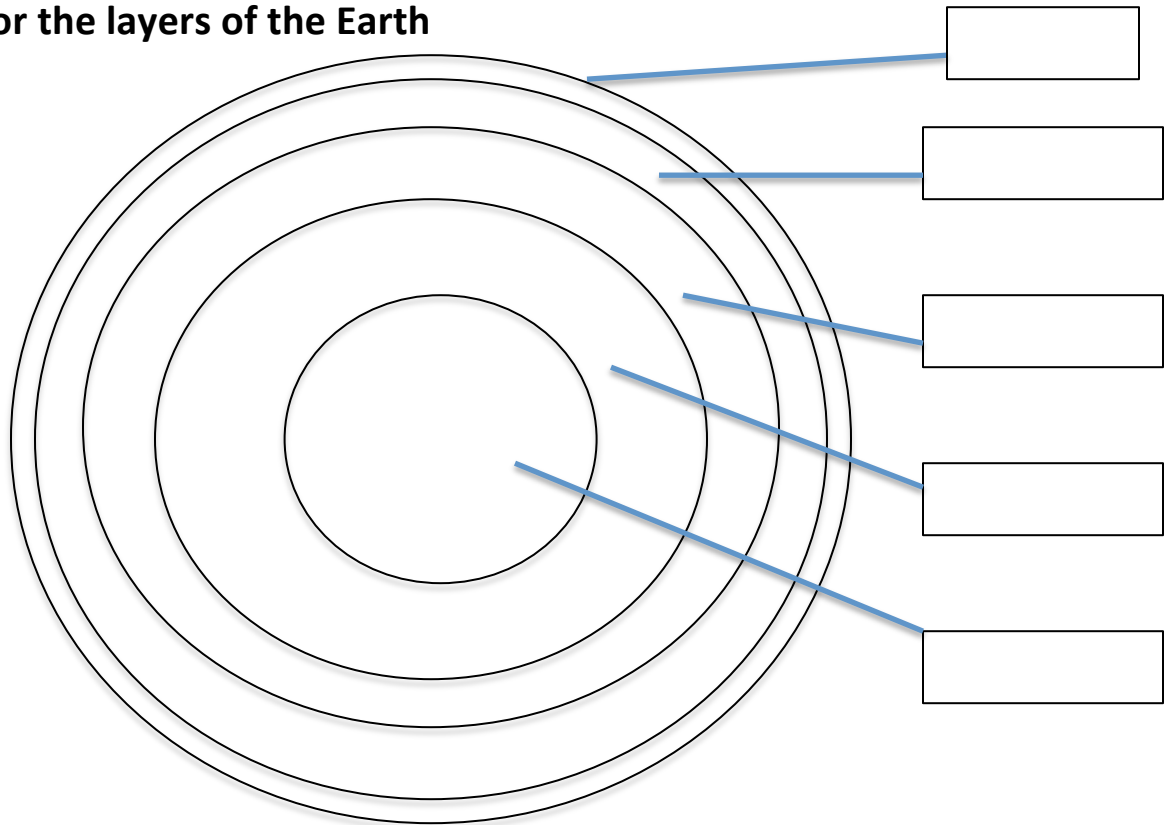
Label the Mantel

Lithosphere -green

Asthenosphere- blue

Outer core--orange

Inner core --red



2. What causes the **mantle to “flow”**?

3. What are the **two main metals that make up the Earth’s core**?

_____ and _____

B. Describe, in your own words, **how the earth's layers were formed?** (see "The four layers")

4.

Use the following sites to help you understand the layers

http://www.harcourtschool.com/activity/science_up_close/606/deploy/interface.html

<http://www.pbs.org/wnet/savageearth/animations/hellscrust/main.html>

http://www.rocksandminerals4u.com/earths_interior.html

c. **The layers**

The Crust

1. Describe the crust and its composition.

2. Complete the following table:

<i>Types of Crust</i>	
Oceanic	Continental
Thickness:	Thickness:
Made of:	Made of:
VIP #1:	VIP #1
VIP #2:	VIP #2:

Mantle: Lithosphere & Asthenosphere

3. Describe the mantle and its composition.

4. What is special about the Lithosphere?

5. How are the asthenosphere & lithosphere related?

The Core: inner & outer

6. Describe the outer core & its composition.
7. How thick is the outer core?
8. Describe the inner core & its composition.
9. What is the diameter of the inner core?

D. Tectonic Plates: <http://www.sciencemonster.com/earth-science/layers-of-the-earth.html> – **only use the first 3 pages!!!**

1. What are **tectonic plates**?
2. What is something else that you learned from pages 1-3 that helps **you** understand what is special about the Earth's structure?

Part II. Convection Currents and the Mantle

Heat transfer is the movement of heat energy from a warmer object/place to a colder object/place. There are three ways in which heat can be transferred: **radiation**, **conduction**, and **convection**. You learned about these last year but if you need a refresher skim through the information On the [Heat Transfer](#) web page.

A. Click here and take the "[Mini Quiz](#)". Put your answers below.

1. _____
2. _____
3. _____

B. Go to www.universetoday.com/26717/earths-mantle/ to learn about what influence convection currents have on Earth. Read and answer the following questions.

1. Describe how **convection currents occur in Earth's mantle**.

2. What is a **constructive force** caused by the convection in the mantle?
3. What is a **destructive force** caused by the convection in the mantle?

Part III. How do we know about the layers of the earth?

Go to:

http://www.classzone.com/books/earth_science/terc/content/investigations/es0402/es0402page01.cfm?chapter_no=investigation

1. What do earthquakes generate?
2. How do scientist use seismic waves to find the layers of the earth?
3. Click on step 7 at the bottom of the pg & watch the animation of the waves traveling through the earth. What happens to the waves when they move through the different layers of the earth?
4. How do you think this would help scientist learn about the layers of the earth?

Part IV. Bonus—to be completed *ONLY* when part I & your choice of part II or part III is complete.

Listen to the song & fill in the blanks: [Crust & Mantel Rap](#)

Crust moving 'cause of _____
The core is really _____ & _____
_____ crust the densest and the skinniest.
The continents fit together something like a _____
When the rock breaks, there's a crack called a _____.