8-3.7 Mountain Building & Faults Notes

Falcon Focus

- 8-1.6 The standard metric unit of volume used in a science lab is…
- a. Celsius
- b. Gram
- c. Liter
- d. Meter

Essential Question

- How would you create an illustration that depicts the movement of the different types of faults? (Include Arrows)

Homework

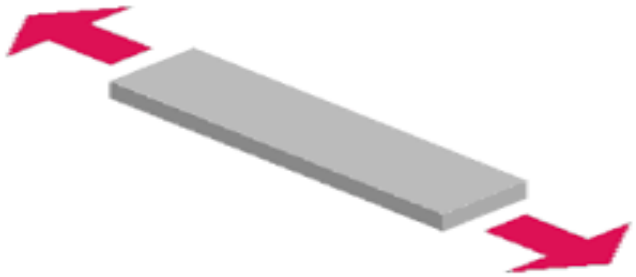
- **HOMEWORK SHOULD BE DONE ON ANOTHER SHEET OF PAPER TO TURN IN.**
- **1ST: INCLUDE THE FOLLOWING WORDS IN YOUR GLOSSARY:** forces/stresses, tension force, compression force, shearing force, folded mountains, faults, fault-block mountains, normal fault, reverse fault, and strike-slip fault (10 words)
- 2nd: **REDRAW AND COMPLETE THE FOLLOWING CHART ON YOUR OWN SHEET OF PAPER.**

Mountain-building forces

- There are 3 types of forces: tension, compression, and shearing
- WHAT IS ANOTHER NAME FOR FORCES? STRESSES
- WHAT ARE FORCES OR STRESSES? Forces or stresses cause rocks to break or move.

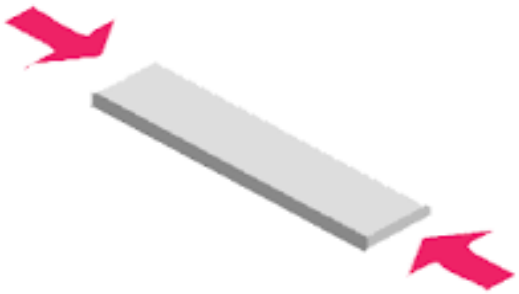
TENSION FORCE/STRESS

- ***Tension***—forces that **pull rocks apart** OR **DIVIDE** (this force happens during a **Divergen**t Boundary)



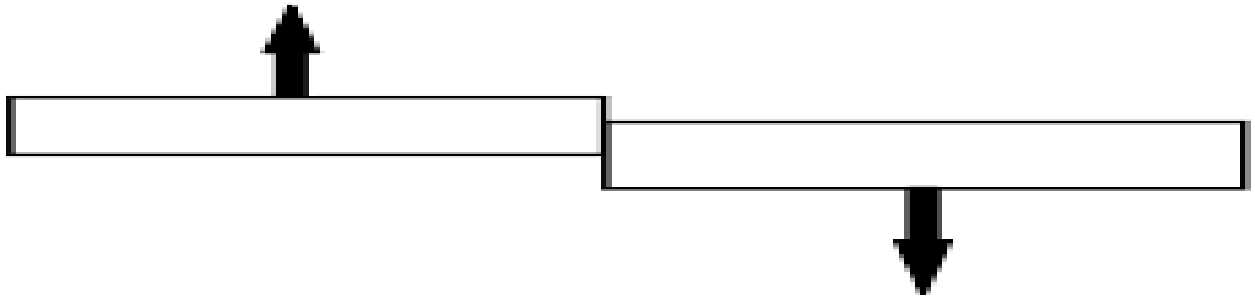
COMPRESSION FORCE/STRESS

- ***Compression***—forces that **push or squeeze rocks together** OR **COLLIDE** (this force happens during a **Convergent** Boundary)



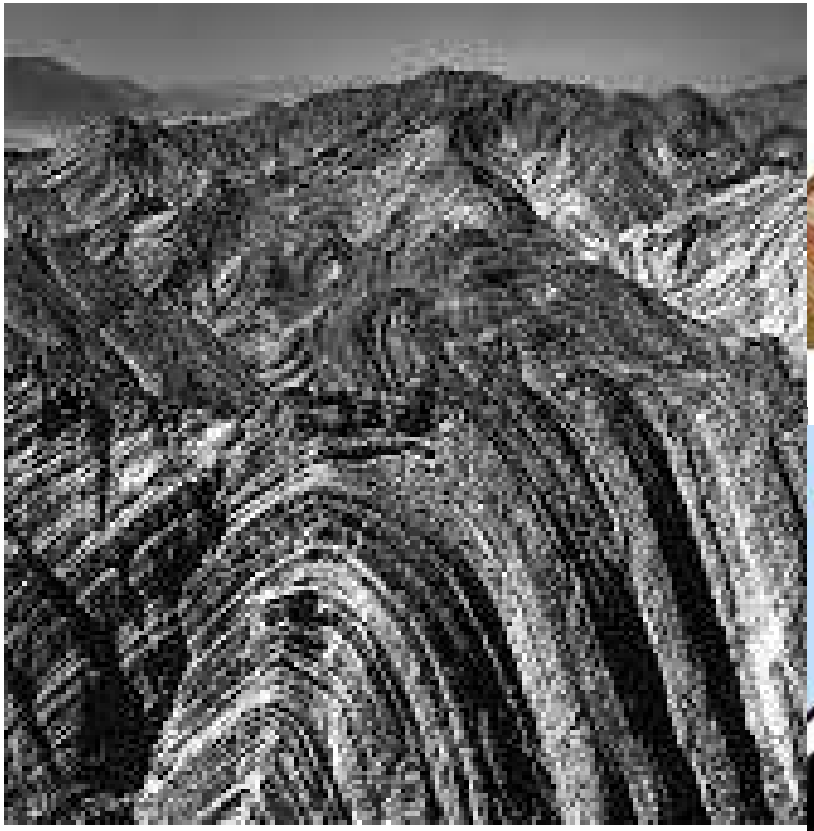
SHEARING FORCE/STRESS

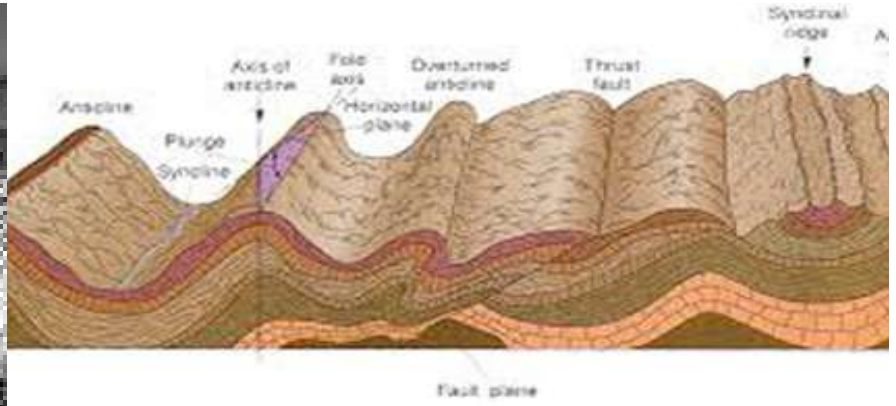
- ***Shearing***—forces that **cause rocks on either side of faults to push in opposite direction or SLIDE PAST EACH OTHER** (this force happens during a **Transform** Boundary)



- **Forces or stresses (for example, *tension* and *compression*) on rocks in the lithosphere can cause them to bend and stretch.**
  - This **bending and stretching** can produce **mountain ranges.**
  - If pressure is applied slowly, ***folded mountains* form**. (images of **Folded Mountains** are below)

FOLDED MOUNTAINS





FAULTS

- **Forces or stresses (for example, *tension*, *compression*, or *shearing*) can become great enough to cause rocks to break and create *faults*.**
- **WHAT ARE FAULTS? FAULTS** are places **in Earth crust where the rocks break** or **a break in the Earth's Crust.**

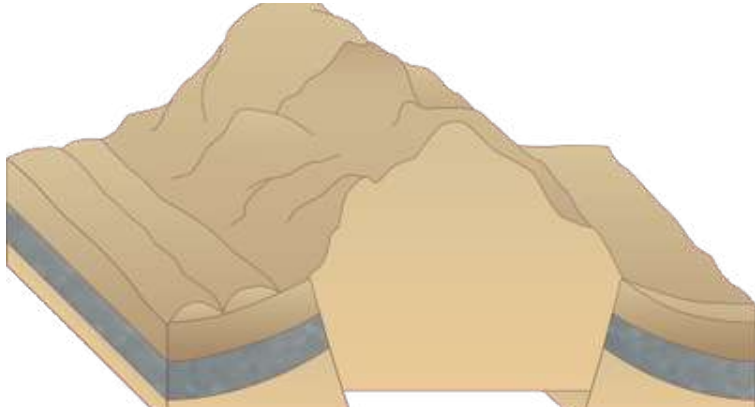
3 TYPES OF FAULTS

- **THERE ARE 3 TYPES OF FAULTS** (Faults are also named according to how they break)
- **NORAMAL FAULT**
- **REVERSE FAULT** (OPPOSITE OF NORMAL FAULT)
- **STRIKE-SLIP FAULT**

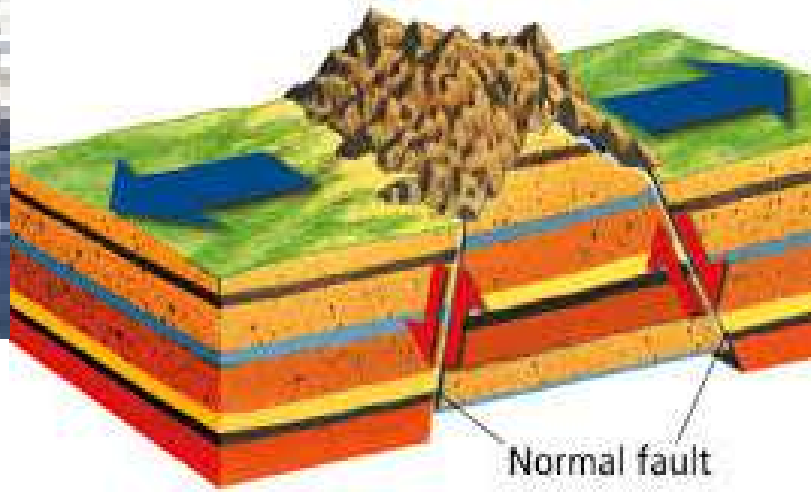
FAULT-BLOCK MOUNTAINS

- **If normal faults uplift a block of rock**, a ***fault-block mountain*** forms (IMAGE BELOW): **Fault-Block Mountains forms when tension causes large blocks of the Earth's crust to drop down relative to other blocks.**

FAULT-BLOCK MOUNTAINS

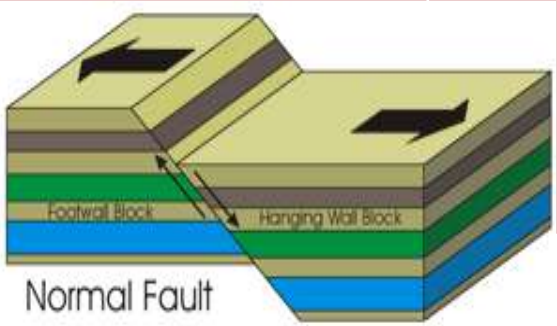


Fault-Block Mountain

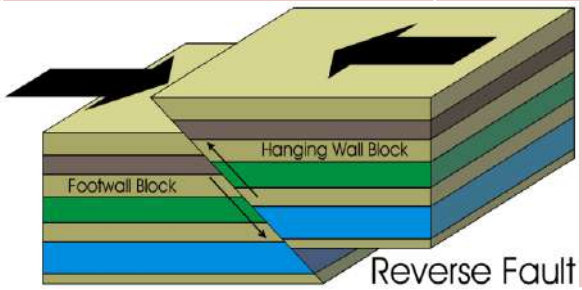


3 TYPES OF FAULT CHART

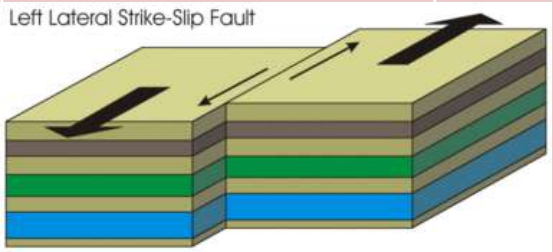
NORMAL FAULT

FAULT	DEFINITYION	PICTURE	BOUNDARY IT BELONGS TO
NORMAL	In a **normal fault**, the block above the fault **on the right** moves **down** and is caused by **tension** forces.		**DIVERGENT BOUNDARY**

REVERSE FAULT

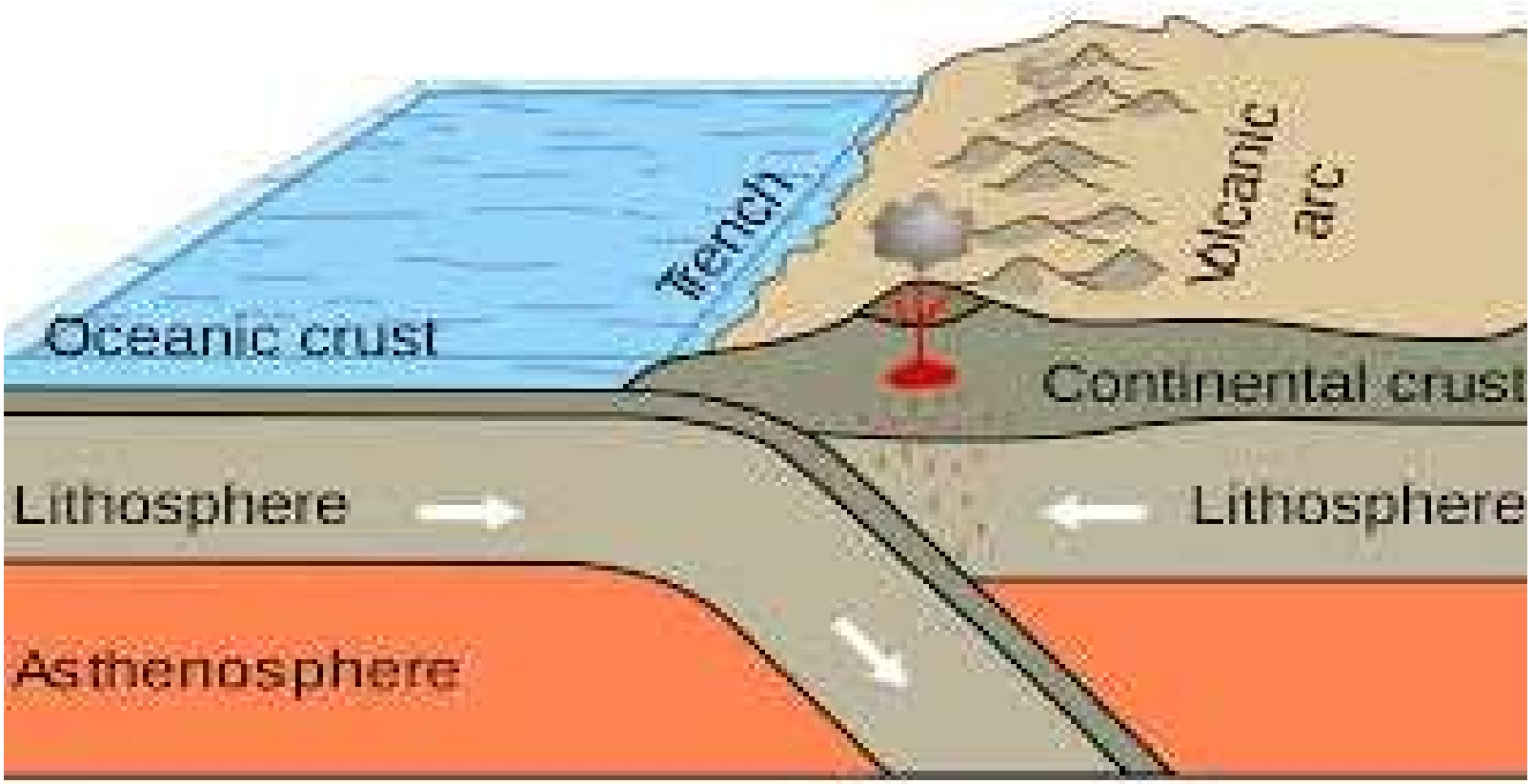
FAULT	DEFINITYION	PICTURE	BOUNDARY IT BELONGS TO
REVERSE	In a **reverse fault**, the block above the fault **on the right** moves **up** and is caused by **compression** forces.		**CONVERGENT BOUNDARY**

STRIKE-SLIP FAULT

FAULT	DEFINITYION	PICTURE	BOUNDARY IT BELONGS TO
STRIKE-SLIP	In a **strike-slip fault**, the movement of blocks along a fault is **horizontal or side by side** and is caused by **shearing** forces		**STRIKE-SLIP BOUNDARY**

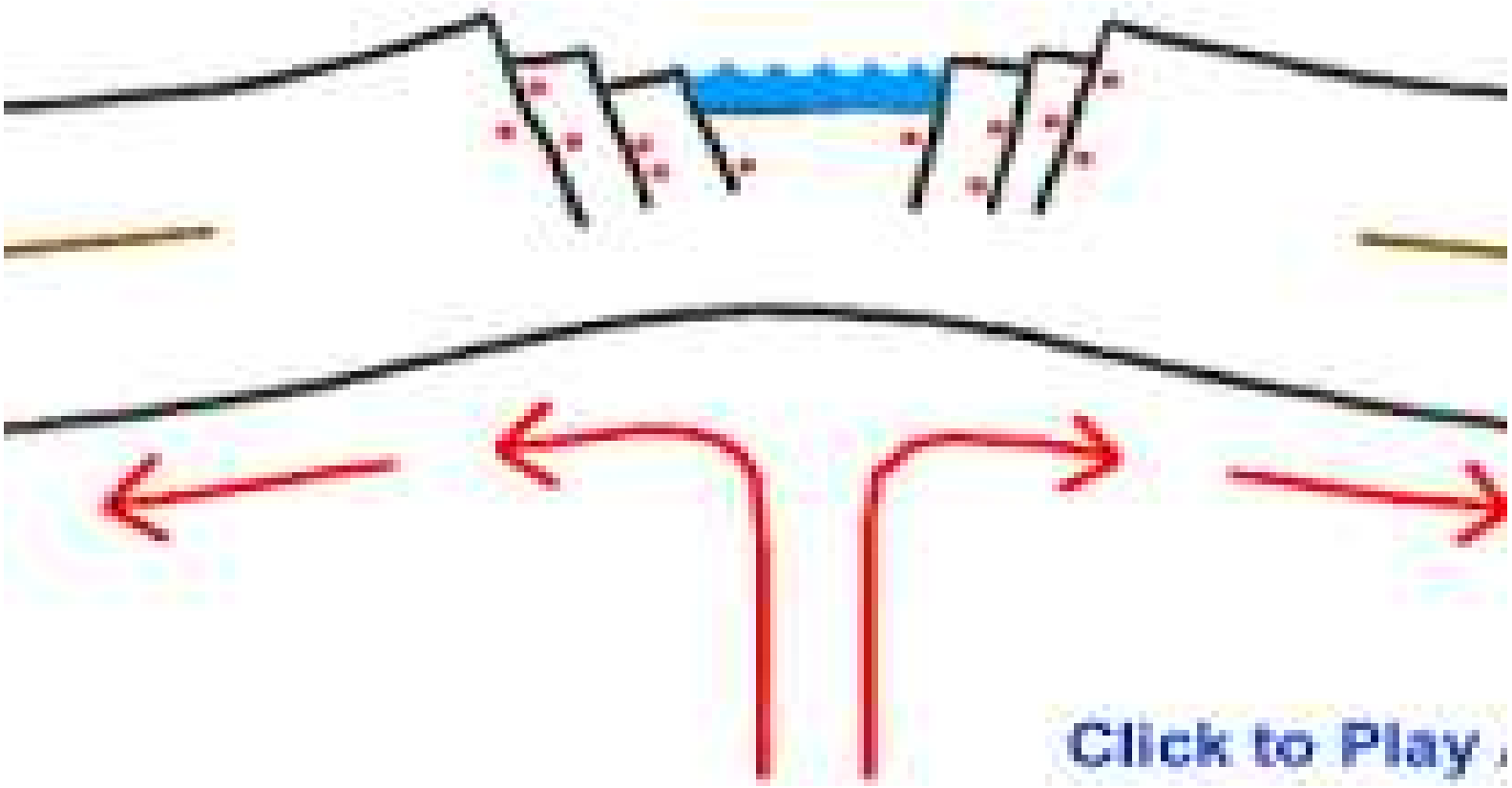
REVIEW TIME/CLOSURE: GUESS THAT BOUNDARY, FAULT, OR FORCE

YOU WILL GUESS THE BOUNDARAY, FAULT, AND FORCE OF EAHC PICTURE YOU SEE AND EXPLAIN YOUR ANSWER


Trench
Volcanic arc
Oceanic crust
Continental crust
Lithosphere
Lithosphere
Asthenosphere

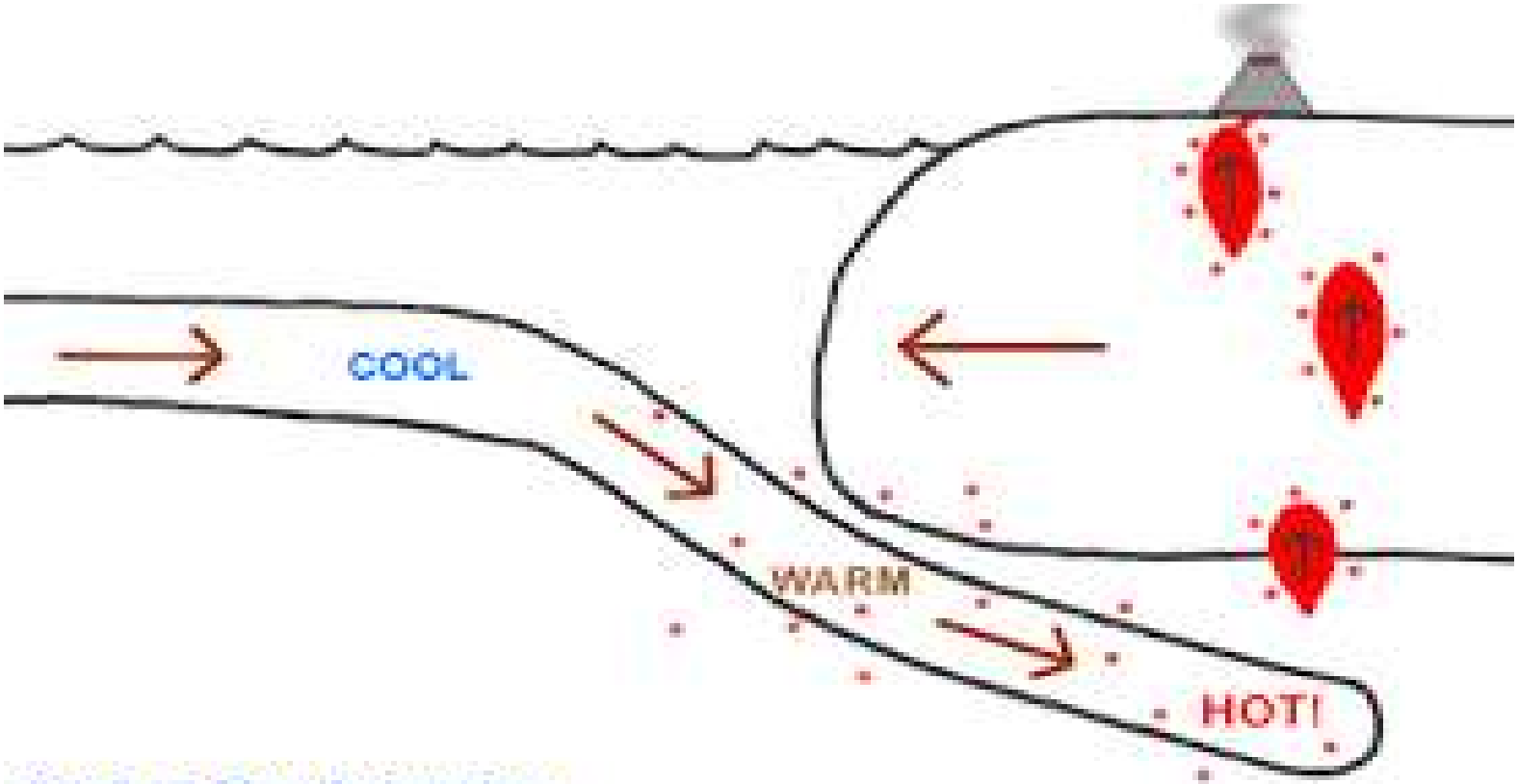
CONVERGENT/COMPRESSION FORCE/ REVERSE FAULT

- BECAUSE OF THE SUBDUCTION ZONE


Click to Play

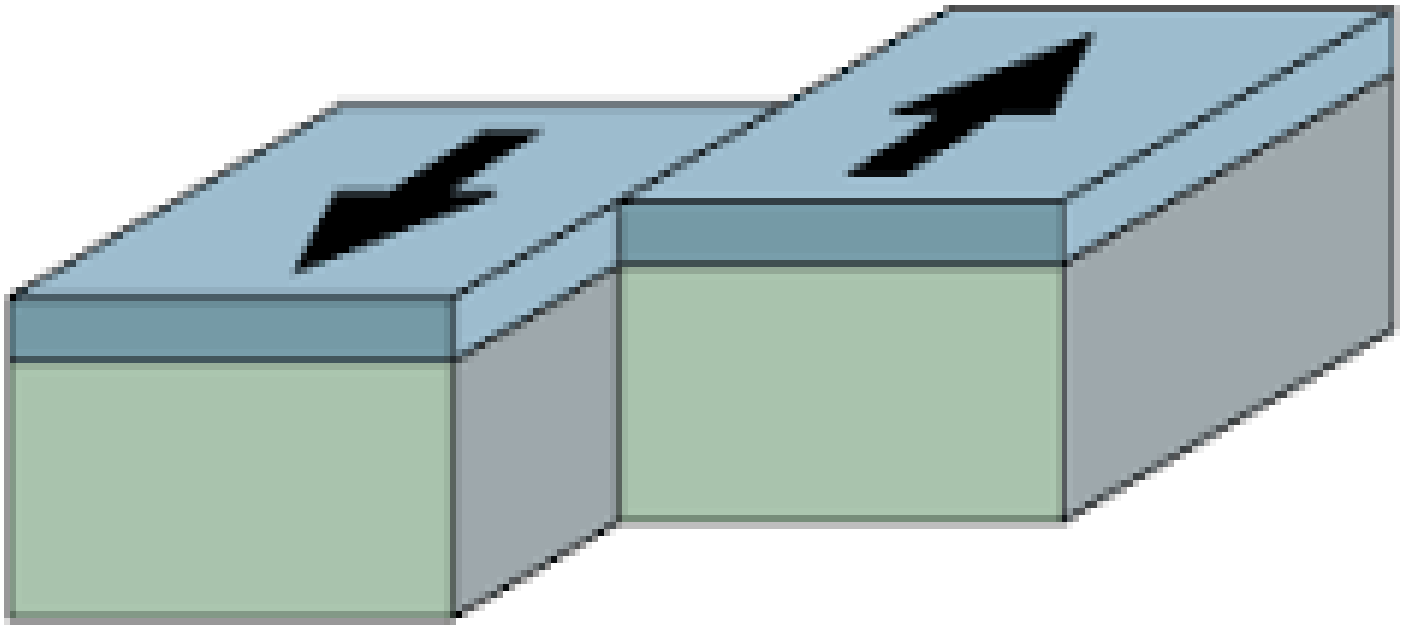
DIVERGENT/TENSION FORCE/NORMAL FAULT

- BECAUSE THE PLATES ARE DIVIDING UNDER WATER CREATING A RIDGE.


COOL
WARM
HOT!

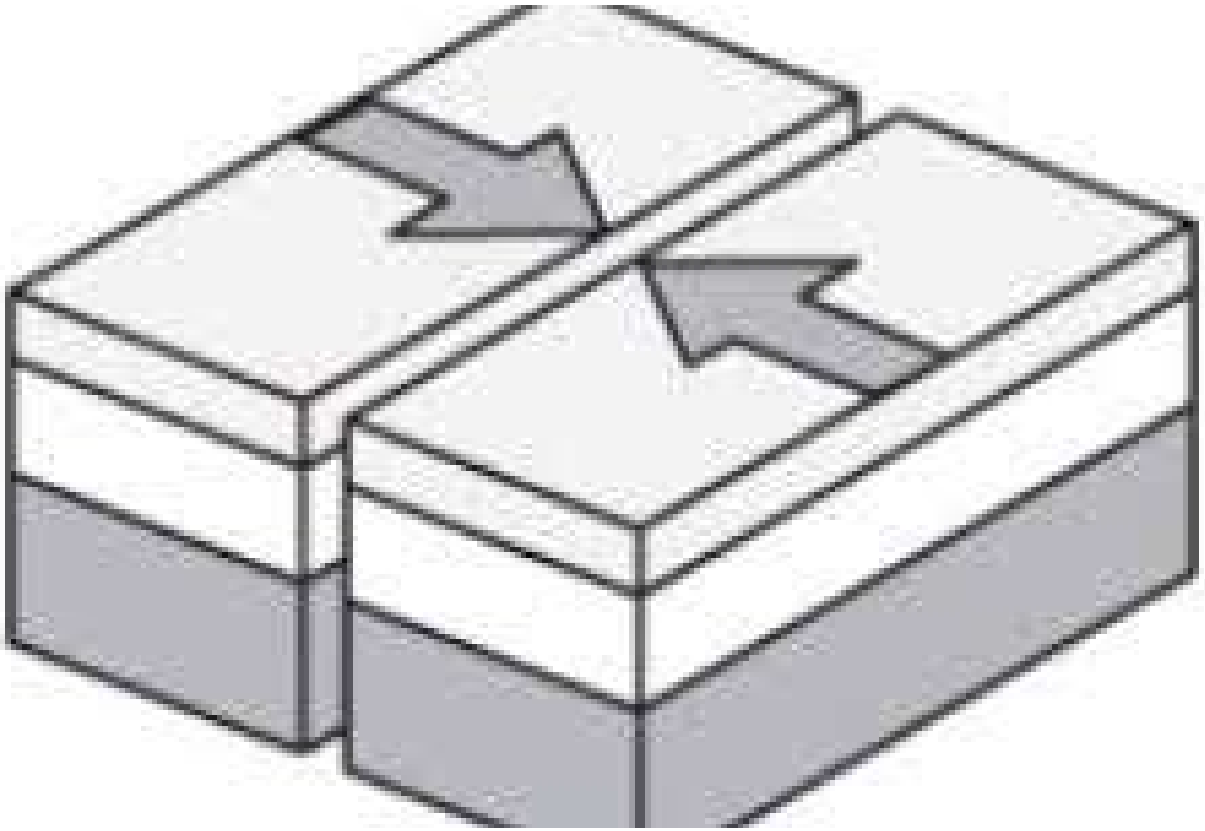
CONVERGENT/COMPRESSION FORCE/ REVERSE FAULT

- BECAUSE OF THE SUBDUCTION ZONE AND VOLCANIC ACTIVITY



TRANSFORM/SHEARING FORCE/STRIKE-SLIP FAULT

- BECAUSE THE PLATES ARE SLIDING PASS EACH OTHER



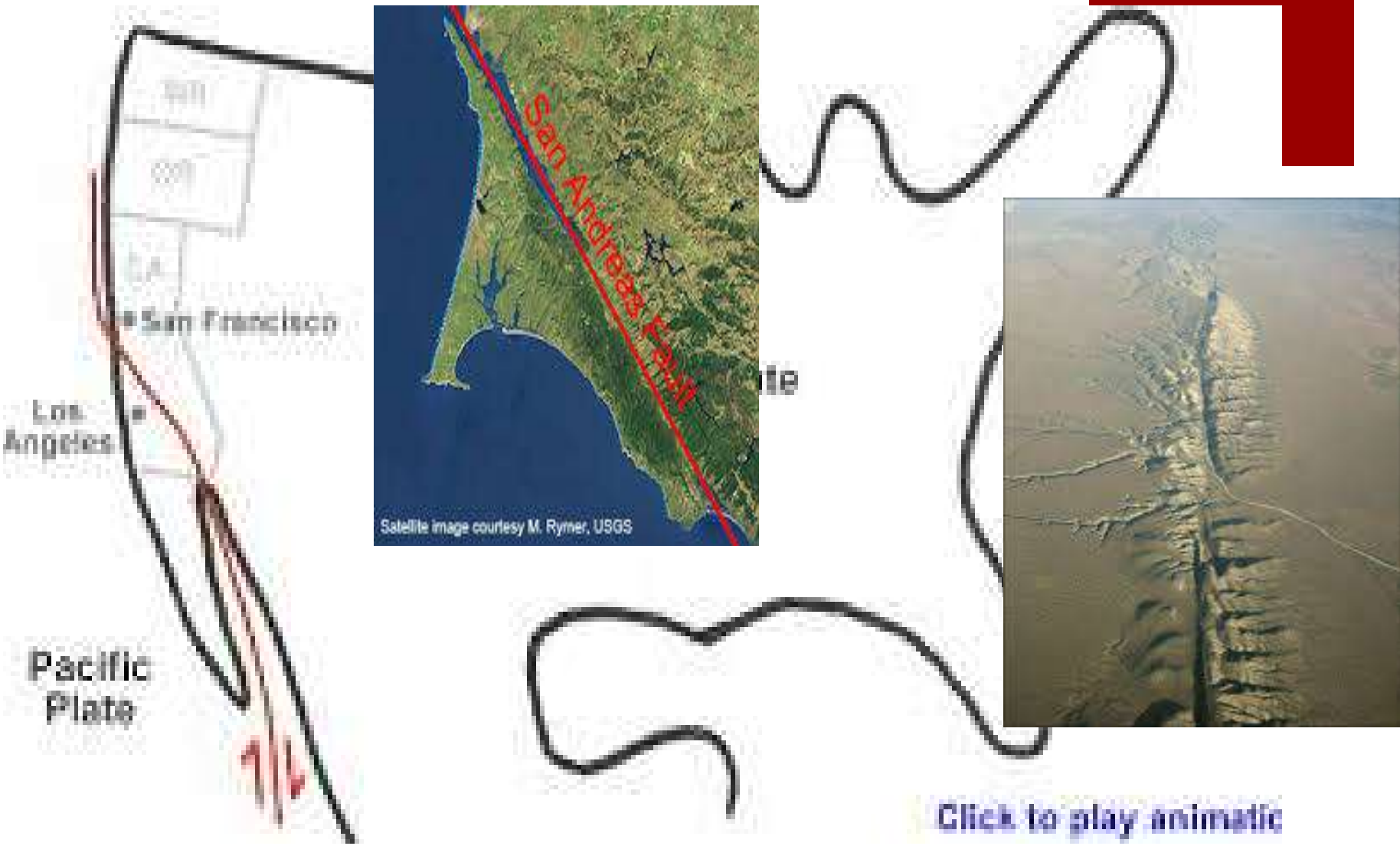
CONVERGENT/COMPRESSION FORCE/ REVERSE FAULT

- BECAUSE THE PLATES ARE COLLIDING OR COMING TOGETHER


Mt. Everest
(8848 meters above
sea level)
Mariana
Trench

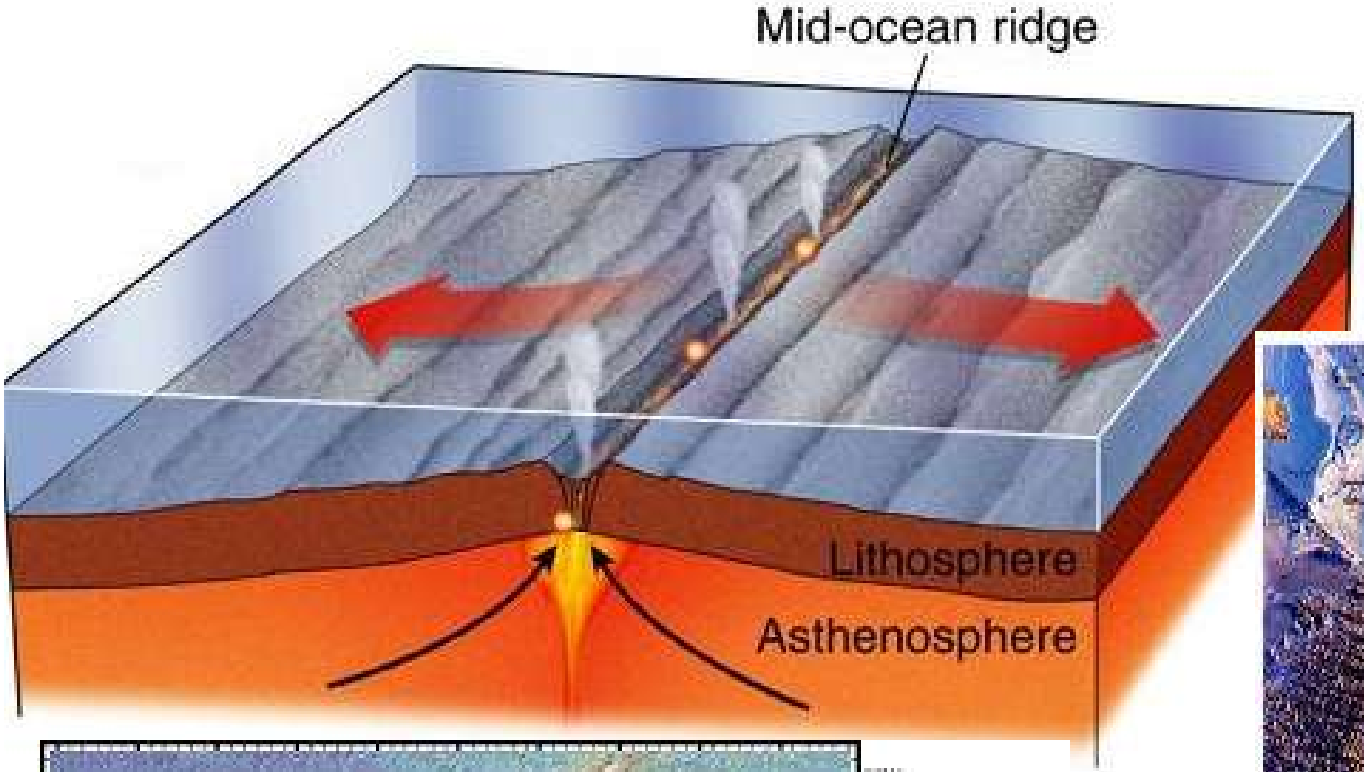
CONVERGENT/COMPRESSION FORCE/ REVERSE FAULT

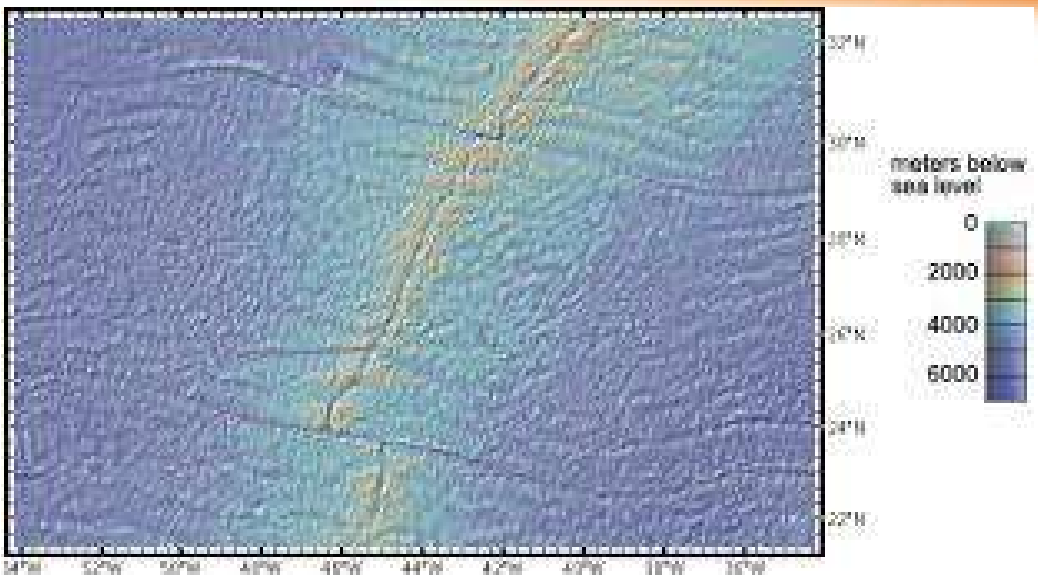
- BECAUSE A TRENCH IS FORMED


San Francisco
Los Angeles
Pacific Plate
San Andreas Fault
Satellite image courtesy M. Rymer, USGS
Click to play animatic

TRANSFORM/SHEARING FORCE/STRIKE-SLIP FAULT

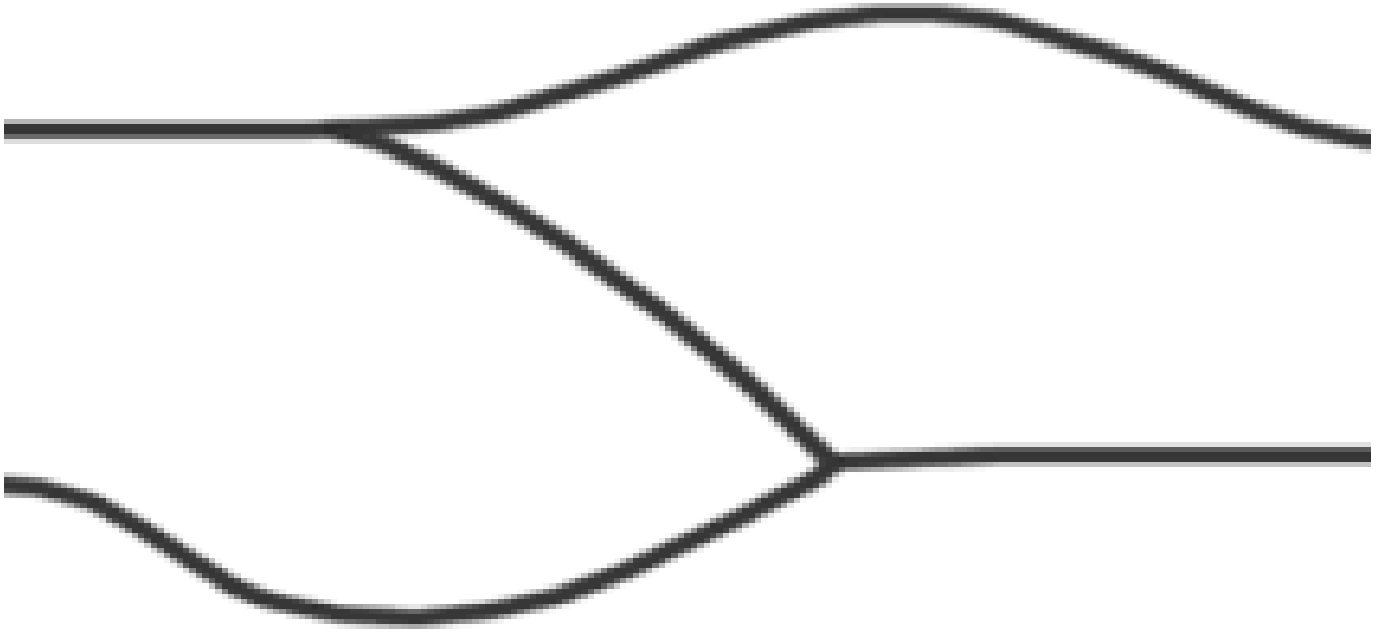
- BECAUSE THE SAN ANDREAS FAULT IS CAUSED WHEN PLATES SLIDE PASS EACH OTHER


Mid-ocean ridge
Lithosphere
Asthenosphere


meters below sea level
0
2000
4000
6000

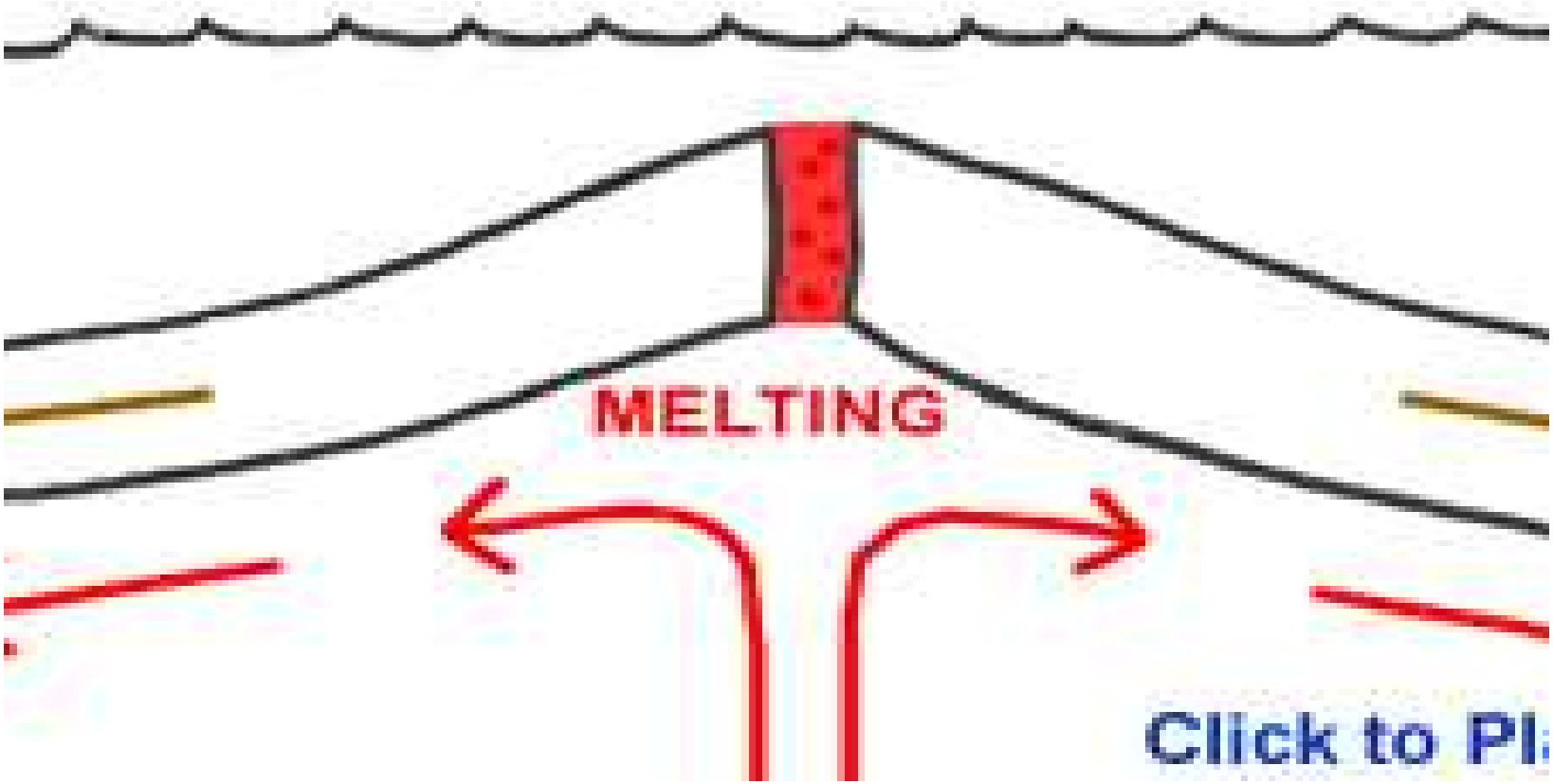
DIVERGENT/TENSION FORCE/NORMAL FAULT

- BECAUSE THE MID-OCEAN RIDGE IS A LINE OF VOLCANOES UNDERWATER THAT ARE CAUSED BY PLATES DIVIDING.



CONVERGENT/COMPRESSION FORCE/ REVERSE FAULT

- BECAUSE A MOUNTAIN IS FORMING


MELTING
Click to Pl

DIVERGENT/TENSION FORCE/NORMAL FAULT

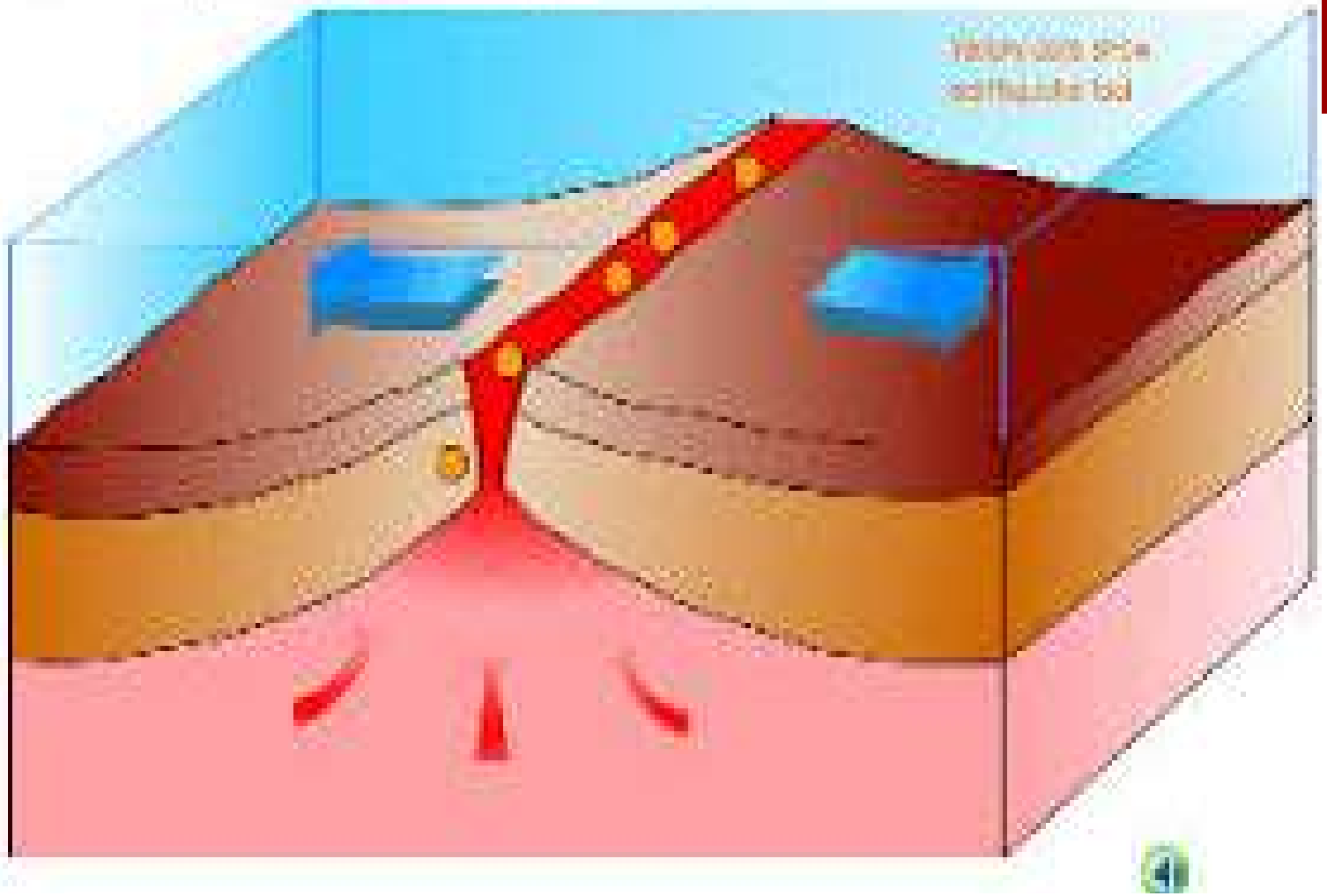
- BECAUSE THE PLATES ARE DIVIDING ON LAND WHICH IS CALLED A RIFT.


Earthquakes

TRANSFORM/SHEARING FORCE/STRIKE-SLIP FAULT

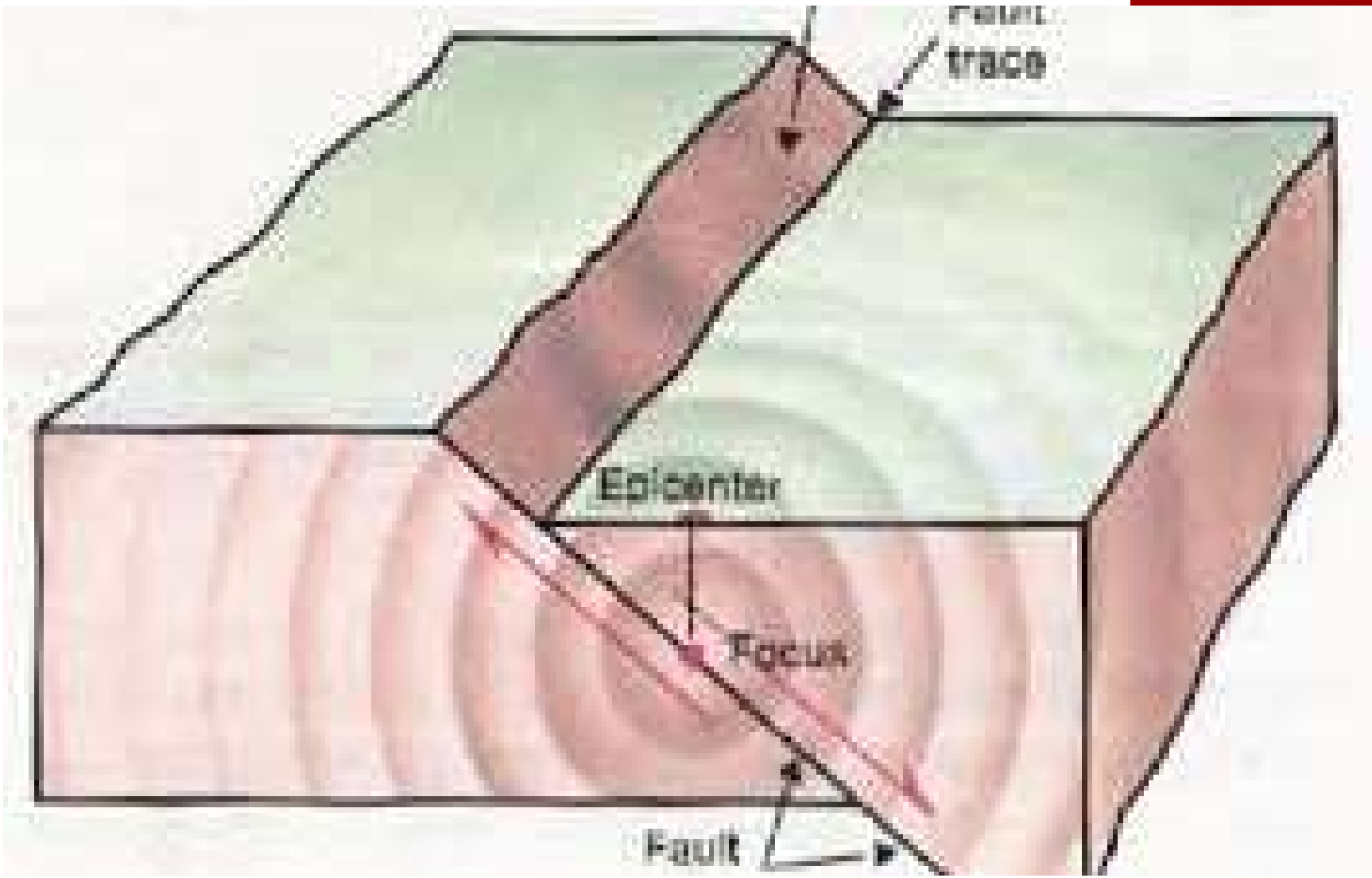
- BECAUSE EARTHQUAKES OCCURS WHEN PLATES SLIDE PASS EACH OTHER

Seafloor spreading at a divergent margin



DIVERGENT/TENSION FORCE/NORMAL FAULT

- BECAUSE THE PLATES ARE DIVIDING FORMING NEW CRUST AS THE MAGMA COMES UP AND COOLS.


trace
Epicenter
Focus
Fault

TRANSFORM/SHEARING FORCE/STRIKE-SLIP FAULT

- BECAUSE FAULTS OCCURS WHEN PLATES SLIDE PASS EACH OTHER

TUESDAY:
VOLCANIC ACTIVITY

FALCON FOCUS

- 8-1.2) A student is investigating which type of soil is best for growing tomato plants from seeds. The student plants four tomato seeds in each of three different containers of soil. Which step of the procedure would help the student get the most reliable results?
- a. Place one container in a dark room.
- b. Use different types of tomato seeds.
- c. Change only the soil type in each container.
- d. Water each container with a different amount of water.

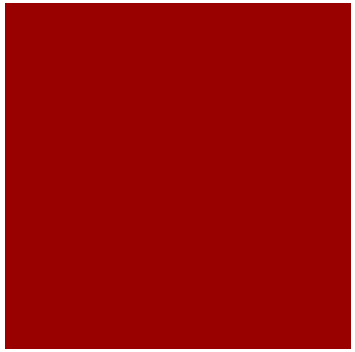
ESSENTIAL QUESTION

- How would you summarize the creation and changing of landforms due to volcanic eruptions?

HOMEWORK

- **ADD THE FOLLOWING WORDS TO YOUR GLOSSARY: VOLCANO, CONSTRUCTIVE VOLCANO, DESTRUCTIVE VOLCANO, MAGMA, LAVA, VENT, AND PACIFIC RING OF FIRE**
- **STUDY FOR TEST (THURSDAY)**

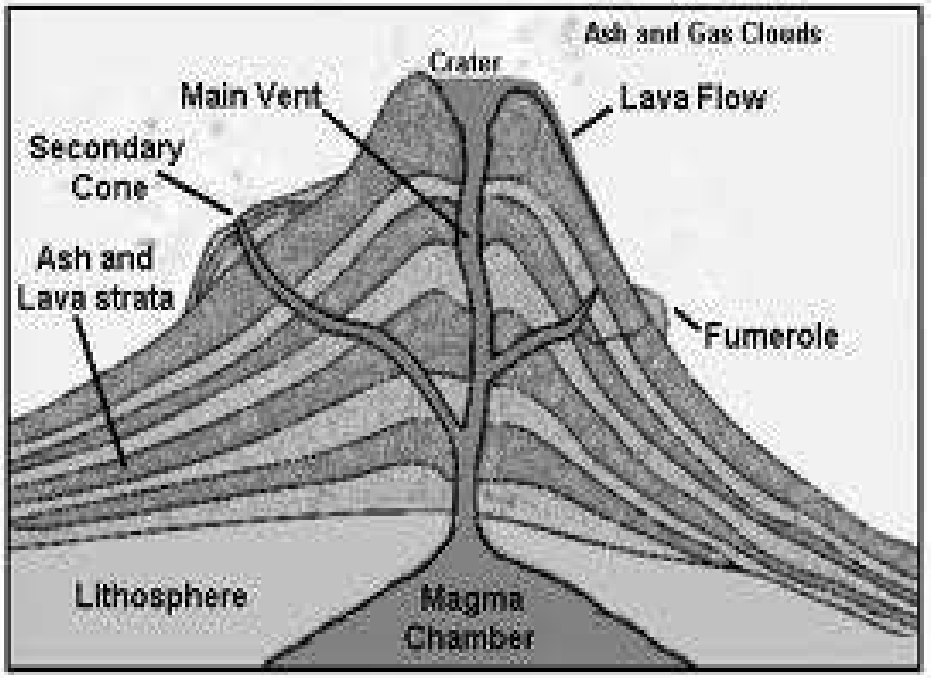
Volcanic Eruptions



- **Volcanic eruptions** are **CONSTRUCTIVE in that they add new rock to existing land and form new islands.**
-
- Volcanic eruptions can be **DESTRUCTIVE when an eruption is explosive and changes the landscape of and around the volcano.**

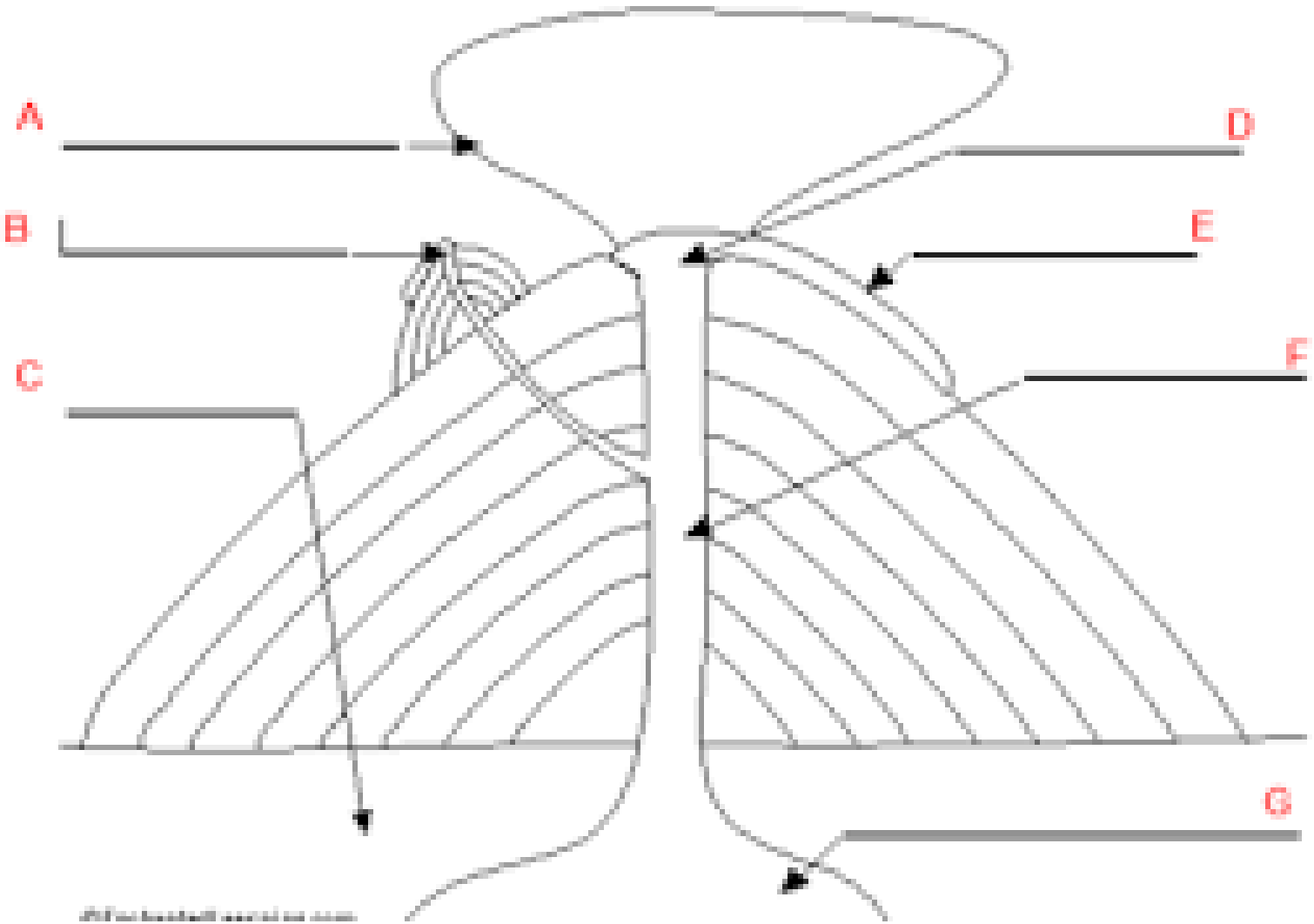
- ***MAGMA*** from the **MANTLE** rises to Earth's surface and **flows out an opening called a *VENT***
- **Magma that reaches Earth's surface is known as *LAVA*.**

- **The vent as well as the mountain that forms around it from cooled lava, ash, cinders, and rock is called a *VOLCANO.***



- **Most volcanoes occur along <u>plate boundaries</u>**; an area in the **<u>Pacific Ocean</u> where volcanoes are common is called the <u>PACIFIC RING OF FIRE</u>.**

- **LABEL THE FOLLOWING ON THE VOLCANO BELOW: USE THE FOLLOWING WORDS (LAVA, MAGMA, MAGMA CHAMBER AND VENT) TO LABEL LETTERS A, D, E, & G.**

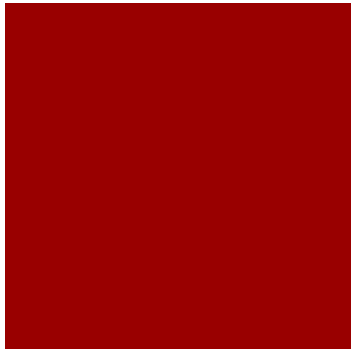

A
B
C
D
E
F
G

ANSWERS

- A. MAGMA
- D. VENT
- E. LAVA
- G. MAGMA CHAMBER

MINI-LAB: VOLCANIC ERUPTION

CLOSURE:



WEDNESDAY

- IT'S REVIEW TIME!!!!

FALCON FOCUS

- 8-3.6 The mid-ocean ridge is a series of underwater mountain ranges that crosses the deep ocean floor. These mountains were created by _____.
- a. volcanic activity
- b. accumulation of sedimentary rock
- c. erosion of surrounding areas
- d. water pressure collapsing surrounding areas

ESSENTIAL QUESTION

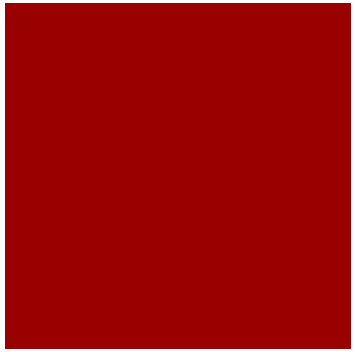
- How would you create a graph that depicts the connections between the three types of boundaries, stresses or forces, and faults?

HOMEWORK

- **CREATE A PIE DIAGRAM OF THE EARTH LAYERS AND WRITE ONE IMPORTANT FACT ABOUT EACH ONE OF THEM.**
- **STUDY FOR TEST (TOMORROW)**

- IT'S REVIEW TIME!!!!!

CLOSURE



THURSDAY

- IT'S TEST TIME!!!!

FALCON FOCUS

- 8-1.3 What is the difference between a constant (control variable) and a control group.

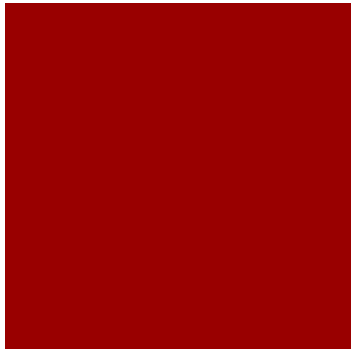
ESSENTIAL QUESTION

- How would you illustrate and label the parts to a volcano?

HOMEWORK

- **DEFINE DENSITY AND GIVE AN EXAMPLE.**

QUICK REVIEW



TEST TIME

- IT'S TEST TIME!!!!

FRIDAY

- SCIENTIFIC INQUIRY LAB: DENSITY

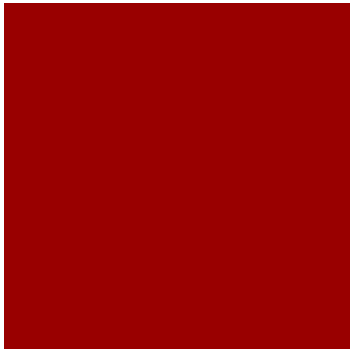
FALCON FOCUS

- WHAT IS DENSITY?

ESSEINTIAL QUESTION

- WHAT IS THE DIFFERENCE BETWEEN MAGMA AND LAVA?

COMPLETE THE DENSITY LAB ACTIVIY



NO HOMEWORK