

## What is a bat ?

### Lesson

# 1

### What we will learn this week:

- how to sort (or classify) animals
- all about bat bodies
- why bats are so fascinating
- how old bats are!



Hello there!

Do you remember me? Spike, the coolest bat there is! I'm excited to get started with our very first online lesson!!

What is a bat? It's such a short question but I have SO much to tell you it could be a very long answer. I'll tell you more about bats over the next 8 weeks. But for now I want to tell you about where we fit in a "family tree" of animals and a little bit about how and when we evolved.

If you see this symbol:



you may need help from an adult.

Don't forget, the pencil symbol means it's your turn to do an activity!

We've included all the **new words** in the list at the end as a reminder!

### You will need :

- ✓ a **pencil**



# A family tree of animals



I know humans like to sort things into groups. Here is an example of sorting - follow the arrows and then decide which group us bats would be in. You can put a tick in the box beside the answer (or draw a little bat). You can also answer the question from a human point of view, but if you are answering the questions for bats and humans use a different symbol for each (e.g. a bat shape for bats and a smiley face for humans).

over to you!



## 1 What are you?

I'm a plant

I'm an animal

## 2 Have you got a backbone (spine)?

**Yes** - I have a backbone  
(that makes you a **vertebrate**!)

**No** - I can't feel any knobby  
bones down my back.  
(if that is the case check  
again...)

## 3 When you were a baby did you drink milk?

**Yes** - my first food was milk.  
(that makes you a **mammal**)

**No** - my parents fed me  
grubs and worms!  
(In that case you were  
probably a baby bird!)

## 4 Can you fly using the skin between your fingers as wings?

**Yes** - hurrah, you are a **bat!**  
You belong to a special  
group of animals called

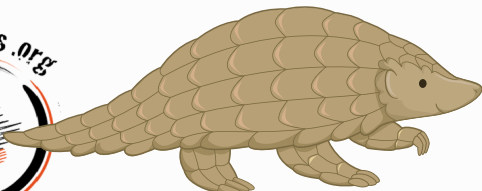
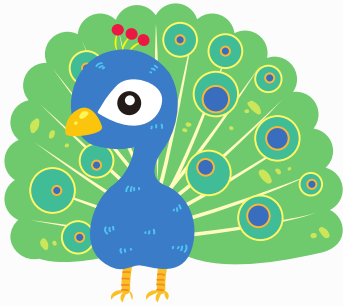
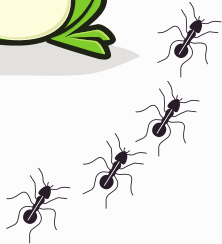
**No** - I can't fly.  
You aren't a bat (could you  
be human?!)  
We can't all be perfect ;o)

**"Chiroptera"**



# What is that animal?

Did you know that an invertebrate is an animal that does not have a backbone and all animals? In the pictures below most of the animals have backbones (vertebrates). Can you spot the ones that do NOT have a backbone? Draw a line to link the animal to the word invertebrate. All the others belong to a big group (vertebrates), that are then sorted into smaller groups which are; mammals, reptiles, birds, fish and amphibians. Draw a line to connecting the animal to their group (also know as a class):



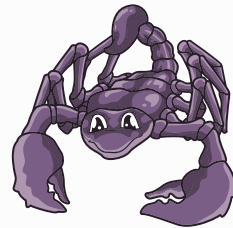
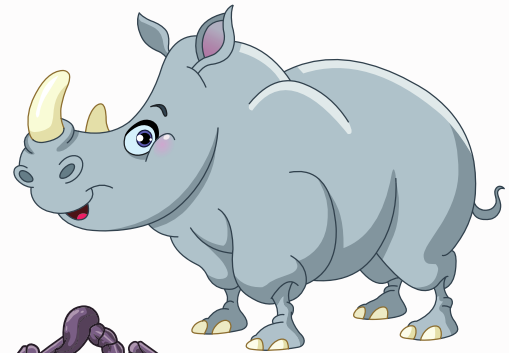
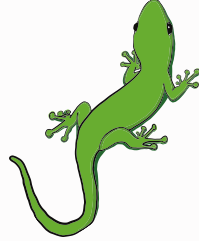
**invertebrate**

**mammal**

**amphibian**

**bird**

**reptile**



# What makes bats so special?

Bats are the ONLY mammals that can fly. Some other mammals can leap from tree to tree and glide on the way, but bats are the only mammals capable of true flight. Bats are special for many other reasons but this is their special unique feature (we like to call it their superpower!).

But as mammals there are also lots of ways in which they are similar to other mammals (like humans) – they are warm blooded, the mum bats give birth to babies (rather than eggs!) and mum produces milk to feed the baby to make it fit and strong. These are all things that humans do too!

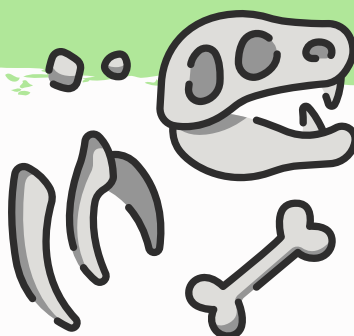


## Bat evolution

### DID YOU KNOW?

The first bats probably evolved around 100 million years ago. The first humans evolved around 5-7 million years ago. The oldest bat fossils are around 52 million years old and show that bats then could echolocate and fly.

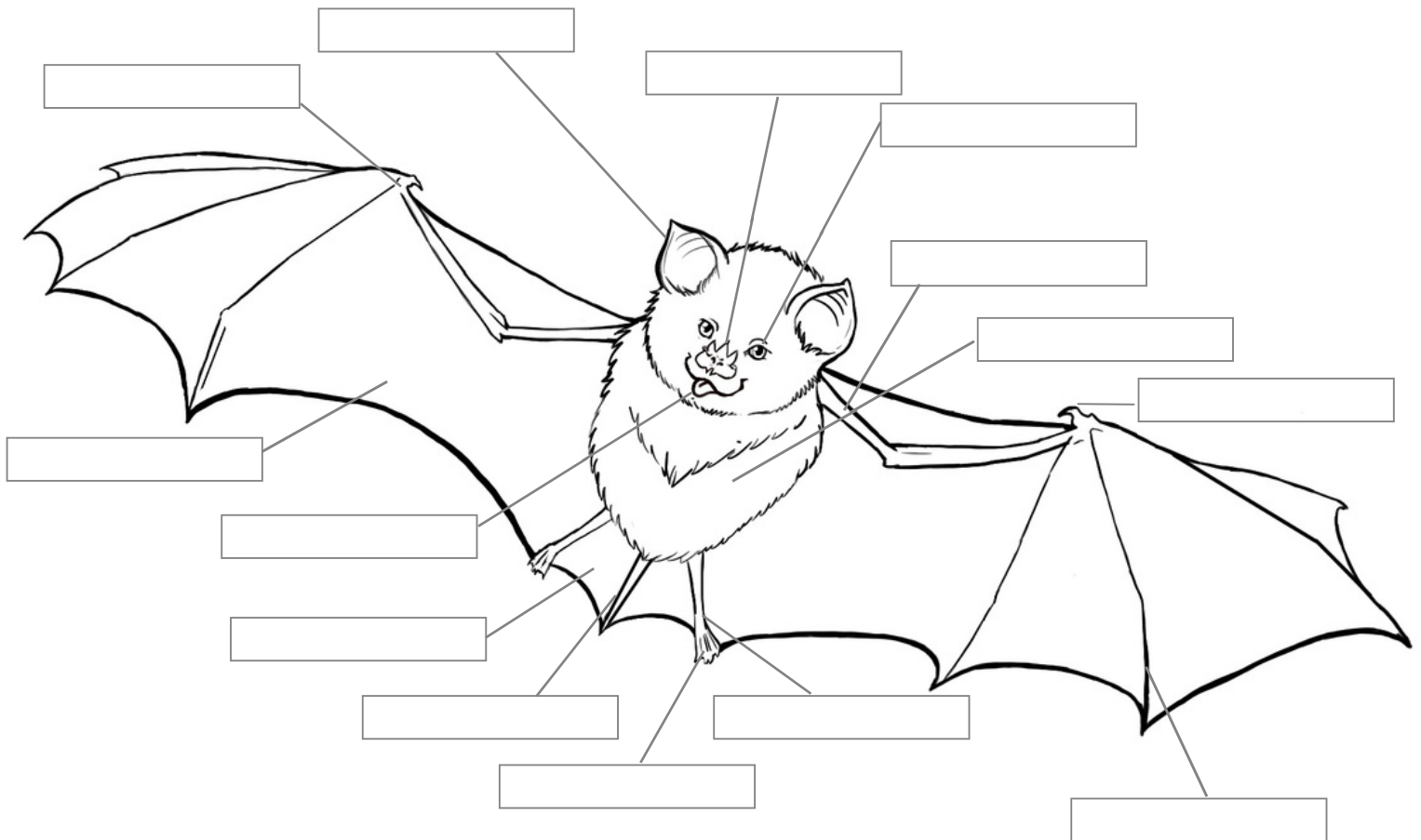
These fossils show bat skeletons that are very similar to the bats flying around now. It seems bats got their body design pretty much perfect and haven't really had to change much since.



# Bat bodies

We aren't so different, you and I. We too have eyes, ears and a tongue! Of course we have one big difference though: wings! Did you know, like humans, we have four fingers and a thumb, but our fingers are very long and joined together by a **wing membrane**. That's right: bats fly with their hands! Like most mammals, we have a tail and fur, and a lot of different types of bats have a strange shaped nose - called a **nose leaf**.

**Zeke here is a gorgeous trident leaf-nosed bat. Can you cut out the labels below and match the labels to the body parts (or write them in)?**



ear

eye

tail membrane

wrist

knee

fur

foot

thumb

forearm

tail

nose-leaf

tongue

finger

wing membrane





DID YOU KNOW?

Here are some  
**FASCINATING FACTS**  
about fabulous  
*bats!!*

Bats are the **ONLY** mammals that can fly. There are other mammals that can glide but we bats are the only mammals that can properly fly.



Bats are really good at changing their heart rate. We can speed up the rate when we need lots of energy to fly and we can slow it right down when we need to save energy. Human heart rates change a bit but not as much as bats.



We can see with our eyes **AND** most of us also see with sound (by echolocation) - I like to describe it as a sound picture.



Bats are found nearly everywhere on Earth. Did you know bats are found as far north of Scandinavia? That's far too chilly for us African bats! We are also found in deserts!! The only places you won't find us are the Arctic, Antarctic and a few isolated Oceanic islands.

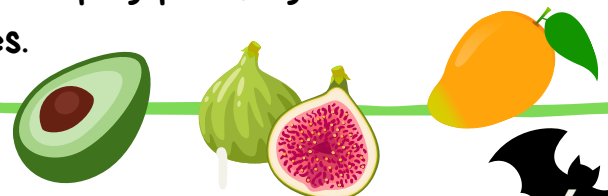


Bats evolved around 100 Million years ago. Bats were flying long before humans ever evolved.



There are over 1,400 different types (species) of bats in the world. Of all the mammal species in whole world a quarter of the species are a type of bat.

Bats are really important, some of us eats lots of insect pests, others pollinate flowers and some help spread seeds helping plants grow in new places.



# Glossary

## (words we have learned today!)

"You may have read some new words in this lesson, to help you remember the words and what they mean I've made you a GLOSSARY. A glossary is a list of words, arranged alphabetically and with a brief description of what they mean.

**Chiroptera** - "hand wing"

A scientific name for bats! *Bats belong to the biological order Chiroptera, their wings are the same as our hands (just with much longer fingers and thin skin between each finger and from the little finger to their ankle).*

**Invertebrate** - an animal without a backbone.

*Jelly fish and insects are invertebrates, because they don't have a backbone (spine).*

**Mammal** - a warm blooded animal, with fur, that gives birth to live young which are fed milk.

*Baby bats and baby humans have milk as their first food. They are both mammals.*

**Vertebrate** - an animal with a backbone (spine).

*Bats and humans are both vertebrates. They both have backbones.*



I hope you learned a lot today!  
See you next week, to learn all about  
incredible bat diversity! Together, we'll  
discover how bats are all very different!

Don't forget; the answers to the activities  
will be available on the Bats without  
Borders website and we'll put a reminder  
on our Facebook page too!