

Name: _____

Period: _____

#: _____

Earth's Interior Structure Webquest

***Open the PDF of this document on Mr. Pysher's Web Page at
<https://www.cusd80.com/Page/76352>***

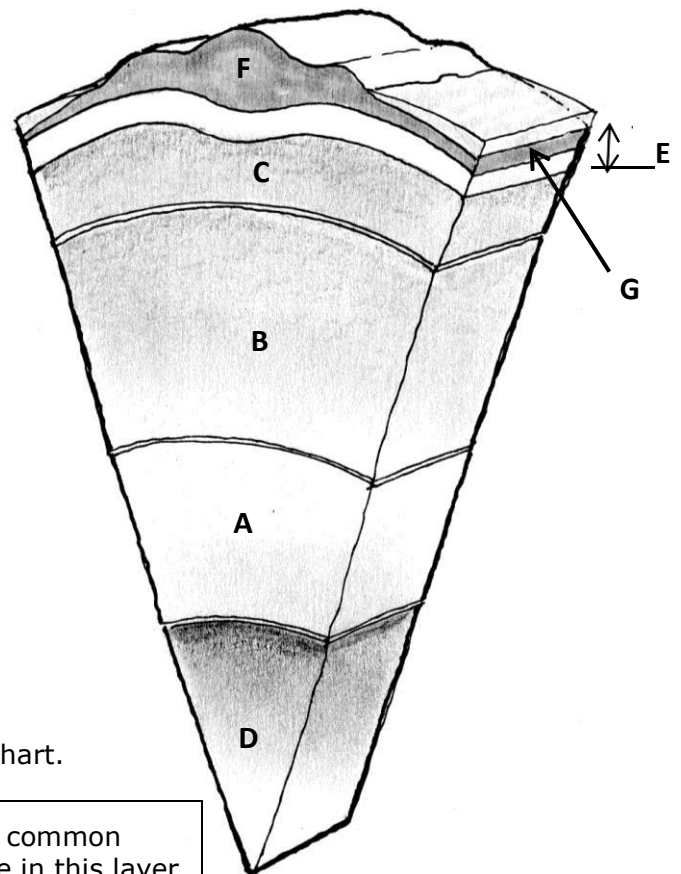
Directions: Each section begins with specific website links for you to follow in order to find the information you need to answer each question.

The three main layers of the Earth are called the crust, mantle and core. The mantle and core are both divided into sublayers.

Go To: [Earth's Layers Diagram](#)

1. Complete the table below by writing the letter that corresponds with each layer in the diagram. Choose a color for each layer and LIGHTLY color it in – add the color to the table. Use diagonal lines for the lithosphere.

Letter	Layer	Color
	Continental crust	
	Oceanic crust	
	Lithosphere	
	Asthenosphere	
	Lower mantle (mesosphere)	
	Outer core	
	Inner core	



Crust

Go to: [Earth's Internal Structure](#)

2. Use information from the link above to complete the chart.

	Thickness (km)	Made of Rock or Metals?	Most common substance in this layer
Continental crust			
Oceanic Crust			

3. Fill in the blank: Continental crust is _____ dense than oceanic crust.

4. If the Earth were a piece of fruit what part would the crust be? _____

Go to: [A Global Crustal Model](#)

You should see a USGS graph that shows the thickness of the Earth's crust. Carefully study the graph to answer the following questions:

5. Find the kilometer (km) scale on the right side of the graph; what color shows crust that is 30 km thick? _____

6. On what two continents do you find crust that is thicker than 60 km? _____

7. Which has thicker crust, oceanic crust or continental crust? Use evidence from the graph to explain your answer in complete sentences.

Lithosphere

8. Use information from the links below to complete the charts.

Go to: [Earth's Crust, Lithosphere and Asthenosphere](#)

	Thickness (km)	Of what 2 Earth layers is it made?	The lithosphere is divided into what?
lithosphere			

9. The lithosphere floats on top of what layer? _____

Go to: [Tectonic Plate Map](#)

Study the map, and use the map key, to answer the following:

10. On which plate do you live? _____

Boundary type	List 2 tectonic plates that share this type of boundary – do not use the same two plates together more than once.
Divergent	11.
convergent	12.
transform	13.

Layers of the Mantle

The mantle is divided into the upper mantle and lower mantle. Additionally, the upper mantle is divided into 2 parts: a thin portion of the lithosphere and the asthenosphere.

Asthenosphere

Go to: [Asthenosphere](#) and

[Characteristics of the Lithosphere and Asthenosphere](#)

14. At what depth range below the Earth's surface is the asthenosphere located? _____

15. List 3 ways that the asthenosphere is different from the lithosphere:

a. _____

b. _____

c. _____

Lower Mantle (Mesosphere)

Go to: [Mantle](#) and [Earth's Layers Diagram](#)

16. Using both links above, list 3 ways that the lower mantle is different from the asthenosphere:

a. _____

b. _____

c. _____

17. To what depth below the surface does the lower mantle extend? _____

Layers of the Core

Go To: [Core](#)

18. Use information from the link above to complete the chart and questions.

	Thickness (km)	Made of what metals?	Temperature Range (°C)	Liquid or Solid State?
Outer Core				
Inner Core				

19. Which layer creates the earth's magnetic field? _____

20. Why is the inner core in a solid state rather than a liquid state given the extremely high temperatures?

Watch the video ([Inside the Earth](#)) and answer the following questions:

21. Scientists in the _____ began using data from _____ to learn about the Earth's interior.

22. What characteristic of seismic waves did scientists use to determine the differences between the layers of the Earth?

23. What are the three characteristics of different layers of the Earth that cause seismic waves to change direction and speed?

a. _____ b. _____ c. _____

Earth's Latest Earthquakes

Go to: [Seismic Monitor](#)

Use this interactive map to find information about recent earthquakes in a region of your choice – click on a region link on the right side of the screen.

24. Region chose: _____ Click on a circle of your choice - Write the date and time, magnitude (MAG) and location (Location Map) of a recent earthquake on the line below:

Review Questions

25. It is incorrect to say that the crust is broken up into tectonic plates. Explain why this is false.

26. What is the deepest, hottest layer? _____

27. Which layer is soft and malleable (bendable)? _____

28. Which layer is completely in a liquid state? _____

29. List the 4 layers that are in a completely solid (rigid) state _____

30. In general, as depth increases, how does temperature and pressure change inside the Earth?

31. If you could travel the following distances, in what layer of the earth would you find yourself?

80 km _____

5,000 km _____

2,000 km _____

6,000 km _____

Additional links:

- http://www.iupui.edu/~g115/assets/mod04/earth_composition.jpg
- <http://geology.com/nsta/earth-internal-structure.shtml>
- <http://earthquake.usgs.gov/data/crust/crust.php>
- http://www.windows2universe.org/earth/interior/earths_crust.html
- <https://www.cusd80.com/Page/76352>
- <https://www.nationalgeographic.org/encyclopedia/mantle/>
- <http://education.nationalgeographic.com/encyclopedia/mantle/>
- http://www.iupui.edu/~g115/assets/mod04/earth_composition.jpg
- <http://education.nationalgeographic.com/encyclopedia/core/>
- Video: Layers of the Earth—How were they found? What are they?
<https://www.youtube.com/watch?v=UD7GHZ>
[IRI-s](#)
Alternate video link:
http://www.iris.edu/hq/programs/education_and_outreach/animations/38
- <http://ds.iris.edu/seismon/>