



# Meet the Stars!

## Teacher Lesson Plan

### Bats in our Backyard Post-Visit Lesson

**Duration:** 30-45 minutes

**Minnesota State  
Science Standard**

**Correlations:**

3.4.1.1.2

**Wisconsin State  
Science Standard**

**Correlations:**

C 4.1, C 4.2

**Supplies:**

- 1) Appendix I:  
PowerPoint,  
slides 4-11
- 2) Area in room  
with walkway
- 3) Copies of 'Meet  
the Stars' bats
- 4) Optional: copies  
of Appendix II,  
scale, dried red  
beans, large  
binder clips.

**Overview**

Students identify the seven species of bats native to Minnesota and develop an appreciation of biodiversity through role play and models.

**Objectives**

1. Students will recognize seven different species in the Minnesota bat community.
2. Students will identify similarities and differences between bat species.

**Background**

There are more than 1,250 species of bats; 47 species live in the USA. There are seven species of bats native to Minnesota. They are all insectivores (eat insects) and they all rely on echolocation to navigate. They are small bats (wingspans under 16 inches). They live in caves, trees, buildings, and underneath bridges. They vary in size; the smallest is the tri-colored and the largest is the hoary bat. The big brown bat and little brown bat stay in Minnesota all year and are usually the ones found in homes trying to hibernate. The other five bat species migrate south to spend the winter.

# Meet the Stars!

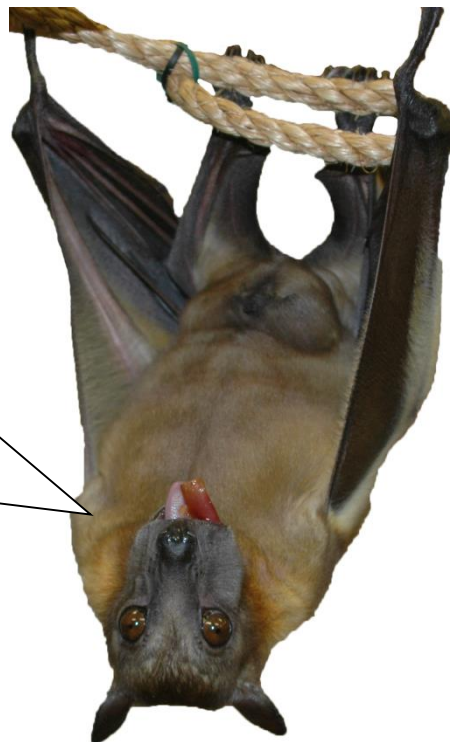
## Procedure

- 1.) Introduce Minnesota's bats using the PowerPoint to show color pictures. Have students point out distinguishing characteristics of each bat (color, ear, nose, etc.)
- 2.) Split students into seven groups. Give each group one of the "Meet the Stars" bats. Within each group, tell each student to choose a few different interesting facts to remember about their bat.
- 3.) Have a red carpet/celebrity walk. Each student presents themselves as a bat and shares their interesting fact. (Example: "I am a hoary bat. My name means 'grey hair.'")
- 4.) Discuss why bats should be considered "stars" in the Minnesota ecosystem. (Possible answers are biodiversity, eat insects, etc.)
- 5.) Optional Bat Models: Minnesota bats are relatively small and it can be interesting to show students the variety in size. Print and cut out the bat outlines provided in Appendix II. You can also have students feel how light bats are by counting out the number of dried red beans or large binder clips it would take to weigh as much as one bat.

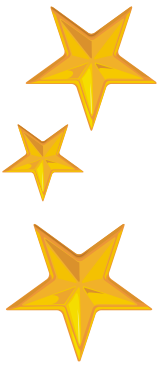
## Assessment:

- 1.) How are bats different from other mammals? *They fly and use echolocation.*
- 2.) How are bats similar to each other? *They have fur, eat insects, are small, have small eyes, have big ears, etc.*
- 3.) How are Minnesota bats different from each other? *Color, size, migration, habitat, life span, etc.*

*Did you know there  
are more than  
1,250 species of  
bats in the world?  
47 species live in  
the USA.*

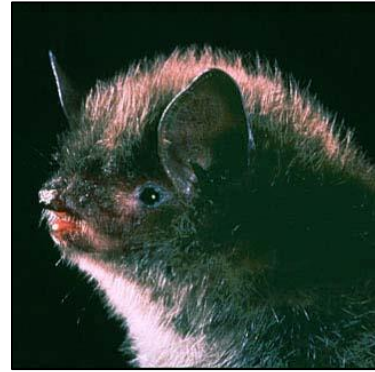


## Meet the Stars!



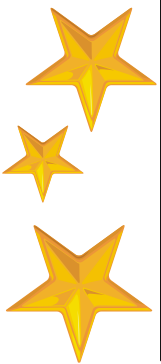
### Big Brown Bat

I have light to dark brown fur. I am 3.4-5.4 inches long with a wingspan of 13-16 inches. I weigh 0.4-0.8 oz. I like to stay in Minnesota for winter, and sometimes hibernate in buildings when I cannot find a better place. I am Minnesota's most common bat!



### Little Brown Bat

I have glossy pale tan or brown fur, with extra-long hair on my toes. I am 2.5-4 inches long with a wingspan of 9-11 inches. I weigh 0.2-0.5 oz. I like to stay home in Minnesota and hibernate in winter. I can live over 30 years!



### Hoary Bat

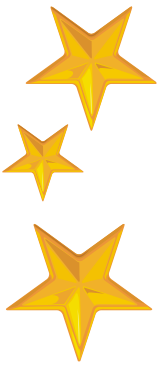
I have dark fur with silver tips ('hoary' means 'grey hair'). I have short, round ears and a furry tail. I am 5.1-5.9 inches long with a wingspan of 13-16 inches. I weigh 0.7-1.2 oz. I live in trees. I migrate long distances to the south to spend winter in warm places like Texas. I am Minnesota's largest bat!



### Silver-Haired Bat

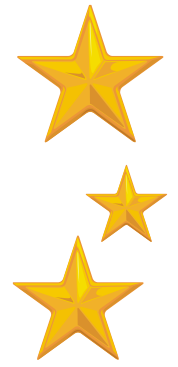
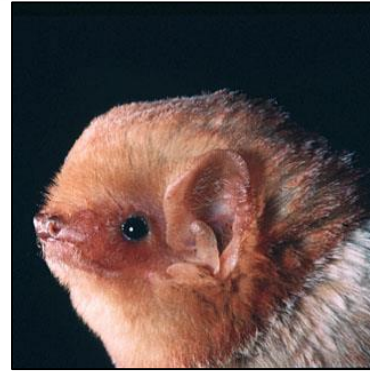
I have black or silver fur and black wings. I am 3.6-4.6 inches long with a wingspan of 11-13 inches. I weigh 0.3-0.4 oz. I live in trees. I migrate south to spend the winter in warm places. I can live up to 18 years!

## Meet the Stars!



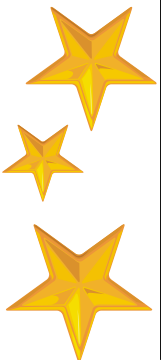
### Tri-Colored Bat

I am also known as "eastern pipistrelle." My head and tail are dark and my belly is light. I am 3-3.6 inches long and have an 8-10 inch wingspan. I weigh 0.2-0.4 oz; I am the smallest bat in Minnesota! I like to migrate south to hibernate in warmer places during the winter, but I always return in the spring to raise my twin pups!



### Red Bat

I have reddish fur and long, pointed wings. I am 4 inches long with a wingspan of 11-13 inches. I weigh 0.4-0.5 oz. I live in trees. I migrate south to spend the winter in warmer places. I sometime like to hibernate by sleeping in dry leaves on the ground!



### Northern Myotis

I have fluffy pale or dark brown fur. My ears, wings and tail are black. My ears are the largest of the Minnesota bats! I am 3.2-3.8 inches long with a wingspan of 9-11 inches. I weigh 0.2-0.4 oz. I migrate in early fall to hibernate in warmer southern temperatures. I can live up to 18 years!

## Important Terms

**Adaptation** - Changes made by living things in response to their environment (where they live).

**Cones** - Cells in the retina of the eye which are responsible for color vision as well as eye color sensitivity; they function best in bright light, as opposed to rod cells that work better in dim light.

**Echolocation** - Locating objects by reflecting sound.

**Endotherm (warm-blooded)** - Animals that generate their own body heat. They are able to raise their body temperature by shivering or eating to increase energy, or lower their body temperature by sweating or panting.

**Hibernation** – A resting state some animals enter in the winter where their heart rate slows, their temperature drops, and their body survives off of fat reserves.

**Mammal** - A warm-blooded (endotherm), vertebrate animal with fur/hair that gives birth to live young, feeds its young milk, and breathes through lungs. This group includes dogs, cats, bears and cows.

**Megabat** – There are 166 species found in Africa, Australia, and Asia. They have fox like faces with long noses, large eyes, and small ears. They rely more on their vision than echolocation and eat fruit, nectar, and flowers.

**Microbat** – There are 759 species found worldwide, they rely on echolocation more than vision so they usually have large ears and small eyes. Micro-bat species primarily eat insects, but some eat nectar, fruit, flowers, fish, or small animals. Three species of micro bats drink blood.

**Nocturnal** - Most active at night.

**Retina** - The light sensing part of the eye that also holds the rods (vision at low light levels) and cones (vision at high light levels, color vision).

**Rods** - Cells in the retina of the eye that work better in dim light.

**Vertebrate** - An animal with a backbone.