

All about the Earth

with Team Get S.E.T

Today's Agenda

- Overview of Earth's internal structure
- Time-lines
- People in the field
- Fossils
- Rock Layers
- Question time

Earth Layers

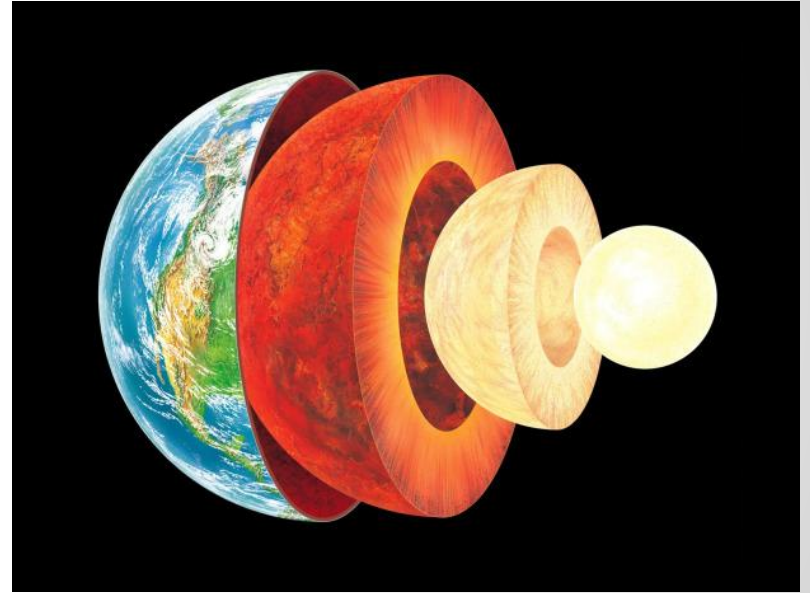
The Earth has 4 distinct layers:

Inner Core

Outer Core

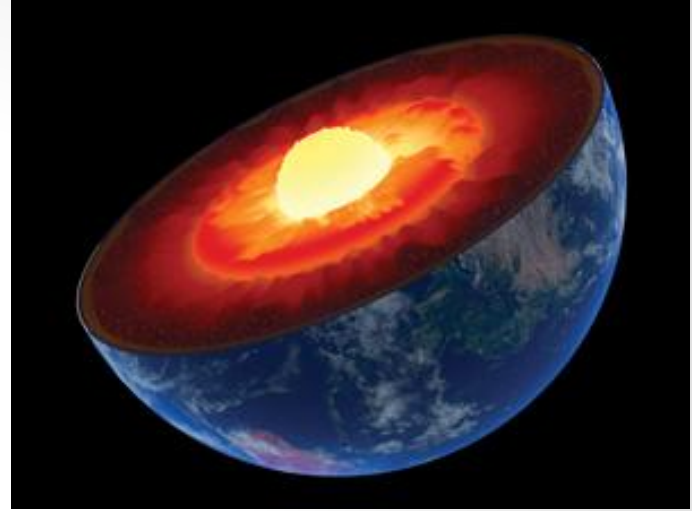
Mantle

Crust



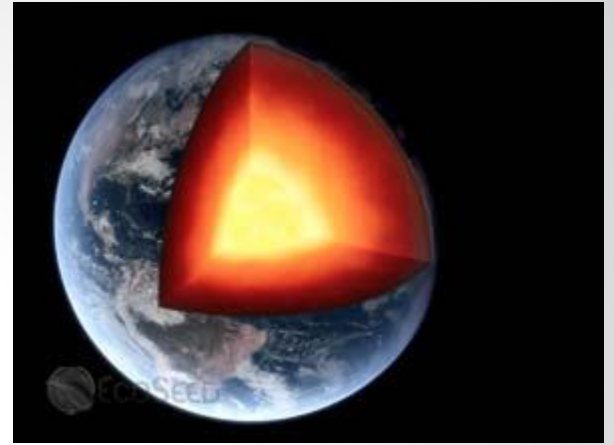
Inner Core

- Thickness
 - 1,220km or 760mi
- Depth
 - 5000km or 3100mi
- Temperature
 - Hot as the surface of the sun!
 - 5,000-7,000 degrees C
 - 9,000-13,000 degrees F
- Primarily made up of iron and other metals



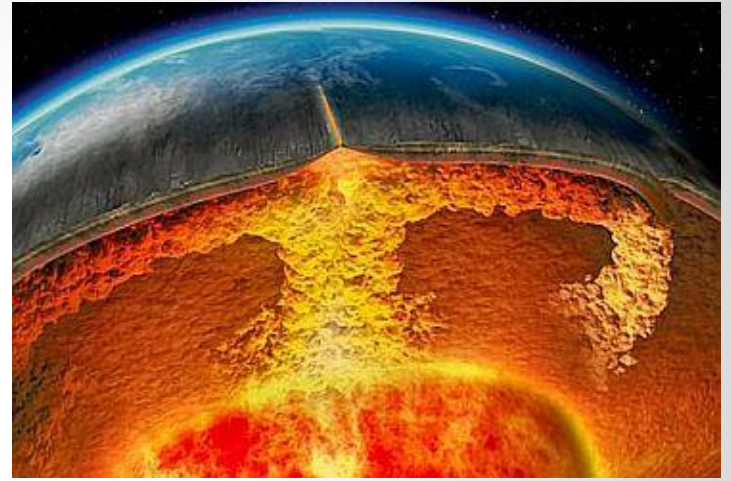
Outer Core

- Thickness
 - 2,300km or 1,400mi
- Depth
 - 2,890km or 1,800mi
- Temperatures
 - 4,000 to 5,730 degrees C
 - 7,280 to 10,340 degrees F
- It's 'fluid'



Mantle

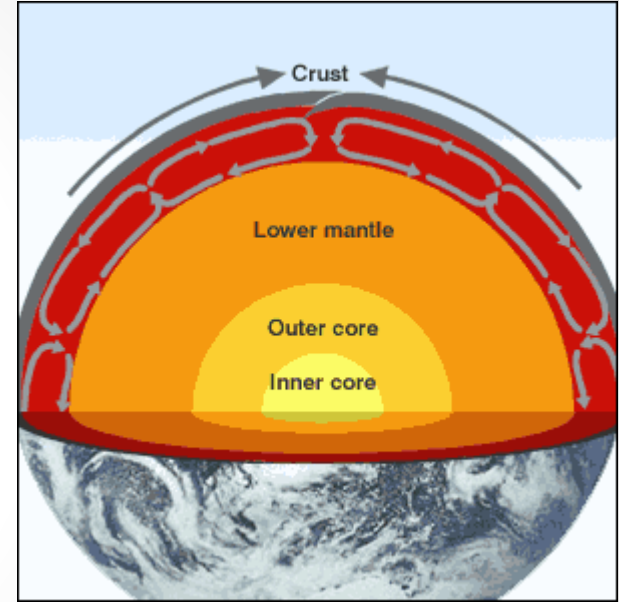
- Thickness
 - 2,900km or 1,800 miles
- Depth
 - 65km or 40 miles
- Temperatures
 - 900 C to 4,000 C !
- Contains many different elements, mostly oxygen.
- Diamonds and other gems form here



Crust

This is where we all live, on a 30mi thick layer of rock.

- Made of many layers, and a great variety of igneous, metamorphic, and sedimentary rock
- It “floats” on the mantle
- Our plate(the North American plate) moves about 1 inch to the west a year



Rock Cycle

The crust has been formed over a long time in a continuous cycle

1. Erosion->Sediment
2. Compacting->Sedimentary rock
3. Heat & Pressure->Metamorphic rock
4. Melting-> Magma
5. Cooling->Igneous Rock

The role time played in Earth's formation

Over time, animals and other living creatures that lived on the Earth's surface, become part of the earth as the cycle continued, and eventually 'buried' things.

Formation of rock layers

Weather breaks down rocks, into smaller rocks

- Grand Canyon

It's moved by wind, rain, and rivers.

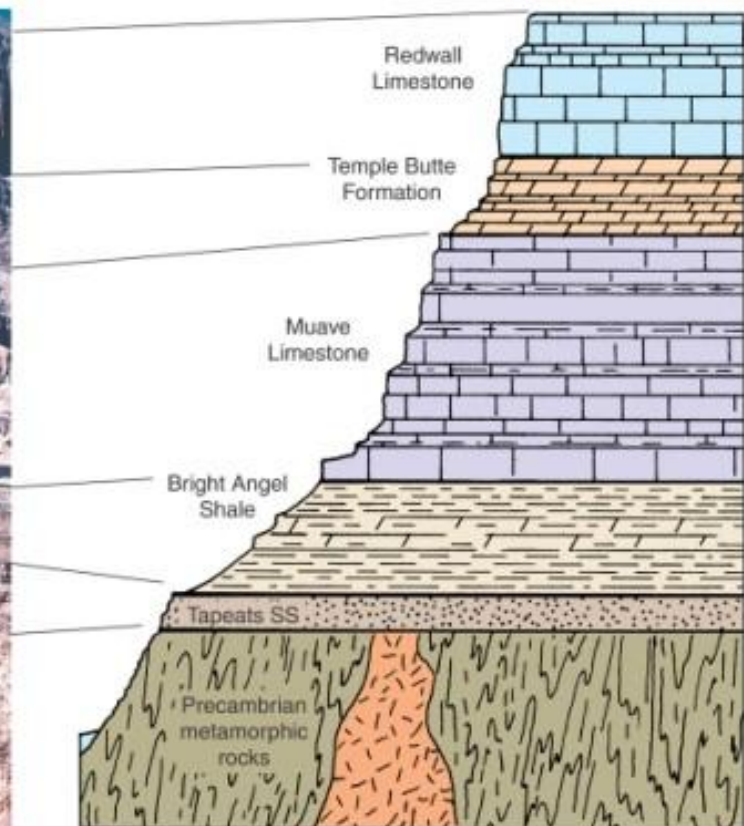
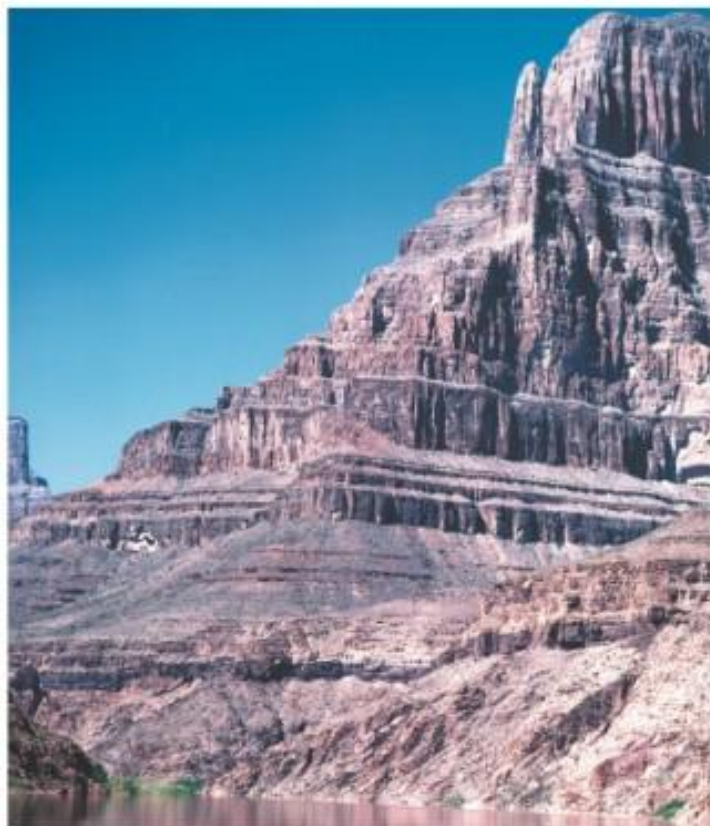
- Sifting

The weight of stuff on top of it compacts the dust and sediment into actual rock!



Composition of Rock layers

- The types of rock varies
- Depending on how far down, you may find more of one than the other.
- The types of rocks are:
Sedimentary, Metamorphic, and Igneous



People in the field

Those that study rocks, animals, and human's past are called different things

Archeology

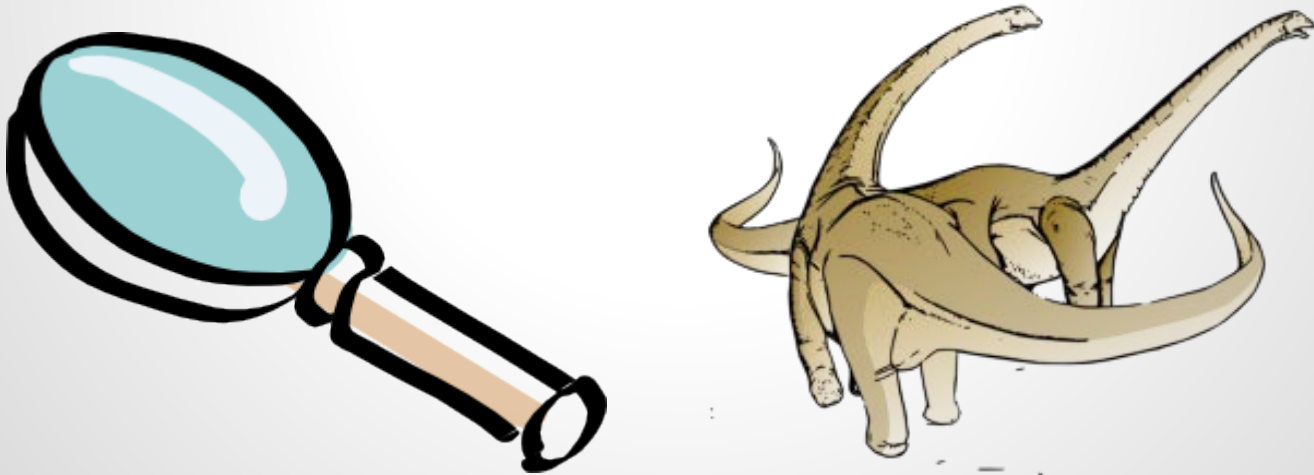
- the study of the humans of the past

Archeology

- Study of humans in the past, using bones and different artifacts to see how people lived back then.

We must go deeper!

Yet as we have searched for clues about what happened long ago, we've found things from times where humans weren't around yet.



Paleontology

We discovered bones and remains from long ago; Paleontology is the study of life that existed before the first humans.



Life over the years



Fossils

- The remains of animals and plants that have died long ago.
- They get 'buried' and encased into stones
- They tell us about history on Earth
- Certain animals only lived at certain times, so we know how old things found near them are.

Geology

The study of rocks and minerals.

They study how the rock layers were formed.

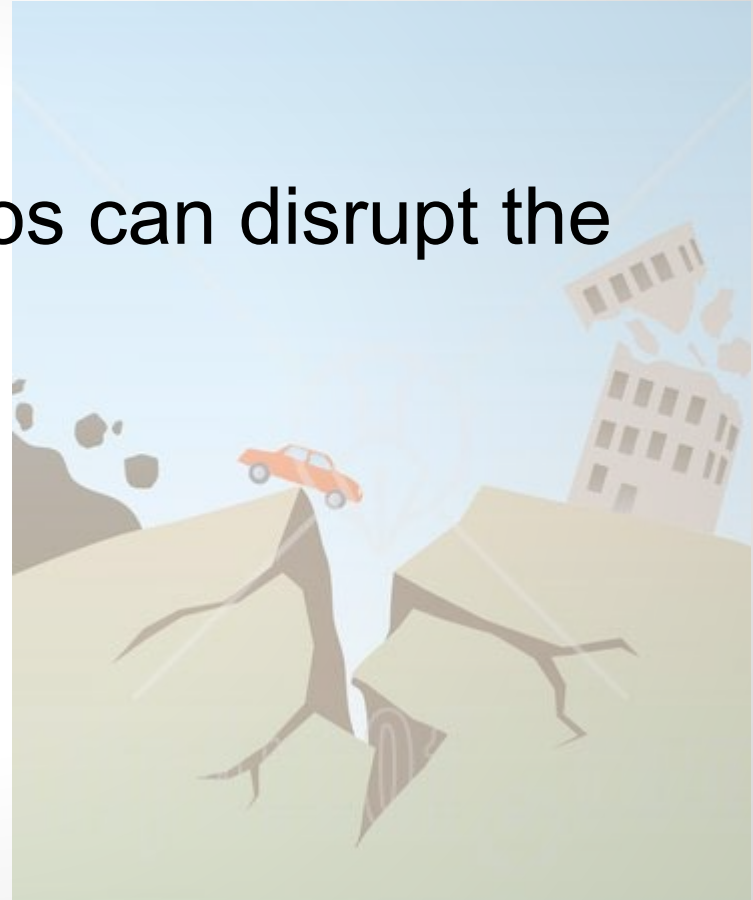
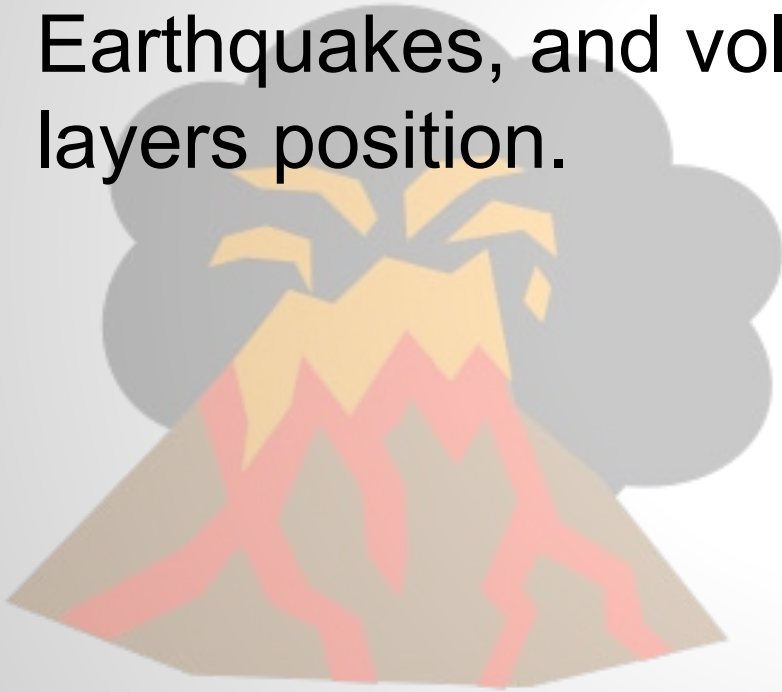
Myths

Some things that movies are wrong about:

- Humans and Dinosaurs didn't exist at the same time.
- The center of the Earth doesn't lead to some fantasy world

Disruptions

Earthquakes, and volcanos can disrupt the layers position.



Next time...

Rock out on Geologist Day!

Super Rock Fun Time!

Questions?

