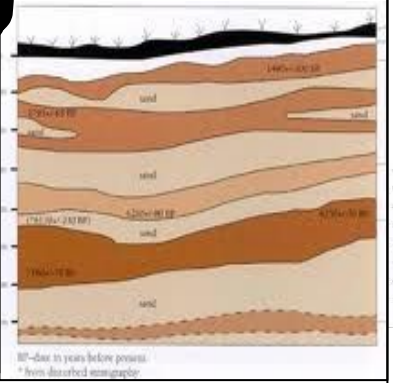
There are actually 5 processes…

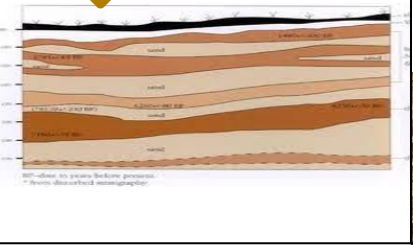
1)WEATHERING when rocks are broken down into sediment by Physical and

2) ERODE – when sediment is CARRIED to a new

3) DEPOSIT – when sediment is DROPPED in a new location



4) COMPACT – when layers of sediment are PRESSED & SQUEEZED together in a piggpile



5) CEMENT – when compacted layers of sediment CRYSTALLIZE or GLUE together

MECHANICAL WEATHERING

The physical breaking down of rock into sediment

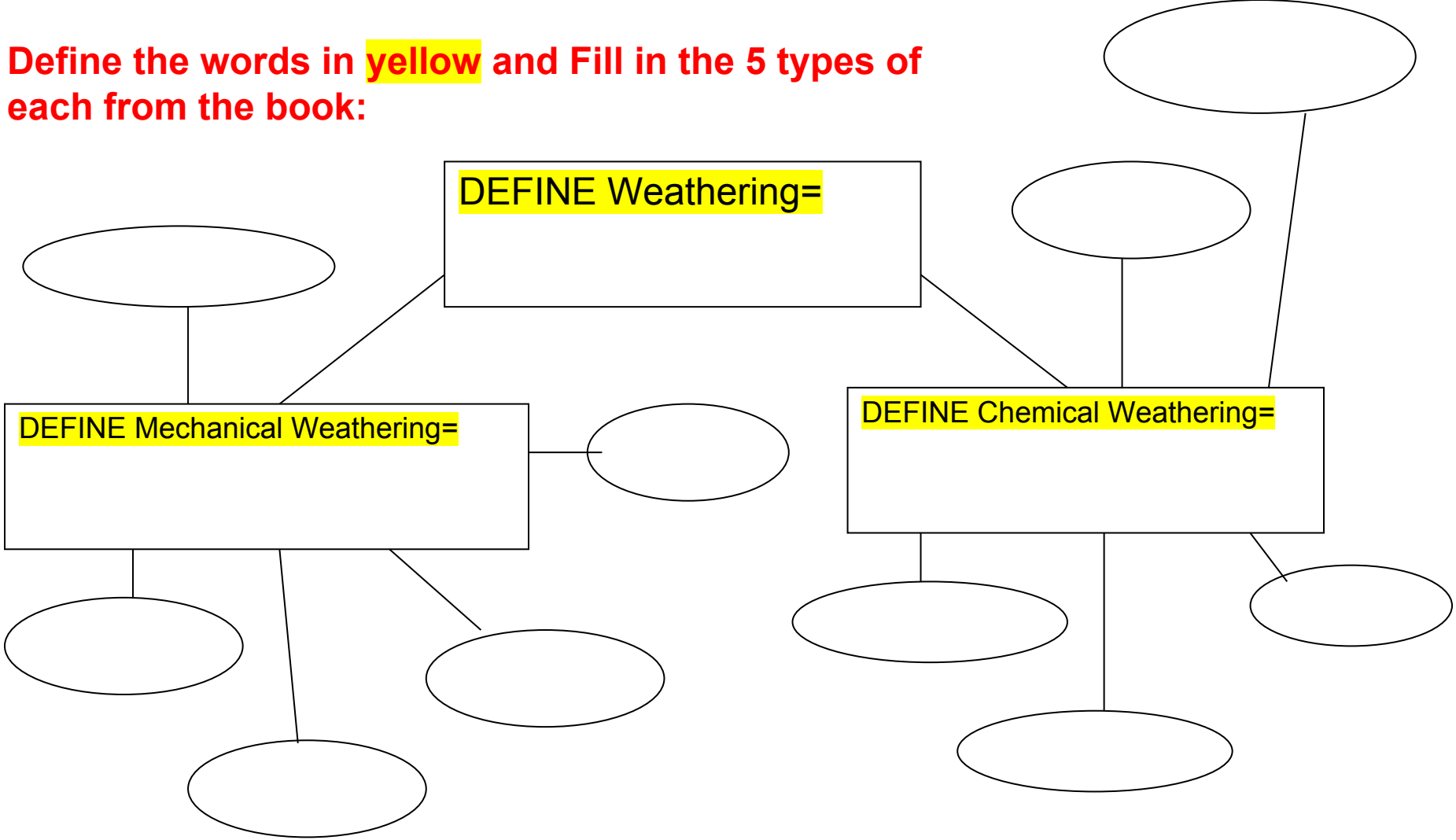
freezing & thawing, plants, abrasion, & pressure

CHEMICAL WEATHERING

When chemicals slowly dissolve and break down rock into sediment

Oxygen, water, moss & lichen, acid rain, CO2

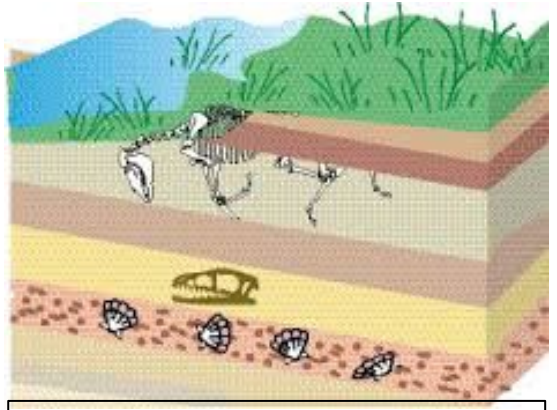
Define the words in yellow and Fill in the 5 types of each from the book:



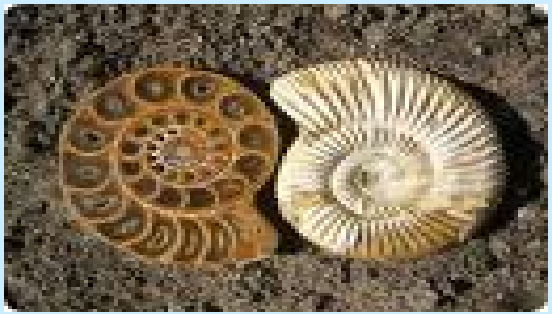
Why are sedimentary rocks the only rocks to have fossils?

Igneous cannot have fossils because...

Metamorphic rocks cannot have fossils because...



Sedimentary Rocks CAN have fossils because...



Fossil Creation & Types

1. Sedimentary rock must be formed in 5 important steps:

a._____ The breaking of other rocks into sediment

b._____The carrying of sediment

c._____The "dropping off"of sediment

d._____The packing together of sediment (as sediment continues to pile on top of 1st layer of sediment)

e._____when minerals dissolve (in water) & crystallize (sediment is "glued together")

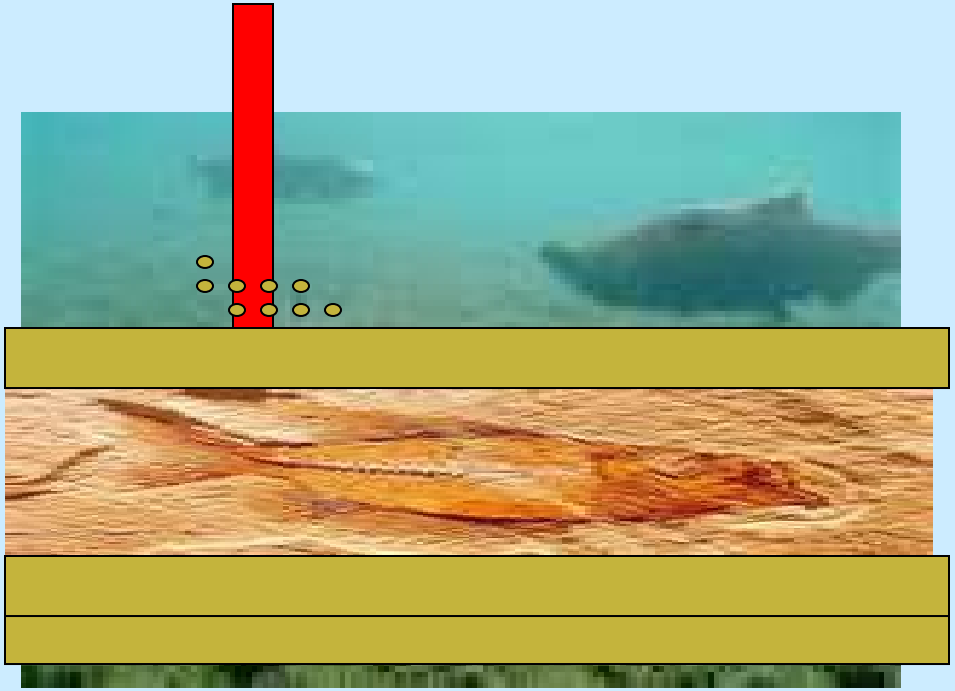
The steps to create most fossils in sedimentary rock:

1) Animal dies and sinks to the bottom of _____, usually a lake or pond.

2) _____ covers the organism. Soft parts of organism _____.

3) Through steps for _____ rock (EDCC) sediment becomes rock preserving parts of the organism.

4) Weather (breaking down) & erosion (carrying away) eventually _____ fossil at surface.



Fossil Types

Molds

What it is:

A _____ area in sediment in the shape of the organism.

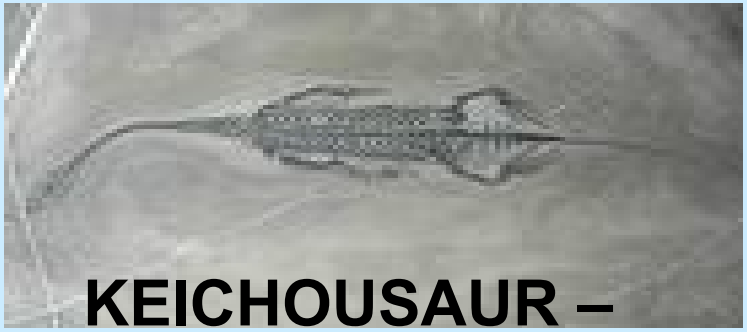
How it's formed:

1.) The hard part of an organism, such as a shell, is buried in sediment.

2.)The hard part leaves an impression in the sediment, which eventually becomes sedimentary rock.

More molds….

Fern – Dominated during Paleozoic Era



KEICHOUSAUR – Triassic 1st appearence

Mystery mold?

Casts

What it is:

A _____ of an organism. The _____ of a mold.

How it's formed:

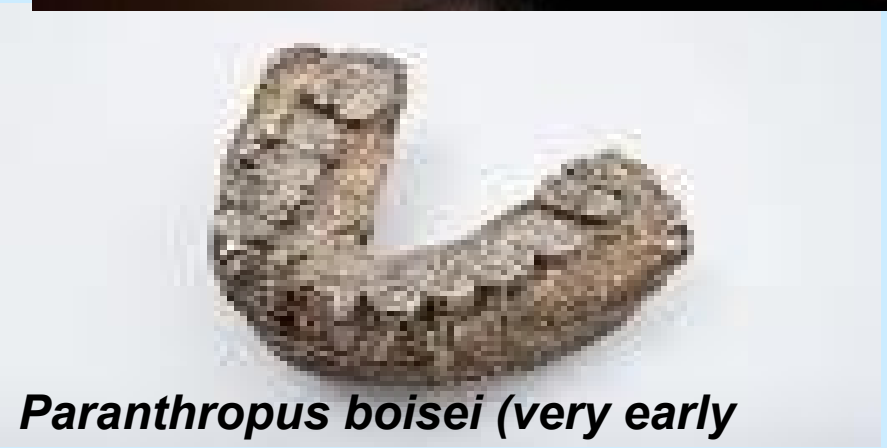
1)Water carrying dissolved minerals seeps into the empty space of a mold.

2) Once the water and dissolved minerals solidify they create a cast.

Part of a Trilobite – appeared in Cambrian time

More casts….

Starfish – 1st appeared during Cambrian time



Paranthropus boisei (very early ancestor of humans) lived predominately in Tertiary time period

Petrified Fossils

What it is:

Petrified = turned to stone

Fossil in which _____ have replaced all or part of an organism. Sometimes parts of the original organism is preserved.

Petrified Tree

How it's formed:

1)Sediment covers the organism.
2)Water rich in minerals seeps into the organism.
3)Minerals in solution harden and fill in all spaces of organism.


Petrified Tree Stump


Petrified Coral


Petrified Tree Roots

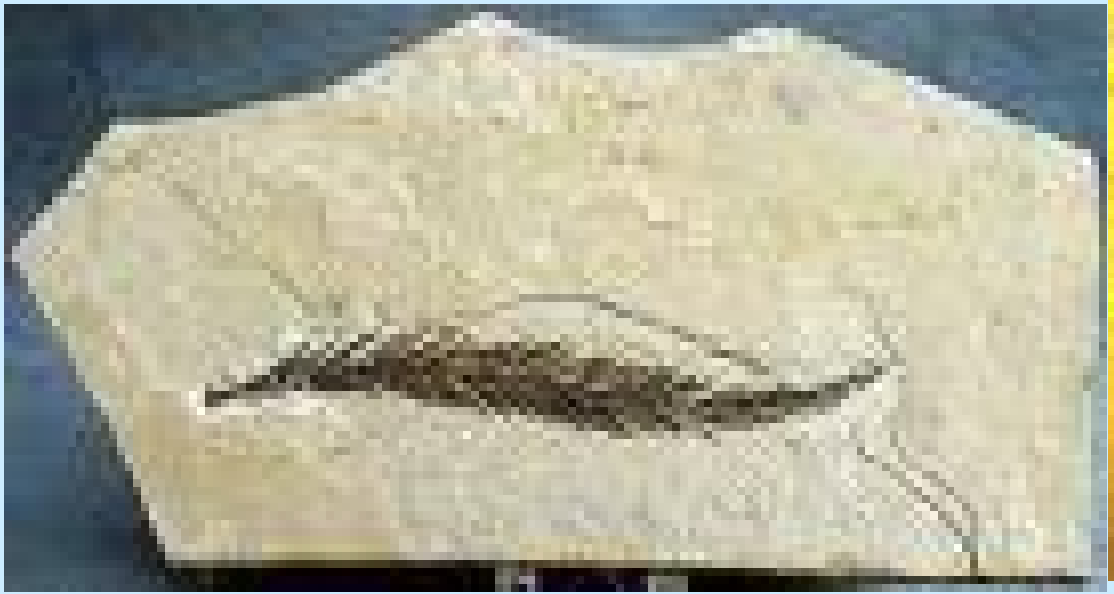
Carbon Films

What it is:

An extremely thin coating of _____(all life contains carbon) on rock, usually black. Often preserves delicate plant leaves & insects.

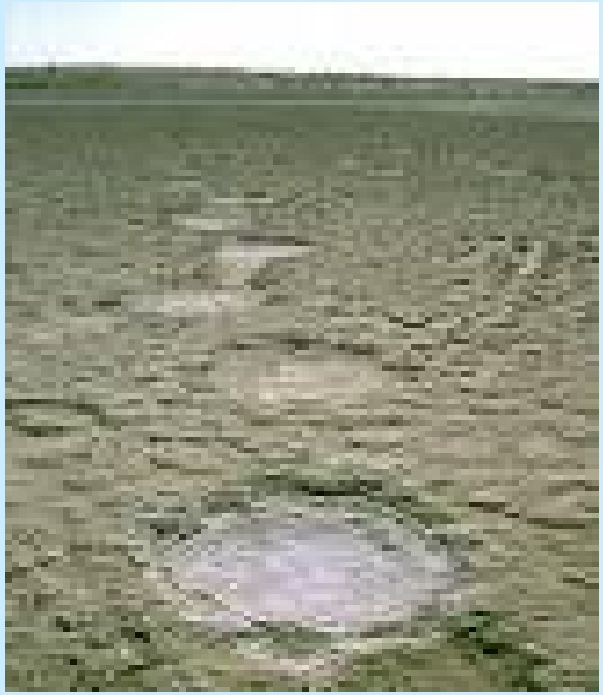
How it's formed:

1)Organism is buried in sediment.
2)Organism evaporates over thousands of years.
3)Carbon in organism remains, leaving a black film on rock it rests on.



Plant carbon films

Trace Fossils



What it is:

Fossil that provides evidence of the _____ of ancient organisms. Example: fossilized footprint.

How it's formed:

1)Footprint or other trace of activity is set in mud or sand.
2)Print gets buried in layers of sediment.
3)Sediment becomes sedimentary rock preserving the footprint for millions of years.

******Why Trace Fossils Are Important******

Scientists can learn about the size, weight and activity of organisms. For example, the distance between prints can tell you the length of organisms legs.

Dinosaur footprint

Human footprint 20,000 years ago during ice age Quaternary time

Preserved Remains

What it is:

An organism that is preserved with _____ change. For example, almost every part of an organism is preserved (wings, legs, hair on legs, etc.).

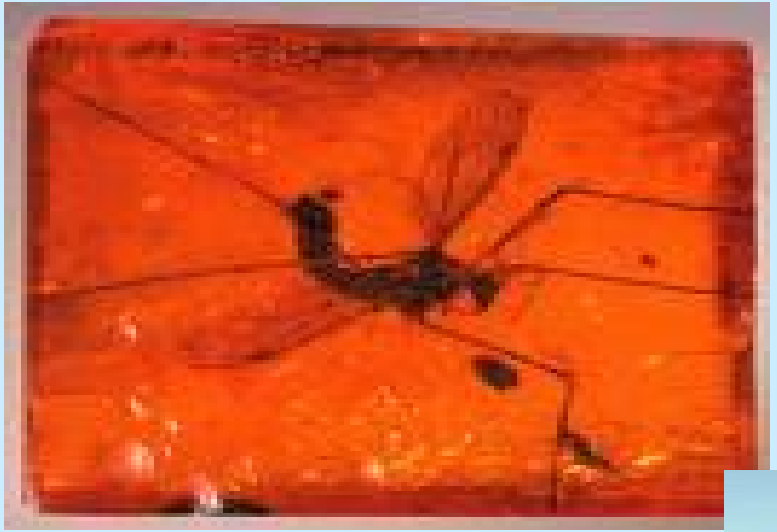
How it's formed:

Multiple methods-

1)Organisms become trapped in tar, tar seeps into bones preventing them from decay.

2)Organisms become trapped in amber (thick hardening sap) preserving insects by preventing decay of delicate parts, as amber hardens.

3)Organisms can freeze in ice in very cold climates. Can preserve delicate parts such as hair of the wooly mammoth.



Mosquito preserved in amber- oldest mosquitoes are over 2 millions year old

Artistic image of wooly mammoth partially frozen in glacier – appeared 50 mya