

Bats!

Did you know there are at least 12 species of bats found throughout Illinois? Join us as we explore our nighttime, bug-eating friends and learn how they help us.

Big Idea

Students will learn about bats through sensory exploration

Standards

11.A.ECd Collect, describe, compare, and record information from observations and investigations.	Students will investigate bat habitats using various books and resource materials, and use the information they gather to construct a bat habitat.
12.A.ECa Observe, investigate, describe, and categorize living things.	Students will investigate the ways in which bats communicate and hunt for food and describe those processes.
12.B.ECa Describe and compare basic needs of living things.	Students will identify the basic needs of bats, including the resources necessary for a successful colony.

Materials

- Books on bats
 - *Bats* by Gail Gibbons
 - *Bats: Night Fliers* by Betsy Maestro
 - *Bats! Strange and Wonderful* by Laurence Pringle
 - *Amazing Animals: Bats* by Kate Riggs
- Two cups or containers of
 - 1/4 cup of coffee beans
 - Two cinnamon sticks
 - One orange slice or segment
 - One sprig of lavender
 - Any other solid, odorous material
- Bowl of water
- Fake insect
- Fabric
- Blocks

Setup

At least two tables will be needed for this activity: One for an echolocation activity and one for a sensory activity. The third activity will happen around the classroom.

Directions

1. In the first station, students will explore echolocation.
 - a. Bats are nocturnal mammals, meaning they are active at night and rest during the day. Because they can't see well in the dark, they have adapted a way to help them hunt better at night. They use sound to locate their prey through a process called echolocation. Dolphins, whales, shrews, and some species of birds use echolocation also.
 - b. Using a bowl of water, students can observe soundwaves bouncing off their "prey" as they tap the water. Simply place a fake insect in one end of the bowl and tap the water at the other end. Have students observe what happens to the waves when they hit the insect. This is similar to echolocation, as the bat feels the vibrations – or waves – being sent back to them from the insect.
2. At the second station, students will engage in a sensory smell and hearing activity.
 - a. This activity simulates the way female bats are able to care for and identify their young. Female bats live in maternity colonies as a way to protect their young while they are out hunting for food. More than 1,700 mamas and their babies can live in one colony. They use their keen senses of hearing and smell to find each other. Each mama bat knows the sound of their pup's cry and how they smell. Students will use both sound and smell during this activity to match up the sensory cups, similar to how the mama bats find their young.
 - b. For this activity, prepare various cups or containers with concealed odorous solids inside, such as coffee beans, cinnamon sticks, lavender, orange segments, or herbs. You will need two of each object and will need to ensure that all cups/containers are the same size and contain the same amount of each substance (for example, two cinnamon sticks per two containers, a quarter cup of coffee beans per two containers). Solids are preferable to liquids to avoid spilling, as the students will be shaking the materials to listen to the sounds they make.
 - c. Students can take turns shaking and smelling each container, searching around the table for the matches. Once they've identified two cups that make the same noise and smell the same, they can pair them off and move on. Using both of these identifiers, students simulate how mama bats search for their young.
3. At the third station, students will create a cave, bridge, tree or any other habitat they think will be safe for bats.
 - a. Depending on space, students can either use various blocks and manipulatives to create their structures, or they can explore the classroom and create a place within the classroom they think could serve as a bat fort. During this portion of the activity, it could also be helpful to play a recording

of bat noises to simulate the environment bats experience within their colony. Further, books and pictures of bat colonies and habitats can be displayed to give students a general idea of what bats need within their habitat, or the types of places they like to live. Fabric and other materials can be presented as well to provide students with various building materials. Students should create their habitat and present their habitat to other students, providing rationale for why they chose to construct the way they did.

Investigation Questions:

- Why do you think bats hunt using echolocation?
- Why are you choosing those materials for your bat habitat?
- What do you think is important to bats when finding a habitat?
- Why do you think the bat colony is so noisy?
- What's easier to match – the sound, or the smell of these objects?