



# Friday, Sept 22, 2017

Pick up: vocab pg 28 and notes pg 29

Today you will:

- Finish notes from yesterday
- Notes on Divergent, Convergent & Transform boundaries pg 30
- Milky Way Lab

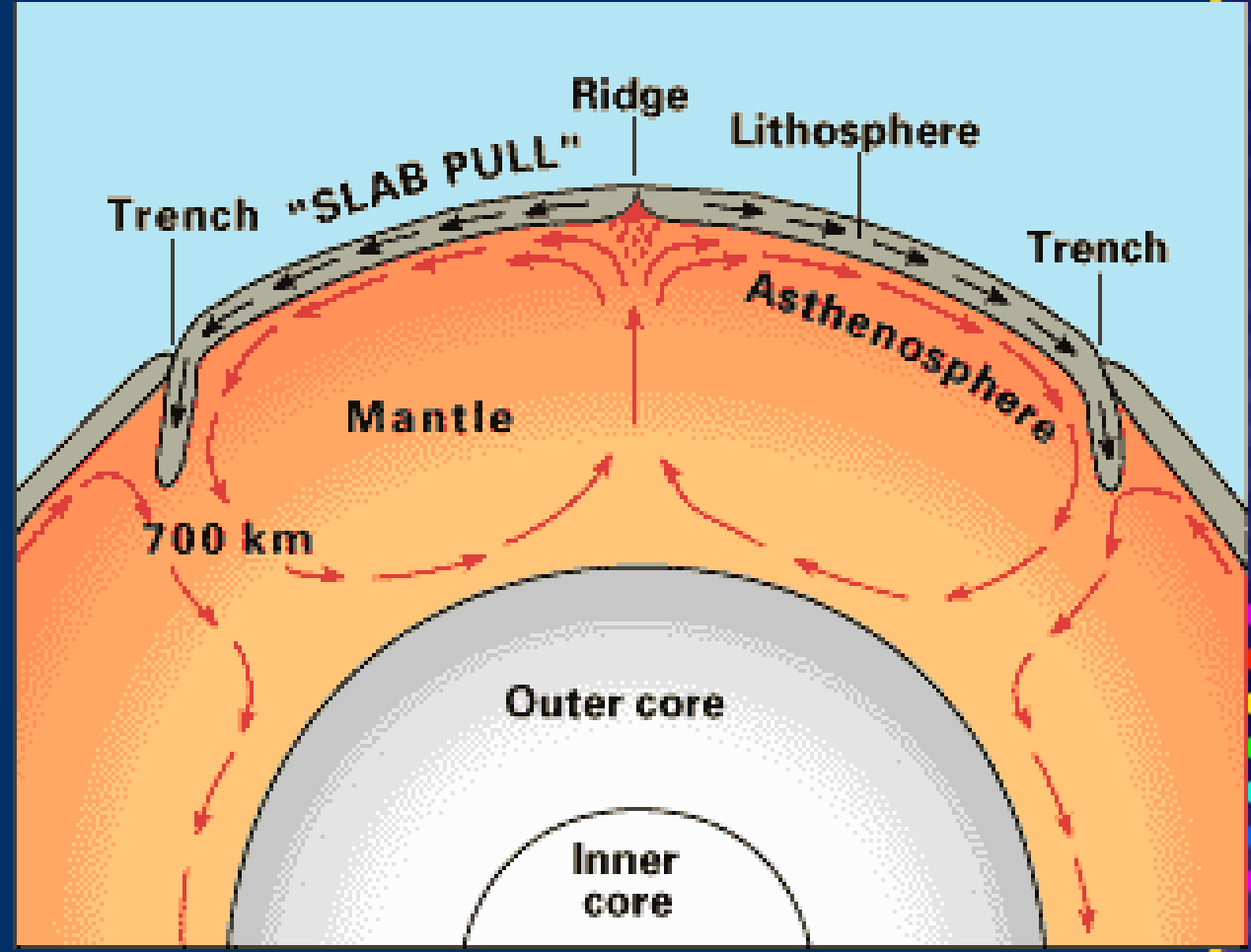
HOMEWORK:

Work on Ch. 10-Complete by 9/29

### Causes of Plate Motion

1. **Convection** Warm fluids in the mantle are less dense and rise to the surface. Cooler fluids sink away from the surface. This drags the plates with the currents.
2. **Density** the plate with the higher density will sink below the less dense plate. Oceanic crust is thinner, but more dense than continental crust, so oceanic crust will sink below continental crust. This is called subduction.





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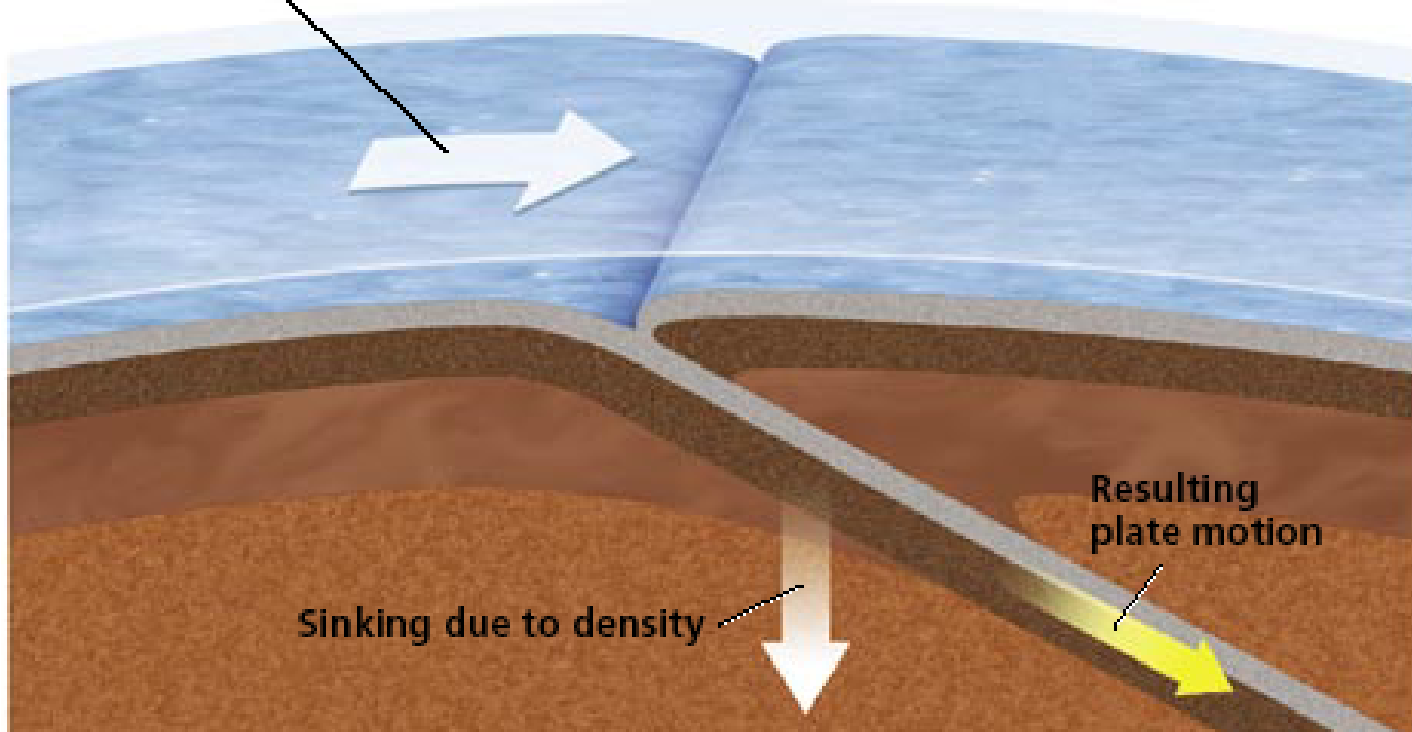
# Chapter 10

## Section 2 The Theory of Plate Tectonics

### Causes of Plate Motion, *continued*

#### Slab Pull

Direction of plate motion



Resulting plate motion

Sinking due to density

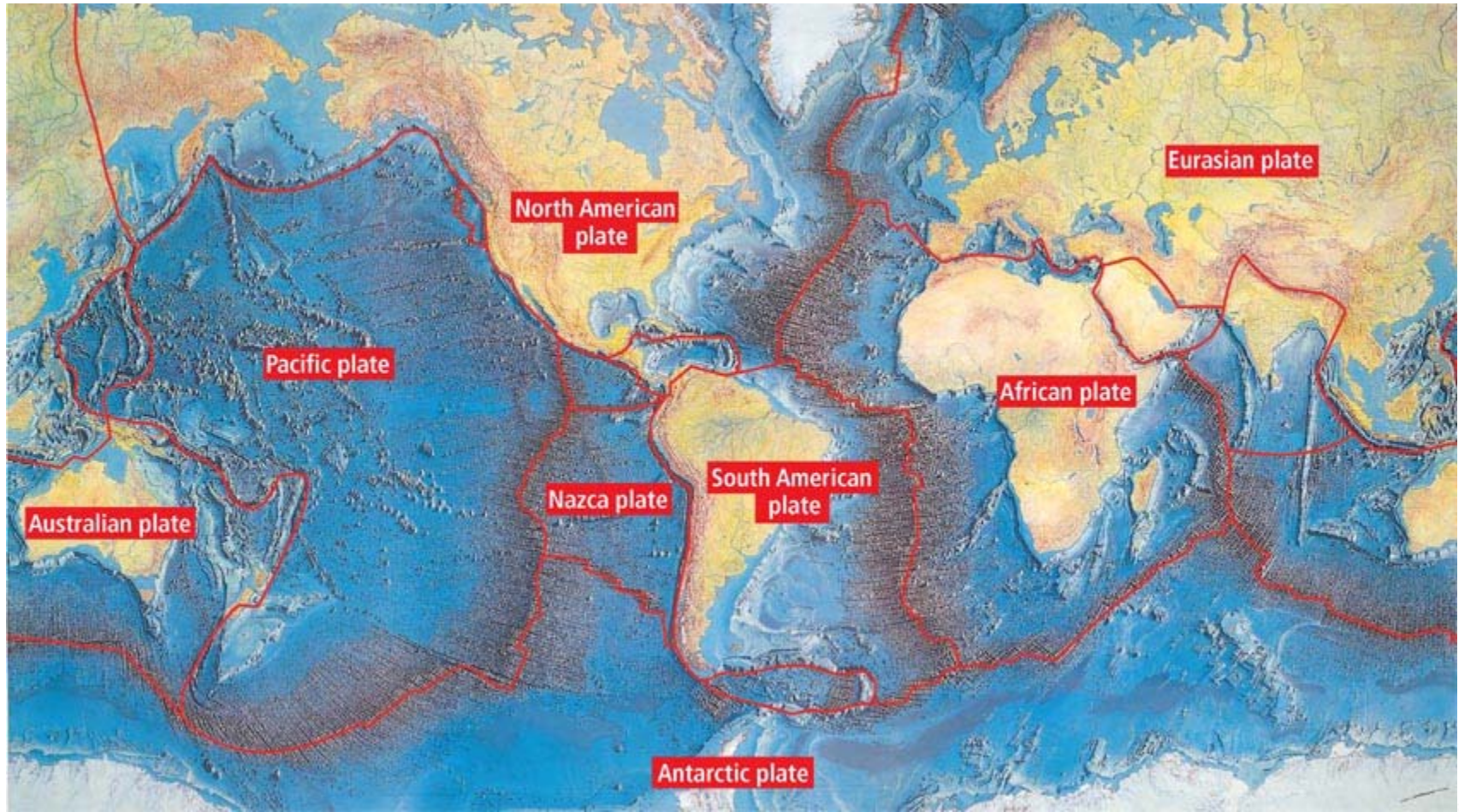
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# Chapter 10

## Tectonic Plates



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## 9.2 Plate Tectonics

### Earth's Major Roles

◆ **Plate tectonics** – The theory that explains how large pieces of the lithosphere called plates move and change shape.

- A **plate** is one of numerous rigid sections of the lithosphere that move as a unit over the material of the asthenosphere.

## 9.2 Plate Tectonics

### Types of Plate Boundaries

- ◆ **Divergent boundaries** (also called spreading centers) are the place where two plates move apart.
- ◆ **Convergent boundaries** form where two plates move together.
- ◆ **Transform fault boundaries** are where two plates grind past each other.

# Divergent Boundaries:

## Continental - Continental

- Place where continental plates are splitting. Landform created “rift valley”
- When spreading centers develop within a continent, the landmass may split into two or more smaller segments, forming a rift.
- Rift – where two plates are splitting apart



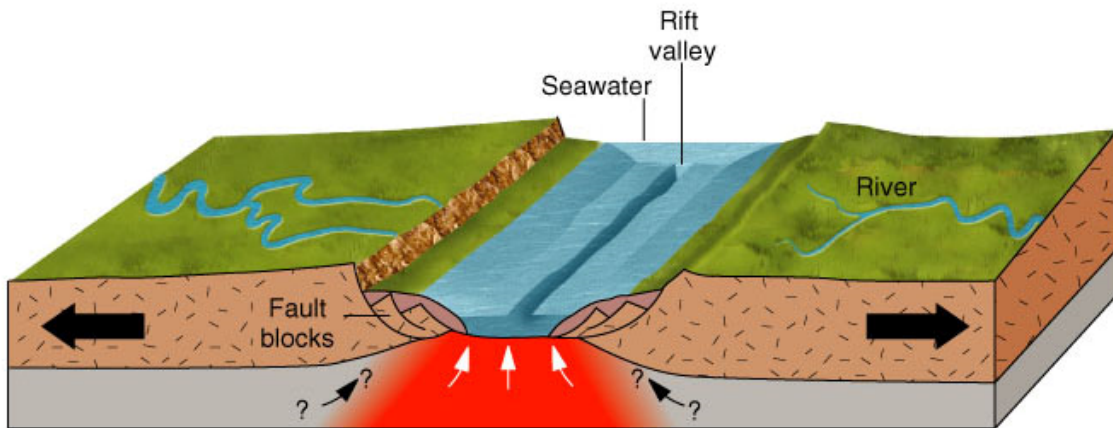
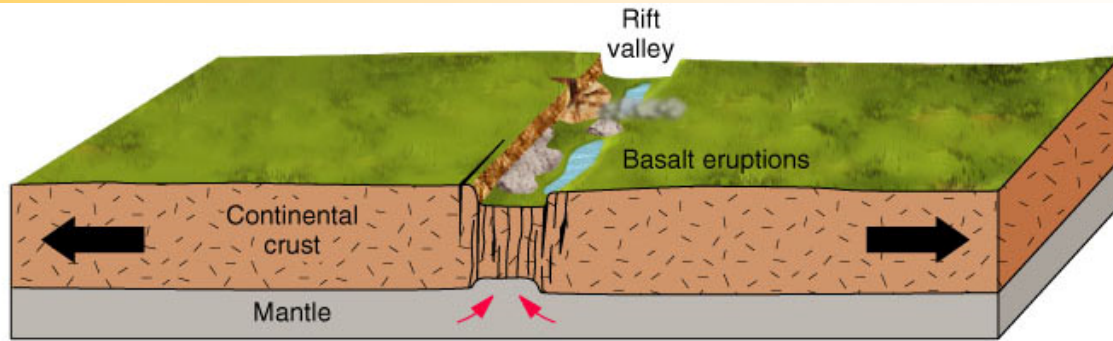
# Real World Example: East African Rift Valley



# East African Rift Valley



# Draw:



# Divergent Boundary Oceanic – Oceanic

Location where oceanic crusts  
move away from each other.

Landform created is mid-ocean  
ridge.

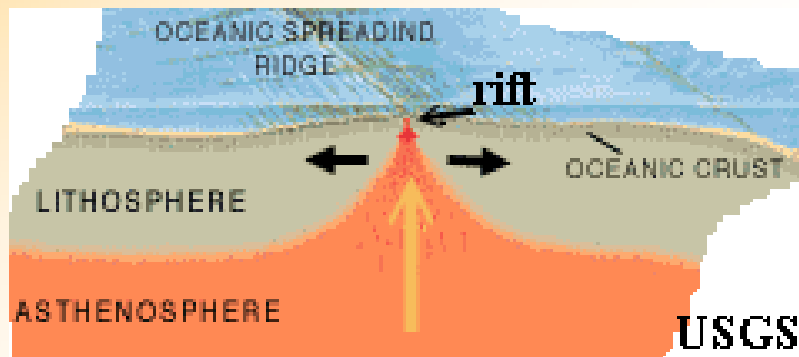
# Real World Example: Mid-Atlantic Ridge



# ICELAND IS SPLITTING due to Mid-Atlantic Ridge



# Draw:



# 9.3 Actions at Plate Boundaries

## Convergent Boundaries

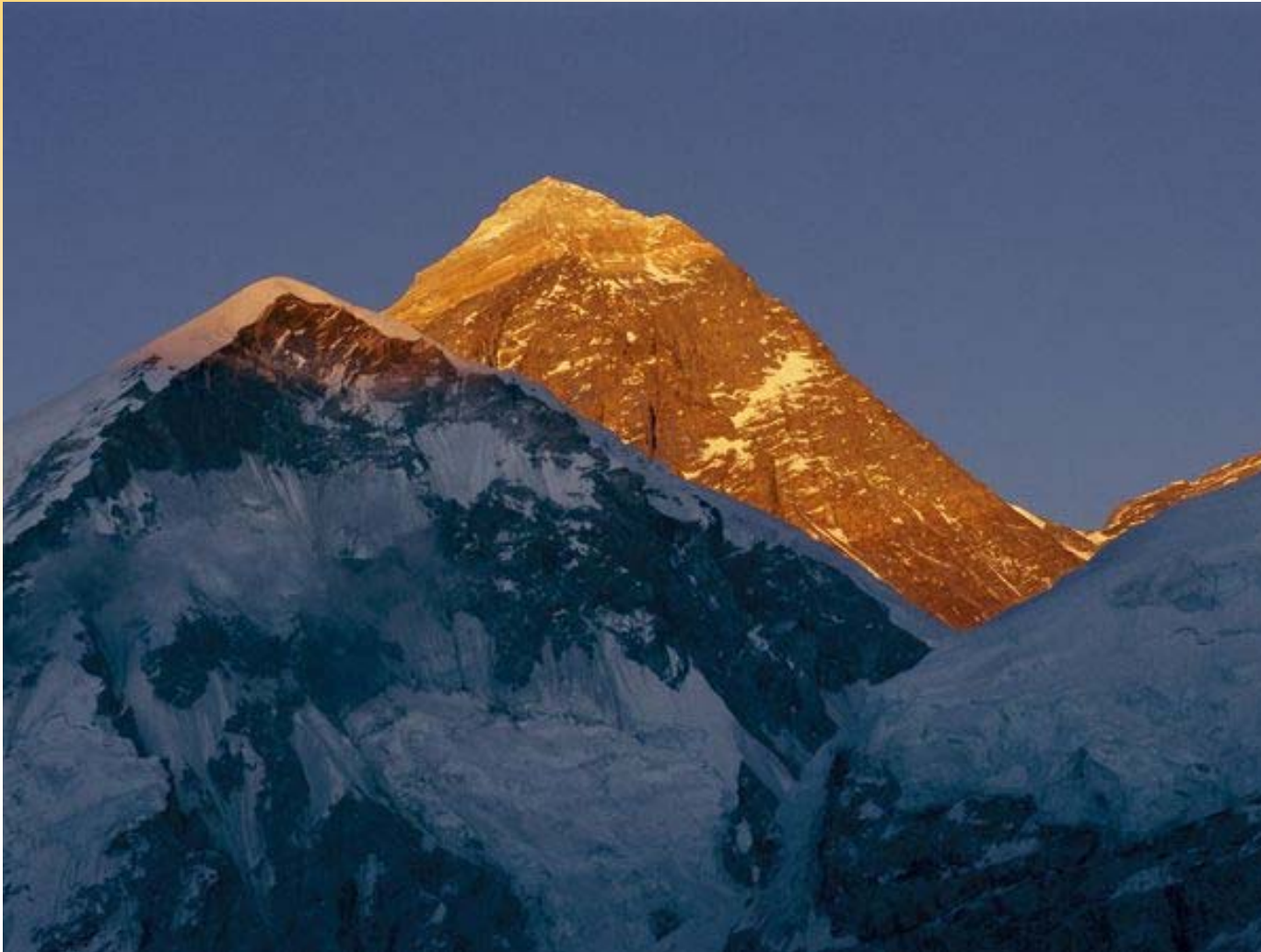
### ◆ Continental-Continental

- When subducting plates contain continental material, two continents collide.
- Landform created: mountain ranges

Real world example: Himalayas.

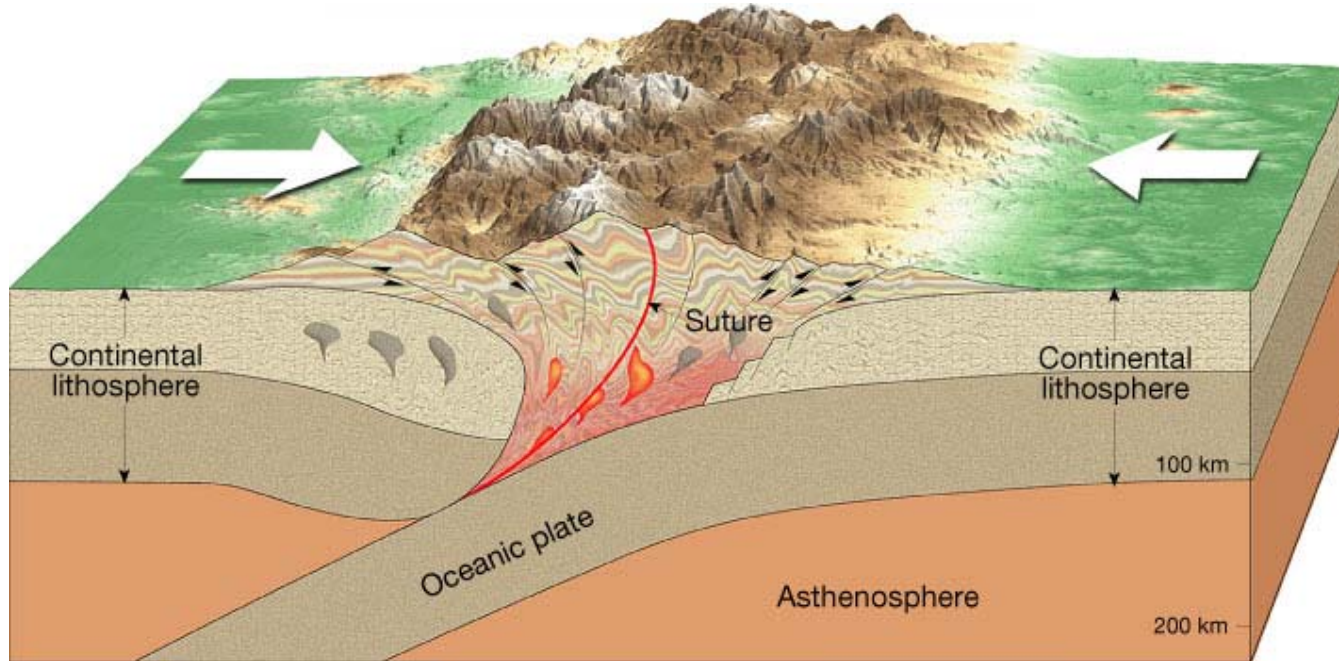


# Continental – Continental Himalayas (Mount Everest

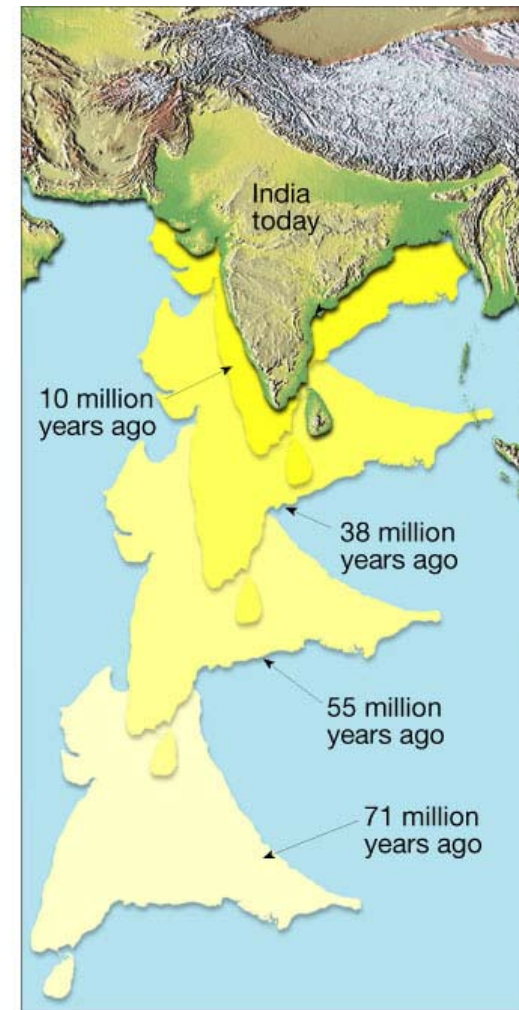
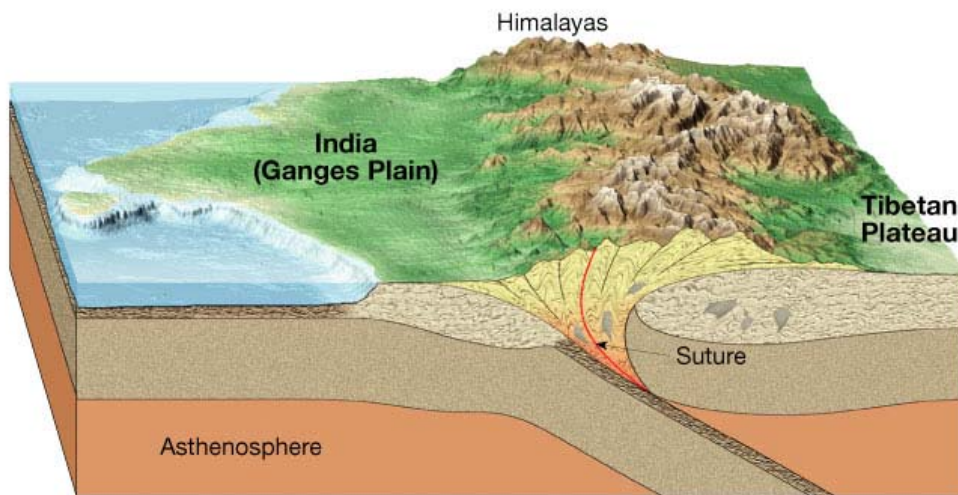
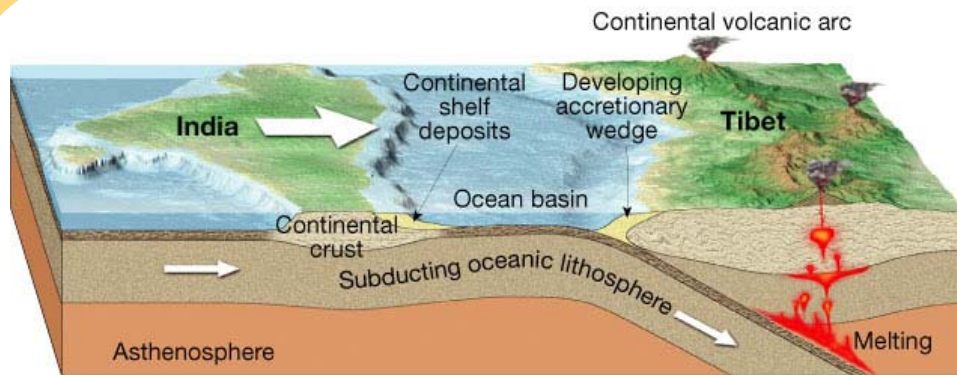


# Continental-Continental Convergent Boundary

Draw:



# Collision of India and Asia



## 9.3 Actions at Plate Boundaries

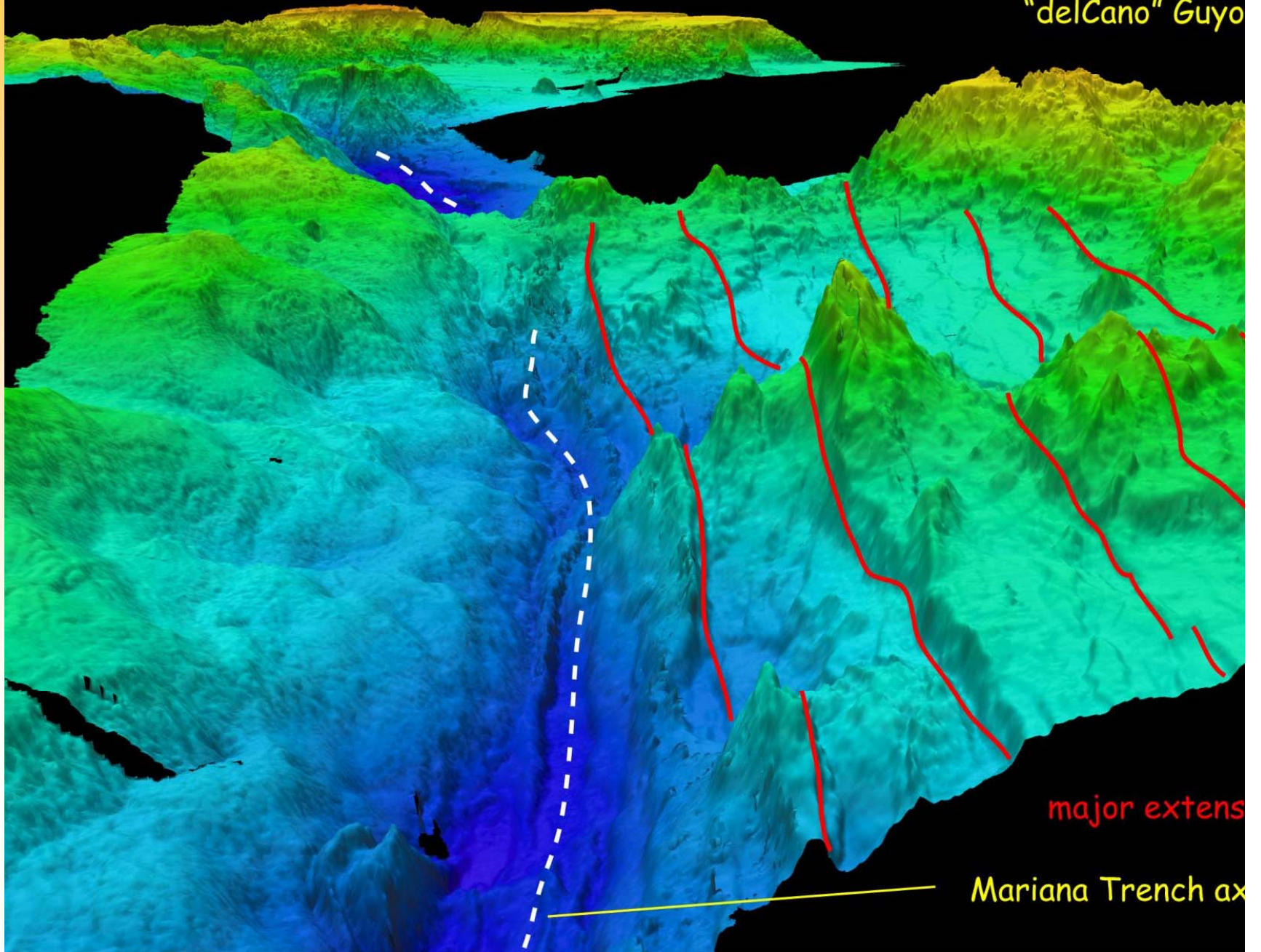
### Convergent Boundaries

- ◆ Oceanic-Oceanic
  - Two oceanic slabs converge and the more dense one descends beneath the other.
  - Landforms created: **Volcanic island arcs and ocean trenches**

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Vogt Guyot

"delCano" Guyot

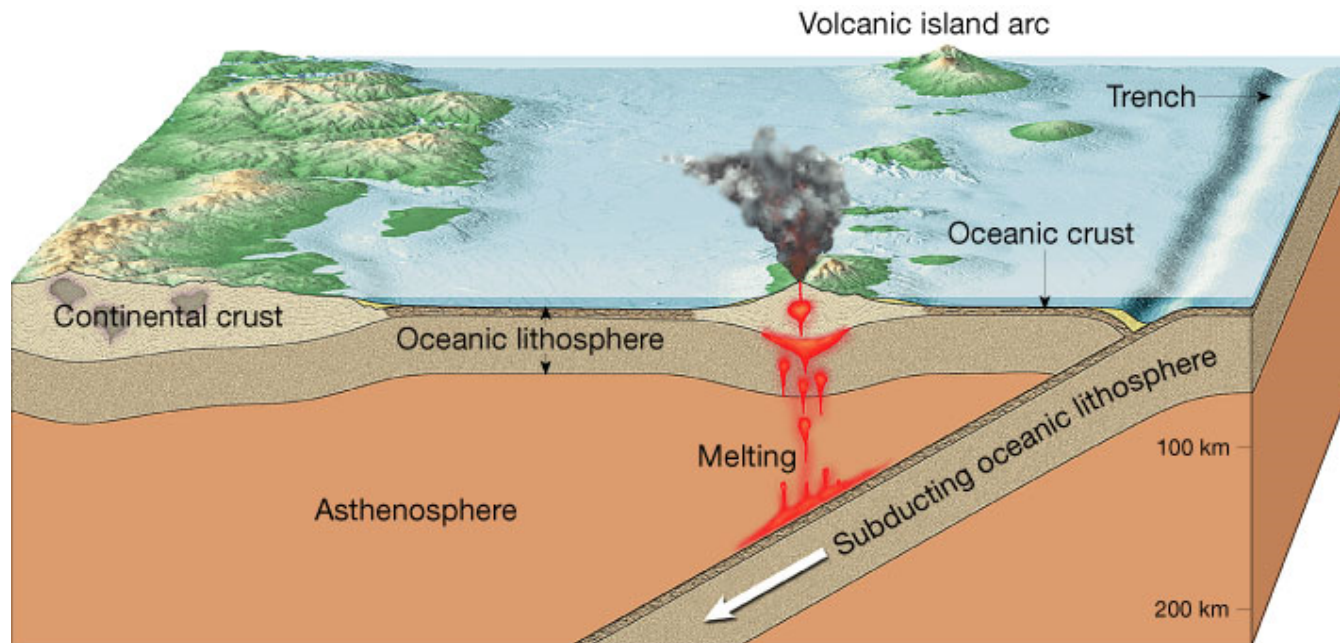


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# Oceanic-Oceanic Convergent Boundary

Draw:



# 9.3 Actions at Plate Boundaries

## Convergent Boundaries

- ◆ Oceanic-Continental
  - Denser oceanic slab sinks into the asthenosphere.
  - Pockets of magma develop and rise.
  - Landforms created: Coastal Mountain Volcanoes  
**Continental volcanic arcs**
  - Examples include the Andes, Cascades, and the Sierra Nevadas.

# Continental – oceanic Andes



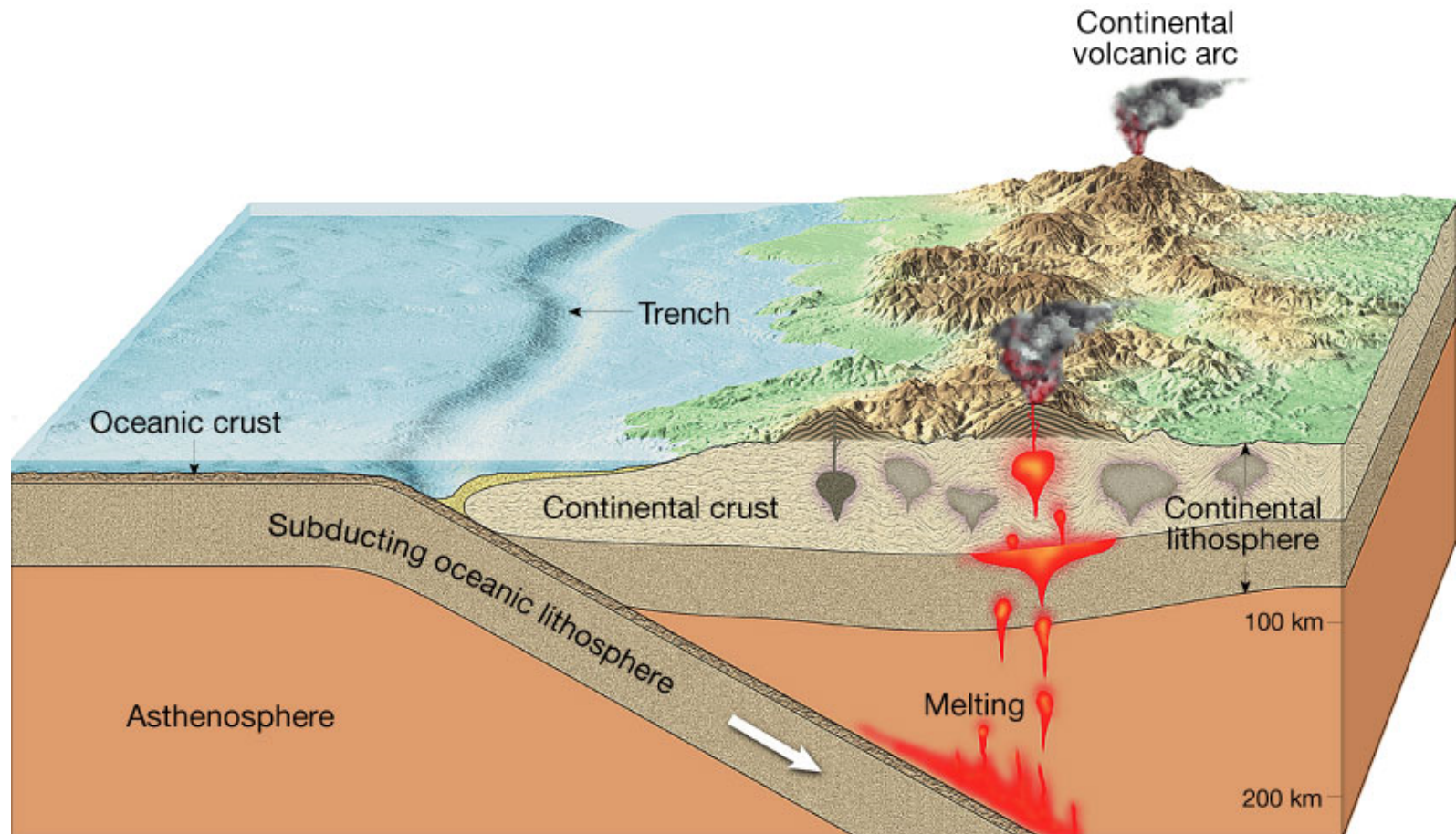


# Continental – Oceanic Cascade Mountains (Mt. St. Helens)



# Oceanic-Continental Convergent Boundary

Draw



## 9.3 Actions at Plate Boundaries

### Transform Fault Boundaries

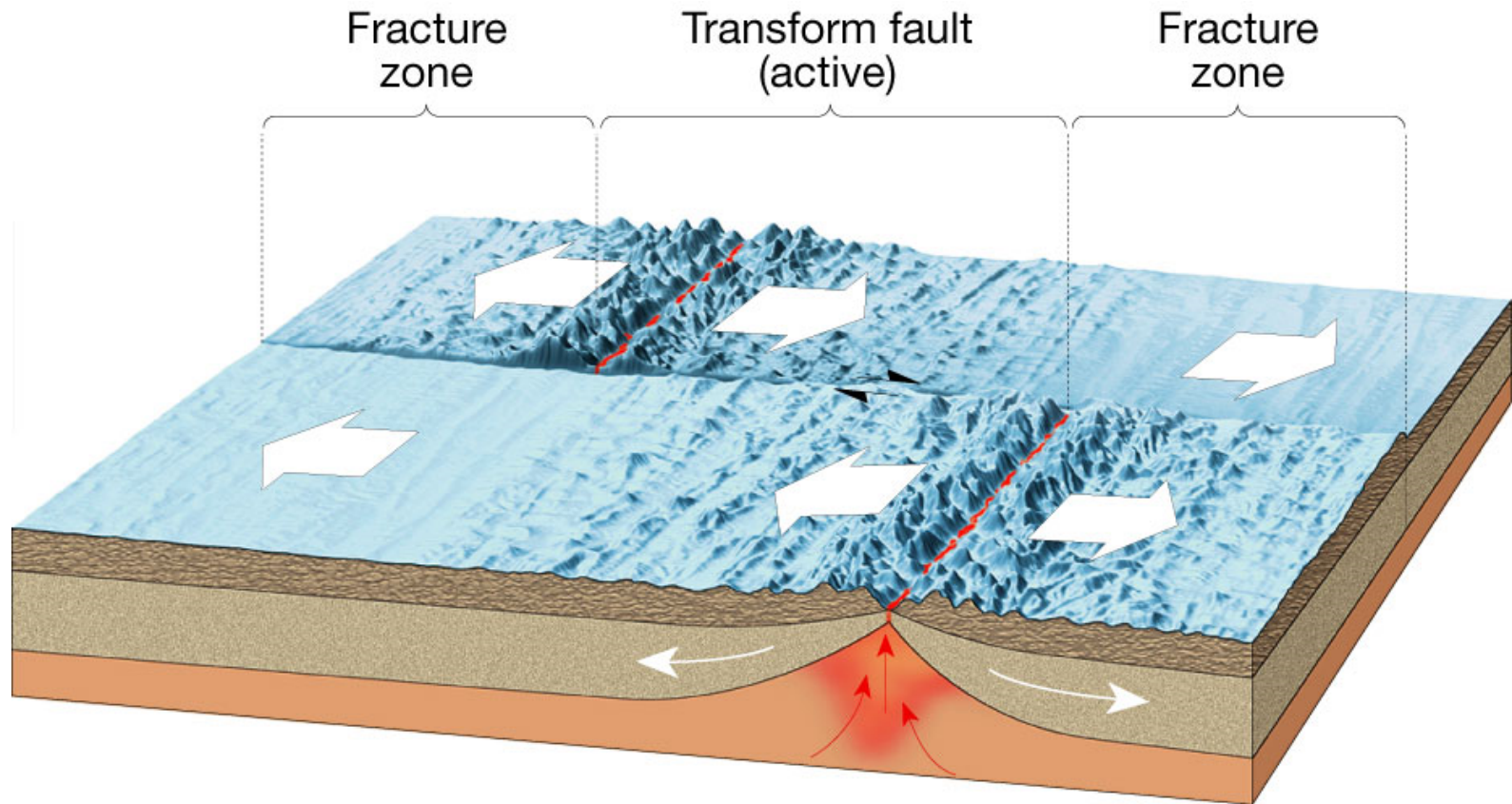
- ◆ At a transform fault boundary, plates grind past each other without destroying the lithosphere.
- ◆ Landform: Fault
- ◆ Real World Example: San Andreas Fault

# San Andreas Fault



# Transform Fault Boundary

Draw:



## 9.4 Testing Plate Tectonics

### ON THE BACK: Evidence for Plate Tectonics

#### Earthquake Patterns

- Scientists found a close link between deep-focus earthquakes and ocean trenches.
- The absence of deep-focus earthquakes along the oceanic ridge system was shown to be consistent with the new theory.