

Layers of The Earth Guided Notes

Essential Question:

How are layers of the Earth different from one another?

Standard:

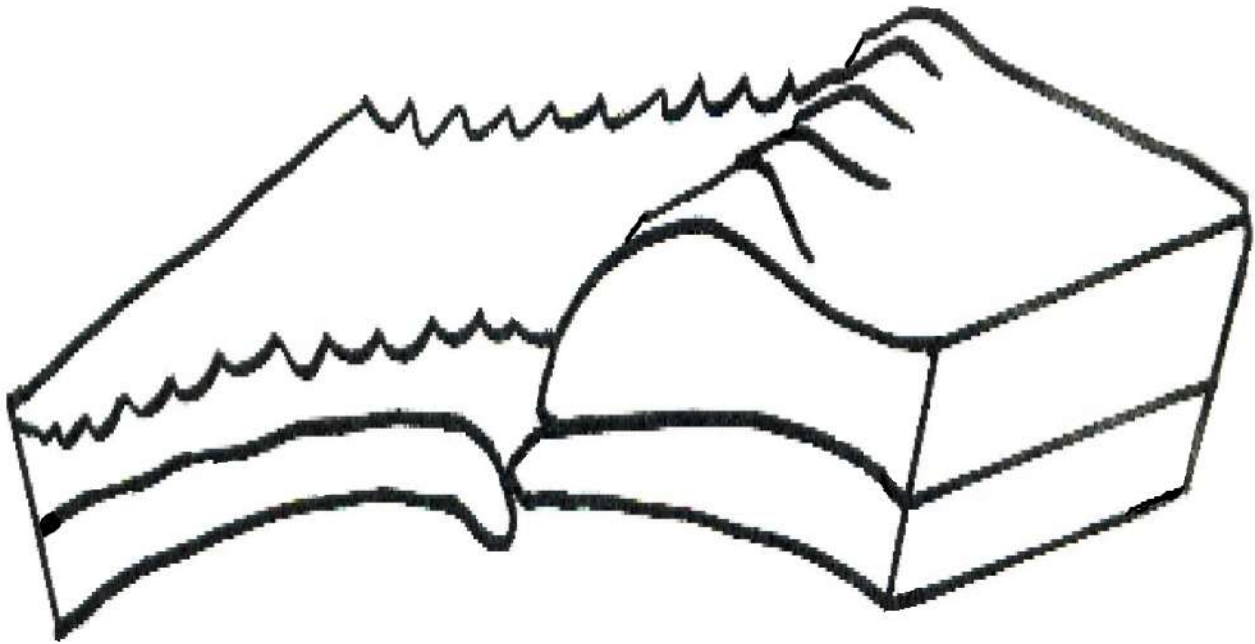
- a. Ask questions to compare and contrast the Earth's crust, mantle, inner and outer core, including temperature, density, thickness, and composition.

Slide 4: The Earth is made up of 4 main layers:

- _____
- _____
- _____
- _____



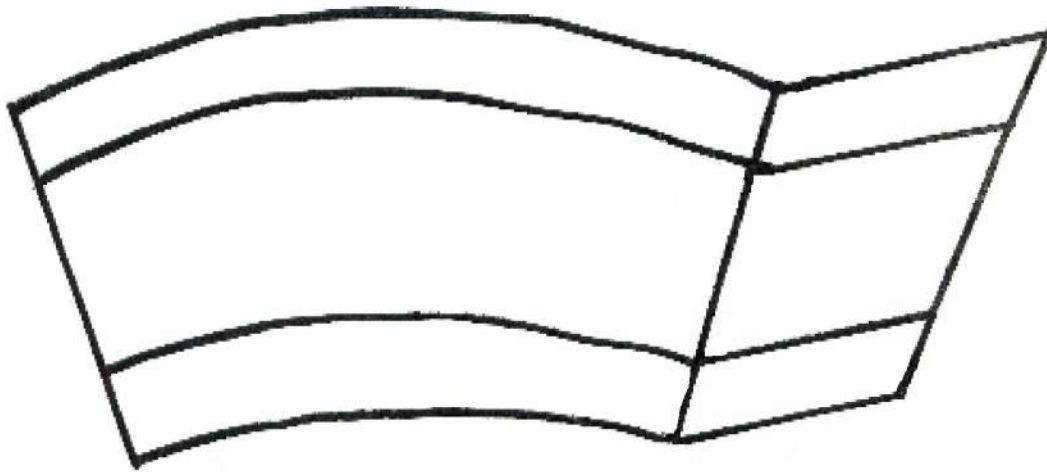
Slide 5: Crust



Slide 6: Crust

- _____ of the Earth that ranges from only _____ in some areas of the ocean floor to _____ under mountains.
- _____ large amounts of _____ and _____
- _____: oceanic crust and continental crust
- _____ on which the continents and oceans rest

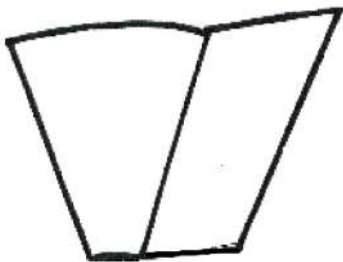
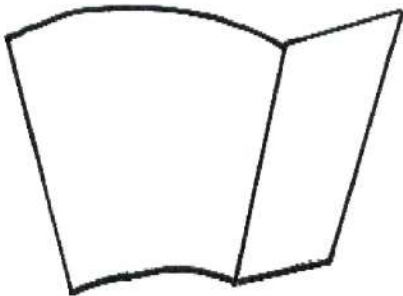
Slide 7: Mantle



Slide 8: Mantle

- _____ (like hot asphalt or fudge)
- _____ of the Earth (making up _____ of the Earth's mass)
- The hot material (magma) in the mantle rises to the top of the mantle, cools, then sinks, reheats, and rises again. These _____ cause changes in the Earth's surface

Slide 9: Core



Slide 10: Outer Core

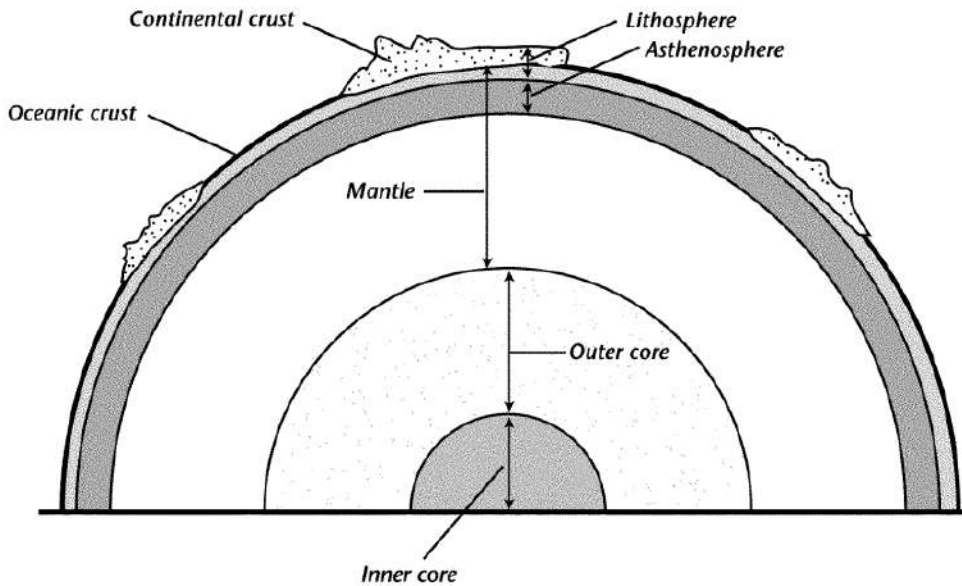
- _____ metal that is about _____
- Located about _____ and is about _____
- Composed of the melted metals _____

Slide 11: Inner Core

- _____ sphere composed mostly of _____
- It is believed to be as hot as 6,650°C _____
- Heat in the core is probably generated by the radioactive decay of uranium and other elements
- It _____ of the _____ from the outer core, mantle, and crust _____ it tremendously

Slide 10:

Earth's Interior



Slide 11: The Lithosphere

The _____ (crust and upper mantle) is divided into separate plates which move very slowly in response to the “convecting” part of the mantle.

Slide 12: _____ increases as _____

Slide 13:

Look at the information in the graph and table below. What's the relationship between depth and density/pressure?

Which layer of the Earth has the greatest temperature, pressure, and density?

TABLE 1 Interior Properties of Earth

Property	Crust	Mantle	Core
Fraction of Earth	<1% of mass	~70%	~30%
State	"Broken rock"	Plastic	(Semi-)liquid
Depth (kilometers)	0-30	30-3030	3030-6370
Density (grams/cubic centimeter)	2.7	3.5-5.5	10-12
Representative chemical composition	SiO ₂	(Fe,Mg)SiO ₄	Fe, Ni
Temperature (Kelvin)	300-500	500-3,000	3,000-5,300
Pressure (atmospheres)	1-1,000	10 ³ -10 ⁶	10 ⁶ -10 ⁷