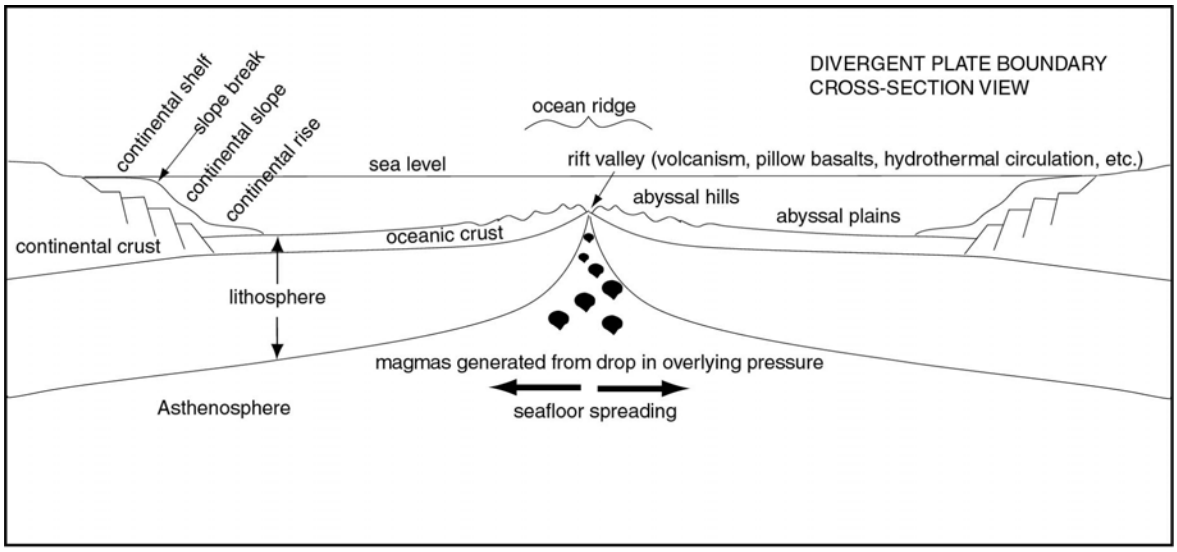
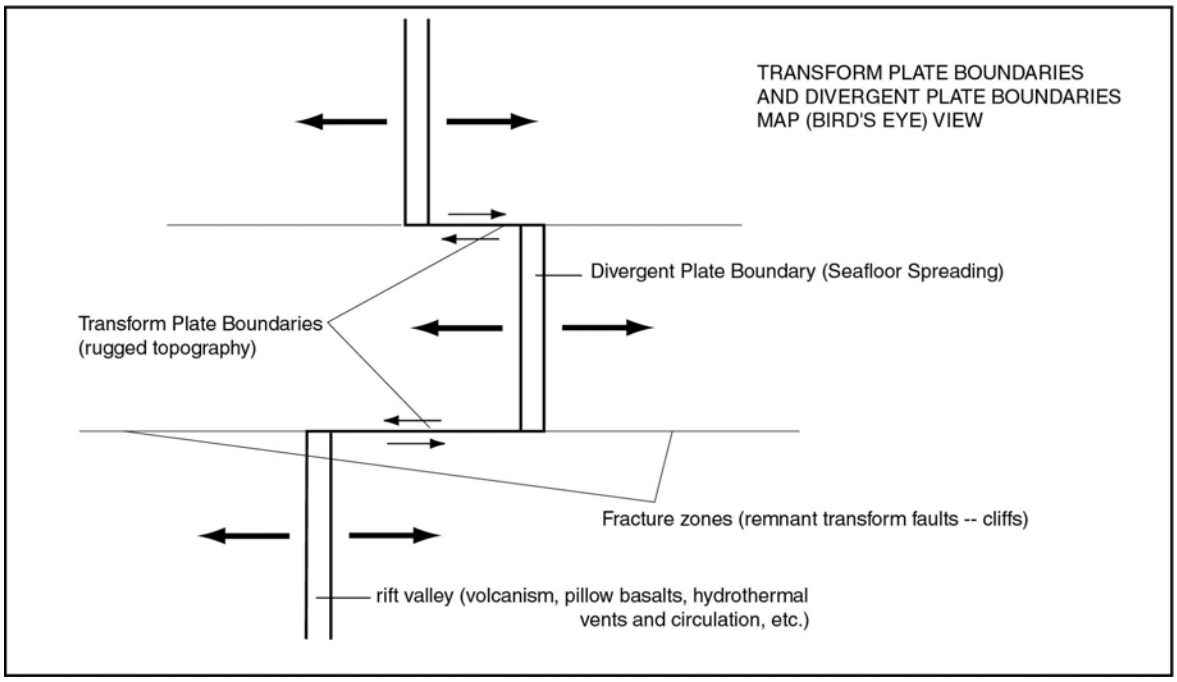
Plate Tectonics Summary





DIVERGENT

MOTION: Apart

FEATURES: Oceanic ridges. Seafloor spreading. Melted mantle rock due to reduced overlying pressure. Rift valleys with volcanism, pillow basalts, hydrothermal vents, and hydrothermal circulation. Serpentinites form at depth in mantle rocks that are undergoing hydrothermal alteration. Transform faults (associated with transform plate boundaries) break up divergent boundaries into small sections offset from one another.

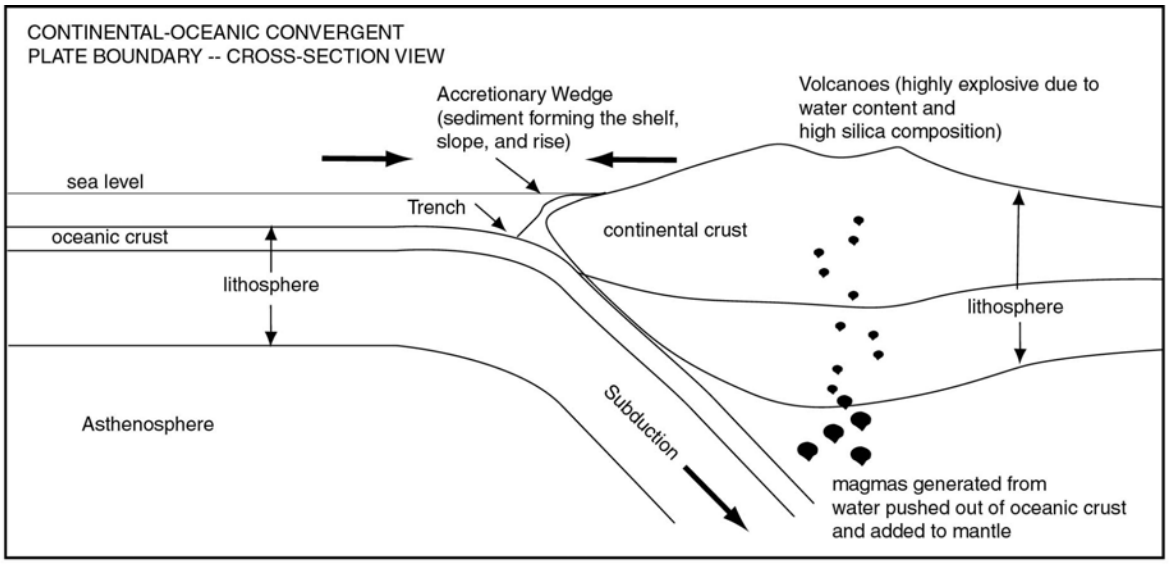
WORLD EXAMPLES: Mid-Atlantic Ridge, Iceland.

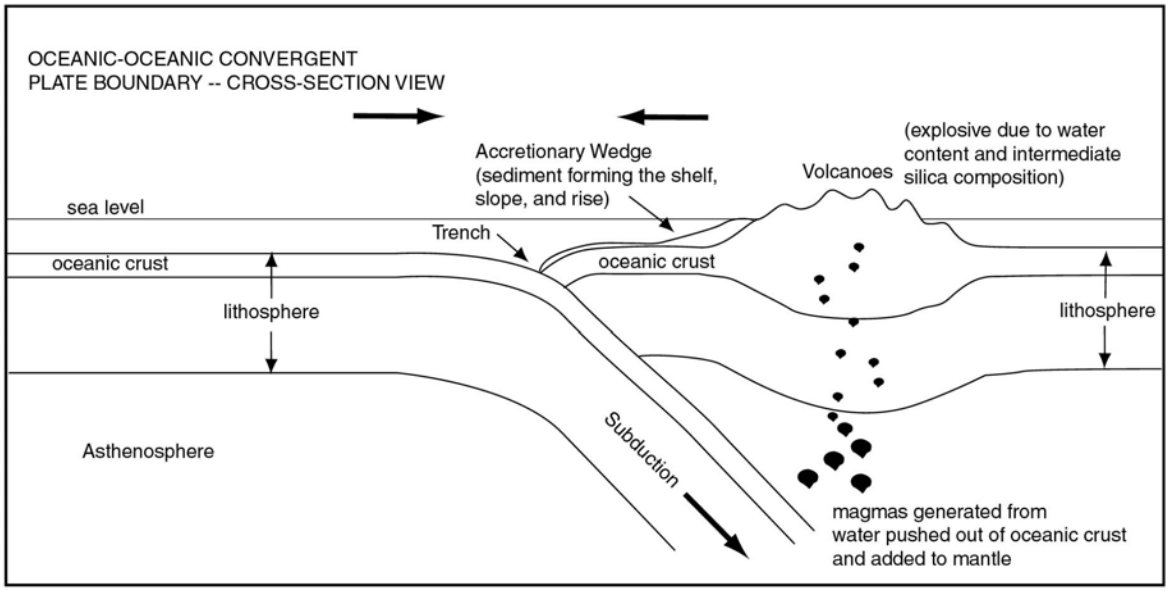
TRANSFORM

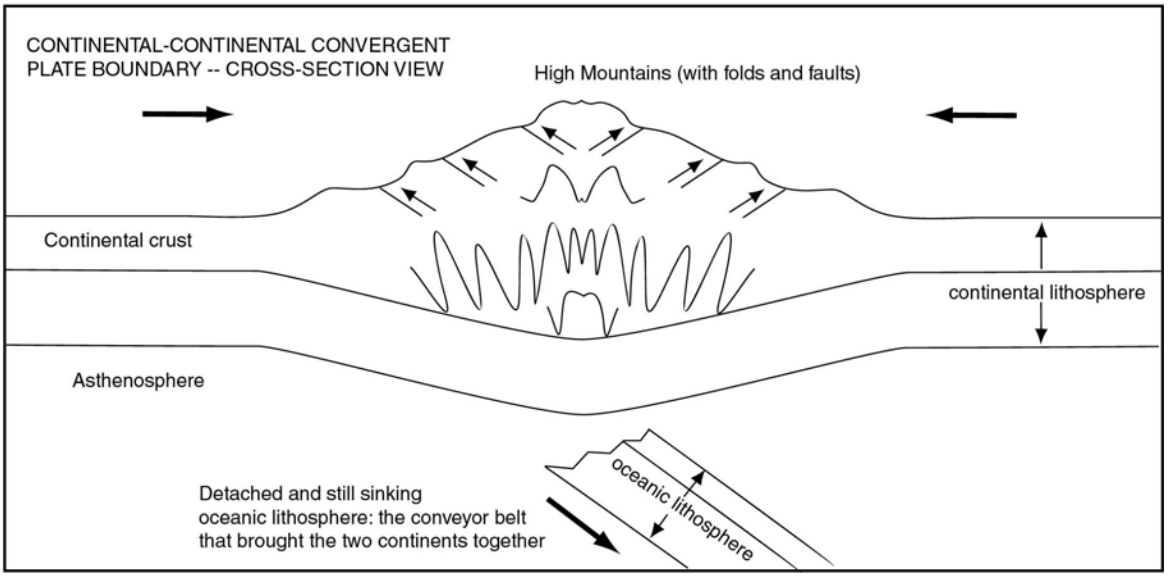
MOTION: side by side

FEATURES: Fracture zones (old transform faults, no longer active, because lithosphere on both sides are part of the same plate). Rough topography (cliffs where ridges offset. Oceanic ridges and spreading centers on both sides.

WORLD EXAMPLES: California, Iceland







CONVERGENT
MOTION:
Towards each other
FEATURES:

Continent-Ocean
Subduction zones (ocean crust sinks back into mantle). Melted mantle rock due to addition of water, which drops the melting point of the underlying mantle. Volcanoes above subduction zone where magmas move upward. Trenches on ocean floor where ocean crust begins subducting. Volcanism is granitic mostly, because it moves through thicker continental crust.
WORLD EXAMPLES:
W. coast S. America
Pacific Northwest

Ocean-Ocean
Subduction zones (ocean crust sinks back into mantle). Melted mantle rock due to addition of water, which drops the melting point of the underlying mantle. Volcanoes above subduction zone where magmas move upward. Trenches on ocean floor where ocean crust begins subducting. Volcanism is basaltic mostly, because it moves through thinner oceanic crust.
WORLD EXAMPLES:
Japan, Philippines,
Aleutian Islands

Continent-Continent
Fold and thrust mountains, thickened lithosphere.
WORLD EXAMPLES:
Himalayas (India)
Alps (Europe)