



Insects!

Concepts

The diversity of insects explains the diversity of insect diets. Generally, insect diets can be classified by their attributes (*e.g.*, live plant matter, decaying plant matter, and other insects) and physical properties (*e.g.*, soft or hard).

HCPS III Benchmarks

SC.K.1.2

SC.K.6.1

MA.K.1.1

Duration

45 minutes

Source Material

PRISM

Vocabulary

Diet

Plant eater

Decaying matter eater

Animal eater

Insect Diets

Summary

Students will learn what insects eat by observing and collecting different food items around their school's campus. Students will classify food items into three main categories recognizing the diversity of insect diets.

Objectives

- Students will be able to explain why diet is essential for insect survival
- Students will be able to describe the three common food items consumed by insects

Materials

For each student:

Insect diet worksheet

Quart size re-sealable bags

For teacher:

Chart paper

Markers

Making Connections

Insect foraging is a common behavioral observation. Students may have witnessed an ant carrying a crumb of food at an outdoor picnic, a cockroach scavenging for leftovers across the kitchen floor, a bee busily gathering nectar from a flower, or unfortunately experienced being bitten by a mosquito.

Teacher Prep for Activity

Find a safe natural site around your campus that you can take students to conduct their fieldwork. Gather re-sealable bags and make enough copies of Insect Diet worksheet for each student.

Background

Nutrition obtained through feeding is essential for insect survival, growth, and reproduction. Insect diversity explains the diversity of insect **diets** (food regularly consumed for nourishment). While some insects do not have discerning diets (*e.g.*, cockroaches), other insects may have highly specialized diets (*e.g.*, honey bees).

Generally, insect diets can be divided into three main categories: **plant-eaters**, **decaying matter-eaters**, and **animal-eaters**. Plant eating insects feed on plants (*e.g.*, caterpillars, butterflies, and some beetles). This includes plant leaves, flowers, fruits, seeds and stems. Decaying matter eating insects' feed



on decaying or decayed plant or animal matter (*e.g.*, flies). Animal eating insects feed on other animals. This includes insects that eat other insects (*e.g.*, dragonflies).

Vocabulary

1. Diet – food regularly consumed for nourishment.
2. Plant-eaters – insects that feed primarily on plants, this includes plant leaves, flowers, seeds and stems.
3. Animal-eaters – insects that feed primarily on other animals, this includes insects that eat other insects.
4. Decaying-matter-eaters – insects that feed primarily on decaying or decayed plant or animal matter, this includes rotting vegetation and animals.

Procedure

1. Give each student a re-sealable bag.
2. Escort students outside to a *natural* area containing plants, leaf litter, and potentially insects
3. For 5 minutes, have students collect 5 different kinds of items they think insects might eat.
4. Instruct students they are allowed to collect more than 1 representative of each kind of item (*e.g.*, collect 3 different kinds of leaves), but must also collect at least 2 different kinds of items. *Note:* teacher can also collect 5 items that can be used as a demonstration during the sorting exercise
5. Escort students back to classroom after 5 minutes have elapsed.
6. Have students place their bags at their seats, then gather as a group in a circle for discussion.
7. Ask students what kinds of items they collected.
8. Ask students, “Why do you think insects may eat that particular item?”
9. Emphasize the variety of food items available to insects.
10. Briefly introduce diet vocabulary (diet and diet classifications).
11. Provide examples for insect diet categories based on earlier students’ responses (*e.g.*, green leaf is an example of a plant-eater diet).
12. Demonstrate how to sort and count items for each diet category (*e.g.*, plant-eater). *Note:* use items collected by teacher to demonstrate how to properly sort items.
13. Place green leaves in one group, yellow-brown leaves in another, and small insects in another group.
14. Explain that plant-eating insects eat the items in the first group; decaying-matter eaters eat the items in the second, and animal-eating insects eat the items in the third group. *Optional:* provide examples of kinds of insects that would eat the items in each category – *e.g.*, caterpillars eat green leaves, flies eat decaying matter, and dragonflies eat other insects (particularly flying insects).
15. Give each student one Insect Diet worksheet.
16. Read instructions aloud referring to sorting demonstration for example on how to properly sort items.
17. Ask students to return to their desks to complete worksheet. *Note:* for students that do not have representative items for a given diet category, have them draw 1 food item that fits into that category.
18. To end the lesson, ask students, “Why do you think insects eat?”
19. Recap key concepts from the lesson:



1. Food is important for insect survival
2. Different insects have different diets
3. Insects can eat plants, decaying material, or other insects

Assessments

Insect Diet worksheet with collected items properly grouped and counted
Class discussion and anecdotal records (taken during sorting activity)

Resources

<http://imfc.cfl.scf.rncan.gc.ca/insecte-insect/regime-diet/index-eng.html>

Extension Activities

Allow students to observe the different insect diets and feeding techniques in the classroom by viewing videos of insects feeding online. View Acacia tree ants feeding on vines that grow on their Acacia tree host (example of plant diet and chewing feeding technique) at:

http://video.nationalgeographic.com/video/player/animals/bugs-animals/ants-and-termites/ant_acaciatree.html. Watch an acorn weevil use its nose drill into an acorn and suck up the juices inside (example of plant diet and piercing/sucking feeding technique) at:

http://video.nationalgeographic.com/video/player/animals/bugs-animals/beetles/weevil_acorn.html.

Math Connection

Sorting items based on similarities then counting items incorporates the understanding and proper use of numbers, ways of representing numbers, and relationships among numbers. After completing Insect diet worksheet the teacher can ask students which type of insect diet category they collected the most items for. If time permits, a simple bar graph on chart paper of students' responses can be created as a class (*e.g.*, total plant diet items, total decaying matter diet items, total animal diet items).



Insect Diet Worksheet

Name _____

Group the insect  food. 

 Count the insect food.

 Write or draw what you see. 

 How much **green** plant food?  

 How much **yellow-brown** plant food? 

 How much animal food?  