

Bats of the Chihuahuan Desert

Echolocation

Demonstrating Echolocation –

Review the concept of echolocation.

[Echolocation is defined as the general method of locating objects using a sonar-like system by determining the time it takes for a sound to bounce off an object and the echo to return to the animal's sensory receptors—ears.]

Materials Needed:

- Bandana

See Resource File 1-All About Bats for the echolocation information and how a bat's eyes and ears impact their echolocation use.

Practice Echolocation –

Tell students: One way of describing how big-cupped ears hear better is to listen to a whisper with your eyes closed. Then cup your hands behind your ears and with your eyes still closed, listen to the whisper.

[Have students practice this by cupping their ears and closing their eyes. Then whisper (either to them or have them work in pairs) and see what they heard.]

Class Echolocation Game –

1. Arrange the students in a large circle.
2. Choose one student to be the bat and one student to be the moth. The rest of the students will be the trees.
3. Have the students who are trees stand still with their arms pressed to their sides.
4. Cover the bat's eyes with a bandana to simulate how bats use echolocation to pinpoint its prey. *Remind the students that bats aren't really blind. The student's eyes are covered only so they focus on echolocation and not on using their sight.
5. Ask the student 'trees' to remain quiet or they will disrupt the echolocation of the student 'bat.'
6. Lead the blindfolded bat and the moth to the center of the circle. The goal is for the bat to find the moth using echolocation.
7. Have the bat call out a 'PEEP.'
8. The moth is to reply or echo the 'PEEP' or clap their hands once in response. The bat must listen closely for the moth's response in order to find it. The bat can callout as many times as necessary to find the moth.
9. For every 'PEEP' made, the bat and moth can each take one step.
10. If the bat gets close to a tree, the student should whisper 'TREE.'
11. Once the moth has been captured, both the bat and moth become trees and new students should rotate in to play the bat and moth.
12. In following rounds, you can increase the number of moths and/or the number of bats.

Follow up questions:

- Was it harder to find dinner when there was only one moth or many moths?
- Was it harder to find dinner when there were more bats than moths?