

DINOSAURS! KNOWLEDGE ORGANISER

Summary

Dinosaurs were a diverse group of reptiles that lived millions of years ago. Their fossil remains have been found on every continent.

The dinosaurs lived for a very long time: Dinosaurs first appeared about 243 million years ago, and became the most dominant land-based species about 200 million years ago.

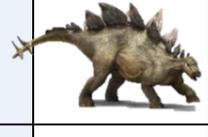
Size: Many dinosaurs were extremely large-bodied – Many serapods, for example, could grow to almost 40 metres in length and 18 metres in height (In comparison, only the tallest humans reach 2 metres!)

The Cretaceous-Paleogene Extinction Event: Most dinosaurs were believed to have died out in a massive event (believed to be an asteroid striking earth) that happened around 66 million years ago.

This picture shows the rough areas of the world that different dinosaurs lived (remember - the continents didn't look like this when they were around!)



Types of Dinosaurs

TYRANNOSAURUS REX		Tyrannosaurus Rex was a large, carnivorous, theropod dinosaur that lived in what is now North America. It lived in the Cretaceous Period. It had a massive, heavy skull with a large mouth, and a huge powerful tail. It is one of the largest land-based apex predators to have ever existed.	Length Up to 12.3 metres Weight About 12 tonnes
BRONTOSAURUS		Brontosaurus was a gigantic, four-legged dinosaur, from the sauropod family. It had a long thin neck and small head, which was perfect for its life as a herbivore. It also had a heavy, whip-like tale. Brontosaurus is thought to have lived in the Jurassic period in the area that is now North America.	Length Up to 22 metres Weight About 15 tonnes
TRICERATOPS		Triceratops had 3 horns (the 'tri' in its name means 'three' and 'ceratops' means 'horned face'). It lived in what is now North America, and it is likely that its horns came in useful in fending off Tyrannosaurus, that lived at the same time. Triceratops was a herbivore, but had about 400-800 teeth!	Length About 8 metres Weight About 9 tonnes
STEGOSAURUS		The Stegosaurus was a large dinosaur that had several bones and plates lining its back (for protection). Part of the group Stegosauria, these dinosaurs were all herbivores. Stegosaurus lived in the Jurassic Era, about 150 million years ago. Their bones have been found in the USA and Portugal.	Length About 9 metres Weight About 5 tonnes
PTERODACTYL		Pterodactyls were large, carnivorous winged pterosaurs. They are not technically considered dinosaurs – rather they were flying reptiles. Pterodactyls were small - there were many larger pterosaurs, some up to 250kg in weight!	Length Up to 50cm Weight About 3kg
IGUANODON		Iguanodon was an interesting, plant-eating dinosaur with a narrow head and a long tail. It lived in the early Cretaceous Period, about 125 million years ago. Many fossils of Iguanodon have been found in Belgium. It could walk on 2 or 4 legs.	Length About 10 metres Weight About 3.5 tonnes
VELOCIRAPTOR		Velociraptor was a small theropod dinosaur that lived around 75 million years ago, in the Cretaceous Period. Fossils of the species have been found in Mongolia and China. They were much smaller than often shown – about the size of a turkey.	Length About 2 metres Weight About 15kg

Key Questions



How do we know that dinosaurs existed?

Everything that we know about dinosaurs comes from fossils, including bones, teeth, footprints, tracks, eggs and skin impressions. Paleontologists explore these fossils like detectives, examining the evidence to discover what the dinosaurs were like. They can work out a great deal!

Were all dinosaurs gigantic?

Although there were many huge dinosaurs (some of the biggest were the largest land animals ever to have lived) many were not big at all! Many scientists believe that most dinosaurs were about the size of humans, but that the larger dinosaurs were more likely to leave a record in fossils. The big ones are also fun to learn about!



How are fossils formed?



Fossils are records of life built into stone. They are formed in lots of different ways, but mainly they are produced when an animal dies in a watery environment and are buried in mud and silt. As the sediment builds it hardens into rock. The hard features of the animal (e.g. bones) imprint the rock. Sometimes, minerals replace the decaying bones, creating a replica skeleton.

Did humans and dinosaurs ever meet?

No! After the dinosaurs died out, around 64 million years passed until the earliest humans began to appear. Only the very first mammals (for example, some small types of shrew) are believed to have been around at the time of the dinosaurs. It is thought that only the extinction of the dinosaurs allowed for large mammals to begin to rule the earth.



Did all of the animals from the time of the dinosaurs die?



All large land-based animals were made extinct by the extinction event. However, some smaller animals, that did not need as much food, were able to survive the new conditions. Believe it or not, even some dinosaurs survived - modern birds are believed to be descended from some of the smaller theropod dinosaurs! Many other animals from the time of the dinosaurs still exist today, including crocodiles, snakes, bees, sharks, crabs, lobsters, duck-billed platypuses, turtles and cockroaches. Many had bigger and fiercer relatives, for example, there were lots of giant crocodile species that dwarf crocodiles today!

Top 10 Dinosaur Facts!

- Dinosaurs lived for around 160 million years (people have only been around for about 2.5 million years).
- A T-Rex bite was more than twice as powerful as a lion's bite.
- Dinosaur fossils have even been found on Antarctica.
- Some of the largest herbivores had to eat a tonne of food a day (a bus-load of vegetation!)
- The word 'dinosaur' comes from Greek, meaning 'terrible lizard.'
- The dinosaurs in the Triassic Period were smaller and more lightweight. Bigger dinosaurs came in the Jurassic and Cretaceous Periods.
- Even though many dinosaurs were large, none were as big as the blue whale, which still exists today!
- A newborn baby has a bigger brain than most dinosaurs had.
- The fastest dinosaur, Ornithomimus, could reach speeds of up to 70 km/h!
- Some pterosaurs had fur, to keep warm.

Timeline of the Dinosaurs

TRIASSIC PERIOD

248 – 206 million years ago

Pterosaurs first appeared in the Triassic Period!

JURASSIC PERIOD

206 – 146 million years ago

Stegosaurus, Brontosaurus and Allosaurus lived in this period.

CRETACEOUS PERIOD

146 – 65 million years ago

Tyrannosaurus Rex, Velociraptor and Triceratops lived in this period!