A Teacher's Guide to the Project EduBat Bat Mural

This beautiful mural captures the amazing diversity of bats in the United States. There are 47 species of bats in the United States and all of them are beneficial to people. Most bats feed on insect pests and some bats even help in pollination. Scientists study bats to further expand our understanding of flight, sound, sonar and evolutionary biology. The mural is designed from east *(right side)* to west *(left side)* and features important bats from these different regions of the United States. Each bat is chosen to represent a special benefit that bats provide or an important bat conservation concept. Use this "cheat sheet" as a guide to transform this fun activity into an educational one as well.

Bats Eat TONS of Pesty Insects!

Bats are the primary predator of night-flying insects. A single bat can eat up to 100% of their body weight (that's more than 4,000 insects) each night! Insect-eating bats, like the **cave myotis**, **Townsend's big-eared bat**, and **little brown bat** pictured here, are opportunistic, and feed on all sorts of insects including moths, beetles, crickets AND mosquitoes! Some of their favorite prey are crop-destroying pests like cucumber beetles and corn-borer moths. Scientists estimate the agricultural value of bat's natural pest-control to be between $3 and $23 BILLION each year!

Bats Are Important Pollinators!

There are more than 1,300 species of bats in the world—and in tropical areas, many of them are critical pollinators for plants and more than 300 kinds of fruit, like bananas, guavas and mangoes.

In the southwestern United States, some of our bats are pollinators too. The **lesser long-nosed bat** pictured here, pollinates agave plants, and the saguaro and organ pipe cactuses. Drawn to the fragrant, pale, night-blooming flowers, lesser long-nosed bats bury their furry faces in the bloom to lap nectar. They emerge, covered with pollen, and carry it to the next flower they visit.

YOU can be a Bat Champion!

We need bats in our lives, but bats also need our help! There are many things that you can do to help bats. Here are some ideas:

- Learn more about bats, and share your understanding about the value of bats with others.
- Take care of the habitat that bats need—like forests and caves.
- Join with scientists to help monitor bat populations.
- Install bat houses to provide summer habitat for bats and places where bats can gather to raise their young.

Healthy Forests Need Healthy Bats – and Healthy Bats Need Healthy Forests!

Bats are incredibly important to the health of our forests. They eat tons of forest pests like gypsy moths and emerald ash borers that can decimate forests if left unchecked.

But bats need healthy forests too! Many species of bats, like the **tri-colored bat** and **hoary bat** pictured here, depend on forests for roosting and summer habitat. Bats, either individually or in small groups, often roost in tree cavities or under loose bark during the daylight hours, and emerge at dusk to feed on forest insects. Bats need healthy, well-managed forests that have both old and young trees. Even standing, dead trees can be important for bats!

Caves are VERY Important for Bats!

Caves across the United States, and the world, provide critical habitat for many species of bats. Some species, like the **gray bat** pictured here, spend their entire lives tied to caves. They roost, raise their young and hibernate in caves. Other species, like the **little brown bat**, use caves during the cold winter months as a safe place to hibernate.

In the eastern United States and in Canada, a new, deadly fungus lives in some bat caves. This fungus causes White-Nose Syndrome, and is responsible for killing more than six million bats in just six years. Scientists are hard at work trying to slow the spread of White-Nose Syndrome, and are investigating ways to minimize its deadly impacts.

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