I AM A PALEONTOLOGIST

What to Know About This Kit

Paleontology is the science that studies animals and plants that lived thousands or millions of years ago. Paleontologists study bones, teeth, eggshells, pollen, and more to try to imagine what life might have been like in the past.

Children are fascinated by dinosaurs, some of the most famous prehistoric creatures.

By using the costume, tools, and equipment within this kit your child will be able to imagine themselves as paleontologists, discovering new dinosaurs at your house.

Hands-on activities included in the kit offer suggested vocabulary, fun facts, and further reading. The chart below provides an overview of language, science, and math literacy skills highlighted in each activity.

Suggested ages: 3-5 years

	Activity #1 Is It a Dinosaur?	Activity #2 Dinosaurs Inside Out	Activity #3 What Was It?	Activity #4 Measuring a Dinosaur Footprint	Activity #5 Dinosaur Stomp	Activity #6 Did Dinosaurs Have Pink Feathers?	Activity #7 What's in a Name?
Language	Animal classifications		Descriptive terms	Math and measurement terms	Size terms Tempo	Colors, skin coverings	Greek and Latin word roots
Math	Sorting, Matching	Matching Part to Whole		Using a ruler, measuring	Comparing		Number terms
Science	Critical thinking, animal classifications	Skeleton	Interpretation of trace evidence			Camouflage, warning colors, mimicry	Body parts
Physical				Fine motor	Whole body	Fine motor	

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#1: Is It a Dinosaur?

Summary: Not every prehistoric animal was a dinosaur. Dinosaurs were reptiles that lived on land millions of years ago.

WORDS TO KNOW:

Reptile-- Reptiles are animals with scaly skin who lay eggs. Living reptiles include turtles, snakes, and lizards.
Prehistoric—living before people were around
Scales—hard bumps on skin
Mammal—an animal with fur/hair that feeds its babies with milk.
Pterosaur—the name for flying reptiles that lived at the same time as dinosaurs
Plesiosaur—the name for some of the swimming reptiles that lived at the same time as dinosaurs

MATERIALS:

What's Inside Photo Cards

ACTIVITY:

- Look at the What's Inside Photo Card pictures. Look at both sides. Talk about what you see.
- Put all the animals that lived on land in one pile and the ones that flew or swam in another.
- None of the flying or swimming animals are dinosaurs. They are reptiles but not dinosaurs. The name for flying reptiles is pterosaur. The swimming reptiles are a turtle and a plesiosaur.
- Look at the pile of land animal pictures. Find the picture of a mammal (an animal with fur). This animal is Smilodon. It is not a dinosaur.
- All the other pictures are dinosaurs.

OBSERVATIONS:

- Can you find dinosaurs that walked on two legs? Four legs?
- Can you find dinosaurs with horns?
- Which dinosaurs were shorter than people?
- How else can you sort the dinosaurs?

DID YOU KNOW?

- There are many kinds of pterosaurs including pterodactyl, rhamphorynchus, and pteranodon.
- Other kinds of prehistoric swimming reptiles include ichthyosaurs and mososaurs.
- Stupendemys was the largest turtle that ever lived
- Most people call a Smilodon a saber-tooth tiger

SUGGESTED READING

E Barton	Bones, Bones, Dinosaur Bones
E Barton	Dinosaurs, Dinosaurs
ICR J 567.9 B	Beyond the Dinosaurs: Monsters of the Air and Sea
J 567.9 G	Is It a Dinosaur?
J 597.98 S	Alligator or Crocodile? How Do You Know?

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#2: Dinosaurs Inside Out

SUMMARY: Can you look at a dinosaur's bones and imagine what its body looked like?

WORDS TO KNOW:

Skeleton—the bones of your body arranged in order

MATERIALS:

What's Inside Photo Cards
Dinosaur models

ACTIVITY:

- Have your grownup find the photo cards for Apatosaurus, Tyrannosaurus rex, Triceratops, Parasaurolophus, and Stegosaurus.
- Put the cards out with the skeleton side facing up
- Can you find a dinosaur model for each of these?

OBSERVATIONS:

- Look for something special about the skeleton, like horns or a long neck.
- Do some of the dinosaurs appear similar? You may need to look carefully to spot differences.

DID YOU KNOW?

- Paleontologists almost never find a complete dinosaur skeleton.
- They guess at the missing parts
- Sometimes the missing parts are found many years later and paleontologists discover that they will have to change the picture of the dinosaur

SUGGESTED READING

E Barton	Bones, Bones, Dinosaur Bones
J 567.91 A	Digging Up Dinosaurs
J 567.9 M	Inside-Outside Dinosaurs

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#3: What was it? What could it be?

SUMMARY: Have you ever left footprints in the snow or in the sand at a beach? What could someone tell about you if they only saw your footprints? Paleontologists are able to use observational skills to learn much from an imprint left behind by an ancient animal or plant.

WORDS TO USE:

Fossil – a trace or print of the remains of a plant or animal of a past age preserved in earth or rock
Imprint – to make a mark by pressing against a surface
Trace fossil—something other than the actual animal or plant. Footprints, skin impressions, and eggshells are examples of trace fossils.

MATERIALS:

Clay or playdough
Leaves,pinecones, shell, flowers, sticks, etc.
Small plastic or rubber toy that can be put in clay
Cloth Apatosaurus dinosaur footprint from kit

ACTIVITY:

- When the adult is alone, he/she needs to press an object into the clay.
- Invite the child to look carefully at the imprint and try to guess what object made the imprint. Help them to use descriptive words to back up their guess.
- Show the real object and have the child place the object to its imprint.
- Repeat the above several times with different objects.
- Look at the cloth dinosaur footprint. It is life size. Was this dinosaur bigger or smaller than a person? This is a footprint from an Apatosaurus.

OBSERVATIONS:

- Do the objects look like something that you find on earth today?
- Have you ever made footprints in the snow or mud?
- How long did your footprints last?

DID YOU KNOW?

- Fossils are clues to help us learn what happened a long time ago.
- Sometimes paleontologists find fossil poop, which is called a coprolite.

SUGGESTED READING

ICR J 567.9138 M	Apatosaurus
J 567.9 G	Dinosaur Tracks
J 567.9 G	Dinosaur Eggs

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#4: Measuring a Dinosaur Footprint

SUMMARY: There's more than one way to measure. Using your own footprints to measure helps you to relate to the relative size of a dinosaur.

WORDS TO USE:

Measure—to figure out the size of something
Ruler—something (often a stick) used to measure
Foot—a unit of length used in the United States
Length—the distance from the beginning to the end
Width—the length of something from one side to the other
Area—the amount of surface within a space

MATERIALS:

Cloth dinosaur footprint
Lots of people
Paper
Scissors
Pencil
Ruler

ACTIVITY:

- Place the cloth copy of an Apatosaurus footprint on the floor
- Take off your shoes
- Walk across the footprint from the heel to the toe, placing your feet one in front of the other.
- How many steps does it take?
- Use a ruler to measure the length in inches.
- How many people can stand on the footprint at one time?
- Stand on a piece of paper and trace your foot. You might need help with this.
- Have your friends do the same. You might need to trace your foot several times.
- Cut out the footprints
- Place them on the cloth Apatosaurus foot print, trying to keep them as close together as possible
- How many footprints does it take to fill the Apatosaurus footprint?
- How many of your stuffed animals can sit in the footprint?

OBSERVATIONS:

- Measuring from the heel of the footprint to the toe is called the length.
- Measuring across the footprint is called the width
- Finding out how many human footprints fit in the Apatosaurus footprint measures the area.
- Paleontologists don't use their own feet to measure because everyone has different size feet. They use rulers.

DID YOU KNOW?

- In the United States we measure in inches and feet. There are 12 inches in a foot.
- An Apatosaurus foot is about 24 inches wide and 48 inches long.
- People have used the foot measurement for thousands of years.

SUGGESTED READING

E Lionni	Inch by Inch
ICR E Rey	Curious George: Dinosaur Tracks
ICR E Rey	Curious George: Roller Coaster (measurement)
J 567.9 G	Dinosaur Tracks
J 591.479 H	Who Has These Feet?
PTC 372.7 A	How Many Ways Can You Make Five?

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#5: Dinosaur Stomp

SUMMARY: To think about how the size of an animal may affect the way they move.

WORDS TO USE:

Weight – the amount that something weighs
Size – how large or small someone or something is
Tempo – the rate of speed at which music is played or sung
Predator – an animal that lives mostly by killing and eating other animals

MATERIALS NEEDED:

Hand drum or pot for beating
Dinosaur figures
What's Inside Photo Cards

ACTIVITY:

- Look at the What's Inside Photo Cards. Each card has the outline of a person next to an outline of the prehistoric animal.
- Which animals were taller than a person? Which were smaller?
- How would a very large dinosaur move? (think of an elephant)
- How would a very small dinosaur move? (think of a cat)
- Move like one of the dinosaurs deciding how its size determines how it moves.
- Beat the drum/pot/box with slow, heavy beats and move to the rhythm.
- Change the tempo of the beats. Slower. Faster.
- Now try to move like a dinosaur. Use the "Dinosaur Moves" song to move like a dinosaur.
- Change the direction to zig zag, straight, curving.
- Pretend to sneak up on another dinosaur. Run away.

OBSERVATIONS:

- How did it feel to be a large, then a small dinosaur?
- How would your size and speed help you find food or escape from predators?

DID YOU KNOW?

- The longest heaviest meat-eating dinosaur was Spinosaurus
- Some dinosaurs weighed just one pound

SUGGESTED READING

E Mitton	Dinosaurumpus!
E Shields	Saturday Night at the Dinosaur Stomp
E Strickland	Dinosaur Stomp!

Dinosaur Moves—to the tune of the Wheels on the Bus

The big dinosaurs went BOOM, BOOM, BOOM (stomp feet, bang drum slowly)
BOOM BOOM BOOM
BOOM BOOM BOOM
The big dinosaurs went BOOM, BOOM, BOOM
All across the land

The little dinosaurs went tip, tip, tip (tiptoe, tap drum quickly)
Tip, tip, tip
Tip, tip, tip
The little dinosaurs went tip, tip, tip
All across the land

The pterosaurs went flap, flap, flap (flap arms, beat drum medium)
Flap, flap, flap
Flap, flap, flap
The pterosaurs went flap, flap, flap
All through the sky

The plesiosaurs went swim, swim, swim (make swimming motions)
Swim, swim, swim
Swim, swim, swim
The plesiosaurs went swim, swim, swim
All through the sea

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#6: Did Dinosaurs Have Pink Feathers?

SUMMARY: How do paleontologist know what dinosaurs looked like if no person ever saw one?

WORDS TO KNOW:

Scales—small, hard plates that cover fish, reptiles, and other animals
Camouflage—a way of hiding something by covering it or coloring it so it looks like its surroundings
Feathers—soft, light body coverings found on birds
Warning—a signal of a possibly dangerous situation
Mimic—to copy or imitate the actions or looks of something else

MATERIALS:

Dinosaur models
What's Inside Photo Cards
ABC Dinosaur Book

ACTIVITY:

- Look at the dinosaur models and What's Inside Photo Cards. What colors do you see?
- Can you think of living reptiles that have these colors?
- Look at the dinosaurs in the ABC Dinosaur book.
- How are they different than the dinosaur models or pictures?
- Do any of the colors surprise you?
- Did you know that some dinosaurs had feathers? How would a feathery dinosaur feel?
- Go to the library and look at books with pictures of reptiles. What colors do you see? Look up gila monsters, chameleons, or anole lizards.

- The book “Uneversaurus” shows you the steps paleontologists and artists use when deciding on dinsosaur colors.
- Draw your own dinosaurs. You can make them up yourself or have a grownup help you search for “Dinosaur Coloring Pages” on the internet. Give them spots, stripes, or wild colors.

OBSERVATIONS:

- Some animals like tigers, have colors that allow them to blend into the environment (camouflage). What dinosaurs might have had camouflage?
- Some animals have spots that look like giant eyes to scare other animals.
- Some male (boy) animals like birds have different colors than female (girl) animals.
- Why do the dinosaurs in ABC Dinosaurs look different than the ones in the Photo Cards?
- What do you think a dinosaur would feel like?
- Do any of the colors in the ABC Dinosaur book surprise you? Can you think of living animals with these colors?
- Did you know that some dinosaurs had feathers? How would a feathery dinosaur feel?
- How would a scientist know that a dinosaur had feathers?

DID YOU KNOW?

- Paleontologists don’t always agree about how a dinosaur should look.
- They use their imaginations!

SUGGESTED READING

ICR J 591.472 F	Hard to See Animals
J 567.9 P	Uneversaurus
J 567.9 T	New Dinos
J 591.472 S	Why Are Animals Purple? (Green, Red, Orange, Yellow, Blue)

American Museum of Natural History website: amnh.org. Search the site for dinosaur activities to find coloring pages and more.

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#7: What's in a Name?

SUMMARY: If you discovered a dinosaur, what would you call it? Learn some of the tricks paleontologists use to create official dinosaur names.

MATERIALS:
Your imagination

ACTIVITY:

When paleontologists first began naming dinosaurs about 200 years ago they used words for numbers and body parts that came from the Greek and Latin languages. At that time all scientists in the United States and Europe learned Greek and Latin in school. Many words in English have their roots in Latin, such as bicycle and tricycle.

- Using the list below can you figure out what some dinosaur names mean? Try Tyrannosaurus rex, Stegosaurus, Triceratops.
- Invent a dinosaur name using the list below.
- Draw a picture of your dinosaur.

Greek or Latin word	English meaning
Bi	Two
Bronto	Thunder
Cephalo	Head
Cera	Horn
Compso	Pretty
Cyclo	Round
Dino	Terrible
Gnathus	Jaw
Macro	Large
Mega	Huge
Micro	Tiny
Nano	Dwarf

Greek or Latin word	English meaning
Ornitho	Bird
Pachy	Thick
Quadri	Four
Rex	King
Saurus	Lizard
Stego	Roof
Raptor	Robber
Tops	Face
Tri	Three
Tyranno	Tyrant
Veloci	Speedy

- Sometimes paleontologists name a dinosaur for where it was found. Argentinosaurus was discovered in the country of Argentina.
- What would you name a dinosaur found in Harford County?

DID YOU KNOW?

- Micropachycephalosaurus (tiny, thick-headed lizard) is currently the longest dinosaur name. The dinosaur was about the size of a house cat.
- Have you ever heard of Harry Potter? There is a dinosaur named Dracorex hogwartsia—the dragon king of Hogwarts
- Xuanhuaceratops means horned face from Xuanhua (in China)

SUGGESTED READING

	ABC Dinosaurs
J 567.9 H	Dinosaur Parade
J 567.9 G	Amazing Giant Dinosaurs