



Bat Faces

Background

EXPLORATION QUESTION

“Why do the faces of bats look so different?”

MATERIALS

- Crayons, colored pencils, or markers
- Copies of the different bat masks for students
- Scissors
- Small hole punch and string elastic **OR**
- Large popsicle sticks and scotch tape

OVERVIEW

Bats come in different shapes, sizes, and colors. Thinking about the types of food they eat, how they find that food, and the habitats where they live can explain many of these differences. Students will get to explore the facial features of five bat species found in the United States including Thompson’s big-eared bat, Florida bonneted bat, hoary bat, lesser long-nosed bat, and spotted bat.

VOCABULARY

Echolocation, insectivore, nectarivore, pollination, tragus

GROUP SIZE

Any

AGE

5 – 10 (okay, really any age)

BAT MAST ARTIST

All five of these amazing bat masks were created by the talented **Jenna Happach**. Thank you Jenna for sharing your gift with us and for your service through the AmeriCorps Program!

Background Information

Worldwide, there are more than 1,400 species of bats. They come in all shapes and sizes, from the tiny, bumblebee bat that weighs less than a penny to the big, Malayan flying fox that can have a wing span of up to six feet. Bats can be white, brown, black, gray, red, or even spotted or striped! The faces of bats tell a story about their different lifestyles and diets.

Insectivores

Almost all bats in North America are insectivores – they feed on insects. Insect-eating bats often have short muzzles and strong jaws. They also have sharp teeth for grinding and chomping tough insect bodies. Because they use echolocation to locate their prey, they often have small eyes and large ears.

Echolocation

Echolocation is a remarkable navigation system that most bat species have developed to help them detect obstacles in flight, find their way to their homes, and hunt down their main target – delicious insects! Contrary to popular belief, bats are not blind. They actually have good eyesight (similar to that of humans), and some bats use their eyes to find food. But, for bats that eat insects, eyesight doesn’t help much when flying through the forest at night. Instead, they use echolocation, emitting very high-pitched, ultrasonic squeaks through their mouths or noses that bounce off obstacles in their path. Bats make these calls as they fly around, and they listen for the returning echoes. Bats use the reflected sounds to identify what an object is, how big it is, and what direction it is moving.

Ears

The ears of insect-eating bats are specially adapted to gather sound waves. The ears are large with a broad, scoop-like form that sticks out well above the head to allow better hearing. Bats also have a special structure in their ear called a tragus. This small, sword-shaped piece of skin is located in front of the ear canal. The tragus plays an important role in directing sounds into the ear for prey location and navigation. Because the tragus tends to be obvious in bats, it can be an important feature in identifying bats to species.

Nectarivores

All but four of the bat species in the United States are insectivores. The remaining four species are nectarivores – they feed on nectar. Nectarivores use their keen senses of sight and smell to find nectar of cacti and agaves in southwestern deserts. Bats that feed on nectar usually have long, slender snouts that fit perfectly into flowers. They also have a grooved lower lip and a rough, scaly tongue to catch nectar. The teeth of nectar-feeding bats are often small because they are not used much for chewing due to the bats’ liquid diet.

Pollination

Nectar-feeding bats throughout the world are critical pollinators. Drawn to pale, night-blooming flowers, these bats bury their furry faces in flowers to lap up the tasty nectar. When they pull their faces out, they are covered with pollen that they carry to the next flower they visit. Through this process, known as pollination, plants are able to produce full-bodied fruit and viable seeds. While many people know that birds and bees are important pollinators, few know that bats are too. In fact, around the world, over 500 plant species rely, at least partially, on bats to pollinate their flowers, including some plants of great economic and ecological value such as wild bananas, cloves, carob, balsa wood, and agave.

Get Ready – Preparation

This fun activity will give people of any age a chance to examine the facial features of five different bat species found in North America including Thompson's big-eared bat, Florida bonneted bat, hoary bat, lesser long-nosed bat, and spotted bat. You will need to copy each of the bat masks on card stock paper. Please note that the spotted bat and Townsend's big-eared bat should be printed on an 11" X 17" piece of paper. The other three species should be printed on 8 ½" by 11" cardstock.

Get Set – Exploring Bat Faces – Hand Out Materials

1. Hand out different bat masks to each of the students.
2. Encourage your students to share what differences they notice when they look at the different bat masks. Ask them the following questions:
 - Why would a bat have a long, slender nose (to reach inside plants to gather nectar)?
 - Why would a bat have big ears (to help them echolocate)?
 - Do all bat species eat the same types of food (no – bats eat all kinds of different foods including insects and nectar)?
 - What is that flap of skin in the front of the ear and what might it do (the tragus – helps with echolocation)?

Go! – Decorate Your Bat Mask

Depending on the age group you are working with, you can trim around the bat mask to get rid of the unneeded paper. Or, you can have the students cut the masks out themselves. Don't forget to cut out the holes of the eyes!

Once the mask has been cut out, allow students to color in the mask. You can show pictures of the bat species, but it might be more fun to let people use their imaginations. That way, they can use whatever colors they want to decorate their masks.

After the masks are colored in, you can either tape the finished mask to a large Popsicle stick (this will allow the student to hold the mask in front of their face). Or, you can punch two small holes on the side of the mask and attach elastic. You will need to push the elastic through the hole and tie a knot to keep it from slipping out.

Go Even Further: Exploring Five Cool Bats!

A brief description of each of the five bat species has been provided to help you lead a discussion about the fascinating faces of each of these bats.

Suggested Resources:

Townsend's Big Eared Bat

<https://batweek.org/townsend-big-eared-bat/>

Florida Bonneted Bat

<https://batweek.org/florida-bonneted-bat/>

Hoary Bat

<https://biology.eku.edu/bats/hoarybat.html>

Spotted Bat

<https://www.animalspot.net/spotted-bat.html>

Lesser Long-Nosed Bat

<https://www.youtube.com/watch?v=aPNolsDEM5E>

Baby Florida Bonneted Bat – bat facts!

https://www.youtube.com/watch?v=JeQr922tG_c

Townsend's Big-Eared Bat



Townsend's big-eared bats are an eye-catching species with marvelously large ears. Their ears are so large that when they are laid back, they extend to the middle of the bat's body!

This bat specializes in eating moths and other insects such as beetles, flies, and wasps. Townsend's big-eared bats are one of the most effective "food specialists" in North America. More than 80% of their diet is made up of moths! This bat has two large, fleshy glands on either side of its nose.

Fun Facts:

- When these bats are sleeping, they curl up their long ears so they look like ram horns.
- Baby Townsend's big-eared bats are born without fur and their ears are folded over their unopened eyes for several days after birth.

Florida Bonneted Bat



The **Florida bonneted bat** is the largest insectivorous bat in North America. It is only found in southern Florida and is the rarest bat in the United States (and possibly the world).

The ears of the Florida bonneted bat are round and forward-facing giving them the appearance of wearing a bonnet, hence the name. The lips of this bat are smooth without grooves or wrinkles. The Florida bonneted bat's diet consists of insects such as beetles, flies, and true bugs.

Fun Facts:

- The Florida bonneted bat is the largest insect-eating bat in North America and is about the size of a chipmunk.
- This bat uses an echolocation frequency that falls within the human hearing range unlike most of our other native bats.

Hoary Bat



Hoary bats are beautiful! These bats have blunt, rounded noses and small eyes. Their ears are short, thick, and round with a striking black border. When laid forward, their ears do not reach the bat's nostrils. The tragus in the ear is short and blunt.

The fur of the hoary bat is multi-colored with gray or silver tips that produces a frosted appearance. The body of this bat is covered in fur except for the undersides of the wings.

While moths make up the bulk of the hoary bat's diet, they also feed on flies, mosquitoes, beetles, small wasps, and more.

Fun Facts:

- These bats wrap their hairy tail membrane around their curled up bodies for insulation while resting during harsh weather conditions.
- Unlike most bats, hoary bats often give birth to twins.

Lesser Long-Nosed Bat



The **lesser long-nosed** bat has a triangular shaped, leaf-like flap of skin at the base of its long nose. This bat's nose fits perfectly into cactus flowers.

The tongue of the lesser long-nosed bat is about the same length as its body which allows it to reach the nectar of deep desert flowers. The tongue is tipped with brush-like features that help with nectar slurping.

The teeth of the lesser long-nosed bat are modified, having lost the cutting and crushing cusps that are needed for eating insects.

Fun Facts:

- This bat can reach flight speeds up to 14 miles per hour.
- Lesser long-nosed bats are important pollinators of desert plants in the southwest United States and northwest Mexico (see the pollen on the bat's face?). Their search for food may carry them 60 miles to find flowers.

Spotted Bat



The **Spotted bat** is striking in its markings and it has the largest ears of any American bat. The bat's ears are hairless, translucent pink and nearly as long as its body. And, it has pink wings to match!

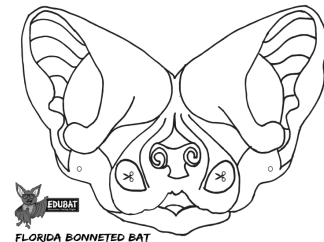
The spotted bat has small white patches under each ear. The tragus, located on the front of the ear, is very large. The bat also has a small, circular bare patch of skin on its throat. This bat cannot be confused with any other bat species!

The spotted bat is an insectivore, which means it eats a variety insects with moths being its favorite snack.

Fun Facts:

- The Spotted bat is named for its three white spots located over each shoulder and on the rump.
- The ears of the spotted bat are rolled up around its head when it is resting. When the bat becomes active they inflate with blood and unroll.

TOWNSEND BIG EARED BAT



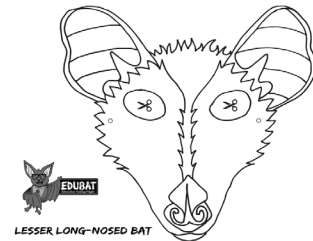
EDUBAT

FLORIDA BONNETED BAT



EDUBAT

HOARY BAT



EDUBAT

LESSER LONG-NOSED BAT

SPOTTED BAT

