



OREGON'S DINO-STORY!

ACTIVITY GUIDE



Hi, my name is Sam.
I am a paleontologist—a scientist
who studies fossils. Join me on a
dino-mite adventure to explore the
clues that fossils reveal
about Oregon during the
Age of Dinosaurs.

Here is what you need
to start the journey.



Kit Materials—Many of the items you need are included in this kit.



Additional Supplies—You will need to gather a few items from around the house.



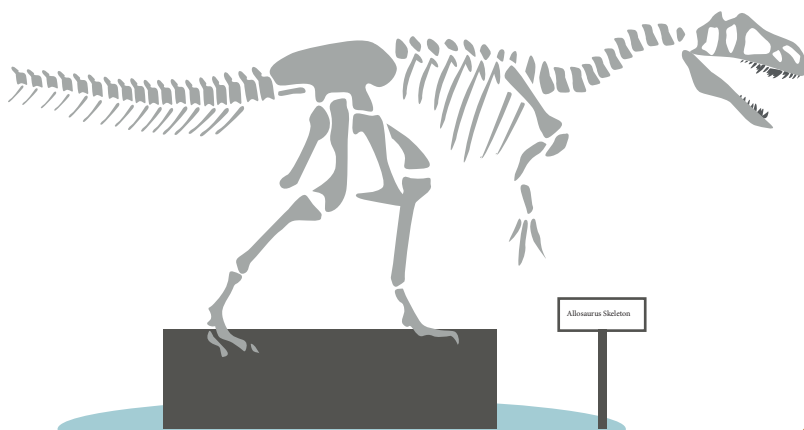
Your Team—This is a family adventure! Enjoy the activities together and remember that the youngest explorers will need a partner.



Exploration Time—The activities can be done in any order and spread out over multiple days. Some are quick and others take a bit more time.

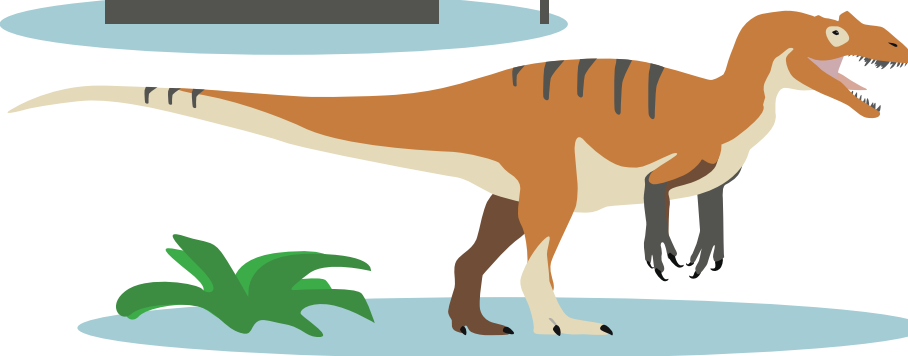


Curiosity—Have fun investigating dinosaurs!



Fossils tell us the story
of dinosaurs!

A fossil is the
remains or evidence of a
living thing that has been
preserved over time.
Like this dinosaur
skeleton!



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AM I A DINOSAUR?



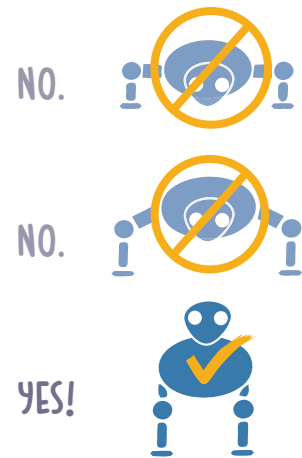
Not all prehistoric animals are dinosaurs.
What makes a dinosaur a dinosaur?

What you need:

- ☐ Animal cards
- ☐ Scissors
- ☐ Sorting labels
- ☐ Dinosaur toy or picture
- ☐ Lizard toy or picture
- ☐ Poster

What to do:

1. Cut out the animal cards and sorting labels.
2. Which animals do you think are dinosaurs? Make your best guess and sort the cards into three piles: **Dinosaurs, Not Dinosaurs, and Not Sure.**
3. Study the poster to find out what makes a dinosaur a dinosaur.
4. Compare the legs of the two animal toys or pictures. Which one is a dinosaur, and which one is a lizard?
5. Sort the animal cards again by asking these three questions for each animal. If you can answer **YES** to **all three** questions, the animal is a dinosaur!



Am I a reptile?

Hint: reptiles do not have fur, but they do have a backbone and they lay eggs.

Do I live on land?

I might wander into water to find food, but I live on land.

Are my legs positioned straight under my body and not spread out to the side?

Check your answers at the bottom of the page. Did any of the results surprise you?



Find the smallest dinosaur, and the biggest dinosaur.

Sort cards by animals that lived during the same time period.

Not Dinosaurs

Pteranodon
Shastaurus
Smilodon
Spike-toothed Salmon
Thalattosaurus
Western Meadowlark
Fire Ant
Giant Ground Sloth
Monarch Butterfly
Pacific Tree Frog
Plesiosaurus
American Alligator
Camelops
Collared Lizard
Columbian Mammoth
Dimetrodon

Dinosaurs

Allosaurus
Ankylosaurus
Camarasaurus
Coelophysis
Deinonychus
Dilophosaurus
Edmontosaurus
Gigantosaur
Iguanodon
Oregon's Ornithomimid
Pachycephalosaurus
Parasaurolophus
Rebachisaurus
Stegosaurus
Triceratops
Tyrannosaurus

PALEO PUZZLES



Oregon's fossils from the "Age of Dinosaurs" are mostly marine animals and flying reptiles. They lived at the same time as dinosaurs but were not dinosaurs.

Why are dinosaur fossils rare in Oregon?
Explore the poster to find out.

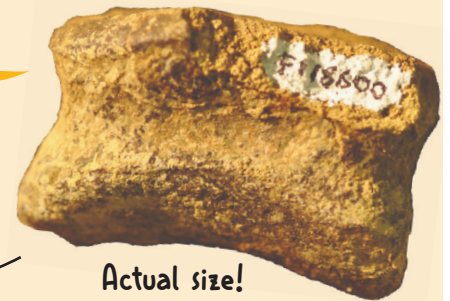
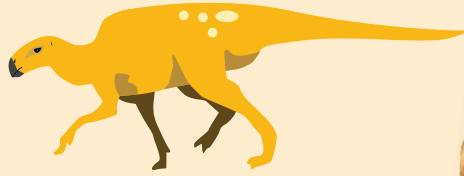


What you need:

- | | |
|---|--|
| ☐ Poster | ☐ Tape |
| ☐ 14 craft sticks | ☐ Pens, crayons, or colored pencils |
| ☐ Ancient animals stencils | ☐ Scissors |
| ☐ Paper bag | |

Oregon's Dinosaur Fossil

One small toe bone of this Ornithomimid dinosaur was discovered in Eastern Oregon in 2015. Scientists believe the land-dwelling dinosaur lived and died somewhere else and then washed out to sea, eventually sinking onto land that became Oregon.

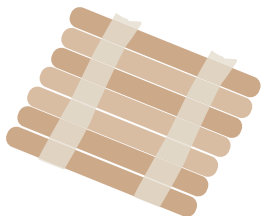


Paleontologists carefully excavate, or dig out, fossils. Sometimes, the fossils we dig out include more than one animal. We sort the fossils and piece each animal back together, like a puzzle.

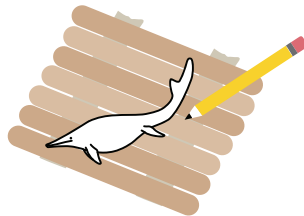


What to do:

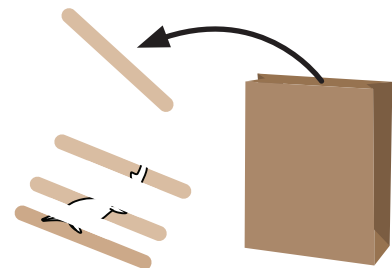
Create two puzzles of animals from the Age of Dinosaurs whose fossils were found in Oregon.



1. Tape 7 craft sticks together.



2. Use a stencil to trace an ancient animal onto the sticks or draw your own. Make sure each stick has part of the drawing on it.



3. Remove the tape and place the sticks from both puzzles in the bag. Pull out one stick at a time and assemble the puzzles.

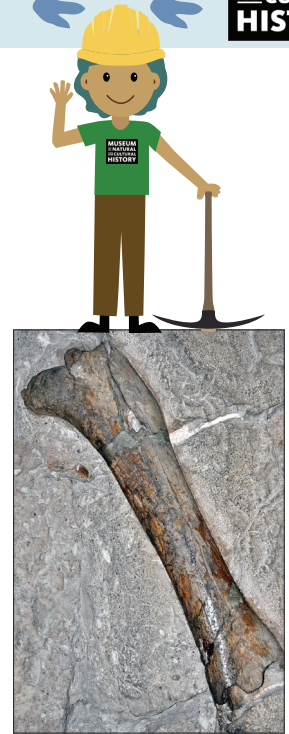
Try This!

For a harder challenge: Draw a different animal on the back side of each puzzle or use the same color for all animals.

For younger explorers: Mix up just one puzzle at a time or number the back of the puzzle sticks.

A **fossil** is the evidence of a living thing that has been preserved over time. It takes a very long time for a fossil to form—sometimes many millions of years!

Paleontologists study fossils to learn about ancient life.
But what are fossils and how do they form?
Let's find out!



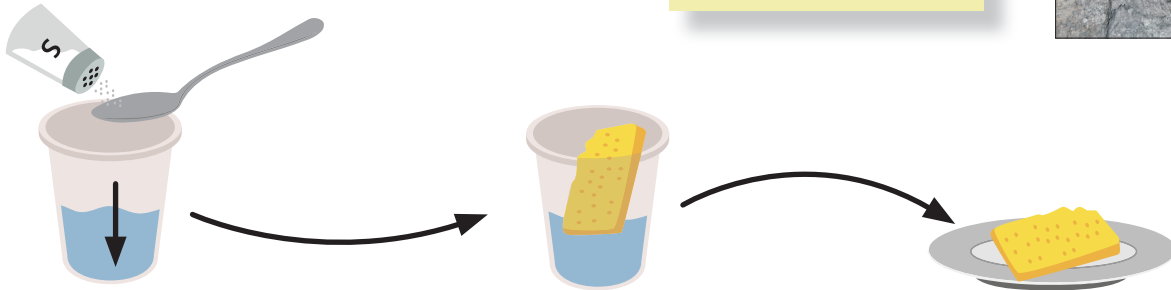
Turning to Stone

Most dinosaur bones are preserved by **permineralization**. This is when minerals are deposited in the pores, or open spaces, within the remains of a living thing and harden into stone.

What you need:

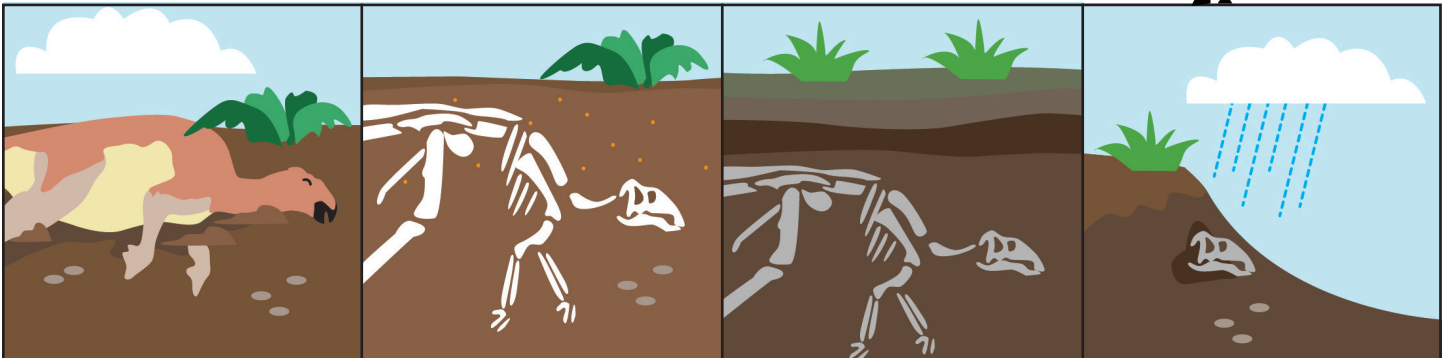
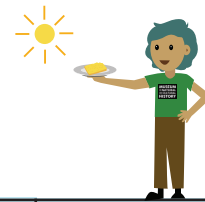
- ☐ Salt
- ☐ Sponge
- ☐ Water
- ☐ Plate
- ☐ Cup
- ☐ Spoon

What to do:



1. Add 1 tablespoon of salt to 1/4 cup of very warm water. Mix until almost all the salt disappears.
2. Soak the sponge in the salt water. Squeeze and resoak it a few times so that it gets really salty.
3. Place the fully soaked sponge on a plate and add a few drops of salt water on top. Let it dry for 5-6 days.

What does the dried-out sponge feel like? Is it soft or hard? Hold it in a bright light. Can you see the sparkly mineral crystals? The sponge has become **permineralized**—like a dinosaur bone fossil!



Step 1

After an animal dies, it is buried by silt, sand, or ash (sediment).

Step 2

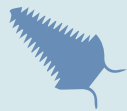
The soft parts of the animal decay, leaving the hard bones. Minerals seep into the bones.

Step 3

Over millions of years, the sediment becomes rock. The skeleton becomes a fossil.

Step 4

The rock erodes and exposes the fossil.



Try these activities to explore other ways that fossils form.

Trapped in Time

Some fossils form when a living thing gets trapped in a material, such as tree sap, tar, or ice. Sometimes this type of fossil can include skin, wings, or fur!

What you need:

- ☐ Small object (shell, toy animal, etc.)
- ☐ Water
- ☐ Ice cube tray or cup

What to do:

1. Freeze a small object (toy animal, gummy bear, piece of a plant, shell) in water.
2. Use warm water (with a dropper or spoon) to “excavate” your fossil from the ice.

This insect was trapped in tree sap that hardened into a kind of stone, called **amber**.



Fossil footprints show us how dinosaurs behaved, how they moved, and how fast they could run.



Leave a Trace

Fossils that show evidence of an animal’s behavior or activity are called **trace fossils**. This includes footprints, nests, burrows, teeth marks, or even poop!

What you need:

- ☐ Model Magic clay or Dino Dough
- ☐ Dinosaur and lizard toys

What to do:

1. Use the dinosaur and lizard toys to make footprints in the clay. Can you tell which animal made the different prints?
2. Explore inside and outside for evidence, or traces, of animal activity—such as scratched furniture, footprints, fur or hair, spiderwebs, or plants eaten by insects.

Try This!

Footprints

Can you make footprints outside? Try walking in soft dirt or step in water and then walk on a dry sidewalk. How far apart are your steps? How are your footprints different from an adult’s footprints?



What to do:

- ❑ Model Magic clay or Dino Dough
- ❑ Toy animals
- ❑ Small objects (shell, feather, plant, etc.)

-
- A collection of various everyday objects arranged on a brown surface. The objects include a metal whisk, a yellow pencil with a pink eraser, a blue pen, a white container, a red eraser, a metal ring, a small figurine, a blue button, a white paperclip, a red paperclip, a small toy dinosaur, a small white container, and two white circular objects.

ALL SHAPES AND SIZES



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How do you measure up to dinosaurs?

What to do:

Use chalk to draw dinosaur features on the pavement outside. Find each dinosaur's picture in your set of animal cards.

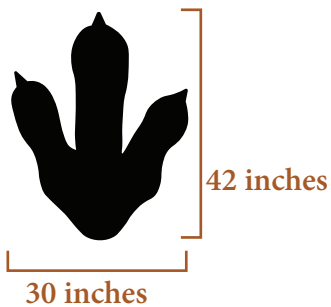
What you need:

- ☐ Measuring tape or ruler
- ☐ Sidewalk chalk
- ☐ Animal cards

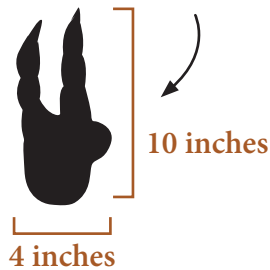
There are over
700 different
kinds of dinosaurs!



1. Compare your foot to these dinosaur footprints.



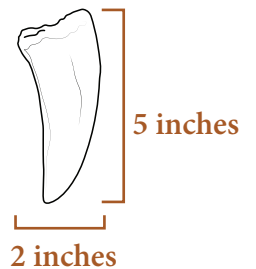
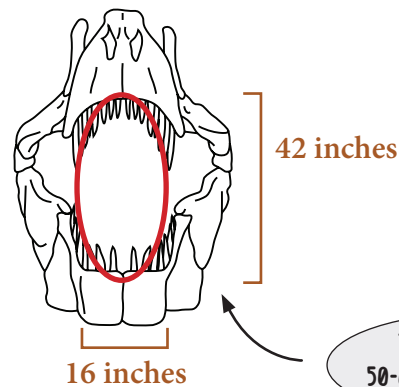
Tyrannosaurus footprint



Deinonychus footprint

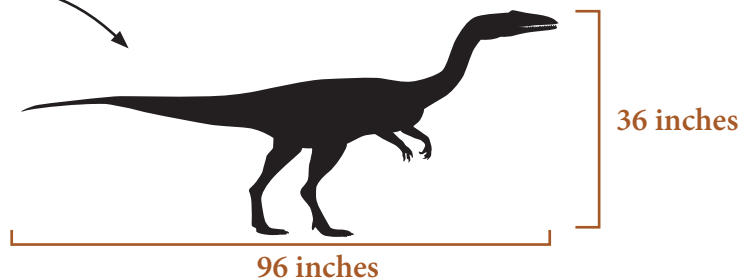
Deinonychus held a toe with a large claw off the ground while walking.

2. Could you fit inside the mouth of a T-Rex?
Is a T-Rex tooth bigger than your hand?



Tyrannosaurus had
50-60 teeth in its mouth!

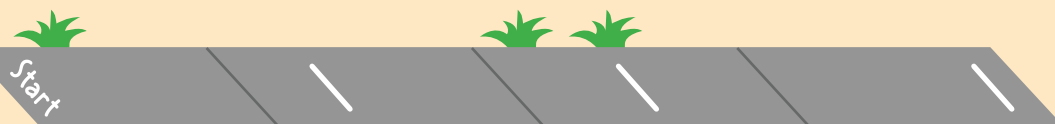
3. Are you taller than a Coelophysis dinosaur?
Try drawing the whole dinosaur with chalk.



Try This!

Dinosaur Line Up

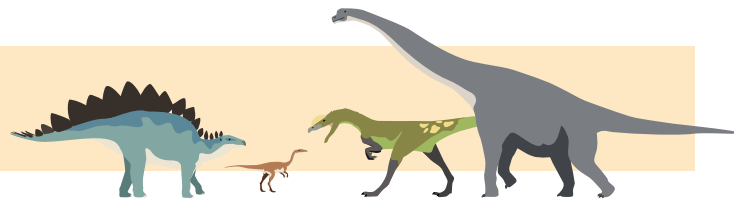
Sort the dinosaur animal cards by length from shortest to longest. Draw a starting line and then place a mark for the length of each dinosaur measured from the starting line. Have one person stand at the start and another person stand at a mark to see how long the dinosaur was.



Use this chart to help you measure the longer dinosaurs.

Feet	Inches
1	12
2	24
3	36
4	48
5	60
6	72
7	84
8	96
9	108
10	120

KEEP ON EXPLORING!



Don't end your prehistoric journey yet!

Try a few of these activities or create some investigations of your own.



Dino Diorama

Use a shoebox to make a home for your dinosaur toy.

Collect natural materials outside and a variety of craft or recycled materials to make a diorama, or habitat model.



Animal Card Memory Game

Place the animal cards face down in a grid on the table. Take turns flipping over two cards. If you reveal two dinosaurs or two animals that are not dinosaurs, keep the cards. If your cards don't match, turn them back over. The player with the most cards wins.



Prehistoric Puppets

Use the animal stencils to create stick puppets, make an ancient landscape, and put on a show.



Try This!

Dino Dough

Use this easy homemade clay to create more fossils, sculpt a dinosaur, or make props for your Dino Diorama.

What you need:

- ☐ Bowl
- ☐ Spoon
- ☐ 2 cups flour
- ☐ 1 cup salt
- ☐ 3/4 to 1 cup water



What to do:

Mix flour and salt in bowl. Add water slowly and stir until consistency of soft clay. Make your creations. Clay will air dry in a few days or bake at 200° F for 2-3 hours.

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Learn more and find additional activities on the museum's website.
mnch.uoregon.edu