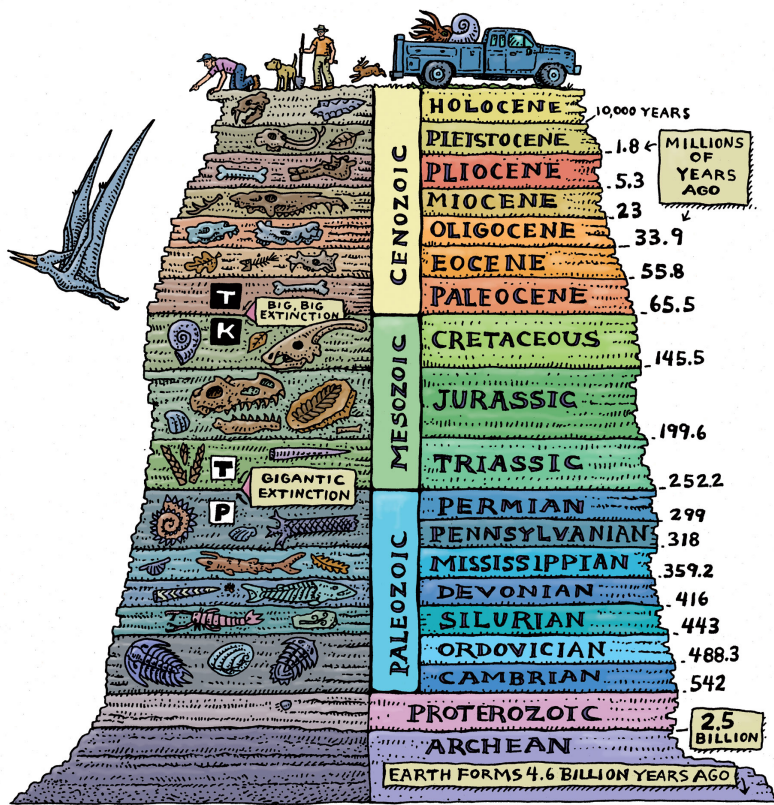


Geology Vocabulary



Write ONLY the underlined parts on the sage-colored slides.

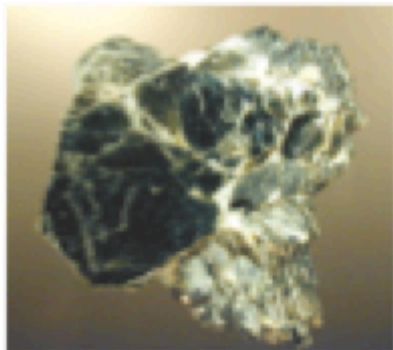
Draw pictures for examples

Main Concept: Rocks are made from Minerals

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



Quartz
(mineral)

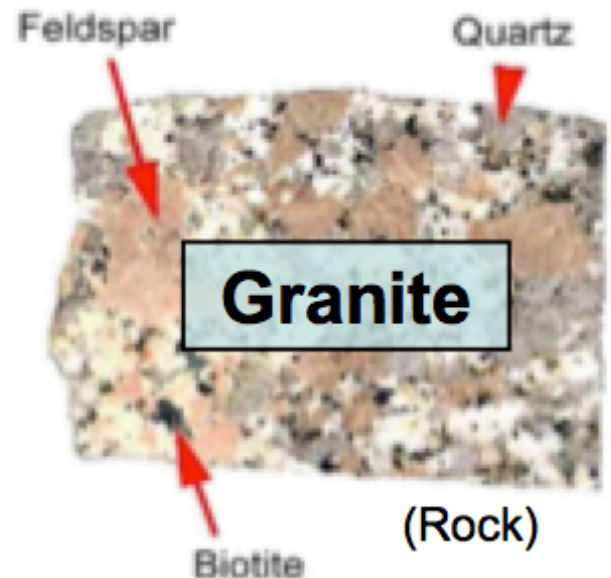


Biotite
(mineral)



Feldspar
(mineral)

=

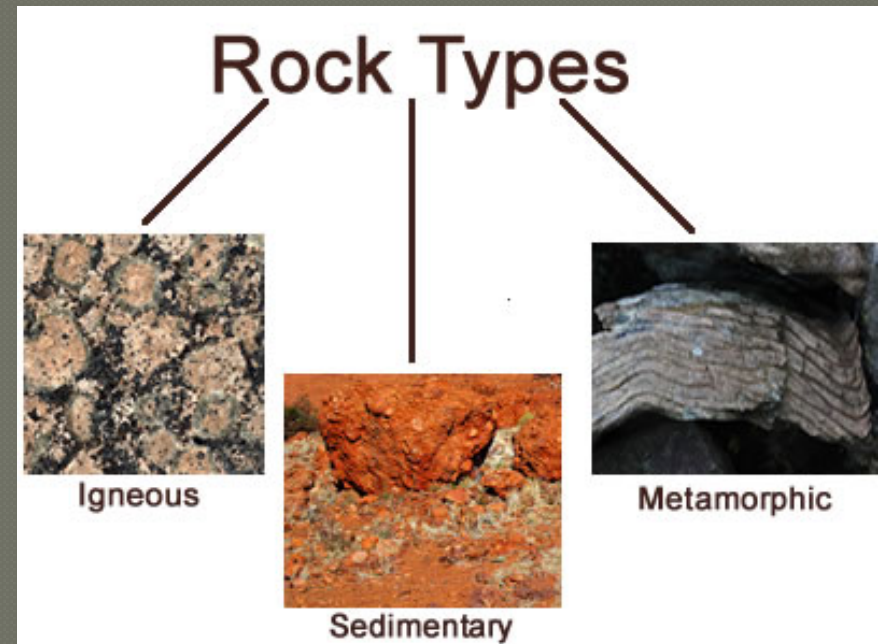


*****All three minerals are combined in a Granite rock**

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.

SEDIMENT COMES IN ALL SIZES

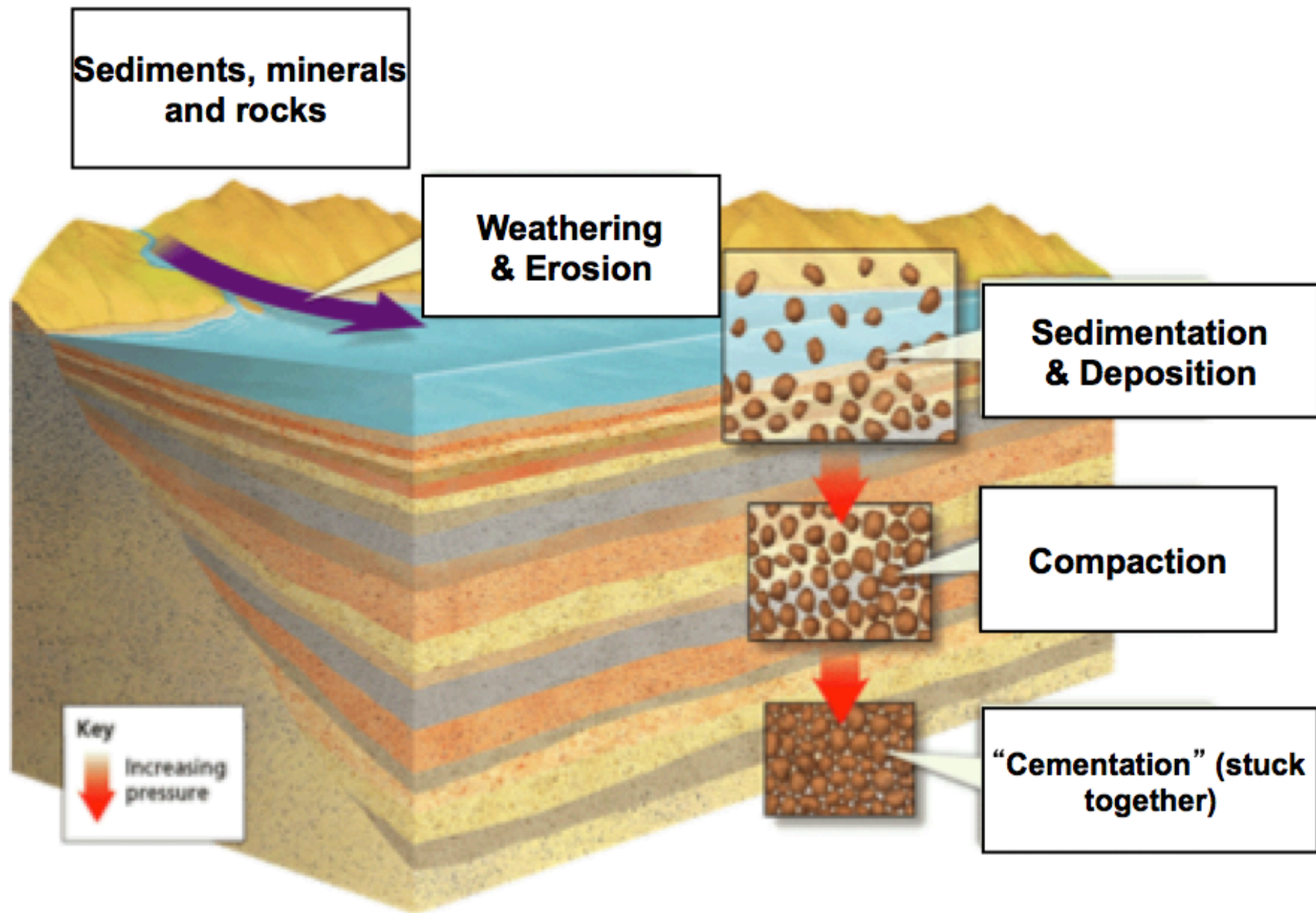
256 mm and up	BOULDERS	GRAVEL
64-256 mm	COBBLES	
2-64 mm	PEBBLES	
0.0625-2 mm	SAND	
0.002-0.0625 mm	SILT	
0.002 mm and smaller	CLAY	



Sedimentary Rocks

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





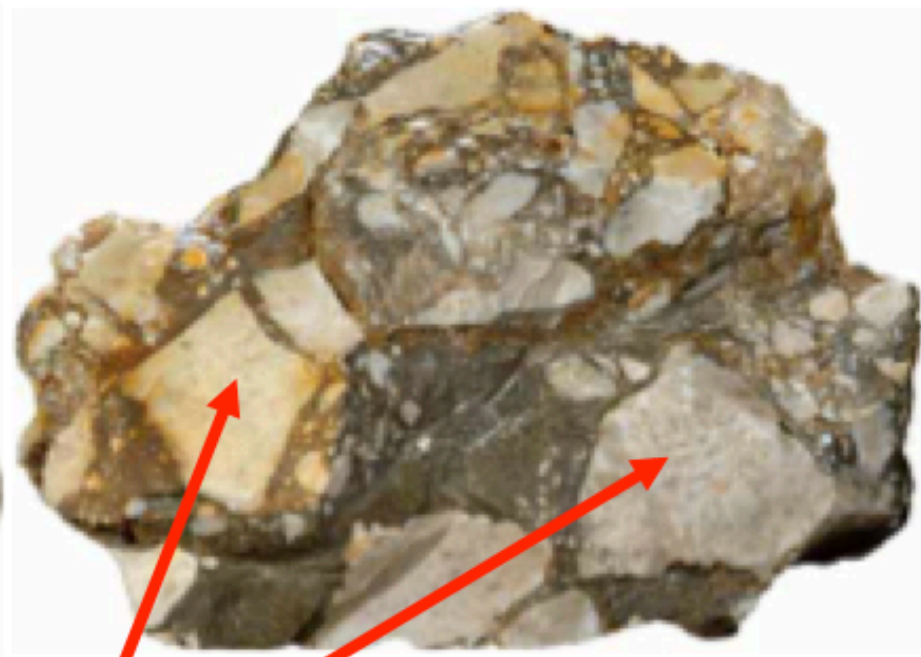
Sedimentary Rock

rock that is glued to other rock



Conglomerate Rock

Notice the rounded rocks



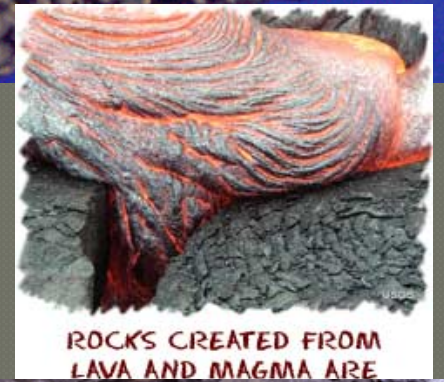
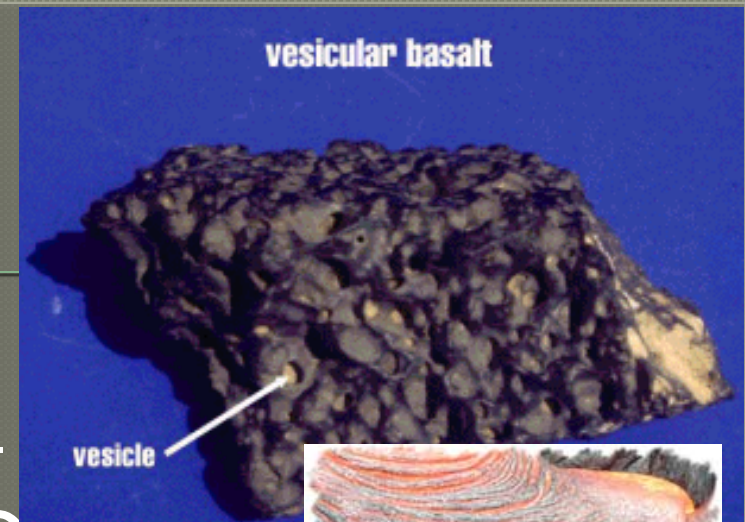
Breccia

Notice the jaded rocks glued

Take notice of small

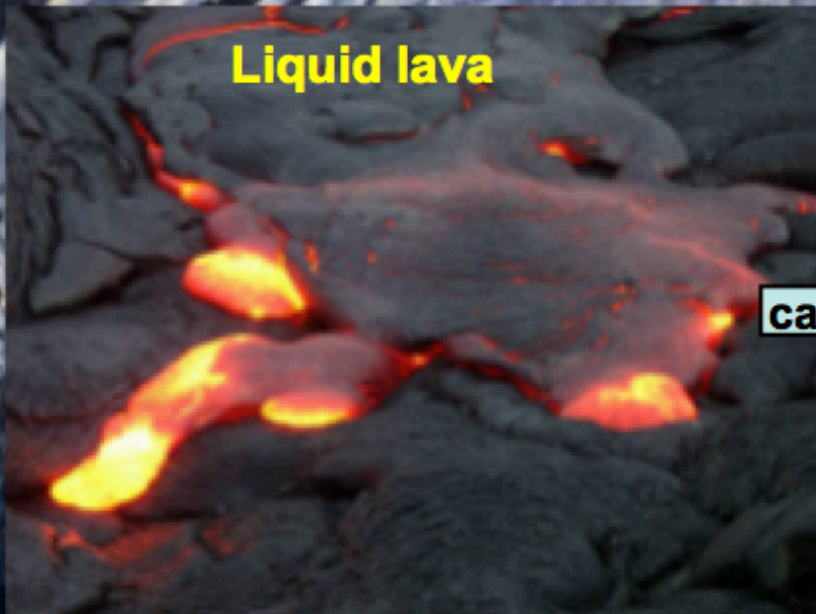
3. Igneous Rock

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

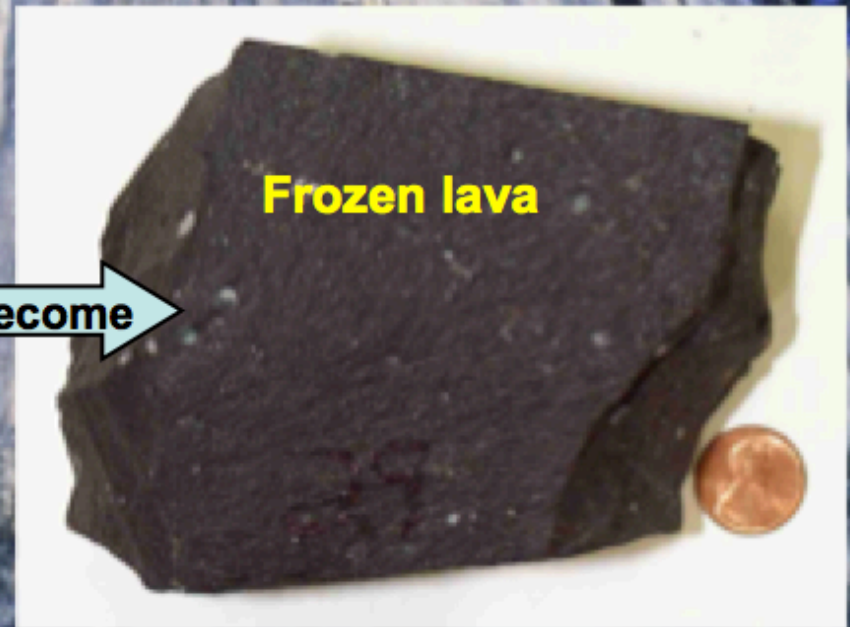


- Formed from cooled Lava and Magma

As an Example:



can become



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

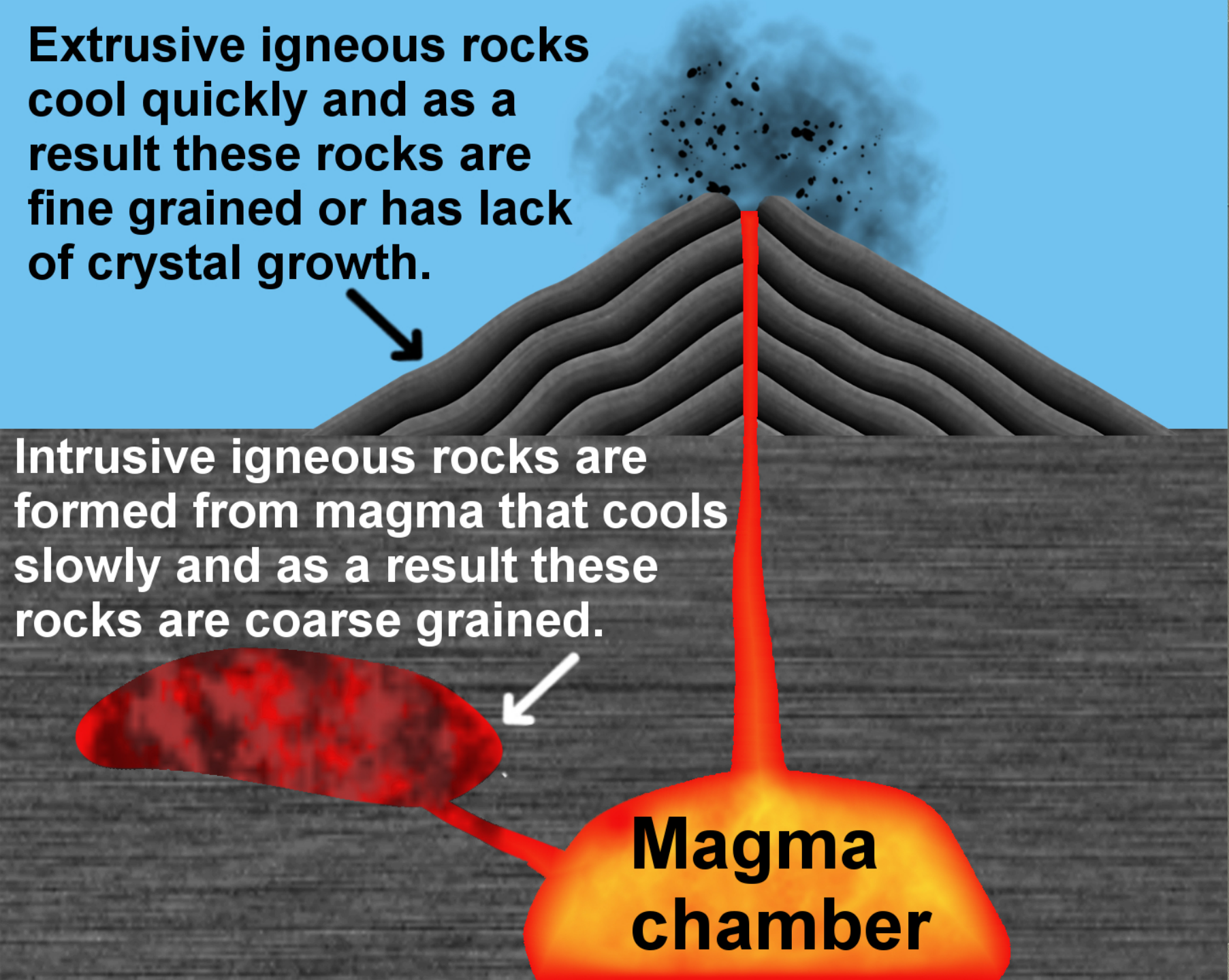
Extrusive igneous rocks cool quickly and as a result these rocks are fine grained or has lack of crystal growth.



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



GRANITE



OBSIDIAN



PEGMATITE



PERIDOTITE



PUMICE



RHYOLITE



SCORIA



TUFF



IGNEOUS ROCKS



- 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?







UNIFORMITARISM

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 geologic processes that occurred in the past can be explained by current geological processes.



6. Superposition

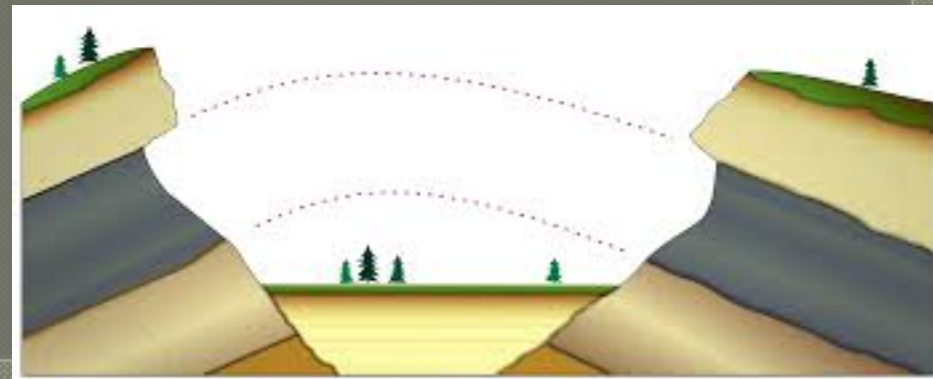
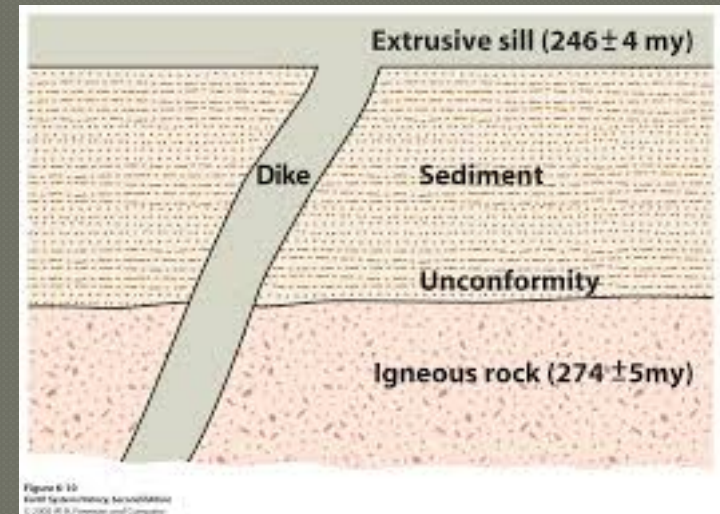
- A principle that states that younger rocks lie above older rocks if the layers have not been disturbed.





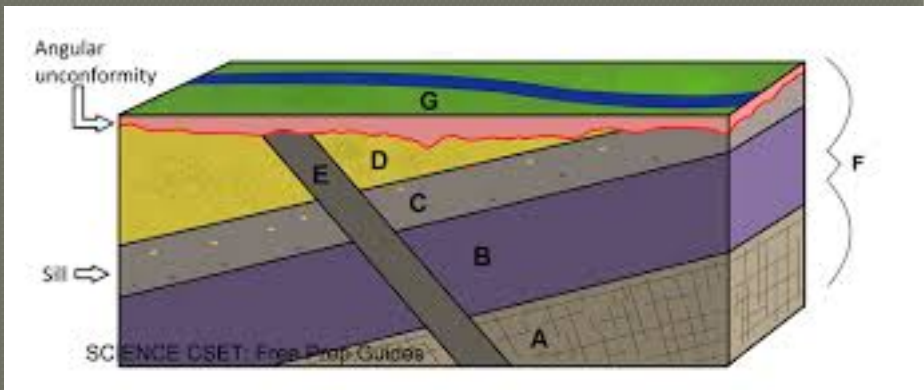
7. Unconformity

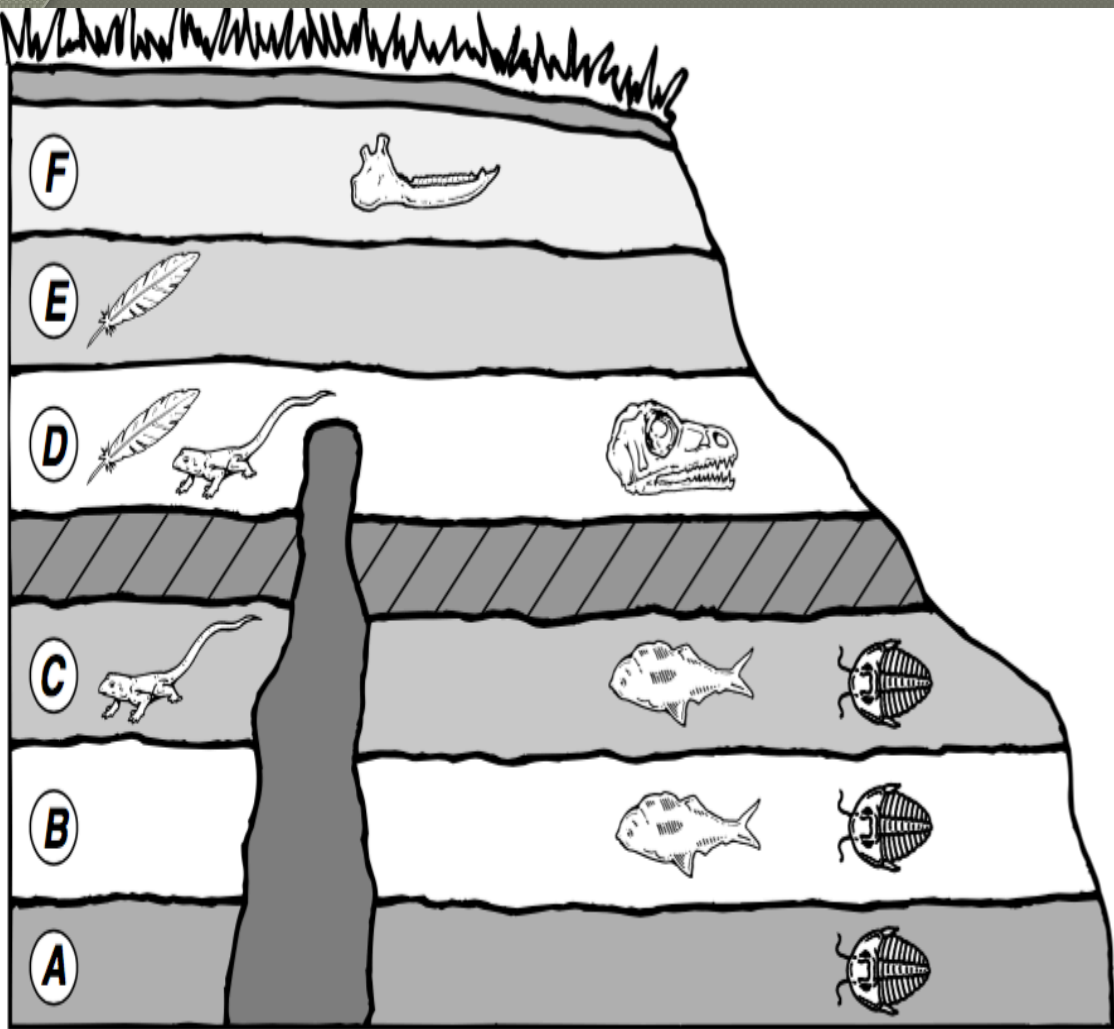
- A break in the geologic record created when rock layers are eroded or when sediment is not deposited for a long period of time. (*missing time)











8. Intrusion

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



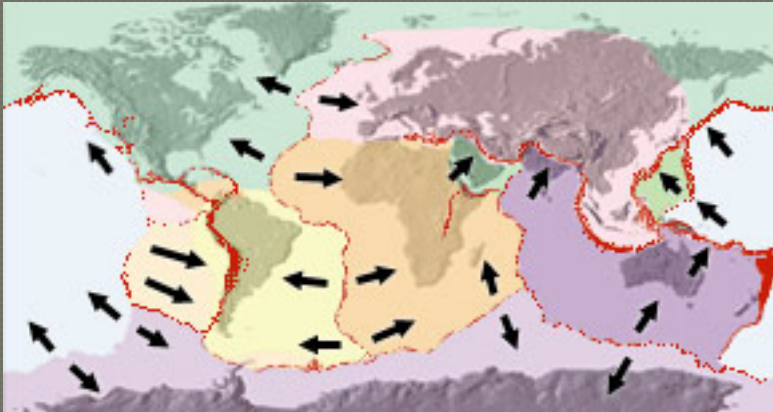


Key

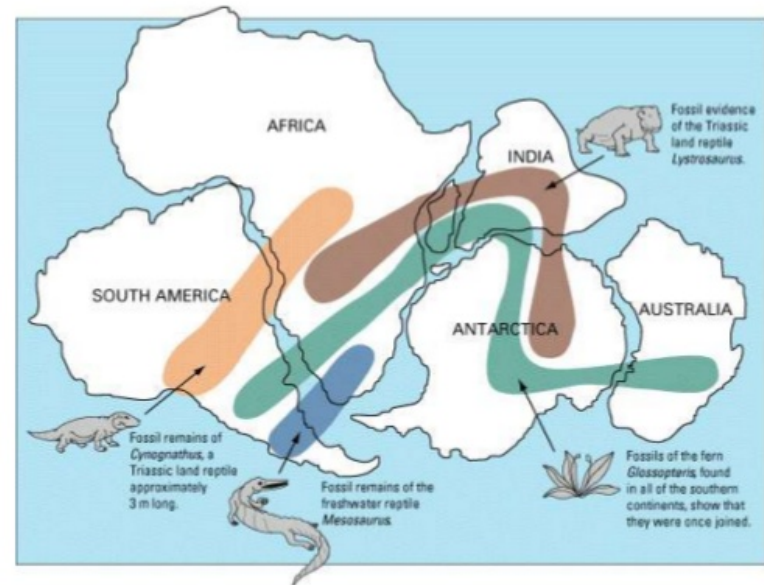
	Reptile		Dinosaur
	Trilobite		Whale
	Fish		Extrusion
	Bird		Intrusion

10. Plate Tectonics

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

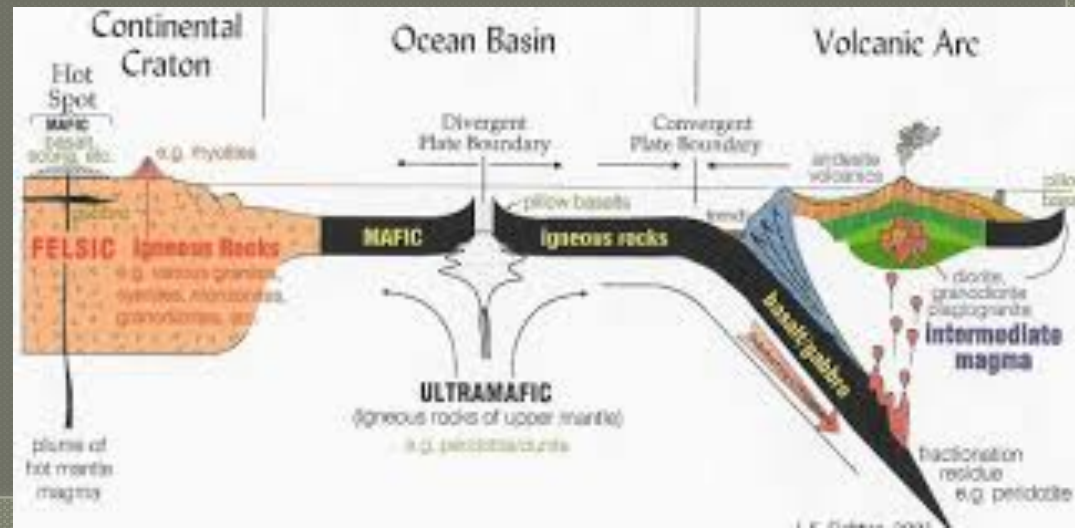


Evidence for Plate Tectonics

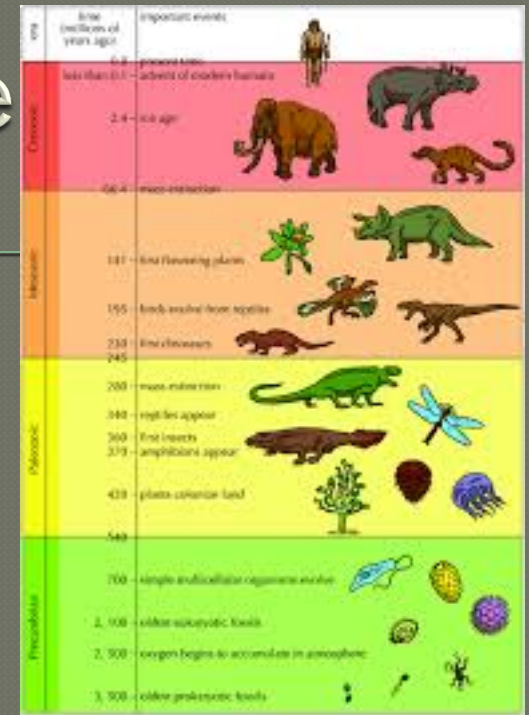


11. Continental Drift

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



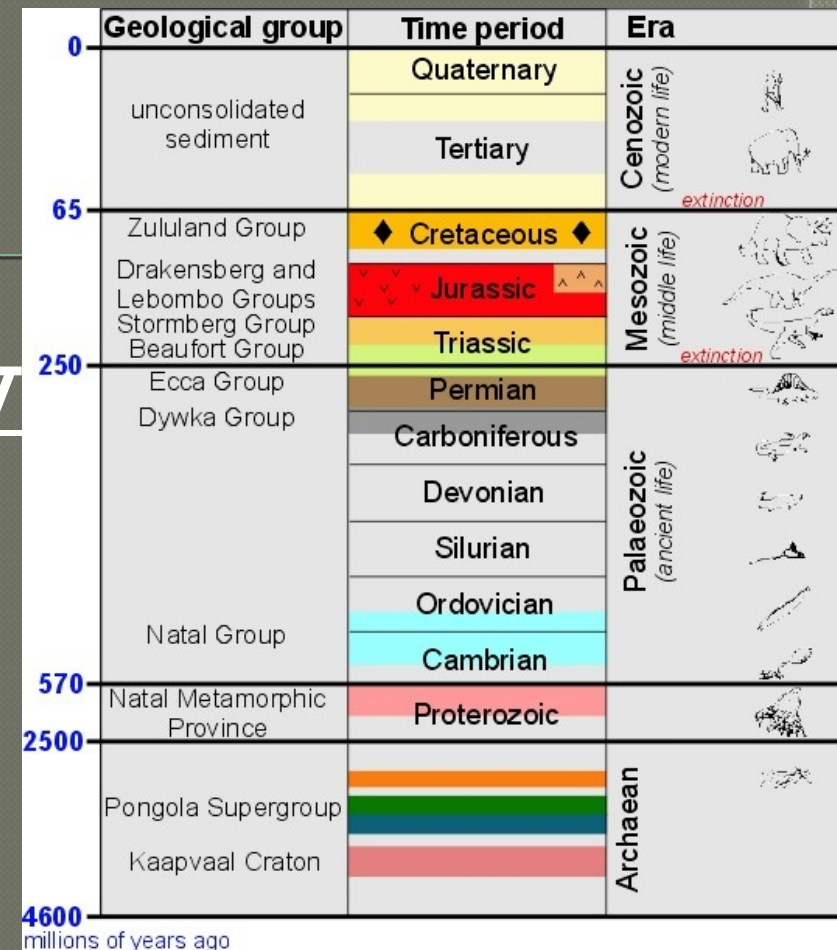
- The standard method used to divide Earth's long natural history into manageable parts.



10 ⁹ years	Era	Period	Epoch	Stage	Approximate Age in years	
660	Cenozoic	Quaternary	Holocene	Humans!		2.5
			Pleistocene			
		Tertiary	Neogene	Pliocene	12	
				Miocene	25	
			Paleogene	Oligocene	36	
				Eocene	Upper	48
					Middle	50
					Lower	54
			Paleocene			
		135	Mesozoic	Cretaceous	Lower	Maastrichtian
Campanian	80					
Santonian	85					
Coniacian	90					
Saragatian	100					
Albian	110					
Aptian	122					
Barremian	125					
Hauterivian	127					
Valanginian	130					
Ryazanian	135					
Jurassic						
	Triassic					
500	Paleozoic	Permian	Seed Ferns, Ferns Gymnosperms Earliest Vascular Plants (430 mya)			
		Carboniferous				
		Devonian				
		Silurian				
		Ordovician				
		Cambrian				

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->



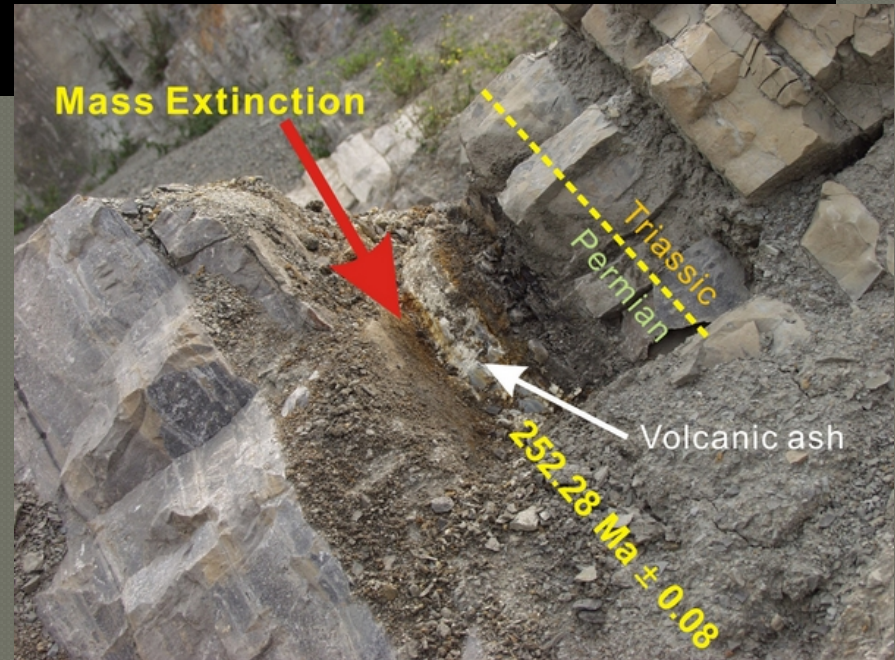
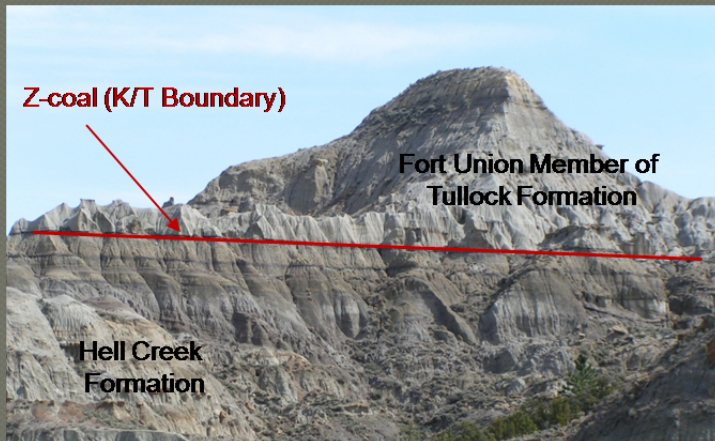
Iridium Layer around the globe



A bed of coal, formed from plants in a swamp, makes up the upper black layer.

The thin gray claystone contains 1,000 times more iridium than the other layers. This element is rare on Earth, but common in asteroids.

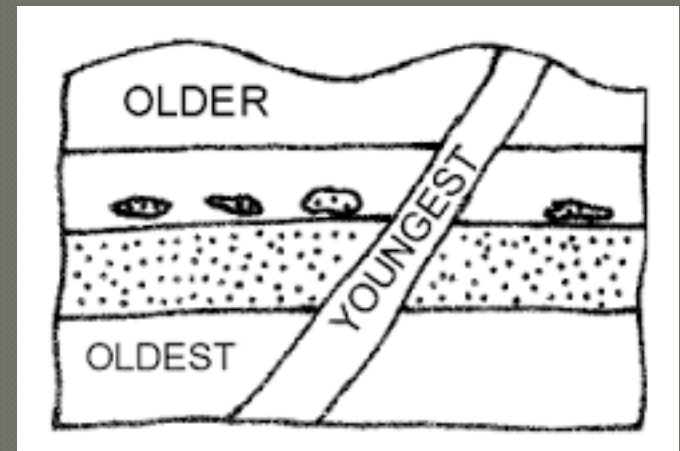
The lower layer of dark gray mudstone formed along the mud banks of a lazy river.

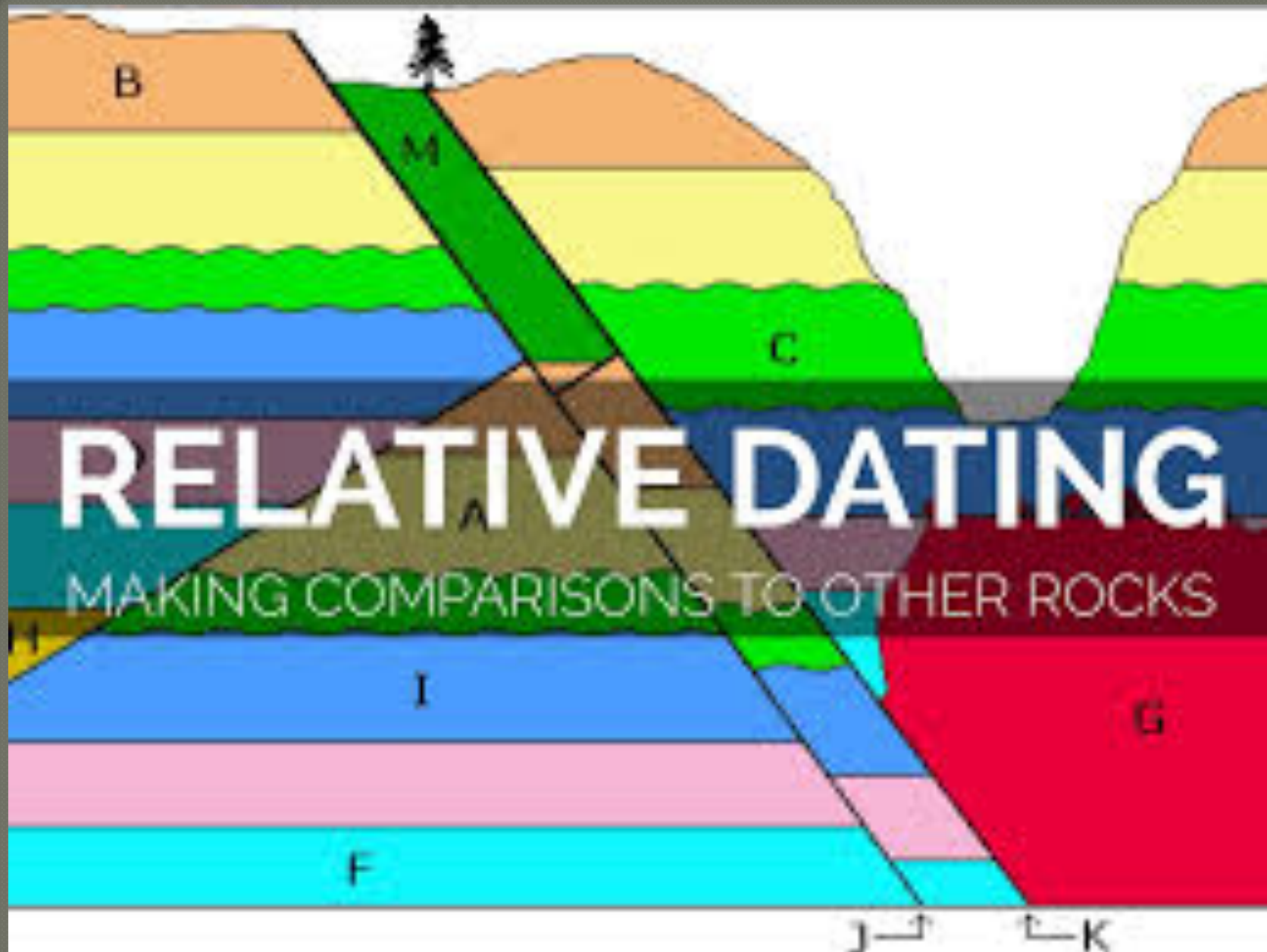




14. Relative Dating

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





15. Fossils

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



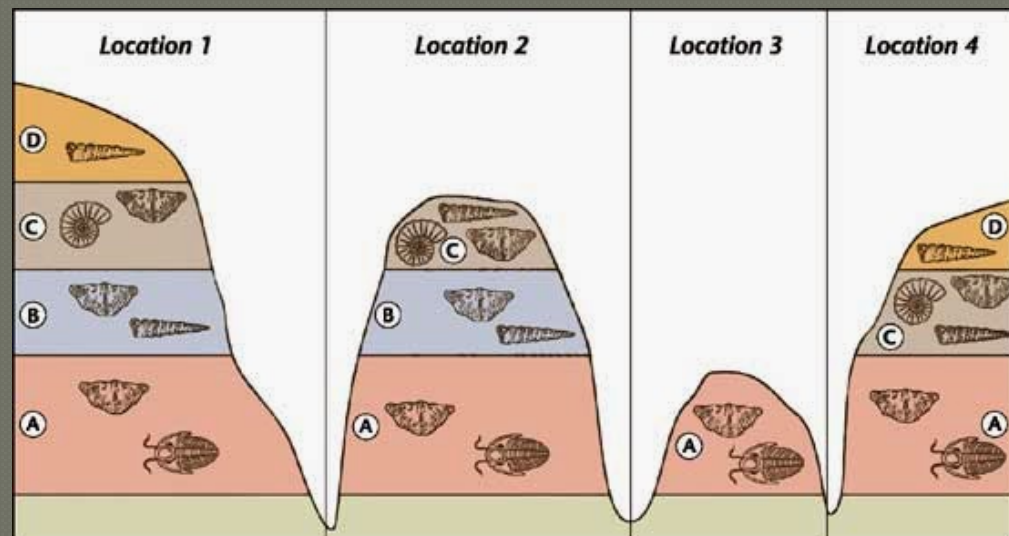
16. Trace Fossils

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

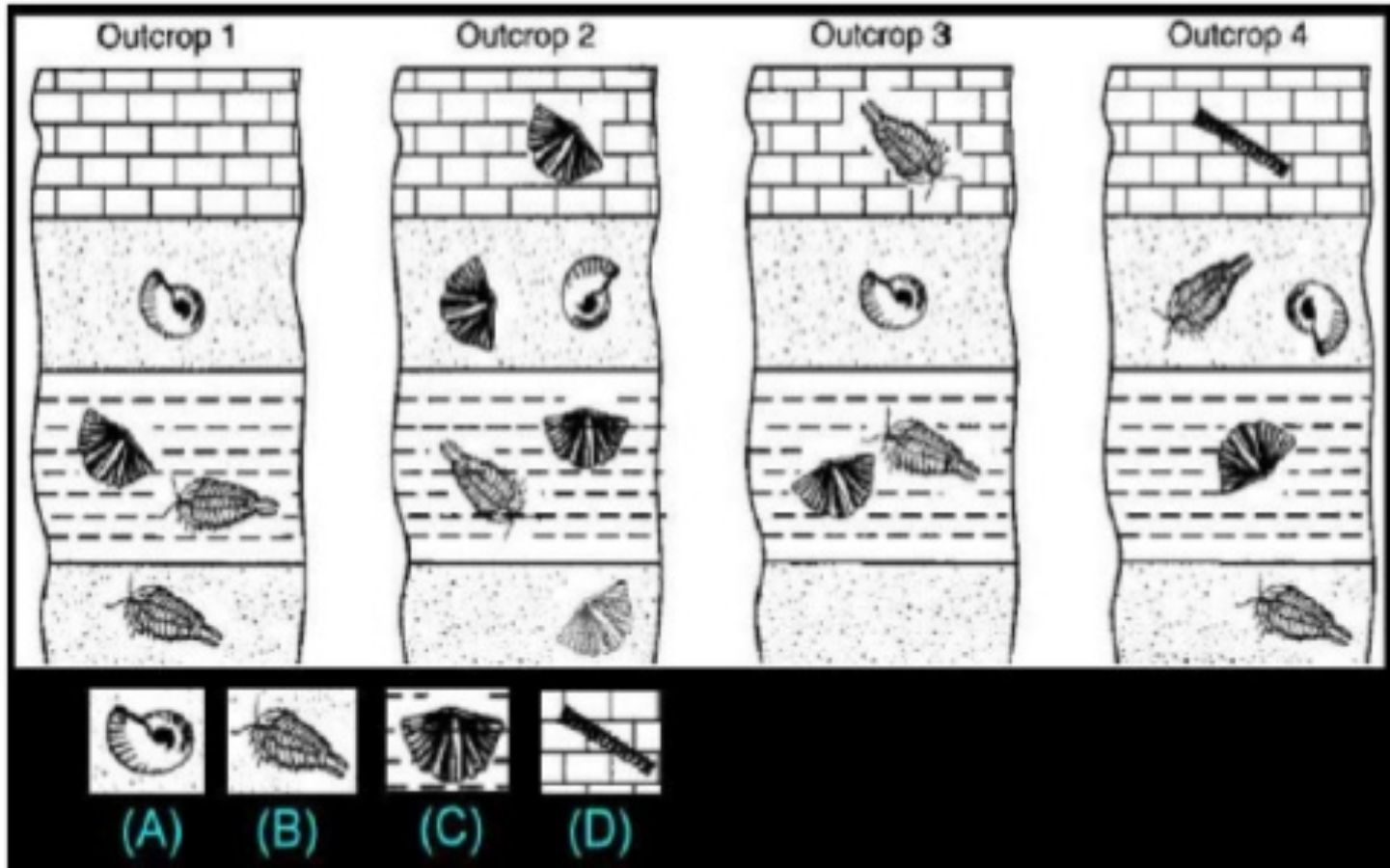


17. Index Fossil

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



Which organism would make the best index fossil?



18. Pangaea

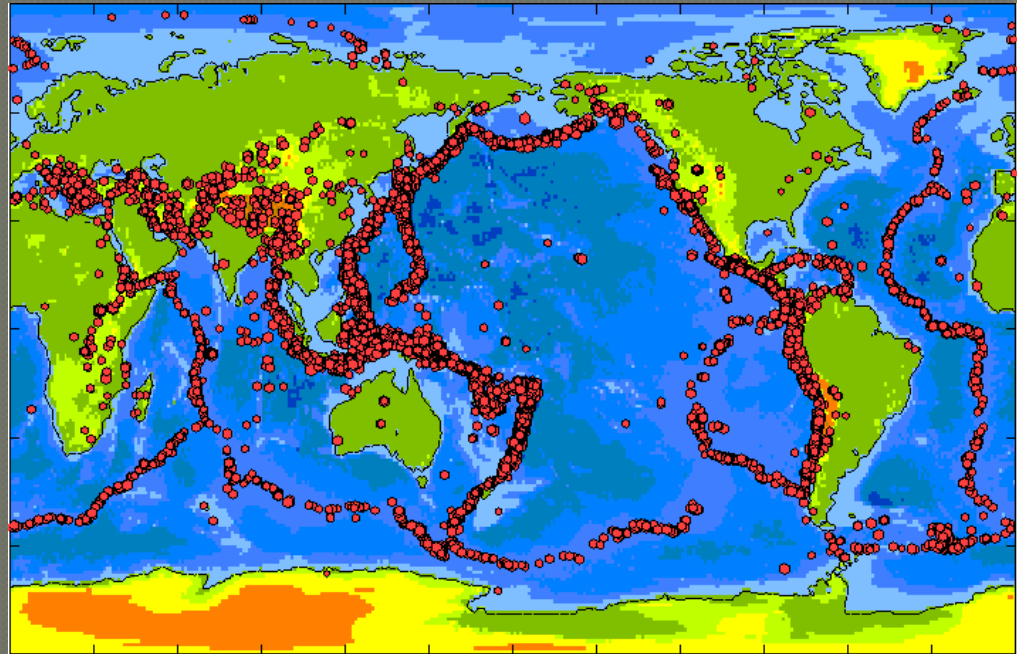
- The name of the super continent – one giant landmass existed about 245 Mya (million years ago)



DID YOU KNOW?

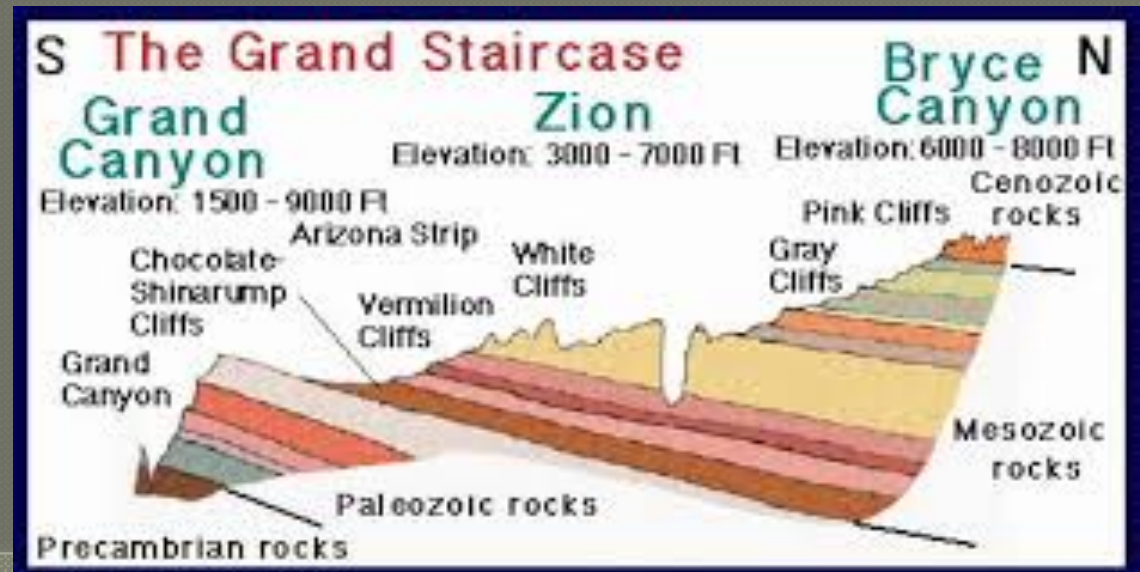
- You live on the
RING OF FIRE:

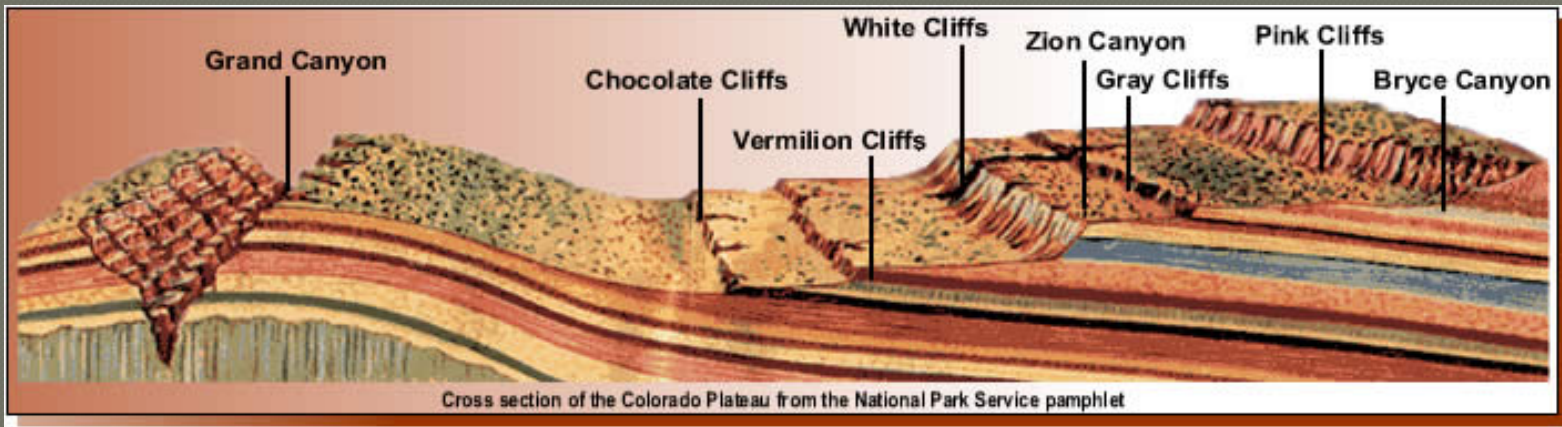
a belt of
volcanoes &
earthquakes
encircling the
Pacific.



DID YOU KNOW?

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





The Grand Staircase

