



Echolocation

Audience/Group Setting

Appropriate for a classroom or camp setting.

Goal

To understand how some bats use echolocation to navigate

Objectives

1. Students will rely on their hearing to locate other group members.
2. Students will attribute a bat's open mouth to the use of echolocation.
3. Students will conclude that bats are specialized to rely on echoes for navigation.

Big Idea/Main Message

Bats are highly beneficial to people. Bats play essential roles in keeping populations of night-flying insects in balance worldwide.

Conservation Action/Behavior Addressed

Bats are not scary or evil. In fact, they are an incredibly important part of so many environments. Active at night, bats are seldom seen but surprisingly important parts of people's daily lives. Many bats feed on night flying insects and act as important natural pest control. As a result, corn, cotton cucumber and other farmers save billions of dollars in pesticides. By reducing the need for pesticides, bats not only lower costs for farmers, they also help protect the environment.

Background Information

Bats navigate using reflected sound waves. This process, known as echolocation, allows these animals to "see" in the dark. To uncover objects, bats must first emit a series of sound pulses. These pulses travel outward and strike objects. The pulses are then reflected off the objects and return back to the bats. Detected by their large ears, the sounds are quickly analyzed by the brain's echolocation center.

Materials Needed

- Blindfold

Staff

One staff or volunteer.

Length of Activity

10 minutes.



Set up

Gather necessary supplies.

Procedure

1. Explain that bat use sound waves, echoes and their ears to navigate at night.
2. Form a large circle. Blindfold the bat and lead to the middle of the circle.
3. Appoint others to be moths and step inside the circle. Remaining students will enlarge the circle and be trees.
4. The bat calls for the insect by saying "Moth?" Moths reply "Here!" The bat must listen and tag as many moths as possible using only his or her sense of hearing. Continue for approximately 2 minutes. If a moth is tagged, it becomes a tree.
5. If the bat is too close to the edge, the trees whisper "Tree," and gently steer the bat towards the middle of the circle.
 - Why does the bat call out?
 - Why must the moths respond each time the bat calls out?

***Note – This activity was adapted from and used with permission of the Lubee Bat Conservancy**