

STUDYING BATS

OBJECTIVE:

The students will measure and use other scientists' research to identify different species of bats.

NGSS: MS-LS1-4 (Animals)

**MATERIALS:**

- 5 bat wing patterns weighted with pennies in activity
- 5 triple beam balances
- 5 metric rulers
- Power point and script for: Studying Bats: The How and Why
- Bat Survey Data Table (per student)
- Bat Information cards (per group)



TIME: 1 hour and 30 minutes

Teacher preparation

- Copy Bat Information cards on cardstock and cut for each group.
- Copy Bat Survey Data Table for each student.
- Copy each bat wing pattern on cardstock and cut out.
- Tape the correct number of pennies on the back of each bat wing pattern as follows:
 - » #1- 2 or 3 pennies for a mass ranging 5-8 g
 - » #2- 5 to 6 pennies for a mass ranging 13-18 g
 - » #3- 1 to 2 pennies for a mass ranging 4-6 g
 - » #4- 16 to 18 pennies for a mass ranging 40-45 g
 - » #5- 4 to 5 pennies for a mass ranging 11-14 gBe sure each pattern has a different mass.
- Set up stations for each bat species. Each station should include:
 - » One bat wing model
 - » Triple beam balance
 - » Metric ruler
 - » Set of bat information cards
 - » Optional: Gloves (for handling bats)
- Have power point and teacher script ready.

Engage

Introduce lesson and activity using the Studying Bats: The How and Why power point Slide #1 and 2.

Explore

1. Continue with the power point using the teacher script as a guide.
2. At slide 7, you will introduce the activity to the stations. Students can start after you pass out Bat Survey Data Table.
3. Students should be able to identify the bat after the measurements are taken and comparing their information with the bat information cards. Then they will use the bat information cards to fill out the physical and behavioral characteristics.

Explain

After students have completed each station, combine two groups and have them compare information and discuss their findings. Monitor groups and assist when needed.

Evaluate

Discuss the following questions: (slide #8 and 9)

At the beginning of this lesson, we identified the types of data we would collect.

- Which measurements did you not have and why would they be important?
- Why do bat biologists need several kinds of information to correct identify bat species?
- How was this activity like what a bat biologist in the field would do? How is it different?
- Why do you think it is important to help bats?
- How could you help bats around your home or school?

Elaborate

Students can visit <https://www.batcon.org/about-bats/bat-profiles/> as well as other sites to research and create their own model of a bat wing that includes the measurements to distinguish their model apart from the models in the lesson. Discuss how these variations are advantageous or not for the survival and reproductive success of a species.

ELPS

Students who need extra support can be paired with other students during the activity. You can also reduce the number of stations a student completes.