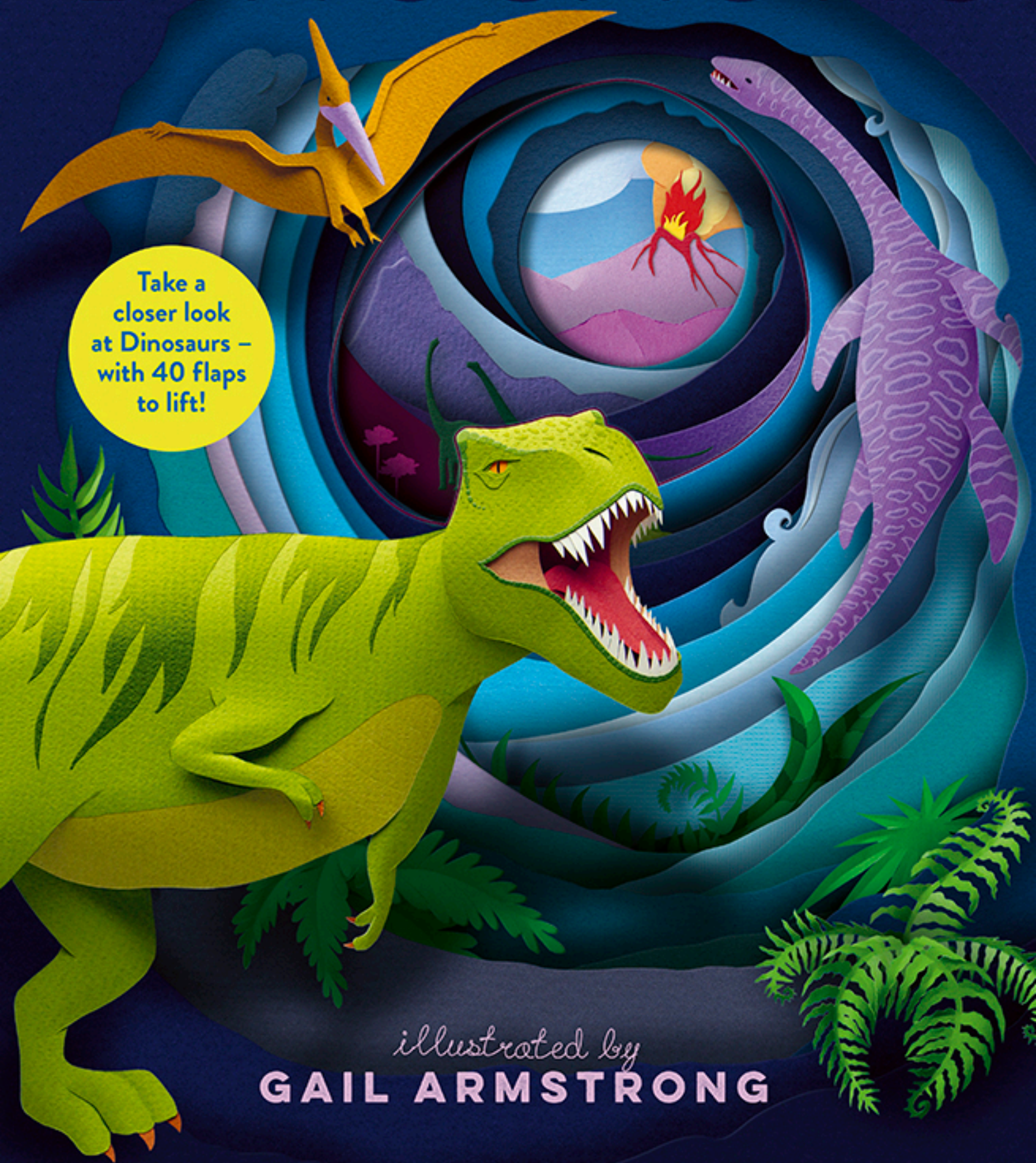


PAPER WORLD

DINOSAURS

Take a
closer look
at Dinosaurs –
with 40 flaps
to lift!



illustrated by
GAIL ARMSTRONG

Anchiornis

This feathered theropod was one of the smallest dinosaurs. Its remains have been preserved in amazing detail meaning scientists can tell what colour its feathers were. It's one of the first dinosaurs that may have been able to use its wings to fly.

Coelurus

This smaller meat-eater grew to around 2m long and would have been about hip-height to an adult human.

Mammals

The mouse-sized creature *Megastodon* was one of the first mammals. It had a small, shrew-like body. Mammals are warm-blooded animals with fur, whose young drink milk.

JURASSIC

The Jurassic Period (201–145 million years ago) was a time of huge change for the planet and its inhabitants. The super-continent Pangea continued to split apart, and new oceans rushed to fill the spaces in between, creating wide, shallow seas, dotted by tropical islands. On the continents, mountains burst up, separated by wide forests of conifers, ferns and cycads. The climate was hot and tropical. And in the oceans, new species evolved – filling the gaps left behind by a huge extinction event at the end of the Triassic.

On land, dinosaurs were dominant, and began to diversify in appearance and lifestyle. With so much plant-life to eat, herbivores reached enormous sizes: the first sauropods evolved, growing to mighty lengths. In response, predators grew larger, too. Alongside these fierce hunters, smaller feathered dinosaurs roamed the forests – these went on to become the ancestors of the birds.

high neck like a giraffe, which enabled it to browse leaves from the highest treetops. It was one of the largest dinosaurs ever.

Carnotaurus

This large herbivore grew up to 6m long. Its hand could have grabbed plants as it ate and it had a beak-like mouth for snipping leaves.

JURASSIC SKIES

The skies of the Jurassic Period were not populated by birds, but by huge flying reptiles with tooth-lined beaks! They were the pterosaurs. These reptiles were not dinosaurs, but were part of the same wider family known as the archosaurs, to which all dinosaurs, pterosaurs and crocodiles belong. They first appeared in the Late Triassic, and ruled the skies for more than 160 million years until the end of the Cretaceous.

Pterosaurs had wings made of skin and muscle, stretched from their long fourth finger to their body. Hollow bones reduced their weight, so they were light enough to fly, despite their huge size. And many had tails, which would have been used like a rudder on an aeroplane to help them steer in mid-air. On land, pterosaurs could have folded their wings and walked on their forelimbs like legs. Like many birds today, they probably roosted on cliff edges or trees, and could have used the height to help them take off.

Feathers

Many dinosaurs had basic proto-feathers on their bodies – not like the scaly reptiles we know today!

Pterodactylus

This pterosaur is thought to have fed on smaller land animals, crushing them with its powerful beak.

Dimorphodon

This small-sized pterosaur may have been an insect-eater. Its relatively short wings mean it probably only flew short distances.

Rhamphorhynchus

This pterosaur used its needle-like teeth to catch fish as it flew over rivers and lakes.

Flying insects

Dragonflies and other insects also buzzed in the Jurassic skies.

Anurognathus

This tiny pterosaur had a wingspan of just 35cm – and weighed just 40g. That's about the same weight as a chocolate bar!

Eggs

Like dinosaurs, pterosaurs' young hatched from eggs.

Pteractyl

- Avian
 - Humerus
 - Radial/Ulna
 - Metacarpals
 - Fingers
- Bat

CRETACEOUS GIANTS

Sauropods were large, long-necked plant-eaters that first emerged in the Jurassic. They walked on four pillar-like legs to support their enormous weight, and spent all day grazing on leaves, ferns and horsetails, in order to take in enough nutrients. However, their long necks enabled them to reach even the highest trees, like giraffes today, so they could reach shoots and leaves inaccessible to smaller animals.

By the Cretaceous, some well-known species, such as Diplodocus had died out. But in their wake came the largest sauropods ever: the titanosaurs. Named after the mythological Titans of Ancient Greece, they grew to lengths of up to 30 metres: longer than three buses. They were the last great group of sauropods before the dinosaurs all went extinct.

Saltasaurus

This huge dinosaur was covered in bony osteoderms to defend it from predators.

Amargasaurus

This was a comparatively small sauropod, reaching lengths of just 13m. It had two rows of spines down its neck and back, which could have been used for display or defence

Sauropod teeth

Most sauropods had pencil-shaped teeth, which scraped leaves or pine needles of trees but were little use for chewing.

Dreadnoughtus

This 26m long giant was only discovered in 2005, from fossil remains in Patagonia, Argentina. It stood about as tall as a two-storey building.

Abelisaurus

Few predators could have taken on the sheer size of a sauropod as prey, but one of those that could was Abelisaurus, a 7.5-metre-long hunter from what is now South America.

Asteroid

Asteroids are rocky bodies that orbit (circle) the Sun. They range from hundreds of metres across to many kilometres wide.

K-T extinction

The extinction is formally known as the Cretaceous-Tertiary, or K-T extinction. K is short for the German word for Cretaceous and Tertiary is the name for the period of time covering the Paleogene and Neogene periods, which came after the Cretaceous.

Velociraptor

This meat-eater was one of the last dinosaurs to walk Cretaceous Asia. It grew to around 2m in length and had a sickle-shaped claw on its rear foot which it could have used to slash open prey.

Microraptor

At no bigger than 80cm, this tiny meat-eater had four small wings.

This constant eruption would have released huge amounts of toxic gases, including the greenhouse gas carbon dioxide, which would have caused the climate to heat up. Or it may be that an asteroid and eruptions both contributed to the extinction.

END OF THE DINOSAURS

Around 66 million years ago, a meteorite as big as a mountain hurtled through space and slammed into Earth. Its impact created giant waves that raced across the oceans, flooding the lands. But more significantly, it threw great clouds of choking dust into the atmosphere, blocking the Sun's light for months or years to come. With no sunlight, all plants on land and in the oceans died out, starting a catastrophic chain of events, as herbivores and finally carnivores ran out of food to eat.

Almost 75 per cent of life died, including all dinosaurs, pterosaurs and marine reptiles such as plesiosaurs. However, some smaller animals, including mammals, birds and fish, survived. This huge extinction marked the end of the Mesozoic Era – the end of the age of the dinosaurs – and the start of the Cenozoic and the rise of mammals.