What is Earth's Structure

Chapter 7 Lesson 1
Part 2

ByDesign Science, Level 4
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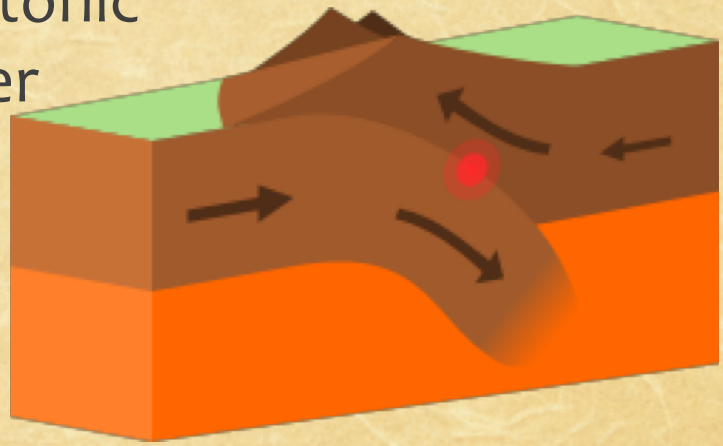
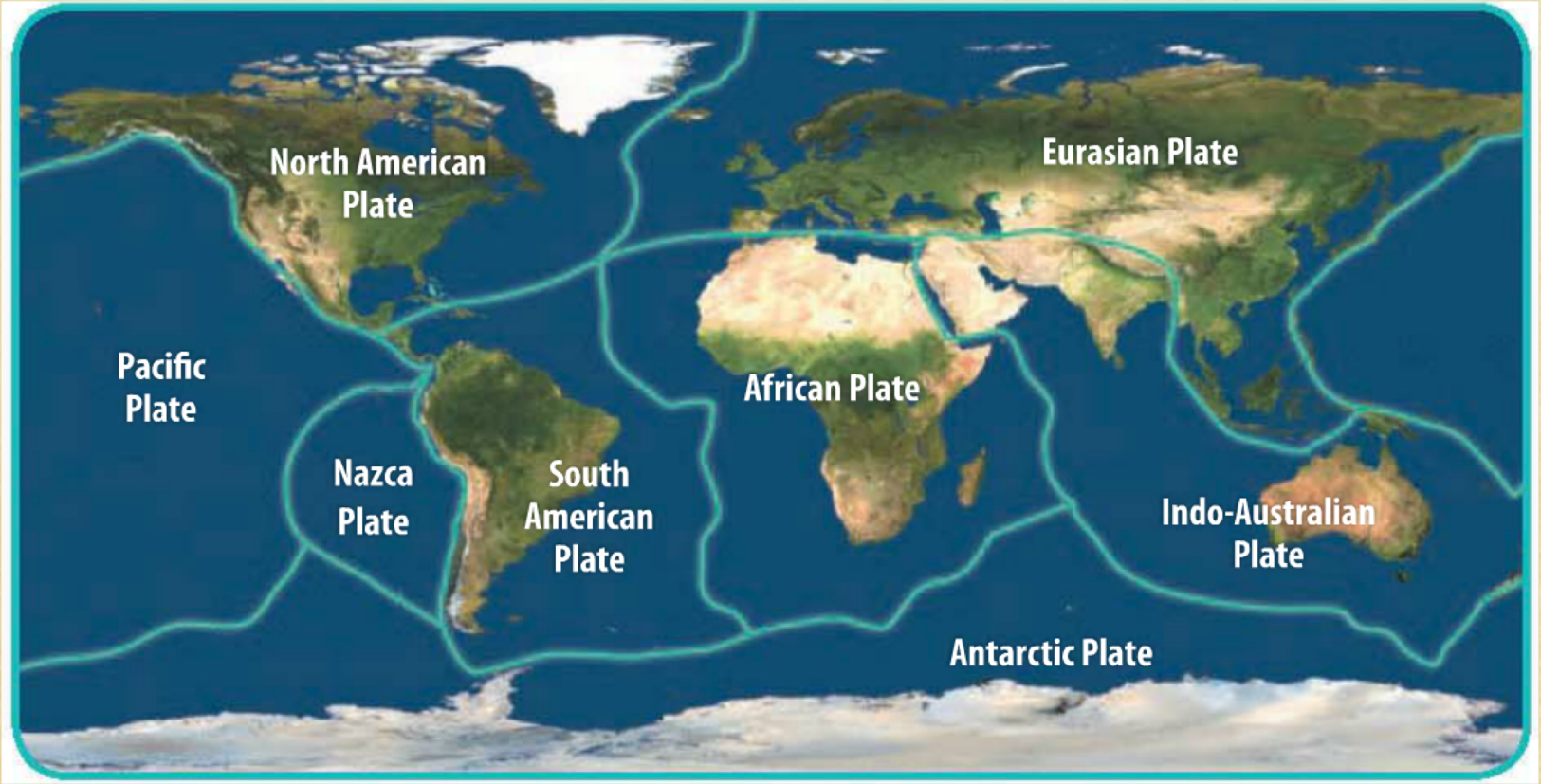
Earth's Cracked Crust

- Earth's crust is not a single, unbroken piece.
- Instead, Earth's crust is broken into several large slabs of rock called **tectonic plates**.
- Everything on the surface of Earth rests on a tectonic plate.
- There are about eight major tectonic plates on Earth and many smaller plates.

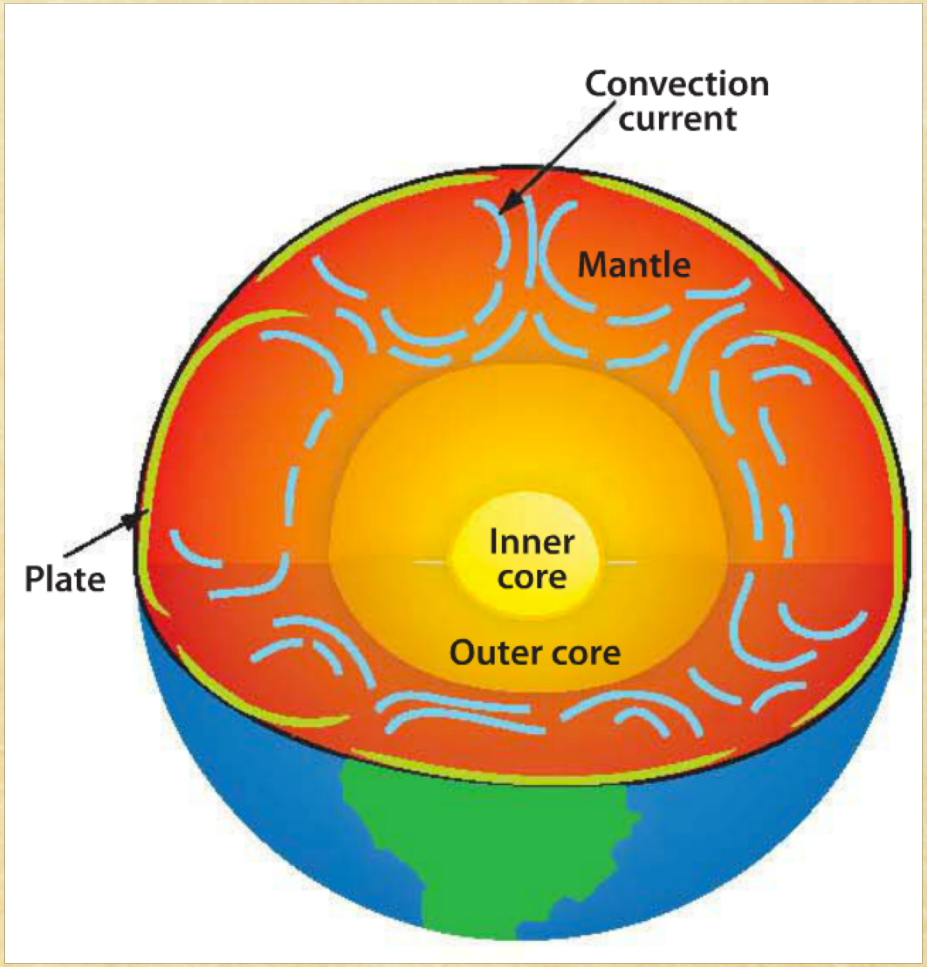


Earth's Cracked Crust



How Tectonic Plates Move

- Tectonic plates float on top of the mantle, like how a piece of wood floats on water.
- The mantle is super-hot melted rock. Temperature differences in the mantle cause convection currents.



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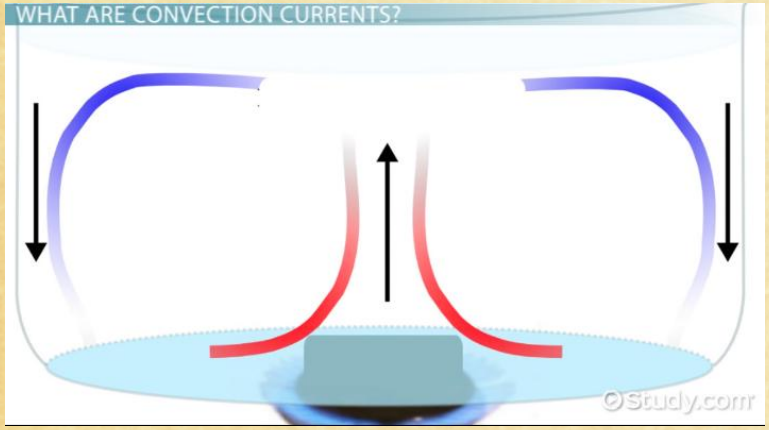
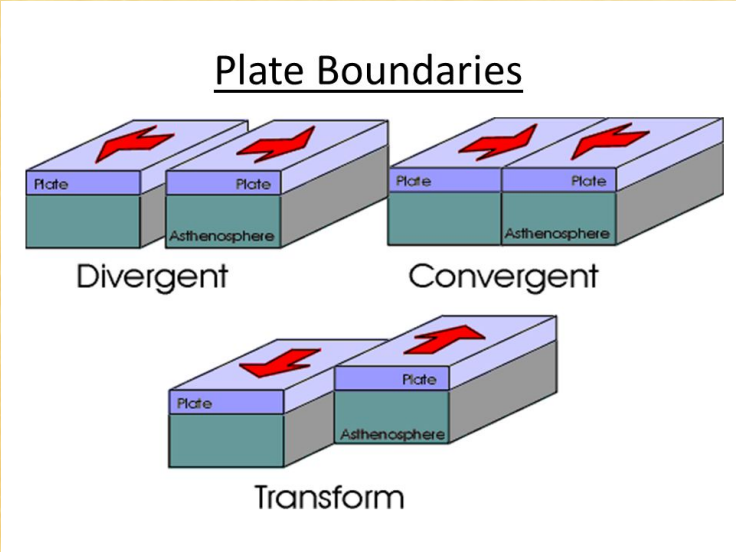


- Convection is the process that causes wind to blow. Warm air to rise and cools. Then, the cooler air sinks. As it heats up, it rises again, in an endless current.

- The same thing happens in the rock that makes up the mantle.
- In the mantle, hot, less dense rock rises, and cooler, more dense rock sinks.
- As it sinks into the lower mantle, it heats and rises. This creates convection currents in the mantle.

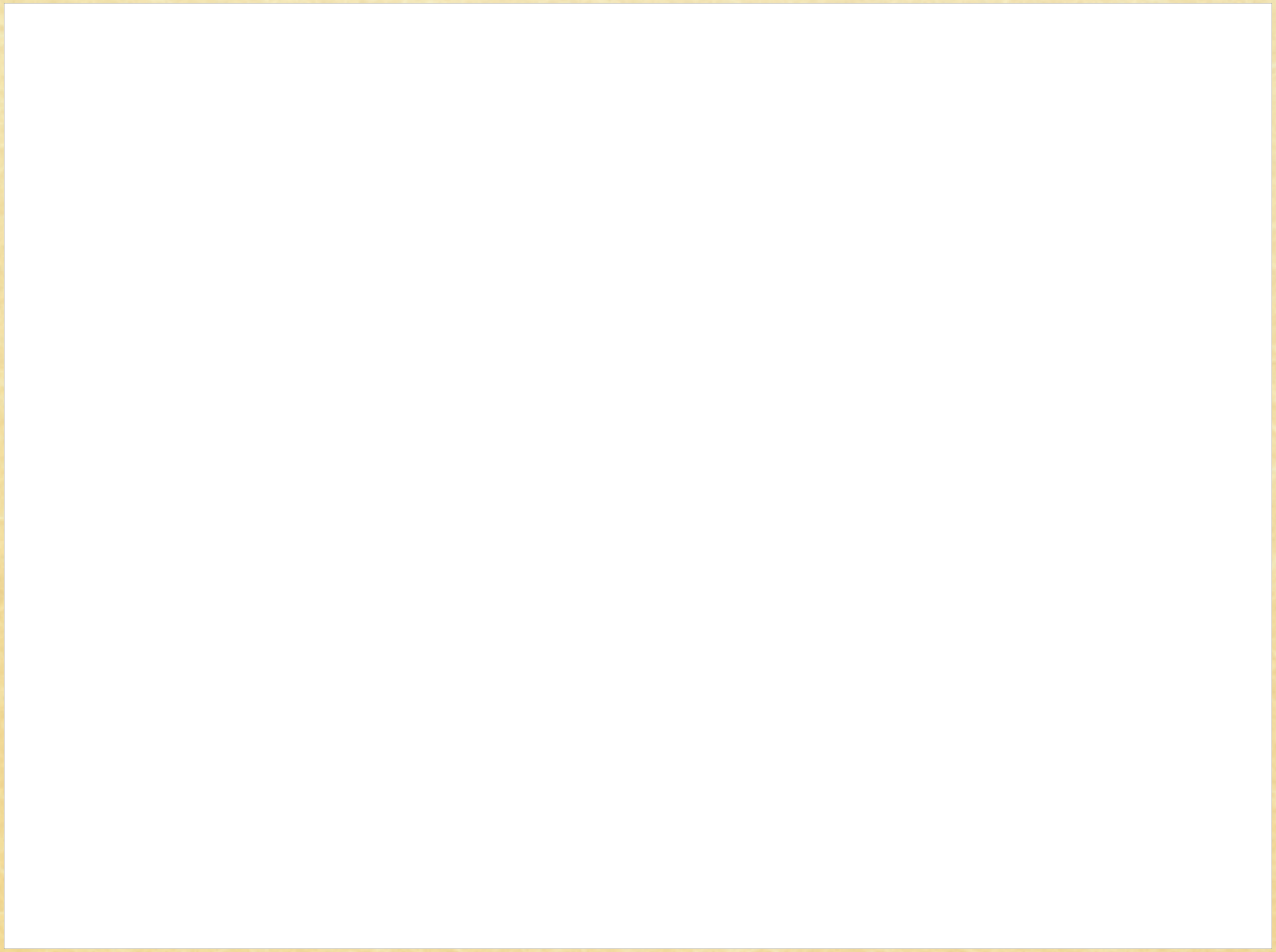
How Tectonic Plates Move

- The motion of the mantle pulls tectonic plates across Earth's surface.
- As the plates move, they push against each other, pull apart from each other, and slide past each other.



- These interactions are related to processes such as mountain building, earthquakes, and volcanic eruptions.

Plate Tectonics



Review

1. What are the layers of the earth, starting from the top and going inwards?
   - Crust, mantle, outer core, inner core
2. Is the inner core a liquid or solid?
   - Solid
3. Is the outer core a liquid or a solid?
   - Liquid
4. What is the thickest layer of the Earth?
   - Mantle
5. What is the thinnest layer of the Earth?
   - crust

Review

6. What is the main reason Earth has layers?
   - Density
7. What are plate tectonic?
   - Earth's crust broken into several large slabs of rock
8. About how many major plate tectonics are identified today?
   - 8
9. When are many earthquakes and volcano eruptions most like to occur?
   - when plates move