**Earthquakes and Volcanoes Notes**

I. The Earth experiences stress due to forces within the Earth.

A. Forces \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_on the crust.

B. Rocks will bend and stretch to a certain point (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) and will change shape and volume, move up, down or sideways.

C. When the force is great enough the rocks, break, tilt, and fold (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).

II \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ types of stress.

A. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the

Rocks and pushes them deeper down and higher up.

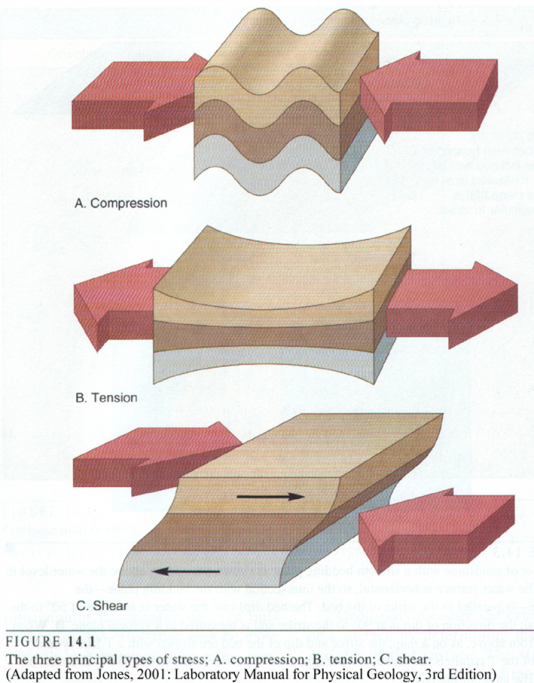
B. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the rocks

and causes it to be thinner in the middle and thicker at the ends.

C. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ rocks into 2

Opposite directions causing twisting and tearing.

\*All can cause the rocks to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

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A.

B.

C.

Type of Boundary

Types of Stress

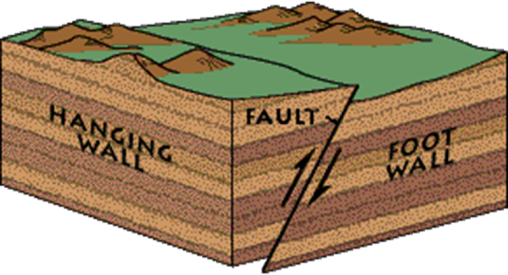
A

B

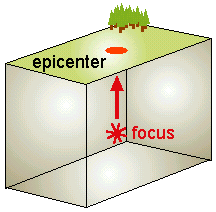
C

**IV Faulting** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Possible results are earthquakes, landslides, formation of mountains and valleys.
2. Faulted Rocks
3. Hanging wall – the one part that moves
4. Foot wall- the block of rock below the fault.



|  |  |  |  |
| --- | --- | --- | --- |
| **Description** | **Image** | **What type of stress?** | **What boundary?** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

What are Seismic waves? - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**that make **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** during an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_\_\_\_\_\_

* The point in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where \_\_\_\_\_\_\_\_\_\_\_\_\_ is released is the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. Seismic waves travel **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Wave types----

**PRIMARY Waves** (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) -

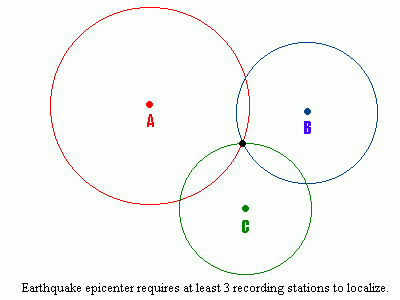
* Cause rock particles to move in the\_\_\_\_\_\_\_\_\_\_\_\_\_ direction as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**SECONDARY Waves** (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) -

* Move through Earthby causing particlesto move \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the direction of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. \_\_\_\_\_\_\_\_\_\_\_\_!!

**Surface Waves aka Love waves** (L-waves)

* The point on the Earth’s surface directly above the focus is the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* Surface waves travel outward from the epicenter moving in an **\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and cause **\_\_\_\_\_\_\_\_\_\_\_\_\_** of the destruction during an earthquake.



Locating an epicenter -

* Primary waves are the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** *(and slow down through liquid layers)* and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** waves are slower *(stop at liquids).*
* Using this information, scientist can determine the epicenter. The farther apart the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ waves the farther away \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is.

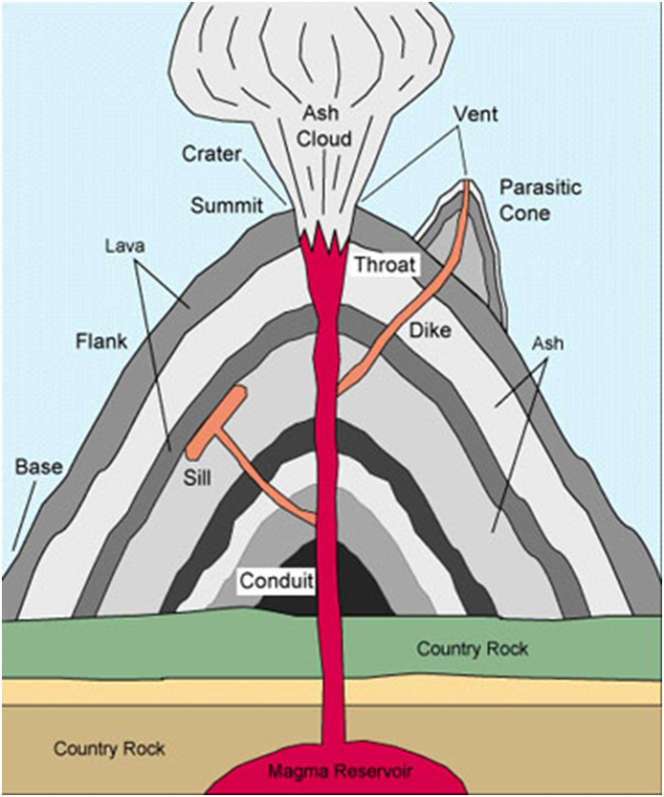
Major Earthquake Zones

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - The points surrounding the Pacific Plate where it is subducted under the surrounding plates.
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – A series of divergent boundaries
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – A series of convergent boundaries from Europe to SE Asia

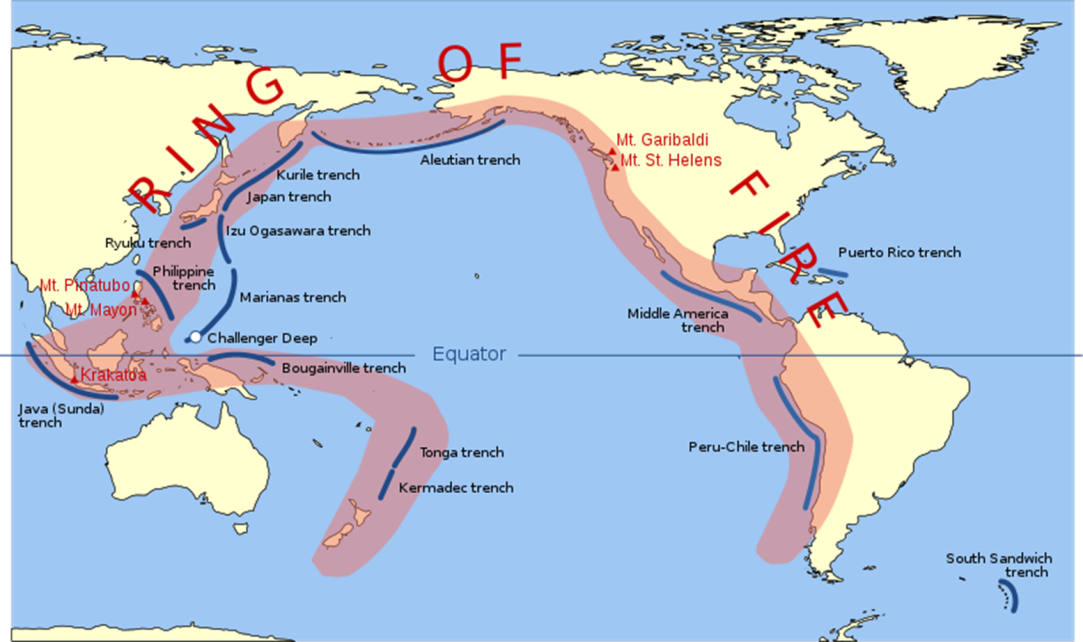
 END OF PART I

I. What causes a volcano?

* Magma is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the rock around it and slowly forced up as lava.
* *(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – space deep in the Earth that contains the molten rock.)*
* Magma reaches the surface and flows out through an opening called a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* Lava flows out quickly and becomes solid, forming layers of igneous rock around the vent. A **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**(opening at the top of a volcano) forms.
* (*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_– larger crater up to 50 km in diameter)*



III. Where do volcanoes form?

* At *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* (15%)
  + Separated plates form long deep cracks called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. Lava flows out and is instantly cooled by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
  + Ex. Iceland
  + What was unique about Iceland’s Eyjafjallajokull volcano?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* At *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (80%) –*
  + Magma is created in the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and is forced upward when 2 plates converge.
  + Example: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* At \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (far away from plate boundaries)
  + some areas in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**are hotter than others and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, which is forced up as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
  + Ex. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Yellowstone: What does it have underneath it?