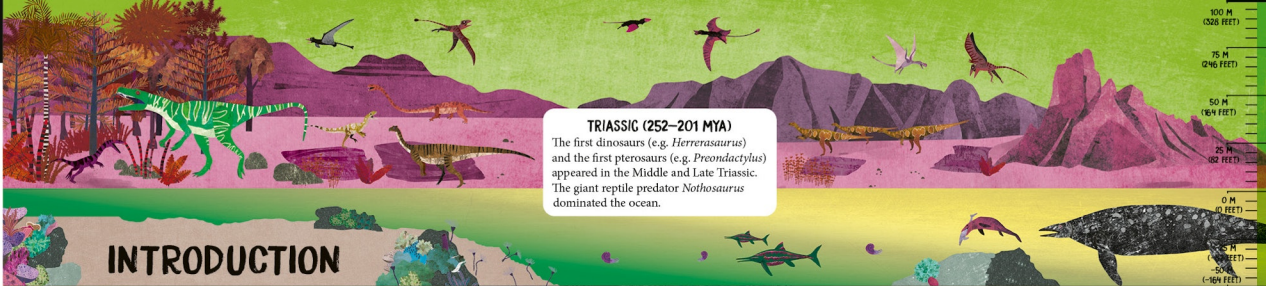


1 THE WORD 'DINOSAUR' MEANS 'TERRIBLE LIZARD' IN GREEK. HOWEVER, DINOSAURS WEREN'T LIZARDS, BUT A SEPARATE FAMILY OF REPTILES. HUNDREDS OF SPECIES OF DINOSAURS LIVED THEIR LIVES ON EARTH OVER MILLIONS OF YEARS, YET THEY ALL HAD PARTICULAR CHARACTERISTICS IN COMMON.

2 DINOSAURS HAD LEGS POSITIONED BENEATH THEIR BODIES, UNLIKE TODAY'S LIZARDS AND CROCODILES, WHICH HAVE THEIR LEGS STICKING OUT TO THE SIDES. THIS GAVE DINOSAURS AN UPRIGHT STANCE. IT ALSO MEANT THEIR WEIGHT WAS BETTER SUPPORTED AND THEY NEEDED LESS ENERGY TO MOVE AROUND.

3 WHILE DINOSAURS DOMINATED THE LAND, PTEROSAURS RULED THE AIR. THESE FLYING REPTILES SHARED A COMMON ANCESTOR WITH THE DINOSAURS AND COULD BE EVERY BIT AS FEROCIOUS. REPTILES ALSO ROAMED THE OCEAN, INCLUDING LONG-NECKED PLESIOSAURS AND FIERCE, FAST-SWIMMING MOSASAURS. WE'LL BE MEETING ALL THESE AND MORE.



TRIASSIC (252–201 MYA)

The first dinosaurs (e.g. *Herrerasaurus*) and the first pterosaurs (e.g. *Preondactylus*) appeared in the Middle and Late Triassic. The giant reptile predator *Nothosaurus* dominated the ocean.

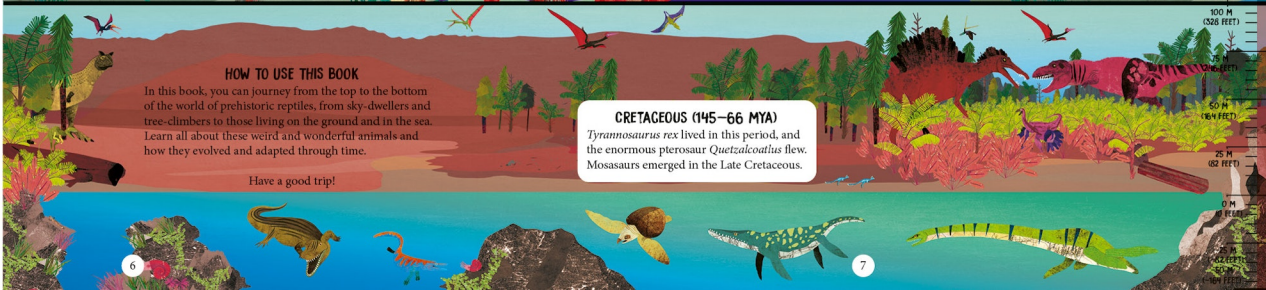
INTRODUCTION

The dinosaurs were a family of reptiles that flourished on Earth between around 230 and 66 million years ago. As we'll discover, dinosaurs came in many shapes and sizes, from giants like *Argentinosaurus* to the chicken-sized *Microraptor*.



JURASSIC (201–145 MYA)

New types of dinosaur (e.g. *Asfaltovenator*) and pterosaur (e.g. *Dimorphodon*) appeared. In the ocean, plesiosaurs flourished, and ichthyosaurs appeared. Giant sauropods (e.g. *Diplodocus*) lived in this epoch, as did the first pterosaur to be named, *Pterodactylus*. The fierce plesiosaur *Liopleurodon* was the apex ocean predator.



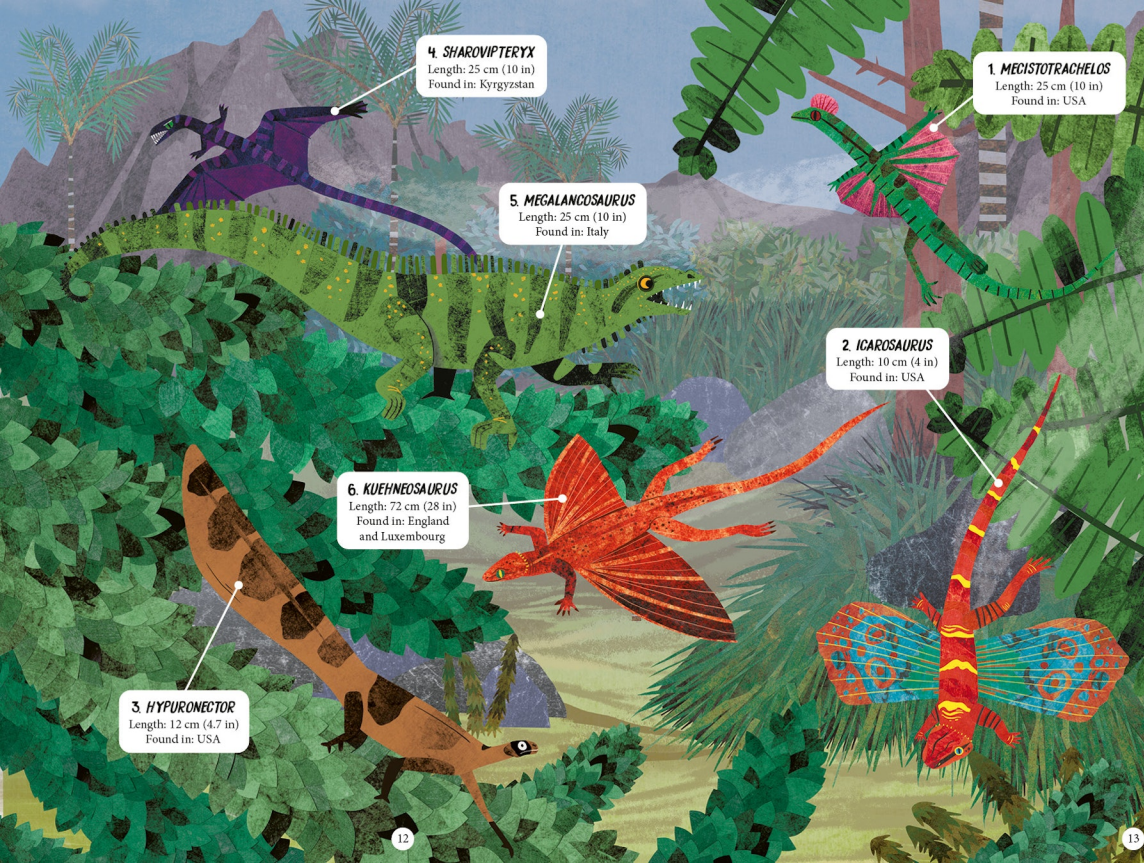
CRETACEOUS (145–66 MYA)

Tyrannosaurus rex lived in this period, and the enormous pterosaur *Quetzalcoatlus* flew. Mosasaurs emerged in the Late Cretaceous.

HOW TO USE THIS BOOK

In this book, you can journey from the top to the bottom of the world of prehistoric reptiles, from sky-dwellers and tree-climbers to those living on the ground and in the sea. Learn all about these weird and wonderful animals and how they evolved and adapted through time.

Have a good trip!



4. SHAROVIPTERYX
Length: 25 cm (10 in)
Found in: Kyrgyzstan

5. MEGALANCOSAURUS
Length: 25 cm (10 in)
Found in: Italy

6. KUEHNEOSAURUS
Length: 72 cm (28 in)
Found in: England
and Luxembourg

3. HYPURONECTOR
Length: 12 cm (4.7 in)
Found in: USA

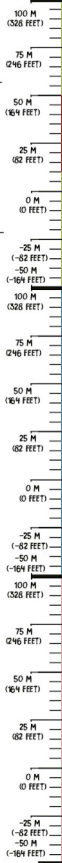
2. ICAROSAURUS
Length: 10 cm (4 in)
Found in: USA

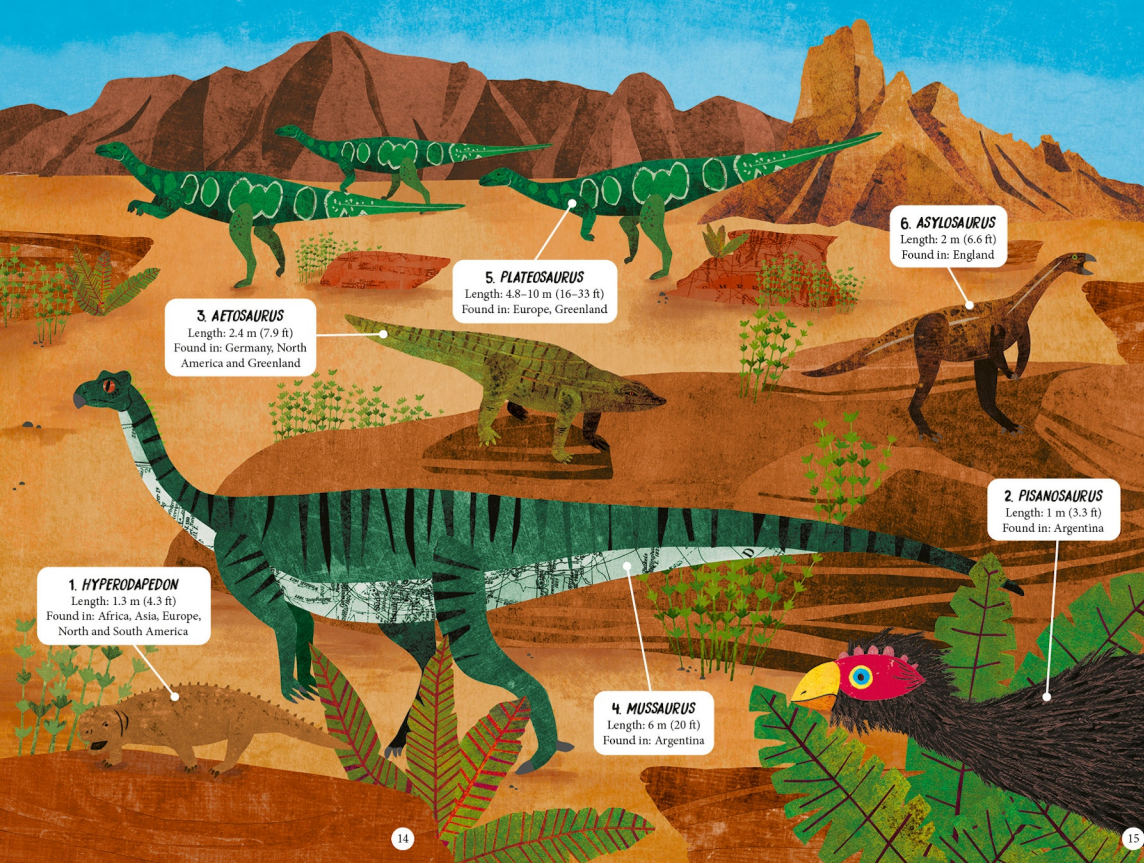
1. MECISTOTRACHELOS
Length: 25 cm (10 in)
Found in: USA

IN THE TREES

DURING THE TRIASSIC, MANY REPTILES MADE THEIR HOMES IN THE DENSE FORESTS OF PANAEA, HUNTING FOR INSECTS AND OTHER SMALL PREY AMONG THE TREES. THEY HAD THE AGILE BODIES AND HOOKED CLAWS OF EXPERT CLIMBERS AND SOME EVEN EVOLVED THE ABILITY TO GLIDE BETWEEN THE BRANCHES.

- 1 MECISTOTRACHELOS (LIVED: C. 226 MYA)**
was able to spread its long ribs to glide on skin-wings. This lizard-like animal had a much longer neck than other Triassic gliding reptiles. It probably lived in the trees and ate insects.
- 2 ICAROSAURUS LIVED: (228–209 MYA)**
Like *Mecistotrachelos*, this tiny reptile could glide short distances between trees using its long, skin-covered ribs. The wings had a convex upper surface and concave lower surface, giving it good lift.
- 3 HYPURONECTOR (LIVED: 228–209 MYA)**
This small reptile from the drepanosaur family was originally assumed to live in the water, due to its paddle-like tail (its name means 'deep-tailed swimmer'). However, further studies of its limbs and tail suggest it lived in the trees.
- 4 SHAROVIPTERYX (LIVED: 225 MYA)** This slender animal is the only known gliding reptile with a skin-wing surrounding its hind legs instead of its forelegs. The delta-shaped wing would have allowed it to glide short distances, but controlling the glide would have been difficult.
- 5 MEGALANCOSAURUS (LIVED: 215–212 MYA)**
was a small reptile of the drepanosaur family. It had a tail with a claw that could grasp onto a branch, as well as clawed hind feet, giving it stability while it hunted for insects with its forelimbs and jaws.
- 6 KUEHNEOSAURUS (LIVED: 215–201 MYA)** had skin-wings formed from its ribs, which jutted from its body up to 14.3 cm (5.6 in). It probably couldn't glide, but used these wings to slow its fall from trees, like a parachute. It used flaps of skin to keep itself horizontal while descending.





1. HYPERODAPEDON

Length: 1.3 m (4.3 ft)
Found in: Africa, Asia, Europe,
North and South America

3. AETOSAURUS

Length: 2.4 m (7.9 ft)
Found in: Germany, North
America and Greenland

5. PLATEOSAURUS

Length: 4.8–10 m (16–33 ft)
Found in: Europe, Greenland

4. MUSSAURUS

Length: 6 m (20 ft)
Found in: Argentina

6. ASYLOSAURUS

Length: 2 m (6.6 ft)
Found in: England

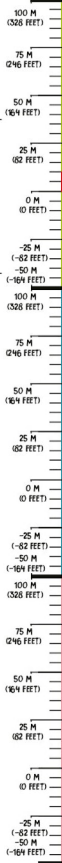
2. PISANOSAURUS

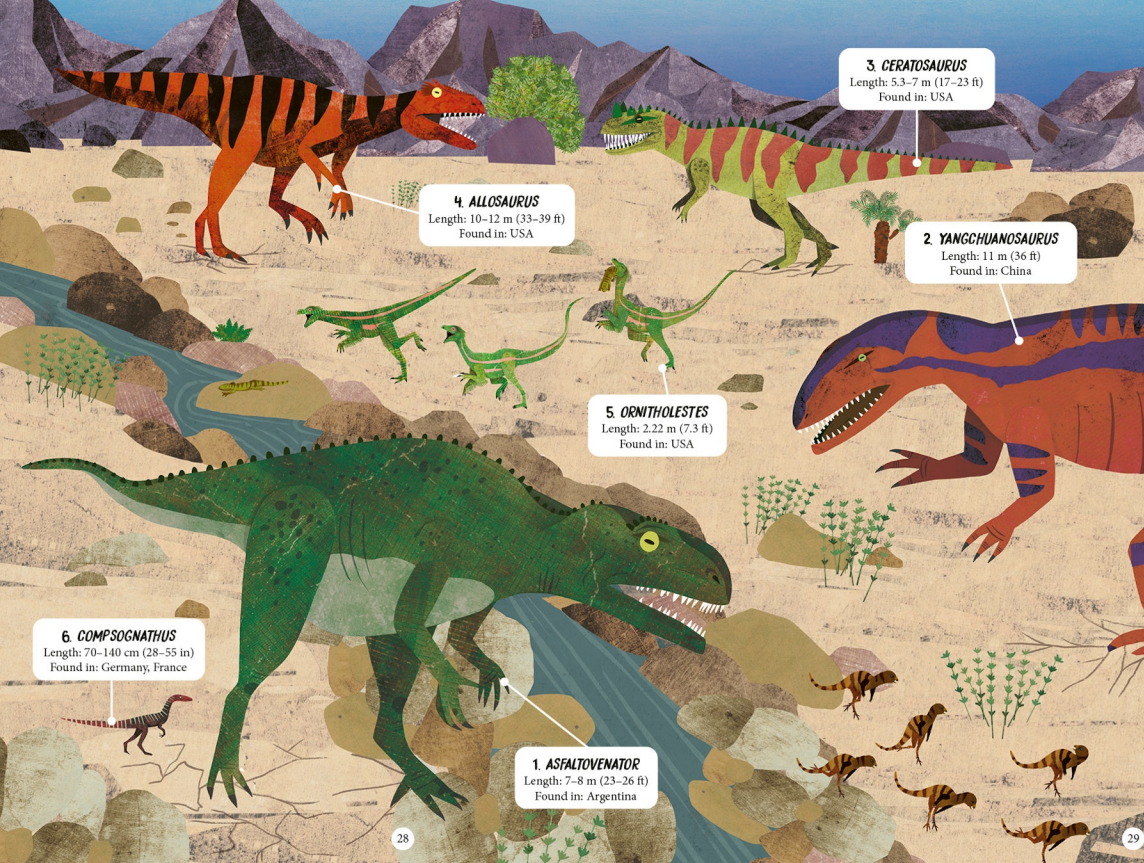
Length: 1 m (3.3 ft)
Found in: Argentina

ON THE GROUND — HERBIVORES

THE FIRST DINOSAURS APPEARED AROUND 231 MILLION YEARS AGO. THEY WERE SMALL CREATURES DARTING AROUND ON THEIR HIND LEGS. THE DINOSAURS FORMED TWO MAIN GROUPS: THE SAURISCHIA (LIZARD-HIPPED) AND THE ORNITHISCHIA (BIRD-HIPPED). BIRD-HIPPED DINOSAURS WERE MOSTLY PLANT-EATERS. LIZARD-HIPPED DINOSAURS INCLUDED BOTH MEAT-EATERS AND PLANT-EATERS.

- 1. HYPERODAPEDON (LIVED: 231–227 MYA)**
This weird-looking animal is a kind of rhynchosaur – a beaked reptile related to the dinosaurs. It had a scaly body and moved slowly, using its beak to cut through tough plants.
- 2. PISANOSAURUS (LIVED: 228–216 MYA)**
This small, lightly built plant-eater weighed less than 10 kg (22 lb). It had strong hind legs and could run away quickly if a predator came near. We don't know if it was a true dinosaur or a close cousin.
- 3. AETOSAURUS (LIVED: 228–209 MYA)** This small, slow-moving, plant-eating archosaur had a long, slender body and short arms. Four rows of thick, bony plates covered its body, providing good protection against predators.
- 4. MUSSAURUS (LIVED: 215 MYA)** or 'Mouse Lizard', got its name because the first fossils discovered were tiny. We now know these were infants. It was a sauropodomorph dinosaur – a bipedal ancestor of the giant sauropods that walked on all fours.
- 5. PLATEOSAURUS (LIVED: 214–204 MYA)**
Plateosaurus was one of the bigger dinosaurs of the Triassic and another sauropodomorph. It had a small head on a long, flexible neck, short but muscular arms with large claws on its three fingers, and powerful hind legs.
- 6. ASYLOSAURUS (LIVED: 208–201 MYA)** was one of the last sauropodomorph dinosaurs to walk on its hind legs. Its close cousins, the sauropods, all walked on four legs.





3. CERATOSAURUS

Length: 5.3–7 m (17–23 ft)

Found in: USA

4. ALLOSAURUS

Length: 10–12 m (33–39 ft)

Found in: USA

2. YANGCHUANOSAURUS

Length: 11 m (36 ft)

Found in: China

5. ORNITHOLESTES

Length: 2.22 m (7.3 ft)

Found in: USA

6. COMPSOGNATHUS

Length: 70–140 cm (28–55 in)

Found in: Germany, France

1. ASFALTOVENATOR

Length: 7–8 m (23–26 ft)

Found in: Argentina

ON THE GROUND — PREDATORS

THE THEROPODS — THE ONLY MEAT-EATING DINOSAURS — GREW BIGGER AND MORE NUMEROUS DURING THE JURASSIC PERIOD. MANY HUNTED IN GROUPS TO BRING DOWN THEIR GIANT OR ARMoured PREY. THE LARGE PREDATORS OF THE TRIASSIC, LIKE *HERREROSAURUS*, WOULD HAVE BEEN DWARFED BY THE GIANTS OF THE LATE JURASSIC SUCH AS *ALLOSAURUS*.

1 ASFALTOVENATOR (LIVED: 174–168 MYA)

Although it lived millions of years before famous Jurassic carnivores like *Allosaurus*, *Asfaltovenator* looked very similar to them and was only slightly smaller. It may represent the start of the transition from big to gigantic predatory dinosaurs.

2 YANGCHUANOSAURUS (LIVED: 168–157 MYA)

was the apex predator in the area where China is now located, hunting saurospods such as *Omeisaurus* and armoured dinosaurs like *Chialingosaurus*. Its skull alone was 1.11 m (3.6 ft) in length and its massive tail was over half the length of its body.

3 CERATOSAURUS (LIVED: 157–145 MYA)

was a medium-sized theropod of the Late Jurassic, with long, blade-like teeth and a horn on its snout, probably used for display. Smaller than *Allosaurus*, it may have been a scavenger, or hunted different prey.

4 ALLOSAURUS (LIVED: 155–145 MYA)

This apex predator of the Late Jurassic was big enough to hunt the biggest saurospods and armoured dinosaurs. Its skull was filled with sharp, serrated teeth and each of its six fingers ended in an 11-cm (4.3-in) claw.

5 ORNITHOLESTES (LIVED: 154 MYA)

What this bipedal carnivore lacked in size and strength it made up for in speed and agility. Its relatively long arms and small head suggest it used its hands rather than its mouth to capture and hold onto prey.

6 COMPSOGNATHUS (LIVED: 151 MYA)

This dinosaur may only have been the size of a turkey, but it was fast and ferocious with small, pointed teeth and large claws on its forelimbs, well suited for its diet of small vertebrates.

