MARCH 17, 2017

Turn in Essay, Document Analysis, and Outline

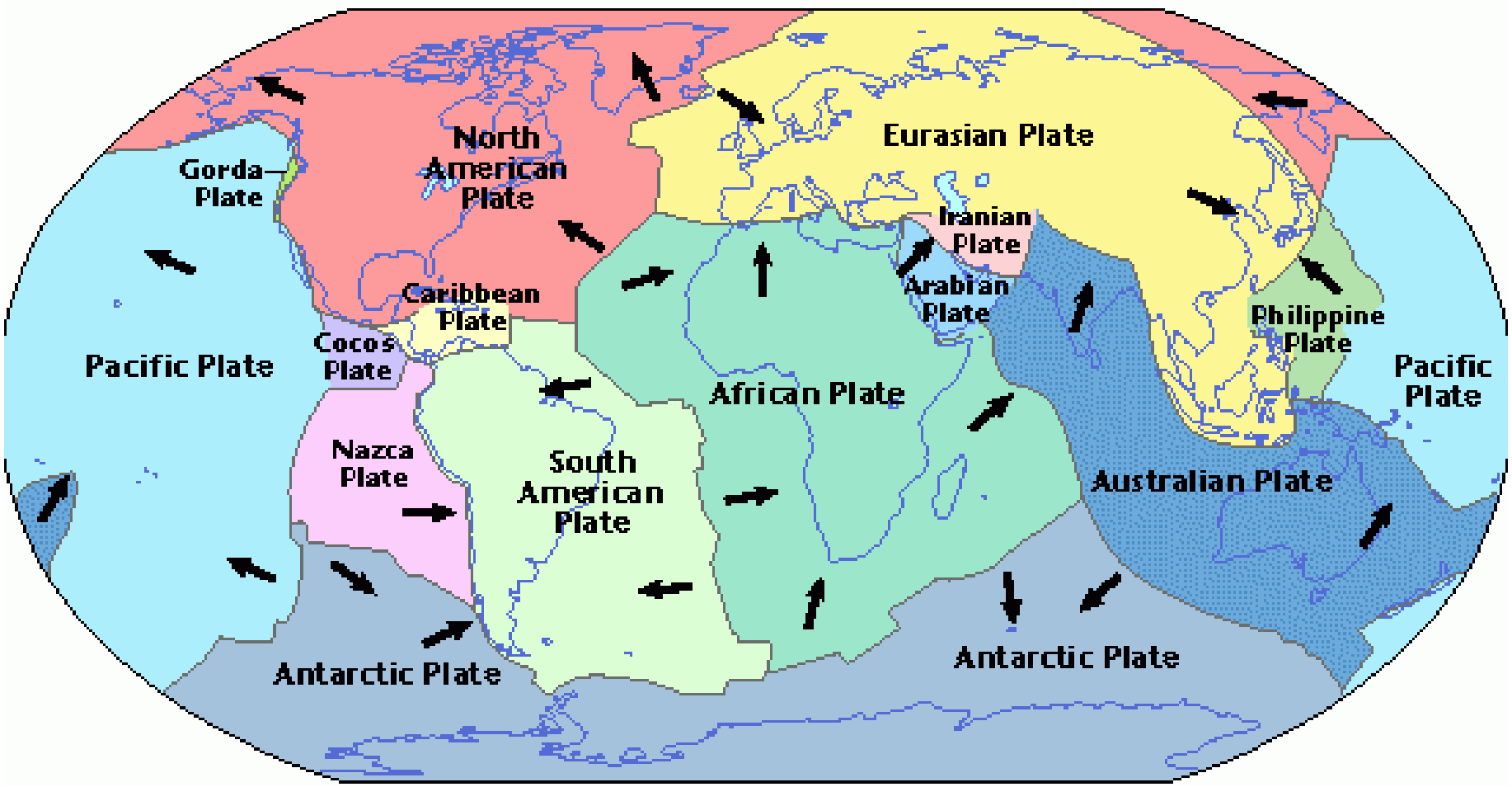
Essay must also be on Turnitin.com

Japan Geography and Plate Tectonics

Japan's Geographic Challenge

- https://www.youtube.com/watch?v=BhSeQxdJw1w&list=PLD985DC24042D71ED&index=18

Plate Tectonics



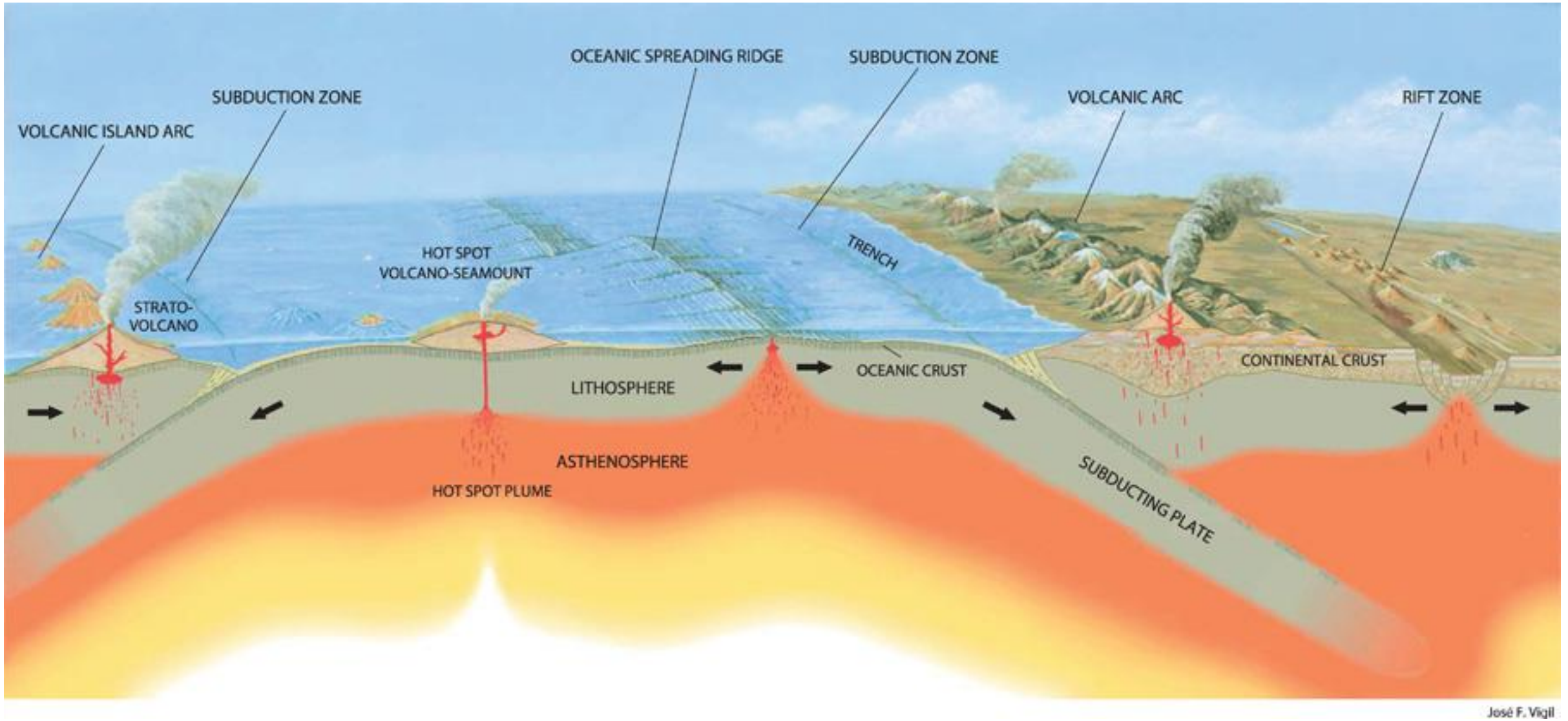
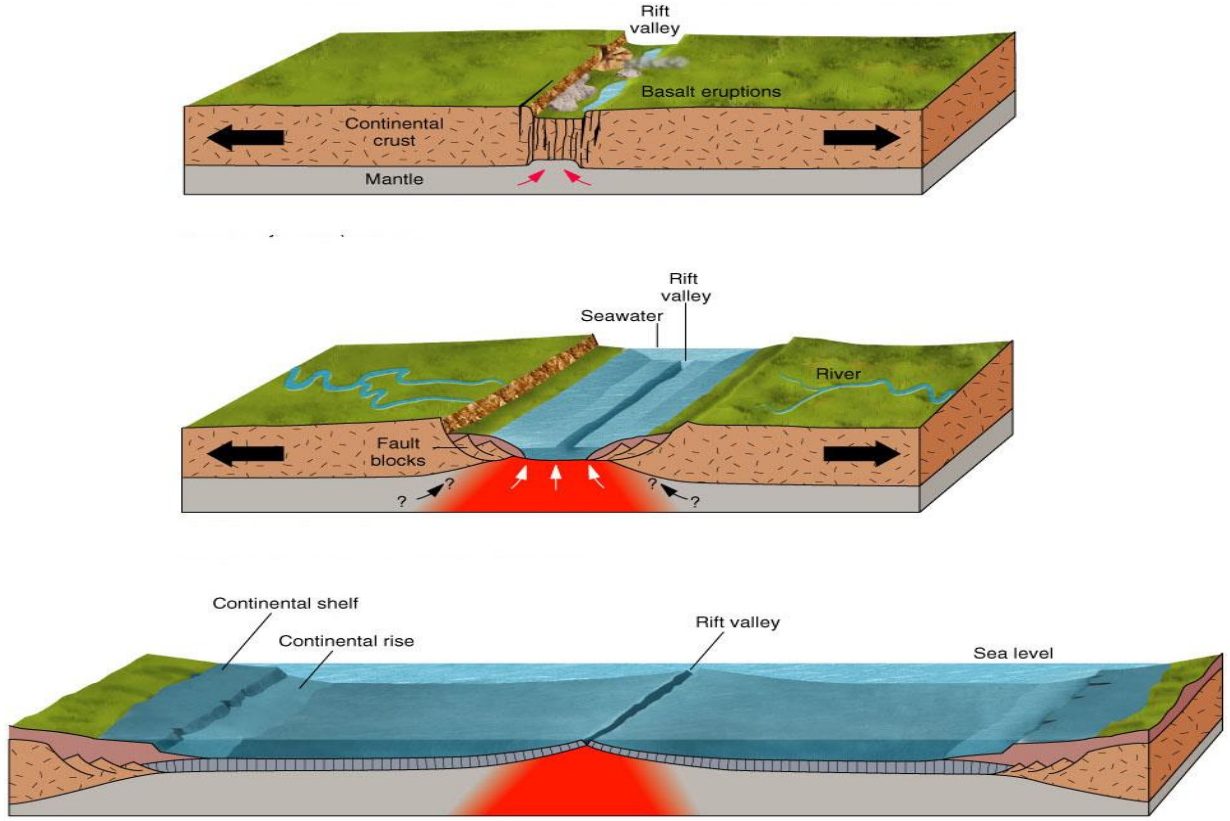
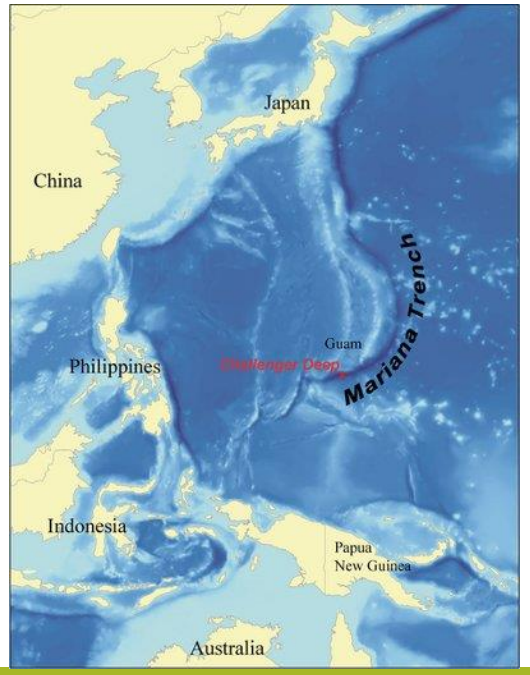

OCEANIC SPREADING RIDGE
SUBDUCTION ZONE
VOLCANIC ARC
RIFT ZONE
SUBDUCTION ZONE
VOLCANIC ISLAND ARC
HOT SPOT
VOLCANO-SEAMOUNT
TRENCH
STRATO-
VOLCANO
CONTINENTAL CRUST
OCEANIC CRUST
LITHOSPHERE
ASTHENOSPHERE
SUBDUCTING PLATE
HOT SPOT PLUME
José F. Vigil

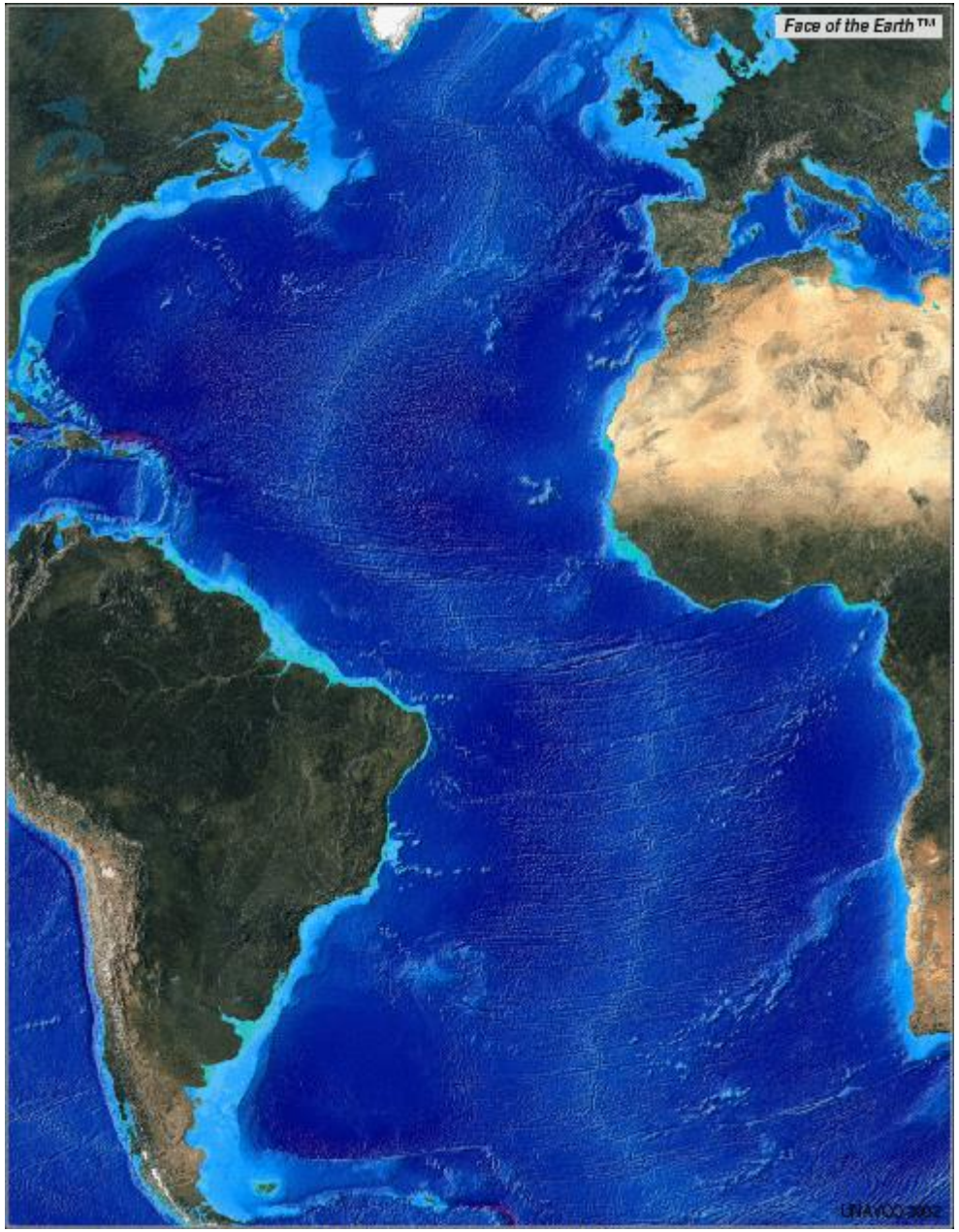
Plate Movements

- Divergent Boundary: Plates spread away from each other. Creates a rift where magma from the core spreads up
- Divergent = Divide



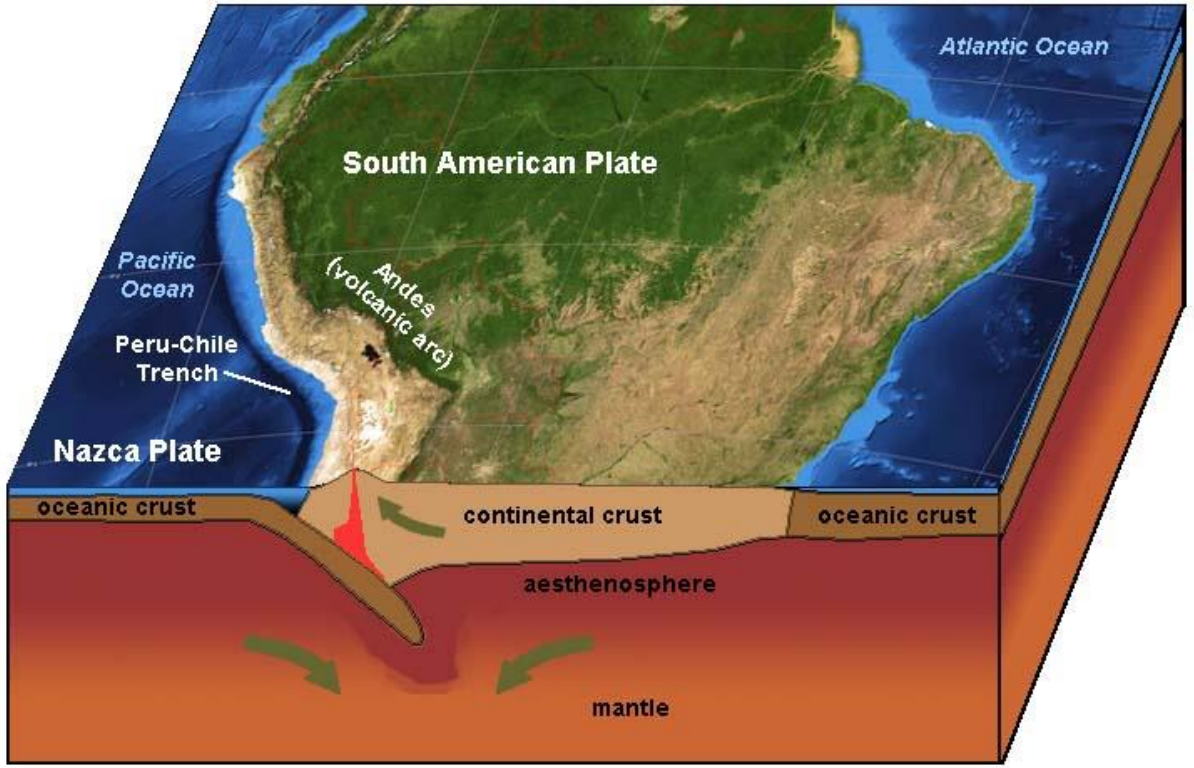
Divergent Boundary

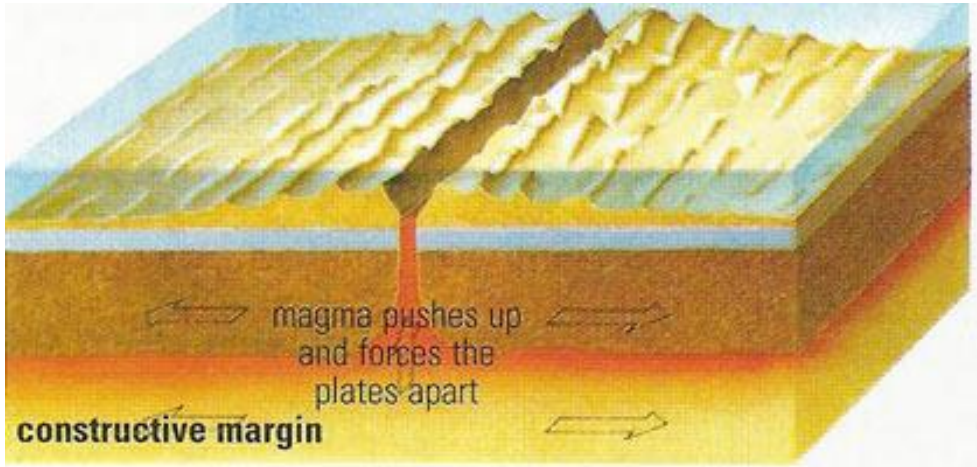


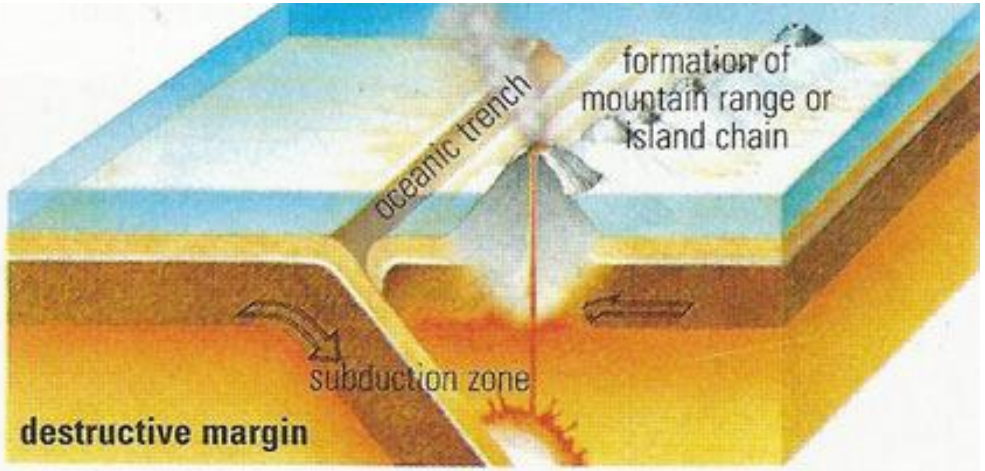


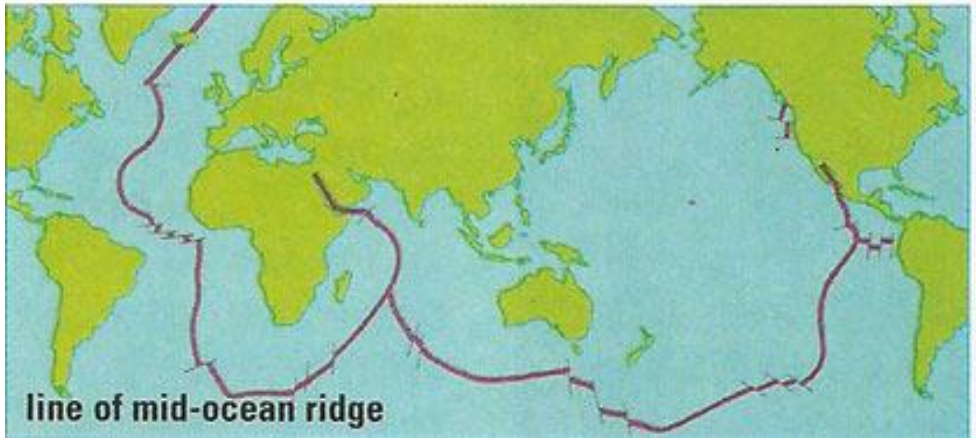
Convergent Boundary: When plates collide

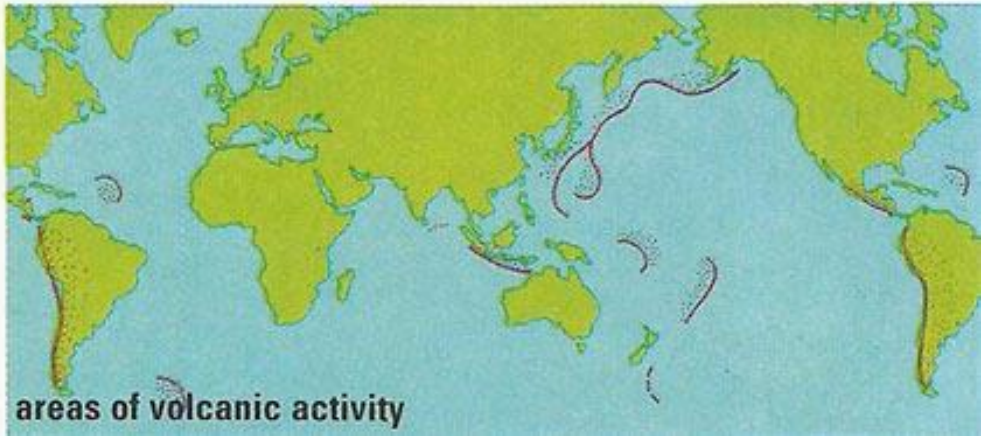
- Convergent- Subduction Boundary: When plates collide and one plate is forced under the other. As the bottom plate melts, magma rises and forms volcanoes.




magma pushes up
and forces the
plates apart
constructive margin

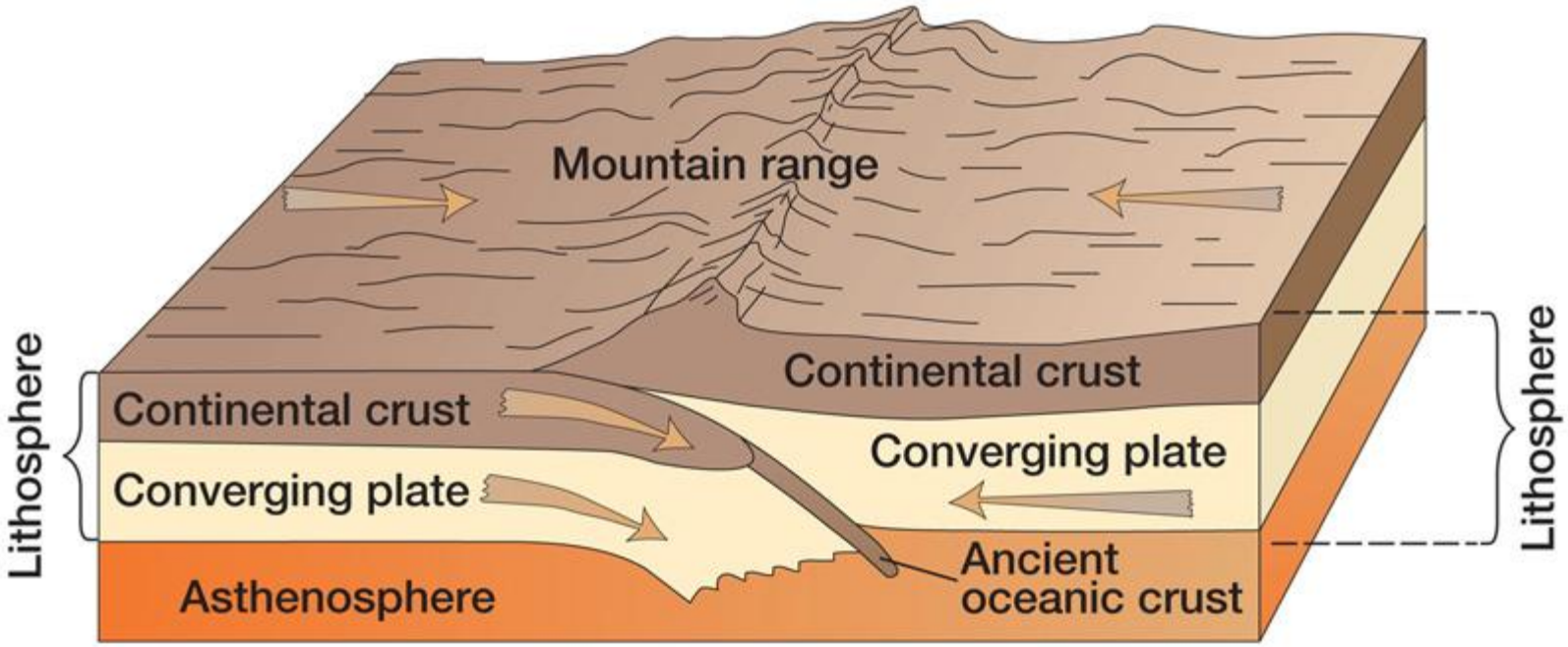

oceanic trench
formation of
mountain range or
island chain
subduction zone
destructive margin


line of mid-ocean ridge

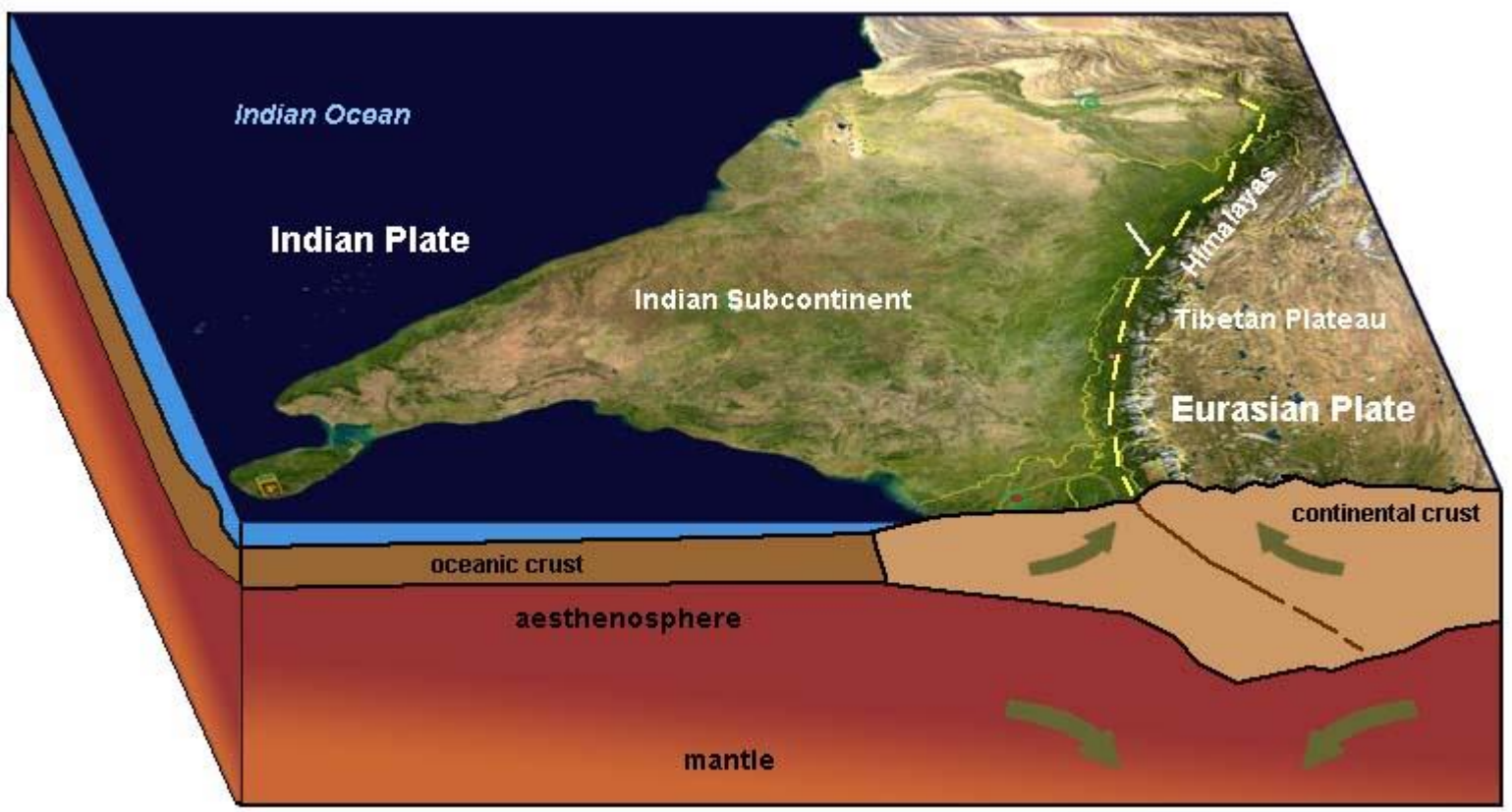

areas of volcanic activity

Convergent Boundary

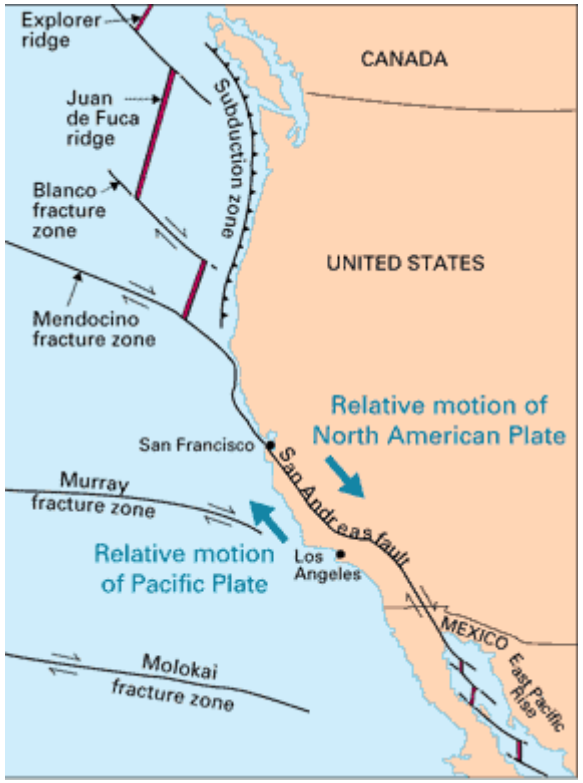
- Convergent-Collision Boundary: When plates collide and the plates buckle and fold
- creates mountain ridges



Convergent Collision



Transform Movement: When plates slide next to each other



Fault: fracture in the earth's crust

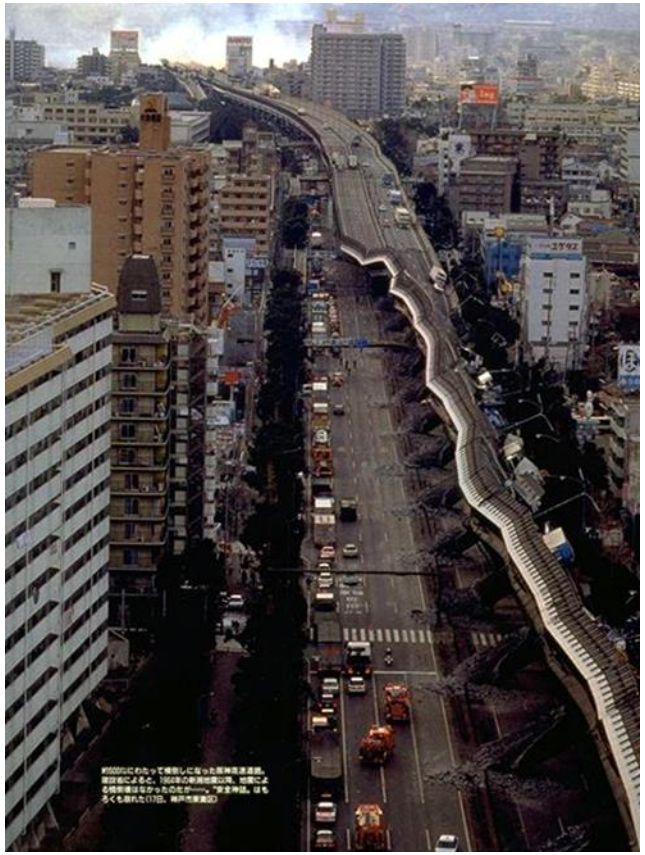
Ring of Fire: A zone around the rim of the Pacific Ocean with the majority of active volcanoes and earthquakes in the world

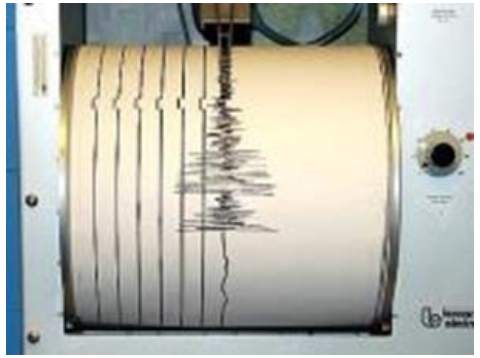
Earthquake

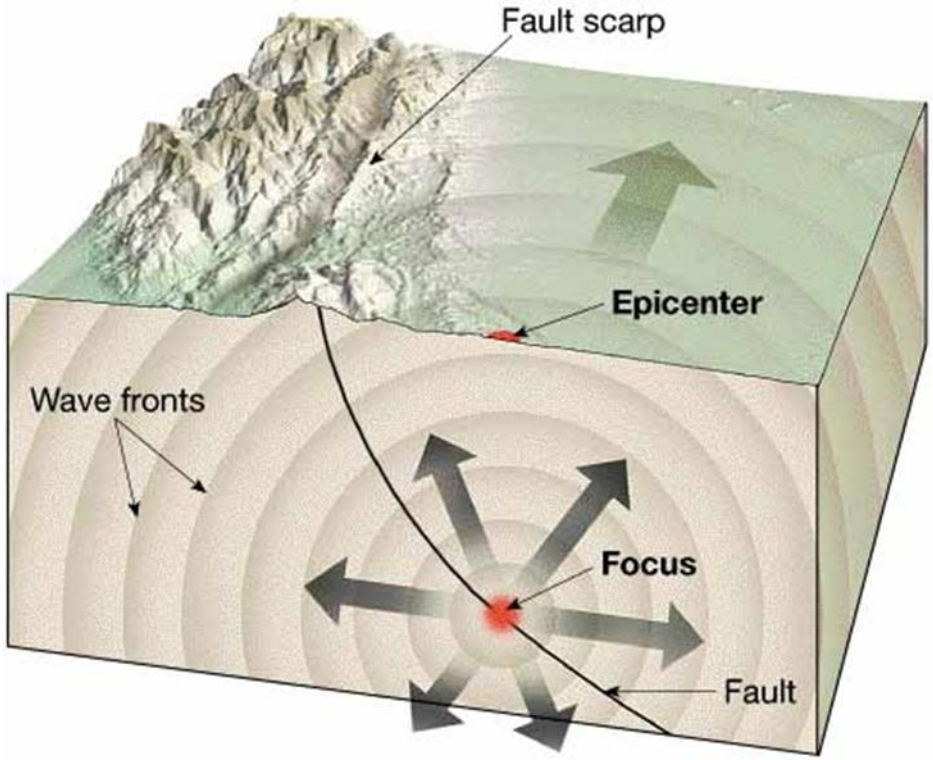
- Earthquake: Shaking causes by plates grinding against each other or colliding
- Epicenter: focus of earthquake
- Seismograph: device to detect earthquake
- Richter Scale: measures strength of earthquake

Description	Magnitude (Richter Scale)	Number Per Year	Approximate energy released (ergs)
Great Earthquake	over 8.0	1 to 2	$> 5.8 \times 10^{23}$
Major Earthquake	7.0 - 7.9	18	$2 - 42 \times \times 10^{22}$
Destructive Earthquake	6.0 - 6.9	120	$8 - 150 \times 10^{20}$
Damaging Earthquake	5.0 - 5.9	800	$3 - 55 \times 10^{19}$
Minor Earthquake	4.0 - 4.9	6,200	$1 - 20 \times 10^{18}$
Smallest Usually Felt	3.0 - 3.9	49,000	$4 - 72 \times 10^{16}$
Detected But Not Felt	2.0 - 2.9	300,000	$1 - 26 \times 10^{15}$

Table 4. Worldwide Earthquakes. *(Data from Table 10.1, Carla W. Montgomery, "Fundamentals of Geology," Wm. C. Brown, 1993 -- original data taken from Gutenberg and Richter, "Seismicity of the Earth and Associated Phenomena," Princeton University Press, 1954.)*

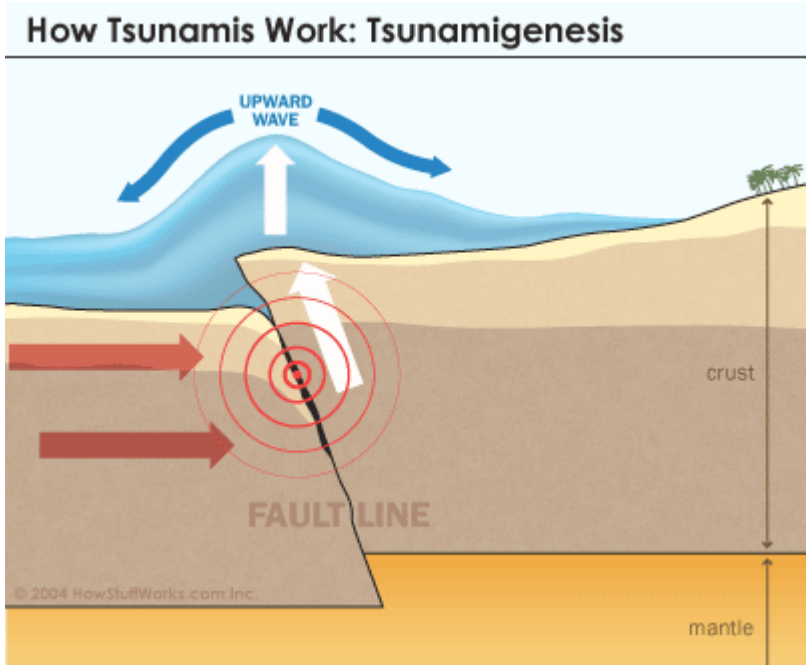


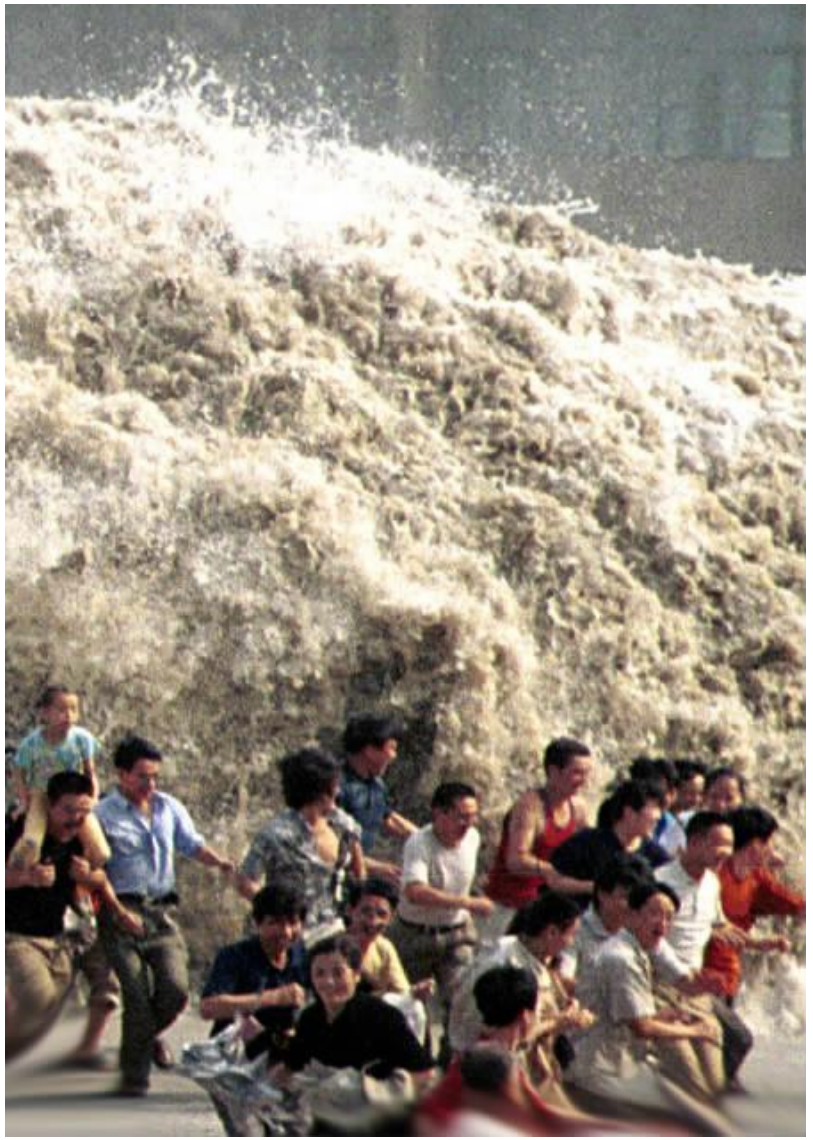



Fault scarp
Epicenter
Wave fronts
Focus
Fault

Tsunami

- Large wave caused by an earthquake

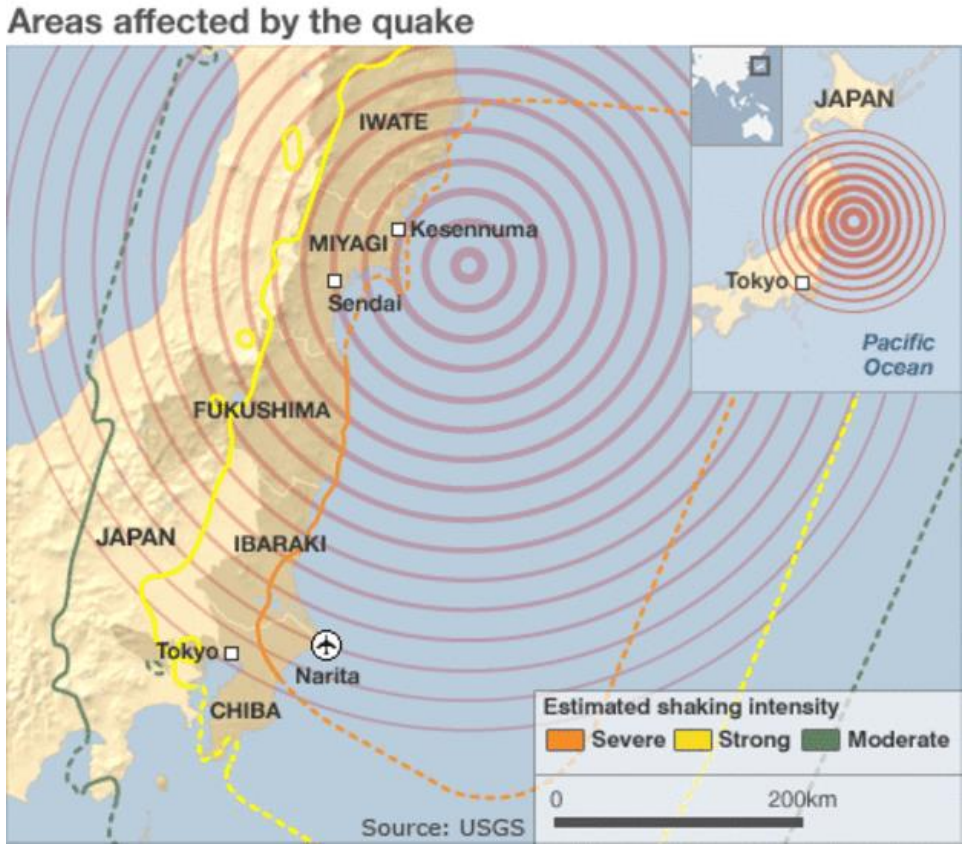




Japanese Tohoku Tsunami March 11, 2011

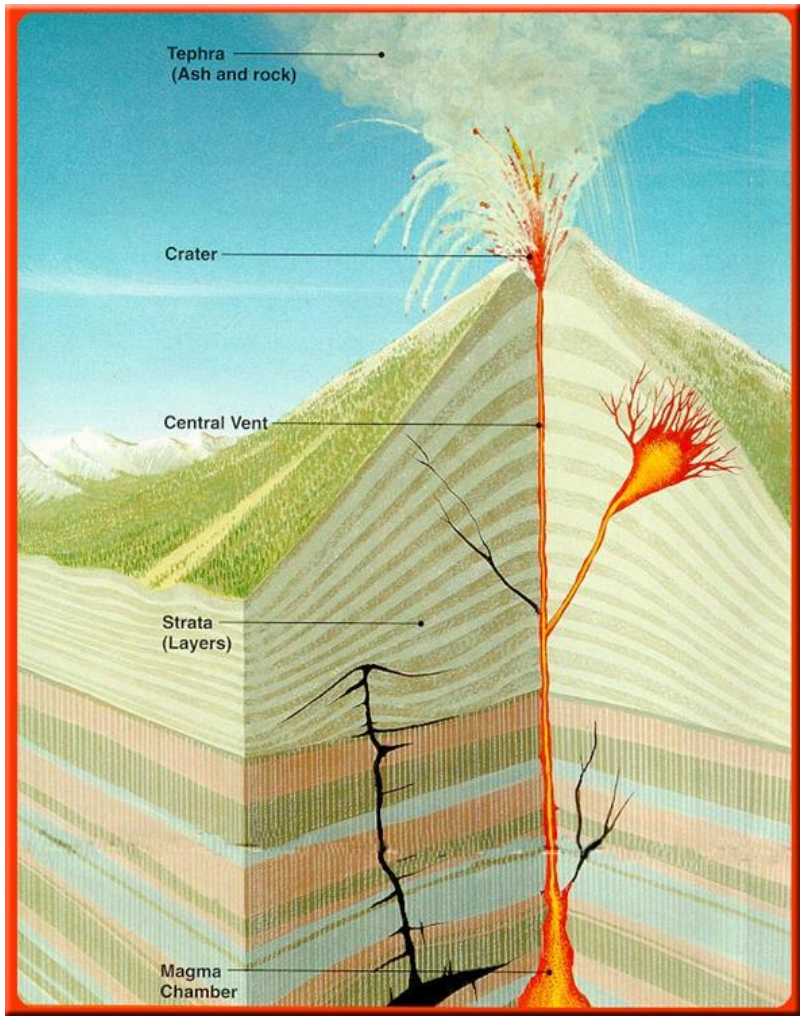
- 9.0 Earthquake off coast of Japan

Japanese Tohoku Tsunami
March 11, 2011

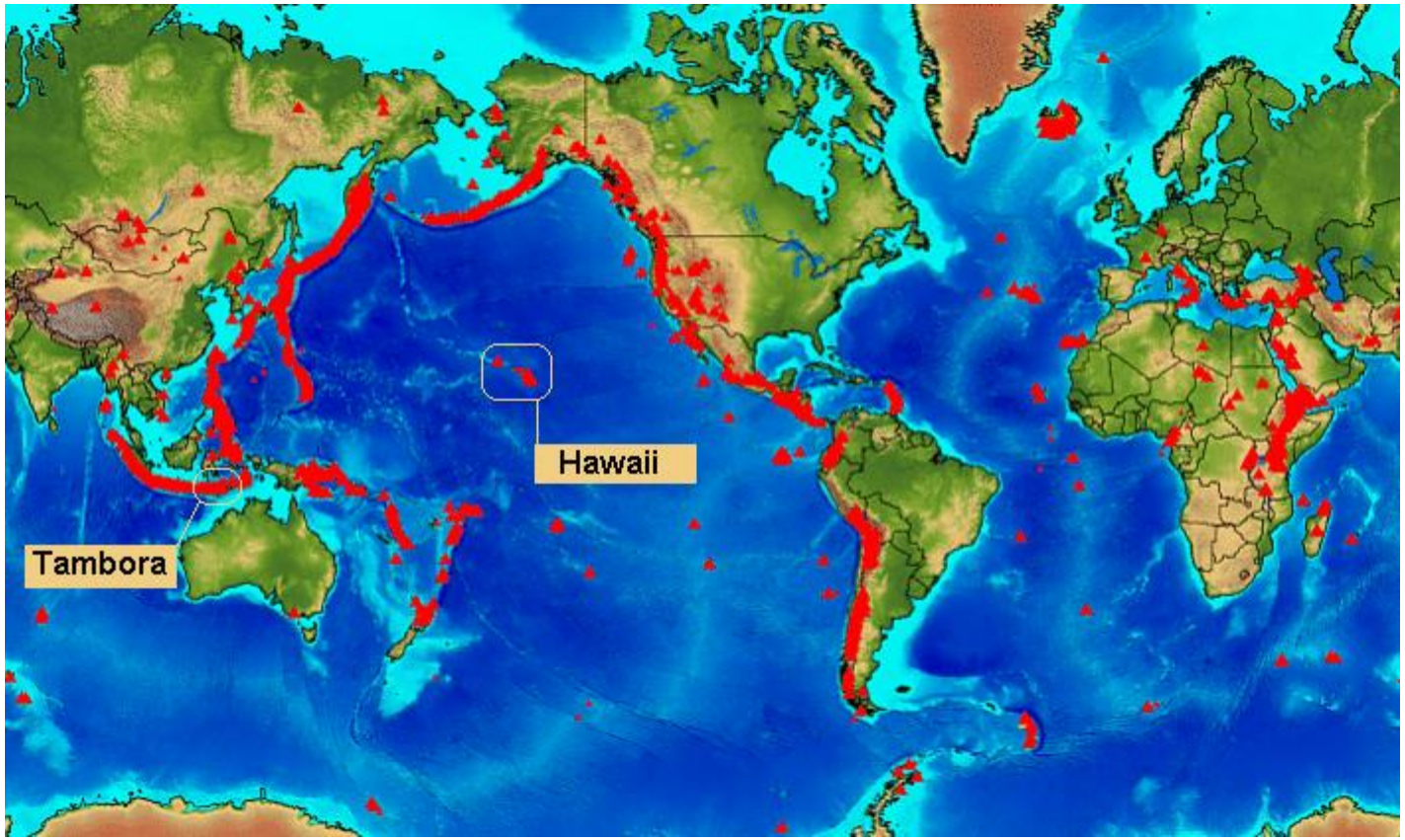


Volcanoes

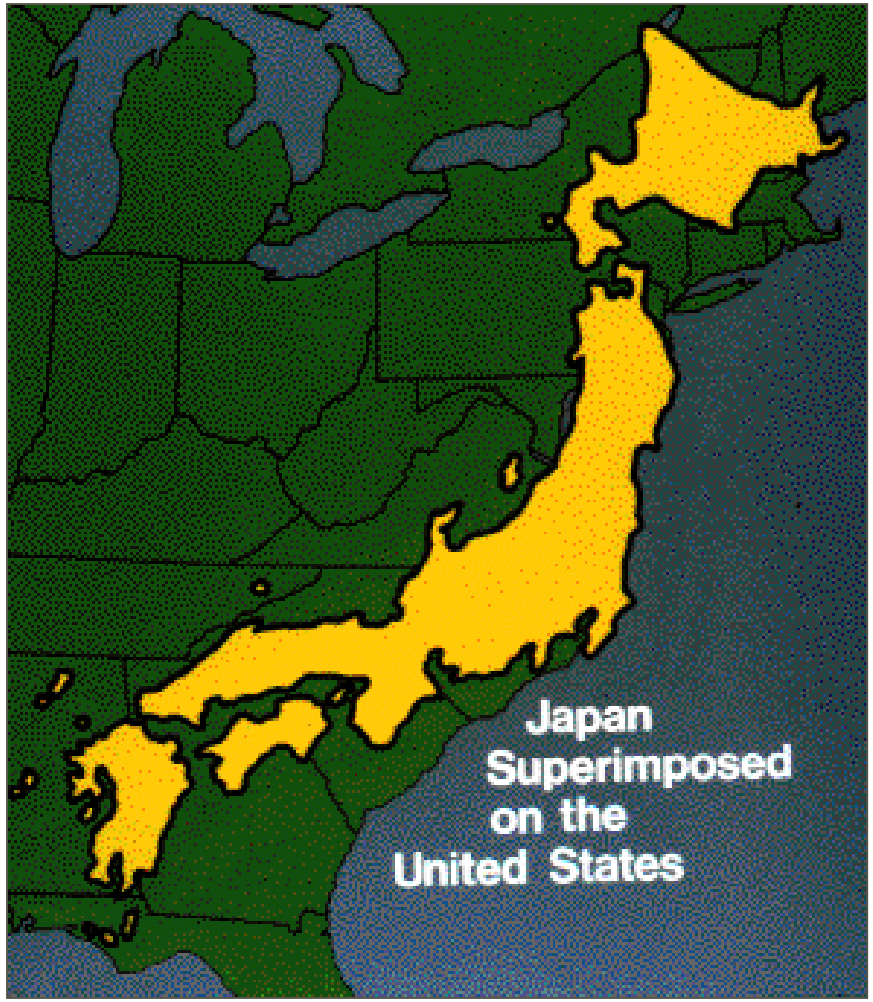
- Magma seeps up through cracks in the surface
- Found along plate boundaries



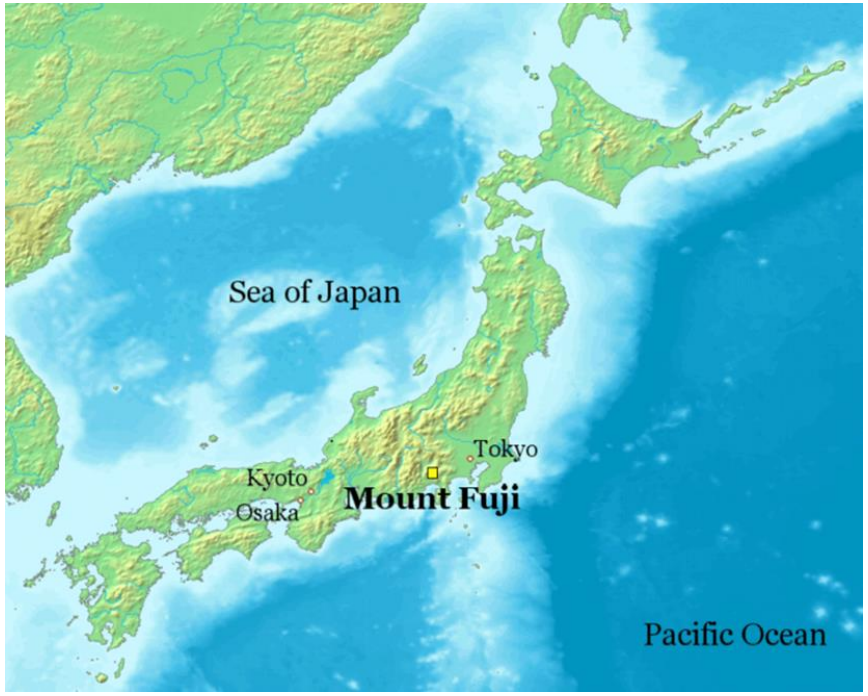
Active Volcanoes in the World



Japan and the United States



Japan: Physical Geography

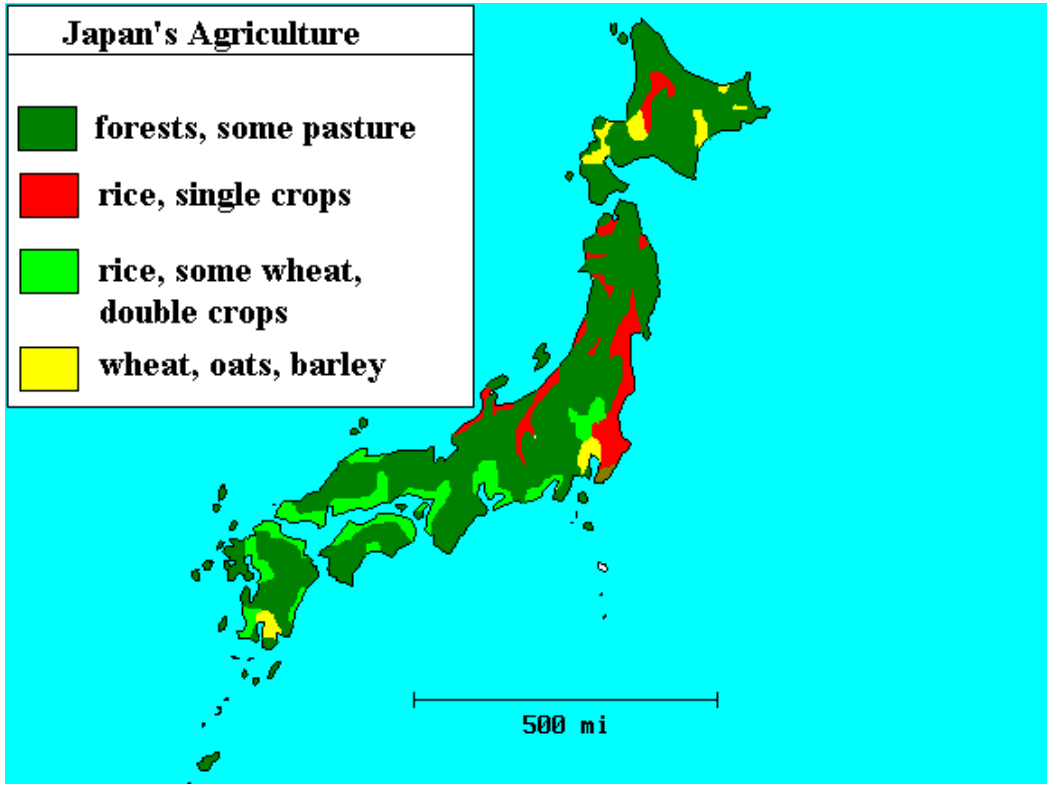


- The homeland of Japan consists of four main islands: Hokkaido, Honshu, Shikoku, and Kyushu, and several hundred smaller islands.
- Mainly mountains separated by narrow valleys.
- Part of the Pacific "Ring of Fire."
  - There are about 60 volcanoes in Japan
- Japan is subject to frequent and powerful earthquakes.

Japan

- Physical constraints
  - 16% of the land is habitable.
    - Efficient management of existing agricultural land.

Japanese Terrain

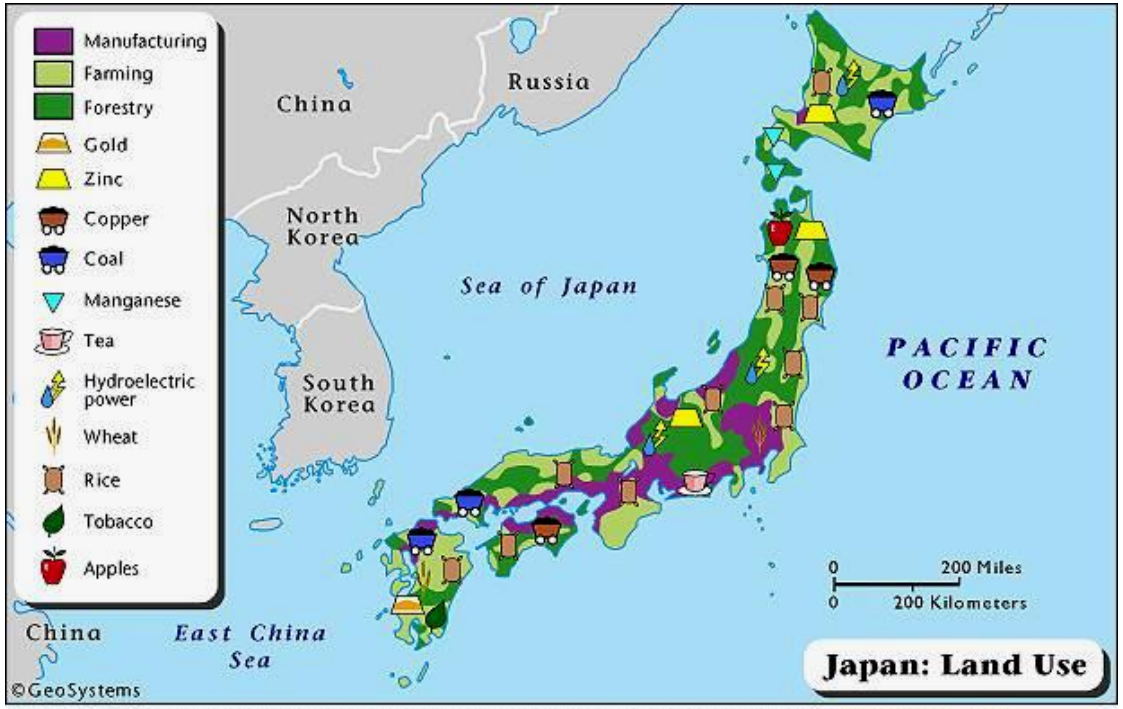


Mount Fuji

Largest mountain in Japan. Last erupted in 1707

Natural Resources

- Lacking many natural resources
  - Forced to trade with other nations
  - Led to imperialism in past
- Terrain is mostly forest
- Most food comes from sea due to lack of arable land



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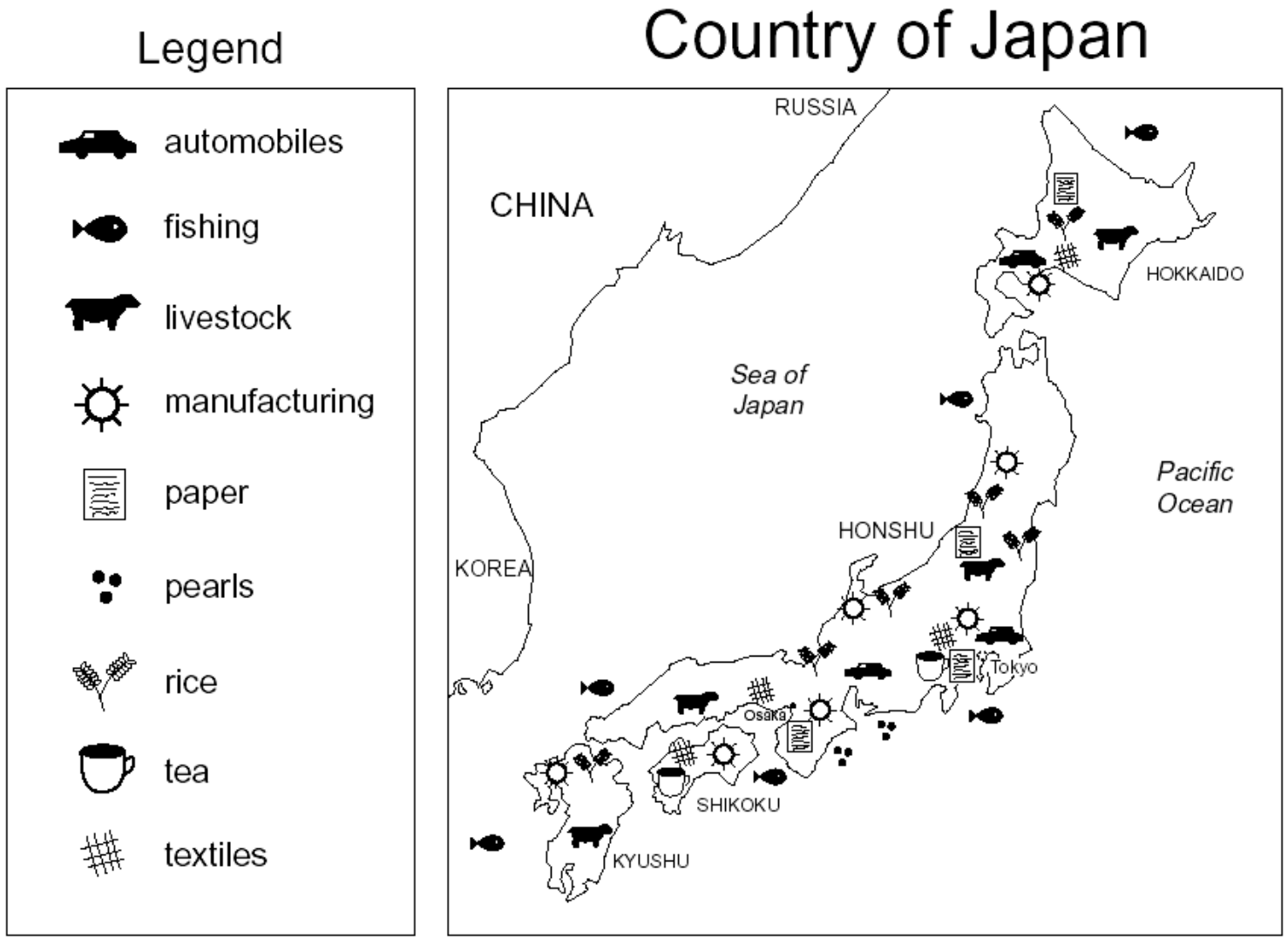
Industry


Legend
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livestock
manufacturing
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pearls
rice
tea
textiles
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