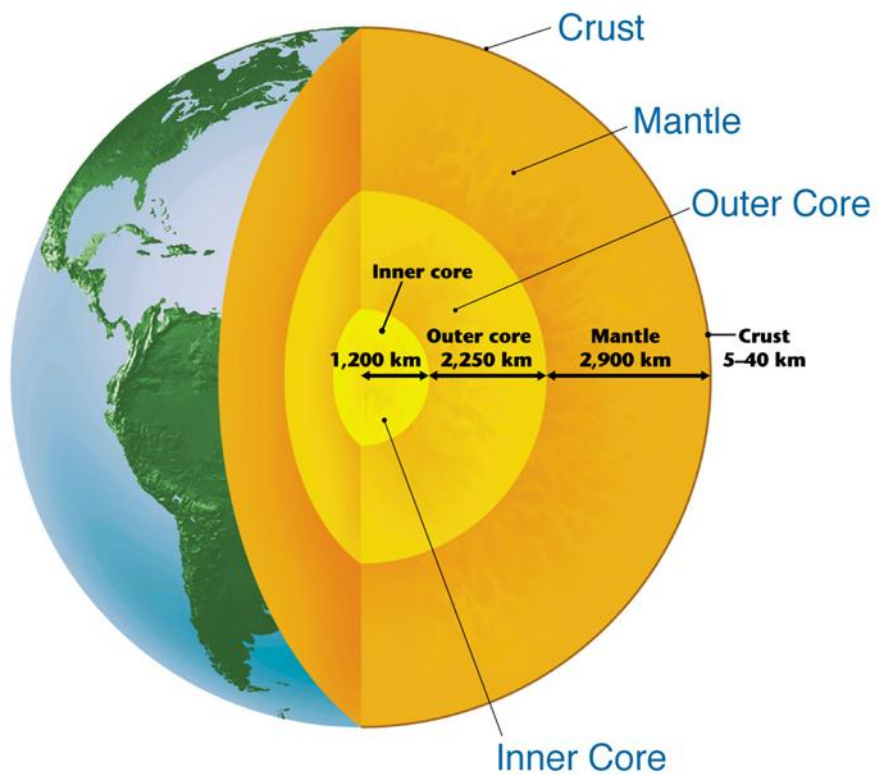


Section 11-1

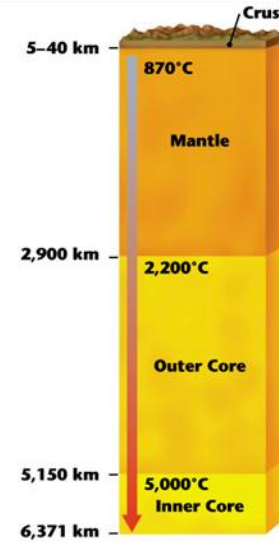
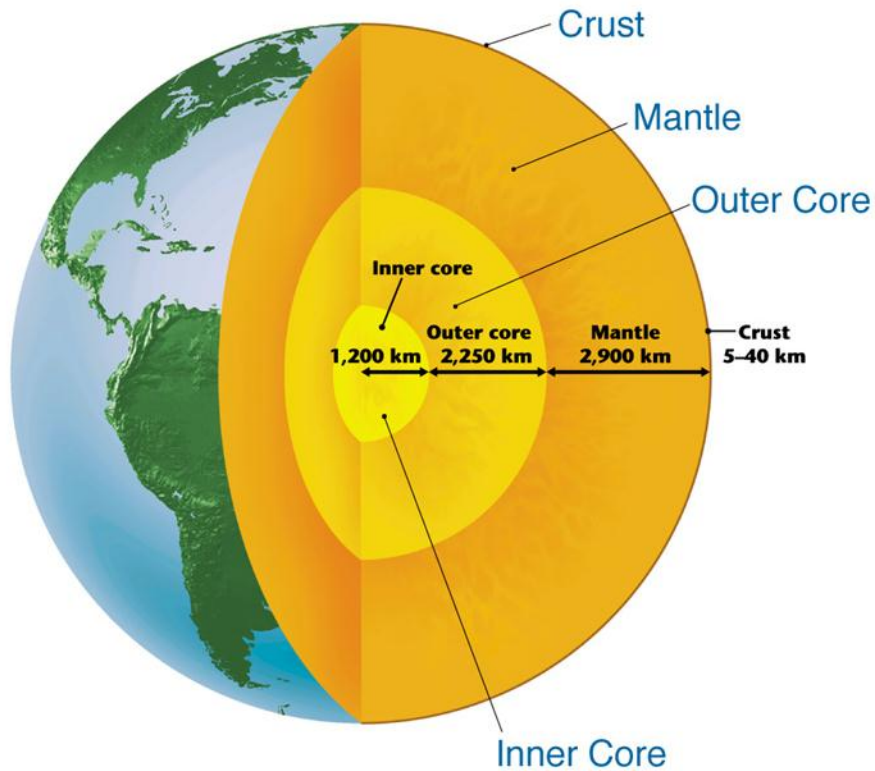
Earth's Interior



Earth's Interior



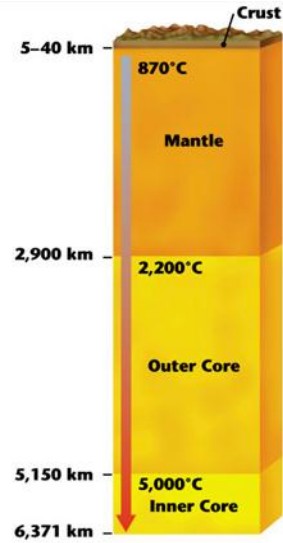
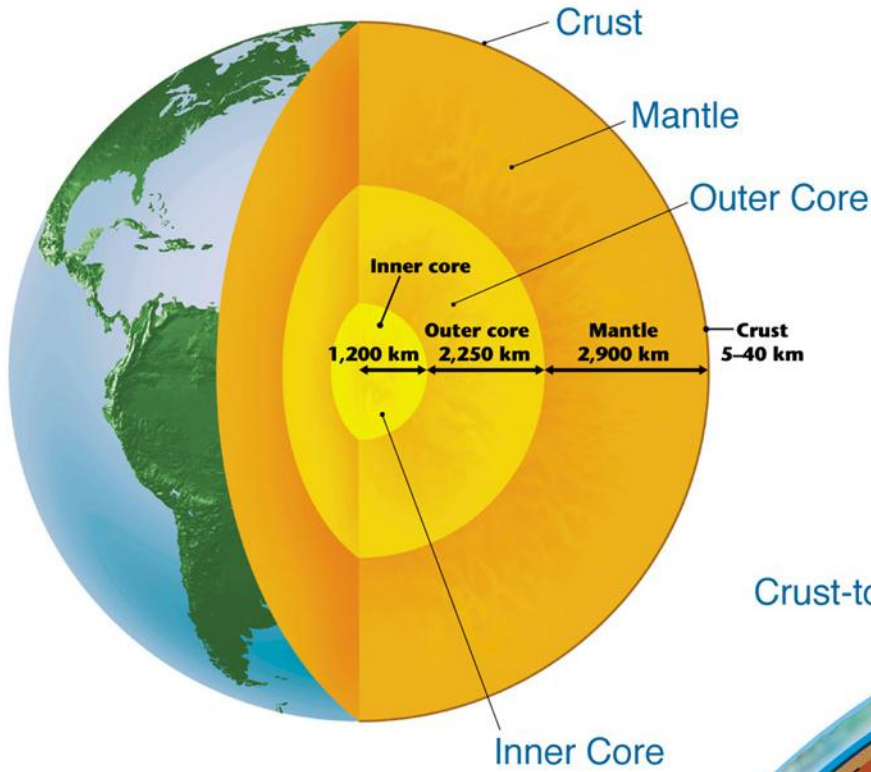
Earth's Interior



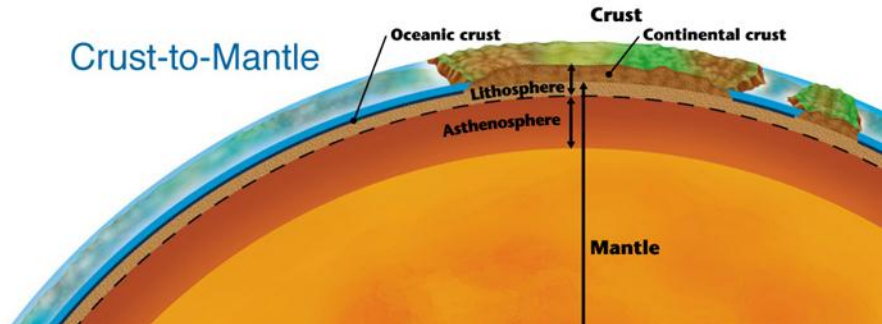
Cross Section
From Surface to
Center



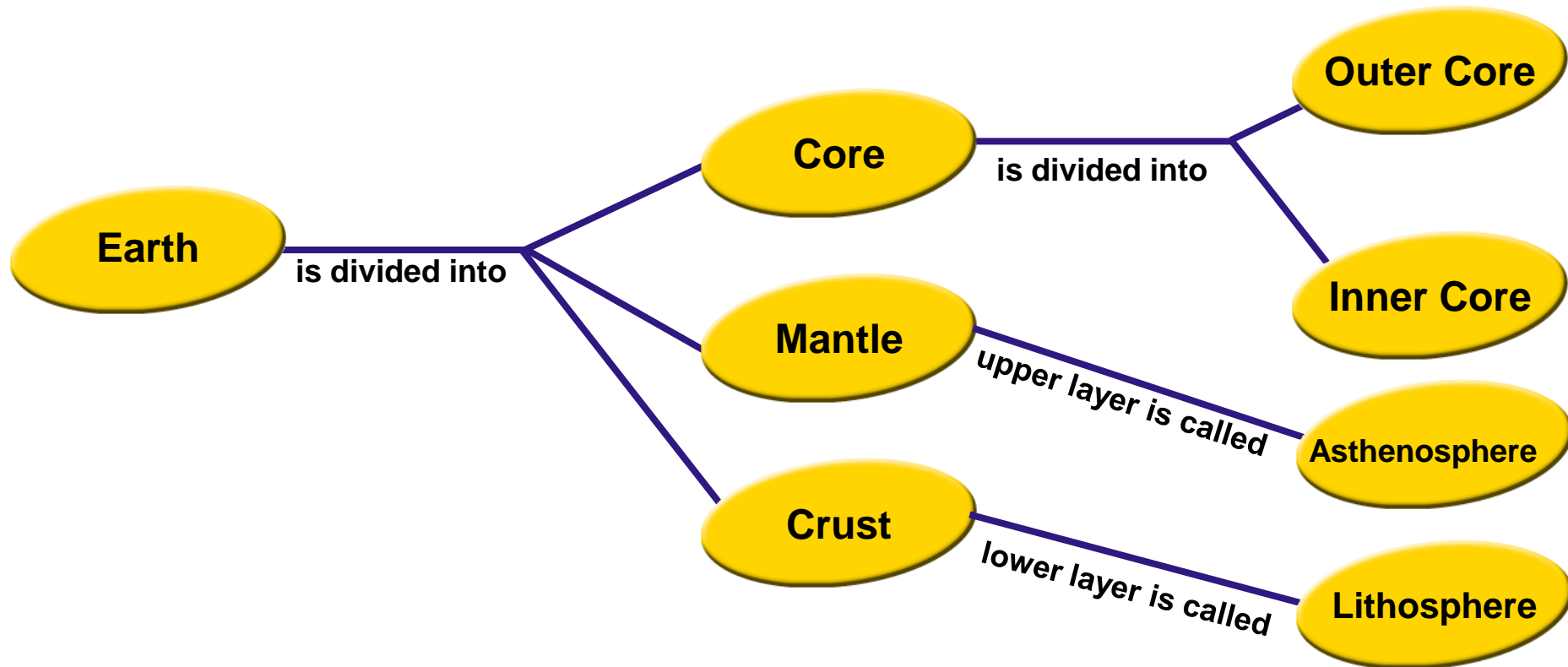
Earth's Interior



Cross Section
From Surface to
Center



Earth's Interior



Section 11-2

Convection Currents and the Mantle



Three types of heat transfer:

1. **Radiation – Transfer of energy through empty space**
2. **Conduction – Heat transfer by direct contact**
3. **Convection – Heat transfer involving the movement of fluids**
 - **Different temperatures create different densities**
 - **Different densities combined with gravity cause convection currents**



Section 11-3

Drifting Continents



Continental Drift



Who first proposed the theory of continental drift?

- Abraham Ortelius, Theodor Christoph Lilienthal, Alexander von Humboldt, Antonio Snider-Pellegrini, and others had noted earlier that the shapes of continents on opposite sides of the Atlantic Ocean (most notably, Africa and South America) seem to fit together.
- The hypothesis that the continents had once formed a single landmass before breaking apart and drifting to their present locations was fully formulated by **Alfred Wegener** in 1912.



Continental Drift



225 million years ago



Continental Drift



180-200 million years ago



Continental Drift



135 million years ago



Continental Drift



65 million years ago



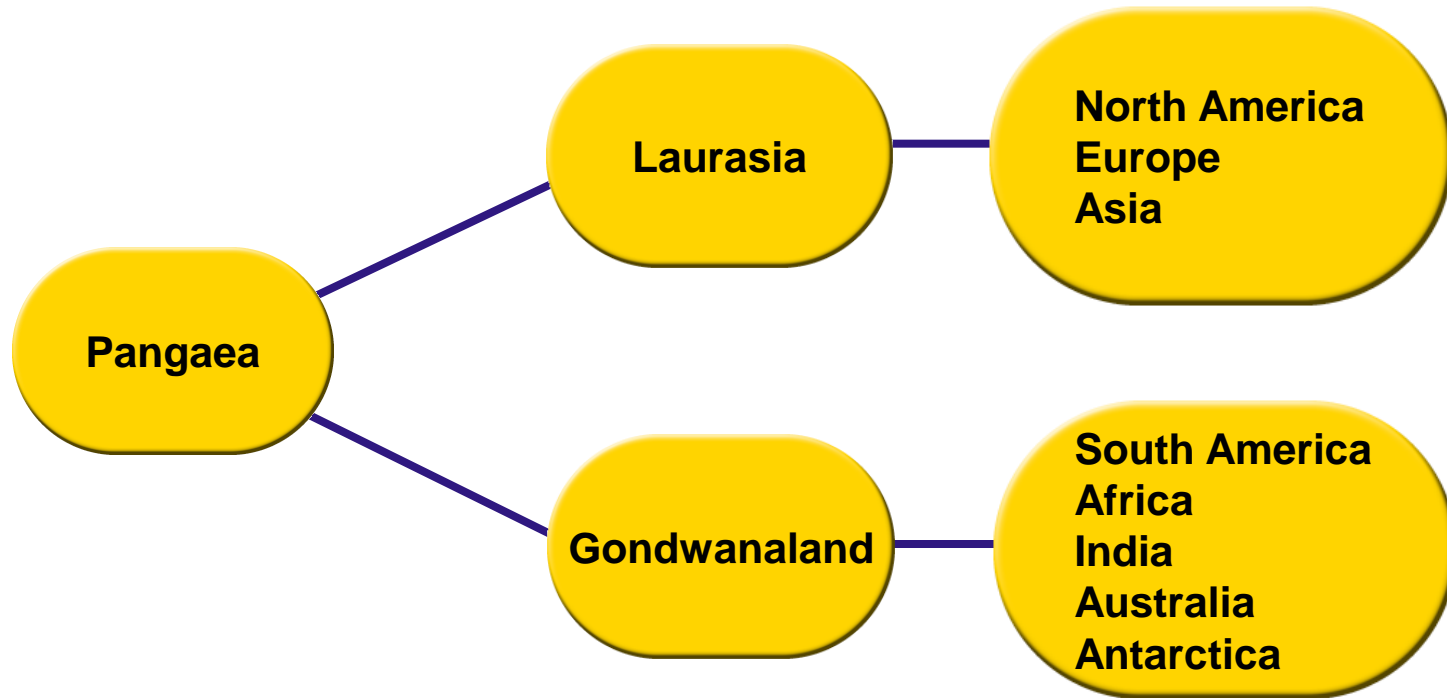
Continental Drift



Earth today



Continental Drift

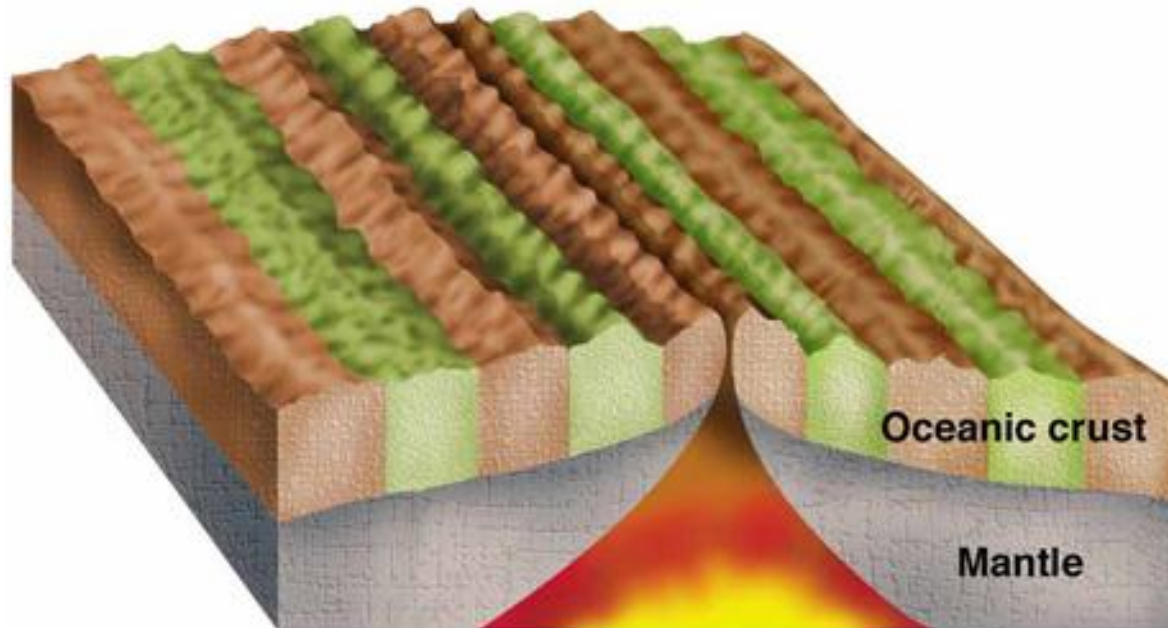


Section 11-4

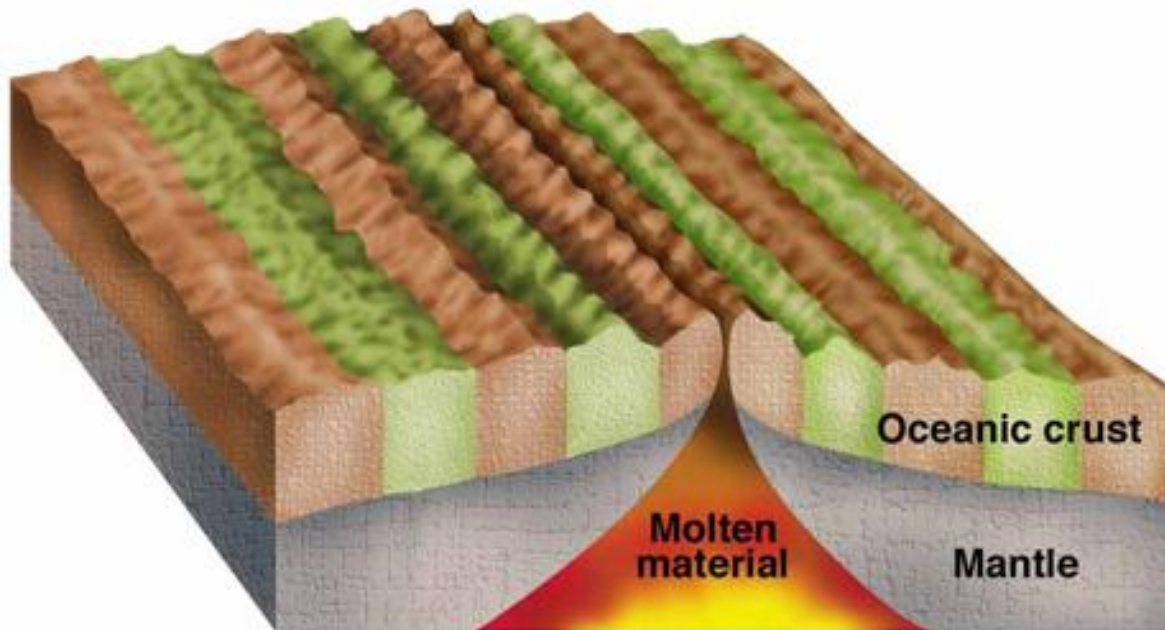
Sea-Floor Spreading



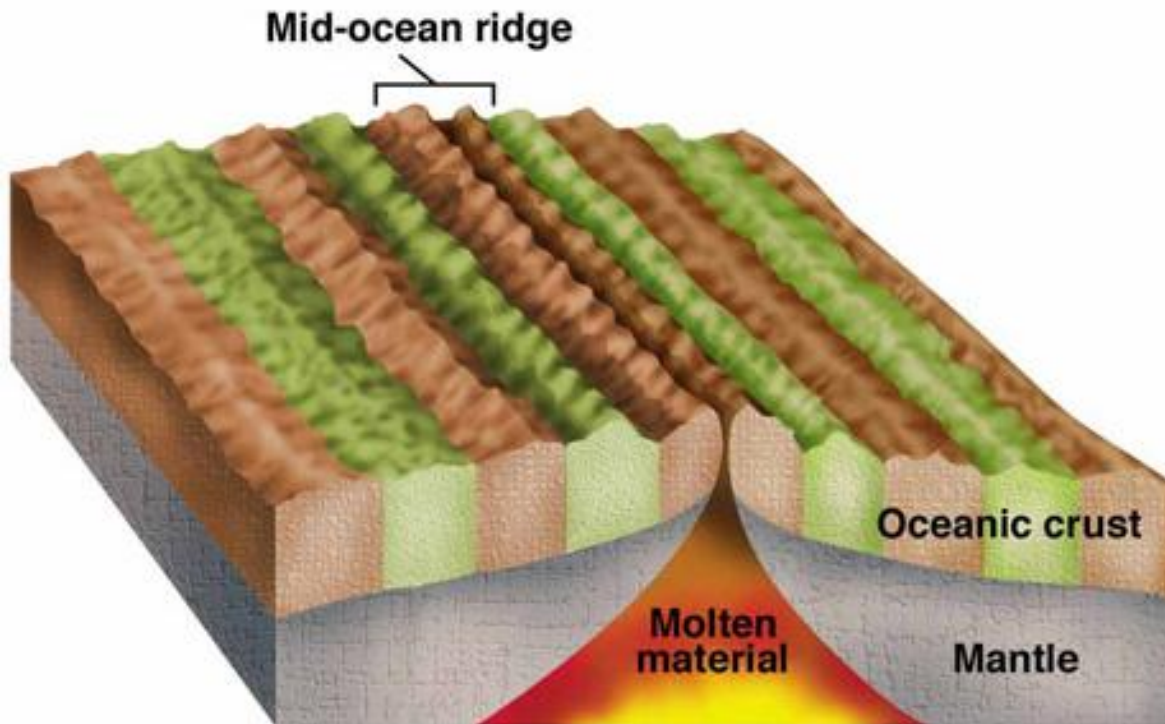
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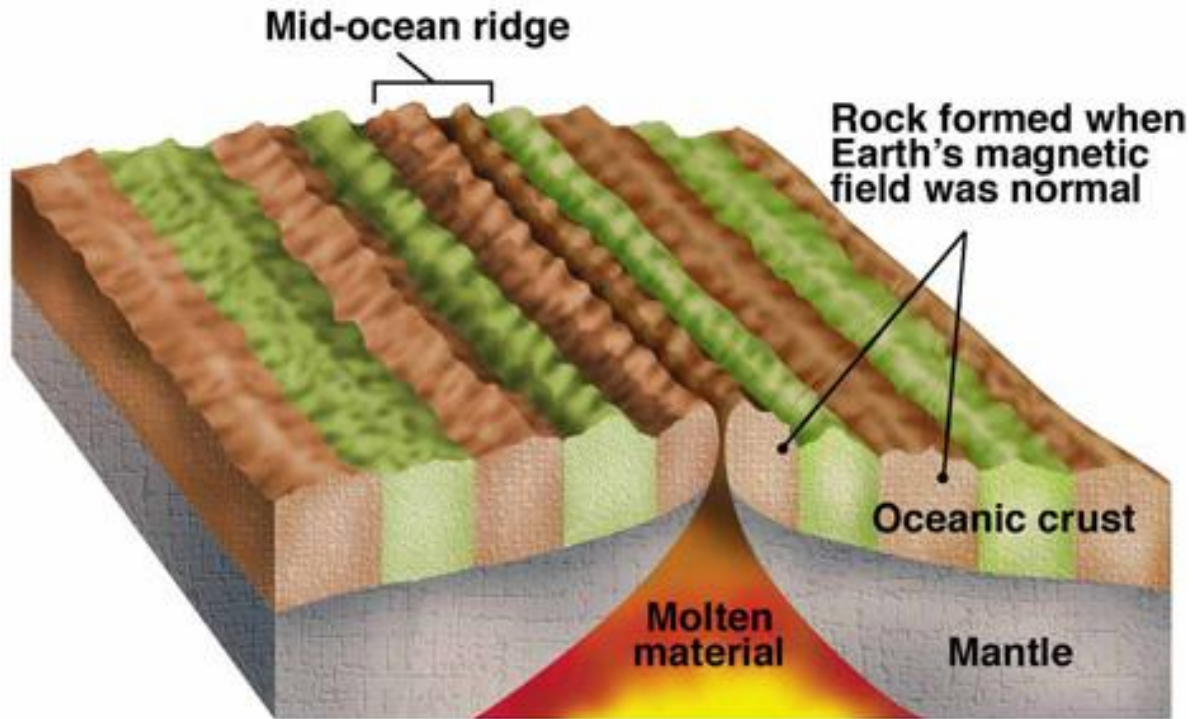
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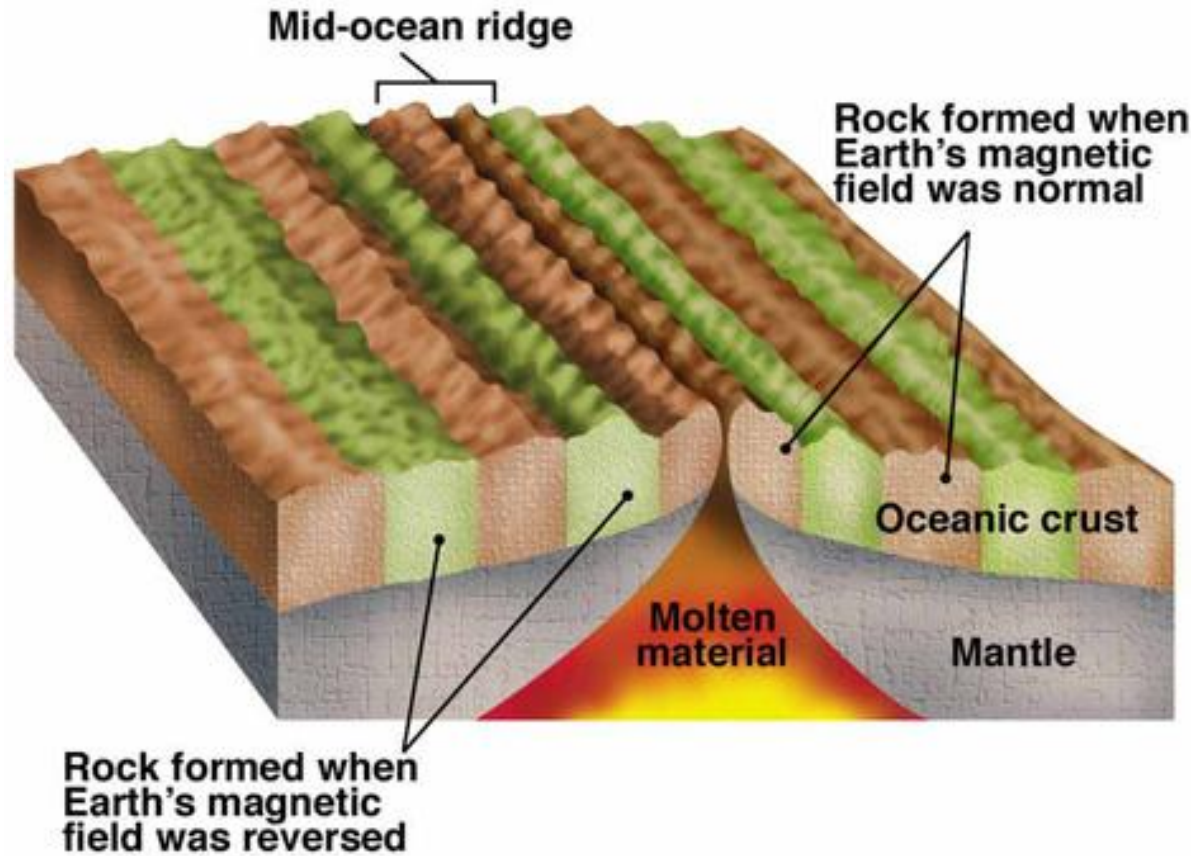
Sea-Floor Spreading



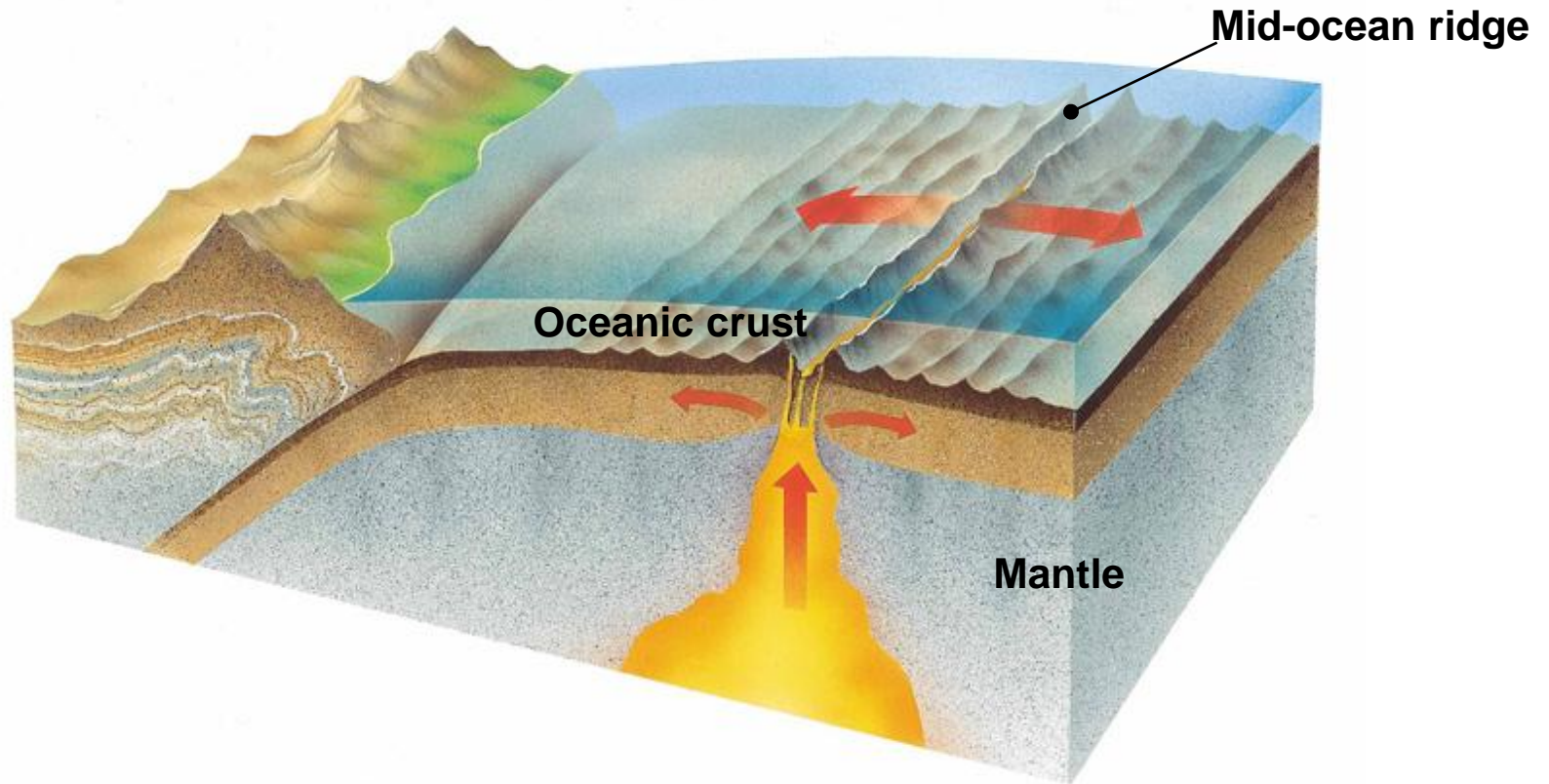
Sea-Floor Spreading



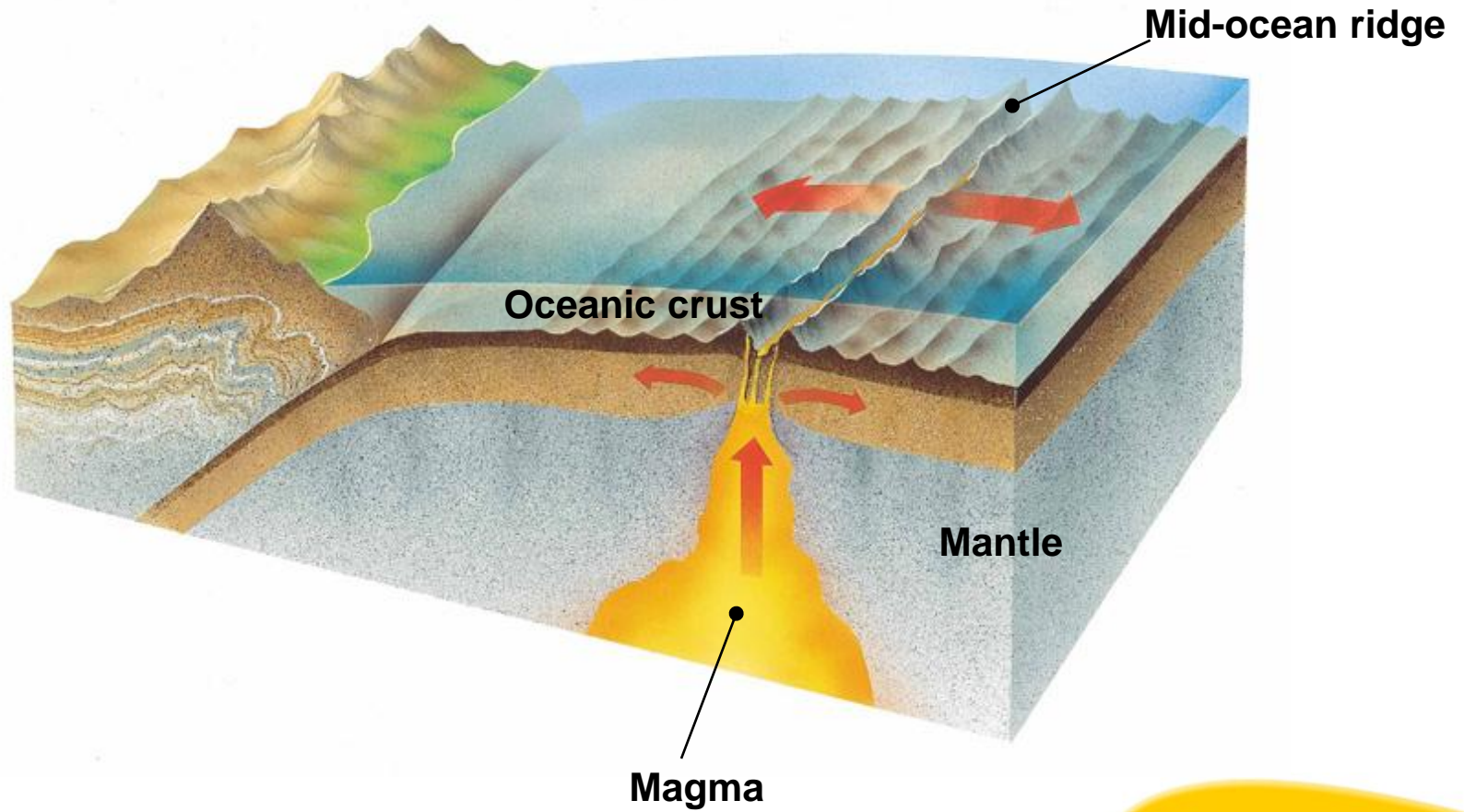
Sea-Floor Spreading



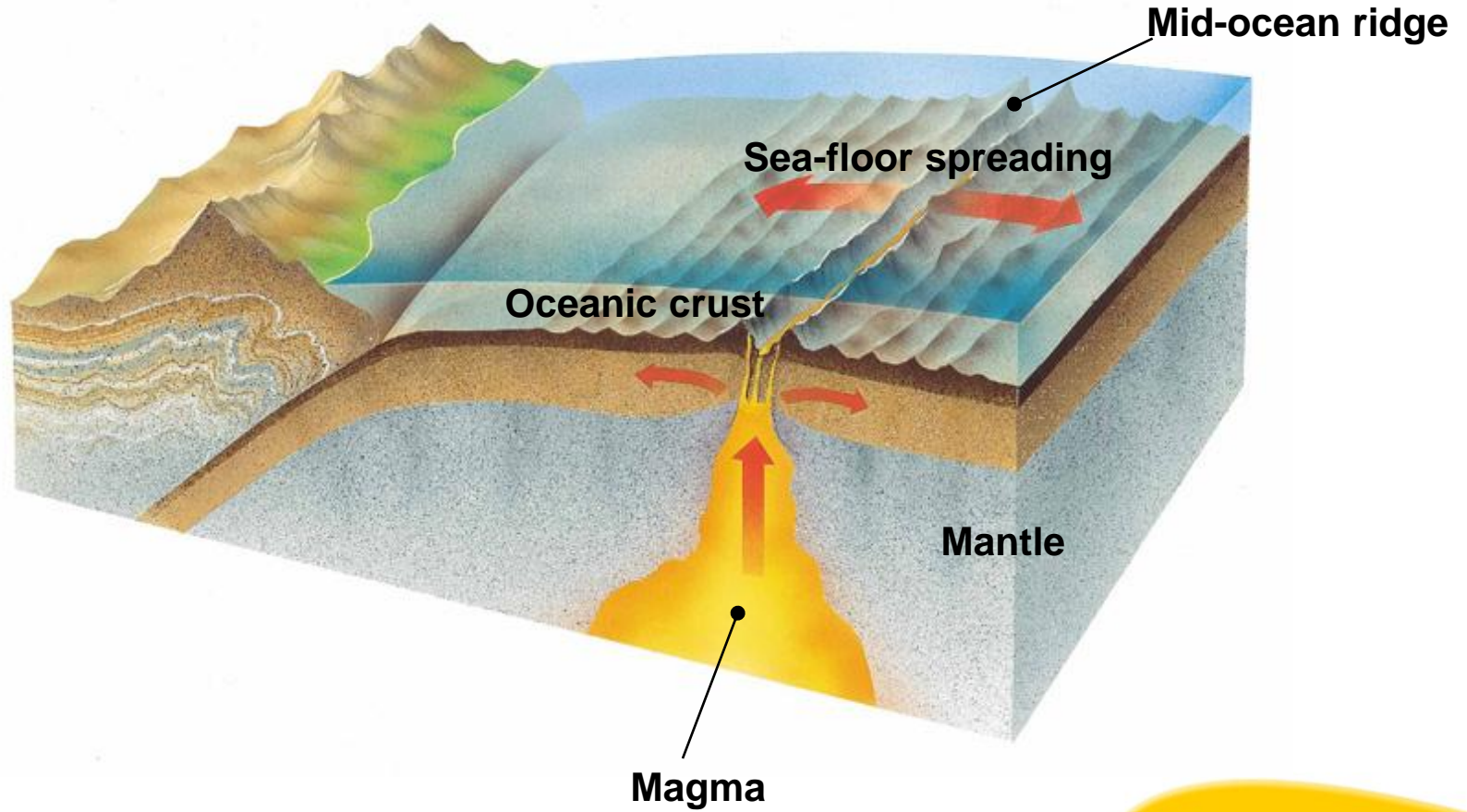
Sea-Floor Spreading



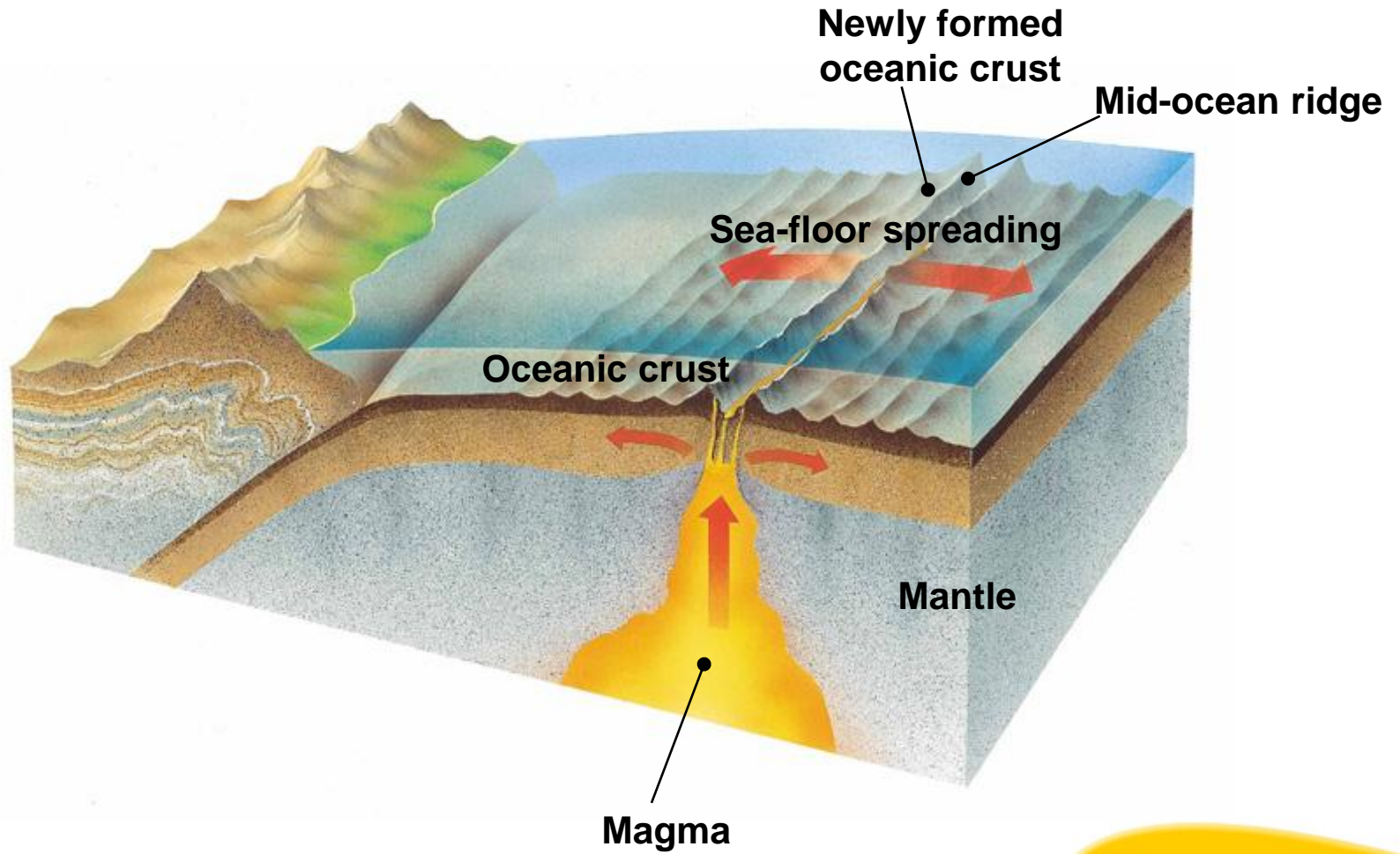
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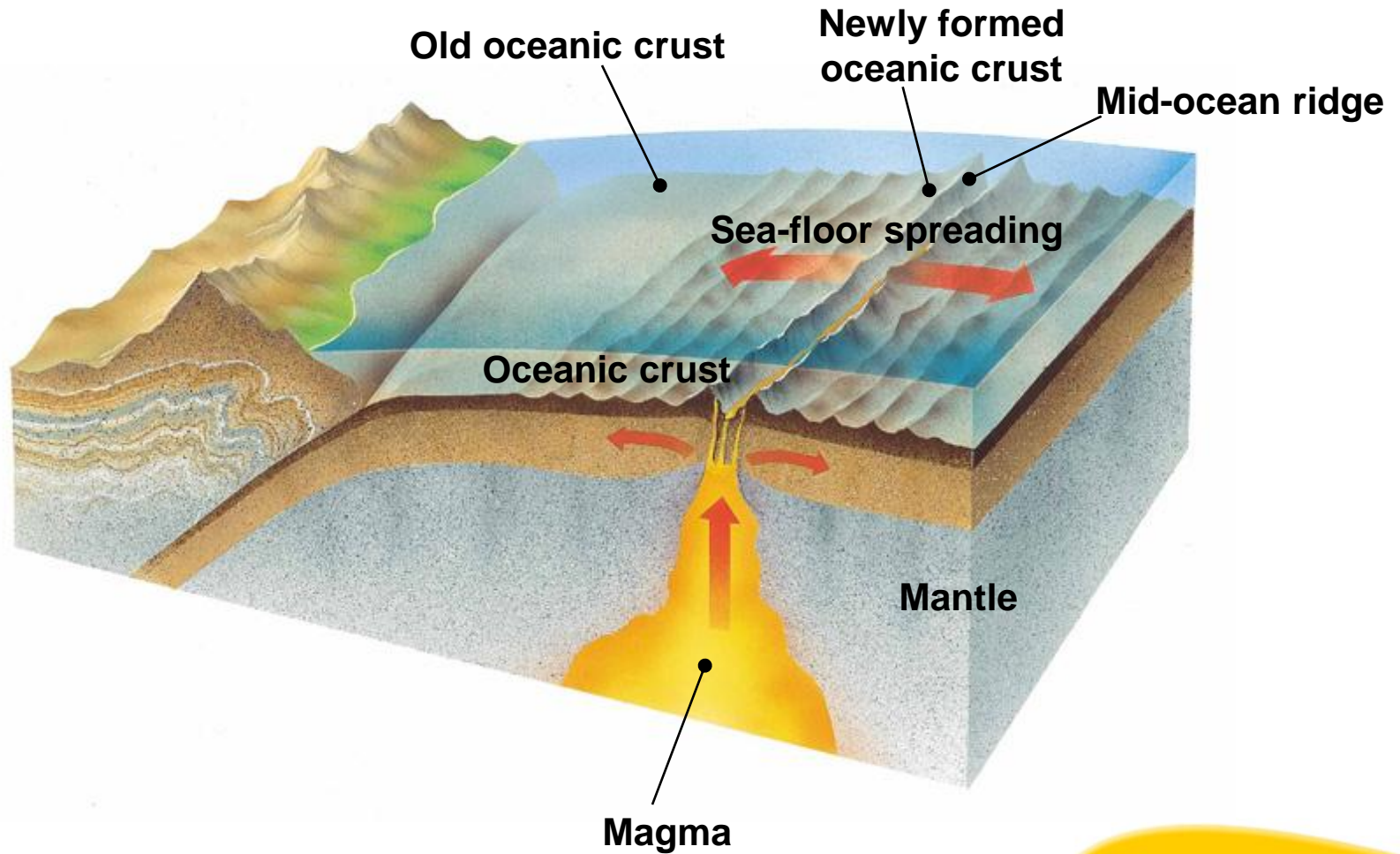
Sea-Floor Spreading



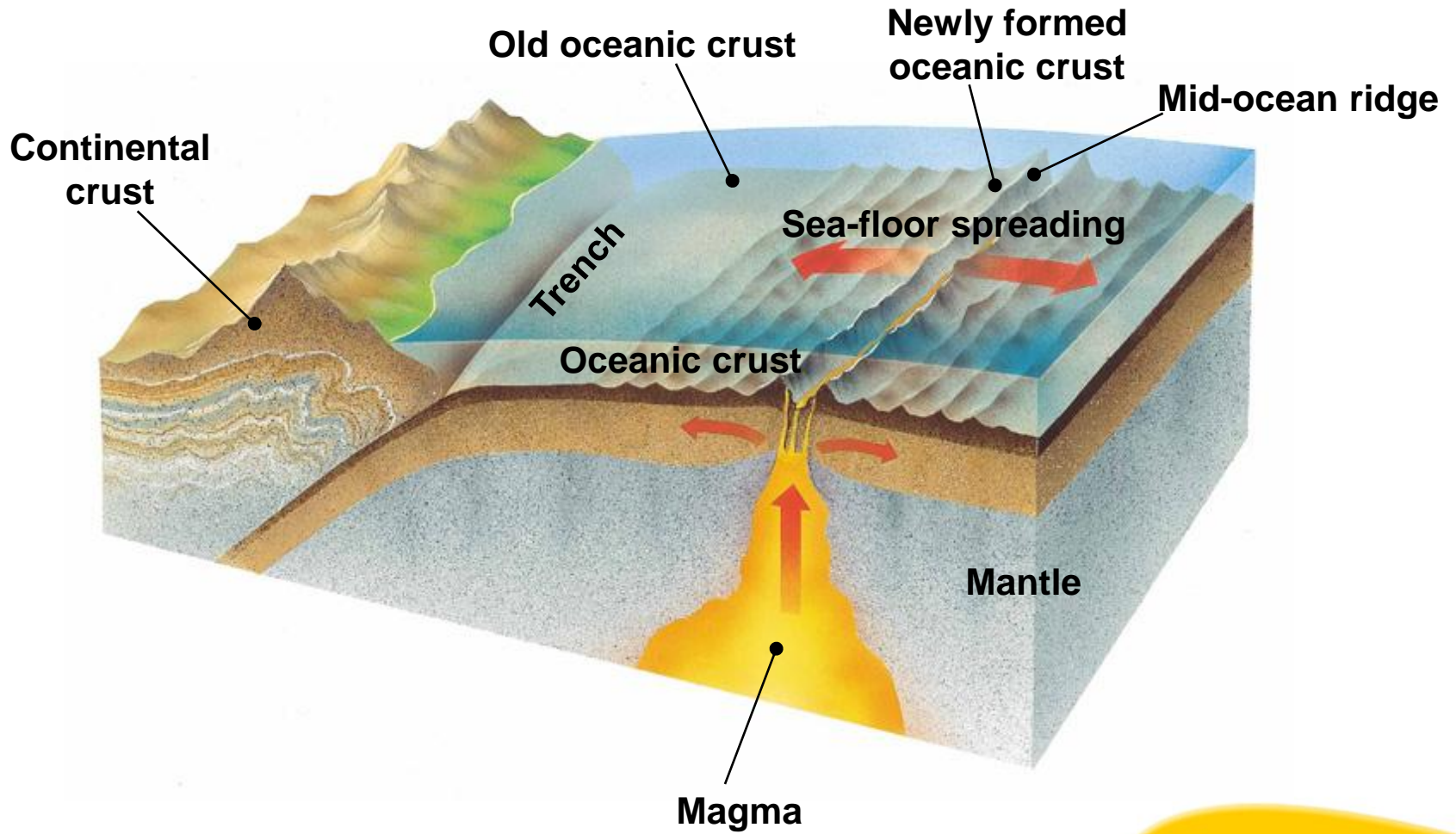
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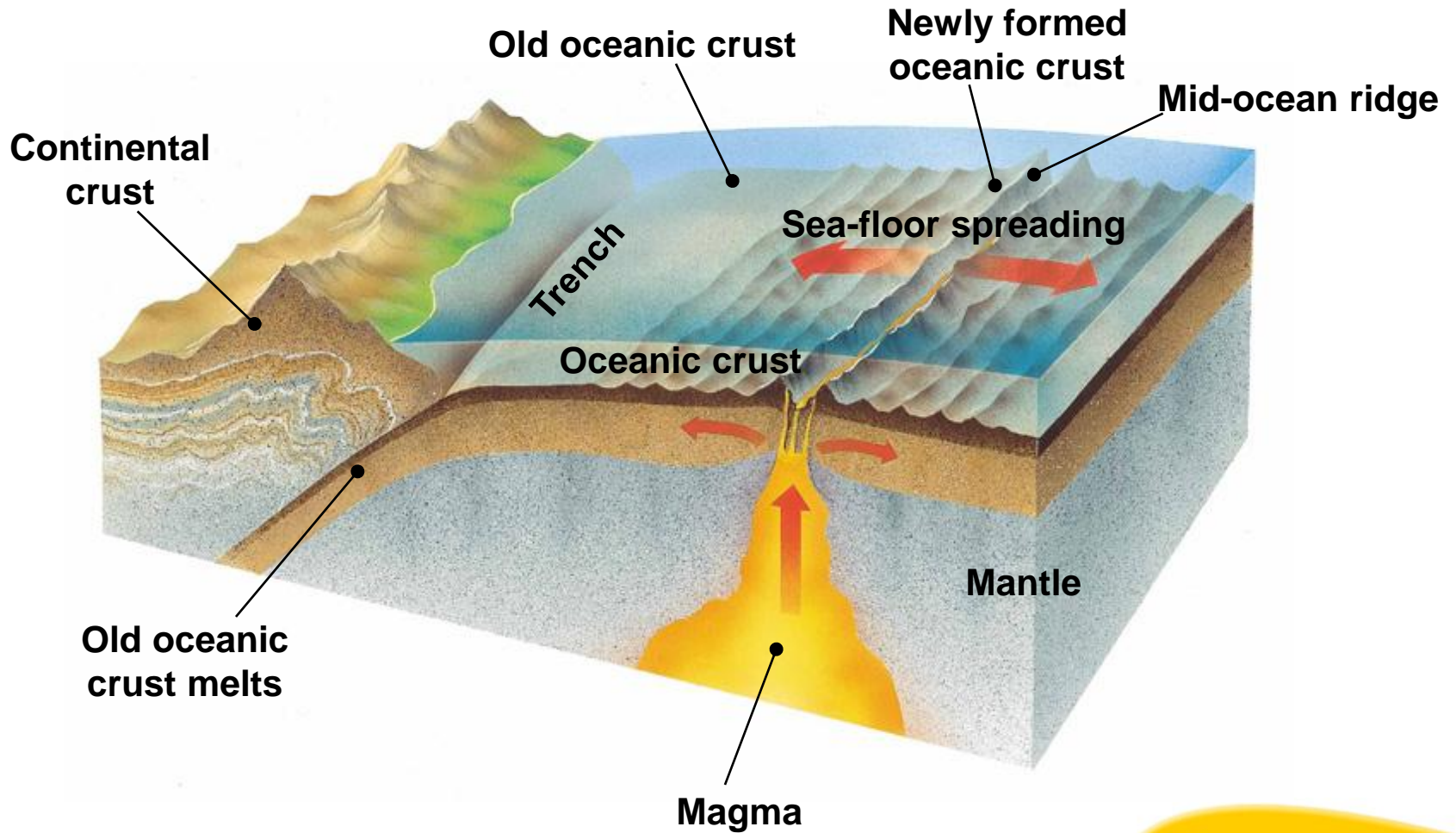
Sea-Floor Spreading



Sea-Floor Spreading

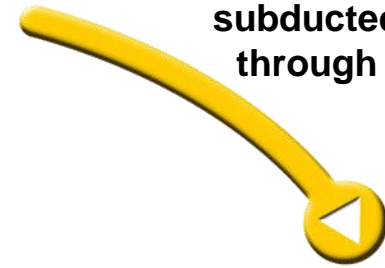


Sea-Floor Spreading



Sea-Floor Spreading

Oceanic
crust

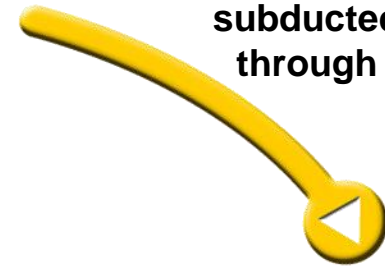


subducted
through



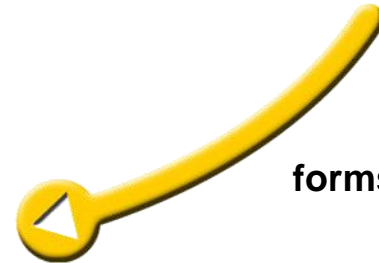
Sea-Floor Spreading

Oceanic
crust



subducted
through

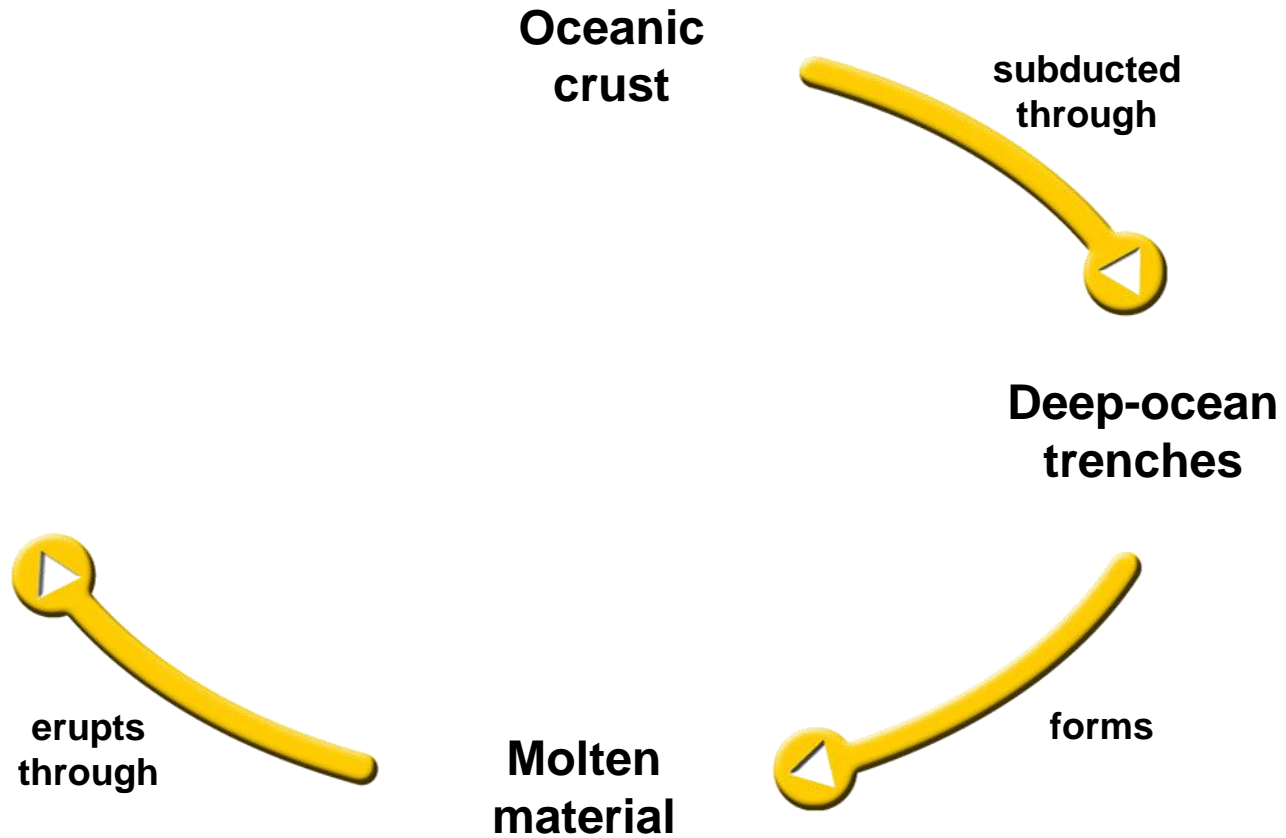
Deep-ocean
trenches



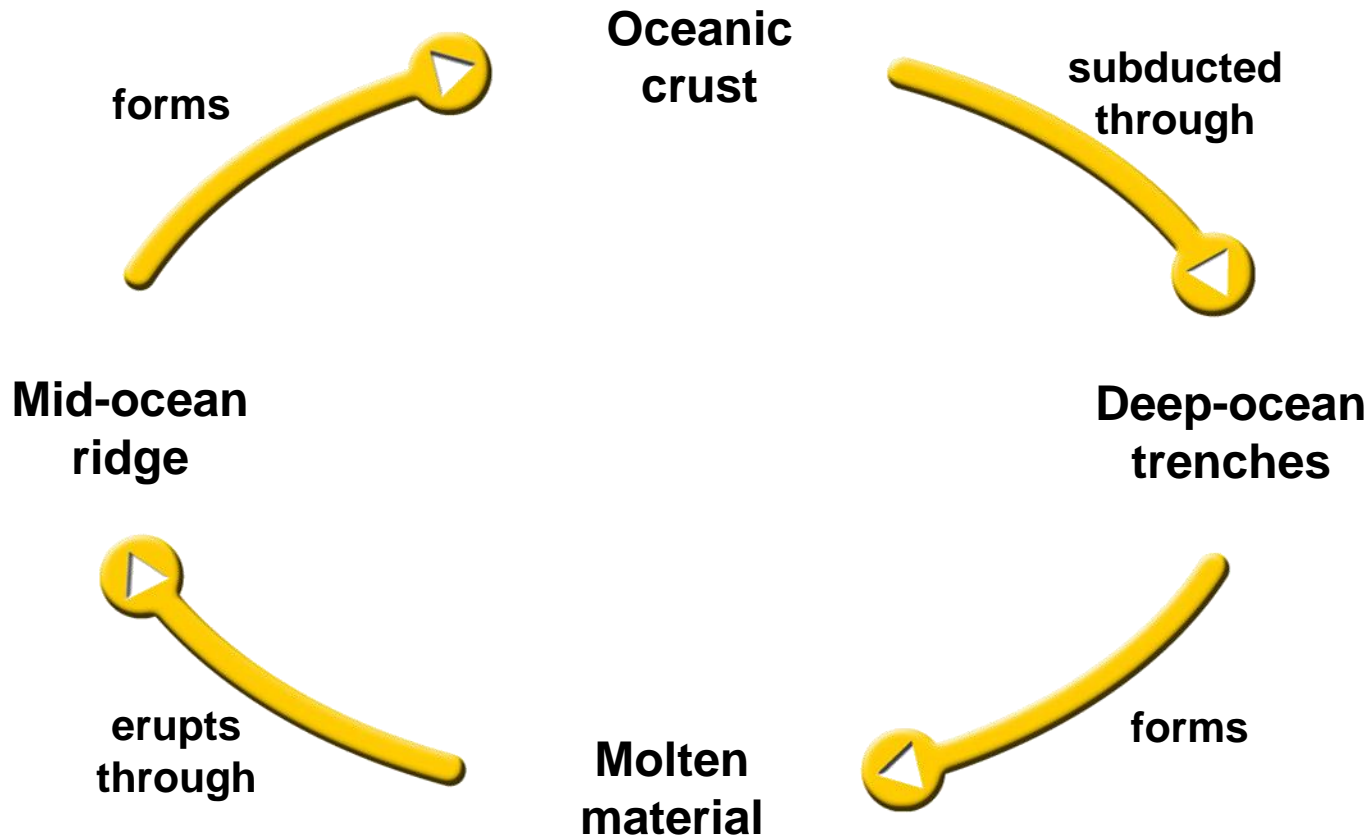
forms



Sea-Floor Spreading



Sea-Floor Spreading



Continental Drift



Continental Drift



Section 11-5

The Theory of Plate Tectonics



Plate Tectonics

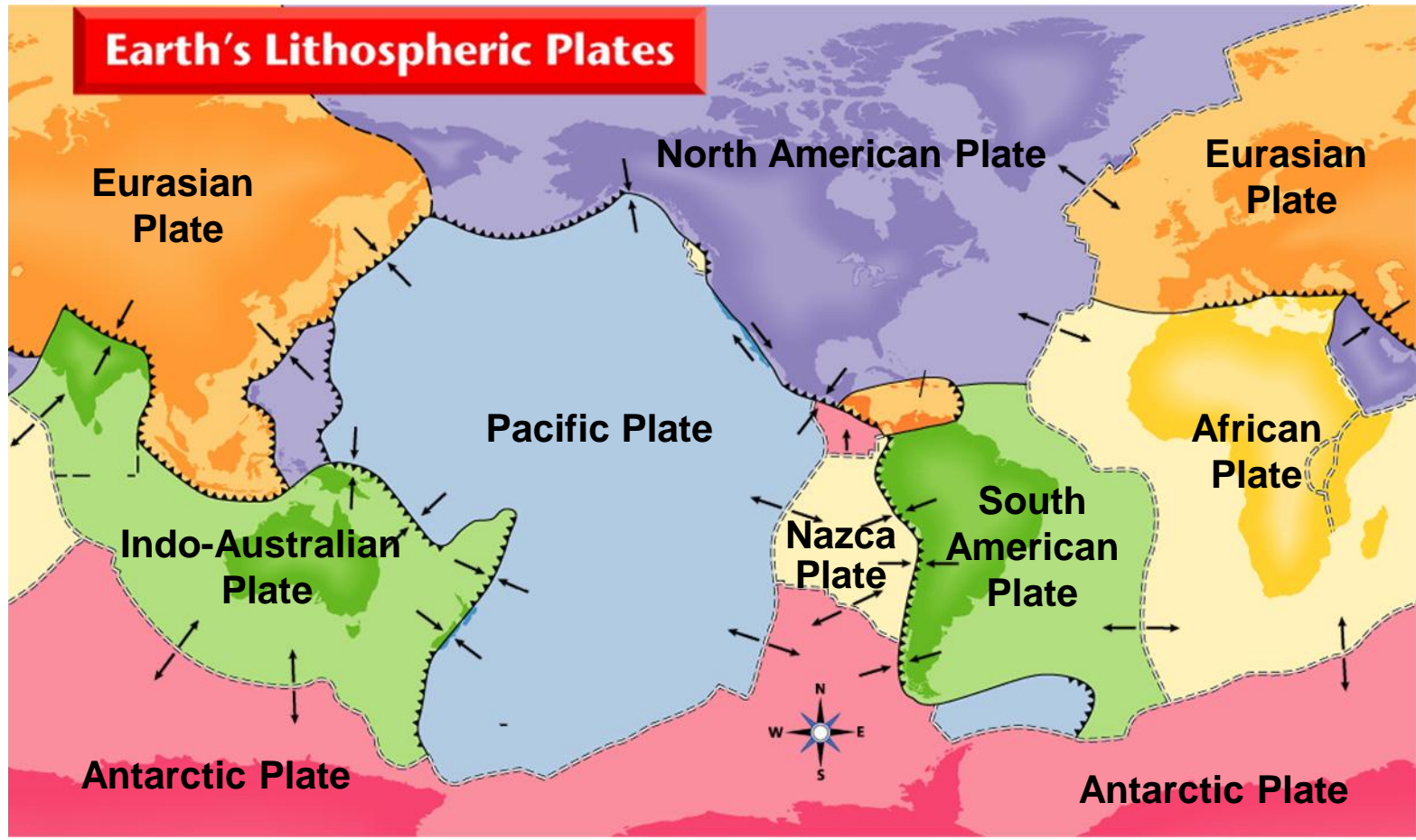
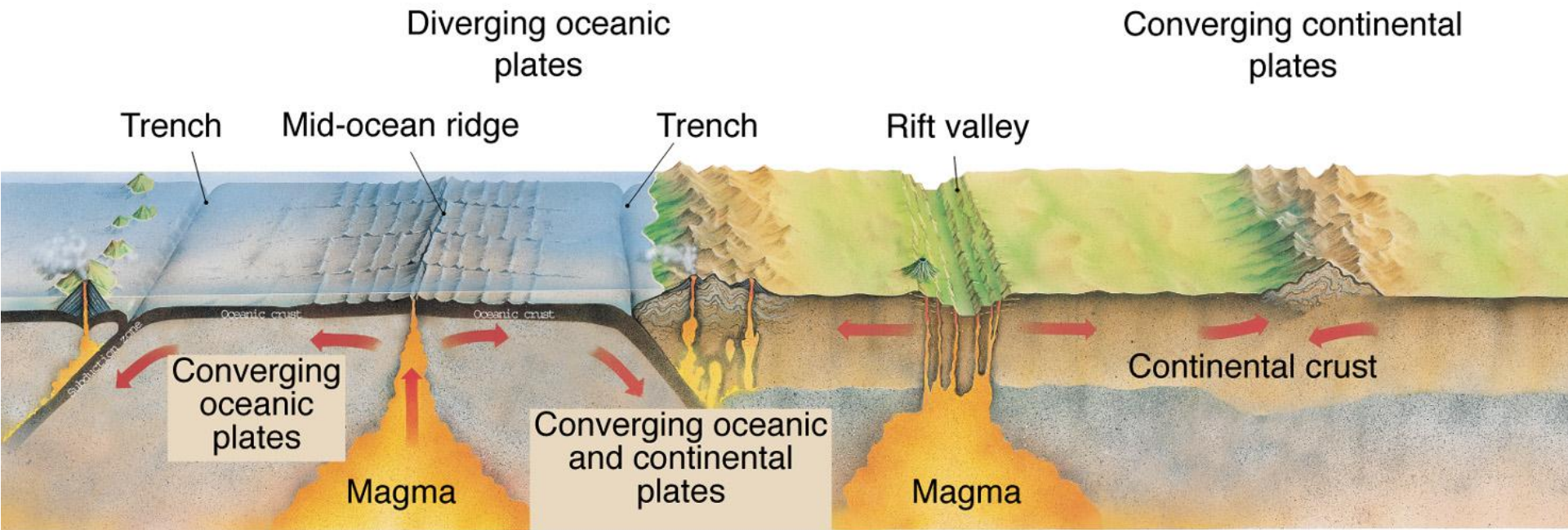


Plate Tectonics



What are the three types of boundaries?

1. Transform boundary:

- A place where two plates slip past each other, moving in opposite directions. Usually cause earthquakes

2. Divergent boundary:

- A place where two plates move apart. Can form a rift valley, volcanoes or both.

3. Convergent boundaries:

- A place where two plates come together. Will form a subduction zone and a trench.

