

Geology:

**the study of the Earth's surface and
substructure (what's inside it)**

The Theory

Of

Continental

Drift

The theory states that the Earth once had a single landmass that broke into large pieces and drifted apart.



The giant
landmass
was called
Pangaea

PANGAEA



when the continents were cuddling.

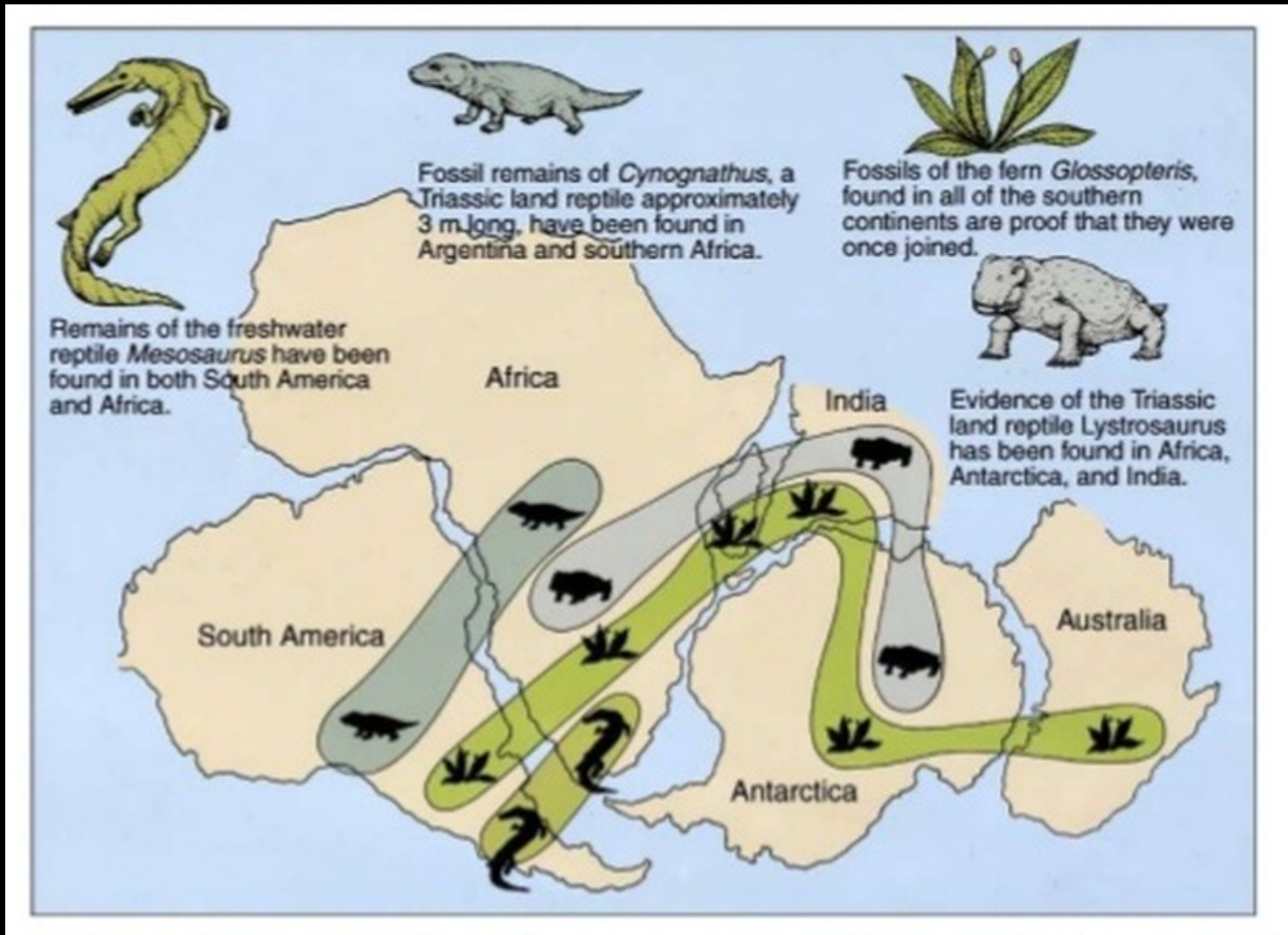


Evidence that supports this theory:

- Edges of
- continents appear to fit together like puzzle pieces



- Fossil evidence



- Matching rock formations

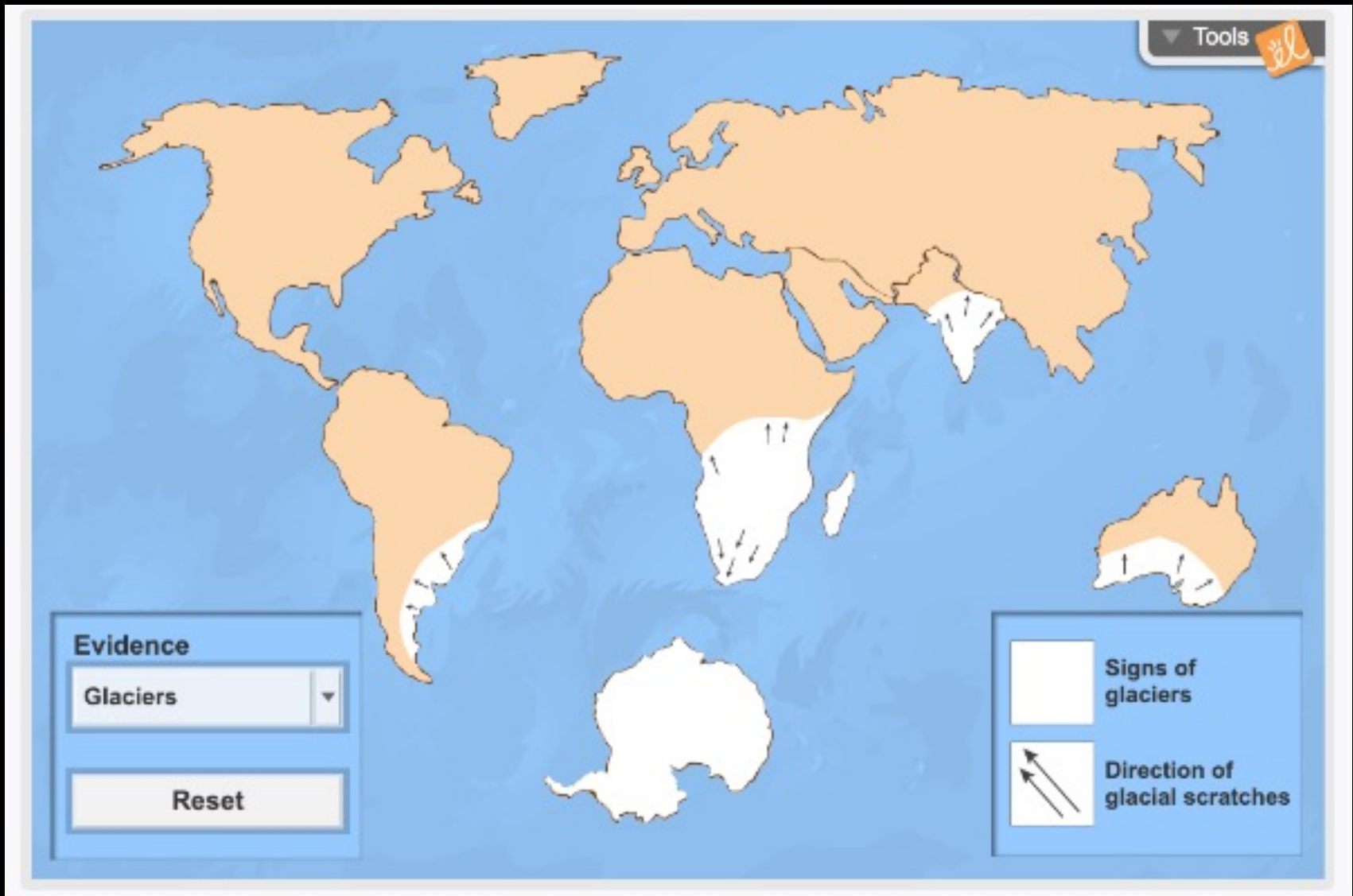
matching **rock** formations – **same age**
& **type** – on **different continents**

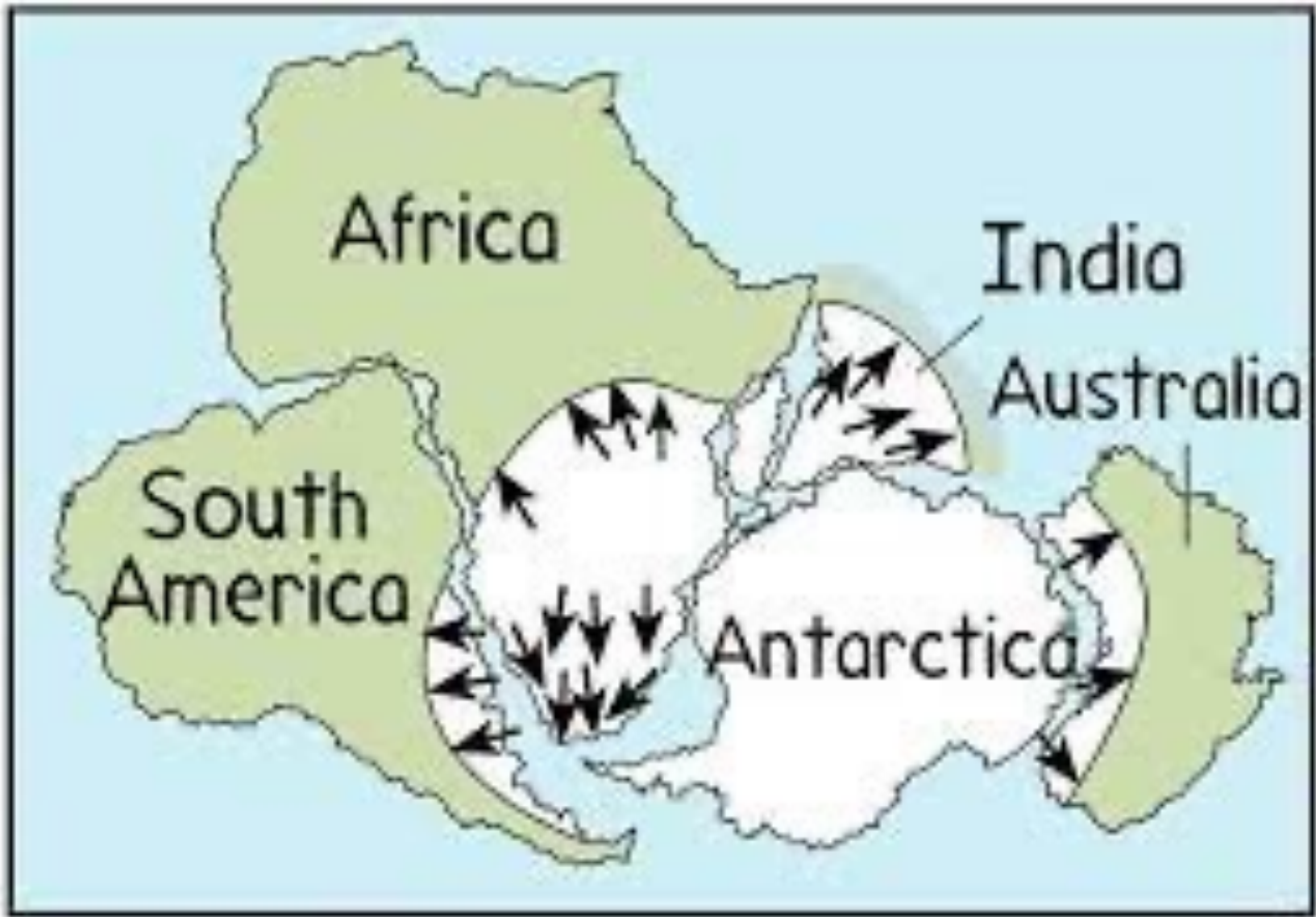




(b) If the Atlantic didn't exist, Paleozoic mountain belts on both coasts would be adjacent.

- Glacier movement







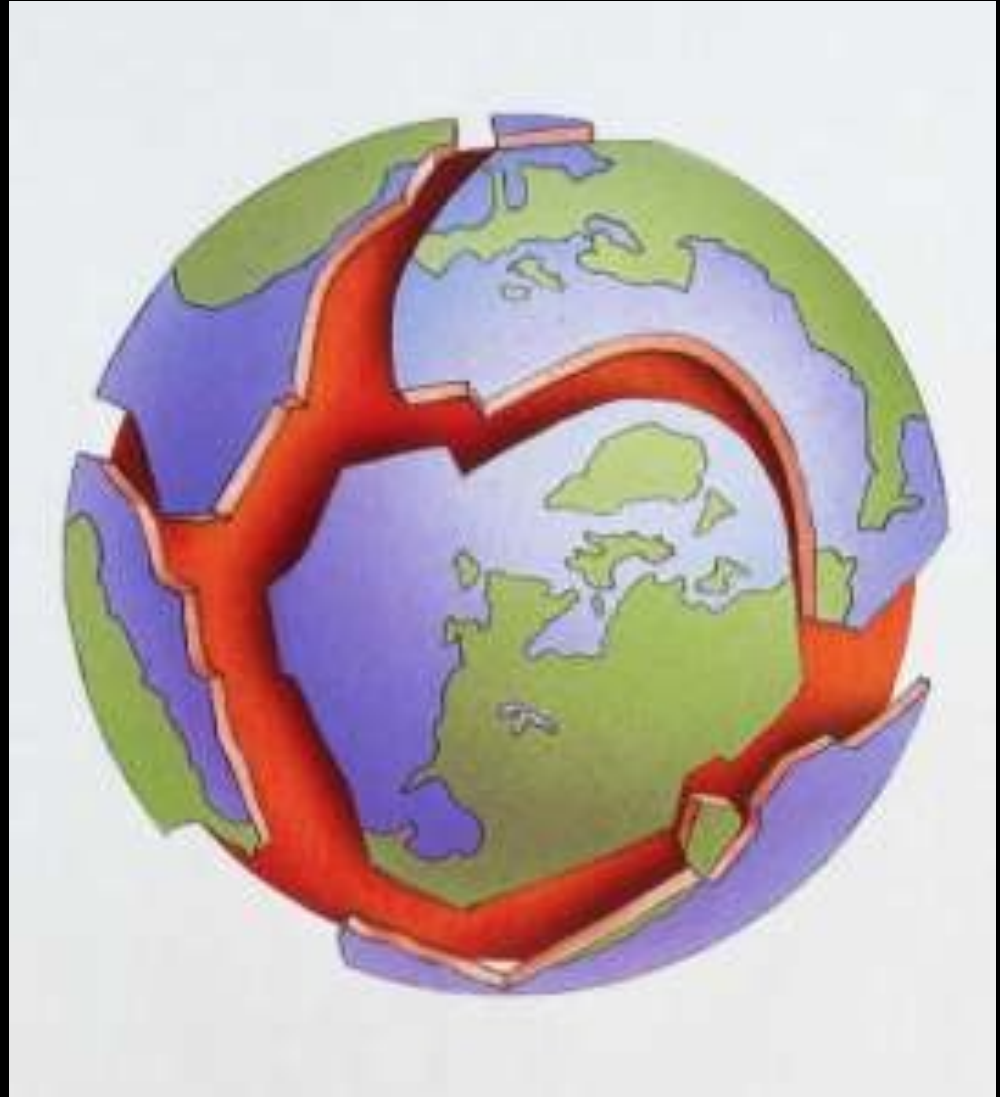
Alfred Wegener proposed the theory of continental drift – the idea that Earth's continents move. Despite publishing a large body of compelling fossil and rock evidence for his theory between 1912 and 1929, it was rejected by most other scientists. It was only in the 1960s that continental drift finally became part of mainstream science.

**The Theory
Of**

Plate

Tectonics

The topmost solid part of the Earth, called the lithosphere, is made of many plates



The plates move at different speeds and in different directions



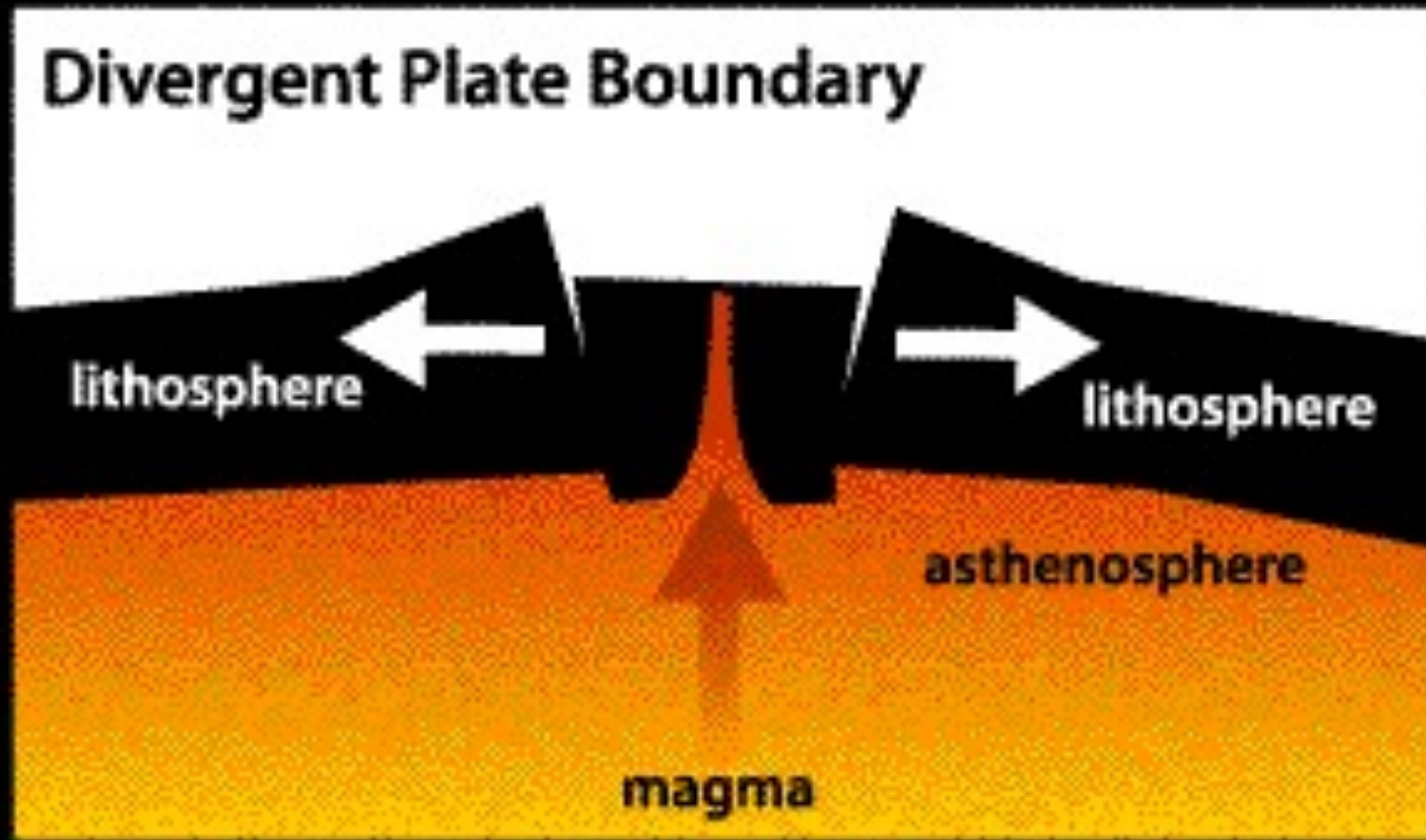
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"I'm sorry. You must've gotten the tectonic plate."

Even today, these plates continue to move. Some small plates that lack landmasses move several centimeters each year. Large plates that are weighted down with continents move only a few millimeters per year.

There are 3 types of plate boundaries:

1. Divergent Boundaries: The plates move apart. Magma seeps up to fill the crack & new crust is created.

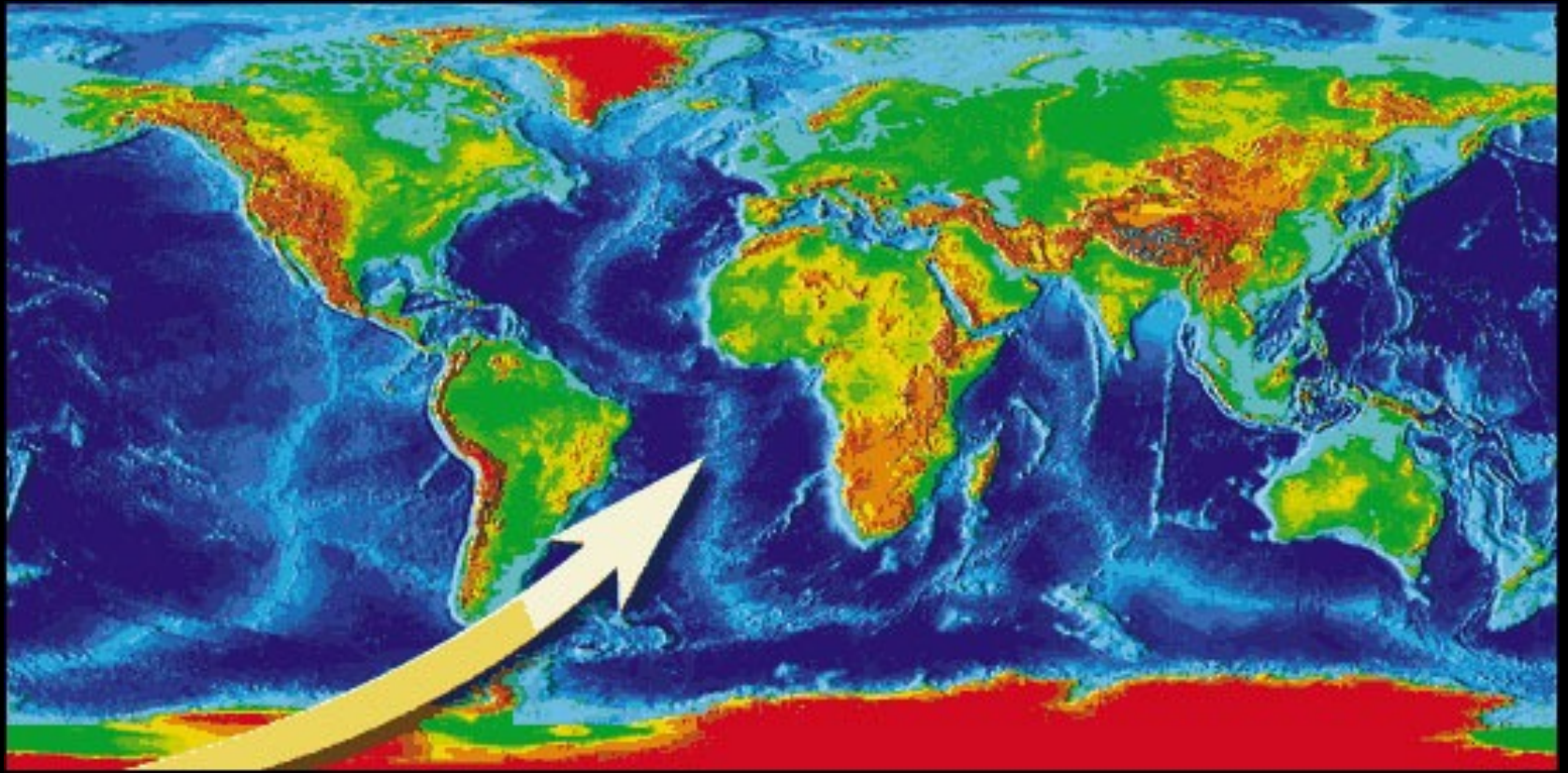
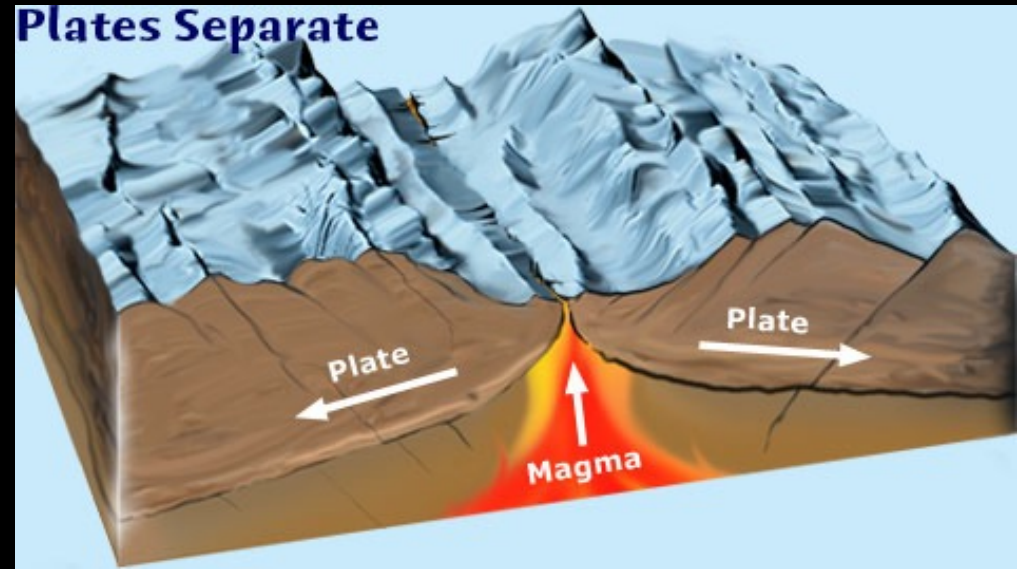


Example: Great Rift Valley, Africa

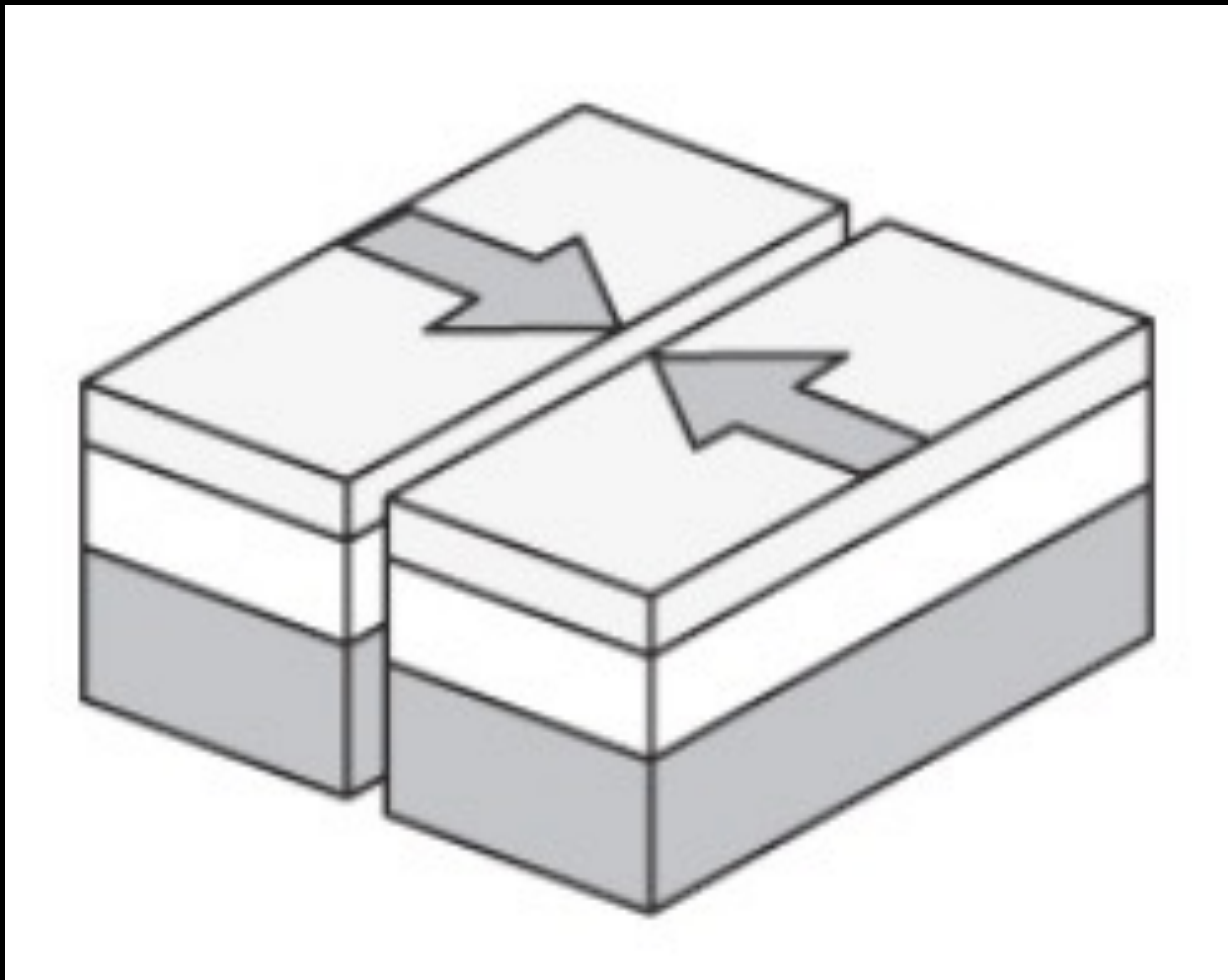


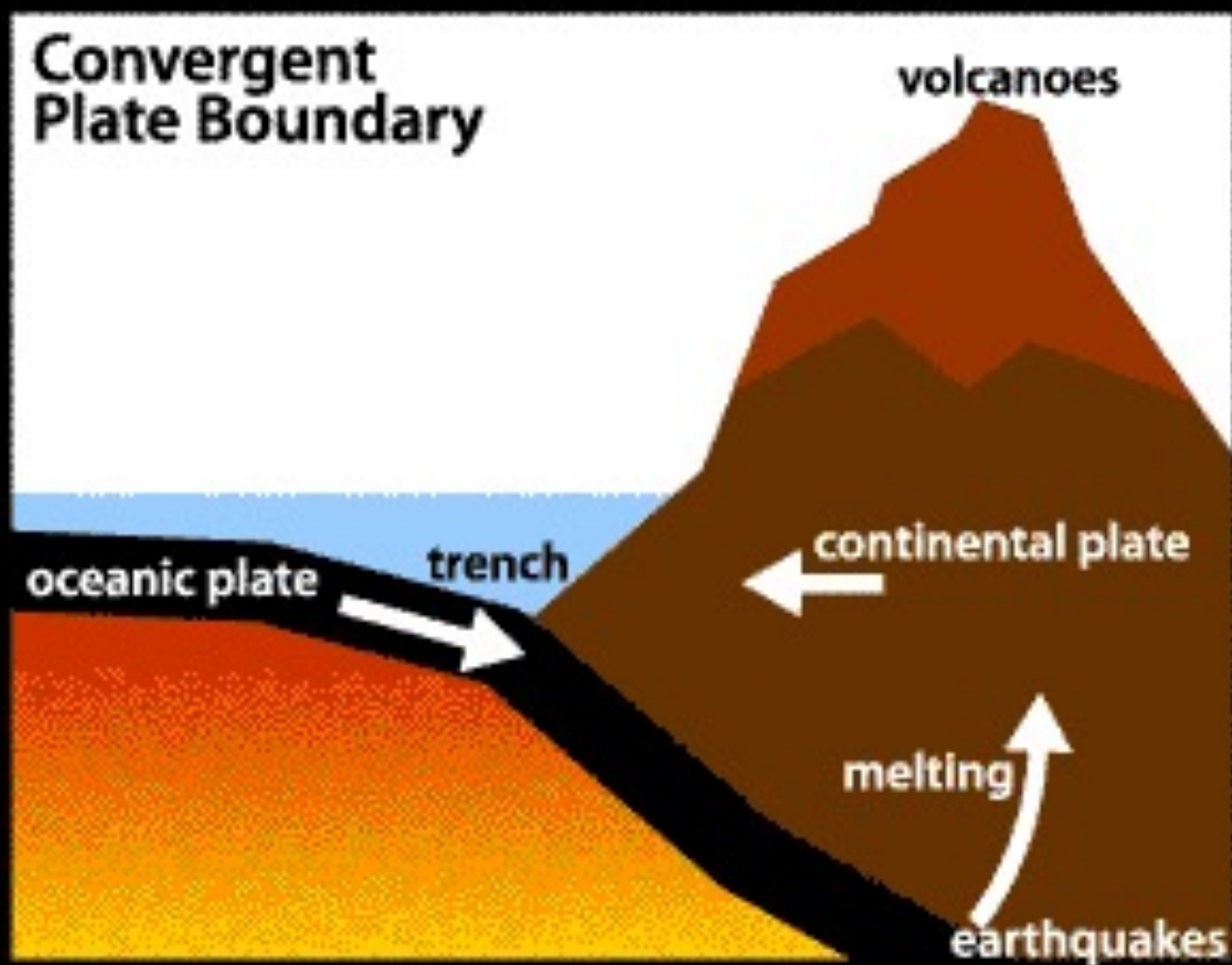
Mid Atlantic Ridge

Plates Separate



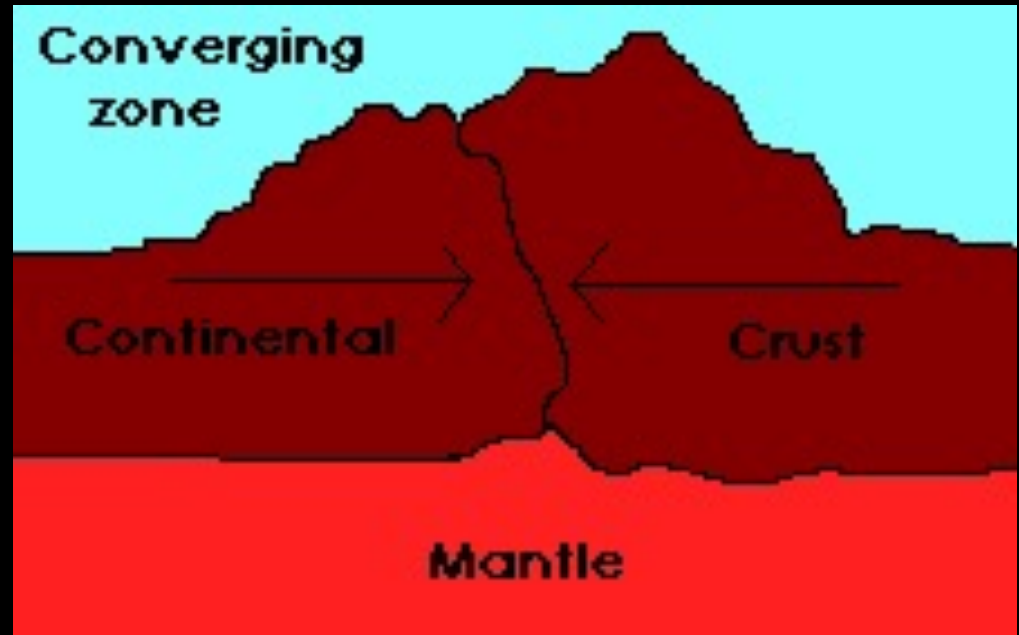
2. Convergent Boundaries: The plates come together





Trenches are formed as the denser plate is subducted, or pushed down, under the other

Mountains are formed when edges of the plates collide



Example: Himalayas / Mt. Everest. Grows 2.4" per year.



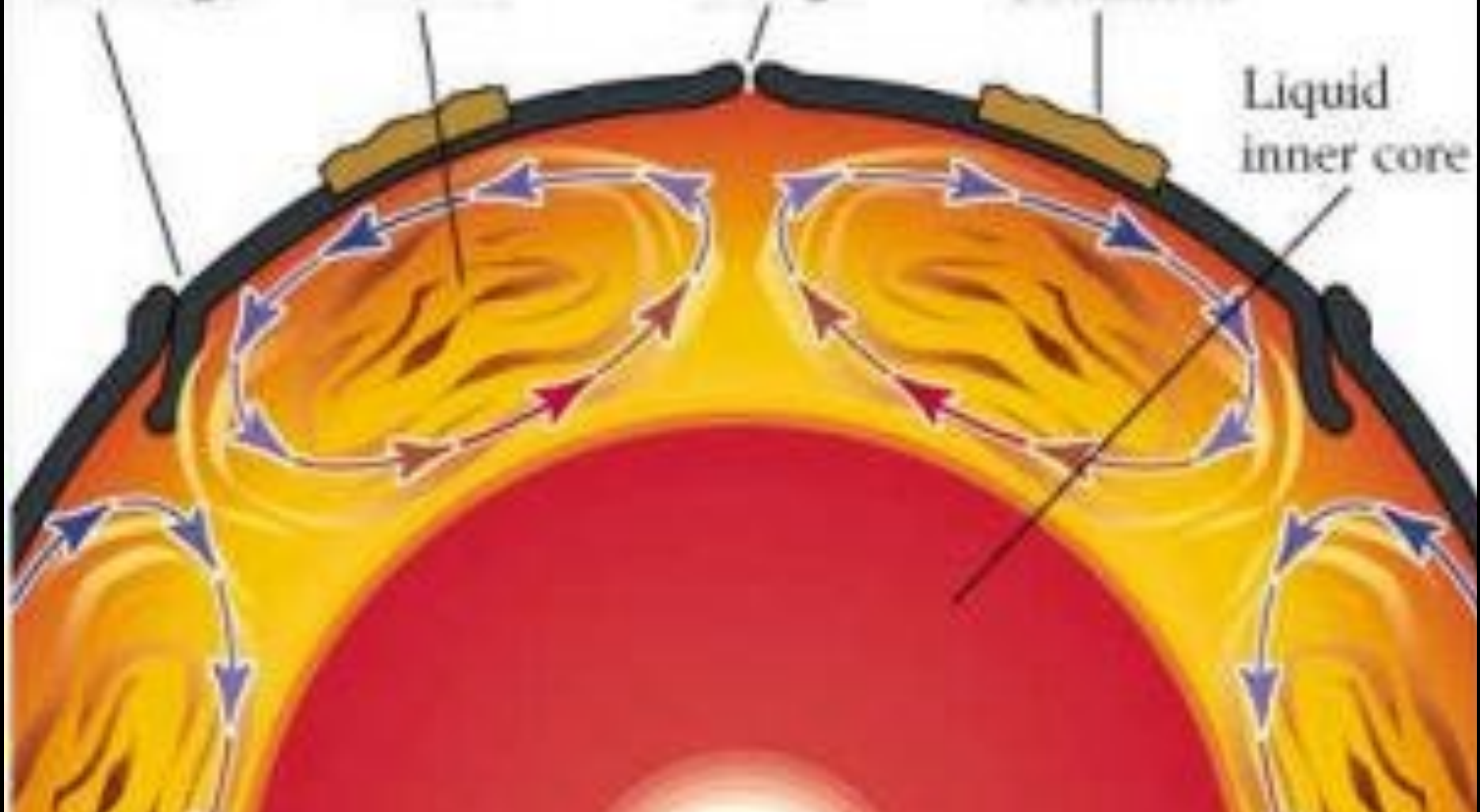
Plates
converge

Mantle

Plates
diverge

Continent

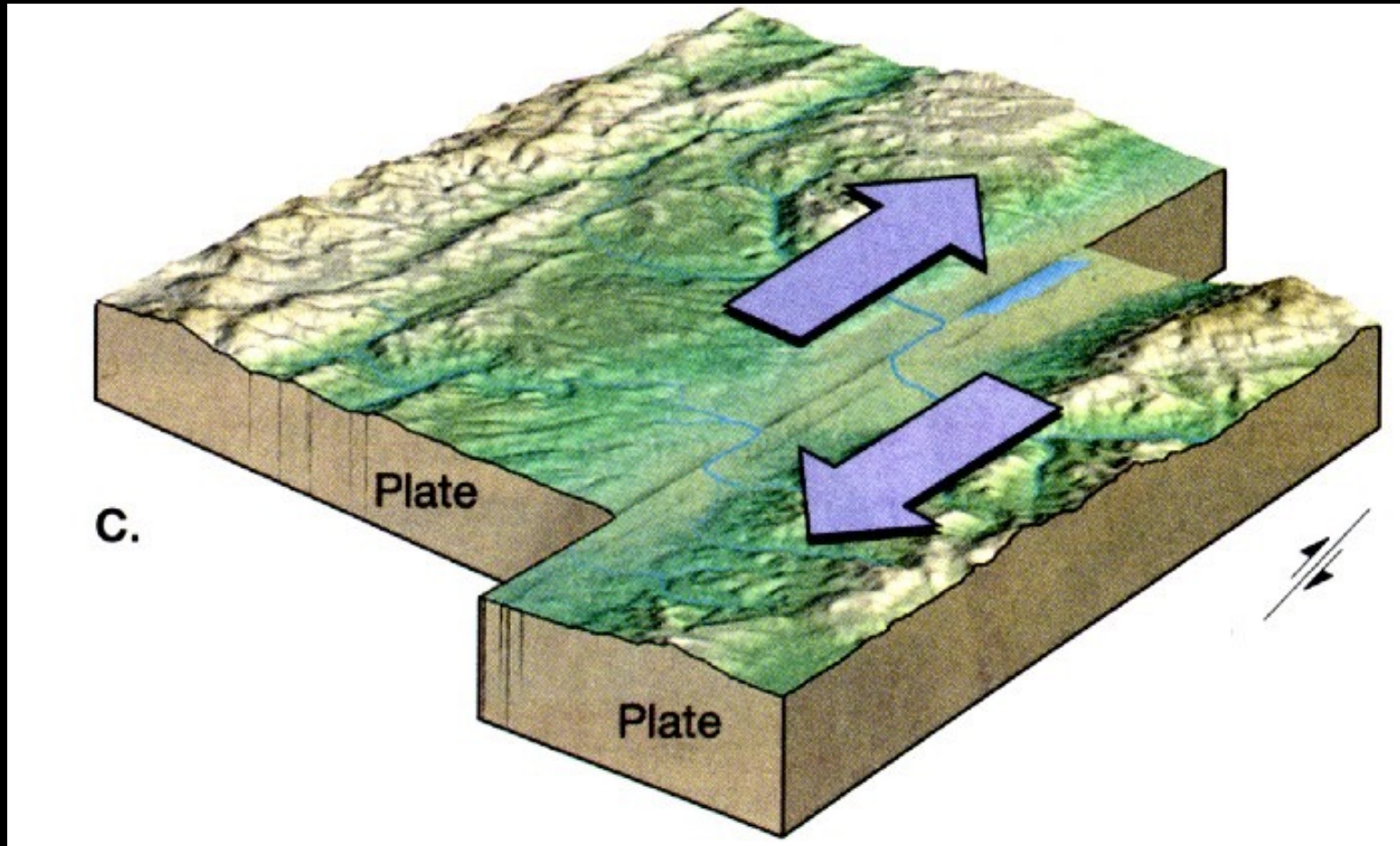
Liquid
inner core



3. Transform Boundaries

(AKA strike-slip boundaries)

The plates slide past each other



Example: San Andreas Fault in California

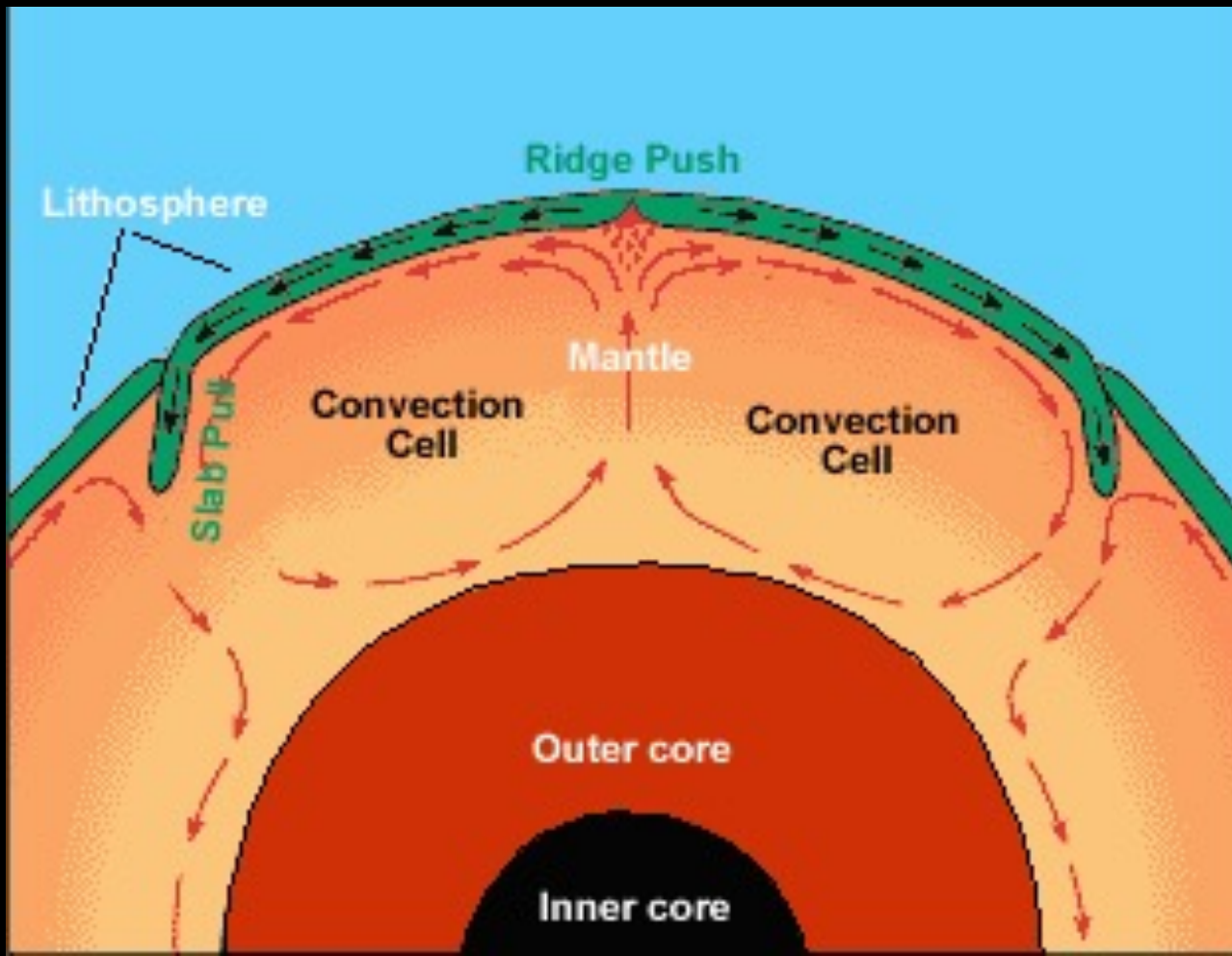


Don't look at me like
that.... It's not
my fault...!



What causes plate tectonics?

- Convection currents in the mantle



*That's All
Folks!*

