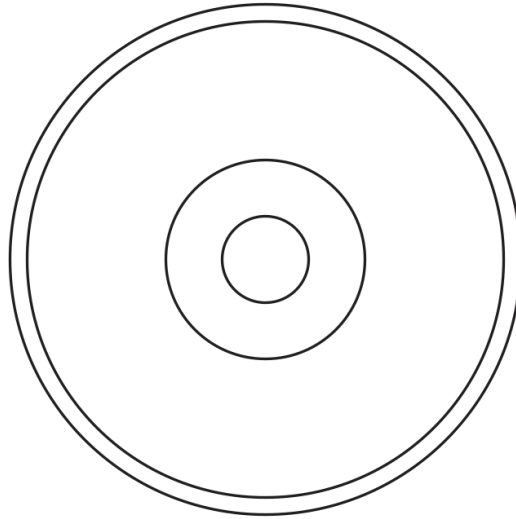


1. Layers of the Earth:
  - Label the layers
  - Describe the type(s) of material in each layer
  - Describe the rigidity (or fluidity) of each layer
  - Describe the density of each layer



2. Reasons why the inside of the Earth is hot:

3. Why is the surface of the Earth cooler?



# Two General Categories of Rocks: **Mafic** and **Felsic**

## Characteristics of Mafic Rock:

- Dark in color
- More Dense
- Low Viscosity (runny) when turned to magma
  - Does not build up high pressure, so it reduces gentler eruptions
  - Does not pile up, so volcanoes are lower and rounder
- An example of this type of rock is basalt
- Found mostly in the mantle and in ocean crust (because it is dense, and it sinks)
- It is called “mafic” because it contains the elements Magnesium (symbol **Ma**) and Iron (symbol **Fe**).

## Characteristics of Felsic Rock:

- Light in color
- Less dense
- High Viscosity (gooey) when turned to magma
  - Builds up pressure and makes volcanoes more explosive
  - Piles up, so it makes volcanoes steeper
- An example of this type of rock is granite
- Found mostly in continental crust and in seafloor sediment.
- It is called “felsic” because it contains the minerals **F**eldspar and **S**ilica.

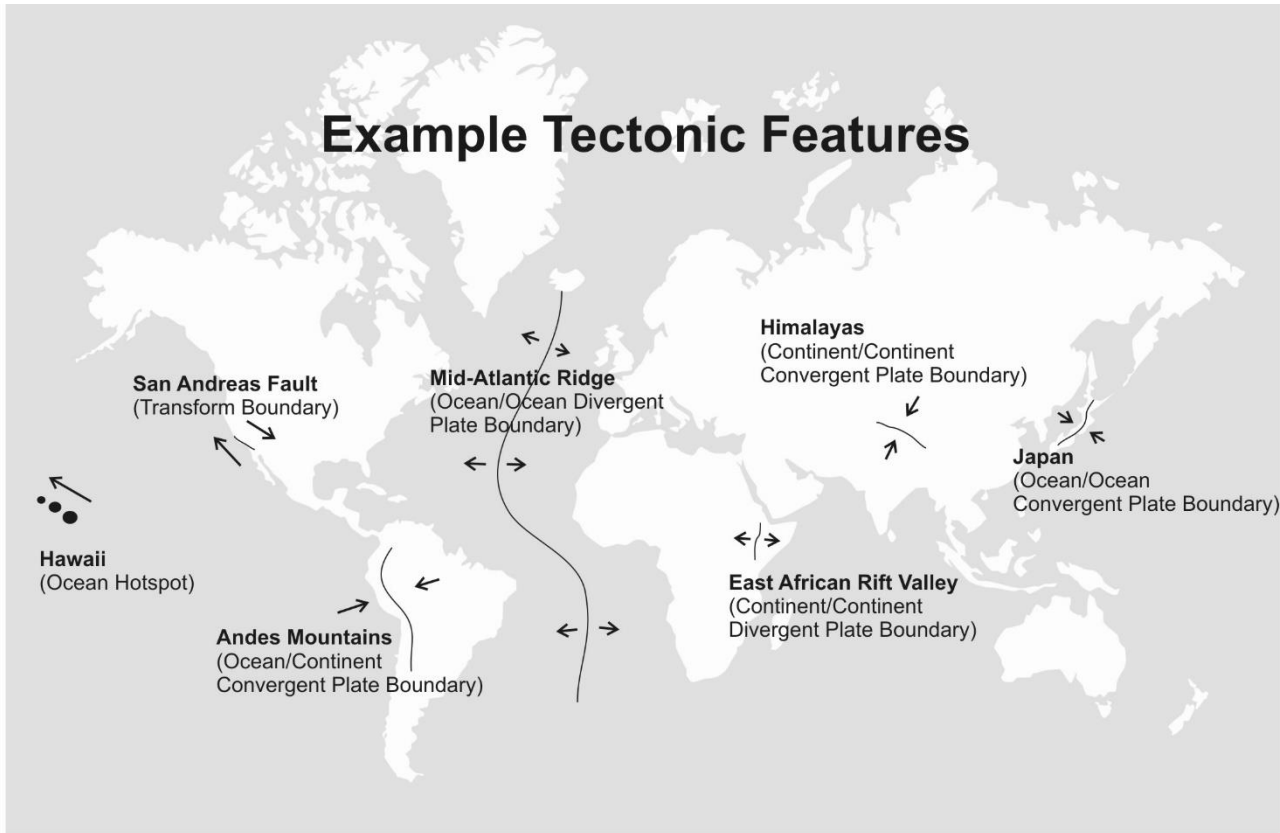
**Felsic:**  
Continental Crust,  
Seafloor Sediment



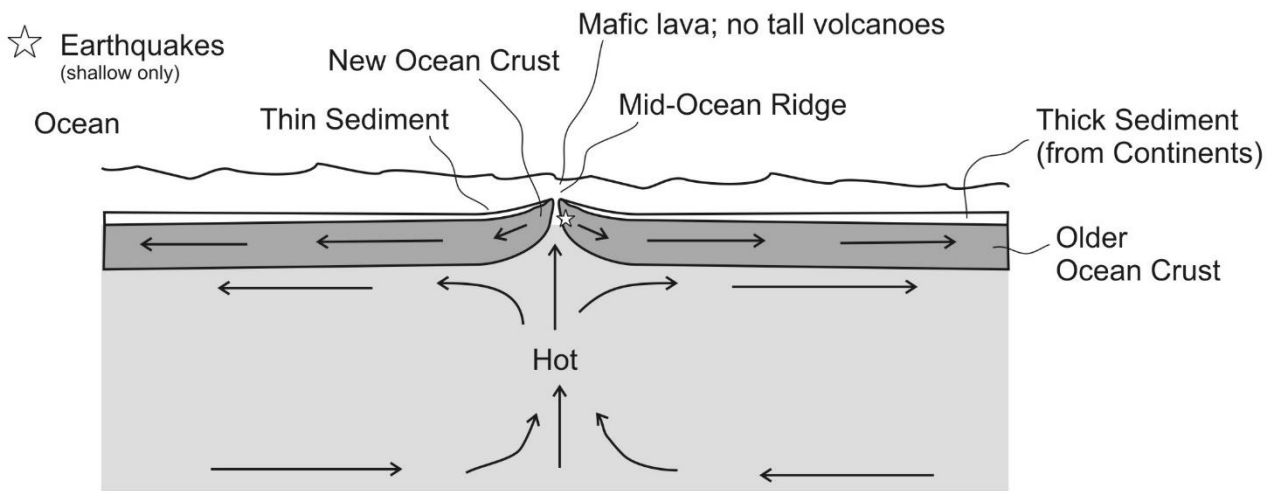
**Mafic:**  
Ocean Crust,  
Mantle



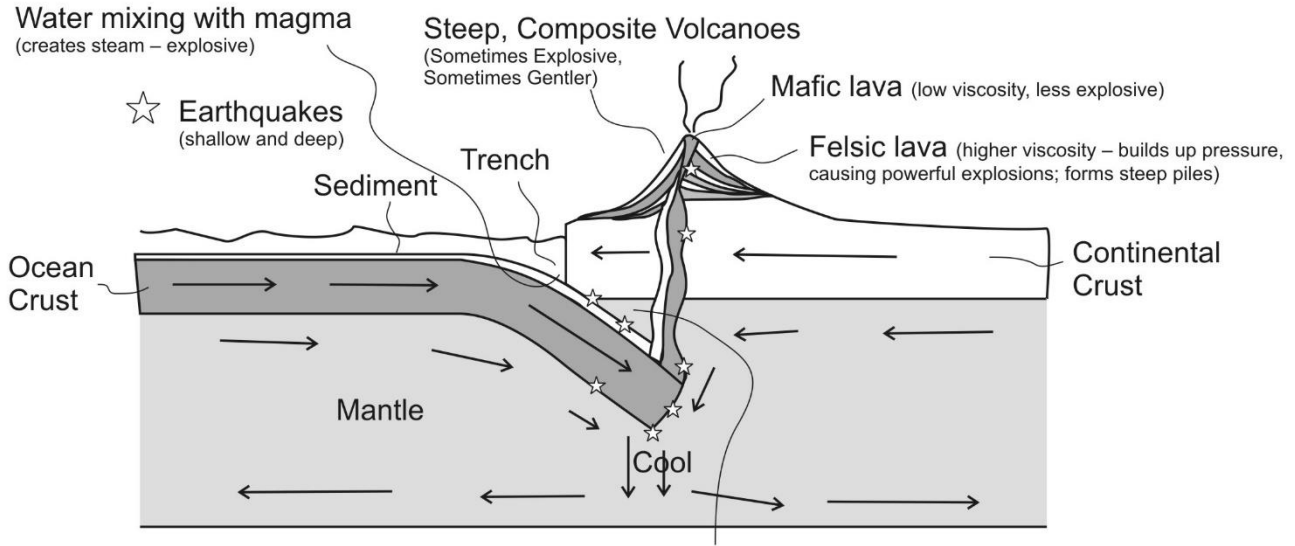
# Example Tectonic Features



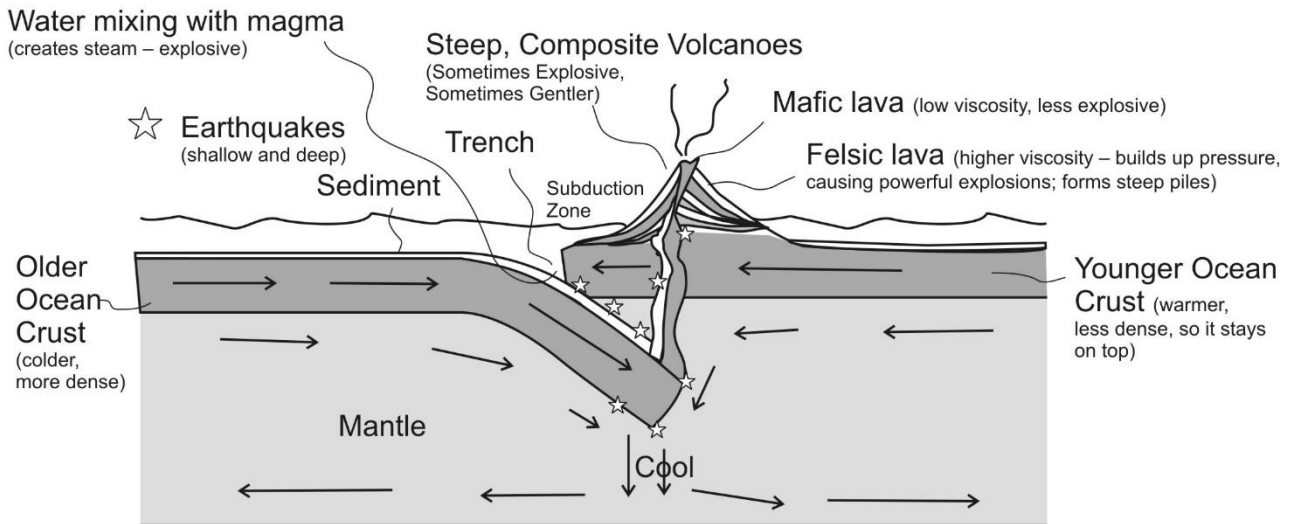
## Ocean/Ocean Divergent Example: Mid-Atlantic Ridge



**Ocean/Continent Convergent**  
**Example: Andes Mountains, South America**

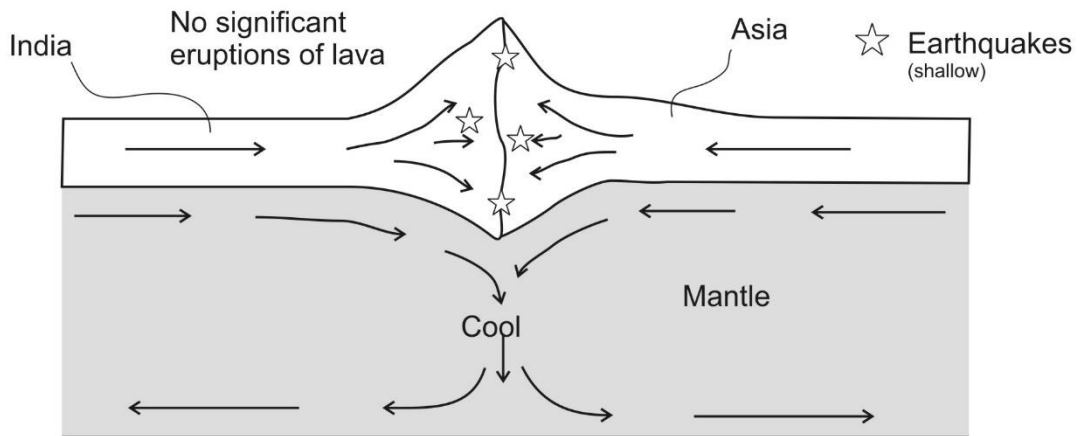


**Ocean/Ocean Convergent**  
**Example: Japan**



**Continent/Continent Convergent**  
**Example: Himalayan Mountains – Mt. Everest**  
**(India colliding with Asia)**

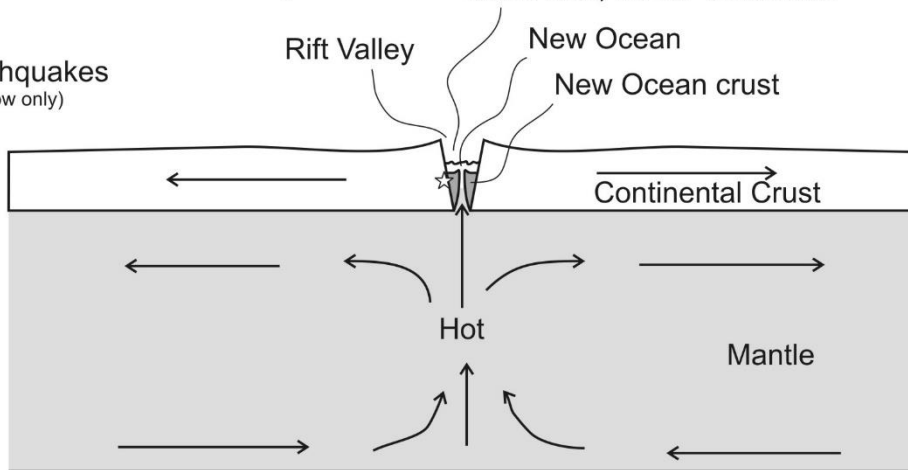
Tall, non-volcanic mountains



**Continent/Continent Divergent**  
**Example: East African Rift Valley**

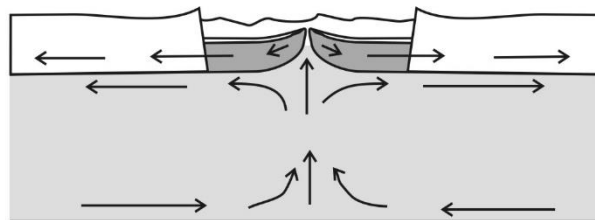
Mafic lava; no tall volcanoes

☆ Earthquakes  
(shallow only)

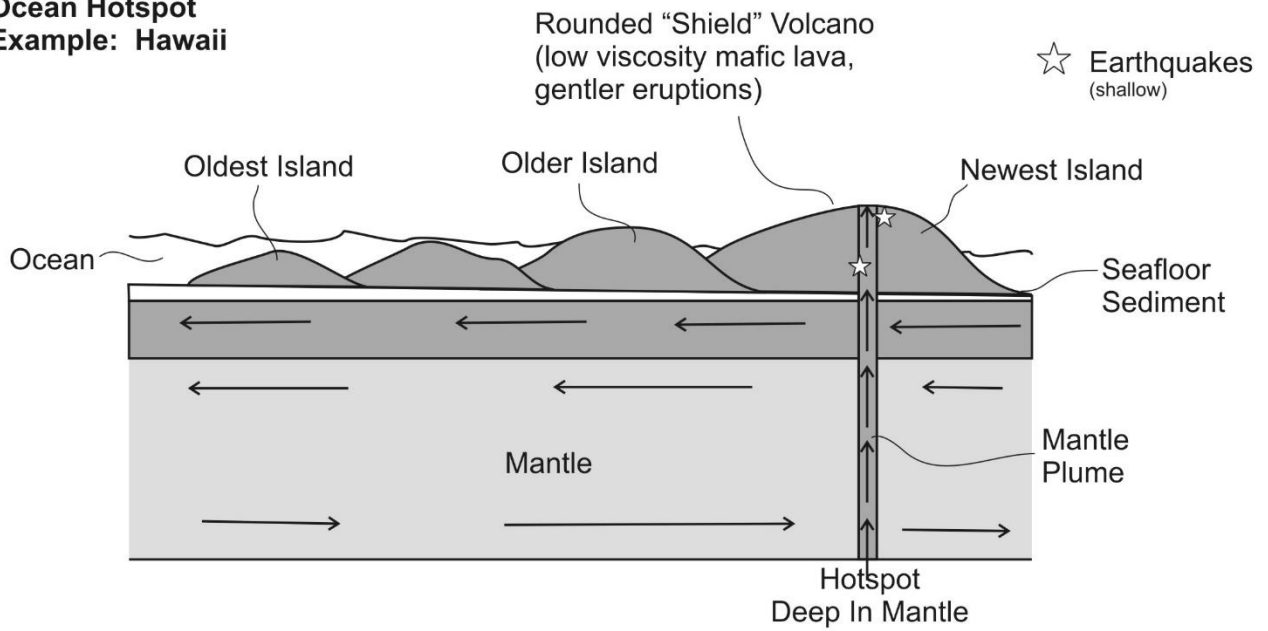


As the continents split apart and more ocean forms,  
 a continent/continent divergent boundary turns into an  
 ocean/ocean divergent boundary.

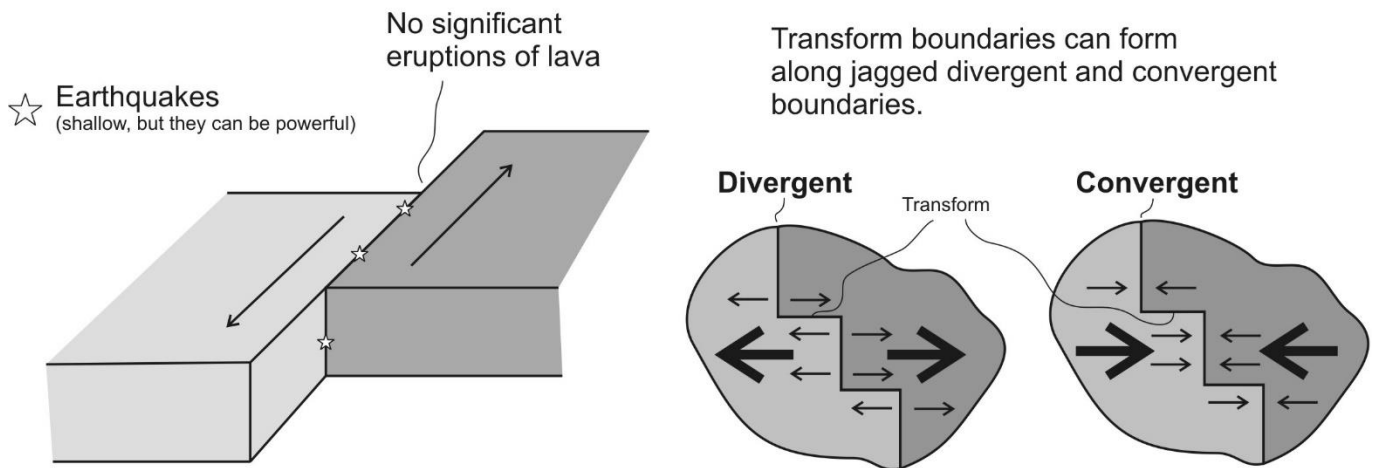
Millions of  
 years later



**Ocean Hotspot**  
**Example: Hawaii**



**Transform Plate Boundary**  
**Example: San Andreas Fault, California**



## Drawing Tectonic Features (Plate Boundaries and Hotspots)

Feature Name:

Example:

Check all that apply:

- |   |   |
|---|---|
| 1. <input type="checkbox"/> There are steep, <i>composite cone</i> volcanoes.             | 7. <input type="checkbox"/> This is a subduction zone.                                  |
| 2. <input type="checkbox"/> There is an ocean trench here.                                | 8. <input type="checkbox"/> The mantle below this area is relatively cool.              |
| 3. <input type="checkbox"/> <i>Relatively</i> violent eruptions of lava <i>can</i> occur. | 9. <input type="checkbox"/> New ocean crust is being created here.                      |
| 4. <input type="checkbox"/> <i>Relatively</i> gentle eruptions of lava <i>can</i> occur.  | 10. <input type="checkbox"/> The mantle below this area is relatively hot.              |
| 5. <input type="checkbox"/> Shallow earthquakes (in the crust) can happen here.           | 11. <input type="checkbox"/> There are tall mountains here, but there are no volcanoes. |
| 6. <input type="checkbox"/> Deep earthquakes (in mantle) can happen here.                 | 12. <input type="checkbox"/> There are rounded, <i>shield</i> volcanoes.                |
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