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MAMMALS

MAMMALS are the group of animals to which humans belong. They are vertebrates (animals with a backbone) that give birth to live young and then feed them with milk. Most mammals have four limbs and a covering of hair or fur. Sea mammals, such as whales, have adapted to life in the water by losing their hair and hind limbs and forming their front limbs into flippers.

All mammals are warm-blooded, which means that their bodies can control their own temperature. They obtain warmth from the process of burning fuel (food) inside the body, rather than from basking in the sun as the cold-blooded reptiles do. The skin and hair of the body are very important both for keeping in warmth in cold conditions and letting it escape to cool off the body in hot conditions. Most mammals also produce sweat, which cools the skin as it evaporates.

Mammals have large brains and complex sensory and circulatory systems. They rely on their sense of smell more than any other kind of animal. Scent is used to communicate between members of the same species, to mark the borders of a territory, to find food and to detect an approaching predator.

Although whales swim in the oceans with the fish, and bats swoop in the sky with the birds, they are just as much a part of the mammal group as the land-living mammals. We humans belong to this group, as do our pet cats and dogs.



African wild dogs are placental mammals. The young dog feeds on its mother's milk through nipples on her belly.

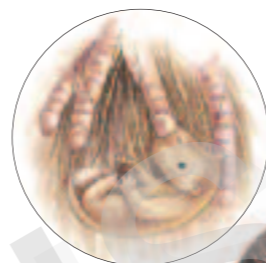
The most important feature which sets mammals apart from other animals is the way they care for their young after birth. All female mammals have mammary glands which produce milk after their young are born. The young feed on this milk, which gives them all the nutrition they need, until they are able to survive and feed on their own. By not having to find their own food, they can put all the energy gained from feeding into growing larger and stronger.

During the period of suckling (feeding on milk), and also while the young learn to feed for themselves, the mother will protect them as much as possible from predators.

Some female mammals raise their young alone while others share the task with the father or other members of a group.

Most mammalian young, apart from the monotremes, are born live (not inside an egg). Small mammals can give birth to several young at one time, which grow and become independent quite quickly. The young of large mammals take longer to grow to full size, and need more care, so litter size (the number of young born at once) is smaller, often only one at a time.

All mammals except the marsupials and the monotremes are born fully formed, though some, such as rabbits, are hairless, blind and helpless. They can grow further while in the safety of their burrow or den.

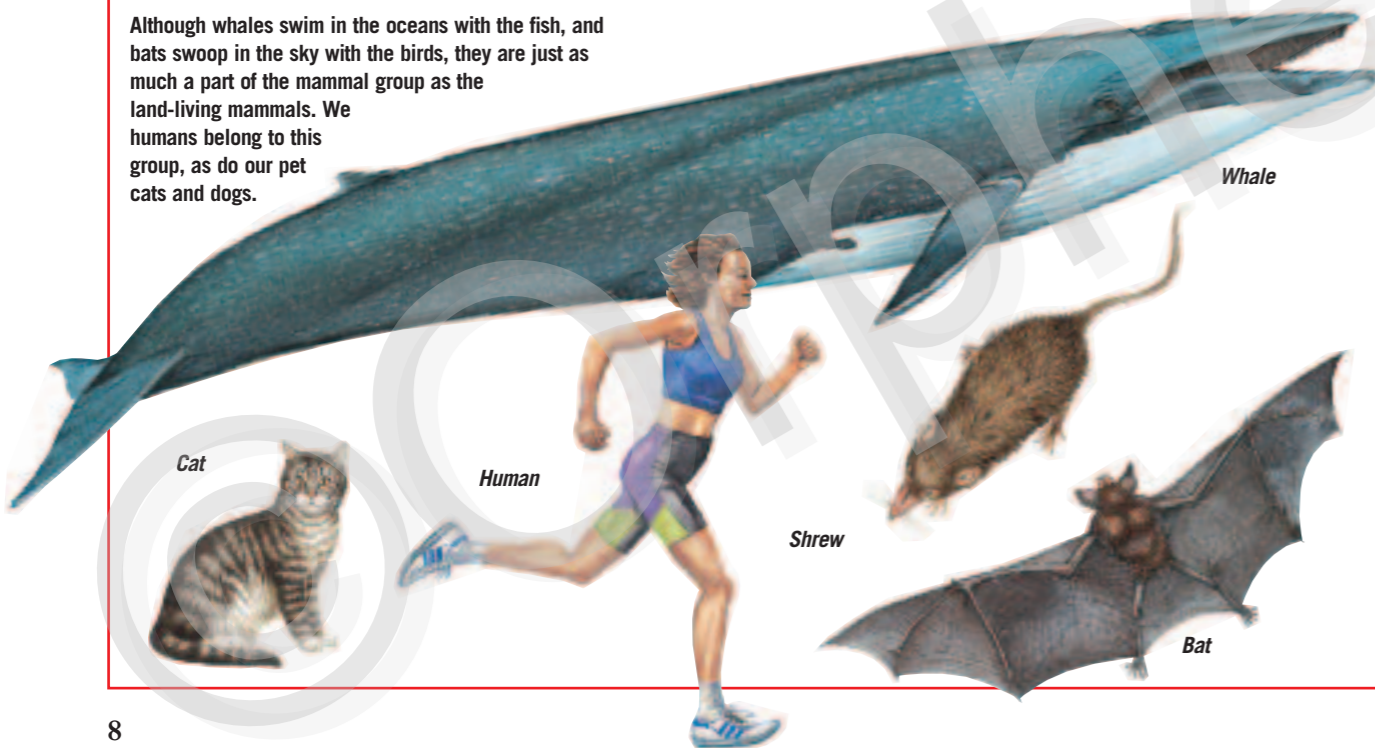


Kangaroos are marsupials. The under-developed young suckle inside the mother's pouch.



In contrast, animals that live in open spaces, such as horses, cattle or deer, are able to walk and even run a few minutes after birth. If a predator appeared, they would need to run away with the rest of the herd.

Many mammals live in social groups that can be made up of a few or many animals. Often the whole group will help to rear and protect the young. Carnivores such as lions or hyenas also hunt together, using their combined strength and skill to kill larger animals than they could tackle alone. Herbivores, such as deer or cattle, form large herds that give them some protection against predators.



MONOTREMES

Echidnas lay tiny soft-shelled eggs (right). The young cling to the small pouch, licking up milk which seeps on to the mother's fur.



LIKE MARSUPIALS (see page 10), monotremes give birth to under-developed young. However, monotreme young are born inside soft-shelled eggs. These hatch after a few days, and the young are suckled until they have developed fully.

There are two kinds of monotremes: the echidna and the platypus. Both are found only in Australia and surrounding islands. Echidnas have a small pouch that holds their young after hatching. Platypuses do not have a pouch, but instead leave their young in a special burrow.

Apart from a few types of shrew, monotremes are the only venomous mammals. Echidnas cannot use their venom but the platypus can kill a dog with poison ejected from a sharp spur on its leg.



When swimming underwater, the platypus uses its sensitive beak to find its prey—tiny bottom-dwelling animals.

MARSUPIALS

MARSUPIALS are mammals that do not give birth to fully developed young. Instead, the young are born at a very early stage, and then continue to develop while clinging to their mother's body.

When the young marsupial is born, it is tiny, blind and hairless. Its limbs are not even properly formed, but somehow it still manages to crawl through its mother's fur to find its mothers' nipples. Many marsupials, including kangaroos and wombats, have large pouches of skin around their nipples. A kangaroo's pouch is deep and forward-facing, so that the young kangaroo does not fall out. Wombats are burrowing animals, so



Koalas spend three-quarters of their day sleeping, stirring only as dusk falls. They spend all their time in trees, feeding almost entirely on eucalyptus leaves.

Most (but not all) marsupials live only in Australia. For millions of years, until the arrival of humans, Australia was isolated from the rest of the world. On the other continents, marsupials tended to lose out in competition for food with the placental mammals (those mammals that are born fully developed) and so, with the exception of the opossum family in the Americas, they died out. In Australia, they had no other mammalian rivals and so they thrived.

Some marsupial species live in the Americas, primarily in South America. The woolly opossum, a fruit-eater, lives in Amazon rainforest trees.



Kangaroos move by bounding along on their immensely strong hind legs. In a single bound, a kangaroo can leap as far as three cars parked end-to-end.

they have backward-facing pouches to stop soil getting inside. Other marsupials hardly have any pouch at all. Their young simply hang on to the nipples until they are old enough to let go.

If a female marsupial has only one or two young, she can carry them in her pouch or, like the koala, on her back. Small marsupials, such as possums or bandicoots, which have several young at a time, must transfer them to a nest when they become too heavy to carry around.

EDENTATES

EDENTATES are a group of mammals made up of anteaters, armadillos and sloths. The word "edentate" means "without teeth", but only the anteaters have no teeth at all. Armadillos and sloths have a few very simple, grinding teeth.

Sloths live in the rainforest of South America. They spend nearly all their time hanging upside down in the trees, feeding on leaves. Sloths move so slowly that they may only travel a few metres every day. In wet weather, a layer of green algae grows on



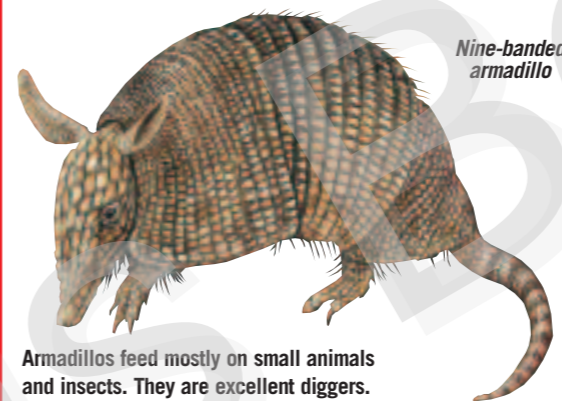
Three-toed sloth

Sloths are so well-adapted for living upside down that their fur grows upwards from their bellies instead of downwards from their backs.

their fur, which helps to camouflage them among the trees.

Armadillos do not need camouflage—they have a suit of armour to protect themselves. Made of bony plates, it covers the whole body, including the tail, head and limbs. Only the belly is soft, and some kinds of armadillo can protect even this part by curling themselves up into a ball.

Anteaters feed on both ants and termites, which they detect using their keen sense of smell. The tongue of the giant anteater can unfurl an amazing 60 centimetres.



Nine-banded armadillo

Armadillos feed mostly on small animals and insects. They are excellent diggers. Their clawed front feet work at speed to quarry the soil while their back feet push it away as it piles up underneath them. They can hold their breath for up to six minutes to avoid breathing in dust.

Giant anteater



Anteaters break open ant or termite mounds with their strong, sharp claws, and lap up the insects with their long, sticky tongues.