Beneficial Insects in the Garden

Lesson Description

In this lesson, students are introduced to 3 types of beneficial insects; predators, pollinators and recyclers. Students will become familiar with examples of each type of insect and go on an outdoor insect hunt.

- Time required: 60 minutes
- Location of lesson: Classroom and garden

Learning Objectives

- Describe how predator, pollinator and recycler insects are beneficial for the garden.
- Be introduced to different examples of each insect.
- Identify insects found in the school garden.

Materials and Preparation

- Brown paper bags; 1 for each student
- White board or chalkboard
- Chalk or a dry-erase marker
- Pens or pencils; 1 for each student
- Store-bought ladybugs for optional activity (depending on availability of ladybugs)
- Computer and projector to show presentation
- 📖 **Beneficial Insects**
- ✋ **Beneficial Insects vs. Harmful Insects**
- ✋ **What are Beneficial Insects – PowerPoint Presentation**
- Prepared vegetable snack of the week – 1 for each student
- Water to drink during the Class Warm-up – water dispenser in the classroom and 1 cup or a water bottle for each student

Class Warm-up: Champion Cheer and Veggie Taste Test (5-10 minutes)

- Give each student a cup of water or ensure that they have a filled water bottle in front of them.
- Give each student the prepared veggie snack of the day.
- Lead the students in enthusiastically reciting the 📖 **Champion Cheer**.
- At the end of the cheer, drink water and eat the veggie snack together.
- Have students complete their 📖 **Taste Test Observations** about the vegetable snack of the week.

📖Indicates reference to student workbooks. ✋Indicates a reference to a teacher resource.

Review of Last Lesson (2-3 minutes)

- Review the evaluation questions from last week's lesson. Evaluation questions from all lessons are listed at the end of the workbook 🕮.

Class Discussion (10 minutes)

What are beneficial insects? Show students 🖐 **Beneficial Insects vs. Harmful Insects** Teacher Resource for a visual. *How do you know if an insect is good or bad for your garden? What type of insects have you seen before? Where do insects live? How many different kinds of insects are there?*

There are over 1 million species of insects! Only 5% of all insects are bad, 95% of all insects are good or neutral. A neutral insect is one that is not beneficial, but it also does not cause any harm. Beneficial insects can be found in many places. There are good insects in the backyard, playground, park and even in your home.

Beneficial insects can be grouped into 3 categories: predators, pollinators and recyclers.

Activities (35 – 40 minutes)

- 🕮 🖐 **"Beneficial Insects" (15-20 minutes)**: Students take notes about the different types of insects as the teacher presents.
    1. Refer students to the 🕮 **Beneficial Insects** page in workbooks.
    2. Project the 🖐 **What are Beneficial Insects PowerPoint Presentation** to illustrate the talking points below.
    3. Encourage the students to take notes in the workbook spaces provided as each insect is discussed.
        a. ***Predators****: Predators are insects that eat harmful insects. Gardeners and farmers like these insects because they kill the pest insects that eat their plants.*
            i. ***Ladybugs*** *are good predator insects. They eat bad insects that are found on vegetables and flowers. Ladybugs are brightly colored black and red to warn birds or other animals that they taste bad.*
            ii. ***Praying mantises*** *are good predator insects. They only eat live insects, never dead ones. A praying mantis is known as a "sit and wait" predator. They sit and wait for their food to come to them. It is like hunting. They are camouflaged to blend in with the stems and leaves of plants.*
            iii. ***Lacewings*** *are good predator insects. The lacewing larvae eat aphids. Aphids are bad insects.*
        b. ***Pollinators:*** *Have you ever stood next to a flowering plant and seen all the different insects visiting the flowers? Some of these are honeybees,*

bumblebees, wasps and butterflies. These insects are pollinating the plants so that the plants can make fruits and seeds.

i. ***Bees*** *are very important pollinators. If it were not for bees, we wouldn't have any flowers or fruits! Bees visit flowers to collect nectar or to gather pollen. Honeybees take the nectar back to their bee hive to make honey. Bees only sting to defend themselves if they feel threatened.*

ii. ***Butterflies*** *are also pollinators. They transfer pollen from one flower to another. When the pollen of 2 flowers mix together, a fruit or a seed is produced.*

c. ***Recyclers:*** *These insects are helpful because they recycle waste. Most people do not think these insects are beneficial because they are around trash and decaying matter, but they are important to the world. These insects help decompose or break down trash.*

i. ***Termites*** *are insects that eat wood and other wood products such as trees and roots. They live naturally in the soil and eat the roots of dead trees and plants. Without termites, fallen trees would stay on the ground and new plants would not have room to grow. Termites sometimes eat houses made of wood and this is not beneficial!*

ii. ***Flies*** *can be found in trash, on poop and near dead animals. Flies like to eat stinky, decaying things. This is good because they help recycle and remove these things.*

iii. ***Beetles*** *are also recyclers. Many times, beetles are found in compost bins. Compost bins are used by gardeners because they have lots of nutrients and help plants grow. Beetles help compost break down quicker and keep air flowing so that gardeners can use it sooner.*

- **"Outside Insect Hunt" (15-20 minutes):** Students collect and identify an insect outside.
    1. Once outside, pass out a brown paper bag to each student.
    2. Give students about 5 minutes to look for insects and put only 1 insect into their brown paper bag without harming it because it may be beneficial.
    3. After each student has collected an insect, ask them to explain what type of insect they collected. Have them tell the class if they think the insect is beneficial to the garden and ask them why.
    4. Depending on available time, start a discussion around this topic and/or let the students draw a picture of the insect they collected and label it as a predator, pollinator or recycler.

Optional Activity (5 minutes – depending on time and ladybug availability)

- **"Ladybug Release" (5 minutes):** Students help release ladybugs into the garden.
    1. Show the students the ladybugs, review that they are beneficial predators who eat bad insects.
    2. Release the ladybugs into the garden.

Evaluation Questions (5 minutes)

1. *What 3 types of insects are beneficial?* (Answers: predators, pollinators, recyclers)
2. *What do predator insects do for the garden?* (Answer: eat the "bad" insects)
3. *What do pollinator insects do for the garden?* (Answer: help the plants reproduce by moving pollen from plant to plant)
4. *What do recycler insects do for the garden?* (Answer: help decompose or break down materials in the soil)
5. *How are termites beneficial?* (Answer: they break down trees and branches to make room for other plants to grow)
6. *How much water should you drink every day?* (Answer: at least 6 cups of water a day)
7. *How many fruits and vegetables should you eat every day?* (Answer: at least 5 fruits and vegetables a day)
8. *Does gardening connect you to your culture and help you learn new words in your language?* (Answer: yes)

Preparation for Future Lessons – Reminder for the Instructor

- Review the materials and preparation needed for the next lesson.
- Remember that an Elder guest instructor is needed for these Fall lessons: Lesson 2 (Exploring Plant Parts), Lesson 4 (Traveling Seeds), Lesson 6 (Winterizing the Garden) and Lesson 10 (Companion Planting and Traditional Cooking).

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