

## CLASSIFYING BATS

**OBJECTIVE:**

**The students will use a dichotomous key and a binomial classification system to identify different species of bats.**

**NGSS:** MS-LS1-4 (Animals), MS-LS4-4

**MATERIALS:**

- 10 informational bat cards (per group)
- Student handout- Dichotomous Key for Texas Bats (per student)



**TIME:** 1 hour

## Teacher preparation

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- Print and cut out the information cards on bats.
- Print student handout

## Engage

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Ask students how scientists tell different bats apart. Students may suggest that scientists would use the physical characteristics such as body shape, size, ears, teeth, wings, etc. Discuss with students that scientists use these physical characteristics to classify the bats and use a taxonomy system. A taxonomy system creates groups based on similarities and differences.

## Explore

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1. Tell students that one way to create these groups is with a dichotomous key. Discuss with students what a dichotomous key is and how it is used to identify the many organisms in our world. (A dichotomous key focuses on characteristics of different organisms such as the leaves, flowering, warm blooded, live birth, etc. A dichotomous key provides a series of decisions points to eliminate some possibilities and proceed on to others in an effort to identify the organism.) Ask students why scientists use a dichotomous key. (A dichotomous key makes identifying an organism much easier and more accurate than trying to do this on your own.)
2. Divide students into groups of 3. Distribute a set of the information bat cards to each group.
3. Direct students to begin with number 1(a). Students will read the information on each card and determine which bat is described. Students will write the name of the bat in the space provided. Based on their answer, the key will direct them to a new statement. Students will continue in this way until reaching an endpoint where they have identified all 10 bats.
4. After the students have completed the dichotomous key, ask them to share out some of the unique features some bats have and what they have learned about bats.

5. Next, discuss with students that they can also classify organisms such as bats by using a binomial classification system. This system names an organism by its genus and species. Have students choose a bat to research and create a classification similar to the one below.

**DOMAIN:**

**KINGDOM:**

**PHYLUM:**

**CLASS:**

**ORDER:**

**FAMILY:**

**GENUS:**

**SPECIES:**

## Evaluate

Students will write a summary with 10 words or less about what they learn in the lesson.

## ELPS:

This lesson can be modified by giving students a shortened dichotomous key using #1-4 with the Information cards for the Florida bonneted, Mexican Free-tailed, Mexican Long-nosed and Hill's Horseshoe bats.

6. Ask students which statement best describes a taxonomic system and why.
- » It places organisms into one of five groups based on appearance.
  - » It categorizes organisms based on shared similarities and differences.
  - » It classifies organisms by size and location, such as air or water.
  - » It categorizes organisms by similarities in color and shape.