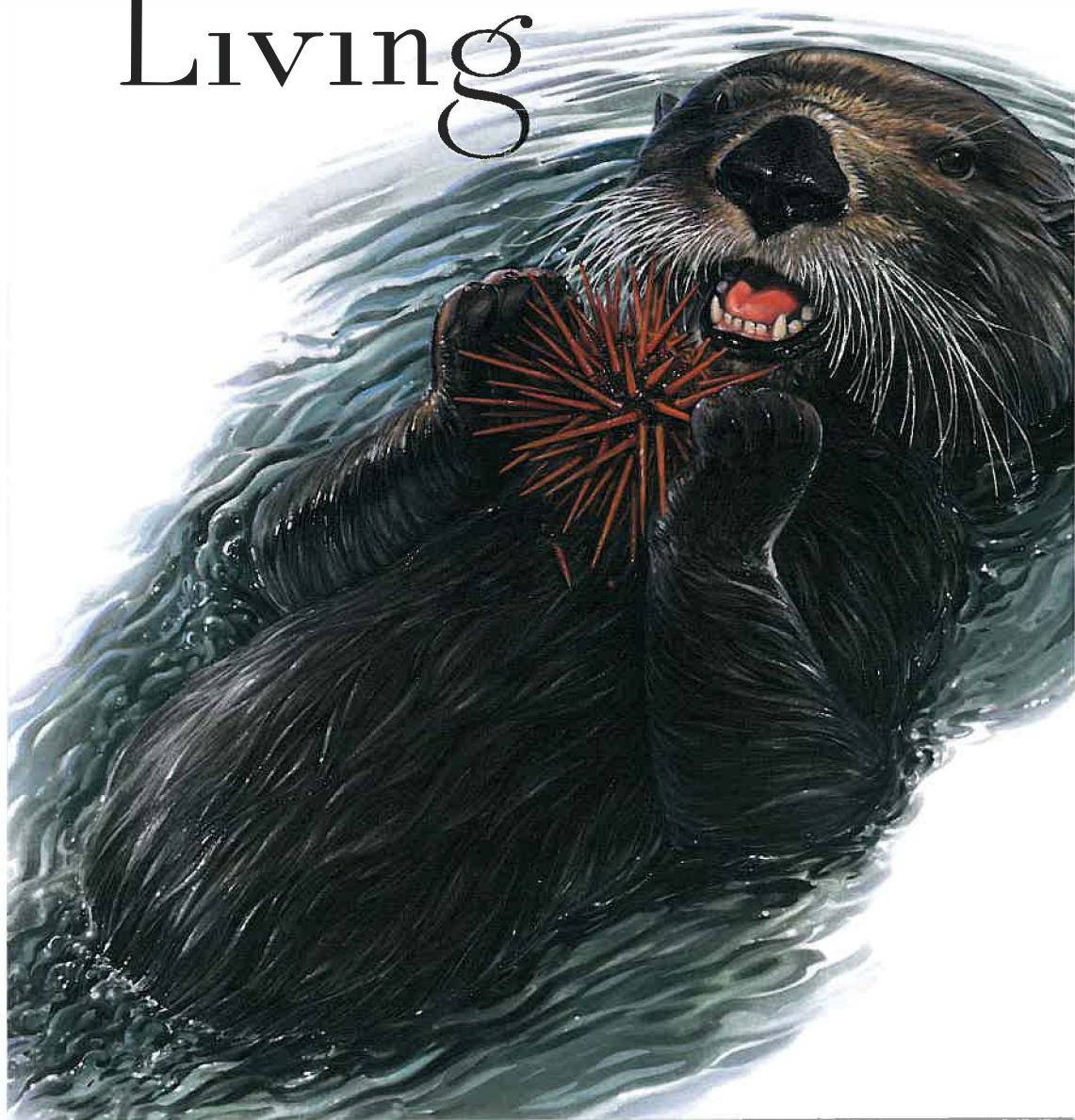


Designed  
for  
Living





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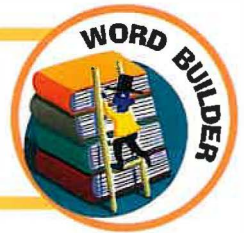
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# Features



Did you know that many mammals can see only in black and white? Learn more about this interesting fact on page 9.

Have you ever heard the expression “playing possum”? Find out where this phrase comes from on page 15.

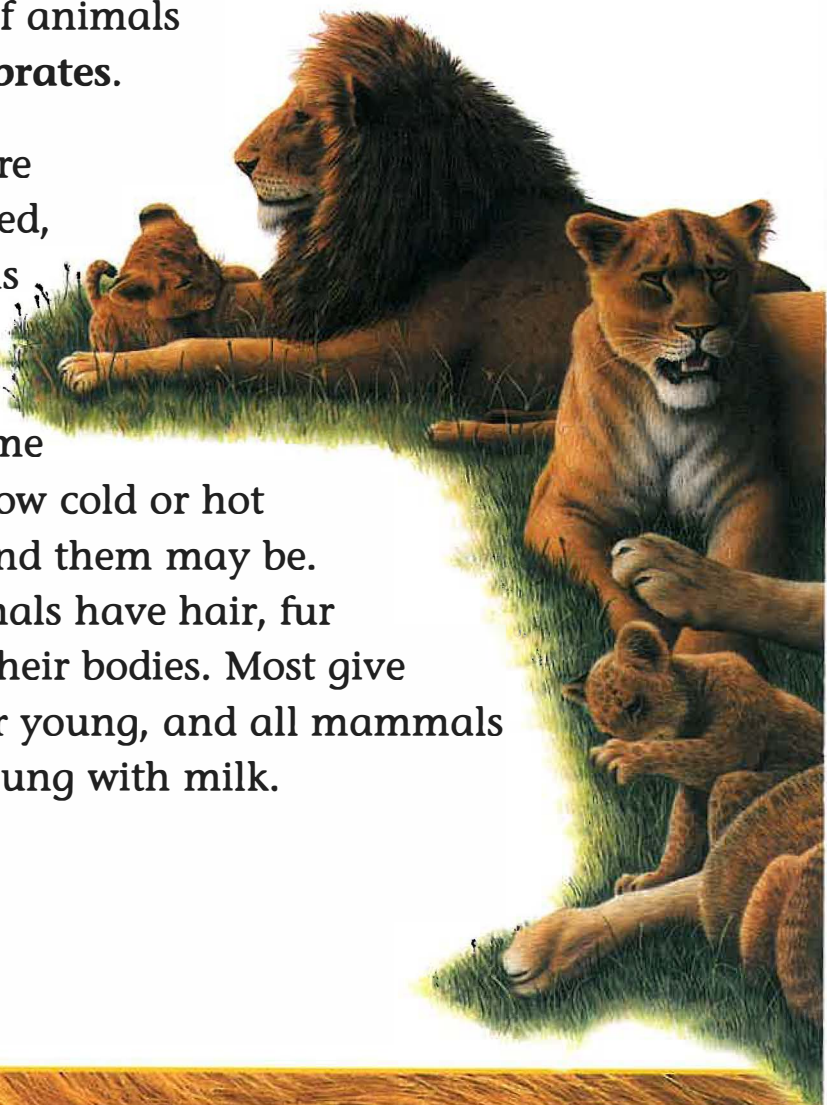


How does a young kangaroo fit inside its mother’s pouch? Go to **Travelling in Style** on page 19 to find out.

# A World of Mammals

Most of the animals we keep as pets, such as dogs, cats and rabbits, are mammals. So are the animals we farm, such as cattle, sheep and goats. Humans are mammals too. Mammals belong to a group of animals called **vertebrates**.

Mammals are warm-blooded, which means their body temperature stays the same no matter how cold or hot the air around them may be. Most mammals have hair, fur or wool on their bodies. Most give birth to their young, and all mammals feed their young with milk.





**Monotremes** are mammals that lay eggs and hatch their young.

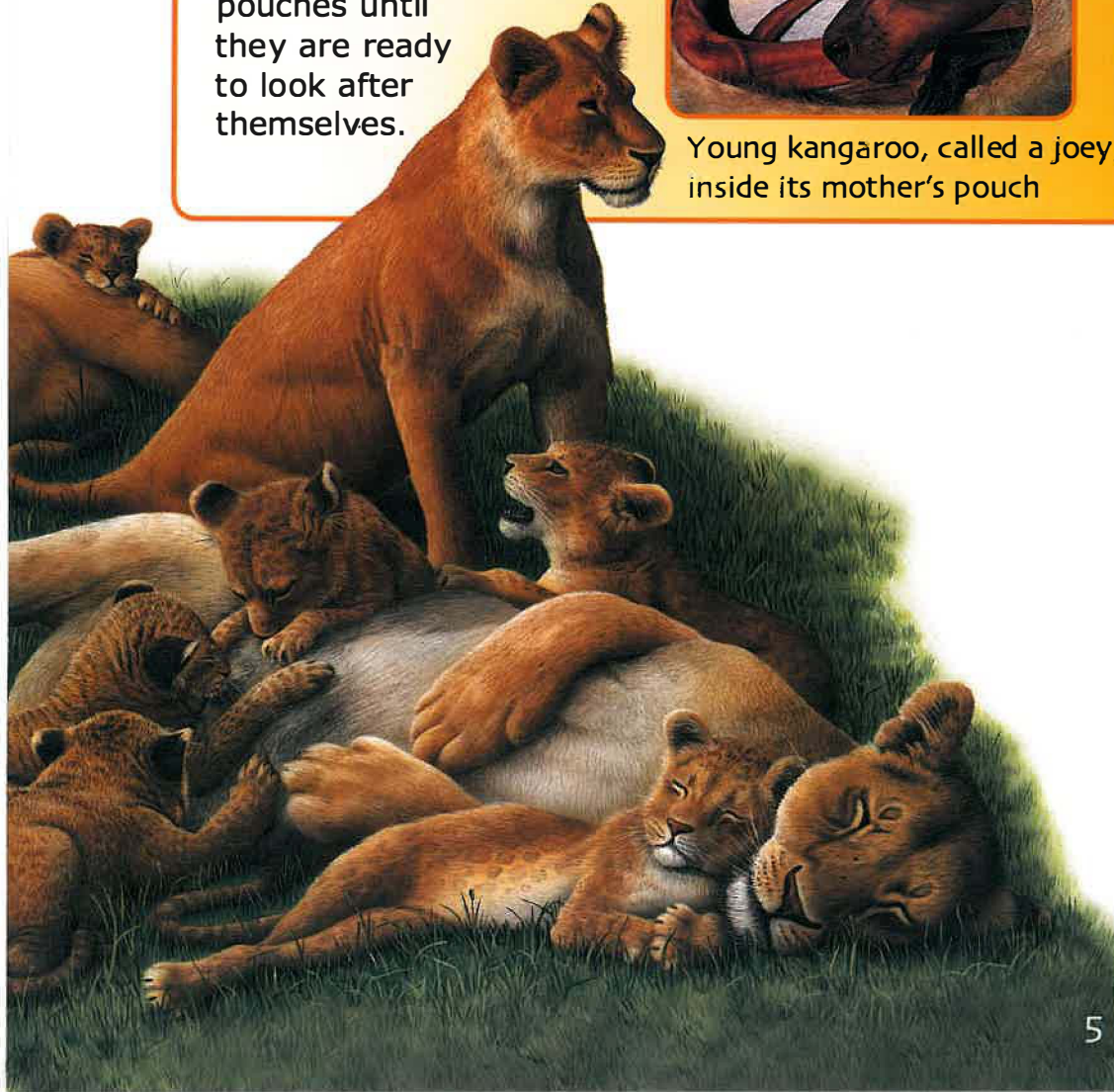


Young echidna hatched from an egg

**Marsupials** give birth to young that are not fully developed. The young live inside their mothers' pouches until they are ready to look after themselves.



Young kangaroo, called a joey, inside its mother's pouch



# Mammal Senses



Mammals have highly developed senses of smell, sight and hearing. Without these senses the animals wouldn't survive.

## Smell

A mammal that must use its sense of smell to find food often has a nose specially suited for that job.

An anteater, like many other insectivores, has a long narrow nose to help it sniff out insects.

Possibly the most useful nose of all belongs to the elephant. An elephant's nose, called a trunk, is used to smell, drink, eat, touch, lift, communicate and protect itself.

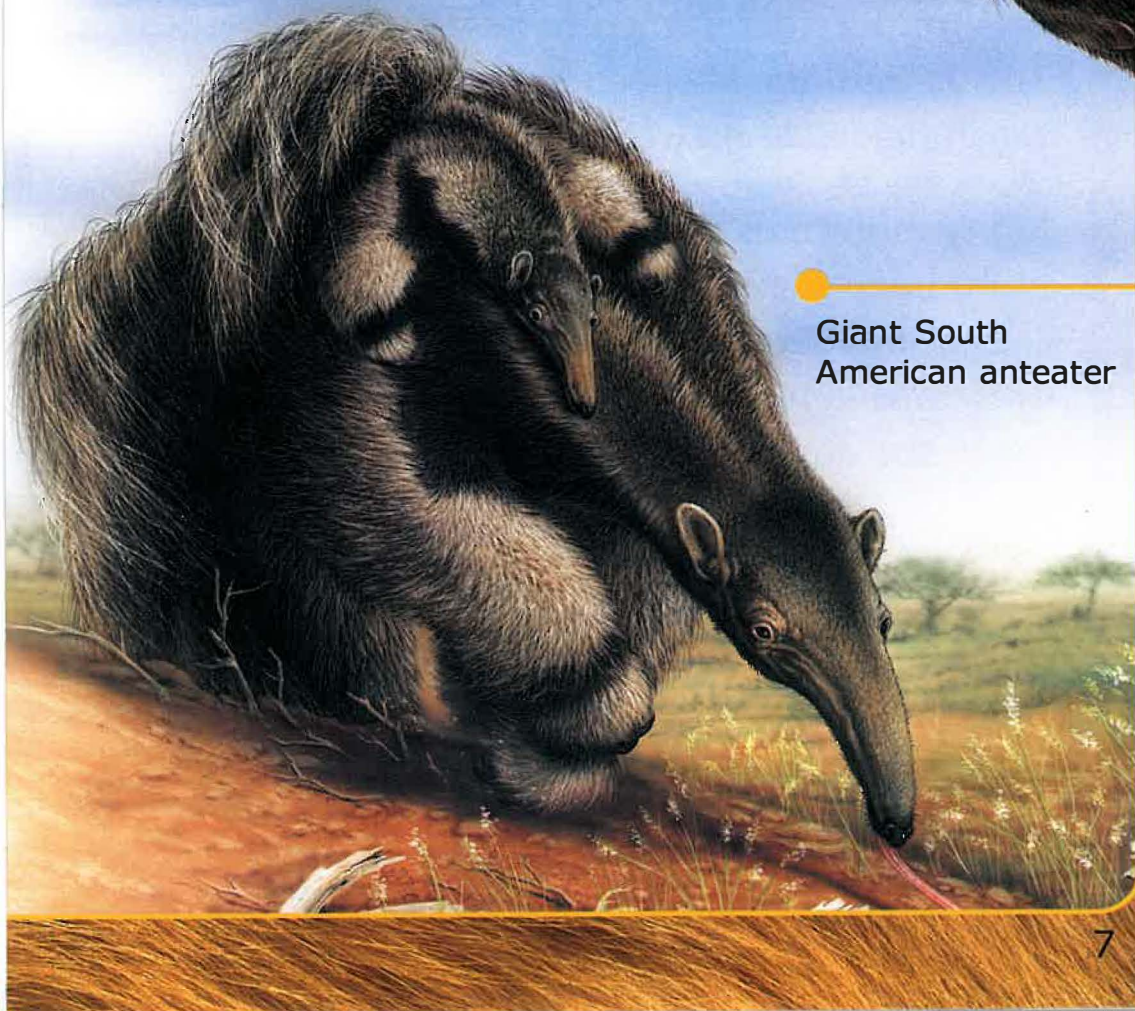


## A Nose for the Job

This mole hunts its prey underwater. It uses its long bent nose to search beneath rocks.

This mole hunts worms and insects underground. It uses its nose to smell and feel for prey.

This hedgehog uses its short snout and whiskers to find the snails, worms and insects it likes to eat.



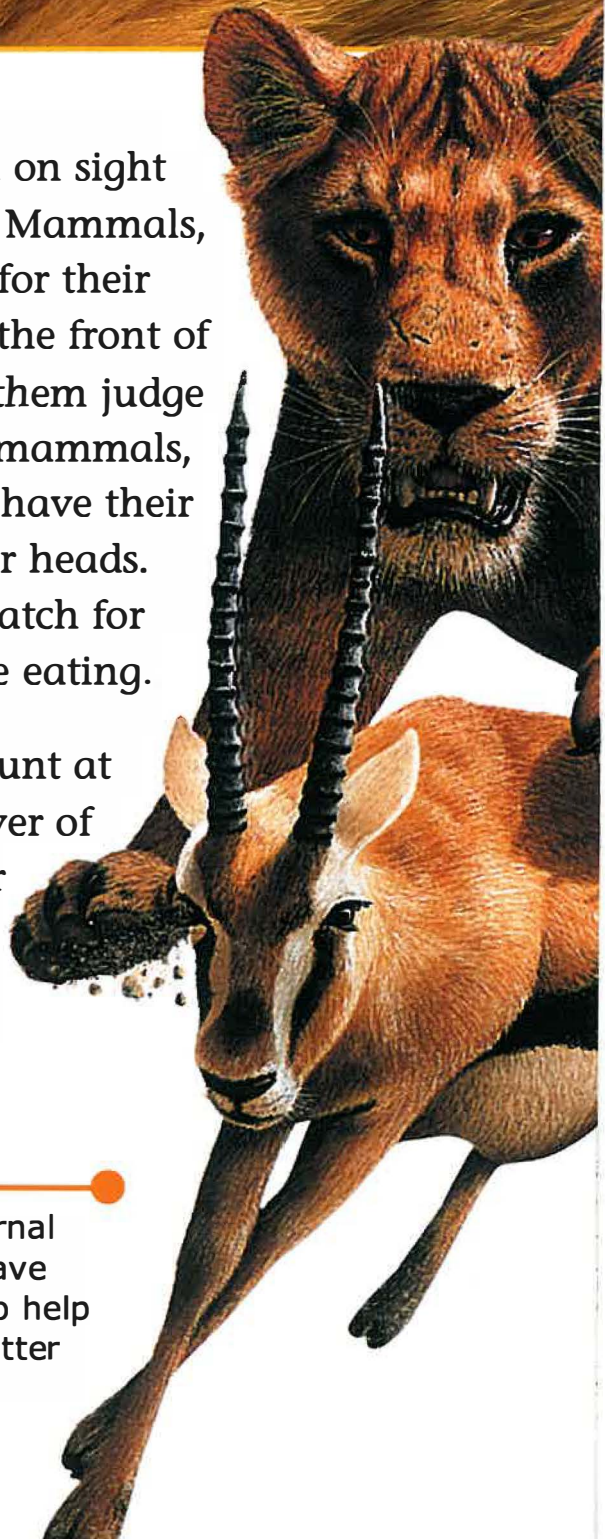
Giant South American anteater

## Sight

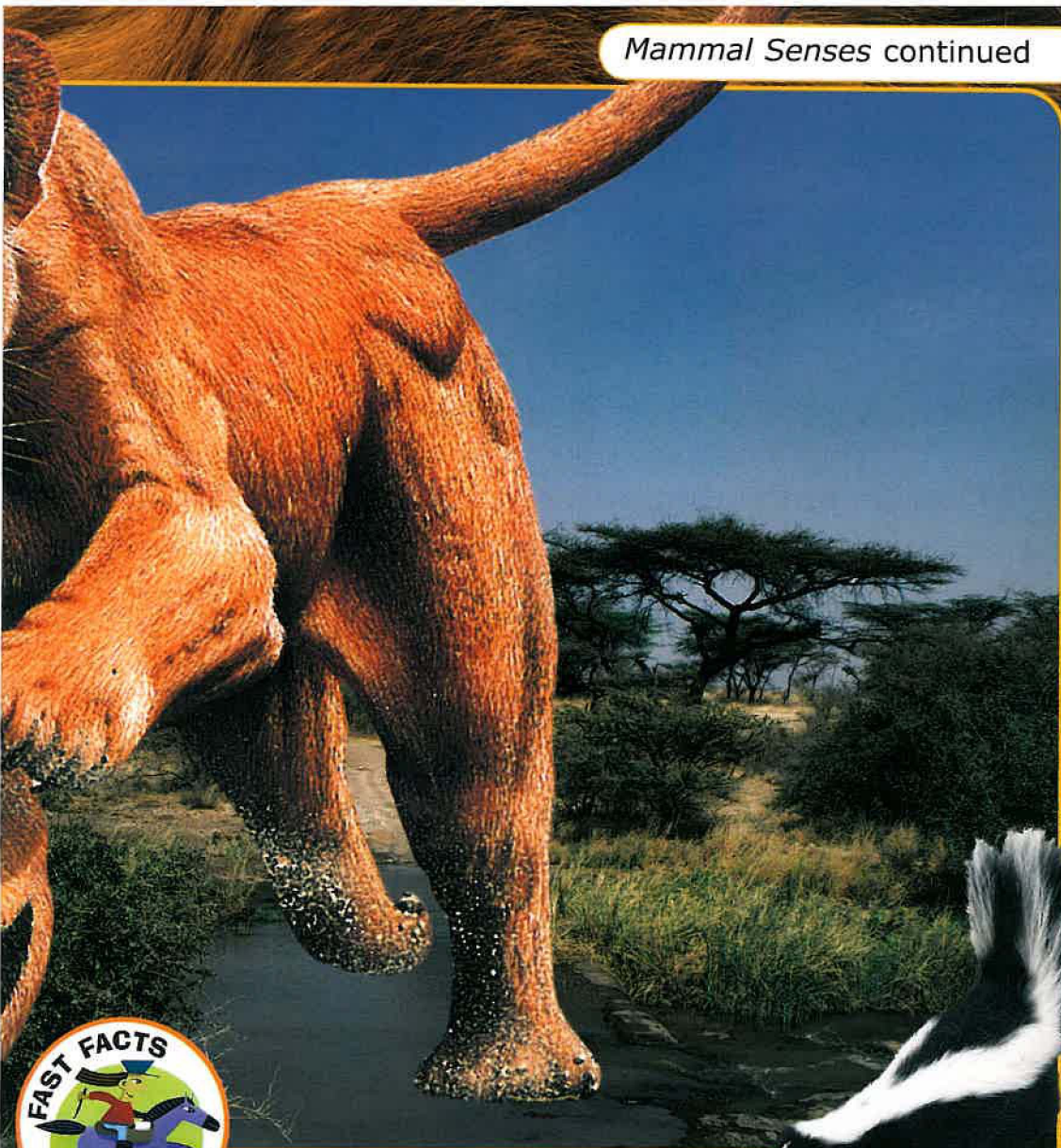
Most mammals depend on sight to help them find food. Mammals, such as cats, that hunt for their food have their eyes at the front of their heads. This helps them judge distances. Plant-eating mammals, such as deer and cattle, have their eyes on the sides of their heads. This helps them keep watch for predators while they are eating.

Many mammals that hunt at night have a special layer of cells at the back of their eyes. This helps them see in the dark.

Some nocturnal mammals have huge eyes to help them see better at night.







Some mammals can see in colour, but many can see only in black and white. This may be the reason that many mammals have patterned coats. The patterns are seen as black and white and the shapes of the animals' bodies can't be seen easily. This makes it hard for predators to see prey and for prey to spot predators.

## Hearing

Many mammals can hear sounds that humans can't hear. Bats produce and hear sounds that humans can only hear with special instruments. They use these sounds for **echolocation**.

Plant-eating mammals often have large ears that they can turn in different directions to listen as they eat. They lift their heads often, flick their ears and sniff the air. Some mammals

that live in very hot places have huge ears. Believe it or not, their ears help them stay cool!





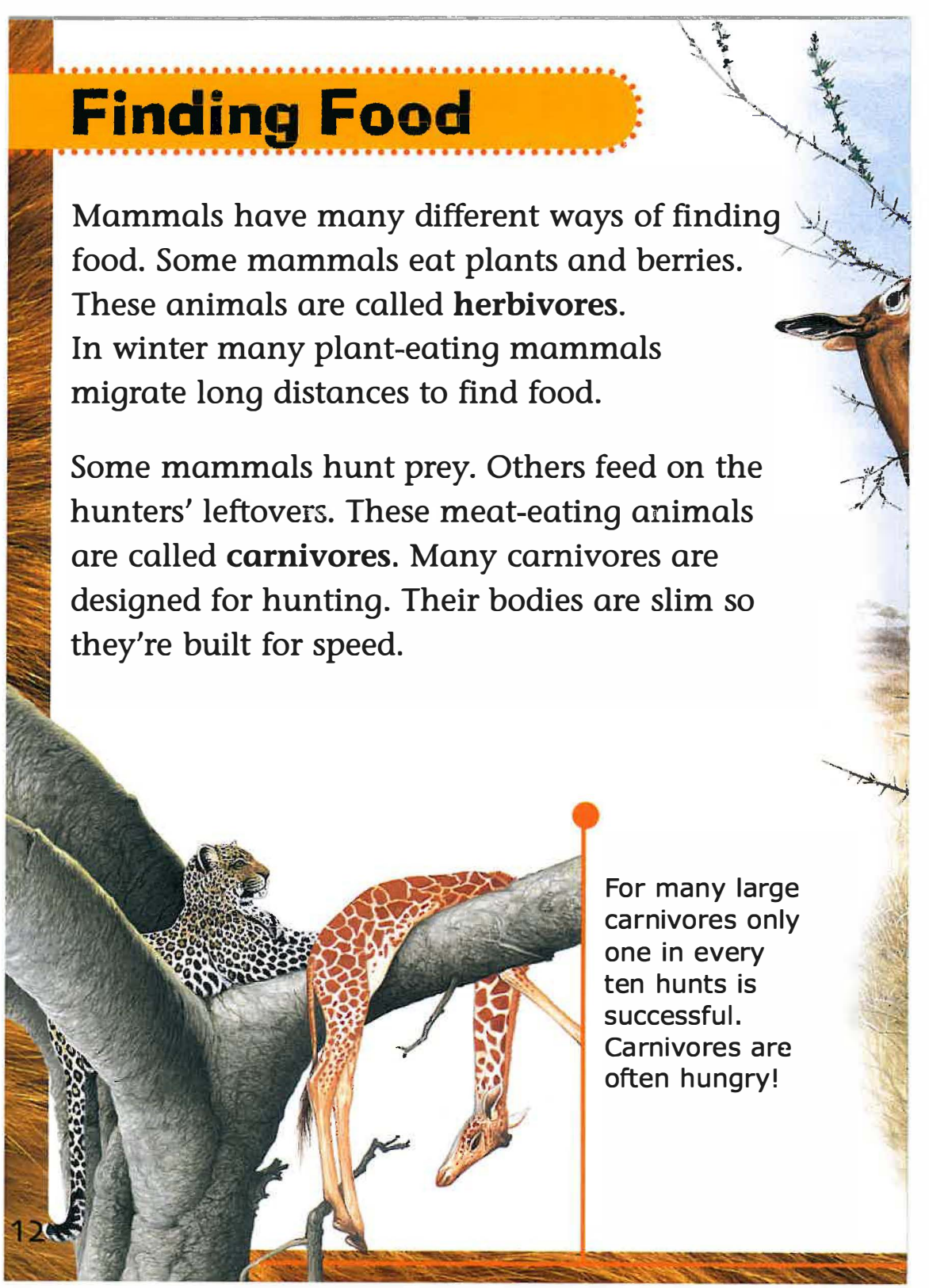
During the hot desert day millions of blood vessels carry blood to the large ears of the fennec fox. The blood cools before returning to the rest of the animal's body. At night the fennec fox uses its excellent hearing to find food.



# Finding Food

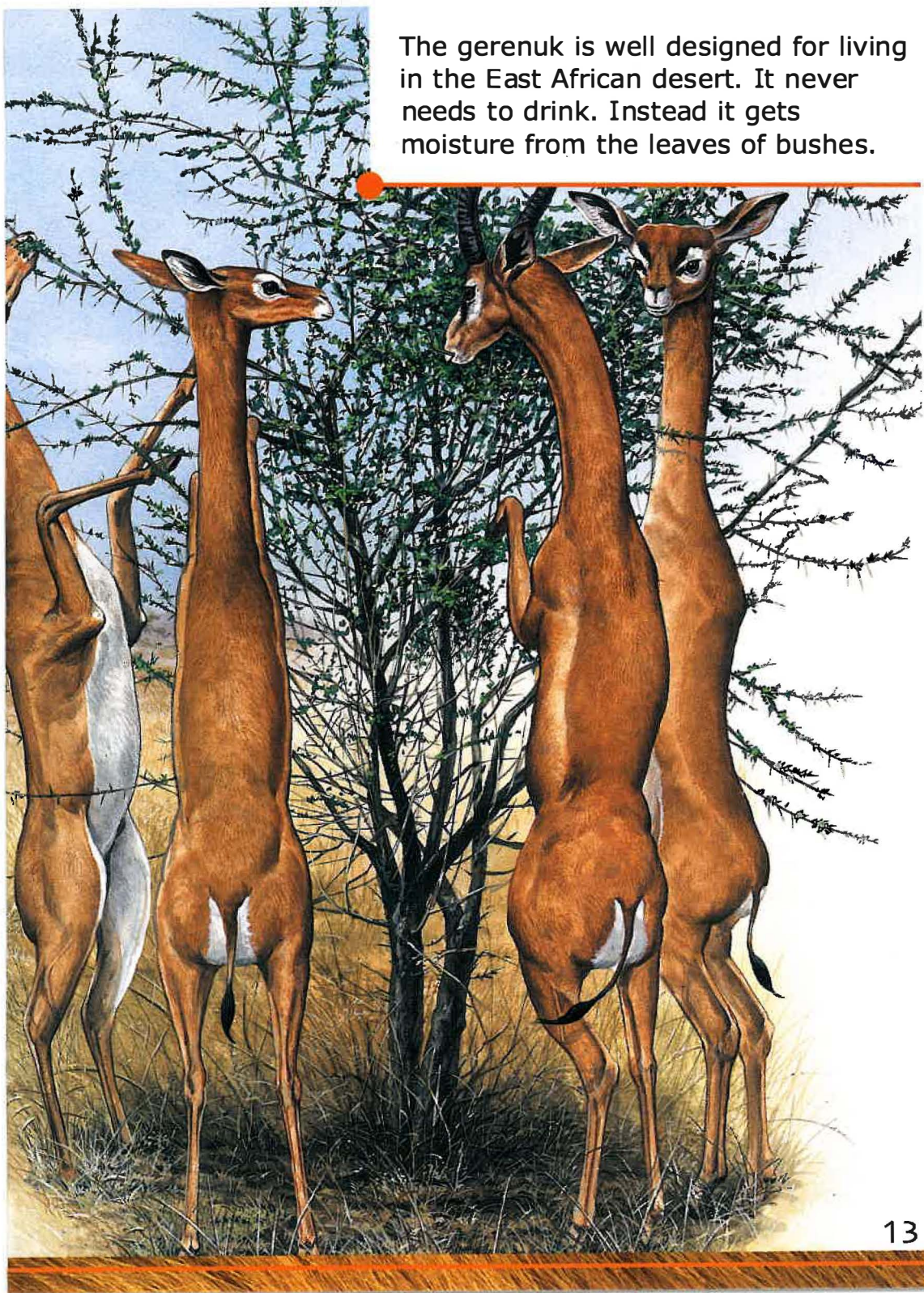
Mammals have many different ways of finding food. Some mammals eat plants and berries. These animals are called **herbivores**. In winter many plant-eating mammals migrate long distances to find food.

Some mammals hunt prey. Others feed on the hunters' leftovers. These meat-eating animals are called **carnivores**. Many carnivores are designed for hunting. Their bodies are slim so they're built for speed.



For many large carnivores only one in every ten hunts is successful. Carnivores are often hungry!

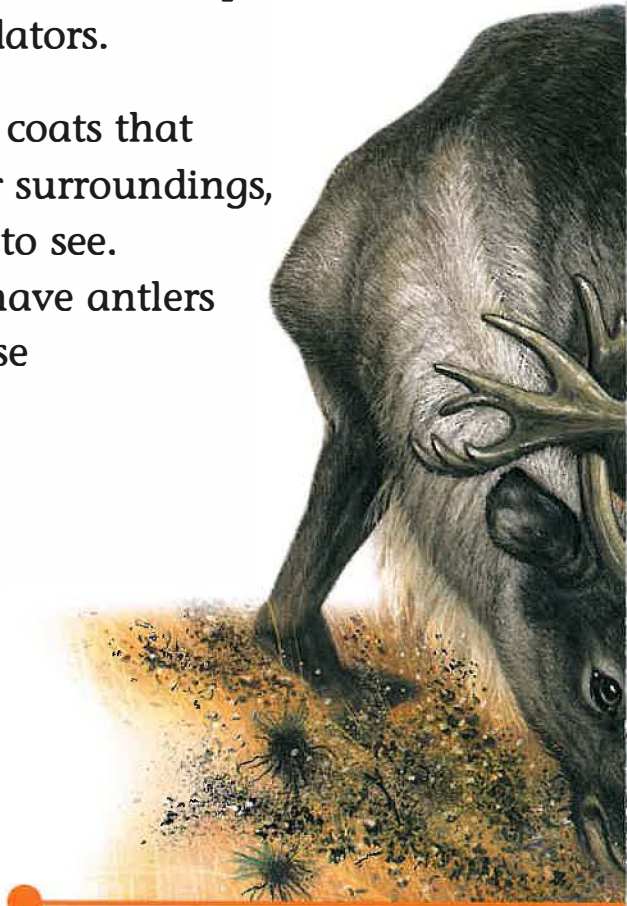
The gerenuk is well designed for living in the East African desert. It never needs to drink. Instead it gets moisture from the leaves of bushes.



# Defence and Attack

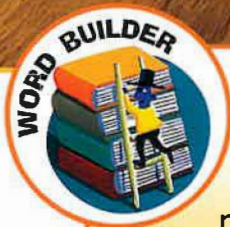
Mammals use their senses to protect themselves from danger. Some mammals work together to keep watch for predators. Some have tunnels they escape to and others take cover in trees. Some mammals depend on their speed to run faster than predators.

Many mammals have coats that are the colours of their surroundings, making them difficult to see. Some deer and cattle have antlers or horns which they use to protect themselves, both from predators and each other.

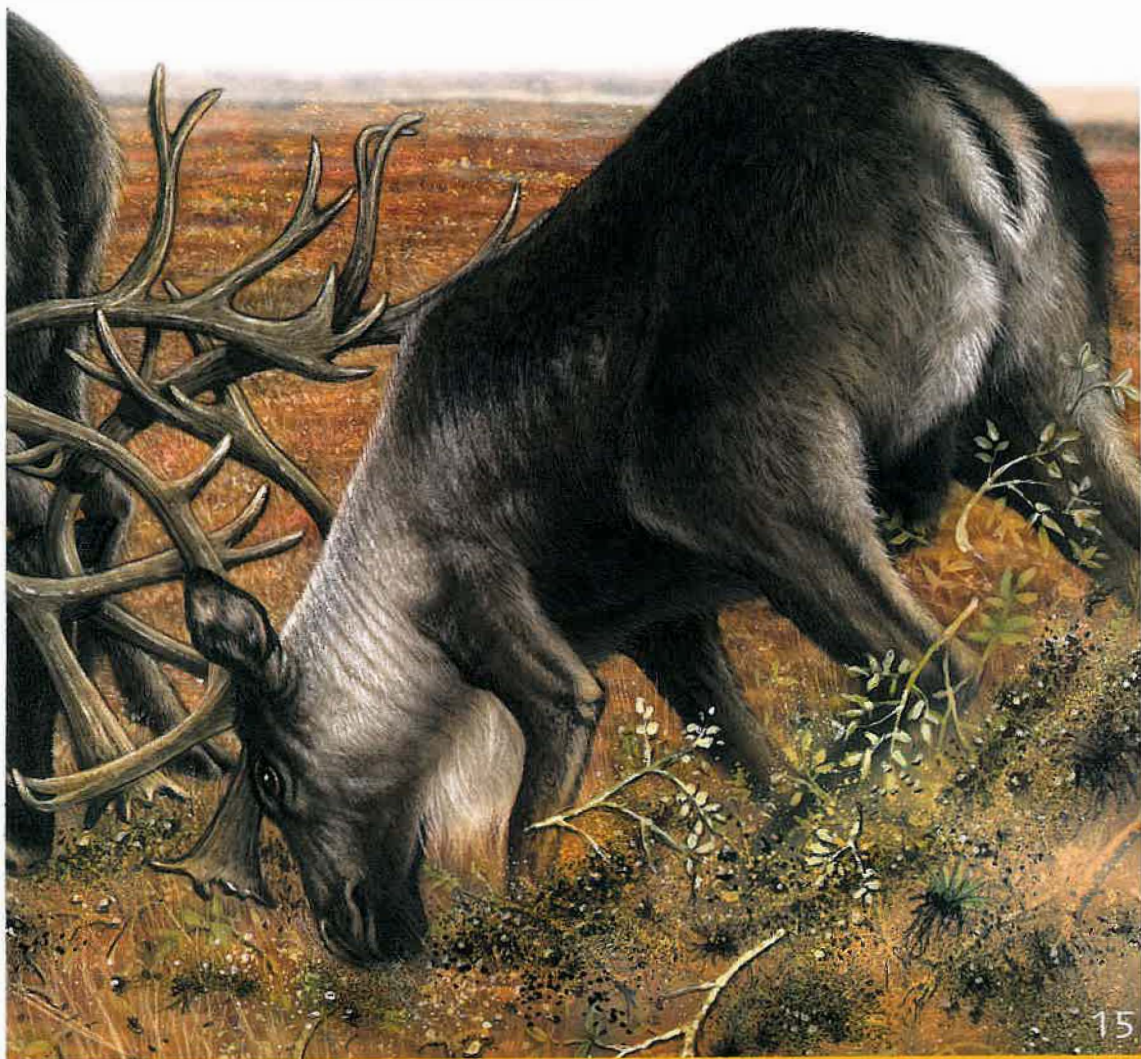


Porcupines have spines, making it difficult for them to be attacked.





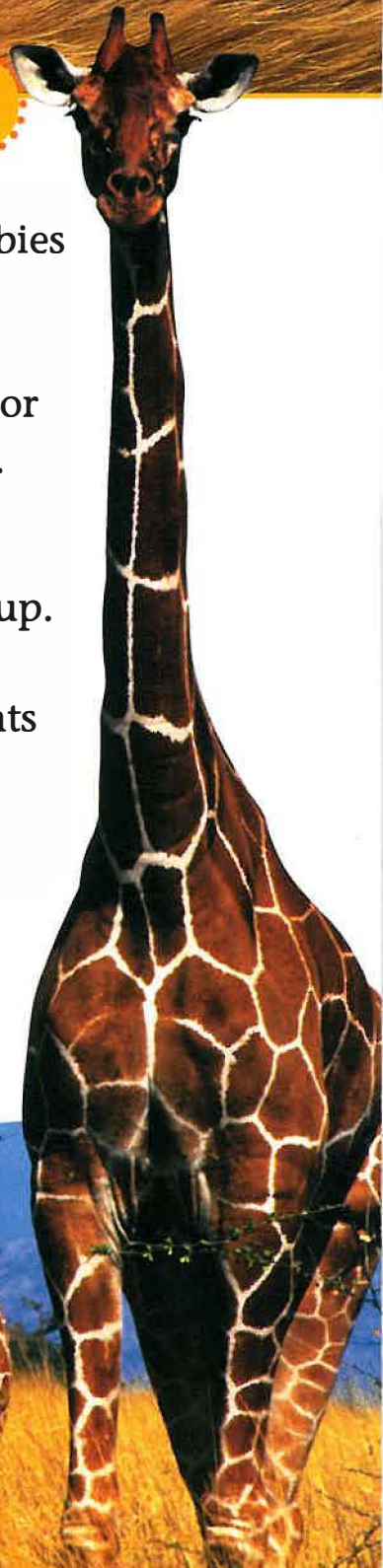
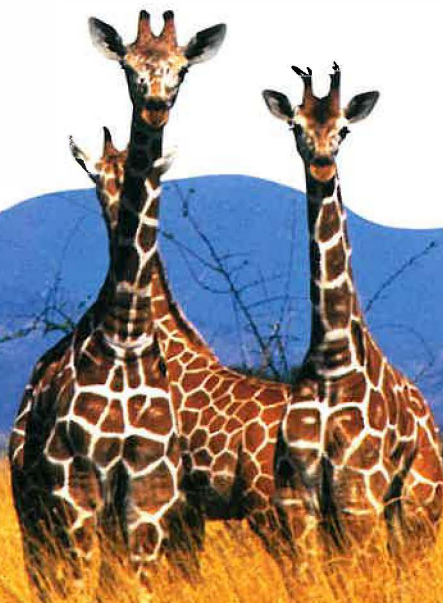
The expression "playing possum" comes from the North American opossum's unusual habit of pretending to be dead when it is approached by a predator. Many predators will not eat an animal that is already dead, so the opossum may be left safely alone.



# Caring for Baby

All mammal mothers feed their babies with milk until the young are old enough to eat other food. Some mammal babies are born in a den or shelter where they can be kept safe.

Most mammals live in groups. The young are watched over by the group. Mammal babies learn to look after themselves by watching their parents and by playing. In play they learn how to stalk, pounce, find food and fight.







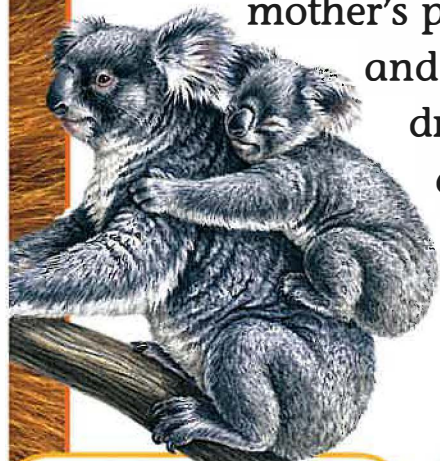
Litter of piglets

Like other cats lions carry their young in their mouths.



# Safe and Sound

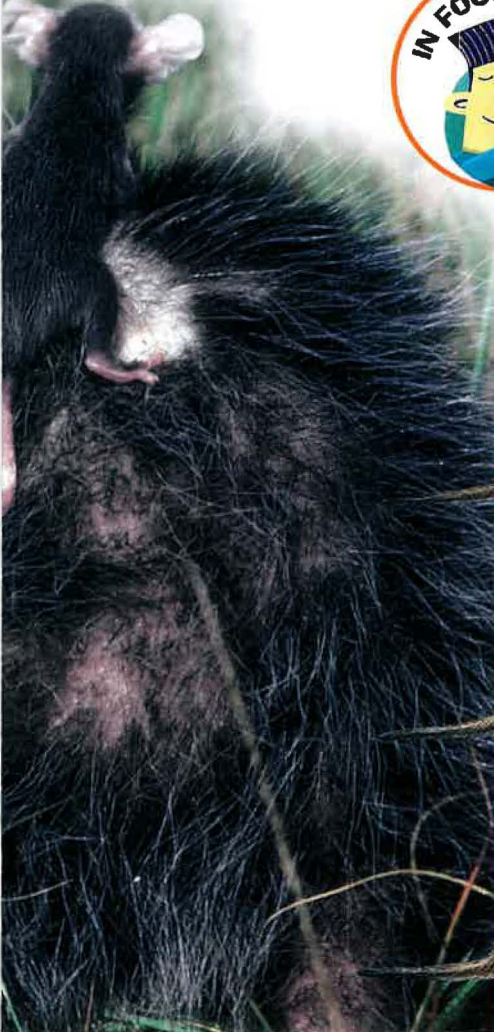
When marsupial babies are born they are not ready to be out in the world. They crawl into their mother's pouch where they are kept safe and sound. Inside the pouch they drink milk and grow until they are big enough to look after themselves.



When a baby koala is about six months old it is big enough to leave its mother's pouch. However, it will ride around on its mother's back for another six months.



Marsupials live in many settings from dry deserts to wet rainforests, in underground tunnels, in trees, on the ground and even in and around ponds and streams. They also move in many ways. Marsupials can be herbivores, carnivores or insectivores.



## Travelling in Style

Long after a young kangaroo is able to leave its mother's pouch it will still return to travel and sleep.



The joey pushes its front feet and head into its mother's pouch.



Then it twists around so its head is on the bottom of the pouch.



Next the joey turns so it can see out or jump out.

# A Close Community

Most **primates** live in warm areas of the world. They eat many kinds of foods such as leaves, seeds, berries, insects, reptiles and small mammals.

Monkeys, gorillas and chimpanzees live in family groups. Young animals are usually cared for by their mothers until they are up to six years old. The group looks after its members and teaches the young how to care for themselves. Most primate groups signal their feelings to each other by using different looks on their faces and by making different sounds.





Primates have pads for sensing on their hands and feet. They also have finger and toenails. They use their special thumbs, and sometimes their big toes, to help them pick up and hold food



Aye-aye  
hand



Aye-aye  
foot



Indri hand



Indri foot



Gorilla hand



Gorilla foot



# Glossary

**carnivore** – an animal that eats meat

**echolocation** – a system of locating objects by listening to how long a sound takes to bounce back. Bats, whales, dolphins, shrews and some seals use echolocation.

**herbivore** – an animal that eats plants

**insectivore** – an animal that eats insects

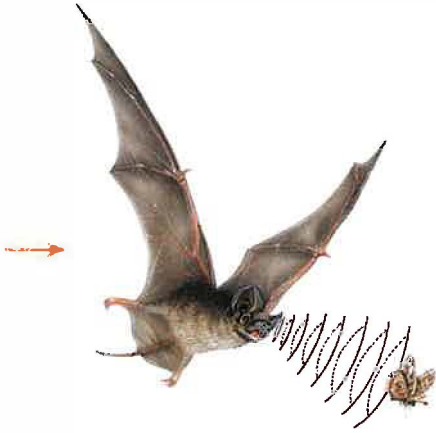
**marsupial** – a mammal that gives birth to young that are not fully developed. The young are protected in pouches, where they feed on milk, until they can move about by themselves.

**monotreme** – an egg-laying mammal. There are only two different monotremes, the platypus and two kinds of echidna.

**primate** – a group of mammals that includes monkeys, apes and humans. Primates have large brains and are intelligent.

**vertebrates** – animals that have backbones. Mammals, birds, fish, reptiles and amphibians are all vertebrates.

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# Discussion Starters

**1** There are nearly 4,000 different kinds of mammals on Earth. What are some of the mammals you didn't know about until you read *Designed for Living*? What are their special features? How would you research more about them?

**2** How are humans and the primates on pages 20–21 alike? What are some of the differences between them? What can you create to best show these facts?

**3** Unlike other mammals humans can invent things to make life easier. What are some things humans have designed for living?

