

The Lithosphere and Asthenosphere

Use with textbook page 290.

1. Describe how the following terms are related:

a) lithosphere and crust

b) lithosphere and mantle

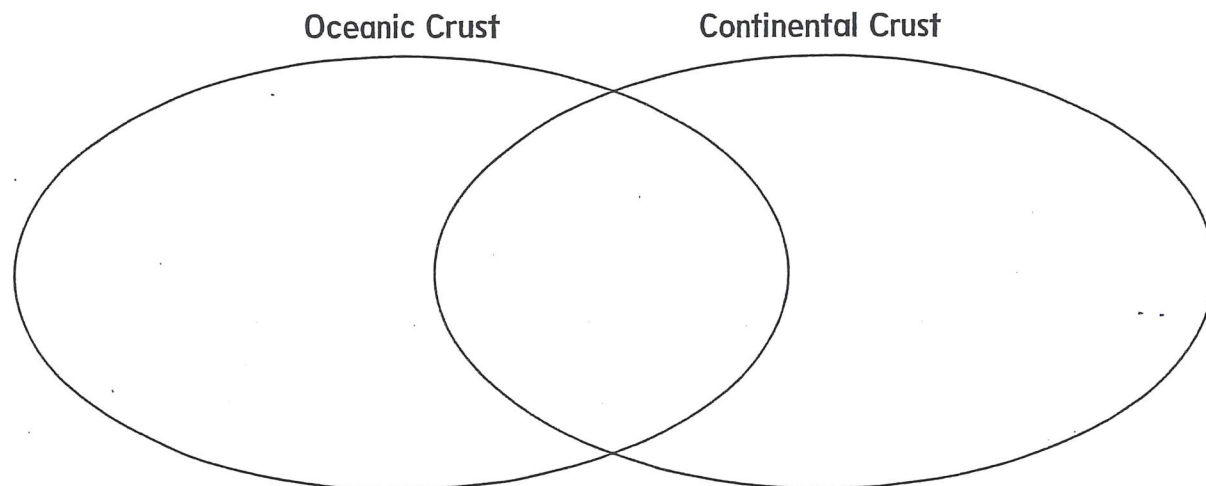
c) asthenosphere and mantle

2. What is the key role of the asthenosphere in the theory of plate tectonics?

3. What characteristics of the asthenosphere make it suitable for moving Earth's tectonic plates?

4. One analogy compares the asthenosphere to toothpaste or melted tar. Come up with your own analogy to describe the asthenosphere.

5. Use the Venn diagram to compare and contrast continental and oceanic crust.



Use with textbook pages 291-292.

1. Identify each type of plate boundary shown in the table, and describe the type of geological activity that occurs at that boundary.

<p>Plate Boundary:</p> <hr/>	<p>Plate Boundary:</p> <hr/>	<p>Plate Boundary:</p> <hr/>
<p>This diagram illustrates a mid-ocean ridge, a divergent plate boundary. Two oceanic plates move apart, creating a central rift valley. Magma rises from the asthenosphere into the rift valley. The layers shown are the asthenosphere and the lithosphere, which includes the oceanic crust.</p>	<p>This diagram illustrates a deep ocean trench, a convergent plate boundary where an oceanic plate subducts under a continental plate. The oceanic plate dips into the asthenosphere, creating a trench. Volcanoes are shown on the continental plate. The layers shown are the asthenosphere and the lithosphere, which includes both oceanic and continental crust.</p>	<p>This diagram illustrates a transform fault, a conservative plate boundary. Two continental plates slide horizontally past each other. The layers shown are the lithosphere, which includes the continental crust.</p>
<p>Geological Activity</p>	<p>Geological Activity</p>	<p>Geological Activity</p>

2. Use your understanding of divergent and convergent plate boundaries to explain why the surface of Earth is not getting any larger or smaller.