





This activity pack is designed for adult helpers to use during a trip to Marwell Zoo, supporting children's learning at eight of our most popular and fascinating animals. The pack provides a series of directed observations, fun facts, and kinaesthetic activities.

Each factsheet also includes the answers to some frequently asked questions about each animal, and a space for noting down any children's questions which will need researching later!

You can use as many of the factsheets as you like, depending on which animals meet your current topic requirements.

The animals included in this pack are: **Humboldt penguin, cheetah, giraffe, Amur leopard, meerkat, Amur tiger, ostrich and ring-tailed lemur.**

Curriculum Links

SCIENCE

Working scientifically

- asking relevant questions and using different types of scientific enquiries to answer them
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Year 3 Animals, including humans

- identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat
- identify that humans and some other animals have skeletons and muscles for support, protection and movement.

Year 4 Living things and their habitats

- recognise that living things can be grouped in a variety of ways
- explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment
- recognise that environments can change and that this can sometimes pose dangers to living things.

Year 4 Animals, including humans

- identify the different types of teeth in humans and their simple functions
- construct and interpret a variety of food chains, identifying producers, predators and prey.

Humboldt penguin

Habitat: Coastal waters; nests on rocky shores and islands.



Look:

Can you see...



A hard
beak?

Flipper-like
wings?

Beady eyes?



Webbed
feet?

Tiny
feathers?

A speckled
tummy?

Can you work out how these adaptations help penguins to survive in their habitat?

Hard beak – helps catch and grip fish

Flipper-like wings – for propelling (swimming) rapidly through the water when chasing fish and escaping from predators

Beady eyes – for a good sense of sight underwater and on land

Webbed feet – for changing direction quickly underwater (like a boat's rudder)

Tiny feathers – to keep the penguin warm in the cold sea and protect its skin from the sun

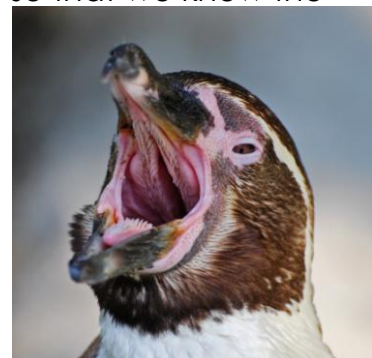
Speckled tummy – for camouflage - to help catch fish and hide from predators

Did you know?

The main diet of Humboldt penguins is fish (such as anchovies, sardines and herring) but they also feed on small crustaceans (such as krill) and squid. At Marwell we feed them herrings that are MSC-certified so that we know the fish comes from a sustainable source.



Humboldt penguin beaks are hooked and they have backward-facing “spikes” on the top of their mouth and tongue which help them to catch and hold slippery fish.



Learn:

Penguins cannot fly so how do you know if they are birds?

They have a beak, wings (flippers!) and tiny feathers. They also lay hard shelled eggs, which they look after in a nest.

Penguin's wings are used as flippers to swim! The wing bones are joined together to make the flipper strong and stiff. The flippers push through the water to help the penguin swim quickly, catch fish and escape predators. When swimming, penguins move their wings in the same motion as flying birds.



Do:

Do the penguin shuffle!

Penguins have streamlined bodies which are specially adapted to help them 'fly' through the water. Their webbed feet, positioned at the base of their body, help to propel them through the water. However, they don't look so elegant when travelling over land. They move about by waddling on their feet. They also jump to climb up and down rocky ground.

Have a go to see if **you** can waddle about like a penguin, and jump up and down, keeping your feet close together!



Any questions?

"Can they breathe underwater?" Penguins can't breathe underwater - they have to hold their breath and come to the surface frequently to take breaths.

"How deep can they go?" Penguins can dive to depths of 150 metres, although they rarely dive deeper than 60 metres, which is approximately the same as the length of 6 double decker buses!

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Cheetah

Habitat: Mostly grasslands.

What is it like in this habitat? (Generally hot and dry for most of the year, with one rainy season)

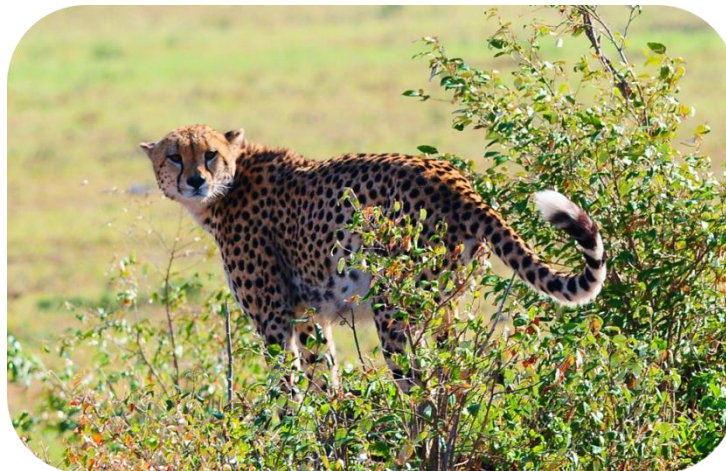


Look: 
Can you see...

A small
head?

Spotty
pattern?

Short fur?



Long legs?

Long tail?

Claws
sticking out?

Can you work out how these adaptations help cheetahs to survive in their habitat?

Small head – lightweight to help it run faster

Pattern – helps it creep up close to prey (camouflage)

Short fur – helps keep it cool

Long legs – so it can take great strides as it runs

Long tail – to help with balance and turning sharp corners at speed

Claws – to catch prey, but also for grip

Learn: 

How can cheetahs run so fast?

The cheetah is the fastest land animal in the world. They can run up to 65mph! Cheetahs are built for speed. They have long legs, large thigh muscles and an extremely flexible, long spine.

Each stride they take can be up to 7m long. They have a long tail to help balance when zigzagging to chase prey. Unlike most other cats, cheetahs can't fully retract their claws. This is to help them grip the ground when running, a bit like wearing football boots.





Did you know?

Cheetahs are **carnivores** and prey on other animals including gazelles, impala, wildebeest calves, warthogs and scrub hares. Cheetahs creep as close as possible to their prey before bursting into a chase. Usually they pursue their prey at around 30mph, then try to trip it up or knock it down with a front paw.

Do:



Race a cheetah! (fair weather only)

Just beyond the cheetah enclosure, on the right, is a running track you can try one at a time. The speedometer at the end of the track will estimate how fast you run. Could **you** beat a cheetah in a race?



Any questions?



“Are they dangerous?” Cheetahs are not usually dangerous to people. They tend to be quite cautious because of their delicate long legs – they do not want to get into a fight! Generally they will only come close out of curiosity.

“Why do they have tear marks?” The black streaks running down a cheetah's face are thought to help keep the sun's glare out of their eyes, a bit like sunglasses!



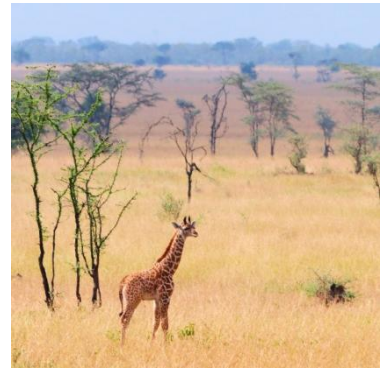
“Are they endangered?” Cheetahs are classed as 'vulnerable'. The main threats that cheetahs face are from hunting and losing their habitat because land is turned into farmland. Farmers put farm animals into areas where cheetahs live. They then hunt cheetahs to stop them killing their animals.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Giraffe

Habitat: Savannah and woodland.

What is it like in this habitat? *(Generally hot and dry for most of the year, with one rainy season)*



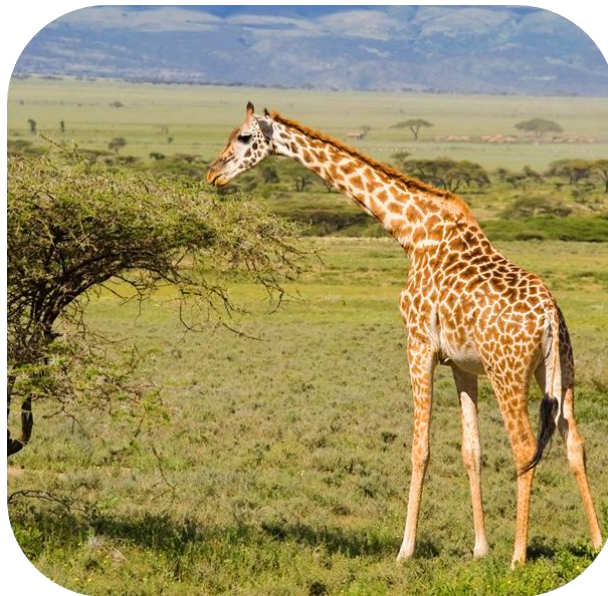
Look: 

Can you see...

A very long
neck?

A long
tongue?

Long legs?



Two little
horns?

Big eyes?

Patchy
pattern?

How do all these features help the giraffe to survive in its habitat?

Long neck – to help it reach high up leaves

Long tongue – to help it grab and pull leaves off the branches

Long legs – to help it reach high up leaves

Little horns – male giraffes use these for fighting

Big eyes – to look out for predators

Pattern – for camouflage (from a distance!)

Learn: 

Did you know? The giraffe is the tallest land animal in the world! Male giraffes can be over 5m tall! Females tend to be a bit smaller, at just over 4m. Even though their necks are much, much longer than ours they still only have 7 neck bones (vertebrae) – the same as humans and most other mammals!

Giraffes are **herbivores**. They feed on up to 100 different species of plants, and use their 45cm tongue to grasp leaves and bring them into their mouths. A giraffe's tongue is so long that they can clean their nose and eyes with it!

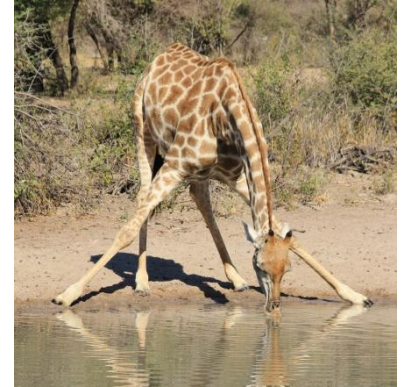
Do:



Lion attack!

Stretch out your legs and bend down, like a giraffe taking a drink. Now imagine a lion is coming! Can you stand up again quickly, ready to run?

Giraffes have to be very careful when they bend down to drink, as this is when lions and other predators have their chance to attack.



Did you know? Giraffe's height and strong eyesight mean they can spot dangers up to 1km away. If they see a threat close by they run, at speeds of up to 25 miles per hour!

Any questions?



“Why is its tongue that colour?” Giraffes have dark, blue-black tongues to help protect them from getting sunburnt during feeding!

“Do they make any noises?” It used to be believed that giraffes didn't make any sounds, but we now know that they bellow, snort, hiss and make flute-like sounds, as well as low pitch noises beyond the range of human hearing.

“What are the horns on its head?” Giraffes have two horn-like structures called ossicones about 13 centimetres long made of skin-covered bone. Female giraffe horns are thin and tufted, male giraffe horns are thick with smooth thin hair caused by using them during fights with other males.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Amur leopard

Habitat: Mountain forests.

What is it like in this habitat? (*Lots of trees, mountain streams, very cold in the winter*)



Look:



Can you see...

Thick fur?

Spotty
pattern?

A long, furry
tail?



Quite small
ears?

Eyes looking
forward?

Long
whiskers?

How do all these features help the Amur leopard to survive in its habitat?

Thick fur – keeps it warm

Spotty pattern – helps it creep up on prey (camouflage in the trees)

Long, furry tail – for balance as it climbs and leaps

Quite small ears – to help reduce heat loss and keep warm

Eyes looking forward – to help it judge distances accurately when hunting

Long whiskers – to sense obstacles when hunting at night

Learn:



Did you know? The Amur leopard is one of the rarest animals in the world. Scientists have recently counted less than 70 in the wild, though this is more than in 2007 when they found less than 30. Amur leopards face many threats in the wild, especially from habitat loss and hunting (for its fur, as trophies and for use in traditional medicines). The animals it preys on such as deer are also disappearing which means leopards sometimes hunt farm animals, so farmers may try to kill them.



Do:

Jump to it!

Amur leopards can jump more than 6 metres horizontally (across) and 3 metres vertically (up). Find a clear, non-slippery surface. Stand in a line with your feet together. Who can jump the furthest from standing still? Who can jump the highest?



Any questions?

“Why is it asleep?” Like all big cats, Amur leopards love to nap! In the wild they are nocturnal hunters, so they spend time sleeping during the day.

“It looks like a cat!” Yes, Amur leopards are in the same family as domestic (pet) cats.

“Doesn’t it get hot with its thick coat?” The fur of the Amur leopard changes in length from 7cm in the winter to keep them warm, to a cooler 2.5cm in the summer.

“Is anything being done to save them?” Yes, conservation groups are trying to stop people hunting the leopards, fighting the forest fires which can destroy their habitat and working with local people to educate them about the leopards and to pay them money if the leopards kill their farm animals.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Meerkat

Habitat: Dry grasslands and scrublands.

What is it like in this habitat? (*Hot and dry, with few trees*)



Look:



Can you see...

Short fur?

Light brown
colour?

Long, thin
tail?



Dark eye
patches?

Sensitive ears
and nose?

Long, sharp
claws?

How do all these features help the meerkat to survive in its habitat?

Short fur – keeps it cool (and prevents sunburn!)

Light brown colour – helps it creep up on prey, and avoid being eaten by other predators (camouflage in the sandy soil and dry grass)

Long, thin tail – to help it balance when standing up on its back legs

Dark eye patches – to help keep the bright sun out of its eyes, like sunglasses!

Long, sharp claws – for digging burrows and digging up insects for food

Sensitive ears and nose – to sense prey animals moving underground or in the grass

Learn:



Did you know? In the wild, meerkats live in large family groups of up to 50 members, known as 'mobs'! All the meerkats in a mob rely on each other for food and protection. They all take it in turns to do chores such as searching for food, babysitting, and looking out for predators.

Meerkats are **omnivores**. They eat a wide range of food including fruit, roots, invertebrates (such as insects, scorpions, spiders and millipedes) and small animals (such as mice, birds, lizards and small snakes). Wild meerkats get all the moisture they need from eating roots and fruits.

Do:



Watch out, predator about!

Can you see any meerkats standing high up on a rock or branch? These meerkats are on 'sentry duty', their job is to let the other members of the group know when a predator is approaching. The sentry makes a different call depending on which type of predator is spotted.

Play this game to see if **you** could survive as a meerkat! Choose 3 sounds to be the meerkats' warning calls for their 3 main types of predator; jackals, eagles and snakes. Then choose one of you to be the sentry. The sentry stands up straight, while all the other players bend down as if they are digging for food. The sentry decides which warning call to make and the other players have to react as follows:

- Jackal or Eagle – sit down as quickly as you can (meerkats will hide in their burrow)
- Snake – snakes can slither down burrows, so hiding underground is no good! Jump up and down and hiss to try and scare away the snake, just like real meerkats do.

If you choose the wrong reaction to the sentry's warning call, or are too slow, you might be eaten and are out of the game!



Any questions?

“Can you keep them as pets?” No, even though meerkats look cute and cuddly, they are wild animals and not used to living with people. They are also predators so have a very nasty bite!

“How many babies do they have?” Between 2 and 5 pups are born in a litter. Meerkats are 'cooperative breeders', this means that other adults help to take care of the young. They help to keep the pups safe, teach them how to forage for food, look out for threats and when to run for safety.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Amur tiger

Habitat: Forests and woodlands.

What is it like in this habitat? *(Lots of trees, mountain streams, very cold in the winter)*



Look: 

Can you see...

Long, thick
fur?

Stripy
pattern?

Sharp teeth?



Long
whiskers?

Big strong
paws?

Sharp
claws?

How do all these features help the Amur tiger to survive in its habitat?

Thick fur – keeps it warm

Stripy pattern – helps it creep up on prey (camouflage in the trees)

Sharp teeth – to kill and eat prey

Long whiskers – to sense obstacles when hunting at night

Big strong paws – helps it move on snowy or icy ground

Sharp claws – to catch and kill prey

Learn: 

Did you know? Amur tigers are **carnivores**. They prey on a variety of animals including wild boar, deer, badgers and raccoon dogs. They have even been known to hunt adult bears! Tigers are 'stalk and ambush' predators; their stripy coat lets them stay camouflaged whilst they creep up on their prey until they are close enough to leap onto it. They rarely chase prey far.





Do:



Creeping tigers

Tigers have to be very good at quietly creeping up on their prey, so that the prey animals don't spot the tiger coming and run away!

Have a quick game to see how quietly **you** can creep. Choose one of you to be 'the listener'. The listener shuts their eyes and everyone else must creep as quietly as possible towards them. Whoever reaches them first is the winner – but if they hear you coming you're out!



Any questions?

"It looks like a cat!" Yes, tigers are in the same family as domestic (pet) cats. Amur tigers are the biggest cats in the world! Their large size helps to keep them warm and overpower their prey.

"Are they endangered?" Yes, there are less than 500 Amur tigers in the wild. In the 1930s there were only 20-30 left. The tigers made a spectacular comeback after hunting was banned in 1947, and there were estimated to be up to 430 by the mid 1980s. However, the population is declining again. The main reasons for this are poaching of tigers as well as hunting of the animals they prey on and destruction of habitat.

"Are there any other stripy cats?" No, tigers are the only wild cats with an all-over stripy pattern. Each tiger has a unique pattern of stripes – just like our fingerprints! The Amur tiger has a lighter orange coat than other types of tiger. Their coat is also longer and thicker because they live in a cold climate and they have a thick mane around their neck and extra fur on their paws to protect them from the cold.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Ostrich

Habitat: Desert and dry grasslands.

What is it like in this habitat? (*Hot and dry, with few trees*)



Look:

Can you see...

Large eyes?

Fluffy
feathers?

Long legs?



A hard
beak?

Tiny wings?

Sharp
claws?

How do all these features help the ostrich to survive in its habitat?

Large eyes – to look out for predators

Fluffy feathers – to help it keep warm at night, or cool off during the day

Long legs – for running quickly

A hard beak – for nibbling plants or catching prey

Small wings – although the ostrich has lost its ability to fly, it can still use its wings for steering as it runs, keeping balance, and flapping displays

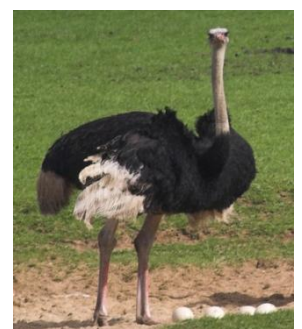
Sharp claws – for defence from predators and grip as it runs

Learn:



Did you know? It is easy to tell the male and female ostrich apart – the males have black and white feathers, and the females are brown.

These colours may help the ostrich to camouflage when they are sitting on their eggs: the dark coloured males sit on them at night, and the lighter females have their turn during the day!





Do:



Keep away from my chicks!

When a male ostrich needs to defend his chicks from a nearby predator, he will first try to scare the predator away by waving his wings and making a low 'booming sound'. Can **you** make yourself look scary by waving your arms and 'booming'?

If this threat display is not enough to scare off the predator, the ostrich can attack using its powerful legs and claws to kick (*please **don't** try this one!*). Ostrich have even been reported to kill lions with a kick. Their inner toe is thick and strong, adapted for running, and is armed with a formidable, ten centimetre long claw.



Any questions?

"How fast can they run?" Ostrich are excellent long distance runners, and can run at speeds of around 30mph for over half an hour. They can also reach a top speed of over 40mph in short bursts.

"Do ostrich really bury their heads in the sand?" No, this is just a myth. However, they do sit down and lay their long necks flat along the ground, so that they appear just to be a small mound of earth. This behaviour may have inspired the 'head-burying' story.

"What do they eat?" Ostrich feed on a wide range of plants such as grasses, seeds, leaves, flowers, fruits and roots and are also known to feed on small animals such as insects, small lizards and snakes as well as some rodents!

To help them digest their food, ostrich often swallow sand and small stones to help grind up the food in their gizzard (a muscular pouch behind the stomach), before it is properly digested.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Ring-tailed lemur

Habitat: Scrubland and forests of Madagascar.

What is it like in this habitat? *(Generally hot and dry for most of the year, with one cooler rainy season)*



Look: 

Can you see...

A long stripy tail!

Long back legs?

Thick, grey fur?



Large, pointy ears?

Long, wet nose?

Human-like hands?

How do all these features help the ring-tailed lemur to survive in its habitat?

Long stripy tail – to help it follow other members of the group and balance in trees

Long back legs – to help it jump from tree to tree

Thick, grey fur – to keep it warm in cool weather and at night

Large, pointy ears – for a good sense of hearing

Long, wet nose – for an excellent sense of smell (their main sense for finding food)

Human-like hands – for good grip as it climbs trees

Learn: 

Did you know? Male ring-tailed lemurs battle to be with females by having "stink fights"! They rub scent from a special gland on their wrist onto their tails, and wave the tails at each other to waft the scent. The lemur with the stinkiest tail wins!

Did you know? The lower front teeth of ring-tailed lemurs form a "toothcomb" which they use for getting food and grooming each other. Ring-tailed lemurs have 36 adult teeth in their mouths. Humans have only 32.

Do:



Just chillin'...

Ring-tailed lemurs like to sunbathe, just like we do! In the wild, this behaviour helps them to warm up their tummies first thing in the morning after a chilly night.

Can **you** sunbathe like a lemur? Sit on the ground with your legs out in front of you. Bend your arms out as if you are holding a giant ball. Now chill!



Any questions?



“Do they make a noise?” Yes, the lemurs are some of the noisiest animals at Marwell! Every so often, the lemurs all start screeching and howling together. Listen out for them while you walk around the zoo – it is very loud! Adult ring-tailed lemurs make at least 22 distinct calls. They also communicate using facial expressions and body postures.

“What do they eat?” Ring-tailed lemurs have quite a varied diet. They mainly eat fruit but also eat leaves, flowers, bark and sap, as well as large insects and even small vertebrates such as chameleons. They are also known to eat soil, possibly for the minerals it contains.

“Are they endangered?” Yes, they are thought to be at serious risk of extinction in the future. Ring-tailed lemurs face many threats in the wild, mainly from habitat loss. More land is being used for farming, trees are being burnt to make charcoal and there are more people who need places to live. Lemurs are also threatened by being hunted for meat and being caught and sold as pets.

Any more questions? If you are not sure of an answer, note the question here so you can help the children find out the answer later.

Look, Learn and Do: At Marwell Zoo!

