**Inside the Earth Guide**

How do scientists know what is inside the Earth?



\*\*\*Temperature **and** pressure \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ as you get deeper into the earth!

LABEL THE 4 LAYERS IN THE PICTURE below:



**CRUST (SOLID rock, mountains & soil):**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ layer (skin)

Thinnest under \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(5 km)

Thickest under \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(100 km)

Temp: near freezing to \_\_\_\_\_\_\_\_\_\_ °C

**Two types of crust**:

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (basalt)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (granite)

Circle above which type of crust is MOST dense.

In the diagram below, label the continental and oceanic crust:



**MANTLE (HOT/bendable ROCK!):**

About \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ km thick (thickest/largest of the 4 layers)

**Why** is the mantle DENSER than the crust?

Temp: \_\_\_\_\_\_\_\_\_ °C to \_\_\_\_\_\_\_\_\_\_\_\_ °C

Note: very top of mantle is \_\_\_\_\_\_\_\_\_\_\_\_

**CORE (inner layer):**

Mostly made of \_\_\_\_\_\_\_\_\_\_ and nickel (very dense metals—so densest layer)

What are the two parts of the core?

* 1. \_\_\_\_\_\_\_\_\_\_\_\_\_ core (**liquid** metal)

--temp: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°C and about 2250 km thick

* 2. \_\_\_\_\_\_\_\_\_\_\_\_\_ core (\_\_\_\_\_\_\_ metal because of the \_\_\_\_\_\_\_\_\_\_\_\_)

--temp: 5000--\_\_\_\_\_\_\_\_\_\_\_\_\_\_°C and about \_\_\_\_\_\_\_\_ km thick

***SO WHAT DOES THIS HAVE TO DO WITH PLATE TECTONICS?***

Two parts of the earth:

1. \_\_\_\_\_\_\_\_\_\_\_\_sphere—the SOLID/rigid outer part of earth (\_\_\_\_\_\_\_\_\_\_\_ and upper mantle)—this part of the earth is broken into tectonic \_\_\_\_\_\_\_\_\_\_\_
2. \_\_\_\_\_\_\_\_\_\_\_\_\_sphere—the soft, thick LIQUID/hot plastic-like part of mantle (flows slowly)

The lithosphere \_\_\_\_\_\_\_\_\_\_\_\_ on the asthenosphere.





**How does heat move around (heat transfer)?**

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_--heat from sun
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_--from touching
3. \*\*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	* **warm** (less dense) \_\_\_\_\_\_\_\_\_\_\_\_\_\_
	* **cold** (more dense) \_\_\_\_\_\_\_\_\_\_\_\_\_\_

Where does the convection heat come from?

Lithospheric is divided into 10 major tectonic plates (most contain oceanic and continental crust).

Example: we live on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ plate

What’s so interesting about California? (Label where it is located)