A Bat Like That

Compare two bat poems and discuss how people's attitudes toward bats differ. Discuss some amazing bat trivia.

Objectives:
List some of the many reasons people don't like bats. Explain why bats are important to people and other animals.

Ages:
Grades 3-8

Materials:
- chalkboard or easel paper
- markers
- copies of the worksheet
- copies of the poems

Subjects:
Science, Language Arts

Say the word "bat" and most people cringe. But the fear and disgust that many people feel toward bats is unfounded. Bats are actually gentle and intelligent and, contrary to popular belief, rarely transmit rabies. In this activity, your group will get a chance to explore their feelings about bats and find out more about these amazing flying mammals.

Part 1: What's a Bat?

Start by listing the words and phrases shown below on a chalkboard or large piece of easel paper. (Don't write down the answers, which are shown in parentheses.) Then have the kids decide as a group whether each word or phrase describes all bats, some bats, or no bats and write the word *all*, *some*, or *none* next to each phrase.

black or brown (some)
warm-blooded (all)
larger than a mouse (some)
eat insects (some)
hang upside down (all)
make sounds people can't hear (some)
eat fish (some)
orange (some)
walk on the ground (some)
suck blood (none, but some lap blood)
swim (some)
hibernate (some)
cold-blooded (none)
migrate (some)
nest in people's hair (none)
active at night (some)
spread rabies (some)
make sounds people can hear (all)
live more than 30 years (some)
eat fruit (some)

Leave the list up and tell the kids that they will find out later how many they got right. Then pass out copies of the bat worksheet. Explain that bats are a very diverse group of mammals and that there are nearly 1000 different species in the world. Have the kids try to fill in the letter of the correct answer on their sheets as you read each question and the multiple choice answers listed below. (An

asterisk indicates the correct answer.) Discuss each question as you go along, as well as the other trivia facts listed on the page.

Afterward, go back to the original list of words and phrases and check to see how many the group got right.

Bat Trivia

1. The largest bats in the world are the flying foxes of Australia and Southeast Asia. Many of these fruit- and nectar-eating bats have furry, fox-like faces and wingspans that stretch _____
   a. about a foot
   b. about three feet
   c. about six feet*

2. The smallest mammal in the world is a called the bumble bee bat. It weighs _____ and its body is slightly larger than a jelly bean.
   a. more than an orange
   b. about the same as a half dollar
   c. less than a dime*

3. Some bats live in colonies made up of more than _____ individuals.
   a. 20 million*
   b. 2 billion
   c. 100,000

4. Many bats have unusual facial features, such as huge ears and strange nose flaps, that _____
   a. help them fly
   b. help them attract a mate
   c. help them navigate and find food*

5. Most bats feed on insects. Some can catch over _____ fruit flies in an hour.
   a. 1000*
   b. 250
   c. 10,000

6. Female bats usually give birth hanging upside down. Their normal litter size is _____
   a. 5-7
   b. 1*
   c. more than 10

7. Vampire bats use their sharp incisors to make a tiny slit in their prey's skin. As blood oozes out, they lap it up. These bats usually feed on the blood of _____
   a. people
   b. reptiles and very small mammals
   c. large birds and mammals*

8. Nectar-feeding bats have long tongues with feathery tips that reach deep into night-blooming flowers. Many of these long-tongued bats are important plant pollinators in _____
   a. parts of North America only
   b. parts of Asia and Australia only
   c. all tropical parts of the world*

Part 2: Bat Poetry

Pass out copies of the poems and have the kids read both poems and compare them, using these discussion questions as guidelines:

- *What feelings did you get from each poem?*
- *How are the poems different? How are they alike?*
- *Which poem agrees most with how you feel about bats?*
- *Do you think both poems are scientifically accurate? Why or why not?*

As you discuss the poems, you might want to ask the kids how poetry expresses feelings and facts differently from prose. (Poetry combines the sound [meter and rhyme] and meaning of language to create ideas and express feelings and facts. Unlike most poetry, prose usually has no regular meter or rhyme.)

As a follow-up, have the kids try to write their own bat poems, focusing on bats in general or on a specific type of bat. Have the kids illustrate their poems and read them to the rest of the group.

Adapted from "A Bat Like That," Ranger Rick's NatureScope Amazing Mammals Part 2. *National Wildlife Federation, 1998.*

Background

Some catch fish. Some eat scorpions. Some lap blood. Some swim. Some live to be more than 30 years old. And all of them fly. Yes, bats can do all of these things and more. Although many people lump all bats together, there are actually nearly 1000 different species of bats, making them one of the most diverse mammal groups in the world.

Wings and Things: Unlike all other mammals, bats have true wings and can fly. Their wings are actually modified arms, which are somewhat similar to human arms. Just like humans, bats have large upper arm bones that connect to their shoulders. But their forearms are unusually long, and four of their fingers stretch out to form the foundation of the wing. A skin-like membrane, thinner than the thickness of a plastic bag, covers the fingers and forearms and stretches to the shorter hind legs and feet. Although this thin wing membrane sometimes covers the tail, it never covers the claws on the hind feet or the thumb.

Even though bats are super fliers, they can get around in other ways too. The powerful claws that many bats have on their thumbs allow them to climb along rocky cave walls, tree branches, and other surfaces. Bats can also walk on the ground, supporting themselves on the joints of their wrists, with their wings folded tightly to their sides. And most bats can swim, using their wings as paddles.

Bats also do something that most other animals can't—they hang upside down for long periods of time. Using the sharp, curved claws on their hind legs as hooks, they can hang from branches, overhangs, and ledges. Some bats also have sucker-like discs on their thumbs and feet that allow them to stick to smooth surfaces.

Dividing the Bats: You won't find any bats in Antarctica. But you will find them on every other continent. Mammalogists have divided the bats of the world into two main groups: the *megabats* and the *microbats.* Although the two groups are separated from each other because they have different wing, claw, and skull characteristics, many of the bats in both groups look alike and have similar habits.

Generally, the megabats are larger than the microbats, have better eyesight, eat fruit, nectar, or pollen, and usually do not hibernate. Microbats, on the other hand, are usually smaller, rely' on their ears more than their eyes to find food, eat mainly insects, and usually hibernate in winter. But some microbats are fruit eaters. Most of the large megabats, such as flying foxes and other fruit-eating bats, live in tropical parts of Australia, Asia, Africa, and the Pacific. The smaller insect eaters are found in the Americas, as well as throughout Europe, Asia, Africa, and Australia.

Bugs, Blossoms, and Blood: Bats feed on a variety of foods, including frogs, fish, birds, insects, fruit, nectar, pollen, and blood. And each type of bat is adapted to its own feeding specialty. For example, some fruit bats have long tongues for probing deep into blossoms to lap up nectar. Vampire bats have special heat sensory organs on their faces that allow them to locate blood vessels on their prey. And fishing bats grab slippery fish with special hook-like claws.

Bouncing Off the Walls: Many of the small microbats have an amazing way of catching insects and other prey. Instead of using their eyes to spot food, they use their ears to listen for it. These bats make a series of high-pitched, squeaking sounds (usually too high-pitched for human ears to hear) that bounce off objects nearby. By listening to the returning echoes, these bats can judge the distance to objects in their path. Using this *echolocation* system, bats can catch fast-flying insects or darting fish, and at the same time avoid branches, wires, and other obstacles. (Several other types of mammals, including dolphins, shrews, and tenrecs, use echolocation to find food too.) Bats also make noises that people *can* hear, from whining and clicking sounds to loud twitters and squeaks.

Waiting Out the Winter: How do microbats make it through the winter? Some "sleep" through it, hibernating in caves, buildings, or other shelters. Others move to warmer, insect-rich areas. The hibernators usually choose a spot that maintains a fairly constant temperature throughout the winter. (That's why caves are so popular.) Looking like furry carpets, many bats hibernate in huge groups, although some species hibernate alone. And sometimes two or three different species hibernate together, hanging side by side. As hibernation begins, a bat's internal system slows way down. Their body temperature may fall from 104°F (40° C) to lower than 32° F (0° C) and their breathing can go from 200 breaths a minute to fewer than 25.

And during hibernation, as their fat reserves vanish, their plump little bodies shrink like slowly deflating balloons.

Migrating bats often travel hundreds of miles to escape cold weather and find the food they need. Some travel in huge flocks, migrating with birds that also are heading south for the winter. Others travel in smaller groups and go much shorter distances. (Fruit-eating bats of the tropics migrate only when fruit, nectar, or pollen supplies are depleted.)

Bat Babies: Home life for a young bat varies, depending on the type of bat. Some bats grow up in crowded maternity caves, with tens of thousands of other bat babies and mothers. Others grow up in small groups or alone with their mother in a sheltered spot.

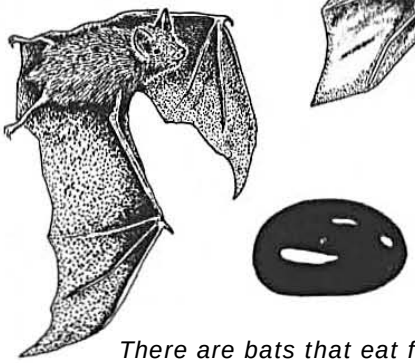
Most bats are born tiny, wrinkled, and naked. And unlike many types of baby mammals, bat pups often have a full set of milk teeth at birth. These tiny teeth have hooked ends that enable baby bats to cling to their mothers' teats. Although some fruit bat babies will hitch a ride on Mom when she flies off to look for a meal, other bat pups are left "hanging around" at home until they are old enough to fly.

Not Batting a Thousand: Although bats are getting better press than they once did, most people still don't realize how important bats are to the world's ecology and how harmless they are to people. Not only are bats great insect eaters, they are also important pollinators-especially of plants in the tropics. But like many mammals, bats in many areas are having a difficult time surviving because of habitat loss and other problems. Some are killed for food. Others succumb to pesticide poisoning or disturbances from spelunkers and well-meaning biologists. And many are killed out of fear or ignorance.

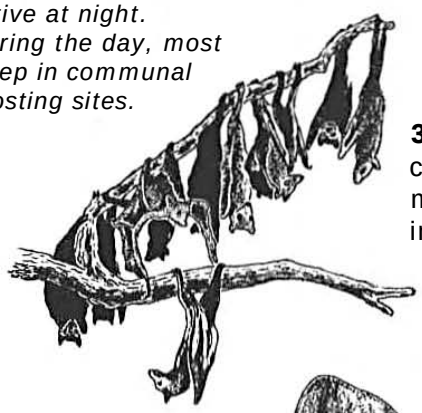
Bats Worksheet

1. The largest bats in the world are the flying foxes of Australia and Southeast Asia. Many of these fruit- and nectar-eating bats have furry, fox-like faces and wingspans that stretch _____

2. The smallest mammal in the world is a called the bumble bee bat. It weighs _____ and its body is slightly larger than a jelly bean.



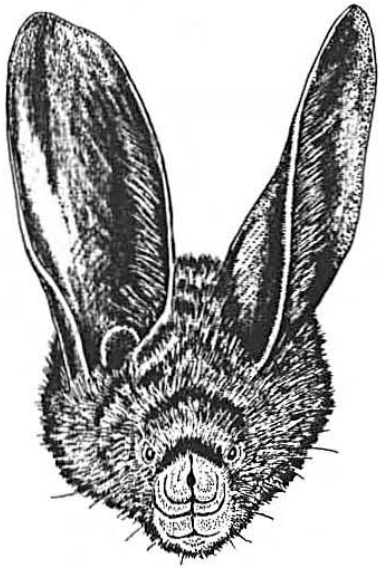
Almost all bats are active at night. During the day, most sleep in communal roosting sites.



3. Some bats live in colonies made up of more than _____ individuals.

There are bats that eat frogs, mice, scorpions, birds, and even other bats.

4. Many bats have unusual facial features, such as huge ears and strange nose flaps, that _____



Not all bats are black or brown. Some have red, tan, olive-green, blue-gray, white, yellow, and even orange fur.

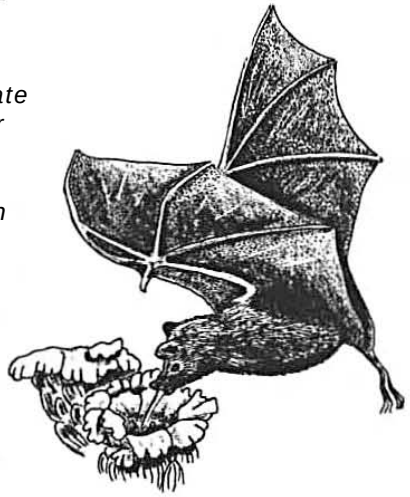
5. Most bats feed on insects. Some can catch over _____ fruit flies in an hour.

6. Female bats usually give birth hanging upside down. Their normal litter size is _____

Some fishing bats use echolocation to find minnows. These bats have special hook-like claws that grip their squirming, slippery prey.

7. Vampire bats use their sharp incisors to make a tiny slit in their prey's skin. As blood oozes out, they lap it up. These bats usually feed on the blood of _____

Many bats hibernate in caves and other protected places during the winter. During hibernation some bats lose as much as 30% of their body weight.



8. Nectar-feeding bats have long tongues with feathery tips that reach deep into night-blooming flowers. Many of these long-tongued bats are important plant pollinators in _____

Bat Poetry

Behold the Bat

Bats are ugly, ugly, ugly,
Grotesque little faces,
Warty snouts,
Tiny teeth in alien mouths.
Friends of witches, friends of trolls,
Wrinkled parchment wings unfold,
Stretched-out finger bones and skin,
So very, very, bat-like thin.
Darkness makes bats come alive,
Hairy bodies, piercing eyes.
Darting, swooping, diving demons,
Of caves and graves and hidden dens,
Moonlight madness, high-pitched beeps,
Bats give human beings the creeps.

Bat Watching

Some people are horse fans,
Others love cats,
And some like snakes and their kin.
But I love bats,
With their furry snouts,
And stretched-out wings of skin.
Can you imagine
How hard it would be
To catch hundreds of darting flies,
Or nab tiny moths
On the wing in the dark
Without ever using your eyes?
Or think about hanging
All day by your feet,
With your body turned upside nmlVr
The world must look different
From a bat's point of view,
With everything twisted around.

But hanging around
Is only for days,
'Cause when twilight fades into night,
Many bats hit the skies
In search of flies
And other insect delights.
So while most other people
Are fast asleep,
With their cats and dogs cuddled tight,
J'm out walking,
Late at night,
Watching bats swoop around at a light.