



Pollinator Power: Symbiotic Survival Between Plants and Animals *2021

Grade: 2nd

Setting: McMurry, Red Fox Meadows, or any Natural Area with a variety of flowering plants.

Theme (Bottom Line): Pollinators are important to the survival of plants, and in-turn these plants provide animals and humans with food and other benefits.

Description: Students learn about the various pollinators around Natural Areas and how they are specially adapted to assist plants in reproduction.

Recommended Time- 30 minutes

Recommended Group Size: 15

FOSS Kit: Insects

State Standards: **Life Science 2.2** Analyze the relationship between structure and function in living systems at a variety of organizational levels and recognize living systems' dependence on natural selection. An organism is a living thing that has physical characteristics to help it survive. **Life Science 2.2.1** Plants depend on water and light to grow and on animals for pollination or to move their seeds around.

Materials list:

- 10 mini white boards/markers
- 5-10 Magnifying glasses
- Pictures of pollinators, pollen coated insects, pollen powered foods (breakfast foods), etc.
- Game Supplies:
 - Various Colored flower cutouts (red, blue, yellow/orange)
 - Thongs
 - Velcro gloves
 - Yellow/Orange Pom Poms

Getting Ready:

1. Read background information about Colorado Pollinators (Plants and Pollinator Notes- 2021 and Notes for Pollinator Presentation- 2021 found in Y drive)
2. Visit the site beforehand and locate flowering plants (if possible) and identify any pollinators out and about.

Nat Note: *If it's too hot or too cold, pollinators will not be as active. Have photos ready to show students if pollinators are difficult to find. Hot weather pollinators will be insects such as bees, butterflies, moths etc., while cool weather pollinators may be flies,*

birds, beetles etc. Also, note we will NOT collect pollinators as many pollinators have stingers. Remind students to be careful (not fearful) around bees and other pollinators and observe from a safe distance.

Welcome students and introduce yourself and any other volunteer. Encourage Adults to participate by giving them each a task. Remind them of the difference between a Natural Area and a Park. Explain the theme of the lesson and begin.

ENGAGE (Introduction)- 5 mins.

Get the students focused with these leading questions.

- Who knows what a pollinator or pollination is?
- Can we name a few pollinators?
- Why are pollinators/pollination important?

Explain that today we are going to learn about the important relationship between plants and their pollinators. We will begin by exploring this area to locate as many different types of pollinators as we can find. We will be using observation skills and tools to watch, not collect these pollinators. Once kids find pollinators to observe they can draw a picture or name the pollinator on their whiteboard. Kids can also keep a tally of how many pollinators they observe during the EXPLORE portion of this activity.

EXPLORE: 5-10 mins.

For this initial exploration, students are partnered with another classmate (or 2), a whiteboard, and magnifying glass. Students are given boundaries and encouraged to search for pollinators in this area. Questions to pose as the leader walks around to the various groups:

- What are the pollinators doing?
- Are the pollinators all insects?
- What parts of the pollinators body has collected pollen?
- Are different types of pollinators attracted to the same plant or do they look the same?

EXPLAIN: 5-10 mins.

Gather students back up to discuss their findings. A few topics to go over now:

- Pollinators are not all insects! Birds and bats can be pollinators too. (Show photos of pollinators with adaptations for pollination.)
- Pollinators have special adaptations for carrying out pollination (mouth parts, hairy legs or bellies, long tongues or beaks that transfer pollen to the next flower the pollinator visits).
- Pollinators and plants have a symbiotic relationship. Explain symbiotic means “mutually beneficial”. Plants become pollinated while the pollinator often gets a tasty meal.
- Pollination benefits humans. Explain that many of our foods are grown with the help of pollinators (fruits, grains, vegetables, etc.) Show photo of breakfast meal and have kids identify what they think could have been grown with the help of a pollinator.

ELABORATE: 5 mins.

Now that students better understand how pollination and pollinators work, they can become pollinators in a relay race to pollinate flowers as a variety of pollinators.

- Hummingbirds vs Bees: Two teams of students must move pollen (pom poms) using their adaptations (Hummingbirds use thongs and Bees use velcro gloves) from one paper flower, to empty paper flowers at the end of the course.
- Hummingbirds can only go to Red or Yellow/Orange Flowers as this is what they are attracted to in nature, while Bees can only go to the Blue or Yellow/Orange Flowers.
- Using their adaptations, each student may only visit one flower and try to pick up as much pollen at once as they can. They must deposit the pollen on the empty flower and run back to the next student to pass off their adaptation. A timer will give the group 5 minutes to finish the game and the flower (team) with the most pollen at the end will be declared the supreme pollinator for the day.

Nat. note: This activity is meant to be fun and not as a judgement on kid's abilities to outrace one another. Please remind students ahead of time that everyone is an important pollinator and any amount of pollen transported to the empty flower means a job well done!

EVALUATE: 5 min.

- Gather students back together and have them remind you of the various pollinators in nature.
- Ask students why pollinators are important to plants.
- Ask students why pollinators are important to humans.
- Ask students how they can encourage pollinators to visit their yard (plant native plants).
- Have students close their eyes and picture their favorite pollinator and tell them thank you for the amazing work they do.
- Answer any remaining questions.



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