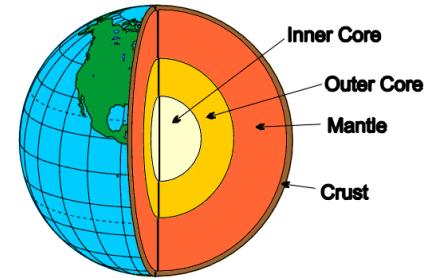


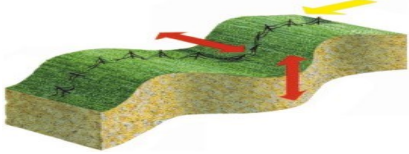
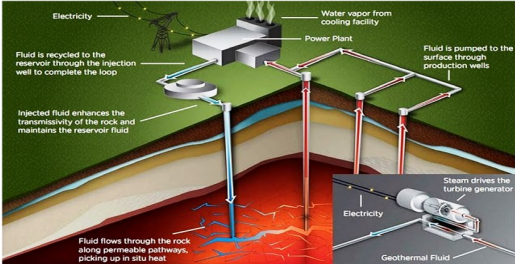
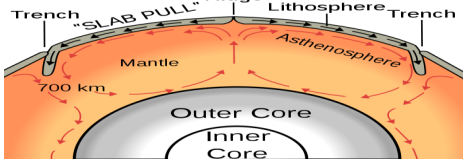
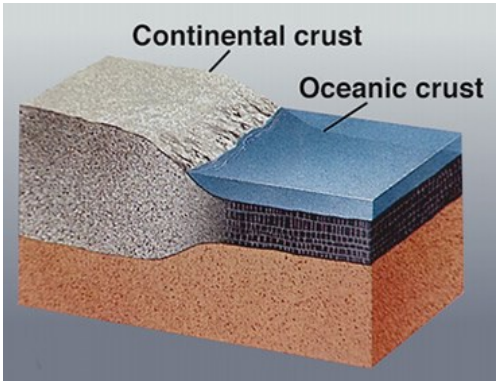
# Layers of Earth and Plate Tectonics

S6E5. Obtain, evaluate, and communicate information to show how Earth's surface is formed.

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



| Term          | Info   | Picture |
|---------------|--|---------|
| crust         | The outermost layer of Earth:<br>Solid<br>Least dense<br>Thinnest<br>Coldest<br>Made of silicon, oxygen,   |         |
| mantle        | The second layer of the Earth<br>More dense than crust, less dense than core<br>Mostly solid<br>Thickest layer<br>Warmer than crust, cooler than core<br>Contains magnesium and iron |         |
| outer core    | The third layer of the Earth<br>More dense and hotter than crust and mantle, less dense and cooler than inner core<br>Liquid<br>Nickel and Iron                                      |         |
| inner core    | The fourth and innermost layer<br>SOLID Iron and Nickel<br>Densest, hottest,   |         |
| lithosphere   | the solid, outer layer of Earth that consists of the crust and the rigid upper part of the mantle  |         |
| asthenosphere | the solid, plastic-like layer of the mantle beneath the lithosphere; made of mantle rock that flows very slowly, which allows tectonic plates to move on top of it                   |         |

| Term                | Info   | Picture  |
|---------------------|--|--|
| Seismic waves       | a vibration in rock that travels out from the focus of an earthquake in all directions; seismic waves can also be caused by explosions |   |
| Geothermal energy   | the energy produced by heat inside of Earth  |   |
| Convection currents | When warm air or liquid is less dense and rises and cool air or liquid is more dense and sinks   |   |
| Continental crust   | The crust of Earth on continents. Made of Granite. Less dense.   |  |
| Oceanic crust       | The crust of Earth under the oceans. Made of basalt. More dense than continental crust.  |  |

### Learning Targets:

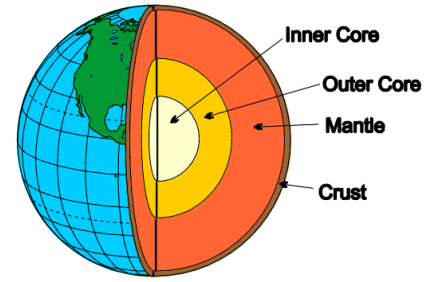
1. I can compare and contrast the Earth's crust, mantle, and core including temperature, thickness, density, and composition (including liquid and/or solid).
2. I can compare and contrast the inner and outer core.
3. I can describe challenges that stand in the way of sending explorers to the center of the earth.
4. I can compare and contrast the lithosphere and asthenosphere.



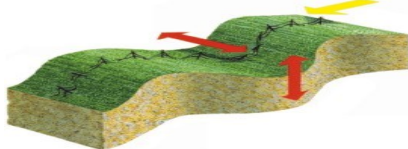
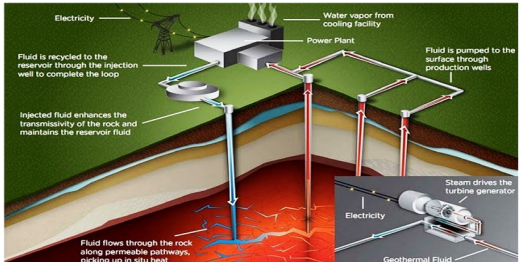
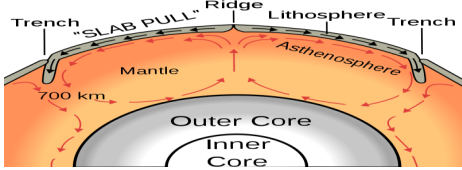
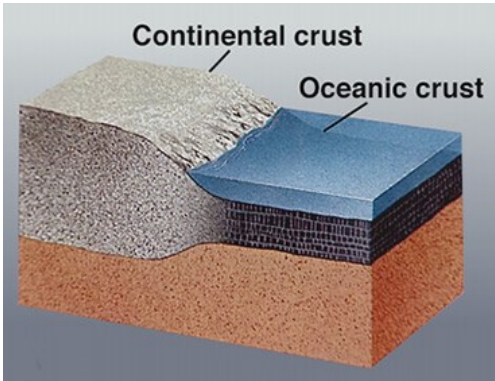
# Layers of Earth and Plate Tectonics

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| Term          | Info | Picture   |
|---------------|------|---|
| crust         |      | <p>A diagram comparing the thickness of oceanic and continental crust. The oceanic crust is shown as a thin layer, while the continental crust is shown as a much thicker layer. A legend identifies the layers: Crust, Upper Mantle, Mantle, Outer Core, and Inner Core.</p>   |
| mantle        |      | <p>A diagram titled 'THE EARTH In Proportion' showing the relative sizes of Earth's layers. The layers and their radii are: Solid Core (1100 km), Fluid Core (2900 km), Mantle (6350 km), and Continental Crust (35 km). The diagram also shows the thickness of the Ocean Crust (1000 km) and the Mohorovičić Discontinuity.</p> |
| outer core    |      | <p>A cross-sectional diagram of Earth showing the internal layers: Crust, Mantle, Outer Core, and Inner Core.</p>   |
| inner core    |      | <p>A cross-sectional diagram of Earth showing the internal layers: Crust, Mantle, Outer Core, and Inner Core.</p>   |
| lithosphere   |      | <p>A diagram showing the lithosphere and asthenosphere. The lithosphere is rigid and extends from the surface down to 60 km. The asthenosphere is plastic and extends from 60 km down to 180 km. The diagram also shows the ocean crust and continental crust.</p>  |
| asthenosphere |      | <p>A diagram showing the lithosphere and asthenosphere. The lithosphere is rigid and extends from the surface down to 60 km. The asthenosphere is plastic and extends from 60 km down to 180 km. The diagram also shows the ocean and continent.</p>  |

| Term                | Info | Picture  |
|---------------------|------|--|
| Seismic waves       |      |   |
| Geothermal energy   |      |   |
| Convection currents |      |   |
| Continental crust   |      |  |
| Oceanic crust       |      |  |

**Learning Targets:**

1. I can compare and contrast the Earth's crust, mantle, and core including temperature, thickness, density, and composition (including liquid and/or solid).
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