

Bats

Objective: Myths about these flying mammals will be squashed in this lesson as well as how humans benefit from and share some bat characteristics.

I. Bats in the Animal Kingdom

A. Mammals

- Birth to live young
- Warm blooded
- Spine & Internal Skeleton
- Fur

B. Similarities to Humans

- Mammals
- Human hand and Bat wing
- Diet

II. Myths & Explanations

A. Bats fly around and get stuck in your hair.

- Truth is that bats are excellent acrobatic flyers and rarely ever run into anything including your hair. Through their use of echolocation, bats “sense” where they are when they are flying around.

B. Bats are really just flying mice.

- Bats are not in the mice or rodent family but in the family Chiroptera.

B. Bats are rabid and will infect humans by biting them.

- Bats seldom carry rabies and even when they do they don't go “mad” and try to attack people. They show no outward signs of being rabid, but are usually lethargic. Records show that less than 10 people in the U.S. are known to have contracted rabies from bats.

C. If a Bat poops in your hair, your hair will turn gray or fall out.

- Scientists often study bats in caves and get pooped on by lots of bats and none of them have had their hair turn gray or fall out.

D. If you drink a bat's blood you will become invisible.

- This is a legend that has been traced back to the island of Trinidad and it's completely false.

E. If you place a picture of a bat under your pillow it will prevent you from sleeping.

- This legend is from ancient Greece and Rome and doesn't seem to work!

F. Bats are blind.

- Not true, bats actually see very well.

III. Truth

A. Bats are considered nature's best bug control.

- Seventy percent (70%) of the bat species are insect eating bats or insectivores. Many of these bats can eat one bug every 6 seconds. This is up to 600 bugs an hour. Besides mosquitoes, bats also eat crop-destroying pests like moths, locusts, grasshoppers, etc. Bats living near your home could keep you free of insect bites and other troubles caused by flying insects. This is why bat houses are becoming popular.

B. Trees in Africa and South America depend on bats to spread their seeds.

- Bats that live on fruit can eat up to three times their body weight in a night. As the seeds of that fruit pass through the bat in 15 - 20 minutes, they end up on the forest floor. The short-tailed fruit bat in South America can scatter 60,000 seeds in a single night. In Africa the baobab tree is considered the tree of life. It is food and shelter to many animals including man. The Egyptian fruit bat sustains the baobab tree.

C. Night blooming flowers depend on bats for pollination.

- Like the seed dispersal, a bat can also be important to a plant for pollination. Like a bee, a bat will fly from one night flower to the next gathering nectar and spreading pollen as it goes. Many plants in the American Southwest such as the saguaro cactus and the agave plant depend on bats.

D. The scientific name for bats is Chiroptera meaning "hand-wing".

- A bat's wing is very close in structure to a human hand. They have four fingers and a thumb. Their arm is made up of a forearm, an elbow, and an upper arm. The fingers are very long and support a thin leathery skin that makes their wings. A bat can change his wing shape as easily and as quickly as you can move the fingers on your hand.
- E. Bats are the only mammals that can fly.
- The closest flying mammal is the flying squirrel. He has skin between his legs that stretches out when he jumps from the trees allowing the squirrel to glide great distances. Still, the flying squirrel does not fly.
- F. The largest bat has almost a 6-foot wingspan.
- There are two categories for bats: Megabats and Microbats. "Mega" refers to the larger bats and "Micro" to the smaller. More than just their size, they also differ by where they live and what they eat. The Megabats live in the warm tropical climates and tend to eat fruits and nectar. The bats in this category can have a wingspan up to six feet and be the size of your two year old little brother.
- G. The smallest bat weighs less than a penny.
- There are two categories for bats: Megabats and Microbats. "Mega" refers to the larger bats and "Micro" to the smaller. More than just their size, they also differ by where they live and what they eat. The Microbats live in cooler to moderate climates like the USA and mostly feed on insects. If you live in Europe or North America, the bats you see on a summer evening are Microbats. These tend to be smaller animals similar in size to a hamster.
- H. Besides night insects, bats eat fish, frogs, fruit, nectar, and blood from other mammals.
- Since there are nearly 1000 species of bats and they live all over the world, you can imagine that they eat a variety of foods. About 70% of the bats in the world eat insects that fly at dusk or dark. Because of the effort of flight and the need for some to hibernate, bats have to consume a lot of food. There are some bats that eat small aquatic animals and can detect a fish near the surface of the water. About 20% of the bat species eat ripe fruit and nectar from night blooming flowers. And of course, there are a few that drink the blood of large animals.
- I. There are almost 1000 species of bats and three are considered vampires.
- The legend of vampires was known in Europe long before the explorers discovered vampire bats in Central and South America. So these bats got their name from the legends. Of the 1000 species, only three are considered vampires. These smaller bats use their front fangs to puncture the skin of a sleeping cow or horse and then they lap up the blood (they don't suck). In order to keep the blood from coagulating, the bat's saliva contains a chemical that thins the blood. This chemical could be very valuable to our health.
- J. Bats have only one baby a year.
- Baby bats or pups are very small and defenseless when they are born. They are usually born in large colonies with thousands of babies squeezed together hanging from the ceiling of a cave. This keeps them warm and safe. A mother must use smell and recognize the cry in order to locate their own pup in the crowd. It is several months before a baby is able to fly and hunt alone. Until then it relies on mother's milk for food.
- K. Insect eating bats use echolocation to find and catch food.
- Though a bat's eyesight is pretty good, many have the added skill of echolocation. Like a dolphin's sonar, a bat will let out high-pitched pulsing sounds from its mouth or nose. The sound bounces off of obstacles and food and echoes back to the bat giving them information about the size, shape, identity and direction of flight of the object. As a bat zeroes in on the prey, the echo pulses increase and the hunt is refined. Using echolocation, a bat can locate food as thin as a human hair.
- L. Bats in cooler climates hibernate or migrate during the winter.
- The night flying insect population greatly decreases in the winter time. Because of this, many bats must move south (migrate) or slow down their bodies and sleep for several months (hibernate). Bats that migrate will fly down to where the weather is warm and the insect population is still large. Migration requires a good fat storage. Like the bear and skunk, some bats hibernate during the cold winter months. They too must store up on fat supplies to make it through the winter as they drop their body temperature and slow down their heart and metabolism.