Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_\_\_\_\_

**Unit 3 Dynamic Earth: Layers of the Earth**



Use Your Handy Dandy E.S.R.T. to fill in the following.

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| **Crust Facts:** 1. Crust is either Oceanic ( ) or Continental ( ). The density of the continental crust is \_\_\_\_\_\_\_\_\_\_\_g/cm3. The density of oceanic crust is \_\_\_\_\_\_\_\_g/cm3.
2. The most dense crust is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Circle all the words that are included in the crust: lithosphere, iron and nickel, sedimentary rock, magma, mountains, solid, lava.
4. The depth of the crust is approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_ km.
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| **Mantle Facts:** 1. The uppermost part of the mantle that has liquid and plastic properties is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The density of the mantle ranges between \_\_\_\_\_\_\_ g/cm3 to \_\_\_\_\_\_\_\_\_\_\_\_ g/cm3
3. The depth of the mantle from the upper asthenosphere to the bottom of the mantle is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ km.
4. The actual temperature at the 2000 km depth is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Pressure in the mantle (increases, decreases, or remains the same) as depth increases.
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| **Outer Core Facts:** 1. The outer core is inferred to be made up of what element? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The distance from the top of the outer core to the bottom is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_km.
3. The actual temperature is near 6000 degrees Celsius. The melting point of iron is (greater of, or less than) the actual temperature. This means the outer core is made up of (solid, liquid, or gaseous) iron.
4. The pressure of the outer core is between \_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ millions of atmospheres.
5. The density of the outer core is between \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ g/cm3.
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| **Inner Core Facts:** 1. The depth of the inner core from its top to center is approximately \_\_\_\_\_\_\_\_\_\_\_\_ km.
2. The actual temperature of the inner core is approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ °C.
3. The dotted melting point line is (above or below) the actual temperature. Therefore the rock in the inner core is in the (solid, liquid, or gaseous) state.
4. The actual elements in the inner core are \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_. This is inferred from meteorite studies.
5. The density of the inner core is between \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_ g/cm3.
6. The pressure at the center of the Earth is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ millions of atmospheres.
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**Conclusions: Use your E.S.R.T. to answer the following.**

1. State the relationship for pressure as you travel towards Earth’s inner core (State your answer in an ‘As’ statement for any relationship questions).

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State the relationship for density as you travel from the crust to the inner core.

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1. State the relationship for temperature as you travel from the lithosphere to the inner core. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. At the Andes Trench on the crust’s surface, arrows indicate that the crust is (converging, diverging, or sliding past) relative to each other.
3. At the Mid Atlantic Ridge the (oceanic, continental) crust is (converging, diverging, or sliding past) relative to each other.