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## Brookfield Zoo's

# DINOSAURS ALIVE!

Below is a list of and facts about each of the animatronic dinosaurs that guests can see at Brookfield Zoo. Dinosaurs Alive! is open from April 6 through October 27.



### Alxasaurus

**Pronounced:** ALL-shuh-SOAR-us

**Name Means:** Alxa Desert lizard

**Diet:** Herbivore (plant eater)

**Period:** Early Cretaceous (120 million years ago)

**Fossils Found:** China

**Weight:** 800 to 900 pounds

**Animatronic Size:** 12 feet long x 6 feet wide x 7 feet high

- 🦖 Alxasaurus had 40 teeth located only at the back of its mouth.
- 🦖 Alxasaurus used its enormous curved claws to grasp and shear leafy branches for food.
- 🦖 Alxasaurus is part of a group of dinosaurs known as therizinosaurids (there-ih-ZIN-oh-soar-us), which are known for having extremely long claws on their hands. These claws may have been used as defensive weapons against predators.



### Amargasaurus

**Pronounced:** ah-MAR-guh-SOAR-us

**Name Means:** La Armaga (bitter) lizard

**Diet:** Herbivore (plant eater)

**Period:** Early Cretaceous (125 million to 103 million years ago)

**Fossils Found:** Argentina

**Weight:** 11,000 pounds

**Animatronic Size:** 35 feet long x 5 feet wide x 10 feet high

- 🦖 Amargasaurus had two rows of spines taller than those of any other sauropod. The long spines may have made it hard for this plant-eating animal to bend its neck up. Most likely, it ate food found near the ground.
- 🦖 No one knows for sure the purpose of the spines. They may have helped Amargasaurus tell its own species apart from other dinosaurs. Perhaps skin grew between the spines and helped warm its blood. Or possibly the spines made the dinosaur look much bigger and tougher.



## **Carnotaurus**

**Pronounced:** CAR-no-TORE-us

**Name Means:** Meat-eating bull

**Diet:** Carnivore (meat eater)

**Period:** Late Cretaceous (72 million to 70 million years ago)

**Fossils Found:** Argentina

**Weight:** 2,000 pounds

**Animatronic Size:** 26 feet long x 4 feet wide x 10 feet high

- 🦖 Carnotaurus was an odd-looking dinosaur with tiny arms that were even shorter than those of Tyrannosaurus rex. The two large horns jutting from its head made this animal stand out from other meat-eating dinosaurs.
- 🦖 Scientists believe the horns may have been used in fights.



## **Confuciusornis**

**Pronounced:** kon-FEW-shus-OR-nis

**Name Means:** Confucius bird

**Diet:** Herbivore (plant eater)

**Period:** Late Jurassic to Early Cretaceous (125 million to 140 million years ago)

**Fossils Found:** China

**Weight:** 0.25 to 3 pounds

**Animatronic Size:** 4 feet long x 4 feet wide x 4 feet high (actual size: 2 feet long)

- 🦖 Feathers used to define birds. If an animal had feathers, it was a bird. In the late 1990s, that definition was altered by the discovery of feathered dinosaurs. Confuciusornis looked like a small Velociraptor, yet its feathered wings and toothless beak made it an intriguing mix of dinosaur and bird.
- 🦖 Confuciusornis's shoulder muscle prevented this animal from raising its wings above its back. The flight feathers, longer than its body, show that it had already diverged from the evolutionary line that led to modern birds.



## **Dilophosaurus**

**Pronounced:** die-LOF-uh-SOAR-us

**Name Means:** Two-crested lizard

**Diet:** Carnivore

**Period:** Early Jurassic (193 million years ago)

**Fossils Found:** North America (Arizona)

**Weight:** 1,000 pounds

**Animatronic Size:** 17 feet long x 3 feet wide x 6 feet high

- 🦖 Dilophosaurus was the largest meat-eating dinosaur of the Early Jurassic period.
- 🦖 It was an agile hunter that used its large, sharp claws to grab prey and had tiny, sharp teeth to tear it apart.
- 🦖 The double crests on top of the snout were not attached to the skull. They may have been for display purposes, like the feathers of a peacock. If this is so, the female of the species probably did not have a crest.



## **Dyoplosaurus**

**Pronounced:** die-op-low-SOAR-us

**Name Means:** Double-armored lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (76 million years ago)

**Fossils Found:** Alberta, Canada

**Weight:** 4,400 pounds

**Animatronic Size:** 19 feet long x 4 feet wide x 5 feet high

- ✎ Built like a giant turtle, Dyoplosaurus had tough, bony armor plating that could snap the teeth of most predators. But it was the tail club that kept all but the most foolish of attackers away.
- ✎ The club—the last 50 inches of the tail—was made of stiffened vertebrae (the handle) and a bony knob. Researchers believe a hit from this animal's tail club could not break big bones. However, a direct hit would cause tremendous pain, persuading most predators to leave all but the weakest Dyoplosaurus alone.



## **Gigantoraptor**

**Pronounced:** jih-GAN-toe-RAP-ter

**Name Means:** Gigantic thief

**Diet:** Omnivore (plant and meat eater)

**Period:** Late Cretaceous (72 million to 71 million years ago)

**Fossils Found:** Mongolia

**Weight:** 3,000 pounds

**Animatronic Size:** 26 feet long x 4 feet wide x 15 feet high

- ✎ Gigantoraptor was the largest known feathered animal.
- ✎ Growth patterns in its fossils show that Gigantoraptor could gain between 150 and 200 pounds per year in the first seven years of its life.
- ✎ Gigantoraptor had a powerful snapping beak and is the biggest toothless dinosaur yet discovered.



## **Kosmocerotops**

**Pronounced:** KOZ-mo-SAIR-uh-tops

**Name Means:** Ornate horned face

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (76.4 million to 75.5 million years ago)

**Fossils Found:** Western North America (Utah)

**Weight:** 5,000 pounds

**Animatronic Size:** 18 feet long x 4 feet wide x 9 feet high

- ✎ With possibly the most ornate skull of any known dinosaur, Kosmocerotops had 10 hooklike horns extending from its bent frill and five horns on its face.
- ✎ For many years, scientists thought horned dinosaurs used their large frill as a protective shield. However, many species, including Kosmocerotops, have large holes in the frill. These holes may have been covered by brightly colored skin. It is possible the frills were used less for defense and more for attracting mates.



## **Microraptor**

**Pronounced:** MY-crow-RAP-ter

**Name Means:** Small thief

**Diet:** Carnivore (meat eater)

**Period:** Early Cretaceous (120 million years ago)

**Fossils Found:** China

**Weight:** 2 pounds

**Animatronic Size:** 7 feet long x 6 feet wide x 4 feet high (actual size: 2.5 to 3 feet long)

- ✎ Although this feathered, four-winged dinosaur could not fly, it probably glided in a steep downward path. The feathers on its legs and tail could have been used to alter and control the descent.
- ✎ Unusual even among early birds, Microraptor sported feathers on both forearms and hands. However, it was an evolutionary dead end. Microraptor did not evolve into a bird.



## **Olorotitan**

**Pronounced:** oh-LOW-row-tie-tan

**Name Means:** Giant swan

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (70 million to 65.5 million years ago)

**Fossils Found:** Asia

**Weight:** 10,000 pounds

**Animatronic Size:** 28 feet long x 5 feet wide x 16 feet high (juvenile) (adults could reach 40 feet long)

- ✎ Olorotitan belonged to the group of duckbills with large, spectacular crests.
- ✎ It is believed that these dinosaurs came from Asia and migrated to North America across a land bridge.
- ✎ Olorotitan is the most complete duck-billed dinosaur skeleton found outside of North America. It was unearthed in 2001 in the Amur region of eastern Russia.



## **Omeisaurus**

**Pronounced:** OH-may-SOAR-us

**Name Means:** Mount Emei lizard

**Diet:** Herbivore (plant eater)

**Period:** Middle Jurassic (168 million to 156 million years ago)

**Fossils Found:** China

**Weight:** 8,000 to 18,000 pounds

**Animatronic Size:** 36 feet long x 5 feet wide x 17 feet high (actual size could reach up to 50 feet long)

- 🦖 The best protection Omeisaurus had from meat-hungry predators was its massive size.
- 🦖 Like most long-necked dinosaurs (sauropods), Omeisaurus spent most of its day eating. Munching up to 2,200 pounds of plants each day, the eating machine did not have time to chew its food. Instead it swallowed food whole and let gastroliths (stones in its stomach) grind the food.
- 🦖 Of all dinosaurs, Omeisaurus had one of the longest necks (17 vertebrae) relative to its body size.



## **Pachycephalosaurus**

**Pronounced:** pak-ee-SEF-uh-lo-SOAR-us

**Name Means:** Thick-headed lizard

**Diet:** Herbivore (plant eater)

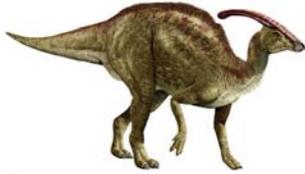
**Period:** Late Cretaceous (67 million years ago)

**Fossils Found:** Western United States (Montana, South Dakota, and Wyoming)

**Weight:** 950 pounds

**Animatronic Size:** 19 feet long x 4 feet wide x 7 feet high

- 🦖 The large, bony dome atop the skull of Pachycephalosaurus was up to 9 inches thick and protected its relatively small brain. The dome, along with the knobs and spikes at its base, was likely used to drive off the competition for mates. Originally, paleontologists assumed that Pachycephalosaurus bashed heads like battling musk oxen do. Closer examination of the neck structure showed it to be too weak to withstand such forces. Current theories propose that the dome was used to head-butt the sides of competitive males while a Pachycephalosaurus was trying to establish dominance.



## **Parasaurolophus**

**Pronounced:** PAIR-uh-so-ROL-uh-phus

**Name Means:** Like crested lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (76.5 million to 72 million years ago)

**Fossils Found:** North America (Alberta, New Mexico, and Utah)

**Weight:** 4,000 pounds

**Animatronic Size:** 25 feet long x 5 feet wide x 12 feet high

- 🦖 The trumpeting alarm calls from the hollow head crest of Parasaurolophus warned others in the herd of approaching predators. The crest, which grew up to 6 feet long, could have been used to make mating calls or announce a good source of food.
- 🦖 Parasaurolophus had a single defense plan: run! It moved quickly on its two strong back legs.
- 🦖 When grazing, Parasaurolophus could crouch down on all four legs.
- 🦖 Parasaurolophus used its ducklike beak and hundreds of tiny teeth to grind tough conifers and ferns into a digestible pulp.



## **Shantungosaurus**

**Pronounced:** shan-TUNG-oh-SOAR-us

**Name Means:** Shandong lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (70 million years ago)

**Fossils Found:** China

**Weight:** 26,000 to 30,000 pounds

**Animatronic Size:** 49 feet long x 8 feet wide x 19 feet high

- 🦖 Shantungosaurus is a hadrosaur (meaning it was duck-billed) and the largest non-sauropod dinosaur ever to be discovered. Larger than the North American theropod Tyrannosaurus rex, both in length and height, Shantungosaurus would have dwarfed the local predators.
- 🦖 Originally discovered in 1964, Shantungosaurus temporarily lost its title as the largest hadrosaur when Zhuchengosaurus was found in 2007 in the same geographical location. In 2011, however, a study concluded that Zhuchengosaurus was simply a mature version of Shantungosaurus.
- 🦖 It appears that Shantungosaurus may have been restricted to a small geographic area in Shandong Province, which was once home to river branching streams or fluvial fans. These natural features may have created physical barriers that this dinosaur was unable to navigate. Also, the bizarrely gigantic size reached upon maturity meant that Shantungosaurus was slow-moving and unable to migrate long distances like its smaller hadrosaur cousins.



### **Sinosauropteryx**

**Pronounced:** SIGH-no-SOAR-OP-ter-ix

**Name Means:** Chinese winged lizard

**Diet:** Carnivore (meat eater)

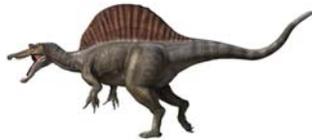
**Period:** Early Cretaceous (125 million years ago)

**Fossils Found:** China

**Weight:** 1 to 2 pounds

**Animatronic Size:** 7 feet long x 3 feet wide x 4 feet high (actual size 2 to 3 feet long)

- 🦖 In 1996, a Sinosauropteryx fossil was found in China. It was the first feathered dinosaur discovered and it changed the way scientists look at dinosaurs and birds.
- 🦖 Its many sharply pointed, serrated teeth were capable of eating small prey whole and could tear the flesh of larger prey.
- 🦖 Sinosauropteryx had the longest tail in relation to its size of any theropod.
- 🦖 Some scientists believe that clues to the animal's true color can be found in its fossilized remains.



### **Spinosaurus**

**Pronounced:** SPY-nuh-SOAR-us

**Name Means:** Spine lizard

**Diet:** Carnivore (meat eater)

**Period:** Late Cretaceous (112 million to 97 million years ago)

**Fossils Found:** North Africa

**Weight:** 14,000 to 20,000 pounds

**Animatronic Size:** 22 feet long x 4 feet wide x 9 feet high (juvenile) (adults could reach between 40 and 60 feet long)

- 🦖 Spinosaurus is the largest of all known carnivorous dinosaurs.
- 🦖 Like a crocodile, Spinosaurus has a long snout and a mouth filled with sharp, straight teeth.
- 🦖 Scientists believe Spinosaurus lived in swamps and marshes and ate fish.
- 🦖 Spinosaurus had spines and a sail on its back, which may have been used to cool blood or attract mates.



## **Stegosaurus**

**Pronounced:** STEG-uh-SOAR-us

**Name Means:** Roof lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Jurassic (150 million years ago)

**Fossils Found:** North America

**Weight:** 6,000 to 7,000 pounds

**Animatronic Size:** 23 feet long x 5 feet wide x 10 feet high (actual size could reach up to 30 feet long)

-  This slow-moving plant eater had double rows of alternating bony plates along its back. The plates were attached to the skin rather than the spine and were most likely used for self-defense.
-  At the end of its tail, Stegosaurus had long spikes, which it used to defend itself.
-  Some believe the plates regulated heat and could blush red as part of a mating ritual or warning signal.
-  Its back legs were twice as long as its front legs.
-  Stegosaurus was not the most intelligent of the dinosaurs. It had the smallest brain of all species.
-  Stegosaurus had small, weak teeth, so it used gizzard stones to grind up food in its stomach.



## **Styracosaurus**

**Pronounced:** stih-RAK-uh-SOAR-us

**Name Means:** Spiked lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (77-75 million years ago)

**Fossils Found:** Canada (Alberta)

**Weight:** 6,000 pounds

**Animatronic Size:** 17 feet long x 4 feet wide x 7 feet high

-  Styracosaurus's largest horn was nearly 2 feet long.
-  More than 50 different species of horned-faced dinosaurs have been discovered. Each species had a different frill and set of spikes on its head. When animals share a common feature for a long time period, it often means that the feature is very important to their survival.
-  Like other horned dinosaurs, the frill and horns are believed to help attract mates. It's also thought that Styracosaurus may have used the spikes to jab the sides of attacking predators.



## **Triceratops**

**Pronounced:** try-SAIR-uh-TOPS

**Name Means:** Three-horned face

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (65 million years ago)

**Fossils Found:** Western North America

**Weight:** 12,000 to 24,000 pounds

**Animatronic Size:** 26 feet long x 5 feet wide x 9 feet high

- 🦖 Despite its size, Triceratops was quite fast. However, rather than outrunning its predators, it may have used its sharp horns to defend itself.
- 🦖 Triceratops was the largest of the horned-face dinosaurs, sporting a skull with a magnificent frill of solid bone and three spikes.
- 🦖 Triceratops had the largest skull of any land animal—up to one-third its overall body length.



## **Tuojiangosaurus**

**Pronounced:** tuh-HWANG-oh-SOAR-us

**Name Means:** Tuo River lizard

**Diet:** Herbivore (plant eater)

**Period:** Late Cretaceous (168 million years ago)

**Fossils Found:** China

**Weight:** 8,000 pounds

**Animatronic Size:** 23 feet long x 4 feet wide x 8 feet high

- 🦖 Like its Stegosaurus relatives, the most striking features of Tuojiangosaurus were the two rows of pointed plates running down its back and an intimidating spiked tail. Both features were initially believed to be defensive, but closer examination revealed the plates to be too porous to withstand the bite of large predators. Instead, the plates may have played an important role in attracting mates, identifying individuals, and collecting heat energy from the sun.
- 🦖 Tuojiangosaurus had no teeth in the front of its mouth.



## **Tyrannosaurus rex**

**Pronounced:** tuh-RAN-uh-SOAR-us rex

**Name Means:** King of the tyrant lizards

**Diet:** Carnivore (meat eater)

**Period:** Late Cretaceous (67 million to 65 million years ago)

**Fossils Found:** Western North America

**Weight:** 10,000 to 14,000 pounds

**Animatronic Size:** 47 feet long x 7 feet wide x 19 feet high (adult) and 16 feet long x 3 feet wide x 6 feet high (feathered juvenile)

- 🦖 The largest Tyrannosaurus rex tooth on record is more than a foot long. This dinosaur had a mouthful of 50 serrated teeth, some more than 11 inches long. It could grow new, sharp teeth as old broken ones fell out.
- 🦖 Of the 50 skeletons discovered so far, the oldest Tyrannosaurus rex (Sue) was just 28 years old when it died.
- 🦖 Although Tyrannosaurus rex had tiny arms, muscle formations suggest its biceps could lift more than 430 pounds.
- 🦖 A Tyrannosaurus rex skeleton discovered in eastern Montana contains a protein necessary to create eggs. This protein is created only by ovulating females, proving the eastern Montana T. rex, known as B-rex, was female.
- 🦖 Recent research indicates that Tyrannosaurus rex juveniles were fast-growing animals. Between the ages of 14 to 18 years, teenagers may have gained up to 4.4 pounds per day.
- 🦖 Tyrannosaurus rex may have been covered with fine downy feathers resembling hair. Feathers most likely developed to keep animals warm. As the dinosaur became larger, it was important to be able to quickly cool off. The down was shed before the animal reached adulthood.



## **Velociraptor**

**Pronounced:** vuh-LOSS-ih-RAP-ter

**Name Means:** Swift thief

**Diet:** Carnivore (meat eater)

**Period:** Late Cretaceous (75 million to 71 million years ago)

**Fossils Found:** Mongolia, Russia, China

**Weight:** 15 to 30 pounds

**Animatronic Size:** 12 feet long x 2 feet wide x 5 feet high (actual size 6.5 feet long x 20 inches high)

- 🦖 Velociraptor was built for speed and quick moves. Most likely, this agile animal hunted in packs like wolves and orcas. It would use its large, infamous “killing claw” on its second toe to rip into the sides of its prey.
- 🦖 In 2007, researchers found evidence of feather attachments on the forearms of Velociraptor. Current research now shows that this dinosaur was probably warm-blooded and most likely had a downy or feathery coat to keep the heat and energy it needed to hunt.

