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| **Layer of the Earth** | **Depth** | **Temperature** | **Composition** | **State of Matter (solid, liquid, etc.)** | **Mobility** | **Other Facts** |
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**“ALL ABOUT THE EARTH” NOTES**

1. **How do we know the characteristics of the layers of the earth if the deepest drill only goes about 12 kilometers into Earth’s crust?** 
   1. **Define seismic wave-**
   2. **What is the Mohorovicic discontinuity (Moho)?**
   3. **How can P waves tell scientists that the core is made of a different material than the mantle? Draw a picture along with your description.**
   4. **If we cannot drill to the mantle or core, how can we determine the *composition* of these layers? (what types of rocks/elements are they made up of)**
2. **What causes the earth’s magnetic field? How can it change?**
3. **Explain Newton’s law of gravitation.** 
   1. **What is the difference between mass vs. weight?**
   2. **Differentiate between the gravity on earth and the moon? Why does *your* mass remain the same but weight differ from the moon to the earth?**
4. **What is a system, according to your textbook?**
   1. **Compare and contrast an open and closed system.**
   2. **Give an example of an open and closed system. Explain why.**
5. **Draw out the water cycle:**
   1. **Define the hydrosphere**
   2. **We think of the hydrosphere as the lakes, rivers, ocean, etc. on our planet, but the hydrosphere can actually exist within earth’s other spheres, as well. Define geosphere, biosphere, and atmosphere and explain how the hydrosphere can exist within each.**



1. **Hypothesize what drives the water cycle?** 
   1. **Where does the energy come from?**
   2. **Define energy and list some different types of energy:**
   3. **What is the 1st law of thermodynamics?**
   4. **Differentiate between external and internal energy sources. Give examples**