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Grade 2 Spring Big Backyard Walk
Insect Detectives

Objectives:
- Observe and compare the diversity of habitats and insects found in the school yard
- Make observations and collect data on insect and plant interactions
- Find evidence that plants and animals depend on their surroundings to get what they need
- Make a scientific sketch (a detailed drawing of "what you see") of a plant and/or insect

Working toward the following science understandings:
- There are many different kinds of living things in any area and they exist in different places on land and in water.
- Insects have body structures that can look different but function in similar ways.
- One way to classify animals is based on the observable characteristics of that animal.
- Animals depend on their surroundings to get what they need, including food, water, shelter, and a favorable temperature.
- Animals depend on plants or other animals for food. They use their senses to find food and water and their body parts to gather, catch, eat, and chew the food.

Focus Questions:
- What can we learn about insects and their behavior through field research?
- Are insects important? Why or why not?

Preparation:
- Schedule walk in later May or early June when warmer temperatures arrive; late morning/afternoon for optimum insect activity
- Walk duration is 35-45 minutes
- Teacher will inform you if an Epi Pen is needed for bee allergies

The BBY Coordinator will:
- Identify areas in the school yard where flowers might be found. (early bloomers such as dandelion, daffodils, tulips, red clover, tree blossoms) This will be the best place to observe insect and plant interactions.
- Make copies of worksheet for each student (print double-sided)
- Gather materials for each Big Backyard volunteer and put in BBY tote bags

MATERIALS

Walk leader:

1 Lexington Alive Field Guide
~4 bug boxes and hand lenses

Students:

1 Pencil and Clipboard per student for on site recordings
1 Insect Detectives recording sheet per student

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PRE-WALK ACTIVITIES

To be led by teachers prior to the walk.

- Ask students to share their thoughts on where insects might be found in the school yard and why. (Under rocks, on flowers, under leaves, in the grass, in the sun, in the shade. Insects look to their habitat for the air, water, food, shelter and appropriate amount of heat needed for survival.)
- *What are the behaviors we might observe if we find insects?* (eating, crawling, flying, hiding, etc.)
- Share the book, On One Flower, by Anthony Fredericks.
    - **Before reading**, ask students to share what they know about the topic of the book just from looking at the illustration on the cover.
        - Ask students to share additional ideas they have about being an insect detective. *What might make it challenging to find insects?* (their size, their ability to blend in using camouflage, their ability to move fast, their ability to hide or be still)
    - **After reading**: *What strategies do insects use to protect themselves?* Can you give examples from the story? (the stinkbug's smell, the camouflage of the spider and the ambush bug , the butterfly's speed, the large black "eyes" on the ladybug's back)
    - *Were there any creatures on the flower that would not be considered an insect? How do you know?* (spider and tick, number of legs)
    - Explain to students that the Insect Detective walk will allow them to further investigate insects found in the Big Backyard. They can compare the insects they find outside to what they know about the painted lady butterfly.
    - Why is the book called One One Flower? (The one flower is a habitat to many different organisms?)

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WALK ACTIVITIES

Students have been studying one type of insect, the painted lady butterfly, in the classroom. They have been observing the life cycle of the butterfly and the life cycle of Wisconsin Fast Plants to explore the relationship between insects and plants. The goal of the walk is to observe a variety of habitat areas within the school yard to gather additional evidence that plants and insects depend on one another.

Once outside:

- Ask students to think about their focus questions for the walk.
    - *What can we learn about insects and their behavior through field research?*
    - *Are insects important? Why or why not?*
- *If we want to find insects, where might we look in the school yard? Are all areas in the school yard the same?* (open areas, woods, field, blacktop, cultivated plants vs wild plants, sunny, dry, cool, shady?)
- *Would we find different animals in different habitats?* (yes, some like cool, some like hot, some like moist, some like dry, all want to avoid predators)
- *What If we were to gather in one space, all the animals that make the school yard their home, what kind of animals would be most common? (insects but they are not all easily seen)*

Lead group to an observation site: (The edge of an unmowed field or flower bed with noticeable insect activity. This location will be identified prior to the walk.)

- Tell students they will observe in an area where they may find more insects. Ask them to look for signs of insects on the way.
- Ask students to be as still as possible to make careful observations. Students can take a short time to stand/sit still to see what insect activity is around them.
- *Why do you think we are seeing/ hearing more insect activity in some areas?* (suitable habitats have the air, water, food, space and shelter needed)
- Get a few impressions from the group.
- *What other signs of animals might we find? (*nests or leaf damage*)*

At an observation site:
Insect Activity
To learn more about insects in the school yard, we will look carefully in one habitat to collect data on the insects we see and their behavior.

- Students will work in pairs but record individually on their student sheet. Students can sit or stand to record their findings.
- Each time they notice an insect, they can mark an √ on the sheet next to the behavior they observe.
    - *What are the insects doing? Are they staying in one place, moving, finding food?"*

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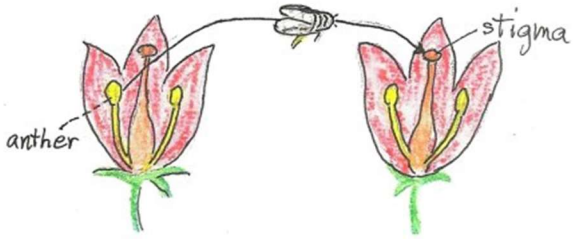
- Students should explore the site and look for plants and insects. If it is possible to catch an insect in the magnifier box without harming the insect or putting any child at risk, allow students to take a closer look at insects.
    - *Can you find an insect, can you sketch what you see?*
    - *What do you notice about your insect? How many legs? What do you notice about the body of the insect? How are they similar to or different than the painted lady butterfly you have been studying in the classroom?*
    - *What about the plants? Do you see flowers, leaves, etc.? Any additional sign of insect behavior (*bite marks on leaves, nests, insect droppings)
    - *The insects clearly need plants for food and water. A**re insects important for plants? Why or why not?*** (Plants need insects, they help in pollination and seed production.) *Flowers are the tools that plants use to make their seeds.*

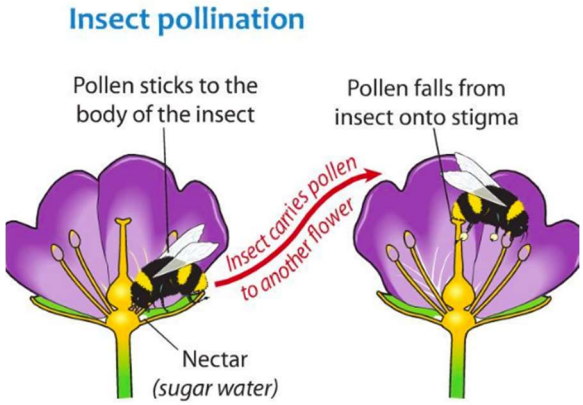
Evidence of Pollination

- Find a location with flowers or a plant with signs of fruit/seed development.
- *How do plants attract insects for nectar and pollen? Flowers are the tools that plants use to make their seeds.* (Sometimes color, sometimes smell.) *Do any of the flowers around us have a pleasant smell?*



https://www.sacsplash.org/post/flower-factsants

- If flowers are present, have students take a closer look at a flower? *Do you see evidence of pollen? How is the pollen moved from one plant to another?* (Pollination occurs when pollen is moved within flowers or carried from flower to flower by pollinating animals or by the wind. The transfer of pollen in and between flowers of the same species leads to fertilization, and successful seed and fruit production.)



- Look at the plant diagram. (see back page) *Let's look closely at a flower to see if we can find the part of the flower that holds pollen.*
- *Why does pollination matter to us? (¾ of our food plants are pollinated by insects. That includes fruits such as apples, oranges, pears, strawberries, and nuts.)*

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Wrap up and Return to School:

- Have students circle up to share their findings.
    - *What did you observe? How is what we observed similar or different than what you are observing in the classroom? What new wonderings do you have?*
    - *Are insects important? Why or why not?* (The insects clearly need plants for food and water. Plants need insects, they help in pollination.)
    - *What makes for a good insect habitat? Is this a place for butterflies like the painted lady? What other insects or organisms can make their home here?*
    - *"How might people and communities help protect and support healthy butterfly habitat?"* (planting butterfly gardens, protecting open spaces and fields, etc.)

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Post Walk Integration Opportunities:
To be chosen and led by the teacher.

Read aloud, A Place for Butterflies, by Melissa Stewart.
This book details the different habitats that support different species of butterflies and how people can preserve and protect these habitats. The book highlights the interconnectedness of our world and how impact on one species can inadvertently harm another. To focus on the pages most connected to this walk, read up to the monarch butterfly and then pick up the story again with Harris's checkerspot. To keep students engaged, share only some of the informational detail in the sidebars. (Of interest: A Butterfly's Life, pg. 2, Eastern Tiger Swallowtail, pg. 3, Karner Blue, pg. 7, Monarch, pg. 12, Harris's Checkerspot, pg. 21, Plants Need Butterflies, pg. 25, Other Animals Need Butterflies, pg. 26) ·

Use Monarch and Milkweed, by Helen Frost and Leonid Gore for an interactive Read-Aloud.

Plant milkweed seedlings that were grown in the classroom to support conservation efforts to support the declining Monarch population.

Read aloud, Under One Rock, by Anthony Fredericks. Ask students to think about the characteristics that all insects have in common. As you read, ask students to think about which of the organisms are insects and why.

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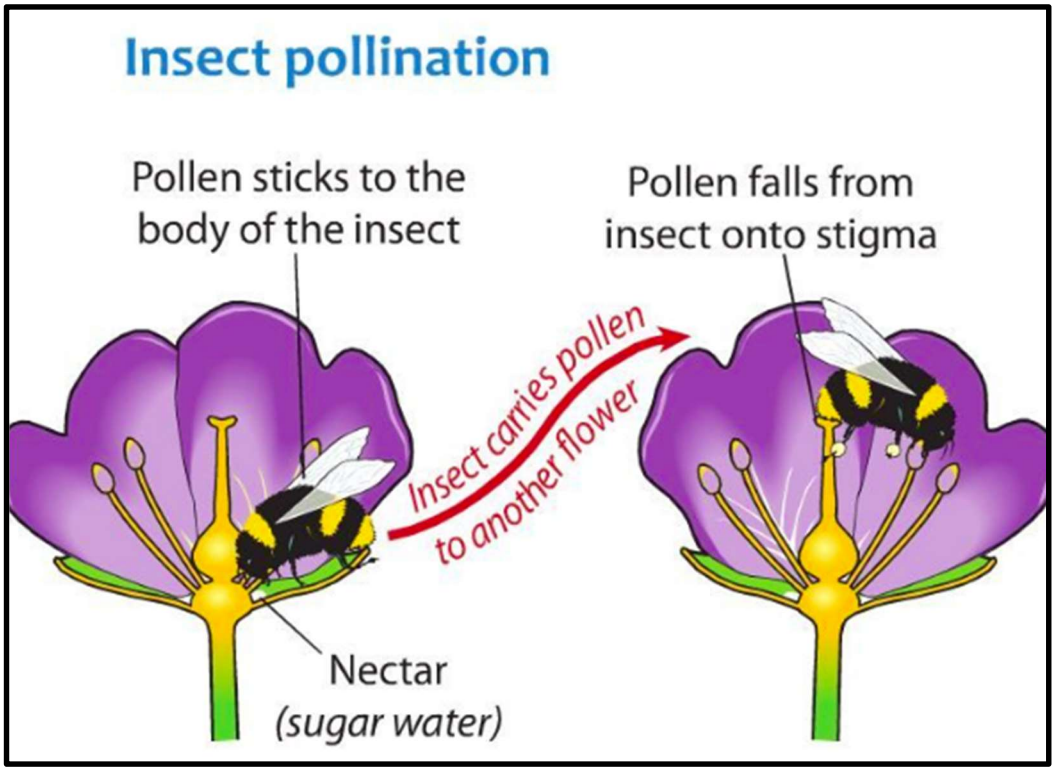

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Worksheet #1

Name: _____ Date: _____

Weather: (circle one) Sunny / Cloudy / Rainy Temp: _____

Stop and look around you. What do you notice? Are there insects present?

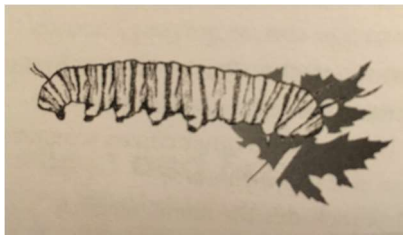
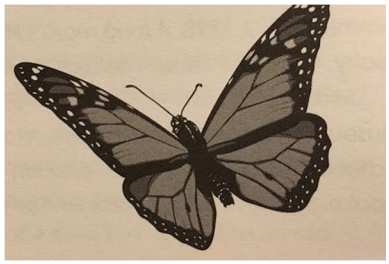
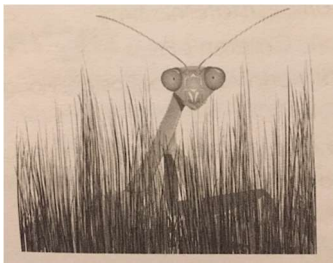
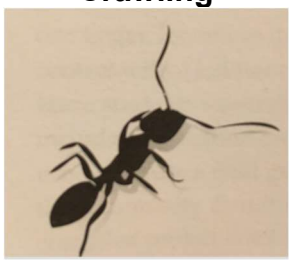
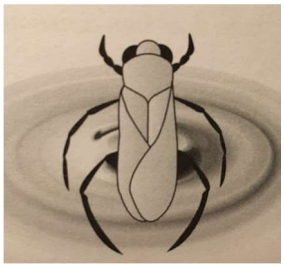
Yes _____ No _____

If there are no insects, why might that be?

_____

_____

Observe the insects around you and place a √ under the picture each time you observe that behavior.

Eating	Flying	Hiding
		
Pollinating	**Crawling**	**Other**
		

Circle the behavior you observed most often.

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Worksheet #2

Take a Closer Look:

Draw your plant or insect observations here.