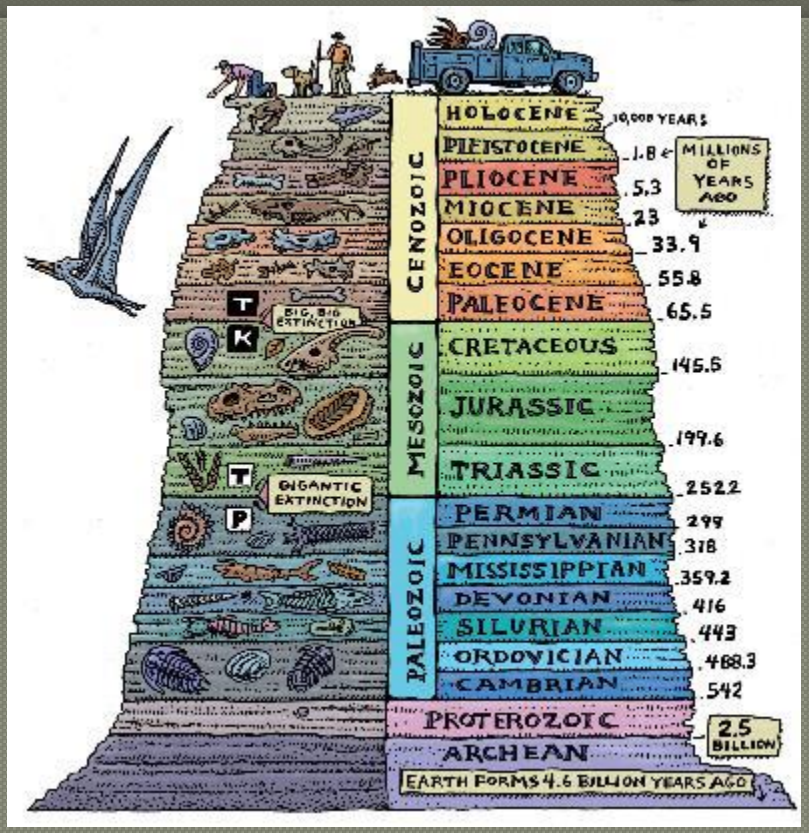
Geology Vocabulary

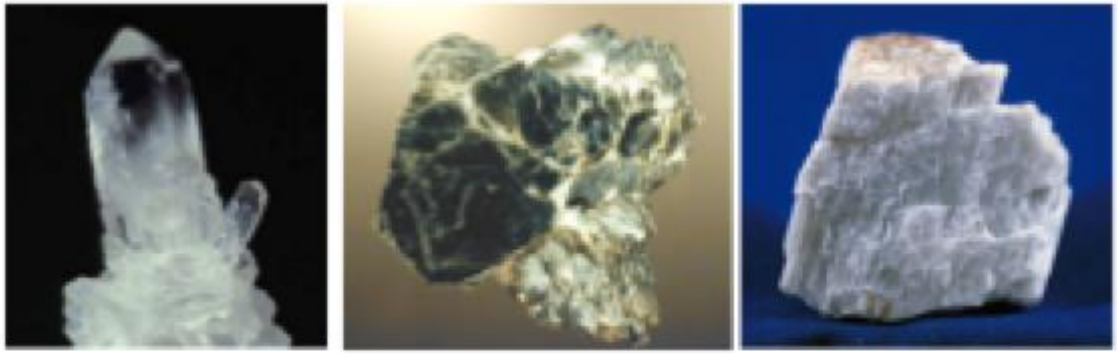


- Write ONLY the underlined parts on the <u>sage-colored slides</u>.
- Draw pictures for examples

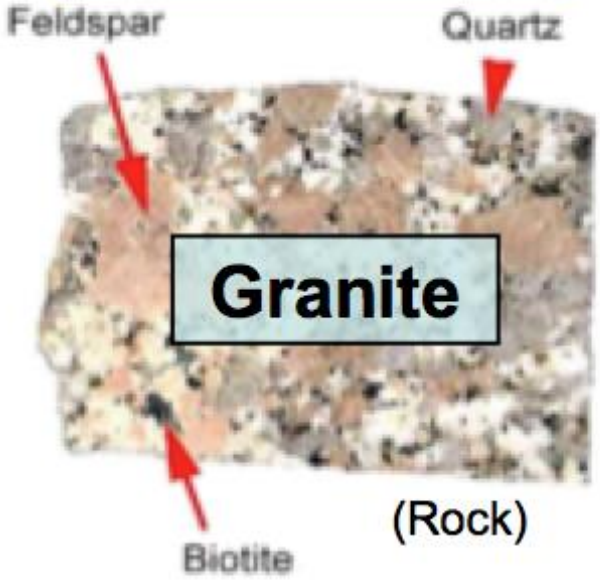
Main Concept: Rocks are made from Minerals

- Rocks are nothing more than a mixture of different mineral crystals.

***All three minerals are combined in a Granite rock



Quartz (mineral) + **Biotite** (mineral) + **Feldspar** (mineral) =

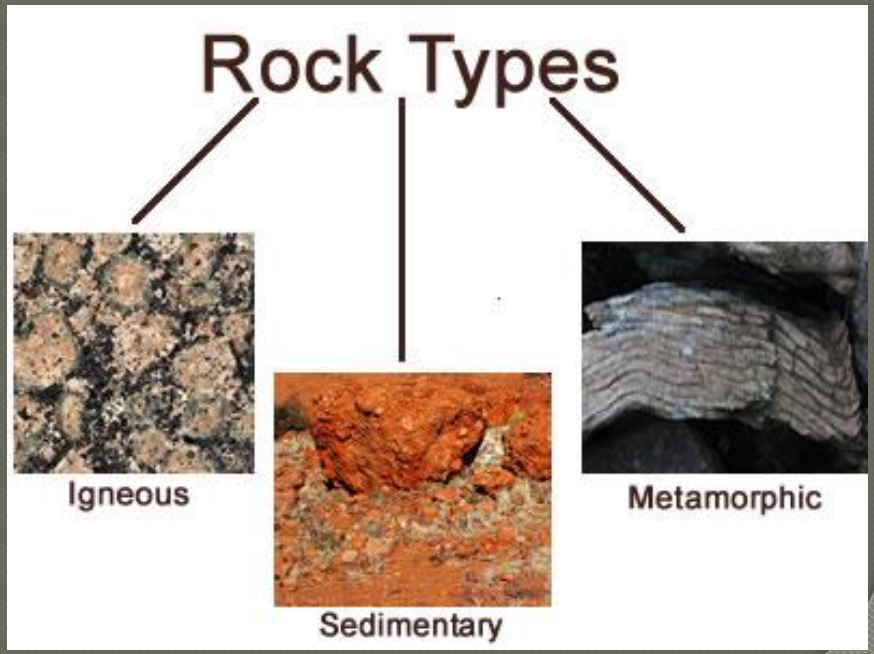


(Rock)

This is Continental Crust!!!

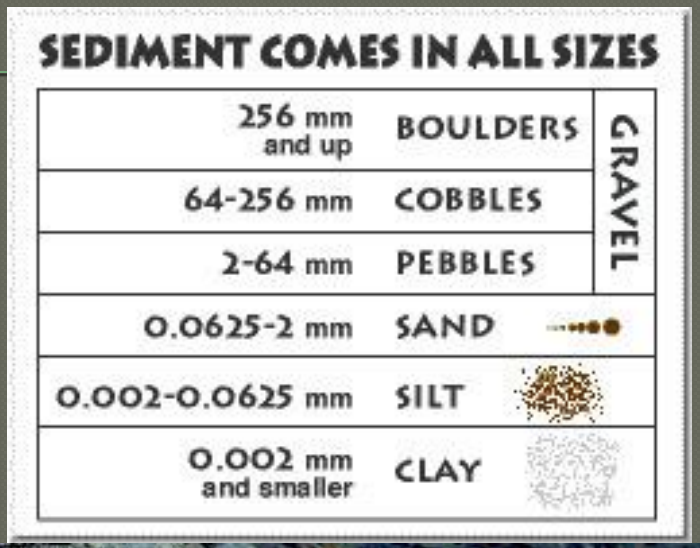
1. Geology

- The study of rocks, layers of soil, etc., in order to learn about the history of the Earth and its life



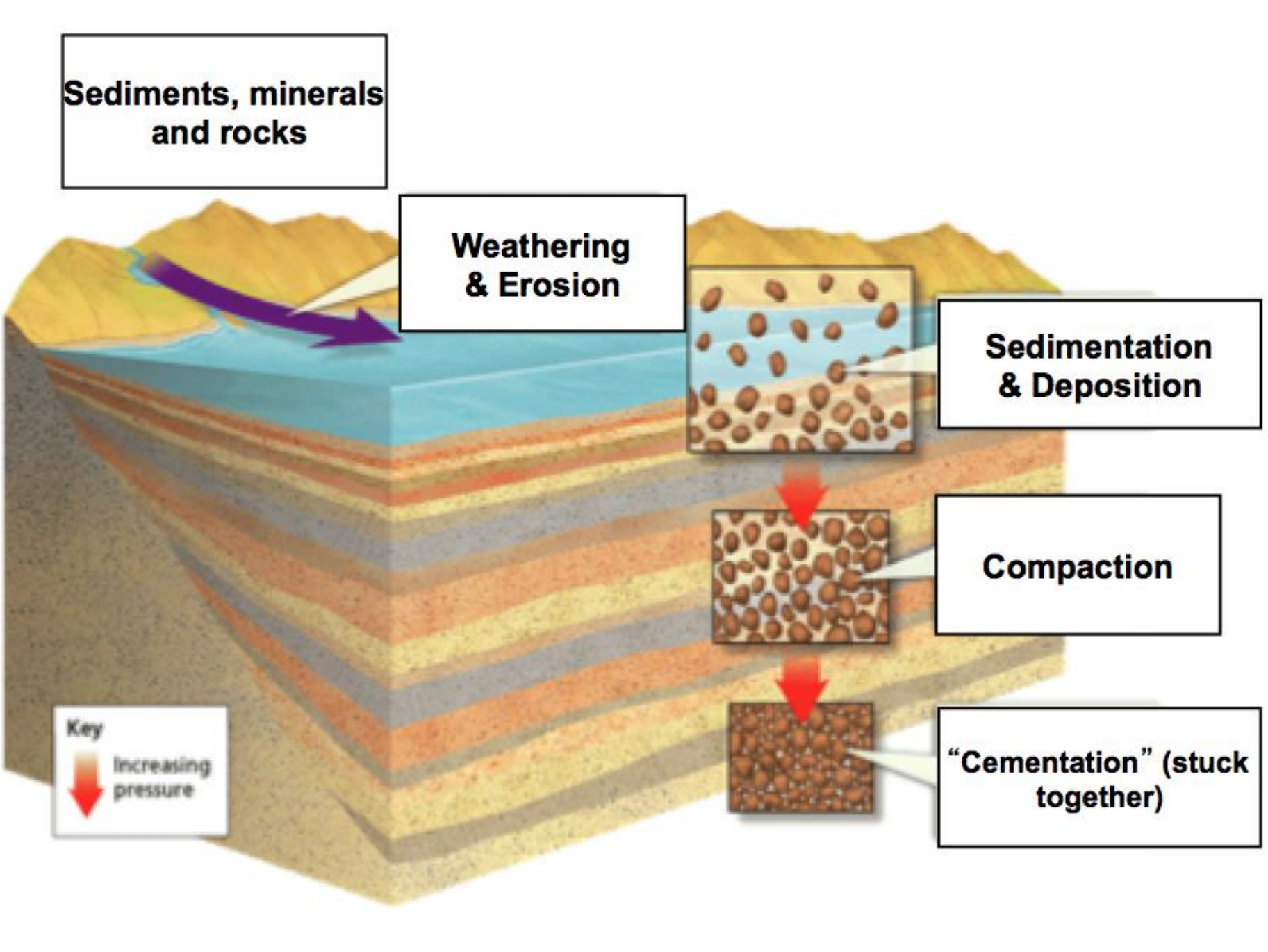
2. Sedimentary Rock

- A rock that forms from compressed or cemented layers of sediment.



Sedimentary Rocks

- Made up of smaller rocks cemented together
- Sometimes have fossils
- Usually have layers.


Sediments, minerals and rocks
Weathering & Erosion
Sedimentation & Deposition
Compaction
"Cementation" (stuck together)
Key
Increasing pressure

Sedimentary Rock

rock that is glued to other rock

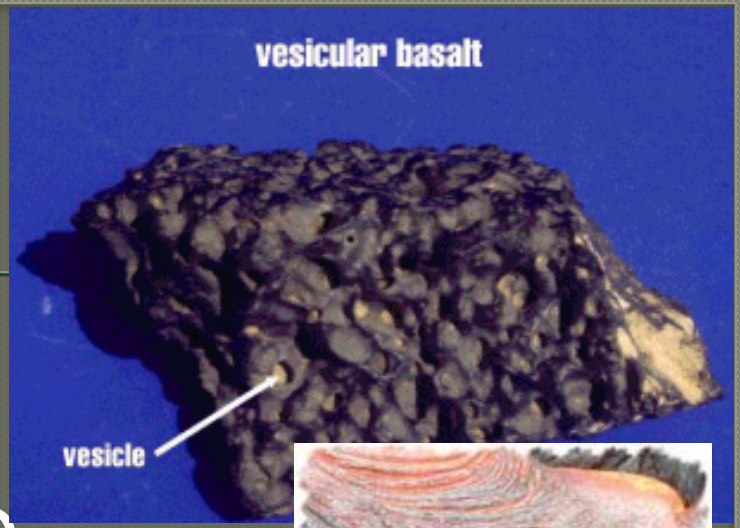
Conglomerate Rock
Notice the rounded rocks

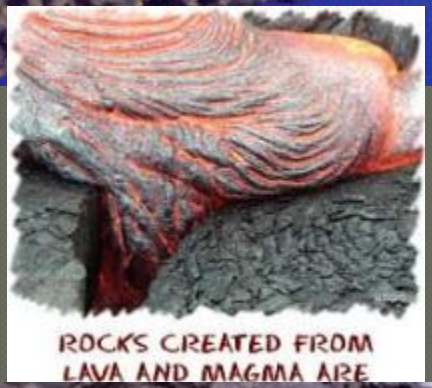
Breccia
Notice the jaded rocks glued

Take notice of small

3. Igneous Rock

- Rock formed by the volcanic activity; the solidification of magma or lava



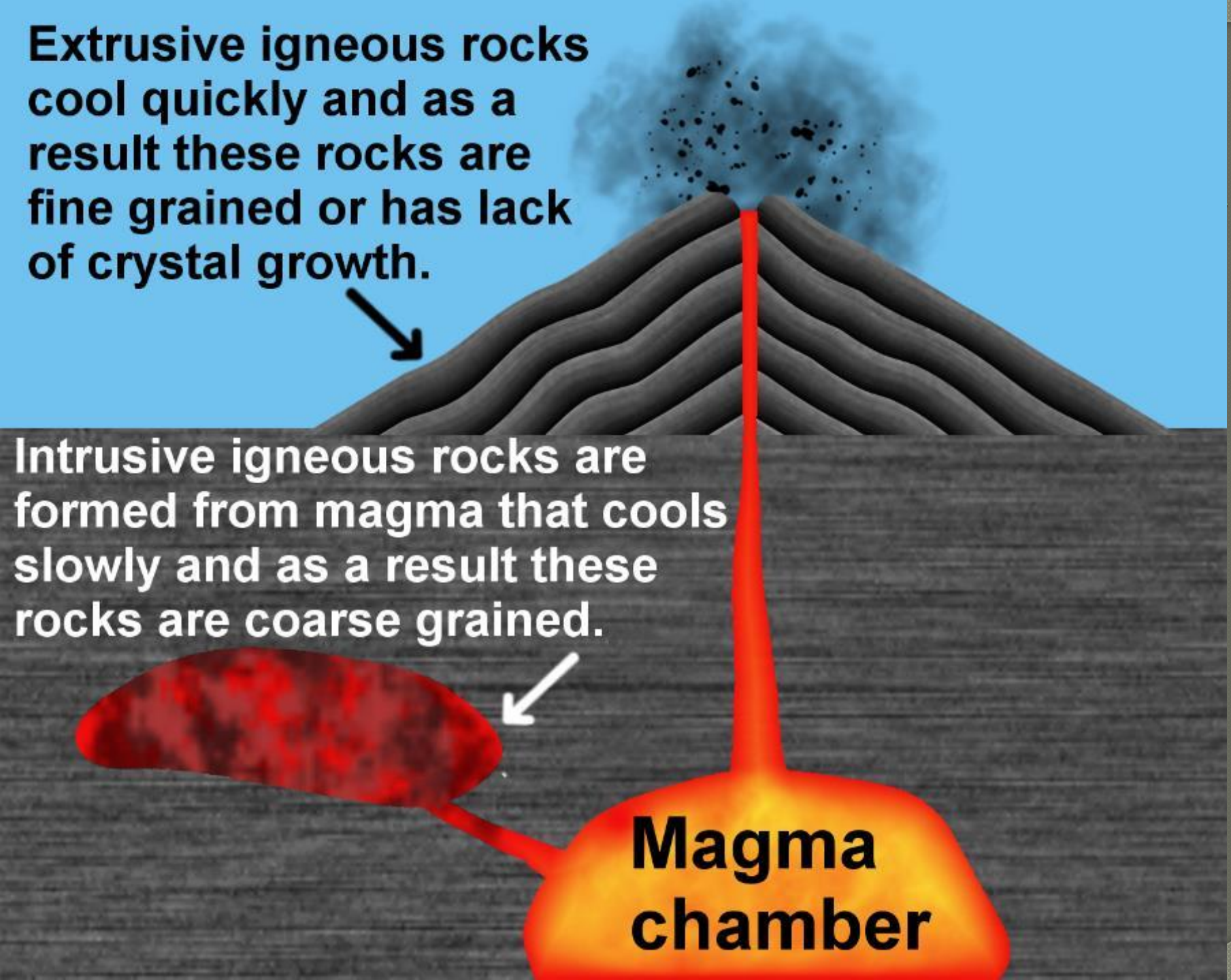


- **Formed from cooled Lava and Magma**

As an Example:

can become

***When the lava cools and turns into a solid, it can turn into Basalt!


Extrusive igneous rocks cool quickly and as a result these rocks are fine grained or has lack of crystal growth.
Intrusive igneous rocks are formed from magma that cools slowly and as a result these rocks are coarse grained.
Magma chamber


ANDESITE
BASALT
DIORITE
GABBRO
IGNEOUS ROCKS
GRANITE
OBSIDIAN
PEGMATITE
PERIDOTITE
PUMICE
RHYOLITE
SCORIA
TUFF

- Granite is commonly used for kitchen counter tops.
- Obsidian makes lovely jewelry.
- Pumice is used for personal care items

Types of Igneous Rocks and Their Uses

4. Metamorphic Rock

- a new highly compacted, crystalline rock formed by extreme heat and/or pressure. (has undergone changes from its original rock type)

Metamorphic Rocks

- To "**Morph**" means to change it!
  "…more than meets the eye!"
  - Rocks that have changed after being buried DEEP underground. The **heat** and **pressure** from being deep underground **changed the rocks.**
  - They were once Igneous or Sedimentary rocks, but not anymore.
  - Has large, inter-grown crystals in thin "bands" (Foliated) or clusters (Non-Foliated).

Pressure and Heat lead to Metamorphic Rocks

The shoes represent the pressure caused by all the rock above the crystals

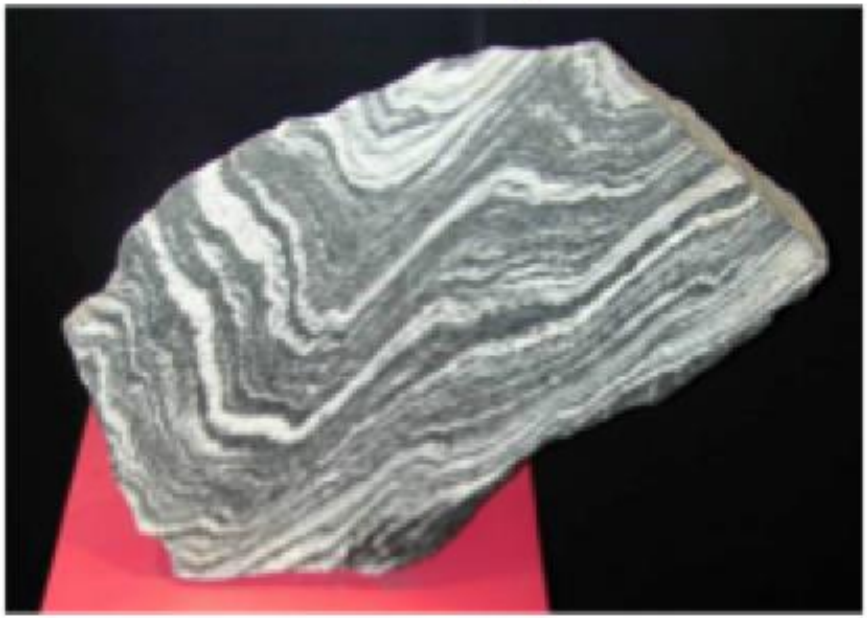
Crystals are large

The "playing cards" represent mineral crystals in a rock!

Crystals have become "squished"

Foliated v. Non Foliated

- Geologists classify metamorphic rocks according to the arrangement of the grains that make up the rocks.



Foliated
(curvy thin crystal lines - Gneiss)

Non Foliated
(No lines - Quartzite)

Examples of Metamorphic Rock:

- Gneiss:

- Schist:

- Slate:

Can you see all the straight layers of crystals?

Uniformitarianism

the theory that Earth's features are mostly accounted for by gradual, small-scale processes that occurred over long periods of time

5. Uniformitarianism

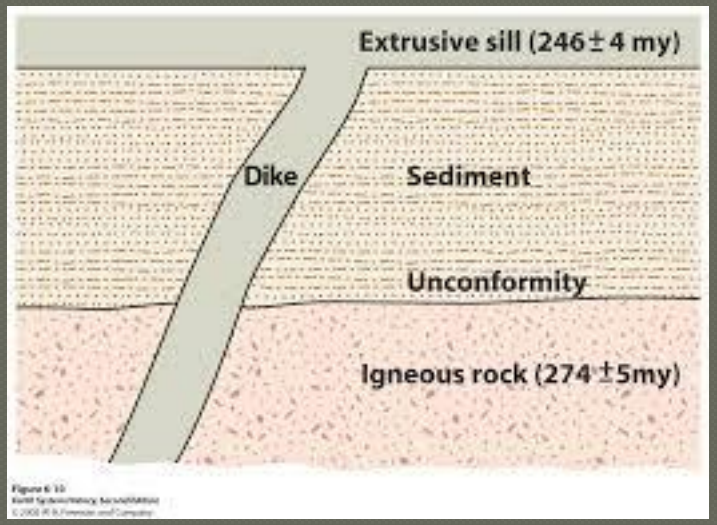
- A principle that <u>geologic processes that occurred in the past can be explained by current geological processes.</u>

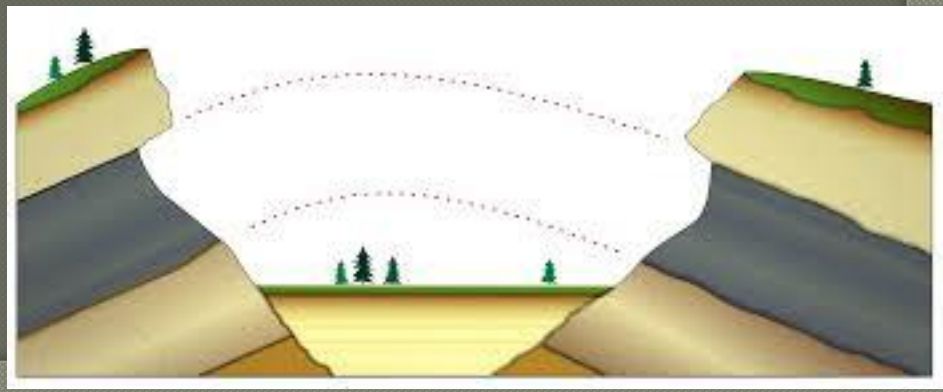
6. Superposition

- A principle that states that younger rocks lie above older rocks if the layers have not been disturbed.

7. Unconformity

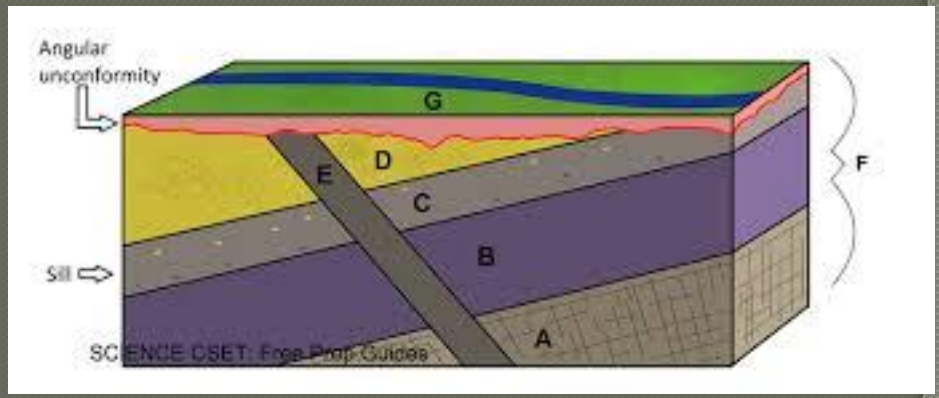
- A break in the geologic record created when rock layers are eroded or when sediment is not deposited for a long period of time. (*missing time)

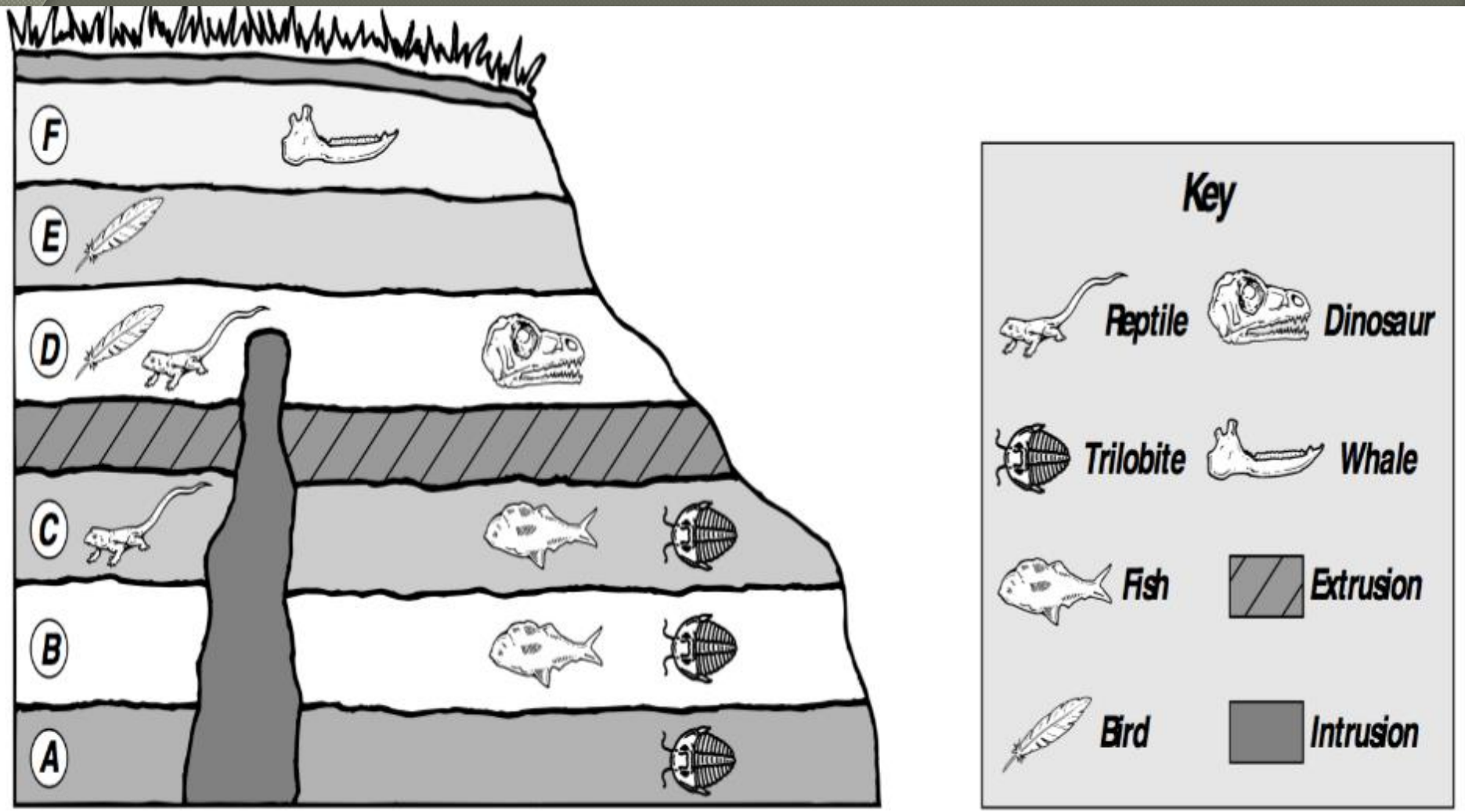




8. Intrusion

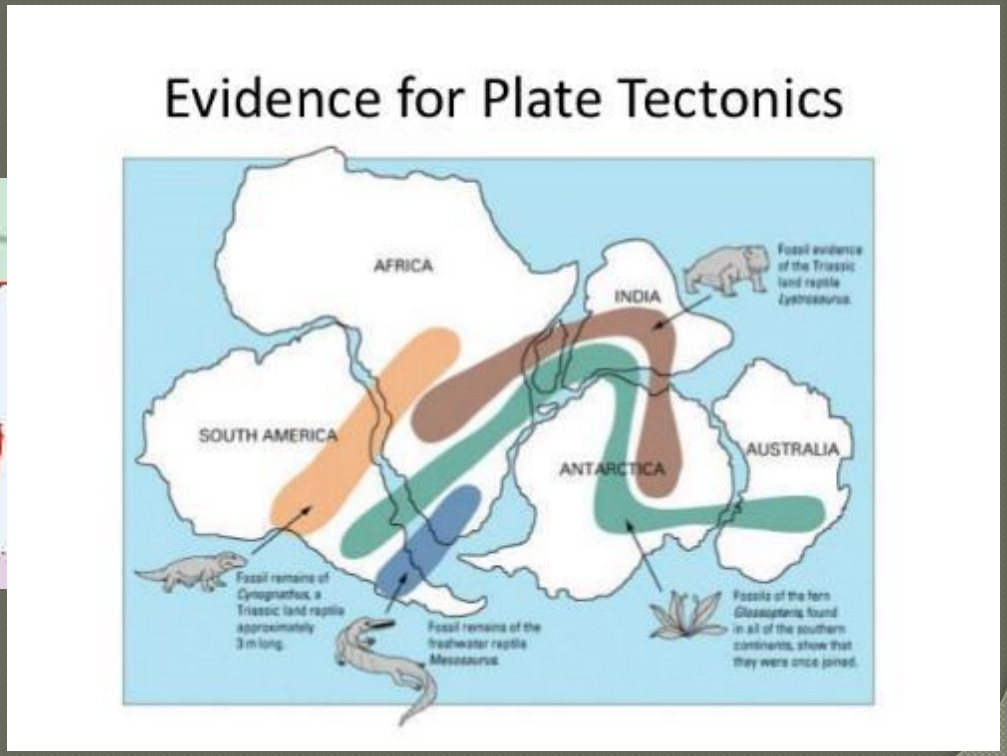
- Is molten rock from Earth's interior that squeezes into existing rock and cools.




F
E
D
C
B
A
Key
Reptile
Dinosaur
Trilobite
Whale
Fish
Extrusion
Bird
Intrusion

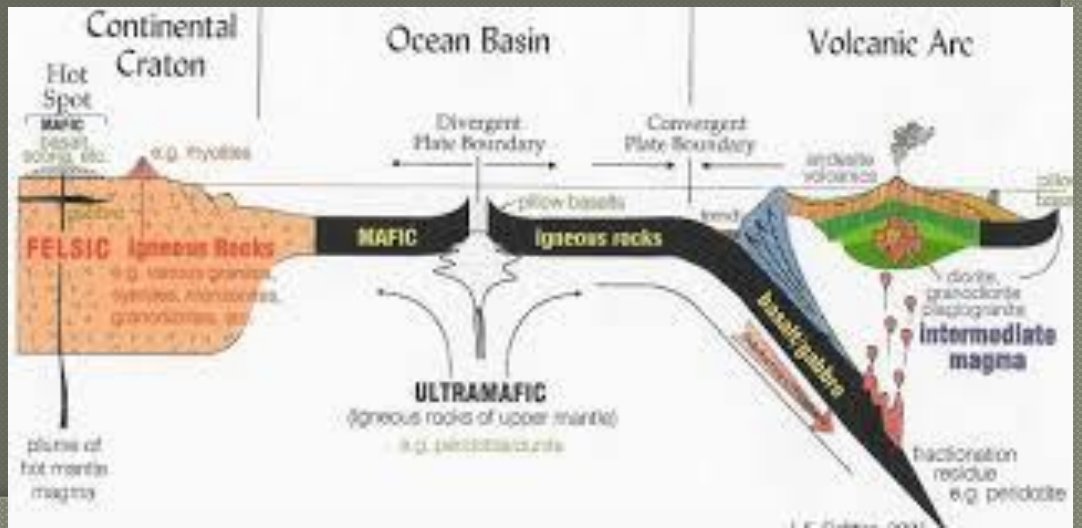
10. Plate Tectonics

- The theory that explains how large pieces or Earth's crust move and change shape.



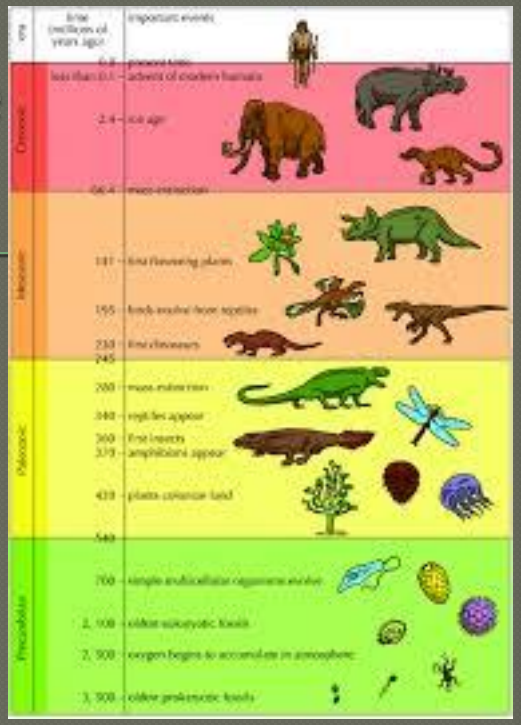
11. Continental Drift

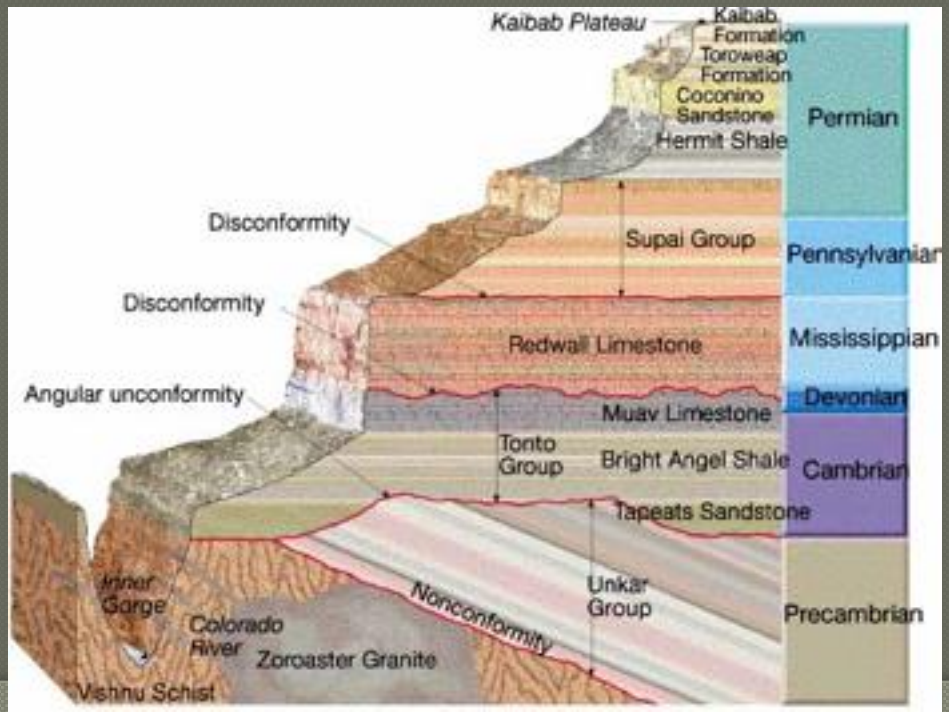
- The hypothesis that a single large landmass broke up into smaller landmasses to form the continents
- the movement of continents

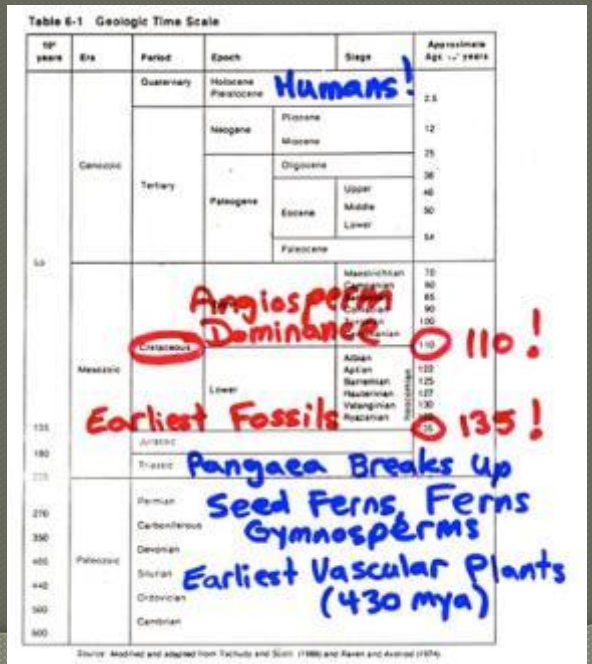


12. Geologic Time Scale

- The standard method used to divide Earth's long natural history into manageable parts.

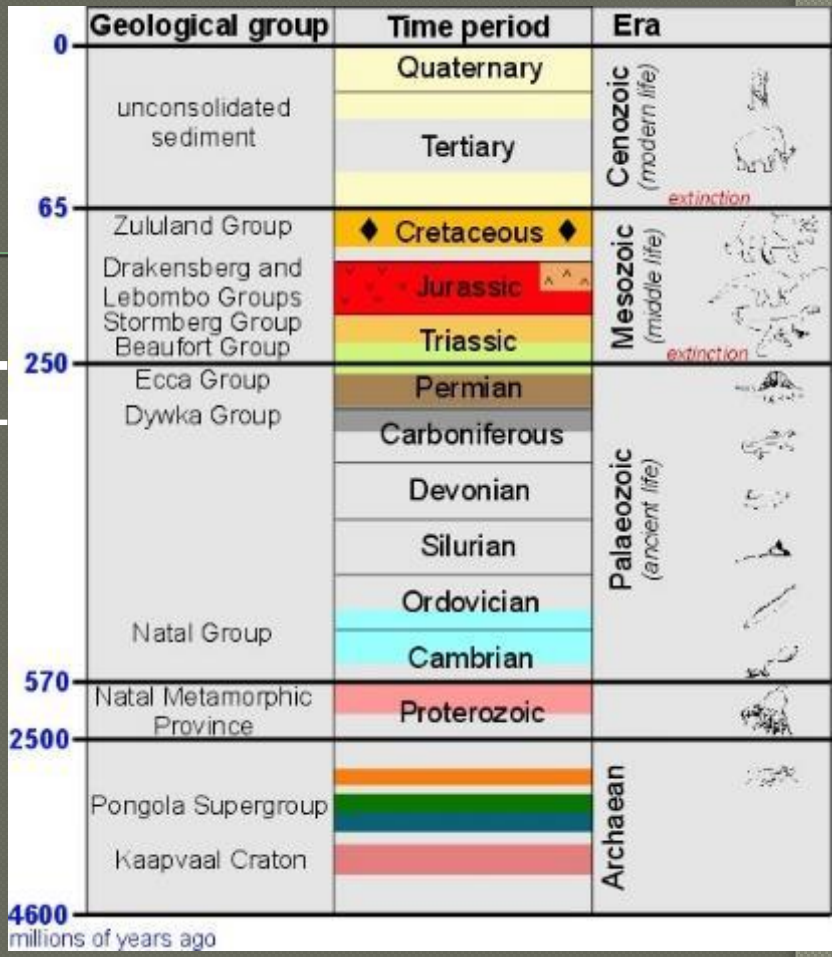






13a. Extinction

- The death of every member of a species.

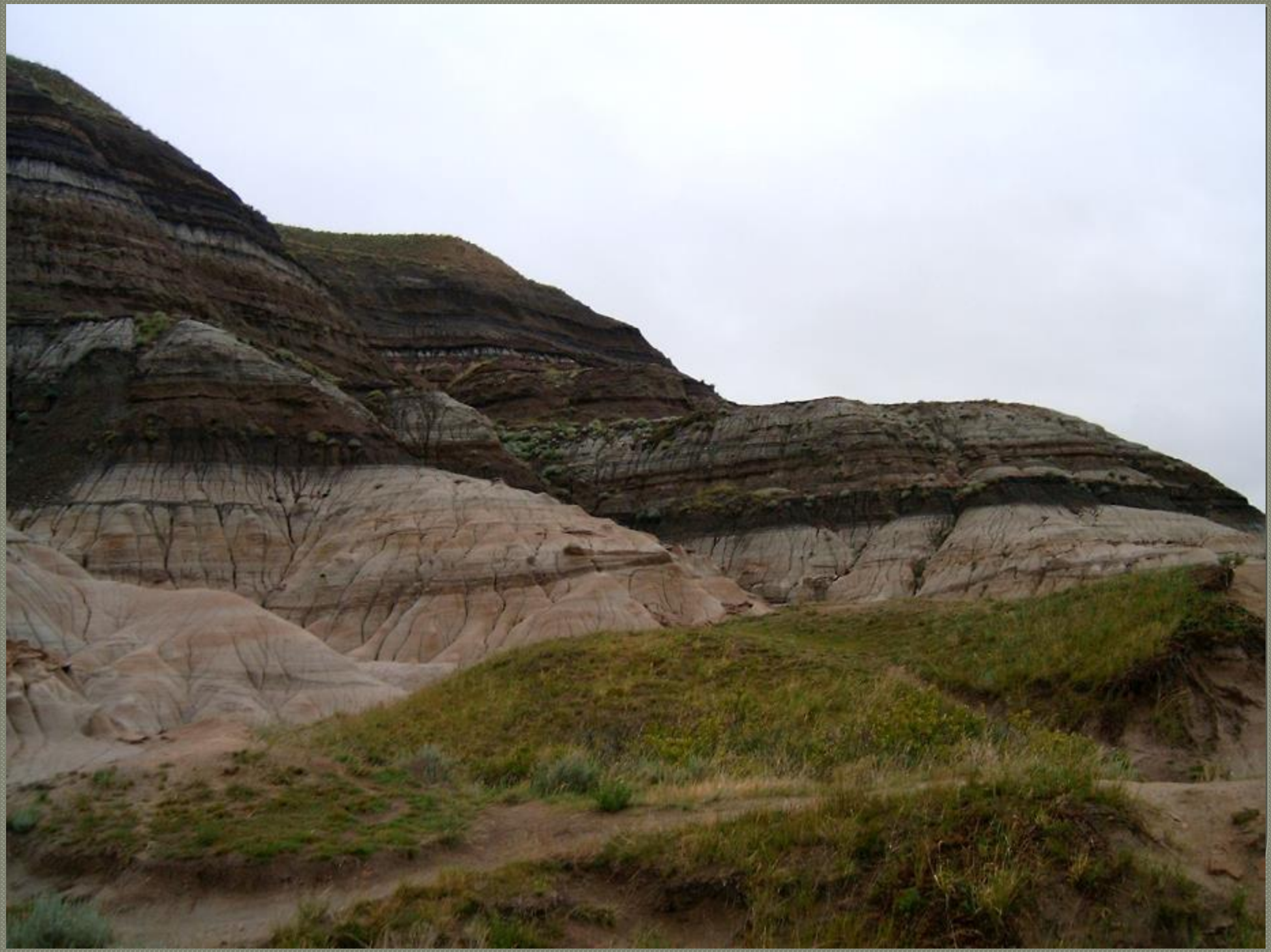


13b. KT Boundary (*Iridium)

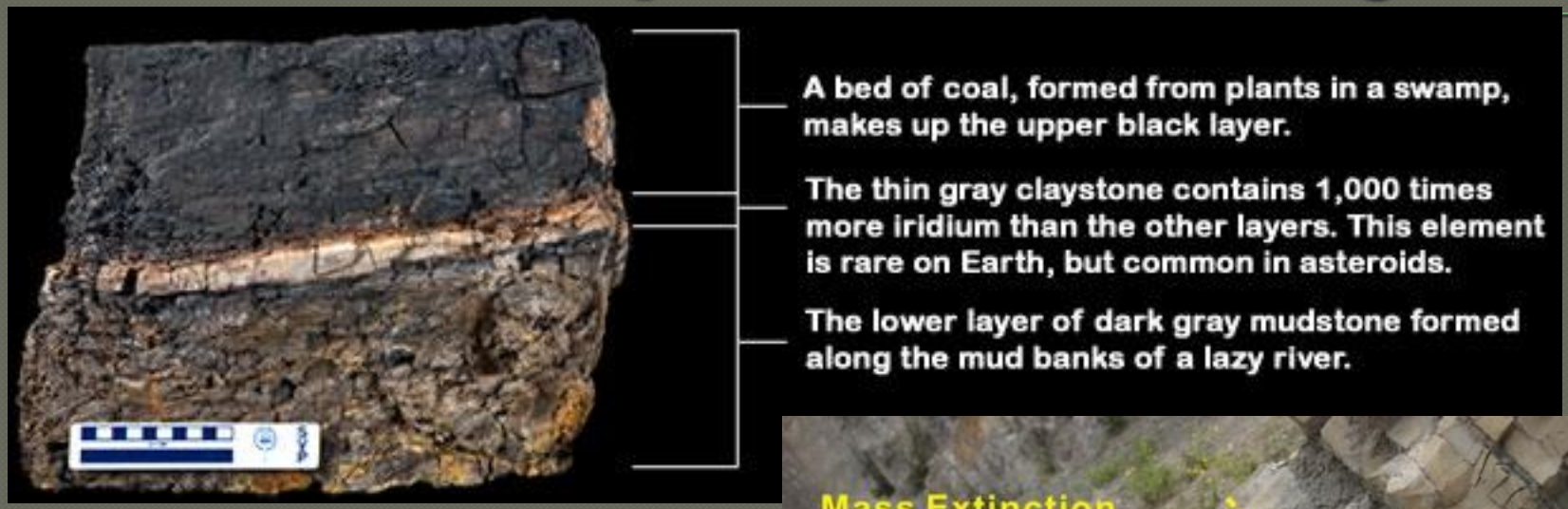
- 65 million years ago
- Likely from huge asteroid

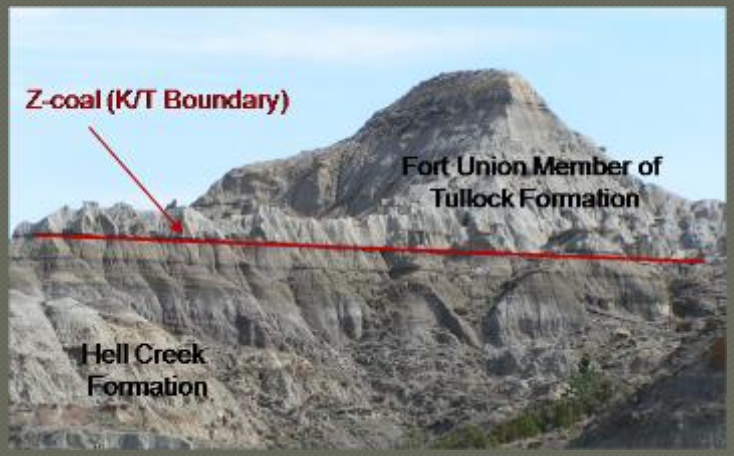
Iridium K/T Boundary

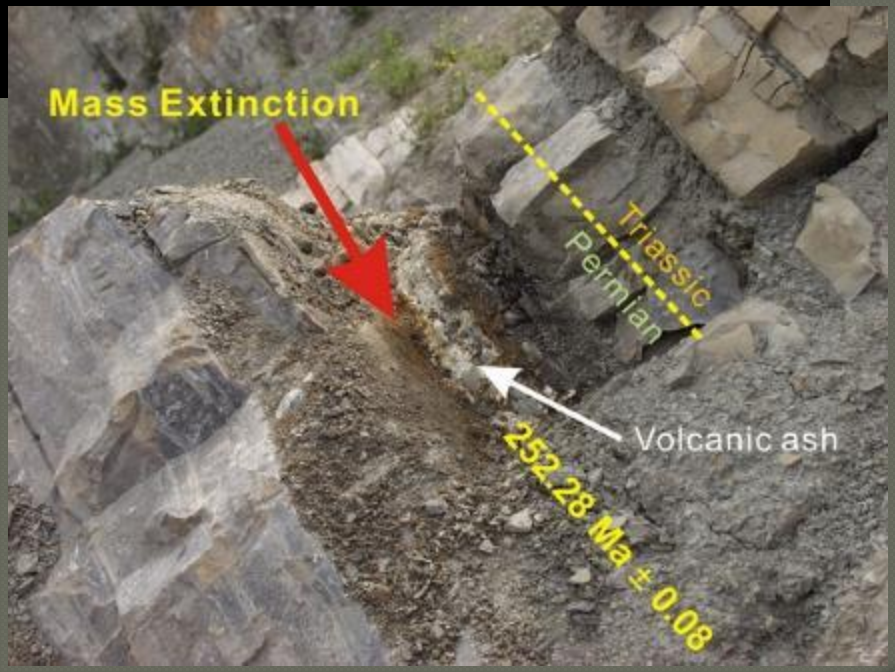
http://www.sciencechannel.com/tv-shows/greatest-discoveries/videos/100-greatest-discoveries-kt-boundary-

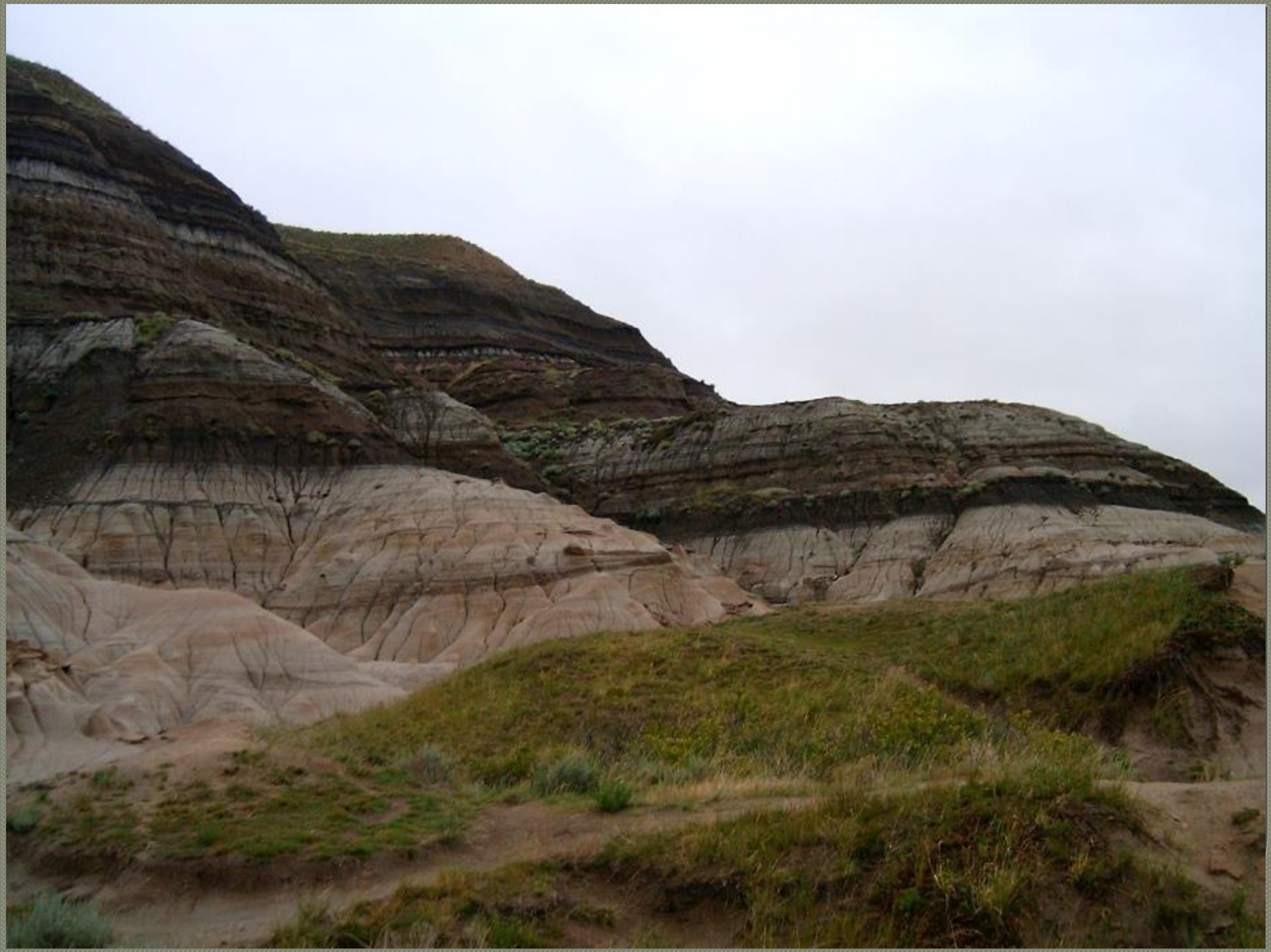


Iridium Layer around the globe



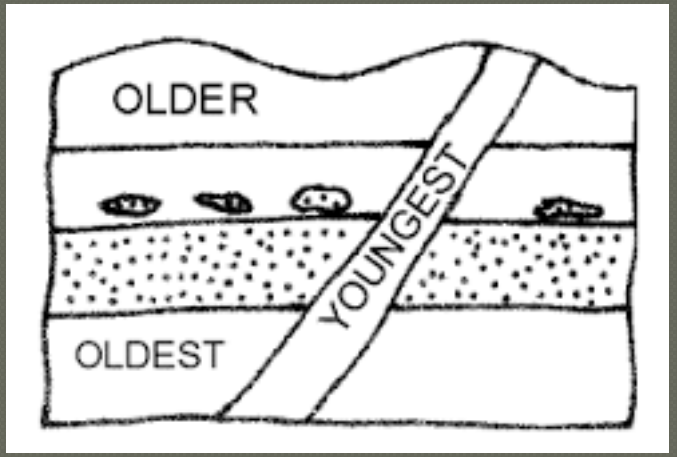


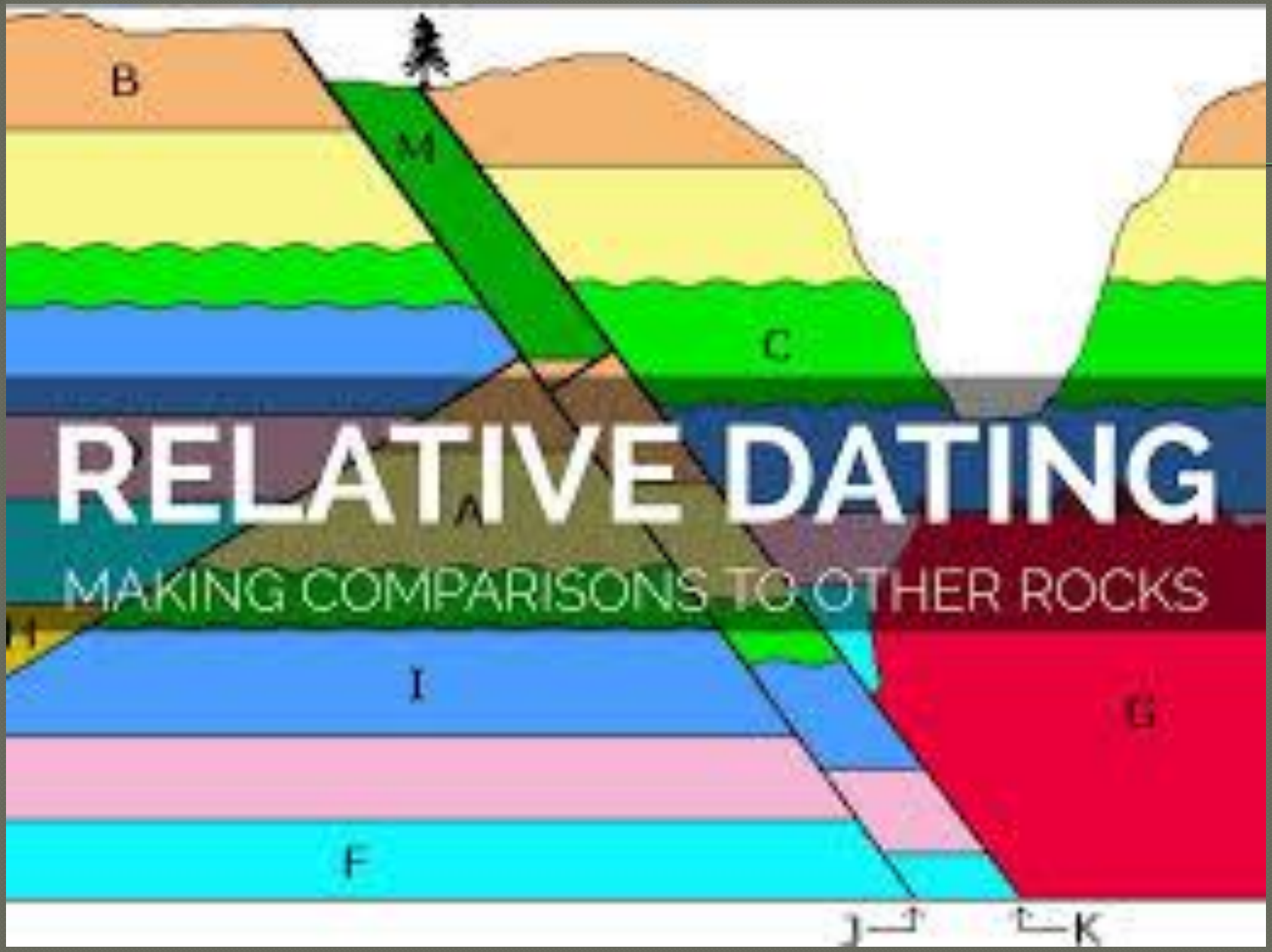




14. Relative Dating

- Any method of determining whether an event/object is older or younger than other events/objects.





RELATIVE DATING

MAKING COMPARISONS TO OTHER ROCKS

15. Fossils

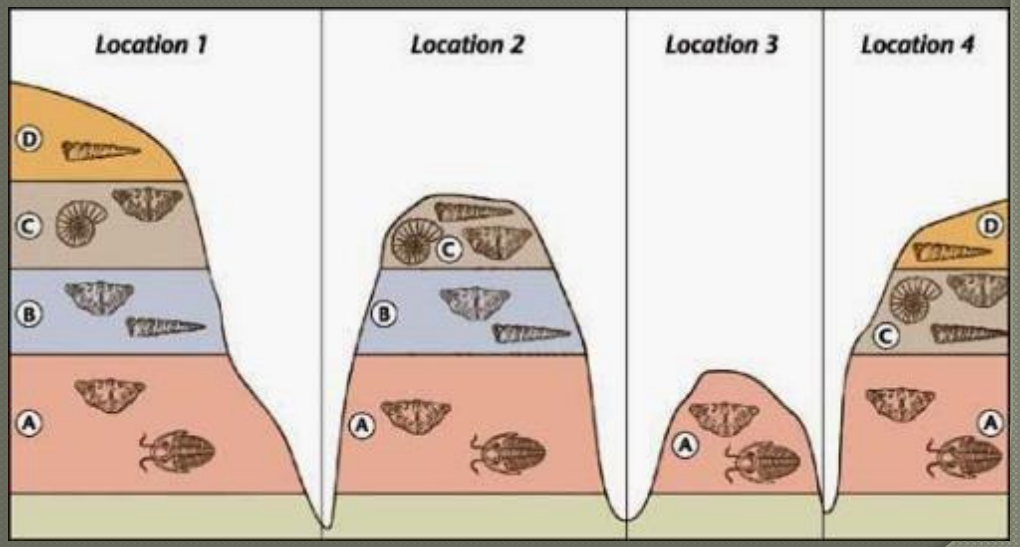
- The remains of an organism that lived long ago, most commonly preserved in sedimentary rock

15. Trace Fossils

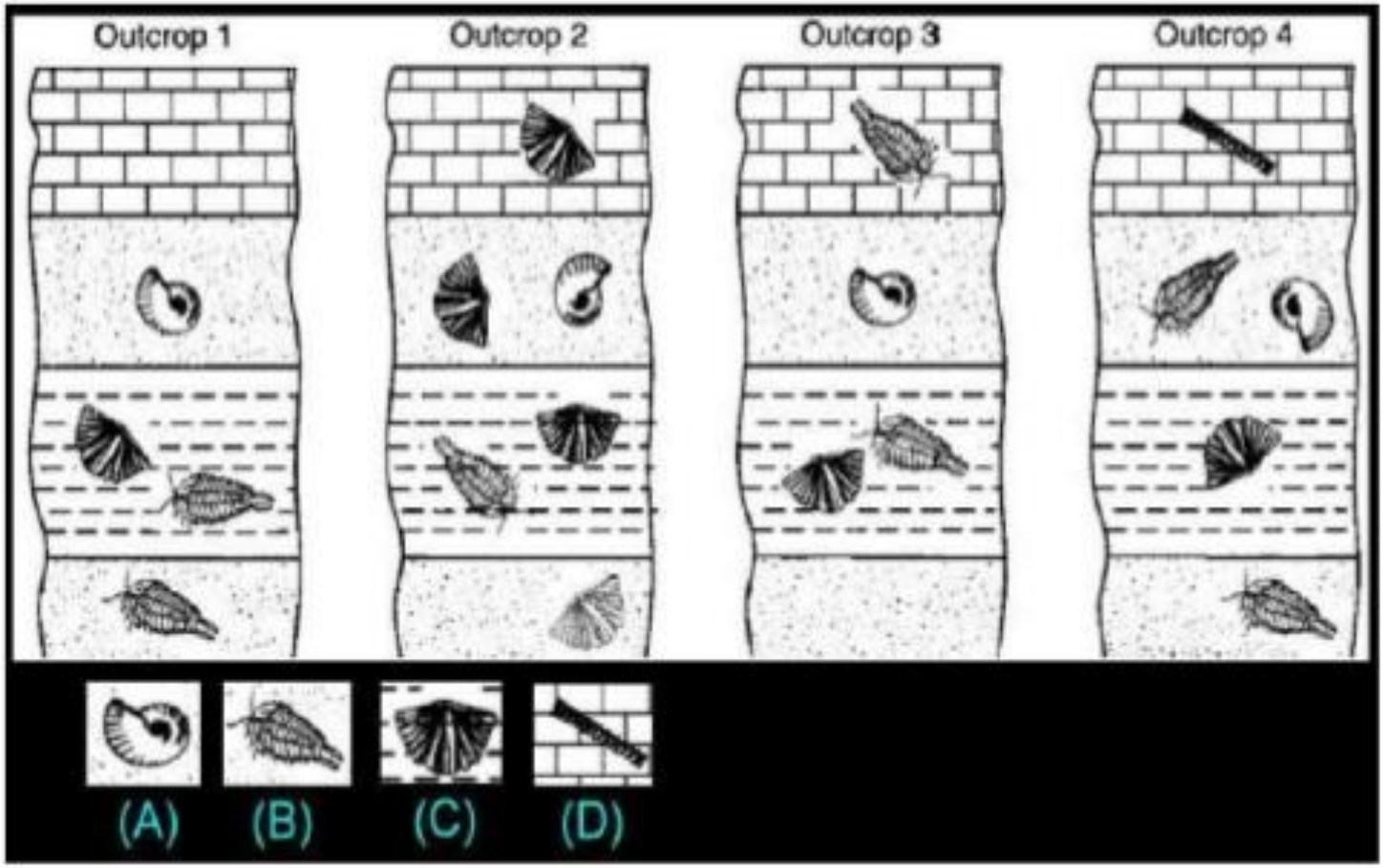
- A fossilized structure, such as a footprint, that formed in sedimentary rock by animal activity.

16. Index Fossil

- A fossil that is used to establish the age of a rock layer because the fossil is distinct, abundant, and widepread; and existed for only a short span of geologic time



Which organism would make the best index fossil?



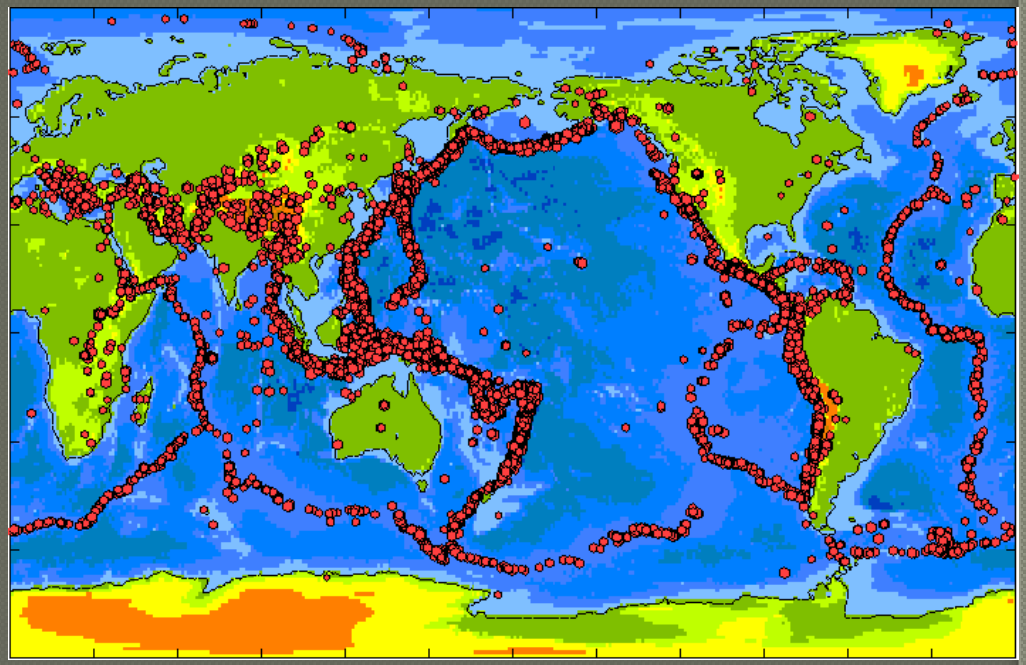
18. Pangaea

- The name of the super continent – one giant landmass existed about 245 Mya (million years ago)

DID YOU KNOW?

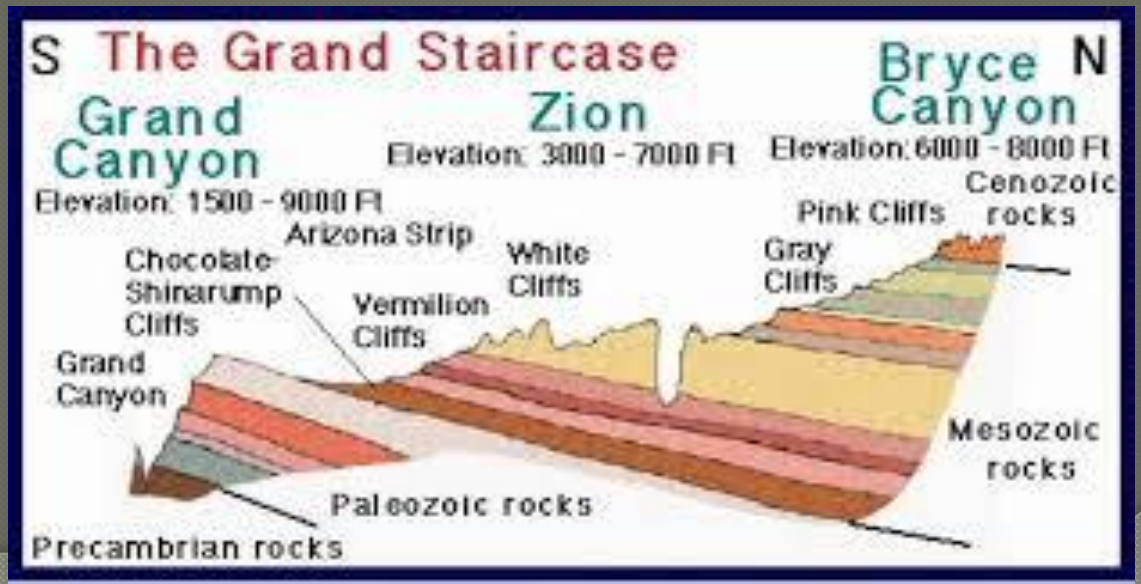
- You live on the **RING OF FIRE:**

a belt of volcanoes & earthquakes encircling the Pacific.



DID YOU KNOW?

- You live near the GRAND STAIRCASE?
- Bryce Canyon, Zion Canyon and the Grand Canyon. Only place on Earth.



The Grand Staircase