

## TEKS-Based Activity for Grade 4

# Come to Mommy

### Description:

In this activity, students model how mother bats identify their young by smelling and listening for their pups.

### Time Frame:

2 lessons (45 minutes each)

### Correlation to Texas Essential Knowledge and Skills:

During this activity, students will be exposed to the following Texas Essential Knowledge and Skills:

**Note:** Some TEKS statements below end with a ; or *and* and nothing thereafter—this indicates that further TEKS statements follow but are not included here.

**(4.8) Science concepts.** The student knows that adaptations may increase the survival of members of a species. The student is expected to:

- (A) identify characteristics that allow members within a species to survive and reproduce;

**Note:** The TEKS listed here are the main content TEKS for this activity; however, this activity may also cover additional content and process skills included in other TEKS.

### Materials:

Various scented stickers (1 per student group)  
Bat shape cutout (1 per student group)  
Blindfolds (enough to blindfold each member of one student group at a time)  
Shoebox-sized containers (1 per student group)  
Come to Mommy questions (included at the end of this activity)

### Background Information for the Teacher:

Although bats can fly, they are not birds. Bats are the only mammals capable of true flight. They have greatly modified forelimbs with leather-like skin stretched between the elongated digits of their hands. Most bat species also have a membrane of skin stretched between the tail and the hind legs that aids in maneuvering through the air.

Bats usually sleep during the day and hunt for food at night. Many use a process called echolocation to find food and to “see” in the dark. Echolocation works by sound waves. The bat sends out sound waves, and when the sound waves hit an object, an echo comes back to the bat. Bats’ ears are large and sensitive to sound, and they are able to identify objects from their echo.

Most bats roost together in large groups called colonies. Bat babies, called pups, are born in the early summer. They stay with the colony until they are about six weeks old, when they start to hunt for food with their mothers. Bats have such a highly developed sense of smell that each mother bat can find her pup anywhere in the colony. Mother bats can also locate their pups through special sounds.

Bats usually live in caves or trees, but they also live under bridges, in tunnels, and in barns or other buildings. Although bats would prefer to stay away from people, lack of habitat has forced some bats to live in urban areas. A famous urban bat colony is located in Austin, Texas, under the Congress Avenue Bridge. The bridge is home to 1.5 million Mexican free-tailed bats. Every night during the summer, the bats emerge from under the bridge and consume 5 to 15 tons of insects.

### **Advance Preparation:**

Purchase or prepare a bat-shaped cutout for each student group. Place a different-scented sticker on each bat shape.

### **Procedures:**

#### *Task 1*

1. Give each student group a bat shape with the scented sticker attached. Tell them they will pretend to be mother bats trying to find their bat pups by using their sense of smell. Have students scratch and smell their stickers. After they have memorized the scent, collect the bat pups and place them in a container.
2. Have each student group come to the container to sniff out their bat pup. They should all be blindfolded while they smell each of the bat pups. After they identify their bat pup, they can remove their blindfold and put their bat pup back in the containers.
3. Ask students, “Was it easy or difficult to identify your pup? Would it be easier or more difficult to identify your pup if all the stickers had the same scent?”

**Note:** You may want to extend this experience by using stickers of the same scent to illustrate how difficult it is to identify their specific bat pup from the others.

4. Tell students that the mother bat’s sense of smell is so developed that she can easily locate her pup amongst all the other, similar-smelling pups. This is an adaptation that appears in many animals. Have the students give examples of other animals that have a strong sense of smell. Ask students if they are aware of other animals that use their sense of smell to identify their babies. Ask if they think people could find their babies using only their sense of smell. Why or why not?
5. Ask students what other ways mother animals can recognize their young.

*Task 2*

1. Clear the center of the room. Put students into pairs and ask them to select a unique sound that will help them identify each other in a crowd. Then have them decide which one will be the mother bat and which will be the bat pup.
2. Move mother bats to the center of the room and bat pups to one side of the room. During the first round, half of the mother bats will be blindfolded and half will serve as guides; during the second round, they will switch.
3. At the teacher's signal, the bat pups will slowly move around the room making their unique sounds. The mother bat guide will follow the directions of the blindfolded mother bat to find her bat pup. As soon as the mother bat finds her pup she can remove her blindfold to see if she has correctly identified it. After this round is complete, begin round two.

**Note:** You may want to have students change roles so that the pups become the mothers and the mothers become pups.

4. Ask students, "Was it easy or difficult to identify your pup?" Then tell students that the mother bat's sense of hearing is as well developed as her sense of smell is, so she can easily locate her pup among all the others. This is an adaptation that appears in many animals. Have the students give examples of other animals that have a strong sense of hearing. Ask if they think people could find their babies using only their sense of hearing.
5. Give each student a copy of the Come to Mommy questions and discuss some of the questions once they have independently answered them all.

## Come to Mommy

### Questions

1. Could you identify someone in your family using only your sense of smell? Who might that be? Explain.
2. List ways of knowing what the cafeteria is serving for lunch without reading the menu.
3. How does having a keen sense of smell help bats?
4. Could you identify someone in your family using only your sense of hearing? Who might that be? Explain.

5. How can you tell when there are several classes in the cafeteria?

6. How does having a keen sense of hearing help bats?