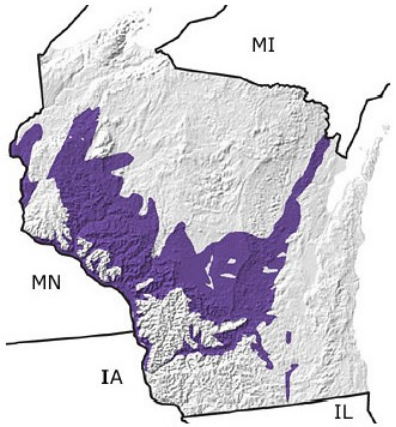
Marquette County in the ICE AGE and before

Millions and millions of years ago, what we know as Marquette County was a giant sea that shifted and changed and left evidence of the animals and plants that lived in the sea.

The Paleontology Portal

The Cambrian in Wisconsin, US



Choose a time period:

Cenozoic
- Quaternary
- Tertiary

Mesozoic
- Cretaceous
- Jurassic
- Triassic

Paleozoic
- Permian
- Carboniferous
- Devonian
- Silurian
- Ordovician
- Cambrian

Precambrian

Cambrian Fossils

Lingulella
A thin-shelled, shallow water brachiopod that burrowed into the bottom sediments.

(2 slides)

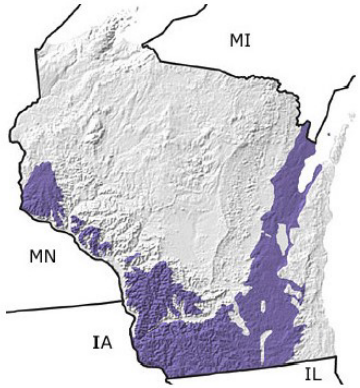
search fossil gallery

Paleontology and geology

In the Cambrian, Wisconsin lay near the equator. The state had a tropical climate and was covered by a shallow sea, teeming with diverse life forms. Fine-grained sediments eroding from adjacent landmasses settled on the sea floor. The deposits of sandstone and shale preserve the remains and traces of intriguing ancient sea life such as *Dikelocephalus* and thin-shelled brachiopods. Rare fossils of soft bodied animals, preserved in tranquil intertidal and lagoonal environments, can be found today at the remarkable Krukowski Quarry in central Wisconsin. Studying Wisconsin's Cambrian fossil record reveals many mysteries of early evolution, ancient ancestors, and bizarre experimental life forms that left no living descendants.

The Paleontology Portal

The Ordovician in Wisconsin, US



Choose a time period:

Cenozoic
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Mesozoic
- Cretaceous
- Jurassic
- Triassic

Paleozoic
- Permian
- Carboniferous
- Devonian
- Silurian
- Ordovician
- Cambrian

Precambrian

Ordovician Fossils

Rhynchotrema
A brachiopod; this filter feeder lived on the shallow, sunlit seafloor.

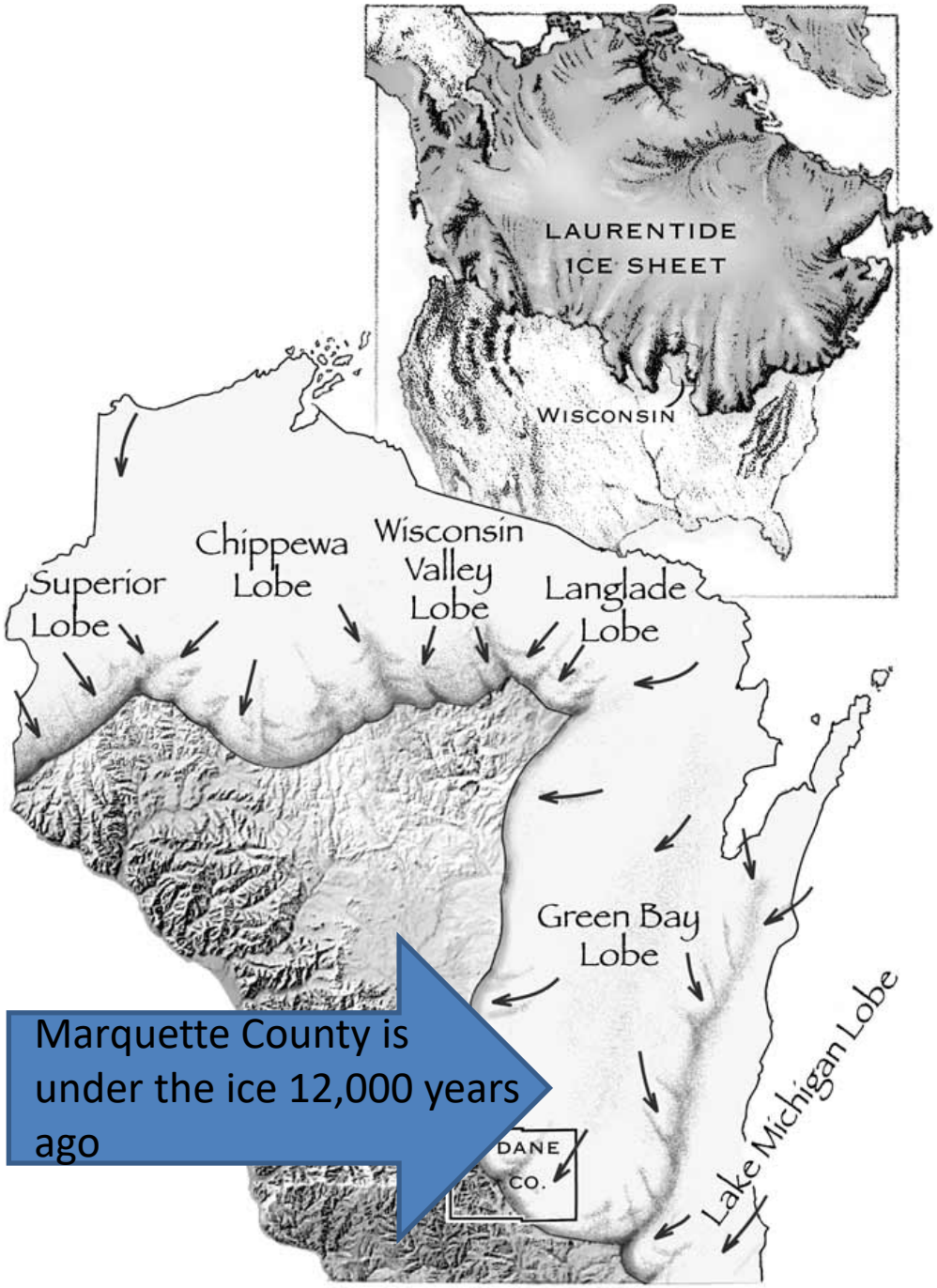
(5 slides)

search fossil gallery

Paleontology and geology

In the Ordovician, Wisconsin had a tropical to subtropical climate. A shallow sea covered the state, and sediments representing the nearshore environment contain fossils of colonial corals and bryozoans, as well as cephalopods. A brief ice age occurred at the end of the Ordovician. Although no glaciers reached Wisconsin, so much water was contained in glaciers elsewhere that sea level declined and drained the sea. These climate and sea level changes caused a mass extinction. Wisconsin provides one of the richest fossil records for the study of this worldwide extinction.

Then, glaciers moved over Wisconsin and Marquette County and finally moved away…receded…about 12,000 years ago.


LAURENTIDE
ICE SHEET
WISCONSIN
Superior
Lobe
Chippewa
Lobe
Wisconsin
Valley
Lobe
Langlade
Lobe
Green Bay
Lobe
Lake Michigan Lobe
DANE
CO.
Marquette County is under the ice 12,000 years ago

There were several times that ice called glaciers covered what is now our home in Wisconsin. The last time was about 12,000 years ago. That was when it started receding or pulling back.

Next are some of the land formations we see in Marquette County. The glacier also left wetlands and swamps and fine, sandy soil.

The Ice Age Trail in Marquette County

The Ice Age Trail follows the outline of the last glacier that covered part of Wisconsin. How many years ago was that? _____

As the glacier **receded,** animals and people moved in. Right where we live today, there were wooly mammoths, mastodons and giant sloths.

The glacier left scratches on the rocks on Observatory Hill. The scratches are called _____.

In Marquette County we have many land formations left by the glacier. Match these:

Kettles
Drumlins
Tunnel Channels
Erratics
Moraines

- Elongated hills of sediment
- Boulders and rocks dropped by the glacier
- Big potholes made from melting chunks of ice
- Piles of rock and gravel left behind by the glacier
- Long valley made by the flow of water under the glacier

The edge of the glacier was probably 200 to 700 feet high and it sloped up where it was thousands of feet thick. Can you walk the Ice Age Trail in Marquette County?

The glacier left many land formations and left evidence that it was here. Have you ever visited Observatory Hill? On top of that rock hill are scratches left by the glacier moving back across the rock. They are called striations.

Land formations from the glacier

Kettles	Big potholes made from melting chunks of ice
Drumlins	Elongated hills of sediment
Tunnel Channels	Long valley made by the flow of water under the glacier
Erratics	Boulders and rocks dropped by the glacier
Morraines	Piles of rock and gravel left behind by the glacier

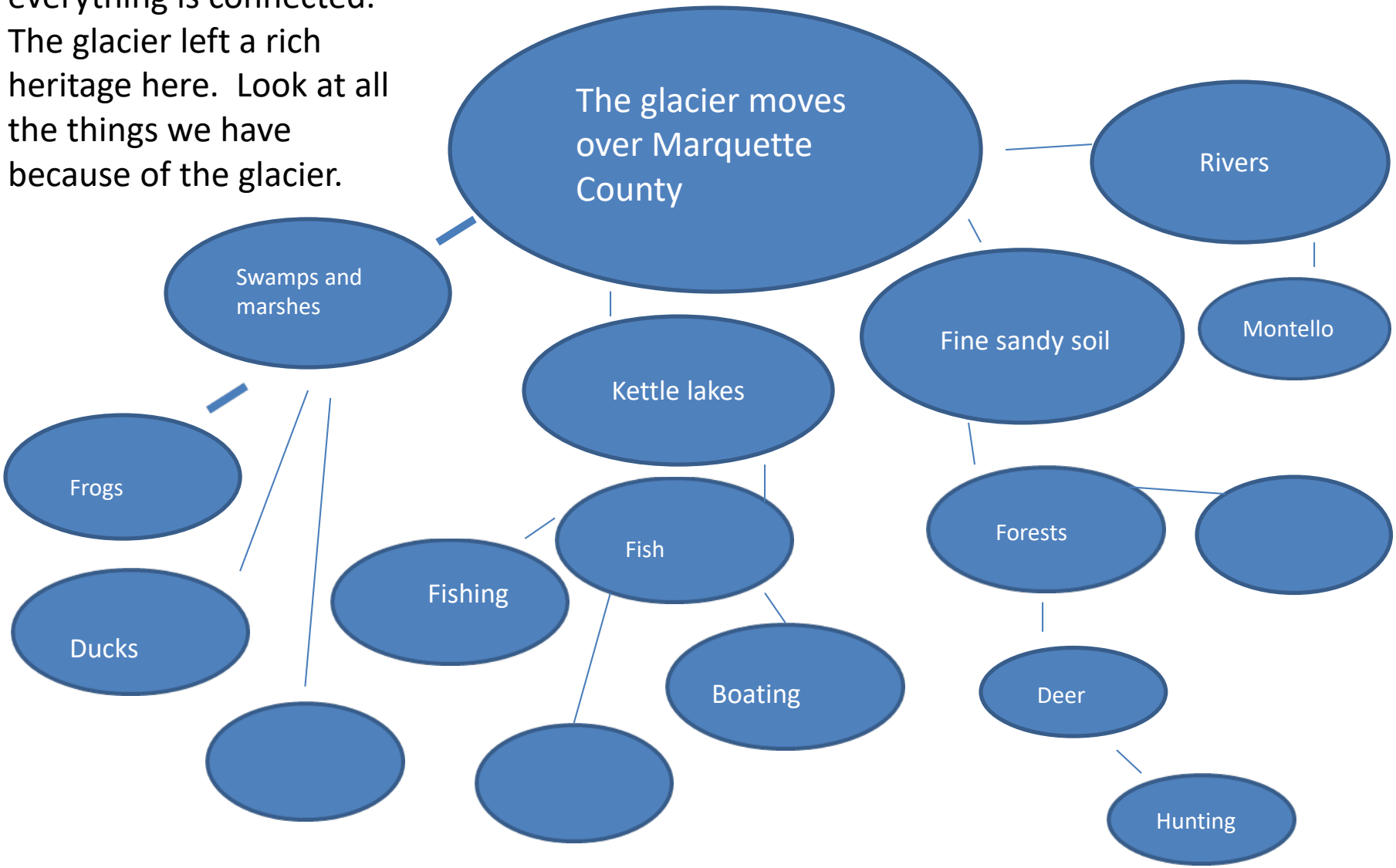
Observatory Hill and striations, below, on the rocks. They are scratches caused by the glacier.

Wooly Mammoths

There were many different animals that lived here right after the glacier receded from this land. They include the Wooly Mammoth, Caribou, Elk, Giant Sloths, Giant Beavers and more.

Giant Sloth

Like John Muir said, everything is connected. The glacier left a rich heritage here. Look at all the things we have because of the glacier.

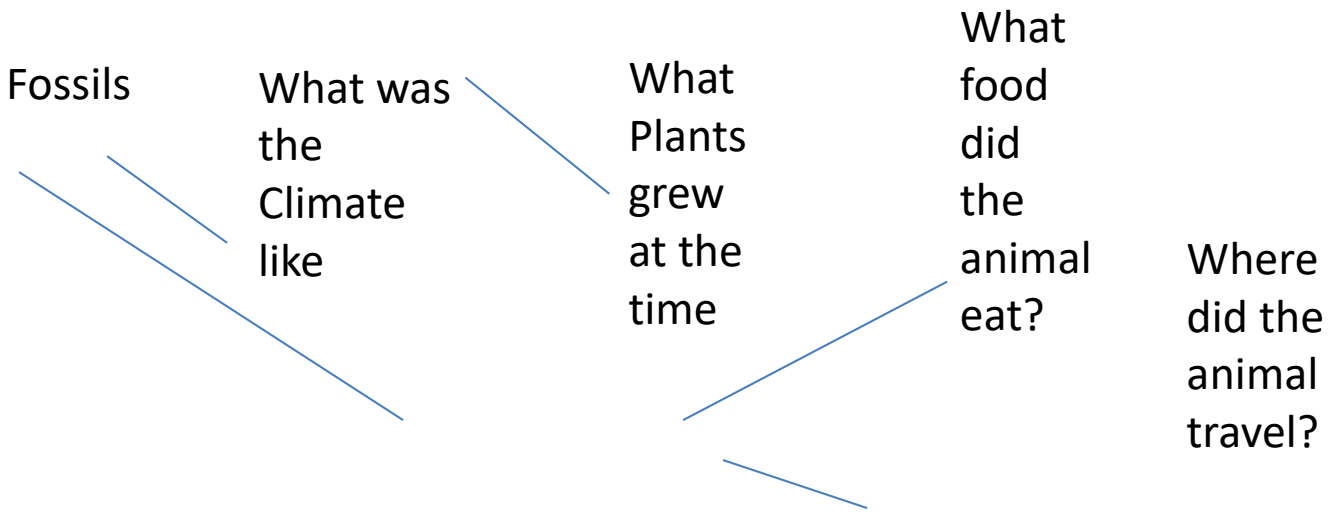


List some more things we have as part of the legacy of the glacier.

Fossils help tell us the history of our home

BE A PALEONTOLOGIST

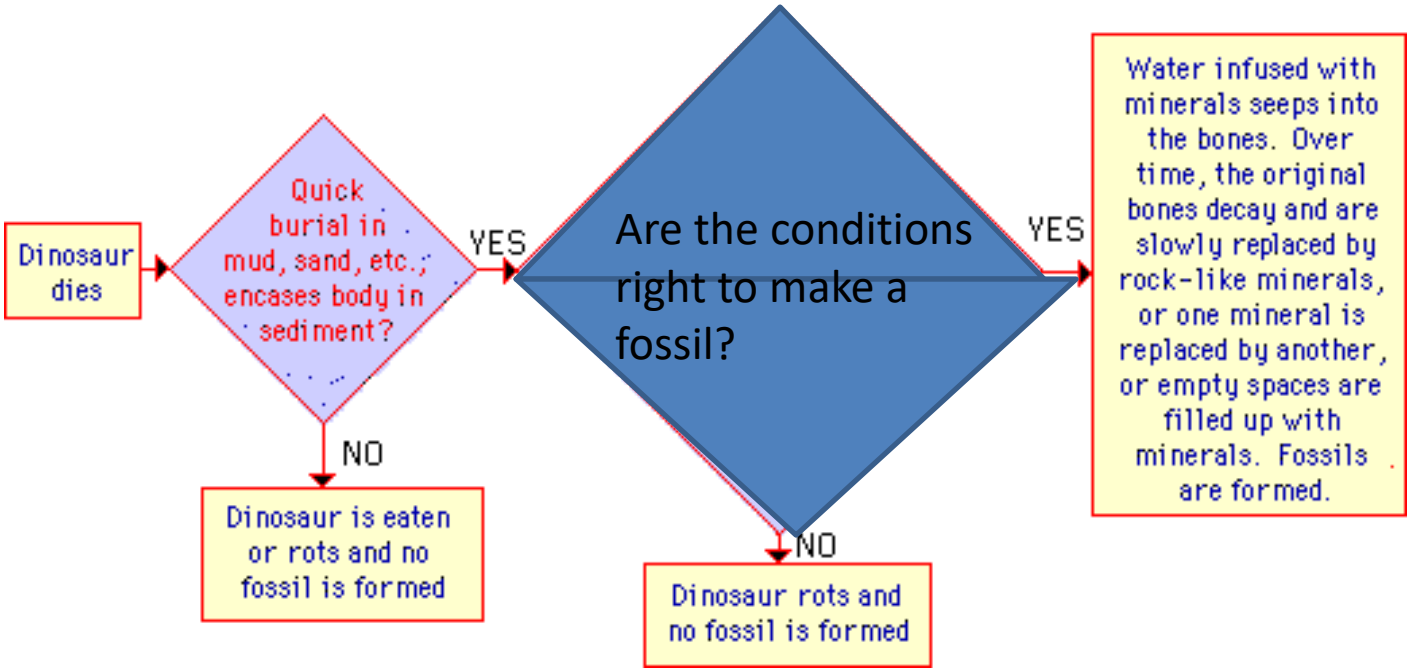
Paleontologists use fossils to draw a picture of what life was like

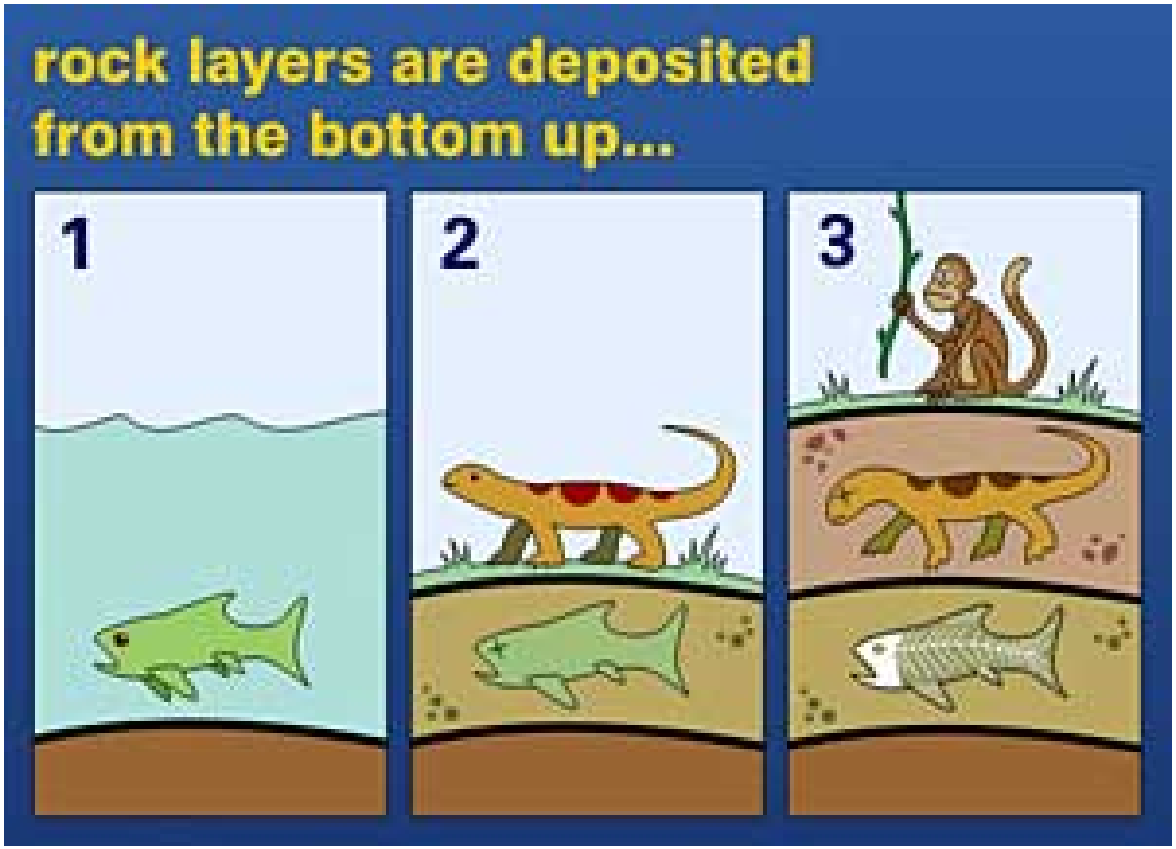


Think about where this animal lived, what it ate, what lived around it, is it extinct now…..and more

Coprolite is a fossil
It's what is known
as a Trace Fossil, not
the animal itself, but
what it left behind
or traces of its life.

How are fossils made





The deeper the fossil is found, the older it is.

permineralization=petrification (in which rock-like minerals seep in slowly and replace the original organic tissues forming a rock-like fossil - can preserve hard and soft parts - most bone and wood fossils are permineralized) Like petrified wood

carbonization=coalification (in which only the carbon remains in the specimen - other elements, like hydrogen, oxygen, and nitrogen are removed)

Trace Fossils=signs left behind from animals that lived millions of years ago like their tunnels and poop

Molds and Casts of organisms that have been destroyed or dissolved

Preservation when the whole animal is preserved, bones, skin, fur

SCHOLASTIC ScienceWorld

FIVE MAIN TYPES OF FOSSILS

Petrified Fossils

Molds and Casts

Carbon Films

Trace Fossils

Preserved Remains

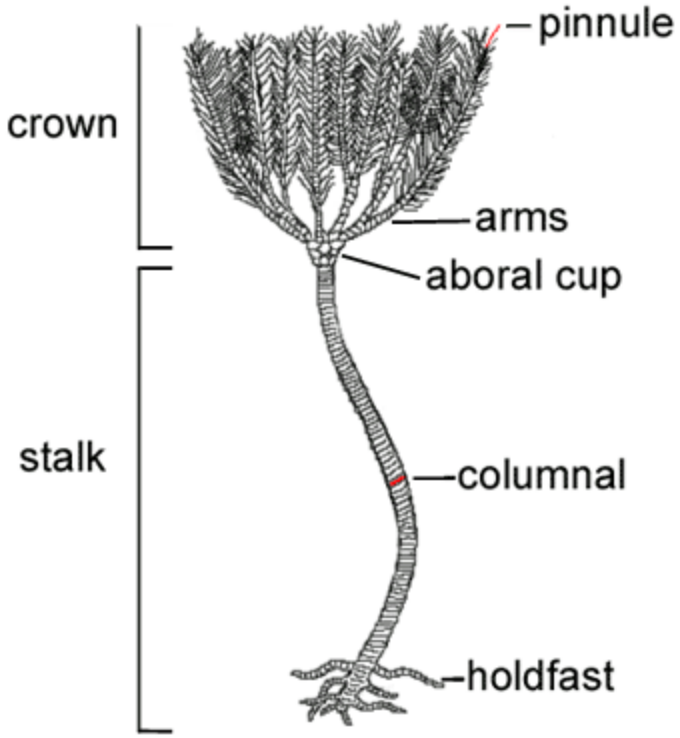
•unaltered preservation (like insects or plant parts trapped in amber, a hardened form of tree sap) or in ice.

Trilobite

Wisconsin's State Fossil

Trilobites are a good example of an animal that has an EXOSKELETON

Crinoids



Crinoids are an example of an animal that is an invertabrate

https://www.youtube.com/watch?v=GYhqVYO4F3w

https://www.youtube.com/watch?v=cZcomBnNKXg

Have fun now being a citizen paleontologist

What Is A Fossil?

Find the words in the grid. Words can go horizontally, vertically and diagonally in all eight directions.

T S I G O L O T N O E L A P N X I
P E R M I N E R A L I Z A T I O N
G V X L E X O S K E L E T O N V
M L X J T N W M L X C S S R O L E
H I T C M B O T S A C E E I L L R
P S D L D L J R T D D R T N T B T
C S P Q D X H N K I N A F N O V E
T O N V N Y Q Q M T C M I W G B B
L F P D K R K E G I L R R M Y Z R
N E M R J Y N R F V P G P B L J A
P C R D O T N I N T L L W P I T T
T A N N A L R Y O D Y T P T S Y E
Q R N R T T I O K R V T N K S J F
V T Y Q E L F T D P H T N Y O Z H
N X V P W R T N E R R L F K F Y R

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BONES
CAST
COPROLITE
EXOSKELETON
INVERTABRATE
MOLD
PERMINERALIZATION
SEDIMENTARY
FOOTPRINT
TRACEFOSSIL
PALEONTOLOGIST
PETRIFICATION
FOSSIL