



Dinosaurs

Girl Scout Brownie Patch

This badge program is designed for troops and individual girls to learn more about the wild and wonderful world of dinosaurs and the remains they left behind. Girls can explore fossils, how dinosaur footprints can tell a story and all about what these Jurassic animals ate.

Brownie Girl Scouts must complete all five activities to earn this patch.

PURPOSE: To help Girl Scouts fully understand dinosaurs, their way of life and how fossils can tell a story.

CONNECTIONS TO GIRL SCOUT LEADERSHIP EXPERIENCE (GSLE):

- Discover: Girls develop critical thinking.

NOTES:

Did you know?

A woman found the first bones recognized as dinosaur bones. In 1822, Mary Ann Mantell found some strange bones near her home in England. Her husband, a doctor, studied them and figured out they belonged to a group of animals like none he had ever seen. In 1842, a friend of his wrote a story about the animals in a science magazine and named them dinosaurs. Today, there are as many women as men studying dinosaurs and they are discovering exciting and new things about dinosaurs all the time.

What is a dinosaur?

There are four things to check out to see if an animal is really a dinosaur:

1. Dinosaurs lived during a time period called Mesozoic that lasted from about 270 million years ago to about 66 million years ago. If you found the bones in rocks that were older or younger than this, then they can't be dinosaur bones.
2. There are no dinosaurs alive today. Dinosaurs walked on legs. They do not have wings or flippers or fins. That means that all those Pterodactyls and swimming reptiles you see in the dinosaur books aren't actually dinosaurs.

3. A dinosaur's legs are straight underneath it – like a hippo, not splayed out to the side like a crocodile.
4. Dinosaurs have special skeletons. For instance, dinosaurs had ankle bones but no knee caps. Dinosaur skulls were also very different because they have more holes in them than many other animals.

If all of these things don't check out, then your animal is a "dino-not." Look through some dinosaur books and see how many "dino-nots" you can find. Have your troop bring in plastic or stuffed animals and see if you can figure out which are dinosaurs and which are not.

ACTIVITIES:

1. **Make A Fossil**

We know dinosaurs existed because their fossils have been found. Fossils are parts or traces of plants or animals that have been turned into rock. Parts of animals' bodies that have been fossilized are called body fossils. These include fossil dinosaur teeth, bones, skin and eggs. Trace fossils include tracks, burrows, nests, poop (very valuable for figuring out what a dinosaur ate) and footprints.

Bones have lots of tiny holes in them just like a sponge. Wash a chicken leg bone and look at it to see this. After a dinosaur died, the soft parts would gradually rot away. The bones might be buried in the sand in a river. Minerals dissolved in water under the ground would fill in all the holes. After a long time, every single bit of bone would be replaced by a little mineral crystal.

You can discover how dinosaur bones turned into fossils by making your own "fossil bone." You will need:

- a sponge (untreated cellulose or flattened dry sponges work best)
- 1 cup hot water
- ½ cup salt
- a pie pan
- a little sand

Directions:

- Cut a bone shape from the sponge.
- Put the sponge in your pan and sprinkle sand over it. Your dinosaur bone has been buried.
- Mix 1 cup hot water and ½ cup salt. Stir to dissolve as much salt as you can. This is the ground water with minerals dissolved into it.
- Pour the salt water over the sand and bone.
- Place the pan in a warm, sunny place for a few days.
- When the water dries up, look at your bone. It will be hard and crunchy where salt has filled in the holes. You have turned your sponge bone into a fossil!

2. Dino Footprints Tell A Story

Paleontologists – people who studies fossils to learn about the past – find out a lot about how dinosaurs lived by looking at their tracks. Every track tells a story: how many dinosaurs were there, how fast were they going, how long were their toenails? Lots of tracks together tells us some dinosaurs lived in herds. Little tracks in the middle surrounded by big ones means dinosaurs walked with their babies in the middle of the herd and adults on the edges. Elephants do this today to protect their young. Tracks of a meat eater on top of tracks of a plant eater means – LUNCH TIME!

Make your own dinosaur tracks story:

- Using the patterns provided, make footprint stamps from sponges, potatoes or fun foam glued to wooden blocks.
- Using inkpads or paint, stamp out some dinosaur tracks.
- Write the story your tracks tell.

3. Dinosaur Tracks and Size

Make life-size dinosaur tracks from newspaper or cardboard using the patterns found throughout these pages. Place the tracks around the room the indicated distance apart to show how big a dinosaur's footprint was. Stand on one footprint and walk to the next. How many Brownie Girl Scout steps does it take to make one Sauropod step? Can your whole troop fit on one Sauropod track?



4. What Did Dinosaurs Eat?

You can tell from their teeth. People have three kinds of teeth. Sit in front of a partner and look at her teeth or use a mirror to look at your own. In the back are broad flattish teeth to chew with. Some dinosaurs had lots of these, like cows and horses do today. Cows and horses eat plants, so we figure that dinosaurs with teeth like them also ate plants, like the Triceratops.

In front of your chewing teeth are sharp, pointy teeth. These are used for ripping off big pieces of meat. Dogs, tigers and alligators have lots of these. These animals eat meat so we figure that dinosaurs with lots of long, sharp, pointy teeth ate meat too. These include T. Rex and Velociraptor. A T. Rex tooth was about the size and shape of a banana!

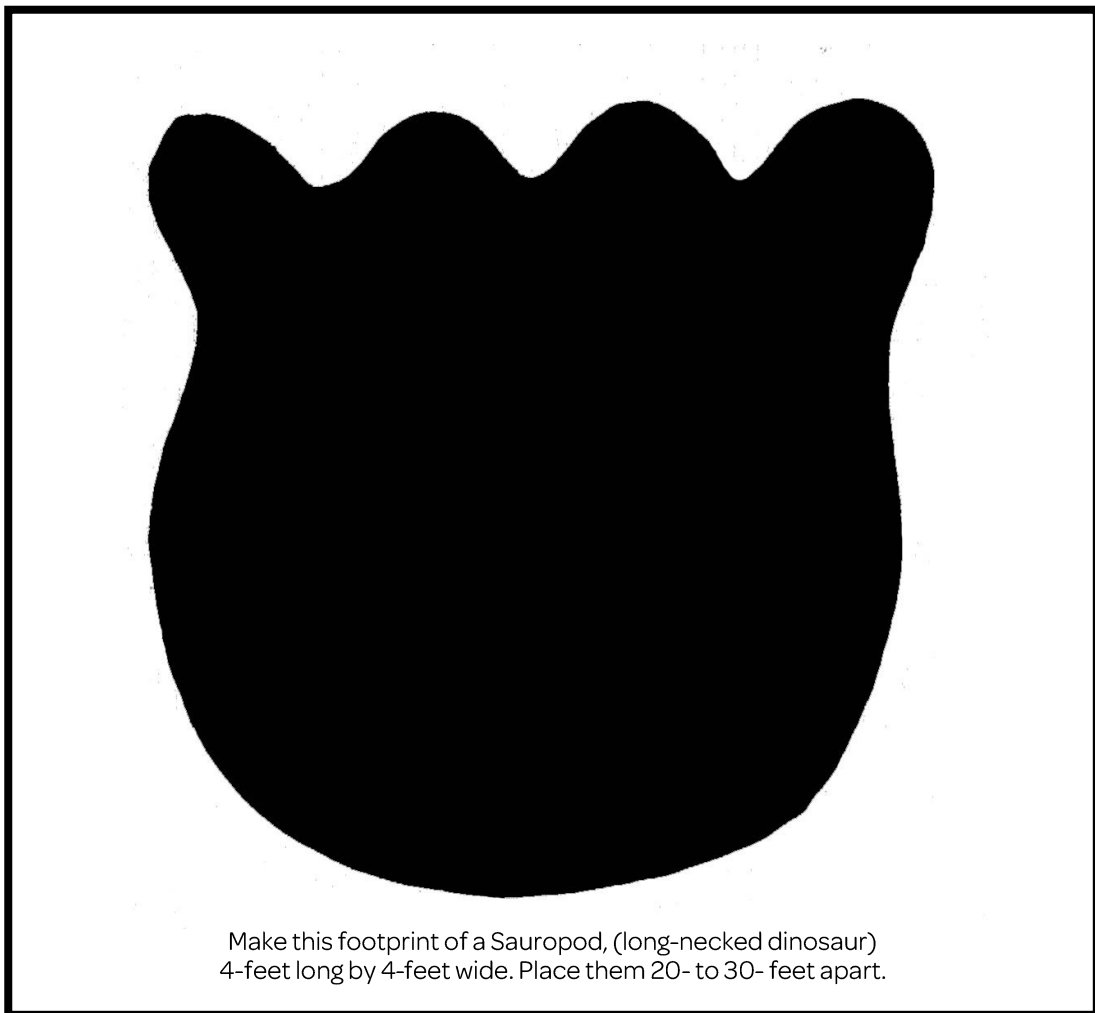
In front of your mouth are teeth for biting things. You use these teeth when you take a bite of an apple. Beavers, mice and cows have this kind of tooth and they eat plants. Dinosaurs with teeth like them ate plants too. These include Brachiosaurus and many other long-necked dinosaurs.

5. Dinosaur Gizzards

Some plant-eating dinosaurs didn't chew their food very well. So how did they grind up all the plants they swallowed? The same way birds do, with rocks. The dinosaurs and birds swallowed rocks that probably got caught in a little pouch in their throat called a gizzard. To find out what happened to their food, do this:

- Put several small rocks into a Ziploc bag. This is your dinosaur's gizzard.
- Now feed your dinosaur. Put leaves, seeds, pine needles and other plants into your gizzard.
- Now the gizzard muscles go to work. Smash the bag around in your hands for a minute or two.

What does your dinosaur food look like now? Did everything get chewed up?



When you have completed the requirements, you can purchase the patch at any of our six regional offices, www.girlscoutsgcnwi.org or our online shop, www.shopgirlscouts.com and go to "Uniquely Ours".