# Classrooms without Walls

EXPLORE - DISCOVER - LEARN - LOVE

## What bats eat

Lesson 4

**What we will learn this week:**

- Types of foods that bats eat
- How bats find their food
- About echolocation
- What foods bats in southern Africa eat

Hi friends, its Spike here to tell you about one of my favourite things - FOOD! It won't surprise you that different types of bat eat different food, but it might be a surprise to learn that bat foods include; insects, fruit, nectar, pollen, fish, frogs, small lizards and blood.

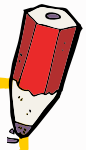
Because we eat different things and find our food in different ways our bodies have different "design features". But one thing remains the same; we all need to eat lots of food to give us enough energy to fly.

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 word list at the end!



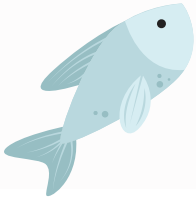
### You will need :

- A **pencil**
- **Paper**
- **Scissors**
- **Scarf**

Over to you!

# Activity 1: Find the food:

Can you find all of the different types of foods that bats might eat in this wordsearch? Remember to search backwards and forwards, side to side and up and down, just like a hungry bat searching for food.



## What bats eat

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INSECTS
NECTAR
FRUIT
FISH
FROGS
MOSQUITOS
BEETLES
FLOWERS
BLOOD
MOTHS

Play this puzzle online at : https://thewordsearch.com/puzzle/3421819/

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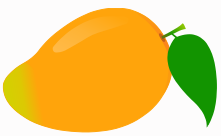
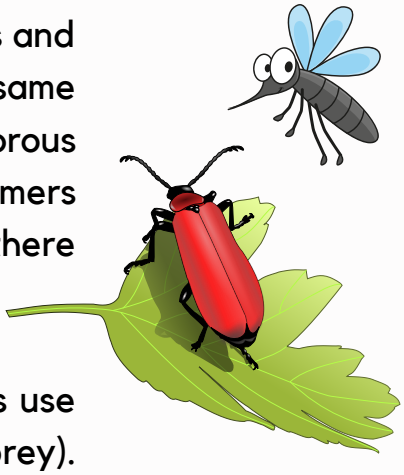


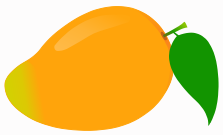
# 1 Types of food that bats eat

Most bats eat insects and are called **"insectivores"**. Their food might include: beetles, moths, mosquitos and gnats. Insect eating bats are much smaller than their fruit eating neighbours, with smaller eyes and shorter snouts. Did you know that bats weighing just 3-8g (the same as a copper coin) can eat 3000 insects in one night? Insectivorous bats are important for controlling insect pests and help out farmers who can use less pesticides. Imagine how many more mosquitos there would be without us bats!



As insects are very tiny and difficult to catch, insectivorous bats use a technique called **echolocation** to find their food (also called prey). More about echolocation later....

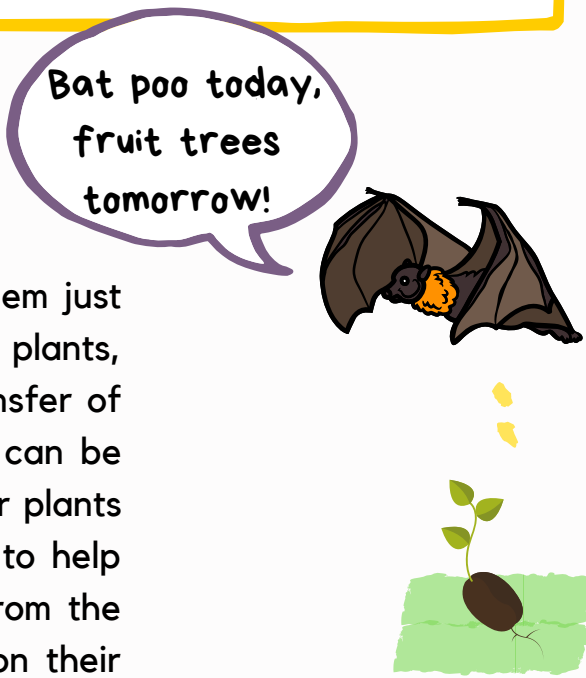
"I eat hundreds of small insects every night. I hunt in the dark and find and eat my food as I am flying. I have to eat quickly because in between mouthfuls I'm busy shouting to "see" my way in the dark



Some bats like eating fruit and are called **"frugivores"**. Bats enjoy eating all the same fruits as you humans do and bats that prefer sugary fruit can even end up with bad teeth! Fruit eating bats tend to have large eyes, long snouts (with powerful teeth) to help them find and eat their food.

Did you know that the seeds from the fruits end up in the bat's poo? This might sound gross but actually it's really important, as this is the way that fruit trees get to grow in new places. The bats eat the fruit then fly on to somewhere else to eat or roost, the seed is then dropped in poo and new fruit trees can grow. How cool!

Hi, I'm Eidolon the great. The biggest fruit bat in southern Africa. My great big eyes and amazing sense of smell help me to find fruit that's ripe and ready for eating. I have sharp teeth for biting through the tough skin of some fruits. My droppings help spread the stones and pips of fruit so that fruit trees can grow in new places.




Some bats feed on nectar in flowers and pollinate them just like bees! Bats help pollinate over 500 different plants, including mangos and bananas. **Pollination** is the transfer of pollen from one plant to another so that new plants can be made. As plants cannot move themselves to find other plants to pollinate with, some rely on animals such as bats to help them out. A bat will fly to a plant to drink nectar from the flowers. Whilst there pollen gets stuck to the hairs on their body. The bat will then fly to another plant for more food, and the pollen then gets transferred from the bat's body to the new plant!


Some bat pollinated plants have clever ways of attracting bats to them. They tend to flower at night (rather than in the day) to attract night time feeding bats, they have large, specially shaped flowers to make it easier for bats to access the sugary goodness inside, and they have strong smells that might smell rather stinky to you humans but smell delicious to us bats. And bats that feed on nectar are specially adapted too, they have a strong sense of smell and some even have long tongues that help to suck up the nectar!

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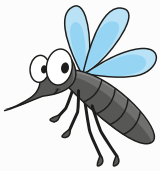
You've probably heard about bats that feed on blood? Bats that feed on blood, are called vampire bats. But did you know there are only three species of vampire bats and they all live in central and South America. We don't have any that live here in southern Africa (or anywhere in Africa).

Even those we don't get vampire bats in southern Africa, we like vampire bats! Vampire bats aren't scary though and don't like to drink human blood. There are only three species (types) of vampire bats in the world! They mostly feed on the blood of birds but can also feed on the blood of pigs, cows and horses. They only drink a very small amount of blood, around two teaspoons, so most animals don't even notice the vampire bat!


# Activity 2: Dinner time!

Match the bat feature to the type of food they eat – there are some clues to help you to do this!

| | | | |
|---|---|---|---|
| I have big eyes and a long snout | ☐ | ☐ Insect eater |  |
| I have a long tongue and a good sense of smell | ☐ | ☐ Fruit eater |  |
| I am small and I use echolocation to find my food | ☐ | ☐ Nectar eater |  |

# 2 Echolocation

Bats are not blind! They can actually see quite well, but bats feeding on small insects in the dark need some extra help to catch their insect dinner.

They use something called "echolocation" where they shout into the night and listen for the echoes with their sensitive ears to tell them where their prey is. Some bats also have large ears to help them hear their prey too!



You might think that lots of bats shouting into the night would get really noisy and wonder why you haven't ever heard them – but these noises are too high for humans to hear. However humans can use a piece of equipment called a bat detector to listen in on the night time adventures of bats. Bat detectors allow us to listen to the calls bats are making, and as different bats use different frequencies, pitches and rhythms we can also start to identify which species of bat we might be listening to!


# Activity 3:
# Bat and moth game

Play the bat and moth game with your friends or family to understand how a bat uses echolocation to find its insect (moth) food!

You will need two blindfolds such as a scarf and at least two other people to play the game with.

- Choose one person to be a bat and one person to be a moth. These two people wear the blindfolds - now they are "in the dark".
- Everyone else stands in a circle around the bat and moth. Their job is to keep the bat and moth safe by not allowing them to stray from the safety of the circle.
- The bat calls out "bat" and the moth replies "moth". Both then take a step.
- If the bat or moth reach the edge of the circle the people there should gently stop them. The most important rule is that when the bat calls the moth has to answer.
- The bat has to try to catch the moth, and the moth should do their best to "fly" away from the bat.
- Take it turns to be the bat and see how long it takes each bat to catch a moth!

# 3 Southern African bats

Now we've learned about what bats eat around the world, let's look at what a few of my friends here in southern Africa eat.

Bongi the Botswana long-eared bat

I can catch insects as I fly or pluck them from the surface of leaves. My broad wings help me to hover while my BIG ears listen very carefully for the sounds of insects walking over the leaves. I can grab insects with my feet and curl my tail over to help trap the insect. If it's really big I will fly to a perch and eat whilst hanging rather than trying to eat as I fly.

Baby Logan

I'm still too young to fly and catch insects. My food is my mother's milk

I'm Ashinga (the Brave one). I can fly really low and grab wriggly beetles off the ground. I fly quite slowly and carefully and feed right in among the leaves and branches. My broad wings make me very maneuverable but I'm not built for speed. My teeth are sharp for biting through the tough outer wing cases of beetles.

Egyptian slit-faced bat *Nycteris thebaica*

Avnaya, the False Vampire, *Lavia frons*

I catch quite big insects. I like to hang around listening very carefully for prey and then when I hear it I pounce! My big ears are constantly twitching and turning, focusing in on where sounds are coming from.

# Activity 4:
# Bobbing bat hats


Get creative with your friends and create some bobbing bat hats!

**What you will need** (for each bat hat):

- 1 piece of card or stiff paper about 65cm long and 3cm wide - **wide band**
- 2 pieces of paper about 30cm long and 1cm wide
- 2 paper bats, cut out and coloured in (get creative) or cut out on black paper

Once you have cut out your wide band (head band), you can decorate it and then staple it to fit your head (you could also use cellotape).

Staple the bats to one end of the shorter pieces of paper, then staple the other end to the head band as shown below:


**Design ideas:**
Why not try and design another bat hat?

Instead of two bats, you might like to have more bats or what about a bat and a moth? Or a fruit bat and a tasty piece of fruit?

**Why not have a bat hat party?**
You could invite some friends over and have a bat hat party and maybe even have a competition and see who can make the most creative bat hat!

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Adapted from the Bat Conservation Trust (UK) instructions, THANK YOU BCT!

# Glossary
## (words we have learned today!)

**Echolocation** - A way of "seeing" with sound. It's very useful if there is no or very limited light. Most bats do this (fruit bats are the exception). High pitched calls are made, either through the animal's mouth or nose. The echoes that come back help the bat "see" what is ahead of it, in the case of a moving object e.g., a flying insect, the bat can gauge the direction and the speed of flight. Dolphins do this too, as there is limited light under the sea.

**Insectivorous** - An animal or a plant that feeds on insects.

**Frugivore** - A fruit eating animal (like Eidolon)

**Pollination** - Transferring pollen from one flower to another. This is vitally important in order to fertilize seeds and produce healthy new plants.

I hope you learned a lot today!
See you next week, to learn all about bat babies!

Don't forget; the solutions to the activities will be available on the Bats Without Borders Facebook page!