

# Meet the Expert: Bats!

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## Distance Learning—Teacher Activity Guide

Bring a scientist into your classroom through a videoconference with an expert from the Carnegie Museum of Natural History! Explore the world of bats during a forty-five minute show and tell presentation.

Throughout our presentation, we will follow the scientific inquiry method. We will ask open-ended questions to encourage higher level thinking skills. As we investigate bats we will emphasize the importance of asking questions to encourage further inquiry into the world of a Chiropterologist.

### Objectives:

- Explain how bats survive their habitats
- Observe bat study skins at the Carnegie Museum via videoconference
- Interpret the difference between bat myth and bat fact

### Background Information:

Bats can be broken into two groups: Megabats and Microbats. Megabats are large and live in the tropical parts of the world. They eat fruit or drink nectar from flowers, and sometimes look for food during the day instead of at night. Microbats are usually much smaller than the megabat. They have small eyes and large ears. They eat mostly insects, fish, lizards, and birds. The vampire bat drinks blood from other animals.

Only about 5% of caves in the United States have the right temperatures and water conditions suitable for bats. Should you come across hibernating bats, its best to let them rest. A bat uses 30-60 days of stored energy to wake up out of hibernation.

### Helpful vocabulary for our videoconference:

- *Mammal*: a warm-blooded vertebrate animal of a class that is distinguished by the possession of hair, fur, or the production of milk by females for the nourishment of the young, and typically the birthing of the young
- *Nocturnal*: active mainly during night
- *Chiropterologist*: The scientist who studies bats
  - Pronunciation: [https://www.youtube.com/watch?v=Gsu8k3o\\_-NU](https://www.youtube.com/watch?v=Gsu8k3o_-NU)
- *Roost*: place where winged animals rest or sleep
- *Hibernate*: to pass time in a condition where the body temperature drops to a little above freezing and metabolic activity is reduced to nearly zero
- Microbat
- Megabat

**Pre- Conference Activity: The difference between bats and birds**

Bats are the only mammals that can truly fly. Birds fly, but they are in a separate scientific classification. Other than the characteristic of flight, are bats and birds alike in other ways? How are bats and birds different?

<b>Characteristic</b>	<b>Bat</b>	<b>Bird</b>
Animal can fly		
Give birth to young		
Has an inside skeleton		
Make nests		
Have fur		
Have feathers		
Have teeth		
Have hollow bones		
Have marrow filled bones		
Hibernate		
Breather air		
Use echolocation to get food		
Use eyes and ears to get food		

Key

<b>Characteristic</b>	<b>Bat</b>	<b>Bird</b>
Animal can fly	X	X
Give birth to young		
Has an inside skeleton	X	X
Make nests		X
Have fur	X	
Have feathers		X
Have teeth	X	
Have hollow bones		X
Have marrow filled bones	X	
Hibernate	X	
Breather air	X	X
Use echolocation to get food	X	
Use eyes and ears to get food	X	X

## **Post Conference Activity: Echolocation with Bats and Moths**

Some bats make high-pitched squeaking sounds to find insects. These sounds (usually too high-pitched for human ears to hear) bounce off objects in their path. Bats are able to determine what an object is and their distance from it, simply by listening to their own echoes. Bats also make noises that humans can hear—clickings, whinings, and squeaks.

### **Procedure:**

1. Blindfold one student. He/she will be that bat. Designate 4 to 6 other students to be moths. The remaining students form a circle around the bats and moths.
2. Both the bat and the moths can move. The bat calls out “bat” and the moths respond “moth.” Using the sounds, the bat must find and tag moths. Tell students that every time the bat calls out “bat”, he/she is pretending to be a bat sending out a high-pitched sound. When the moths reply “moth”, they are pretending to be the bat’s echo bouncing off the moth and back to the bat’s ears. As the moths are tagged, they join the students forming the circle.
3. You can also add more bats, making sure the bats don’t collide, or trees that stay stationary.