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# DINOSAURS ALIVE!

## Dinosaur Fun Facts

-  It is unknown how many dinosaur species actually existed, but scientists have uncovered between 500 and 700 distinct types. This represents about 5 percent of the known bird and reptile species of today.
-  All birds are descendants of dinosaurs in the Theropod family.
-  The first dinosaur to be named was the Megalosaurus in 1824. New dinosaurs are being discovered every day.
-  Predatory dinosaurs like Tyrannosaurus rex and Troodon had the largest brains, but they were still no smarter than an ostrich.
-  Birds are the only relative of dinosaurs to be alive when humans roamed the Earth. Humans appeared on Earth about 65 million years after dinosaurs became extinct.
-  The smallest known dinosaur is Microraptor, which was 16 inches long. A smaller skeleton of Mussaurus (“mouse lizard”) has been discovered. The juvenile skeleton was also 16 inches long.
-  Dinosaurs have gone to space! The first dinosaur in space—parts of a *Maiasaura* dinosaur—arrived at Spacelab 2 in 1985.
-  Dinosaurs have been found in 35 states across the United States.
-  The United States ranks No. 1 in finding dinosaur remains, but China is close behind at No. 2.
-  Some scientists believe that many dinosaurs were brightly colored like modern birds. This would have been handy for camouflage and for courtship displays. A few dinosaurs may even have been feathered.
-  Spinosaurus was much larger and more ferocious than Tyrannosaurus rex, the “King of Dinosaurs.”
-  The word “fossil” means “dug up.” Conditions have to be perfect for a fossil to form, which is why they are so rare. Fossils can form only in sedimentary rock. Also, when a dinosaur died, it had to be covered quickly by mud or sand. Gradually, as water ran over the bones

and teeth, their calcium was replaced by rock minerals. Eventually, all traces of the bones are gone, leaving an exact replica made of stone.

 Questions about dinosaur feathers have been taking flight since the late 1990s, when the first feathered fossils were discovered in Liaoning Province, China. During the Jurassic Period, Liaoning Province was located between lakes and active volcanoes. This environment proved to be the perfect place for preserving the impression of feathers on fossilized dinosaurs. Paleontologists have discovered numerous fossils of feathered dinosaurs, including Caudipteryx, Microraptor, and Dromaeosauridae. Fossilized relatives of Tyrannosaurus rex have also been found to have feathers. While there is no longer any debate on the existence of feathered dinosaurs, scientists continue to debate the use of feathers on dinosaurs; speculation includes flight, body temperature regulation, and mate selection.

 The warm-blooded or cold-blooded nature of dinosaurs has been debated since the 1960s. Early descriptions of dinosaurs made them appear to be overgrown, slow-moving lizards or crocodilelike animals that are ectothermic, meaning they relied on the environment to regulate their body temperature. Because of recent scientific discoveries, modern descriptions of dinosaurs have morphed into fast-moving, migrating, endothermic animals, meaning dinosaurs could regulate their own internal body temperature like modern birds and mammals can.

What led to the change in thought? Paleontologists discovered lines of arrested growth (LAGs) in dinosaur bones. These bone lines are found in animals whose growth is determined by environmental conditions like temperature and drought. Similar to rings on a tree, these lines indicate that dinosaurs were affected by substantial changes in temperature, like modern cold-blooded reptiles. Recently, scientists have discovered lines of arrested growth in hoofed animals from around the world. When compared to dinosaur bones, the lines of arrested growth on the bones from the hoofed animals are indistinguishable from those of the dinosaur. Paleontologists now assert that previous arguments for dinosaurs being cold-blooded based on LAGs is flawed. Because the dinosaurs' growth pattern most closely resembles birds and mammals, experts believe dinosaurs may have been warm-blooded.

