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4-H Pollinator

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POLLINATORS ISSUE

The Bat



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BATS, BATS AND MORE BATS



OVER 1,300 SPECIES

Bats are shy, gentle creatures, and are the only mammals that can fly. As mammals, they are warm-blooded, and generally have one baby, or pup, per year. The newborn pup is remarkably large at birth – almost a third the size of its mother. Imagine if human babies were born a third the size of their moms! The pup clings to its mother's fur, and nurses milk for a couple months, tucked near the mother's armpit for warmth and safety.

BATS AS POLLINATORS

Bats are nocturnal, which means they are awake and active during the night. They feed on bugs, fruit, frogs, fish and nectar from flowers. Nectar-feeding bats fly to a flower and use their long snouts and tongues to dip in and out of the flowers, while their powerful wings keep them hovering in mid-air. There are tiny hairs on their tongues that serve as miniature spoons to scoop and drag up the delicious sap. While they eat this tasty nectar, some pollen gets on their fur and transfers to other flowers as they make their feeding rounds. That transfer of pollen from one flower to another helps flowers reproduce, and is what makes bats such important pollinators. This is what's called a symbiotic relationship, which is when both organisms benefit.

DID YOU KNOW?

There are three kinds of vampire bats. As their name suggests, these are bats that drink animal blood. They live in Central and South America, as well as in the Amazon Rainforest. One species only feeds on birds, while the others drink blood from sleeping or wounded animals such as wildlife, cattle or horses. They seldom suck it out, but instead they use their tongues to lap it up. They rarely drink human blood, and this has only been reported to occur in the Amazon. In fact, bats generally fear humans and avoid them as much as possible.



ANATOMY OF A BAT

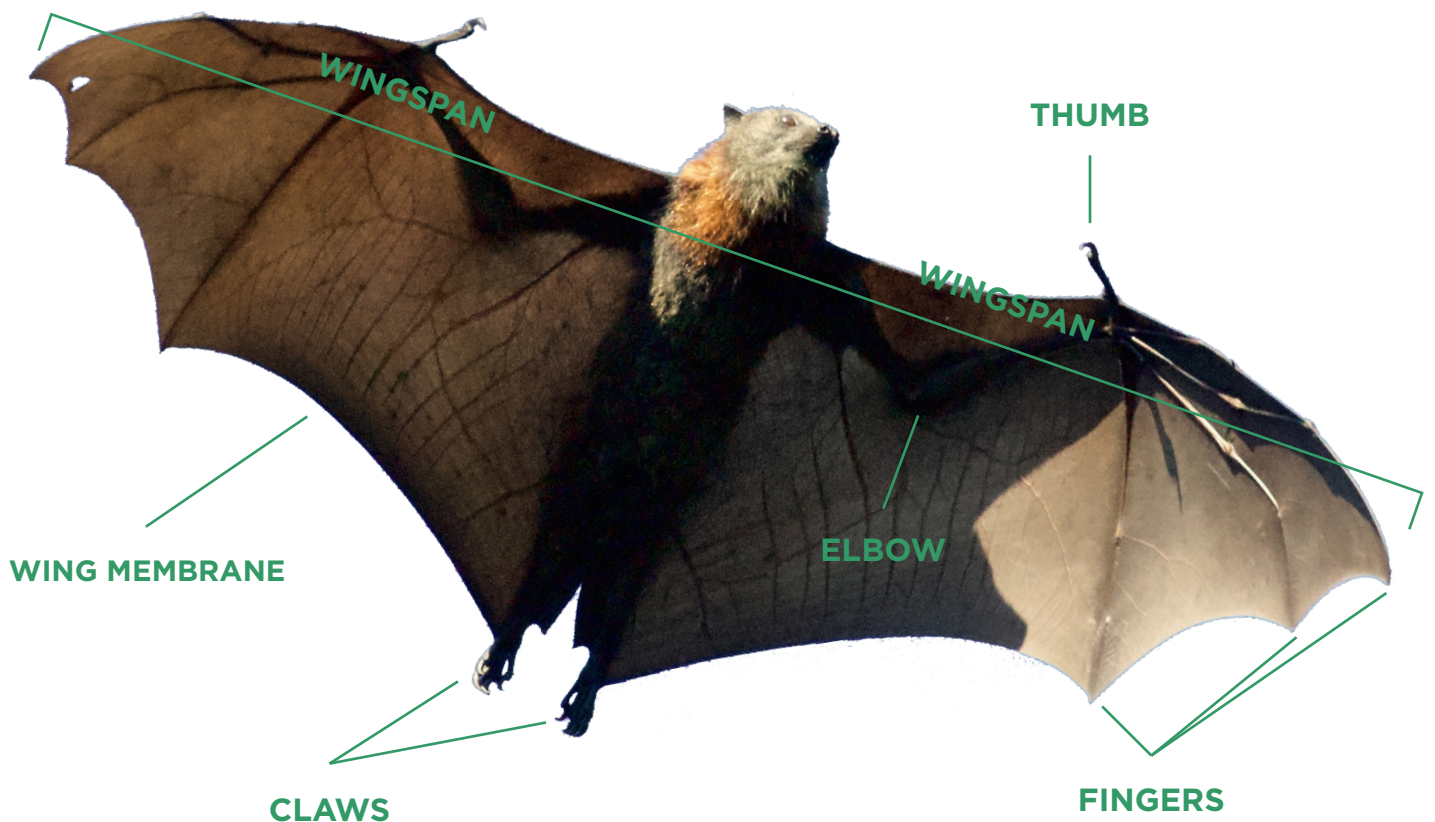


PARTS OF THE BAT

A bat's wings are like its hands, with four long fingers and a thumb. The wing membrane, a thin layer of skin, spreads between each finger. Bats produce high-pitched sounds from their larynx, and some also from their nostrils. These high-frequency sounds bounce off objects in their vicinity, and the bats listen for the

returning echoes. This is a process known as echolocation, and it allows bats to understand their surroundings so that they can hunt food, avoid predators, and, of course, keep from flying into trees or buildings. These sounds are so high-pitched that humans can't hear them. Bats also communicate with each other by clicking their tongues.

SPREAD YOUR WINGS TO FLY!



BAT FACTS



BIGGEST AND SMALLEST

Fruit bats and flying foxes can grow as large as 4 pounds. These are the largest bats in the world, with a wingspan of approximately 6 feet. Bumble bee bats are the smallest in the world, weighing about 2 grams, and they're about the size of your pinkie finger.



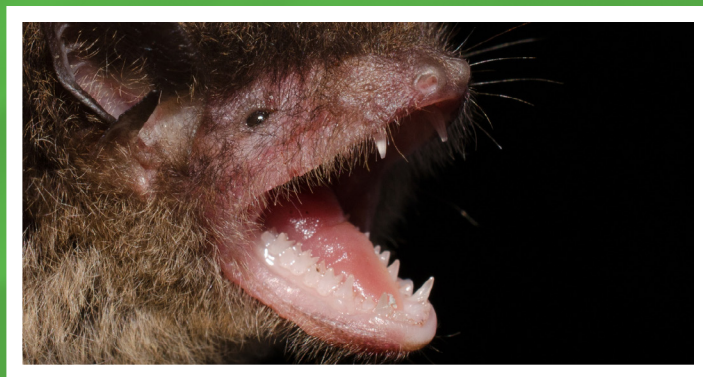
A COLONY OF BATS

Bats usually become active and leave their home, called a roost, to hunt in the evenings. Most bats live in large groups called colonies, or camps, that are in warm places like caves, hollowed trees, barn rafters, or abandoned buildings. These are places that are safe and where bats can avoid humans and predators.



A NURSERY OF BATS

Maternity season for bats – when babies are born – in North America is from April to June, when it is warm and there is an abundance of insects to eat. The female positions herself upward so gravity will help when she gives birth. A newborn bonds with its mother as she licks it clean. As the pups get older, females will leave them huddled upside down in groups with a babysitter in the nursery at night while they go out to feed.



SHARP TEETH

Bats have sharp teeth so they can cut through fruit skin and grind through its pulp. These sharp teeth are also useful for breaking the hard shells of insects. Most bats can eat 50 to 150 percent of their body weight in insects in one night!





MAKE YOUR OWN Bat Mask

ABOUT THE ACTIVITY

Use the template to create a bat mask with any combination of colors you can think of.

MATERIALS

- Bat mask template (Provided)
- Crayons or markers
- Pipe cleaners
- Scissors



STEP 1:

Color your bat mask.



STEP 2:

Cut out your mask.



STEP 3:

Cut out the eyes, and poke small holes under the ears and next to the eyes using a pen.



STEP 4:

Thread a pipe cleaner through one cheek hole; twist one end of the pipe cleaner around the cheek, then fold the other end to fit like eyeglasses over the mask-wearer's ear. Do this on both sides.

STEP 5:

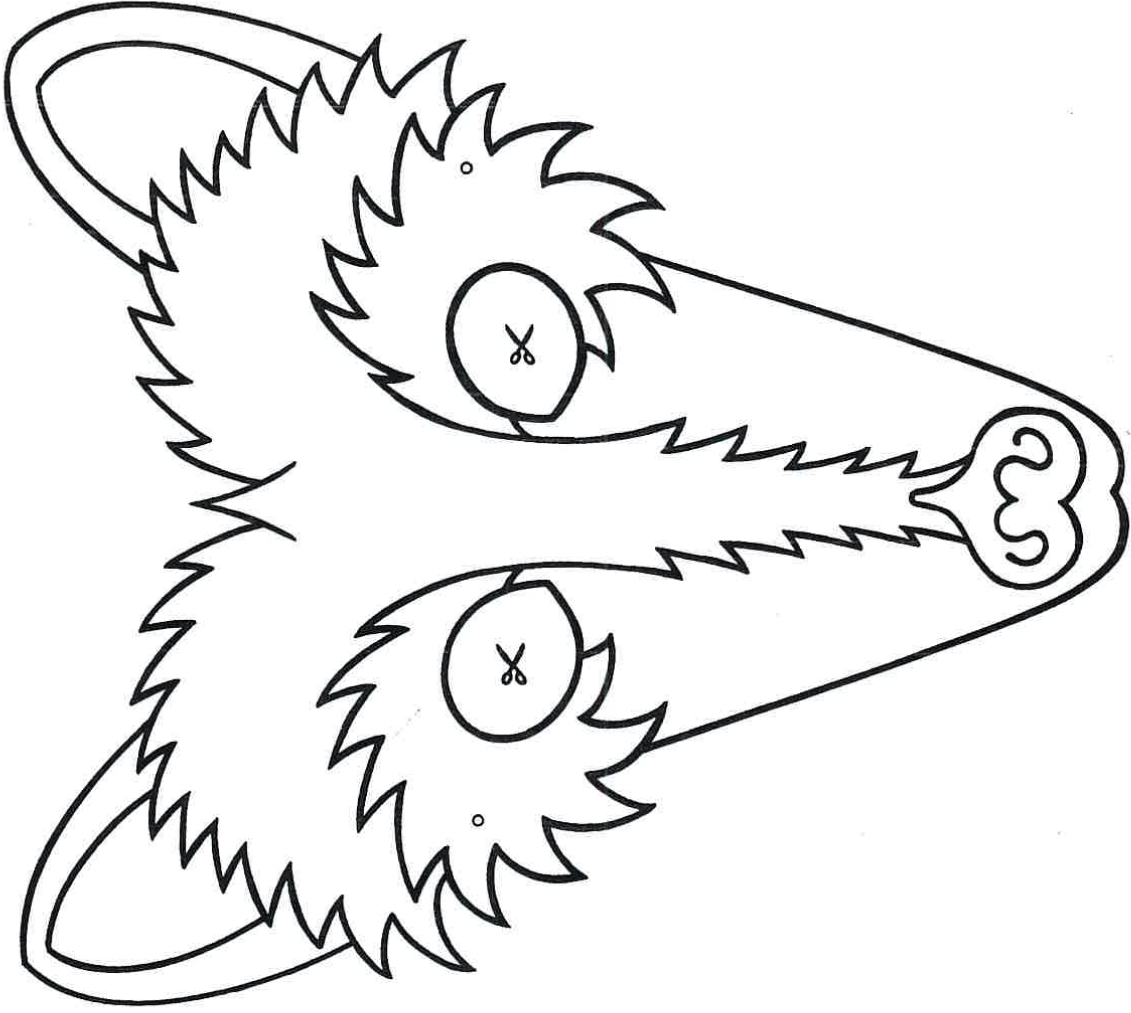
Thread the pipe cleaners through the holes and make a knot at the end, on the colored side.

DID YOU KNOW?

Bats are typically brown or black in color, but may have grey, red, white or orange fur.

Enjoy your mask!



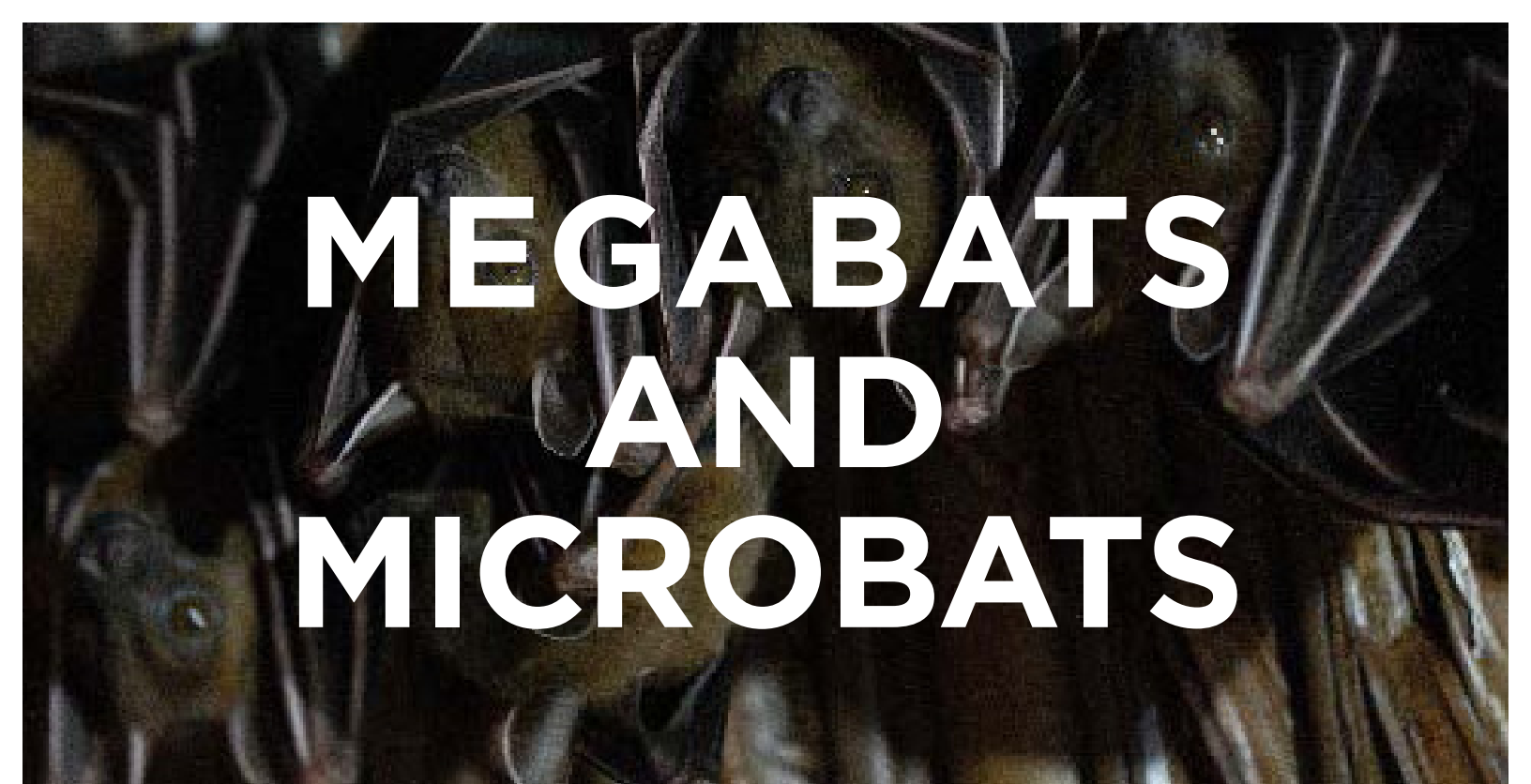


Grey-headed flying-fox
Pteropus poliocephalus

Fun Fact

This megabat is native to Australia and likes to eat fruit. This bat only uses its eyes to find its food - it does not echolocate!

www.batcon.org



MEGABATS AND MICROBATS

CHIROPTERA

The scientific name for all bats is Chiroptera, which means “hand wing.” Bats have small bodies, lightweight bones and big wings. A bat can move its wing by adjusting its fingers and thumb in different ways (similar to how we flex our fingers) enabling a flying bat to quickly change its wing shape, which in turn changes its speed and direction. At night, a bat can put in four hours of airtime flying an average speed of 50 MPH. Bats swoop low through the sky – flying among trees and even close to the ground – to catch flying insects out at night.

DIFFERENT BAT GROUPS

There are two bat groups: megabats (big bats) and microbats (little bats). The major difference between the groups is how they find their food and what they eat. Megabats eat pollen, nectar or fruit. They rely on sight and smell to locate their food. Microbats catch insects and animal prey. They use their hearing and echolocation to find food. Big or little,

all bats have a head, body, two legs, and two wings. They use their clawed feet to hang upside down and sleep during the day.

WHY HANG UPSIDE DOWN?

Bats roost, or perch, upside down because, unlike birds, bats cannot launch their bodies into the air from the ground. That’s because their wings don’t produce enough lift to take off. Plus, hanging upside down in groups is a great way for bats to hide from predators and danger; providing safety in groups.

TEMPERATURE AND WEATHER PROTECTION

Their wings can help them cool off when open, and some bats swim to cool down. Their blood cools while they are flying, but flapping their wings helps to heat them back up. A bat wraps its wings around its body to stay warm when hanging upside down at rest or sleeping during the day. Their wings also make a great raincoat!

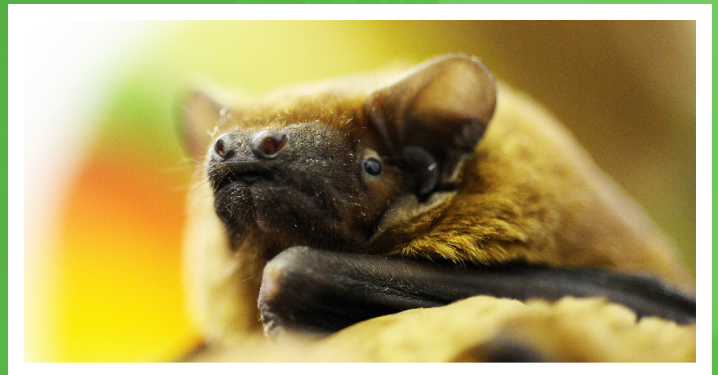
BATS AS POLLINATORS



Bats play a key role in ecosystems around the world. For one, they help to pollinate plants and flowers across the globe, as hundreds of plant species – from the rainforests to the deserts – depend on bats for pollination. They also help humans, especially farmers, by eating insects that can be harmful to produce or livestock.



Bats are essential to keeping our ecosystem healthy, and farmers and ranchers appreciate the work of bats when they eat pesky insects like crop-damaging moths and mosquitoes. It saves them thousands of dollars on pesticides, which aren't healthy to spray on produce, anyway.



Fruit bats eat fruit and quickly digest it, scattering seeds in their guano – aka, bat poop. Scattering those seeds is essential to the growth of not just plants, but of entire forests. Many people fear bats, but they are handy to have around. Just don't touch them – or any wildlife, for that matter. Respect their desire to be left alone, and they will do the same.



Source: www.batcon.org; www.pollinator.org; www.lubee.org; <https://www.youtube.com/watch?v=gr9r6JHNFtM>; <https://www.youtube.com/watch?v=b3w9ZbRQlek>, Water for Wildlife, Daniel A.R. Taylor & Merlin D. Tuttle/Bat Conservation International

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