



Pollination Department

Lesson 1 - Suga's Hard Working Pollinators

Essential Questions:

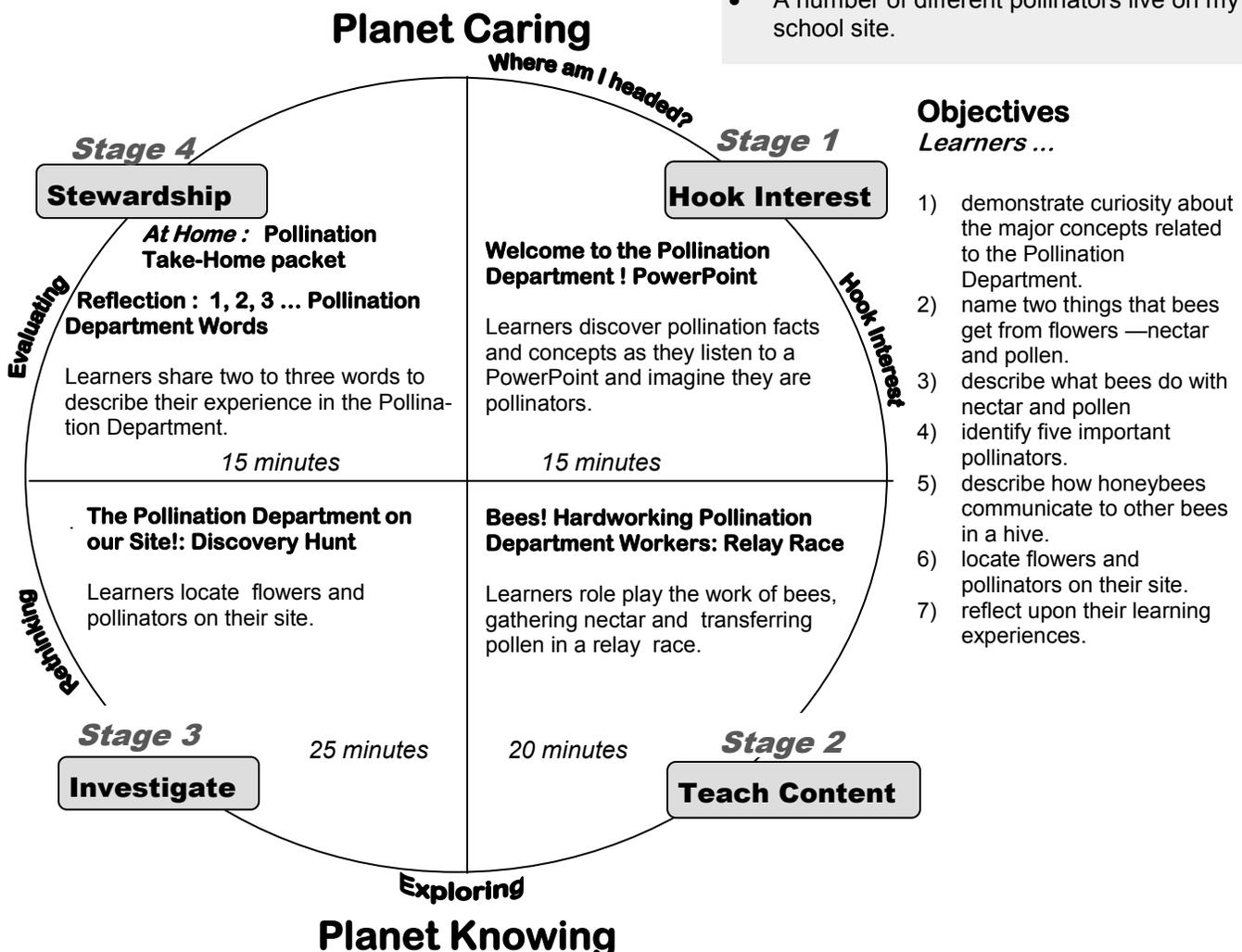
*How do plants and animal pollinators interact to help plants reproduce?
Which pollinators live on my site?*

At a Glance:

An interactive presentation (PowerPoint & dramatization) hooks learner interest and concern for the Pollination Department (PD) on their school site. A lively discovery hunt engages club members in hunting for PD workers and related organisms on their site. Near the end of the club session, children reflect on the health of their site's PD; they received a PD take-home packet and make plans to investigate the PD at home with families or friends.

Concepts:

- Pollination is an important eco-service that is provided by my school site ecosystem.
- Plants require help from animals, wind to mate and reproduce.
- Animal pollinators include bees, butterflies, flies, wasps, beetles, bats, birds and more.
- Plants give animals rewards, such as pollen and nectar, as a lure to visit their flowers.
- Plants and animals have adapted to work together.
- Pollinators are essential for fruits, seeds, or new generations of flowering plants.
- A number of different pollinators live on my school site.



PROCEDURES IN BRIEF: Pollination Lesson 1—Suga’s Hard Working Pollinators

Stage 1. Welcome to the Pollination Department!

PowerPoint

Procedure:

1. Start by introducing learners to some of the Pollination Department workers by showing them the Eco-service cards.
2. Show the Learner/kid-friendly version of the PowerPoint.

Use the PowerPoint to introduce or refresh learners’ understanding of pollination and also to focus their attention on the goals of the pollination module.

Use the following questions to review concepts learned in the PowerPoint presentation:

- What help do plants get to enable them to reproduce?
- How do plants get animals to come to them?
- What threats face pollinators?
- Can you name some pollinators?
- What would happen if there weren’t any pollinators?
- Name 3 of the pollinators you learned about through the Eco-service cards.

Supplies

- PowerPoint on CD
- Eco-Service Cards
 - *Bumble bee*
 - *Paper wasp*
 - *Honey bee*
 - *Longhorn beetle*
 - *Bee fly*
 - *Monarch butterfly*
 - *Hover fly*
 - *Ruby-throated hummingbird*

Stage 2. Bees! Hardworking Pollination Department Workers! A Relay Race

Procedure:

1. Review how bees contribute to the pollination process (see full write-up for background).
2. Set up the playing field according to the diagram in the manual (or online).
3. Break the learners up into two even teams. Ask the teams to stand behind a starting line.
4. *Explain the rules:*
The runner holds the bee puppet while running. Each runner in turn must go to the first flower bucket and pick out one pollen token and one nectar token. The runner must then go to the second flower bucket and deposit one pollen token in the bucket. The runner then picks up one pollen token and one nectar token from that container. The runner now has two nectar tokens and one pollen token. The runner returns to the hive and places the tokens in the beehive container. Before passing the bee puppet to the next runner in line, the current runner must do a waggle dance that includes at least one total rotation of the body. Then the ‘bee’ is passed to the next learner and the previous runner moves to the end of the line.
5. Start the relay race. Encourage all the kids to participate even if one of the teams has finished. When both teams have finished the race, look in the beehives and the flower containers and analyze the contents.

Supplies

- Pollen tokens
- Nectar tokens
- 2 beehive containers
- 4 flower containers
- 2 bee pictures/puppets

Stage 3. The Pollination Department on our Site!

A Discovery Hunt

Procedure:

1. Orient learners to the activity by telling them they will go outside to look for flowers and workers in the Pollination Department. Review the major pollinators and discuss sources of pollen they may locate on the site. Show a flower to the class and point out the pollen on the anthers. Describe how the pollen is transferred between flowers.
2. Two different learner worksheets (Version 1 and 2) are provided. Choose the one most appropriate for your group.
3. Divide the class into groups and explain their assignment. Give each group a Pollination Department Hunt worksheet and discuss how to complete each column.

Learner Worksheet (Version 1) Instructions: *Find pollen on five flowers. Record the flower names, if you know them. What color are they? How do they smell? If you saw a pollinator on the flower, name or describe it.*

Learner Worksheet (Version 2) Instructions: *Look for the flowers and pollinators listed on the sheet. Once you find one, place a check mark in front of it.*

4. Lead the class outside. Assign each group to a specific area of the site. Each learner or team of learners can record their findings.
5. After 15 minutes, bring the whole group together. Have each group discuss what they found.

Supplies

- data collection sheets
- clipboards
- hand lenses
- flagging tape or construction paper

Stage 4. One, Two, Three... Pollination Department Words Reflection

Procedure:

1. Give students 1-2 minutes to reflect on their learning experience with the Pollination Department
2. Have each student share one to three words to describe their learning experience or how they feel about the learning experience. Allow time to expand on these thoughts and feelings after everyone has had a turn.

Reflection Questions:

What did you learn about the Pollination Department?

Can you name some organisms (plants or animals) that are ‘Eco-service Workers’ in this department? What is their role in this department?

What is your role in the Pollination Department?

Why do you need this Department?

Does the Pollination Department need you? Why or why not?

What are some actions you can take to minimize your impact on the Pollination Department?

What is your motivation in helping the Pollination Department?