Layers of the Earth-A deeper look

Name_____ Period_____

ctivating Prior Knowledge: In the space below, bullet facts that you already know about the layers of Earth!

Applying the Science Process: Now, write a question you are wondering about the layers of the Earth. Write it in appropriate, scientific form! *(HINT: Refer to your notes (Peculiar Problems) about problem format and variables!!)* What is the effect of DEPTH on Layers of the Earth?

Research: Read chapter 5, section 1 (pages 124-131) of your Earth Science textbook to learn more about the layers of the Earth. As you read, answer the following questions, label the diagram, and complete the table.

Exploring Inside Earth:

1. What prevents geologists from directly exploring Earth's interior?

They cannot dig a hole to the center of the Earth because of the extreme heat and pressure.

2. Name and explain the two types of evidence that geologists use to learn about the Earth's interior.

Direct: rock samples, observing the Earth's surface.

Indirect: speed and path of seismic waves from earthquakes.

A Journey to the Center of the Earth:

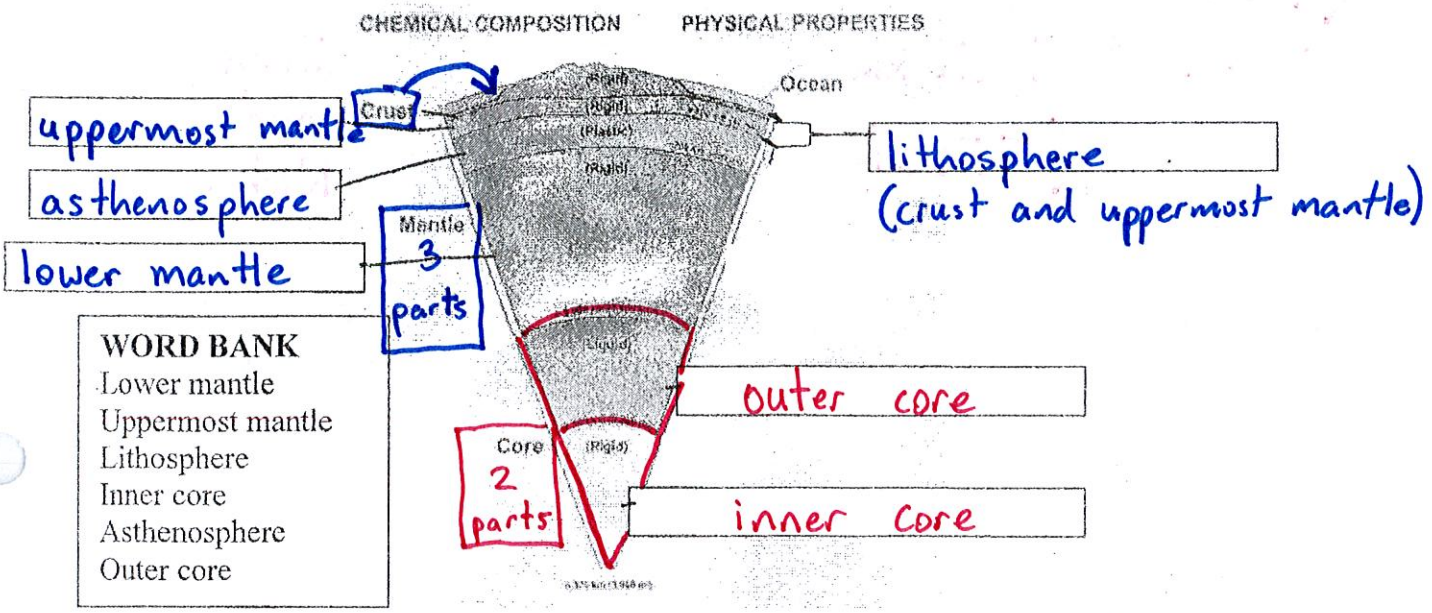
3. How is the water in a swimming pool (see figure 4) similar to the Earth's interior? How is it different?

Similar: As you go deeper, pressure increases

Different: In pool, temp decreases with depth (water)

The Crust, The Mantle, and The Core

4. As you read pages 128-130, label the diagram and complete the chart on the back of this page.



Layer of the Earth	Thickness of this layer	Temperature of this Layer	State of matter of this layer (solid, semi-solid, liquid)	Content of this layer
Crust	5-70 km (3-44 mi)	Temperature varies with location (land and ocean floor)	solid	Continental Crust- granite (less dense) Oceanic Crust- basalt (more dense)
Uppermost Mantle	100 km (62 mi)	870C or 1600 F	solid	Oxygen, silicon, aluminum, calcium, iron, sodium, potassium, magnesium
Asthenosphere	335 km (221 mi)	2200C or 4000 F	semi-solid	Silicon, oxygen, aluminum, iron, magnesium, calcium
Lower Mantle	2,867 km (1,781 mi)	3700 C or 6700 F	solid	Silicon, oxygen, iron, magnesium, aluminum, calcium
Outer Core	2,266 km (1,408 mi)	4300 C or 8500 F	liquid	Iron and Nickel
Inner Core	1,216 km (756 mi)	7200 C or 13000 F	solid	Iron and Nickel

Combine to form lithosphere (tectonic plates)

mantle

core

Hypothesis: We will come back to this! When we do, write a hypothesis to your problem based on the research you just completed. *(Hint: Refer to your notes (Happy Hypothesis) about format, variables, and research!)*