The background is a vibrant, textured red. A large, white, circular sun is positioned in the upper left quadrant. Scattered across the scene are numerous giraffes of various sizes, from small calves to tall adults. They are all depicted with yellow bodies and dark brown spots. The giraffes are in various poses, some standing tall, some leaning their heads, and some looking in different directions. The overall composition is dense and lively.

THERE ARE  
**MAMMALS**  
EVERYWHERE

**B**  
**I**  
**G**  
**P**  
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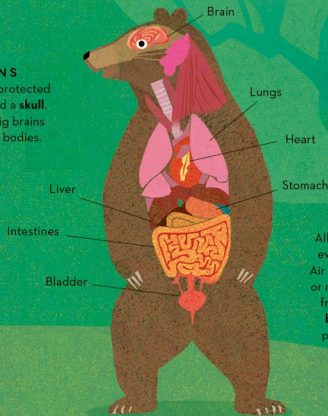
BRITTA TECKENTRUP

# IT'S A MAMMAL! (SO WHAT IS THAT?)

There are almost 6,000 species of mammal alive today. Mammals may look very different on the outside, but they all have bony **skeletons** that allow them to perform a wide range of movements. Some mammals have four legs and a tail, but others walk on two legs, fly using two wings, or have flippers and fins.

## BIG BRAINS

A mammal's brain is protected by a bony case called a **skull**. Mammals all have big brains for the size of their bodies.



## BREATHING AIR

All mammals use **lungs** to breathe air, even the mammals that live in water. Air reaches the lungs through the nose or mouth and the lungs absorb **oxygen** from it. The oxygen passes into the **blood vessels** and the **heart** then pumps the blood around the body.

## BATS

**Bats** are the only mammals that have wings and can fly. Their wings are made up of large sheets of leathery skin that are stretched between the long, skinny bones of their front limbs and their legs. The largest bats are huge, with a wingspan of 150 centimetres or more.



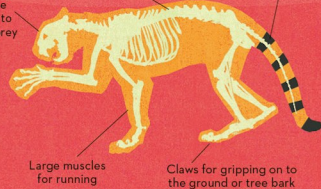
Fur is often coloured with spots or stripes to provide **camouflage**.

Long, bendy spine

Eyes face forwards to focus on prey

## CATS

Members of the **cat** family have strong, bendy bodies that allow them to run, climb and pounce. They have powerful legs and feet that are equipped with claws, and their jaws are lined with sharp teeth. Long tails help them to balance as they quietly stalk their prey.



## SEALS

**Seals, sealions and walruses** belong to a group of mammals called **pinnipeds**. They live in water so they have flippers and strong tails for diving and swimming. Pinnipeds have a thick layer of fat, called **blubber**, beneath the skin to keep them warm in chilly seas. Some have furry bodies, but others have smooth skin and whiskers on their snouts.



## RECORD-BREAKERS



**Black rats** may not look deadly, but they are more dangerous to humans than any other mammal because they spread disease, including food poisoning and plagues.



Everyone knows that dogs have a superb sense of smell, but it's **polar bears** that have record-breaking snouts. They have been spotted following the scent of **seals** across the ice for over 60 kilometres!

The fastest mammal over a long distance is actually the **pronghorn**. It can keep up a top speed of 56 kilometres for an hour before it needs a rest.



Many mammals make foul smells to scare other animals away, but a **zorilla** could probably out-stink them all. It sprays a burning liquid from its bottom that smells so terrible even lions turn tail when they see a striped zorilla nearby!



# MAMMALS HAVE BEEN AROUND FOR AGES

Mammals have been around for a really long time. The first mammals looked like **shrews**, which are tiny **mouse-like** animals with long, whiskered snouts. They lived about 210 million years ago, when **dinosaurs** walked the Earth and none of them grew much bigger than a **cat!** When the dinosaurs died out, mammals began to change and evolve into the vast range of creatures that live today.

210 MILLION  
YEARS AGO



*Morganucodon*

**Morganucodons** were amongst the earliest mammals to live. They were small, furry creatures that ate insects.



*Eomaia*

**Eomaia** lived 125 million years ago. It was a long-snouted mammal that grew 10 centimetres long. The babies grew inside their mother's body, just like modern mammals.



*Sifhippus*

The first horses were the size of a cat and ate leaves instead of grass. **Sifhippus** lived about 50 million years ago, when the world was much warmer than it is today.



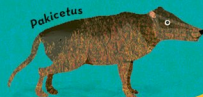
*Elasmotherium*

Two million years ago, our human ancestors would have kept a safe distance from this giant rhinoceros! **Elasmotherium** was a plant-eater but it was equipped with a huge, scary horn on its head.



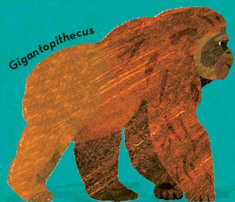
*Apidium*

Monkeys and apes evolved from animals like **Apidium**, which lived 30 million years ago. **Apidium** jumped from branch to branch, eating fruit and flowers, just like many of its modern relatives.



*Pakicetus*

Forty million years ago, the first whales lived on land, not in the sea! **Pakicetus** probably spent most of its time hunting on land, and occasionally paddled about in shallow water, looking for fish to eat.



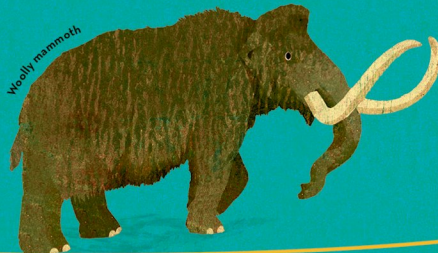
*Gigantopithecus*

The mighty **Gigantopithecus** was one of the tallest mammals to ever live - reaching an impressive 3 metres in height. This giant ape lived in warm forests one million years ago.



*Megatherium*

**Megatherium** grew an incredible 6 metres long. This giant sloth lived 10,000 years ago and used its long claws to reach leaves high up in trees.



*Woolly mammoth*

**Woolly mammoths** had long, shaggy fur to keep them warm during the last Ice Age. They went extinct about 5,000 years ago when temperatures increased.



*Giraffe*

The tallest land animal today is the **giraffe**. It can reach 5 metres in height and uses its long neck to reach the juiciest leaves high up in the trees.

# WHY ARE MAMMALS UNIQUE?

Mammals are a large and very successful group of animals. They have been able to spread across the world and survive in all sorts of habitats because they have some unique ways to stay warm, feed their young and get food.

## WARM BLOOD

Mammals are **warm-blooded** - which means they can control their body temperature. This allows them to stay warm even if the weather turns cold, or if they live in cold water. They can also cool themselves down when they get too hot - they often do this by sweating or panting. African elephants flap their huge ears to cool down!



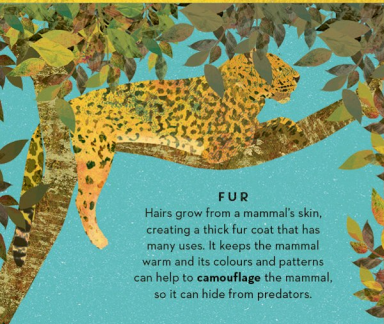
## BIG BRAINS

Many mammals are intelligent animals that can play, learn and solve problems. This helps them to develop the skills they need to stay safe from predators and to find food.



## FUR

Hairs grow from a mammal's skin, creating a thick fur coat that has many uses. It keeps the mammal warm and its colours and patterns can help to **camouflage** the mammal, so it can hide from predators.



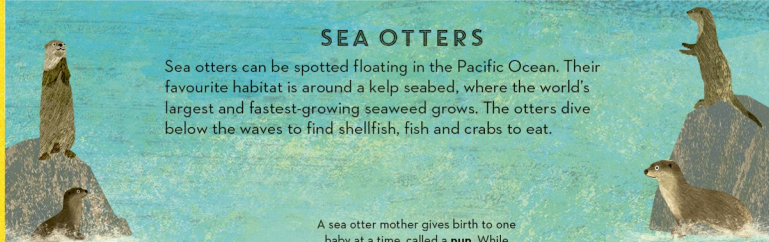
## BABIES AND MILK

Almost all mammals give birth to their babies (rather than laying eggs) and feed them with milk that the mother makes in a special part of her body called **mammary glands**. The milk is the perfect food for the babies and it protects them from disease.



# SEA OTTERS

Sea otters can be spotted floating in the Pacific Ocean. Their favourite habitat is around a kelp seabed, where the world's largest and fastest-growing seaweed grows. The otters dive below the waves to find shellfish, fish and crabs to eat.



Sea otters have an incredible 125,000 hairs growing from every square centimetre of skin! The hairs are very fine and trap air between each strand. The air keeps the otter warm, like a thick, waterproof blanket. It also works like a life jacket, helping an otter to float.

A sea otter mother gives birth to one baby at a time, called a **pup**. While she floats in the water, she rests the pup on her belly.

3. The sea otter floats on its back and rests the stone on its belly. It bashes the shellfish against the stone until it cracks open.



2. Some shellfish are very tough so the otter also collects a stone from the seabed and swims to the surface.

1. A hungry sea otter uses its hand-like paws to pick **sea urchins** off the **kelp** or shellfish, such as **clams**, from the seabed.

## CAN YOU FIND?

Long-spined **sea urchins** eat the giant kelp and damage the sea otters' habitat. How many sea urchins can you spot grazing on the huge fronds of seaweed?

# WHERE DO MAMMALS LIVE?

Nearly all species of mammals live on land – about 98 per cent of them. However, there are groups of mammals that spend most, or all, of their lives in water. These include **pinnipeds**, **whales** and **dolphins**. Other groups of mammals are superb swimmers and spend lots of time in the water, but choose to stay on land when they give birth or raise their young.

## WHALES

**Whales** are perfectly adapted to life in the ocean. They have smooth skin and torpedo-shaped bodies that slip easily through the water. They have **flippers** instead of legs and they breathe using blowholes on the top of their heads.



Whale mothers give birth in the ocean. Their babies are called **calves** and they stay close to their mothers while they grow and learn how to find food.

**Blue whale** babies are enormous and they grow a thousand times faster than a human baby!

## BEAVERS

**Beavers** belong to a group of mammals called **rodents** that have super-strong front teeth. They use these teeth to gnaw trees and branches and use the wood to build their homes in the middle of a pond or slow-flowing river.

A beavers' home is called a **lodge**. It contains rooms, called **chambers**, where young beavers are kept safe from predators.

Beavers are good swimmers. They enter the lodge through tunnels underwater and can stay safe and warm in their home during long, cold winters.



## TUNDRA

The land around the Arctic is called the **tundra** and it is famous for its snowy blizzards and blustery winds. It is a snug place to live – unless you can stay snug inside your own super-thick fur coat. **Musk oxen** have hair that almost touches their toes and they snuggle up next to each other to get the benefit of some buddy-body-warmth!



## FORESTS

Tropical forests are packed with tall trees that bloom all year round, producing plenty of fruit for any animals that can reach it.

**Orang-utans** spend almost all of their lives in the branches, using their strong arms to climb from tree to tree, following the fruit as it ripens.



## DESERTS

Deserts are very dry habitats that experience extreme temperatures. **Bactrian camels** survive desert life by storing food and water as fat inside their two **humps**. They grow thick, shaggy fur for the icy winter, and shed it for the hot summer months.



## CAVES

Many species of bat gather together in caves in big groups called **colonies**. They rest during the day by hanging upside-down from the cave ceiling and go hunting at night. Some caves can house more than five million bats!

## CAN YOU FIND?

Other animals like to camp out in a beavers' lodge, including **water voles**. Can you find one of these small, furry rodents with a long tail?

