GRADE TWO FALL NATURE WALK
A Place for Butterflies

OBJECTIVES

Students will:

- compare habitats around the school yard that support different types of insects
- observe that a variety of flowering plants makes a good habitat for butterflies and insects
- survey the school yard for plants that support the life cycle of Monarch and Painted Lady butterflies
- make a scientific sketch of a plant and/or insect (a detailed drawing of "what they see")
- look for evidence that the insects and plants in the school yard depend on one another

PREPARATION

- This walk is best done **early in the school year** before the flowers are gone and the cooler temperatures arrive; before the second week of October. There will be more insect activity later in the morning/afternoon so later walks are ideal.
- The BBY Coordinator will:
    - identify areas in the school yard where receptive flowers can be found (goldenrod, jewelweed, New England aster – great late season nectar source for for insects, red clover, cow vetch, Joe Pye weed, Queen Anne's lace, milkweed and black-eyed Susan) This will be the best place to observe insect and plant interaction.
    - survey and identify areas where host and nectar plants are found (milkweed, yarrow, plantain, goldenrod, red clover and black-eyed Susan) in the school yard.
    - collect a few nectar plants for students to sketch. (Keep their stems in a moist paper towel to keep them fresh.)
    - Collect milkweed pods to provide each group. Be sure to wrap the broken stem to contain the sticky milkweed sap.

- The Big Backyard walk will last about 45 minutes.
- *Note: the teacher will inform you if there are any bee allergies and if needed an Epi Pen will be with the teacher.

MATERIALS

Walk leader:

- Clipboard
- 1 set of Butterfly and host plant pictures
- *Who Might Live in Our Big Backyard?* –1 recording sheet
- Lexington Alive Field Guide (1 per group)
- ~4 bug boxes and hand lenses

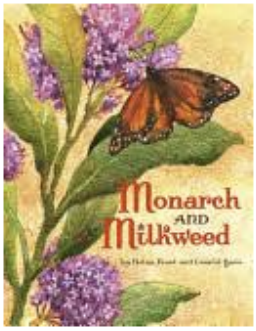
Students:

- 1 Pencil and Clipboard per student

- 1 Recording Sheet (#1) per student

PRE-WALK ACTIVITIES
To be led by teachers prior to the walk.

- Since this is the first Big Backyard walk of the year, set the stage by asking students to think about what it looks like when students are on a nature walk. Suggest making a list of behaviors that would be seen. For example: Stay together as a group; Move slowly so we don't scare animals; Talk quietly; Share your discoveries with others; Listen to nature and to each other; Cooperate with walk leaders.



- Use Monarch and Milkweed, by Helen Frost and Leonid Gore for an interactive Read-Aloud. (see attached lesson description)
    - Before reading, ask students to share what they know about the topic of the book just from looking at the illustration on the cover.

  Read A Butterfly is Patient, by Dianna Hutts Aston and Sylvia Long to introduce the idea of insect pollination.

WALK ACTIVITIES

WHO LIVES IN OUR BIG BACKYARD?

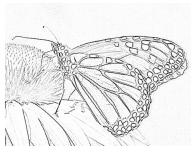
- Just outside the door to the school ask students to look and listen for animal activity. (Be sure that the students know that insects are animals.) Get a few impressions from the group. *"Do we see and hear animal activity from where we are standing?"* Have students share their findings. Hopefully they will notice that they will see and hear more evidence of animal behavior in some areas than in other areas. (sounds mostly from birds and insects)
- *Where might we go to see or hear more animals? Including insects?* (Gather suggestions.)
- Lead your group to a spot in the school yard, ideally, at the edge of an unmowed field with noticable insect activity. (This location will be identified prior to the walk.) Tell students that as field scientists, the two senses they will focus on today are sound and sight.
- Ask students to be as still as possible to make some observations.
- "*Why do you think we are hearing and seeing more insect activity in some areas?"* (suitable habitats have the air, food, water, space and shelter needed)
- *"What do you know or have you noticed about the different areas around the school, are they all the same?"* (open areas, woods, field, blacktop, cultivated plants vs wild plants, sunny, dry, cool, shady?) *"Would we find different animals in the different habitats?"*
- *"What If we were to gather in one space, all the animals that make this area their home, what kind of animals would be most common?"*

- Use the recording sheet, *Who Might Live in Our Big Backyard* to collect their ideas. They may not respond with "insects"as larger animals are more noticeable. Put checks in the corresponding columns as students list their ideas.
- Share with them what scientists have found in terms of the number of organisms found on a much larger scale, the Earth. *"Similar to our small area, if we were to take a much larger look at the Earth, scientists have found that insects make up the largest group of animals."*
- *"If there are so many insects, why don't we realize that they outnumber other animals? (*most insects are small, and they hide*) Let's go to find some and see what they are doing."*

IS THIS A PLACE FOR BUTTERFLIES?

Students will read a book of this same title when they return to class. The 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.

- *"Where in the schoolyard might be a good place to look further at insects and insect activity?* (field, flower bed)
- Move the focus to butterflies, *"In class you have a special kind of animal that is a member of the largest group of animals on Earth. Today, we are going to focus on butterflies in their natural habitat."*
- "*Is this a place for Butterflies? What do butterflies need from plants? (*flower nectar for food, a place to lay eggs*) "What might make good habitat for butterflies? (*hold up the butterfly photos*) Think back to the book, some butterflies only lay their eggs on certains plants."*



- Show students the color photos of the butterflies, monarch and the painted lady. Ask students to look at the two pictures, "*Look at the pictures and tell me how both butterflies are alike?"* (A very large proboscis or tongue for drinking nectar from plants. The proboscis unravels and the built-in straw is ready to use.)
- "*Does anyone know what plants these butterflies need in their habitat?"* (Students might refer back to the book, Monarch and Milkweed). Take some time for students to share what they know.
- Use the photographs to share more about the plants needed by monarchs and painted lady butterflies.

monarch and painted lady nectar plants:

goldenrod, , black-eyed Susan, red clover, New England aster, bull thistle (to name a few)

monarch host plant (for egg laying and caterpillar food):

milkweed only

painted lady host plants: (The painted lady is one of the most widely distributed butterflies in the world with a global distribution due to larvae

feeding on a variety of plants.) plantain, bull thistle, yarrow, lamb's quarters (to name a few)

- Host plants are needed for laying eggs while Nectar plants are needed to provide the sweet liquid that provides nutrients to insects. Many plants are the host for many different insects but the monarch is special, milkweed is the only plant on which they will lay their eggs. Painted lady butterflies have a variety."

- "*For nectar, both insects have a variety of flowers they visit. Here are just a few."* Share the photographs with students.
- *"We are going to look to see if we can find these plants as we walk to a few different areas of the school yard."* "*While traveling, look for insect activity or signs of insects (partially eaten leaves, flowers that are now seed pods, etc.)" Observe as much as you can about the insects around us."*

- *" What did you notice?"" Now, further away from the school, did you hear insects? Other animals (birds)?"*
- *Do you think there are more insects found in some areas than in other areas? What is your evidence? Why might that be?"*
- Explore a few different sites and look for plants and insects. If it is possible to catch an insect or two in the magnifier boxes without harming the insect or putting any child at risk of a sting, allow the students to look closely at some insects.
- The whooly bear is a common caterpillar found at this time of year, feeding on common plantain, dandelion and nettles. Students can take a close look at this caterpillar but some may have a reaction if touched so have studenets use a bug box for closer examination. According to folklore, the amont of black on the body can be a predictor of winter's cold and snow.

RECORD FINDINGS

- Once the group is in an active insect area and they have located some of the host or nectar plants, tell them they will take a more focused look. "*To help us do this, Scientists sometimes sketch and take notes in the field to learn more about the plants or animals there and to share information with others."*
- *"Find an insect on a plant, can you sketch that interaction? You can focus on just a plant or insect or both! The questions on your student sheet will help you to look closely."* (See Sheet #1.)
- Walk leaders, please note the *Lexington Alive Field Guide* is a useful resource for walk leaders and students but it can easily become a distraction for students if not used at the right time.
- While students are working, you might ask: "*What do you notice about your insect? How many legs? Wings or no wings? What are they doing? Are they staying in one place, moving, finding food?"*
- *"What about the plants? Do you see flowers, seeds, leaves, etc.? (*You might need to mention that if you are looking at plants and find only seeds, there would have been flowers there earlier in the summer.)

- *The butterflies clearly need the plants for food and water. Could butterflies survive everywhere in our schoolyard?* (Different plants survive better in different settings because they have varied needs for water, minerals, and sunlight.)
- *"What do you predict will happen in this area as the season changes?"* (some insects hibernate, protected by the leaf litter or underground, some overwinter in the egg, larva or pupal stage to emerge in spring, some insects, like the monarch, migrate to warmer climates.)
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WRAP UP AND RETURN TO SCHOOL

In the field or while walkingback , ask the following:

- *"Did we find the plants needed for a healthy butterfly habitat for monarchs or painted lady butterflies?"*
- *"What maes good butterfly habitat? Is this a place for butterflies? What other insects or organisms can make their home here?"*

- If there is time and the school coordinator has provided milkweed pods, students might help spread milkweed seeds. **Caution, only the walk leader should handle the milkweed pod.** Milkweed, when broken, lets out a milky sap which is a mild poison called cardiac glycosides. Certain insects, including monarch butterfly larvae, are immune to the toxin. By feeding almost exclusively on milkweed leaves, they are able to accumulate enough of the poison in their bodies to make them distasteful to predators. Some people may develop an allergic reaction when the sap touches the skin.
- Ask, *"How might people and communities help protect and support healthy butterfly habitat?"* Allow students time to share their thinking around planting butterfly gardens, protecting open spaces and fields, etc. Provide some seeds for students to spread in a light foot- traffic area.

POST-WALK CURRICULUM INTEGRATION OPPORTUNITIES

To be chosen and led by the teacher.

- Read aloud, A Place for Butterflies, by Melissa Stewart.
  This book details the habitats and behaviors of a large variety of butterflies. 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, Eastern Tiger Swallowtail, Karner Blue, Monarch, Harris's Checkerspot, Plants Need Butterflies, Other Animals Need Butterflies)

- Plant milkweed with students (purchased seeds or seeds from the dried pods) to support the human-nature interaction and conservation efforts. Plant some of the other nectar and host plants listed within the walk guide.

- Follow the annual migration of the Monarch to Mexico via Journey North's website and resources. http://www.learner.org/jnorth/monarch/

Name Date

Insect and Plant Observations

Flower in bloom yes no Color of flowers, if present _____

My Insect/Plant Observations:

_____

_____

_____

What makes a good butterfly habitat? _____

_____

_____

Student Sheet #1

Monarch Butterfly

Milkweed- the host plant for monarch butterflies

A female monarch butterfly laying a single egg on milkweed

Painted Lady Butterfly

Host Plants for Painted Lady Butterflies

Lamb's Quarters

Yarrow

Plantain

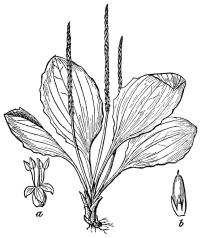
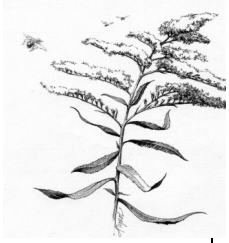
Nectar Plants for Painted Lady and Monarch Butterflies

Red Clover

Black-eyed Susan

Goldenrod

Walk Leader Plant Identification Guide

Butterfly	**Host Plant/s**		
Monarch	**Milkweed** 		
Painted Lady	**Yarrow** 	**Plantain** 	**Lamb's Quarters** 
Butterfly	**Nectar Plant/s**		
Monarch & Painted Lady	**Golden Rod** 	**Black Eyed Susan** 	**New England Aster** 	**Red Clover** 

NATURE WALK EVALUATION

Walk Leader:_____

Grade and Teacher:_____ **Date:**_____

Children in Group:_____

1. **What parts of the walk interested the children the most? (check all that apply)**

Collecting sounds	Sketching the plant
Using the field guide	
Finding plants	
Observing plants and insects	

Other:_____

2. **What parts were not successful? (check all that apply)**

Collecting sounds	Sketching the plant
Using the field guide	
Finding plants	
Observing plants and insects	

Other:_____

3. **This walk was: (circle one) TOO LONG JUST RIGHT TOO SHORT**

4. **The children seemed adequately prepared: (circle one) YES NO**

5. **This was a good working group: (circle one) YES NO**

6. **I felt adequately prepared to lead this walk: (circle one) YES NO**

7. **Other comments or suggestions:**

Grade 2 Interactive Read Aloud

Text: **Monarch and Milkweed** by Helen Frost and Leonid Gore

- Content Objective: Students will identify how the life cycle of the Monarch butterfly and the life cycle of the milkweed plant are similar and how they co-exist.
- Language Objectives: Students will discuss and write about how the life cycle of the Monarch butterfly and the life cycle of the milkweed are similar.

CCSS.ELA-Literacy.RI.2.3 CCSS.ELA-Literacy.SL.2.1

Teaching Moves
Pose a question: *The title of this book is* **Monarch and Milkweed**. *What do you know about how this plant and butterfly are related to one another?*
Read aloud page one and ask students to visualize and act out how the "milkweed stretches into the warm air" with its roots reaching "deep and wide" and its stem "pointing to the sky."
Read aloud page 2* (*Monarch spreads her wings…*) and ask students act out how the monarch "spreads her wings and rides the wind…across a creek, heading north."
After reading aloud page 7* (*Monarch lights on Milkweed,…)* stop and ask students: *What do you think "tastes home" means in this part about the monarch landing on the milkweed plant.* ***Turn and tell your partner***.
After reading aloud page 13* (*…and when it grows too big…*) stop and ask students: *How is milkweed plant supporting the monarch?* ***Turn and tell your partner***.
After reading aloud page 17* *(*She opens her wings,…) stop and ask students to act out "she opens her wings, closes them, opens them wide – a light breeze lifts her, and she flies.
After reading aloud page 24* (*Milkweed's pods split open…)* stop and ask students: *How is the way the milkweed seeds are spread around similar to the way the monarch seeds are spread around?*
Revisit page 7 stop and ask students: *What do you think now about what "tastes home" means in this part about the monarch landing on the milkweed plant?* ***Turn and tell your partner***.
After finishing the book ask: *So how are the life cycles of the monarch and the milkweed the same? What's your evidence?* Lead/facilitate students in a discussion about this inquiry and record student thinking on chart paper.
Ask students to return their science notebooks and draw a picture and write a few words about the life cycles of both the milkweed plant and the Monarch butterfly.

CCSS.ELA-Literacy.RI.2.6
CCSS.ELA-Literacy.RI.2.7

CCSS.ELA-Literacy.SL.2.2
CCSS.ELA-Literacy.SL.2.4

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