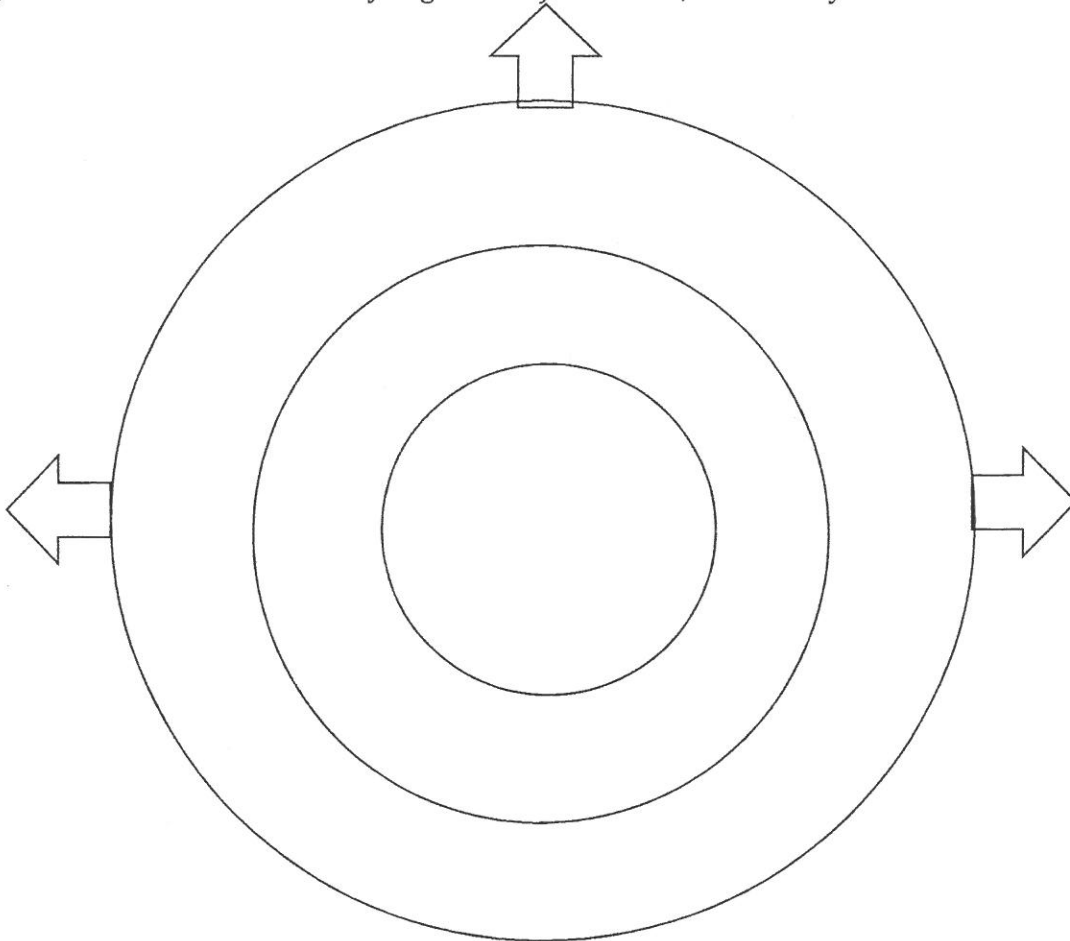


## -Seismic Waves Exploration-

### Procedure

1. Go to <http://aspire.cosmic-ray.org/Labs/SeismicWaves/> (Note: You **MUST** use Internet Explorer!!)
2. Spend 1-2 minutes playing with the Mighty Wave Maker and answer the questions online.
3. Using the paragraph below the first set of multiple-choice questions, list **2 facts** about P-waves:
  - 
  -
4. Using the paragraph below the second set of multiple-choice questions, list **2 facts** about S-waves:
  - 
  -
5. Click on "Discover More About Earth's Interior". Follow the instructions on the website as you move through the next three slides. When you get to the *fourth slide*, label the layers of the Earth below:

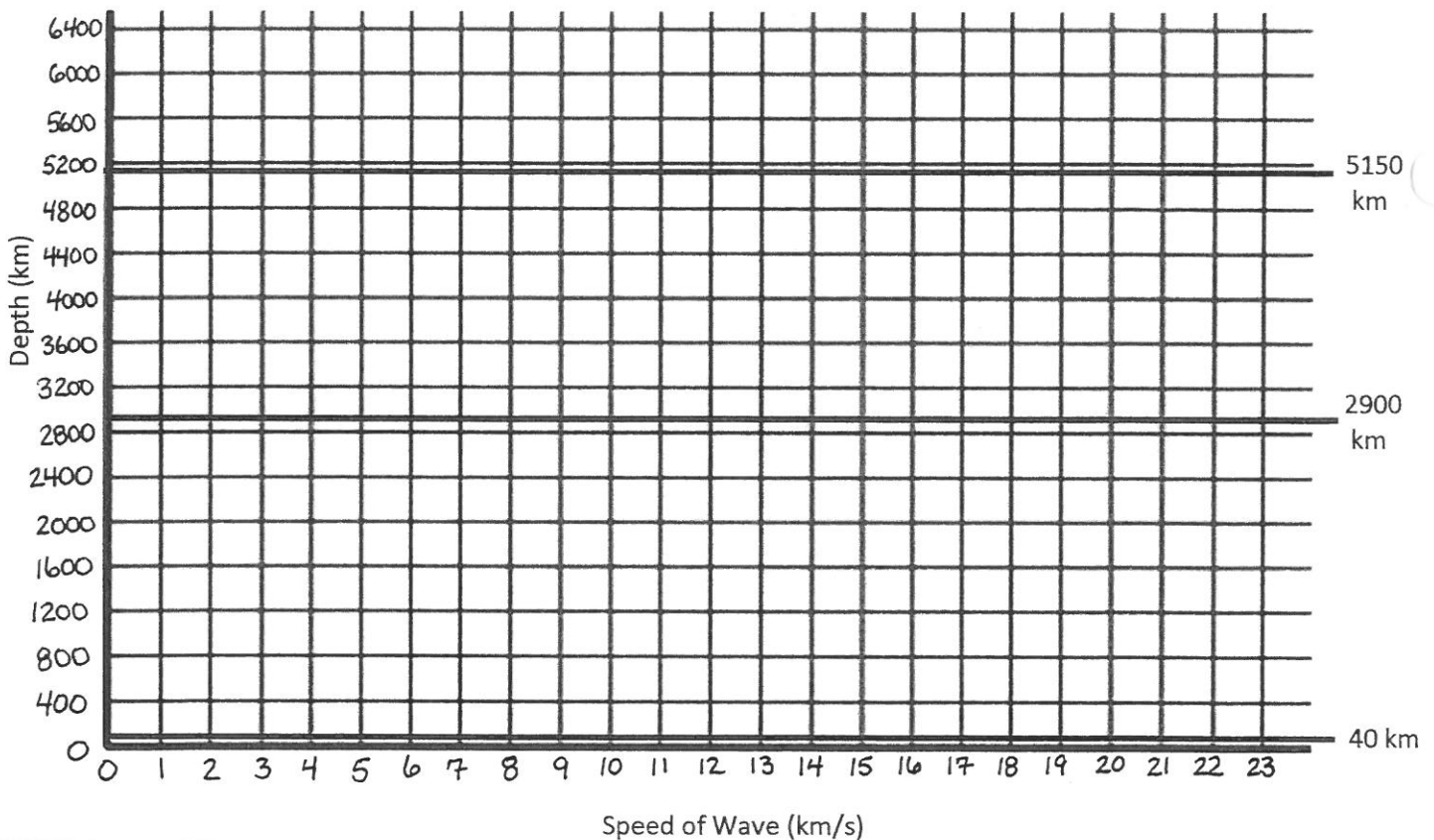


6. Still on slide four, click on **one** of the houses. On your diagram, draw where the P and S waves travel (make sure to include if they bounce/refract in a different direction).  
**\*\*\*Use a different color for each wave type and try to keep your drawing neat\*\*\***

7. What types of waves travel through the core? \_\_\_\_\_
8. According to calculations, what have scientists predicted Earth's core is composed of?  
\_\_\_\_\_
9. Why do scientists think the inner core is solid?  
\_\_\_\_\_
10. What 3 things *increase* as you get closer to the center of the Earth? \_\_\_\_\_  
\_\_\_\_\_, and \_\_\_\_\_
11. On your diagram, label the relative densities of the layers of the Earth. (*Use a different color for clarity*)  
Average Core Density: \_\_\_\_\_ (on slide 6)  
Average Crust Density: \_\_\_\_\_ (on slide 15)  
Average Mantle Density: \_\_\_\_\_ (on slide 15)
12. Scientists have determined that the mantle is \_\_\_\_\_. Why have scientists given it this name? \_\_\_\_\_

**Graphing**

13. With the data provided on the separate sheet, create a double line graph showing the relationship between **P-wave speed/S-wave speed** and **depth** within the Earth. Label the Crust, Mantle, Inner Core, and Outer Core based on their depth on the graph below (use the bold lines as the dividing lines between layers).



**Graph Interpretation:** Describe the relationship between the layers of the Earth and the speed of the S and P waves.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_