

POLLINATOR POWER

*Grades 3 - 4, Science and Technology
Prepared for Monarch Mayhem 2020*

OVERVIEW & PURPOSE

This lesson plan intends to give an introduction to the life cycle of plants as well as the relationship between plants and animals, specifically pollinators.

UNIT: Growth and changes in plants, habitats and communities.

Estimated time to complete: 45 minutes to 1 hour.

OBJECTIVES

1. Students will be able to identify the importance of pollination to both plants and animals.
2. Students will gain a better understanding of the importance of plants and animals in the lives of humans.

MATERIALS NEEDED

1. Flashcard activity sheet.
2. 'What's for dessert?' activity sheet.
3. 'Millie the Monarch' colouring sheet.
4. Pollinator-inspired snacks.
5. Pencil crayons.
6. Scissors.
7. A computer and the PowerPoint presentation.

VERIFICATION

Steps to check for student understanding

1. Students will complete a flashcard activity to show their understanding of pollination and the life cycle of plants.
2. Students will create a dessert recipe using animal-pollinated foods to prove their understanding of the importance of pollinators and plants to people.

PRESENTATION

You will have received the PowerPoint presentation ‘Pollinator Power’ via email. You can also download this at: monarchmayhem.ca/resources. The presentation has been created as a visual aid for this lesson.

Pollination is the movement of pollen from the male part of a flower called the *anther* to the female part of a flower, which is called the *stigma*. This aids the reproduction of plants. The goal of any living organism is to reproduce (or create a new generation). Plants do this via pollination. After the pollen is moved to the stigma, the eggs are fertilized and seeds are created. Although the words used might be different, reproduction isn’t all that different in plants as it is in all animals.

The most common form of pollination is called **animal pollination**, which is when animals (usually insects) carry pollen from the male part of the plant to the female part of the plant. Some of the students may be familiar with the image of a bee with yellow clumps on their body, this is a fantastic example of animal pollination.

So then why do some insects do this? This is a good opportunity to ask the students to come up with some ideas in a few minutes to then discuss as a class. It provides a great way to gently introduce the idea of interdependence (specifically for Grade 4s) as the process is important to both plants and animals, but each does so primarily for itself.

The animals, pollinators, are visiting the flowers because they are hungry and the flowers have nectar and pollen that they can eat. When the pollinators land on the flower in order to eat they touch pollen and it sticks to them (the same thing may have happened to students when they have brushed up against a flower before). They then visit another flower to get more nectar and the pollen from the flower before will brush off and land on the female part of the plant (stigma).

It is important to mention that although the pollinators might not be actively pollinating on purpose, both the pollinator and the plant have evolved in a way that ensures that this happens. Therefore every time an animal pollinates a plant when it is collecting nectar or pollen, it is making sure there will be new plants available next year to eat from.

Hand out the **flashcard activity sheet** to the students. Have them cut out the cards and try to put them in order. Give them 10 minutes to work on it (in pairs, if regulations allow) and 5 minutes to share their ideas.

The answer key for flashcard activity:

Note: students can start with any one of the cards. It is the order of the cards that remains the same.

1. Plants mature and flower.
2. A bee visits a flower to eat nectar.
3. Pollen gets stuck to the bee.
4. Pollen falls off of the bee when it visits more flowers.
5. Seeds are created.
6. Some plants grow a fruit around their seeds.
7. Seeds are dispersed by animals, wind or water.
8. Young plants grow.

What happens after the seeds are created? One way plants have their seeds spread out to new areas also involves animals. The plant will grow a sugary edible fruit around the seeds. This encourages animals to eat the fruit, which in turn gives the animal energy. After the animal has digested the fruit, it will expel the seeds as a waste product, usually in a new location. The seeds then grow into a new plant.

Ask the students ‘What are your favourite fruits?’ Although not all fruit is pollinated by animals, things like peaches, blueberries and raspberries are all pollinated this way. Although it’s sometimes really easy for us to forget it, we do in fact rely heavily on other animals as well as plants.

Activity #2: Hand out the ‘What’s for dessert?’ activity sheets to be completed and give students 10 minutes to work on it. Have the students share their ideas with the class or hand in the sheets for marking. Hand out the pollinator-inspired snacks.

Optional: Activity #3 Millie the Monarch colouring sheet.