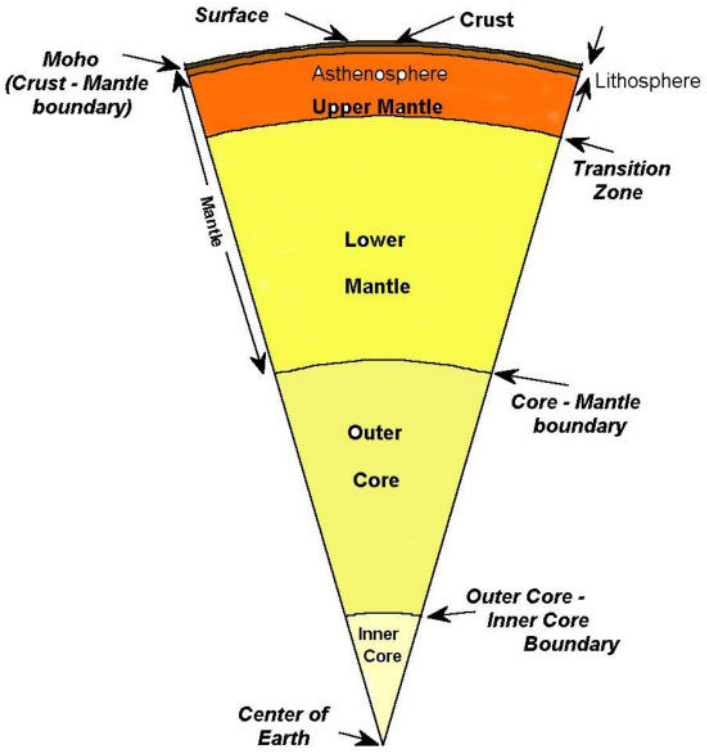
Earth Slice Activity

You are going to make one of these



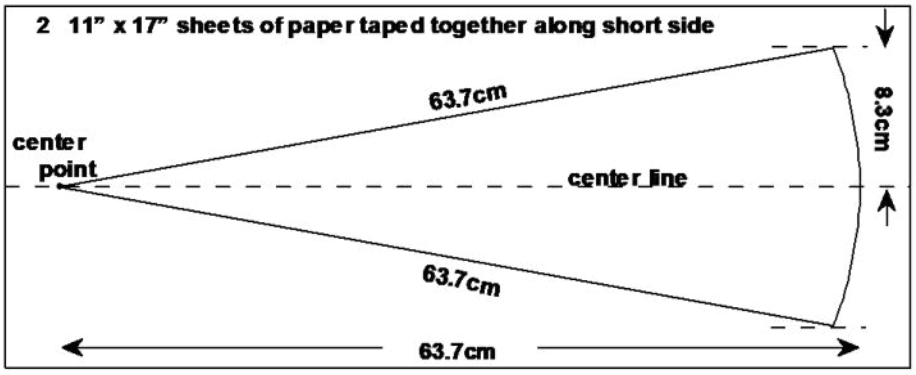
Materials

- 11x34 in paper or two 11x17 in sheets taped together on the short side
- Length of string
- Coloring utensils
- Meter stick
- Scissors

Instructions

- Label a center point to be the Center of the Earth near one edge of the paper. (see figure 1)
- Use the string as a compass; make an arc 63.7 centimeters in length.
- Draw two diagonal lines from the ends of the arc. Each side is 63.7 cm.
- Using the depth conversion chart (on the back) mark with a dot how many centimeters each layer is from the crust of the earth.
- Then use the string to draw the curved line for each layer.
- Label each layer and its density, composition, temperature, and color each layer the color stated on the Labeling Chart
- Cut the slice out

Figure 1. Dashed lines are light pencil lines (draw first) that can be erased after the solid lines of the "slice" are drawn.



Standard 2 Models are used to describe the structure of Earth. **Objective 2** Analyze how density affects Earth's structure.

Labeling chart				
Layer	**Density g/cm3**	**Color**	**Composition**	**Temperature**
Surface and crust	1- 2.8 **g/cm3**	Green	Minerals and Rocks	0 °C to 700 °C
Lithosphere	2.8 **g/cm3**	Brown	Minerals and Rocks	600 °C
Upper mantel	3.3 **g/cm3**	Yellow	Thick Dense Rocks	500°C to 900°C
Lower mantel	5.0 **g/cm3**	Orange	Thick Dense Rocks	1600°C to 4000 °C
Outer core	11.0 **g/cm3**	Red	Liquid Fe & Ni	2200°C to 5000 °C
Inner core	13.5 **g/cm3**	White	Solid Fe & Ni	5000 °C

Depth Conversion Chart	**Actual Depth**	**Scale Depth (1:10 million Scale)**
Radius of Earth	6371 km	63.7 cm
Depth* to base of the crust (average)	35 km	0.35 cm from the crust
Depth* to base of lithosphere (average)	100 km	1.0 cm from the crust
Depth* to base of upper mantle	670 km	6.7 cm from the crust
Depth* to core-mantle boundary	2885 km	28.9 cm from the crust
Depth* to outer core- inner core boundary	5155 km	51.6 cm from the crust

* All measurements are from the surface of the crust.

Write a short essay in your Notebook Journal:

¶ 1 Describe the activity.
¶ 2 Describe the trends in density and temperature.
¶ 3 Describe any changes in state of matter.
¶ 4 Describe your group, how well everyone worked with each other.
¶ 5 Summarize what you learned in this activity.

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