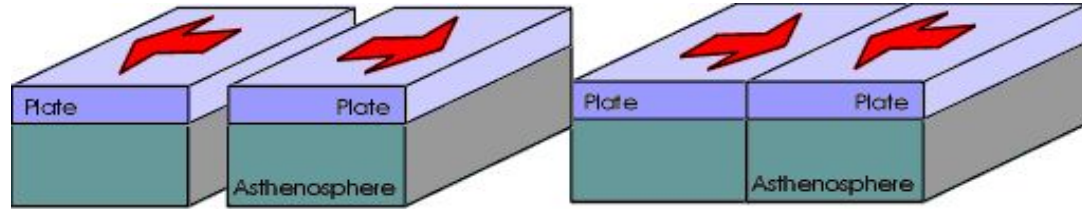


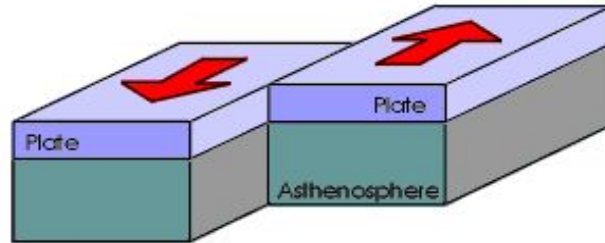
Tectonic Plate Boundaries and Motions

Boundary Types



Divergent

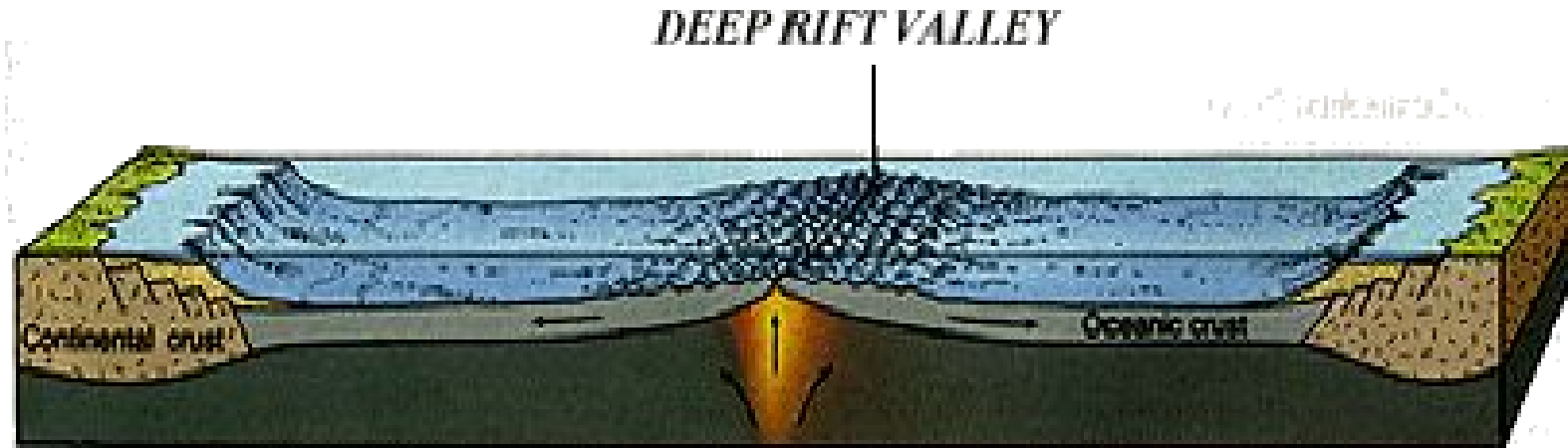
Convergent



Transform

Divergent Boundaries

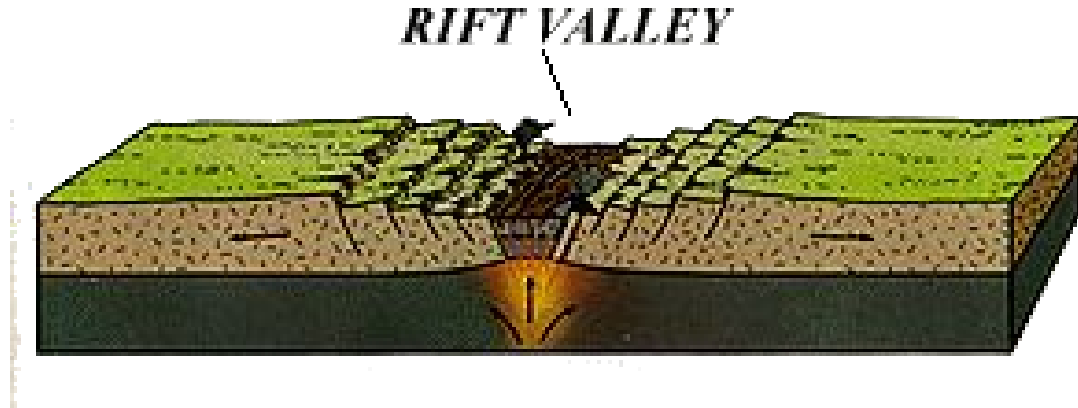
- The plates move apart
- Produces new oceanic lithosphere



Divergent Boundaries

Divergent boundaries on **land** form **rift valleys**.

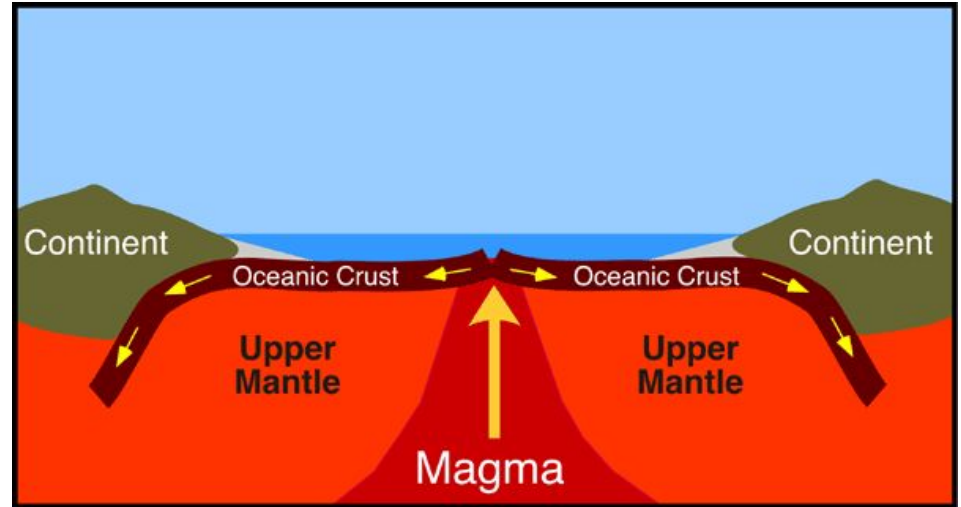
- Magma rises, hardens, and pushes plates apart.
- **Volcanoes** form as magma rises up
- **Earthquakes** occur as the magma breaks rocks while it rises



Divergent Boundaries

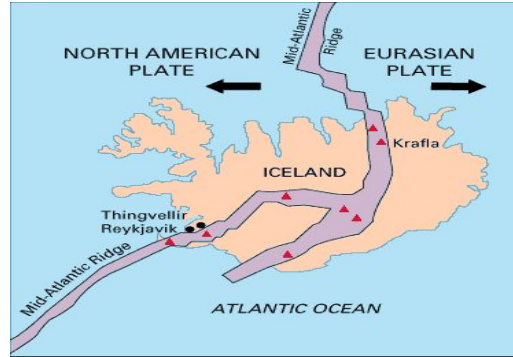
As divergent boundaries spread at the **ocean floor**, they form **mid-ocean ridges**

- This is called **seafloor spreading**
- Magma hardens to produce **mountain ranges** at the bottom of the ocean.



Examples of Divergent Boundary

- **Iceland**
- **Great Rift Valley**
in eastern Africa
- **Rhine Valley** in
Europe



Mid-Ocean Ridges

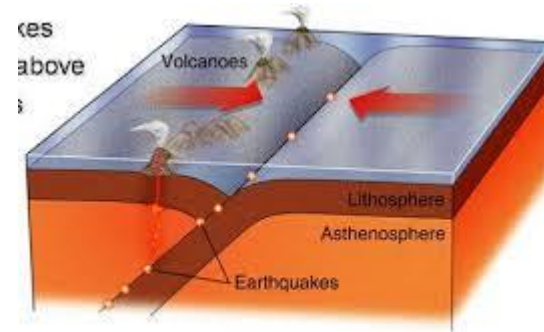


Convergent Boundary

- The plates move **together**
- **Destroys** old oceanic lithosphere

3 types:

- 1) **Ocean-Ocean**
- 2) **Continental-Ocean**
- 3) **Continental-Continental**

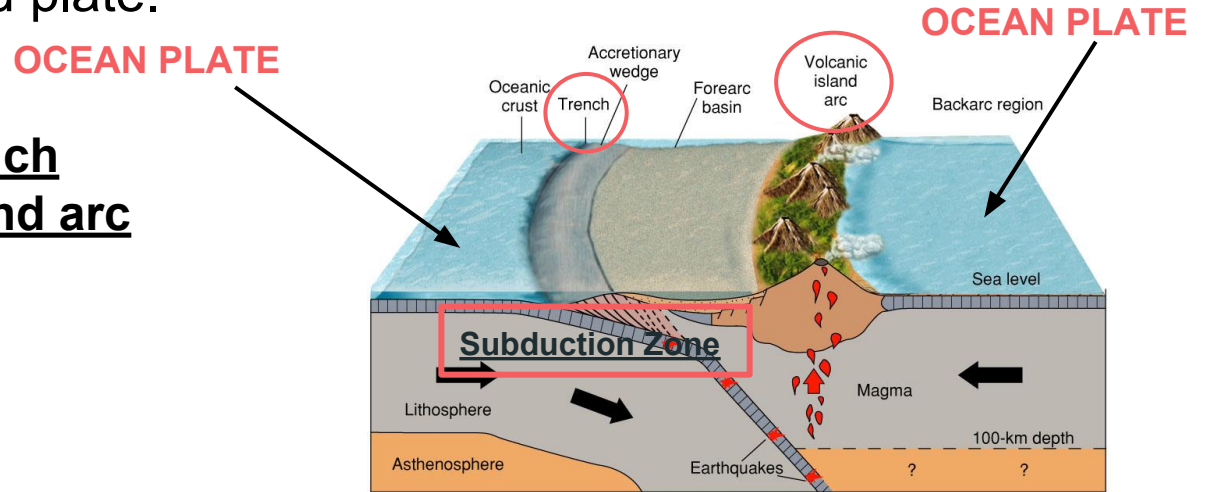


(b) Convergent boundary
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Convergent Boundary: Ocean-Ocean

Subduction Zone - when one oceanic plate is pushed down into the mantle beneath a second plate.

- Creates an **ocean trench**
- Forms a **volcanic island arc**



Convergent Boundary: Ocean-Ocean

Volcanic Island Arc Example:



Hawaii



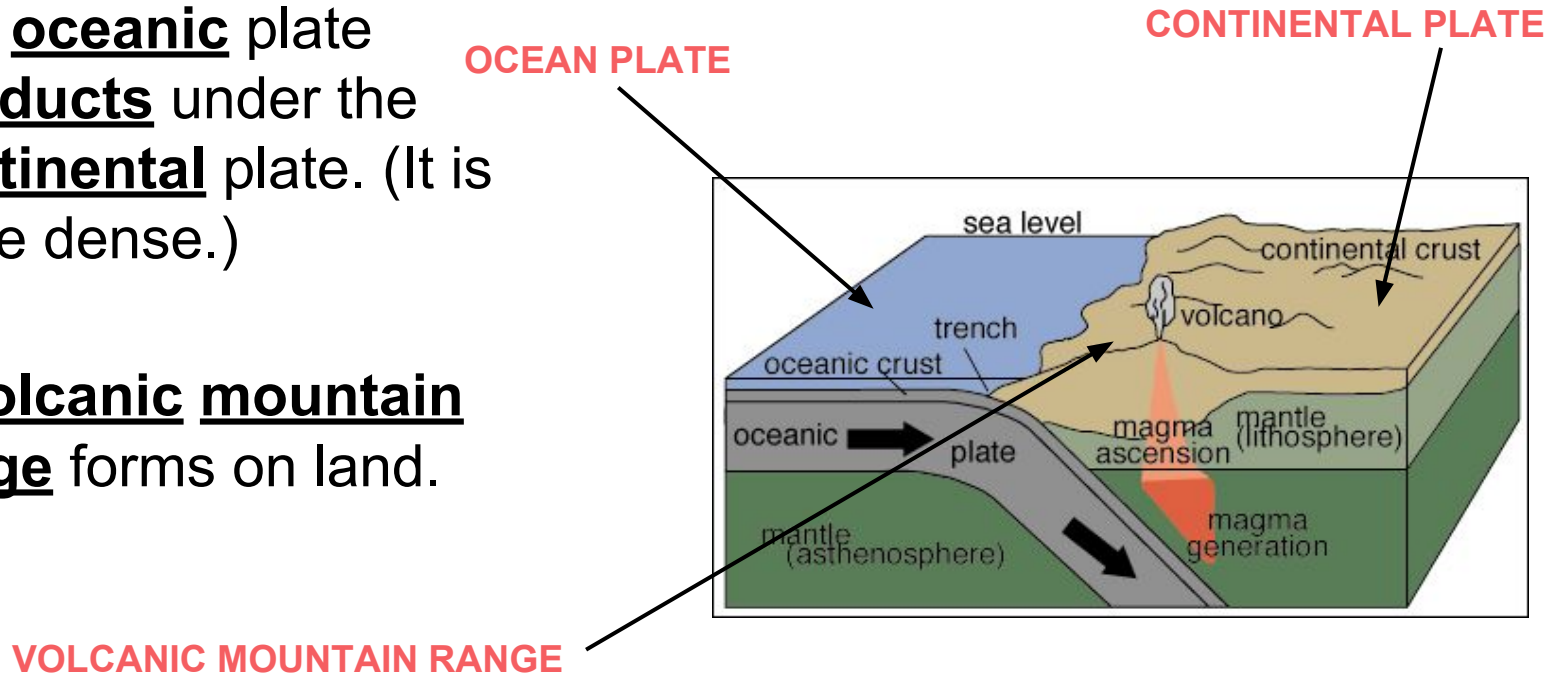
Aleutian Islands



Mariana Islands, Japan, Indonesia

Convergent Boundary: Continental-Ocean

1. The **oceanic** plate **subducts** under the **continental** plate. (It is more dense.)
2. A **volcanic mountain range** forms on land.



Convergent Boundary: Continental-Ocean



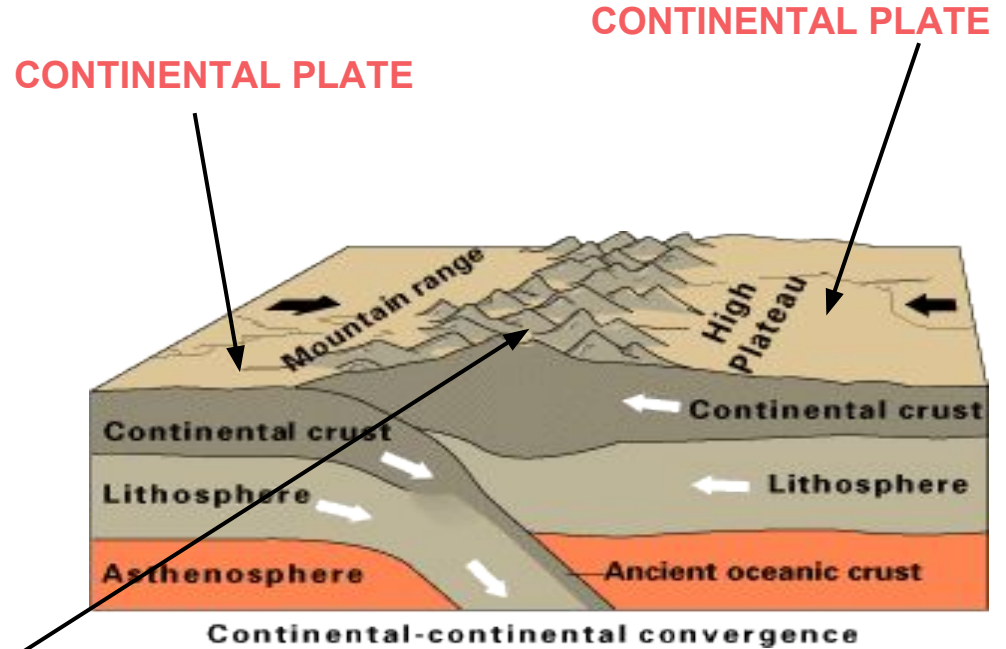
Andes Mountains (S. America)



The Cascades (N. America)

Continental-Continental Boundary

- When two **continental** plates collide, they form **folded mountain ranges**.
- **Earthquakes** are common at these sites.



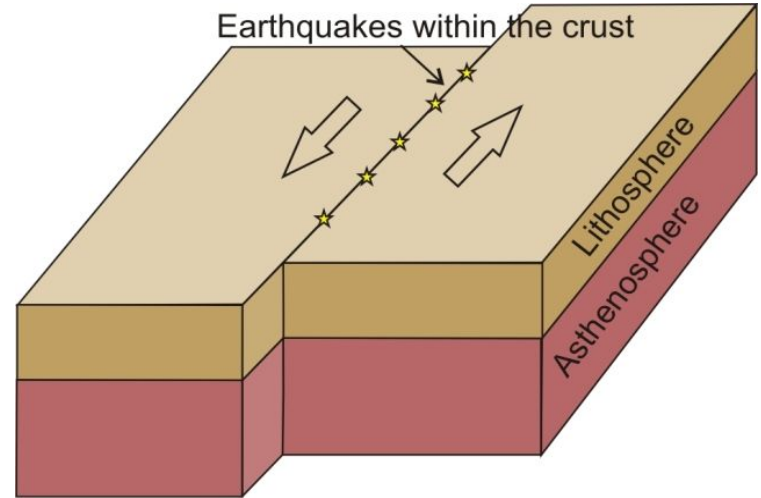
FOLDED MOUNTAIN RANGE

Formation of Japanese Islands

<https://www.youtube.com/watch?v=6fIDbhnzCLY>

Transform Fault Boundary

- Two plates **slide** past each other
 - **Opposite** direction
 - **Same** direction at different **speeds**
- **Earthquakes** occur at these sites.



Transform Fault Boundary

Example: The San Andreas Fault
in California

<https://www.youtube.com/watch?v=ZxPTLmg0ZCw>

