



# TEACHER GUIDE

## Animal Adaptations at London Zoo

Spring  
2024





# HOW TO USE THIS GUIDE

This guide highlights a number of animal species at London Zoo that demonstrate interesting or unusual adaptations.

## ADAPTATION

**A physical or behavioural feature of an animal that helps them to survive in their environment.**

We recommend that you visit a selection of the animals in this guide and share the information with your students.

While you can visit these animals in any order, we recommend you explore one coloured zone of the London Zoo map at a time.

## ORANGE ZONE

- 1. Tiny Giants**
- 2. Humboldt Penguins**

## BLUE ZONE

- 3. Western Lowland Gorillas**
- 4. Sumatran Tigers**
- 5. Bactrian Camels**

## PINK ZONE

- 6. Rainforest Life**
- 7. Giraffes and ostriches**
- 8. Okapi**



# 1. TINY GIANTS (CORAL REEF)

## Ocean specialists

**TOP TIP: TINY GIANTS WORKS BEST AS A ONE-WAY SYSTEM, FOLLOWING THE PATH TO THE RIGHT AS YOU ENTER. THE CORAL REEF IS AT THE BOTTOM OF THE BUILDING.**

### WHO LIVES HERE?

Welcome to our beautiful coral reef, home to many species of fish and coral!



### CLOWNFISH

Look in the anemone at the top left of the tank for our clownfish.

Like all fish, clownfish use **gills** to get the oxygen they need from the water.

They have **streamlined bodies** to help them move quickly through the water.

### CLOWNFISH AND ANEMONE

Clownfish and anemone have a special relationship called a **symbiotic relationship**.

The anemone helps the clownfish by giving it somewhere to hide from predators. The clownfish helps the anemone by keeping it clean and providing food (in the form of poo!)

Sadly coral reef habitats are declining. How do you think this will affect clownfish?



## 2. HUMBOLDT PENGUINS

### Coastal and Ocean Specialists



Welcome to Penguin Beach! Humboldt penguins are adapted to live in the rocky coastal areas of South America rather than the Antarctic.

#### PENGUIN ADAPTATIONS

Penguins have **two layers of feathers**:

- A semi-waterproof outer layer
- A warm, downy inner layer

Penguins have **solid bones** to help them dive deep while catching fish. They can dive up to 150m!

#### WHY ARE PENGUINS BLACK AND WHITE?

This is a special form of camouflage called **countershading** that many ocean animals have.

When looked at from above, their dark back camouflages with the darkness of the deep ocean.

When looked at from below, their white belly camouflages with the bright shallow water.

#### PENGUIN PROBLEMS

Like other ocean animals, penguins are affected by plastic pollution. What can you do in your everyday life to reduce the amount of plastic you use?



# 3. WESTERN LOWLAND GORILLAS

## Forest Specialists

**TOP TIP: THE BEST TIME TO SEE THE GORILLAS IS EARLIER IN THE DAY. THEY REALLY LOVE A LUNCHTIME NAP!**



### GIGANTIC GORILLAS

Western Lowland Gorillas are the largest of all ape species.

They can weigh up to 200kg, the same as two adult humans!



### COMPARE YOUR SKULLS

Take a look at the replica gorilla skull on the way into Gorilla Kingdom. How does it compare to a human skull?

Like humans, gorillas have a mix of **incisor**, **canine** and **molar teeth**. Can you spot the different teeth on the replica skull?



Gorillas mainly eat plants and insects, so why do you think they need such large, sharp, canine teeth? How do they defend themselves?





## 4. SUMATRAN TIGERS

### Forest specialists

**TOP TIP: OUR TIGERS SLEEP FOR 20 HOURS A DAY!  
LOOK OUT FOR THEM UNDER THE TREES AND PLATFORMS.**



#### STRIPY AND SNEAKY

Sumatran tigers are **ambush predators**. They use their **stripy camouflage** to hide from prey until they're ready to pounce.

Sumatran tigers can leap forward 10 metres in one pounce! How far can you jump?

#### PALM OIL PROBLEMS

There's estimated to be 500-600 Sumatran tigers left in the wild.

Sumatran tigers are affected by deforestation for palm oil plantations, and illegal hunting for their skins and body parts.

You can help tigers by choosing to purchase products that use sustainable palm oil.





## 5. BACTRIAN CAMELS

### Desert Specialists



#### ONE HUMP OR TWO?

Our camels are two-humped Bactrian camels. Dromedary camels have one hump.

#### WHAT'S IN A CAMEL'S HUMP?

It's not water, it's **fat**! Camels need stores of fat to give them energy on long desert journeys where food sources are rare.

#### HOW DO CAMELS STORE WATER?

Camels store water in their bloodstream. If they do find a water source in the dry desert, they make the most of the opportunity – they can drink up to **57 litres** in one go!

Look at the camel's **split upper lip**. Each side of their top lip can move independently to assist them in feeding, so they don't have to stick their wet tongues out and risk losing precious water.

#### SANDY SPECIALISTS

Camels have **long eyelashes** to keep the sand out of their eyes.

They can also **close their nostrils** to keep sand out. Try it yourself!

They have **big feet** that work like snowshoes to prevent them from sinking in the desert sand.



## 6. RAINFOREST LIFE

**TOP TIP: ASK OUR FRIENDLY STAFF AND VOLUNTEERS IN THE RAINFOREST TO TELL YOU MORE ABOUT THE ANIMALS!**

### WHO LIVES HERE?

Rainforest Life has a variety of different animals sharing the same space. The monkeys are often the easiest to spot, but look closer and you can find sloths, tortoises, bats, and even a tree-dwelling anteater!

### RAINFOREST ADAPTATIONS

To live in this environment, animals need be able to withstand high temperatures and frequent rainfall. Many animals here have adaptations that help them climb trees with ease, and can be very vocal as they need to communicate through dense foliage.

Here are some brilliant rainforest specialists to look out for:

#### TWO-TOED SLOTH



**Curved claws to hook  
onto tree branches**

#### RODRIGUES FRUIT BAT



**Large eyes to help  
see at night**

#### WHITE-FACED SAKI MONKEY



**Dense fur to protect  
from rainfall**





## 7. GIRAFFES AND OSTRICHES

### Savannah specialists

**TOP TIP: IF YOU CAN'T SEE THE ANIMALS OUTSIDE, FOLLOW THE PATH AROUND TO THEIR INSIDE DEN.**



#### GIRAFFES

Giraffes have patchy spots that help them **camouflage** in the savannah habitat.

They have a **long neck** to reach leaves at the top of tall trees.

They have **long, flexible tongues** to strip leaves from branches. It's also dark purple to prevent it getting sunburnt!



#### OSTRICHES

Ostriches have **strong, muscular legs** for running. Ostriches are the fastest running birds in the world and can reach speeds of 40mph!

They have a **sharp claw** on each foot that grips the ground when they run, and can be used to defend against predators.

They also have **long eyelashes** to protect their eyes from the sun.



## 8. OKAPI

### Rainforest Specialist



#### SHY AND STRIPY

You might think okapis are most closely related to zebras because of their stripy camouflaged legs, but they're actually more like giraffes!

Giraffes and okapis both evolved from a common ancestor. You can see their similarities when you look at the shape of their skulls.



**Giraffe skull**



**Okapi skull**

#### WHY THE SHORT NECK?

Okapis evolved to survive in a rainforest habitat. As there are plenty of trees and plants around to munch on, they don't need a long neck to reach every bit of the tree like giraffes do in the savannah.