

Changing Habitats Activity Bag - Butterflies: Teacher Guide

This activity will explore how differences among animals within a population can give individuals an advantage in surviving and reproducing in changing habitats. Students will use different colored butterflies to investigate how coloration affects an animal's ability to survive when predators are present.

Materials From The Teacher Bag (for all students)

- 6 Butterfly punch-out sheets
- Transparent tape
- Blank butterfly pattern

Other Materials

- Ability to view the Google Slide Deck
- Stopwatch
- Scissors
- Something to color a butterfly (crayons, markers, colored pencils)
- Butterflies Student Activity Sheet

Part 1: Butterfly Hunt

Preparation:

1. Carefully remove the butterflies from the punch-out sheets.
2. Choose a location in the classroom with multiple colors (a bulletin board works well). This area will be the butterfly habitat.
3. Before class, use tape to place 12–18 butterflies in the habitat.
 - a. Make sure all butterflies are completely visible (not hiding behind or under anything).
 - b. Place some butterflies where they are easy to see and others where they are more difficult to find.

Procedure:

1. Tell students they will participate in a game. Explain that their job is to **locate as many butterflies as possible in 30 seconds**.
2. Show the students what the butterflies look like.
3. Tell students to silently keep track of how many butterflies they see (**no talking**).
4. Point out the butterfly habitat and tell students to begin.
5. After 30 seconds, say “Stop,” and ask each student to share how many butterflies they found.
6. One at a time, ask a student to come to the habitat and point out one butterfly they found.
7. Continue until all the butterflies have been found.
8. Collect all the butterflies to be used for the rest of the activity.

Content Connection:

Lead a discussion with your students using the following questions:

- Which butterflies were easy to find? **The butterflies that do not blend in with their habitat.**
- Which butterflies were difficult to find? **The butterflies that blend in with their habitat.**
- How did the background help or hurt the butterflies' ability to be found? **The background helped some butterflies stay hidden if their colors matched it. When a butterfly blended in with the background, it was harder to see. This is called camouflage. Butterflies that did not match the background were easier to find because they stood out.**
- How might the results change if the background were different? **If the background changed, different butterflies might be easier or harder to find. Butterflies that blended in before might stand out on a new background, while others might become better hidden. This would change which butterflies were most commonly found.**

Part 2: Birds and Butterfly Hunt

Preparation:

1. Select **two different habitats** (inside or outside). Each habitat should be large enough to place **10–15 butterflies**.

Procedure:

1. Explain to students that they will repeat the butterfly hunt, but this time the habitat will change, and each student will place their own butterfly.

2. Separate the class into two equal groups.
3. Locate two habitats for the groups to use to hide their butterflies.
 - This can be done outside or inside.
 - Each habitat should be large enough to place 10–15 butterflies.
4. Explain to the class that birds are predators of butterflies. In this game, each student will place a butterfly in a habitat with the goal of not being found.
5. Give each student one butterfly and show each group their assigned habitat.
6. Give each group a few minutes to place their butterfly.
 - Butterflies must be completely visible, and it cannot be hidden behind or under objects.
7. Bring the entire class together and explain that the class will now act as birds searching for butterflies for food. You will hunt the other habitat.
8. **Now one group at a time:**
 - The birds will line up about 15 feet away from the habitat.
 - Give students 30 seconds to look for butterflies.
 - Students must silently keep track of how many butterflies they see (no talking).
9. After 30 seconds, say “Stop.”
10. Ask each student how many butterflies they found.
11. One at a time, have students point out one butterfly they found.
12. Repeat with the other habitat.

Content Connection

Lead a discussion with your students using the following questions:

- How did you determine where to place your butterfly?
- What was the first thing you did, as a bird, to find a butterfly?
- How does this activity show the relationship between predators and prey? **This activity demonstrates the relationship between predators and prey, showing how predators hunt and how prey try to stay hidden. The students acting as predators searched for the butterflies, just like birds look for insects in nature. The butterflies that blended into their habitat were harder to find and had a better chance of surviving, while the ones that stood out were found more quickly. This shows how predators depend on seeing their prey and how prey depend on camouflage to stay safe.**
- How does a habitat change affect a butterfly’s ability to survive? **When a habitat changes, butterflies may be less able to hide from predators. If they are easier to see, they may be eaten more often. Butterflies that can blend into the new habitat have a better chance of surviving and staying safe.**

Part 3: Protect Your Butterfly

Procedure:

1. Have a class discussion about what the students have learned so far. Students should know that
 - Butterfly color and patterns are external structures that help them survive.
 - These structures help butterflies survive by making them harder for predators to see (camouflage).
 - Different habitats can impact the survival rate of the butterflies.
2. Explain to the students that they will have the opportunity to design a butterfly for a specific habitat. The goal is to camouflage their butterfly and help it survive.
3. Show students the habitat where they will place the butterflies. All students will use the same habitat
4. Give each student a blank butterfly pattern, access to materials to color it, and a Butterflies: Student Activity Sheet. Allow the students time to create their butterfly, then place it in the habitat, and answer question #1 on your student activity sheet.
 - Students may need to visit the habitat frequently to camouflage their butterfly.
5. Once all the butterflies are placed, ask an administrator or another class to come in and see if they can find the butterflies. Those that are found can be taken down (eaten). Those that have not been found are camouflaged and have survived.

Content Connection:

Have students answer the remaining questions on their student activity sheet.