

POLLINATORS, SEED DISPERSERS, AND PEST CONTROLLERS

OBJECTIVE:

The students will explain the positive impact bats have on the environment as pollinators, seed dispersers, and for insect control.

NGSS: MS-LS1-4 (Plants), MS-LS1-6, MS-LS2-3

NGSS CONNECTION: MS-LS1-5



MATERIALS:

- Consumable materials for making a bat head model: index stock paper, construction paper, pipe cleaners, wooden craft sticks, toothpicks, masking tape, glue sticks, aluminum foil, wax paper, cotton balls, string, straws, paper plates, cups and/or any consumable items available.
- Student Response sheet (per student)
- Student Instructions page (per student)



TIME: 1-2 hour

Teacher preparation

- Prepare to show the 2:14-minute video, 1:04 minute video, the short power point presentation, and facilitate discussions.
- Copy Bat Heads, The Pollinators Student Response Sheet to complete individually or with a partner.
- Provide a paper image, plastic, silk, or real flowers for student teams to pollinate with their model of a bat head.
- You need to crush up Cheetos type of orange snack, use yellow-orange popcorn salt, or dry yellow-orange tempera paint powder to simulate pollen for the models of the bat head to use to pollinate the teacher provided flowers.
- Gather and make materials ready for students to make a model of a bat head.

Engage

1. Show students the 2:14-minute informational video about Bats, titled, "The Pollination Night Shift" by Bat Conservancy International:

<https://www.youtube.com/watch?v=Cg99cQGQr1k>

Facilitate a brief student discussion about the video content.

2. Show students the 1:04 minute informational video, titled "Saving Bats by Planting Agaves" by Bat Conservancy International:

<https://youtu.be/mCfmz4Bx2lo>

Facilitate a brief student discussion about the video content.

Explore

Student groups can view and discuss the Bats: Pollinators, Seed Dispersers, and Pest Controllers Power point completing the lesson with the Student Response sheet to continue the discussion.

The discussion should emphasize the importance of bats and their environmental impact through pollination, seed dispersal, and insect control. Encourage students to discuss what they saw and what they still wonder with a shoulder partner and write in their journals if time.

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Additional Information, Bats as Pollinators:

<https://vimeo.com/63694877>

Disney Nature: Wings of life, Bats 6-minute video, Bats as pollinators

Explain

Facilitate a class discussion about the benefits bats have on the environment. Discuss how being a pollinator benefits the bats. In addition, discuss how controlling the insect population benefits the bats and farmers. Students should be able to answer the following questions:

- When do bats pollinate plants, flowers, and trees?
- When do bats eat?
- How do bats impact the insect population?
- How do these behaviors benefit the environment and ecosystem?
- Why is the shape of the structure important for its function?

Evaluate

Students will work with a partner to select a bat from a list of bat pollinators. The team will research images and pictures of their selected bat. Once several images have been found and analyzed, the team

will create a model of the bat's head, eyes, ears, nose, mouth, and tongue. The team will use materials provided by the teacher to create the model of a bat head. Once completed students will dust or dip the bat face into crushed Cheetos type of snack food, yellow-orange popcorn salt, or dry yellow-orange powdered tempera paint to simulate pollen. With the bat head model, students will pollinate a flower provided by the teacher. The teacher may use a paper, plastic, silk, or real flower to be pollinated for the simulation. Students will share their bat head models with other teams and fill in the Student Response page.

Elaborate

A review of structures and functions will help as they create their models of bat heads that pollinate since those features are different from insectivores.

ELPS

Group students strategically for students with various abilities. Students who need additional support should be paired with others. Teacher provides sentence frames for students during science talk and written responses.