



Instructors: Galen Miller, (SAGE outreach coordinator), and Gretchen Gould working with 14 afterschool students ranging in age from Kindergarten through 4th grade

Unit Title: Springtime Reveal

Length of Unit: We met with students for two hours, one day per week for six weeks

Timeline:

April 7 – Spring Ephemerals, journal and clay seed pod pendant creation, and seed parts/cycles

April 14 – Pollinators, seeds, and how they are related

April 21 – Spring Break!

April 28 – More pollinator games and a group drawing project

May 5 – Expedition week to the Plymbsbury State Forest to look for frogs, toads, and salamanders

May 12 – Forms and Patterns, (ferns, bark rubbings and Andy Goldsworthy inspired rock balancing)

May 19 – Culmination – Students worked together to create collages with their nature photographs

Goals of this unit: We want students to have the opportunity to explore the natural world, rain or shine. In this time where plants and animals are waking up, we ask students to notice and document changes and to reflect upon their own observations. Our hope is that students will walk away with a greater interest in the miraculous world that is unfolding all around them, a sense of connection to this world and the ability to ask questions and learn through observation.

Essential questions to consider: What are some of the signs of spring? Are seeds the beginning or the end of a plant's life cycle? What is a pollinator? How do plants attract pollinators and why? How do you begin to draw what you see? What are the guidelines for exploring the woods? What are the forms and patterns you notice in the natural and man-made world? What purpose do these patterns serve? Where do you fit within this ecosystem?

Students will know:

- Methods of observation and documentation
- The relationship between plants and pollinators
- How spring peepers and wood frogs survive our harsh winter
- Where to look for red efts
- That ferns, horsetails and club mosses are some of the oldest species found on the planet
- Sound science, great art and expansive knowledge are available with the application of diligence and patience

Students will be able to:

- Craft their own journal
- Take a useful photograph, use it to learn and to share their learning
- Sketch what they see
- Explore the woods mindfully and safely
- Use the natural world to inspire their own art
- Work together to create a body of work that is informative and delightful

Assessments of learning:

Throughout the entire program, students had the opportunity to photograph each other and their experiences in the woods. The excitement of using the camera provided accessibility and inspired close observation and many questions. As a culminating activity, we selected 100 of the many images snapped by the students, had them developed and created group and individual collages. Participants were able to remember some of the different plants and animals we observed and choose their favorite moments to highlight. While I believe that the students learned many important facts about the structure and inhabitants of the natural world around them, I see that their greatest need was to have the opportunity to explore freely in nature. I now see my role as being less of an instructor and more of a facilitator and guide. In reviewing their journal work, photography and collages, I assess that the students experienced great joy, had some exciting adventures, and cultivated a deeper respect for the workings of nature.

It was a beautiful challenge to have such a large group of participants with a wide range of ages, experience and ability. I loved seeing the older students assisting the younger and the younger admiring the older. This expanded peer group, while a complicating factor, felt like an important component. In the future I would like to do one of several things:

- Keep the age range but limit the enrollment
- Run separate programs for the older and the younger students
- Have the same large group with the age range and an added instructor

Activities to support learning targets:

Please know that snacks and photography were two of the activities that happened every week and were of utmost importance. Each week we had 4-6 small digital cameras for the students to share. They were very careful with the equipment and did a marvelous job sharing.

Week 1 – Journal crafting with construction paper, plain white paper, string and pencils. As it was pouring rain, we brought dried plants as well as a variety of seed catalogs, plant and animal books, sprouted lima beans and young pea plants for inspired drawing. For the second ½ of our session, we ventured out into the pouring rain to trek around in the woods. The students were thrilled to have the opportunity to be outside in the rain, splashing in puddles and stirring up wet rock chalk.

Week 2 – Broke into 2 groups, introduced the cameras, crafted clay seed pod pendants and explored the woods looking for pollinators. For the pendants, (and really, generally), we are fortunate that Gretchen is an art teacher with access to clay and a kiln.

Week 3 – Shared the story and photos of Darwin’s orchid and its pollinator, Morgan’s sphinx moth. Again, broke into two smaller groups. Group 1 played a partner game where one student was the pollinator, the other, the flower. The flower had a cup of nectar, (honey water), and pollen, (glitter). The pollinator would buzz along with his/her proboscis, (a straw), take a sip of nectar and inadvertently get covered in pollen. In their journals, participants drew a, “create your own pollinator and/or flower,” picture. Students in Group 2 worked together to create a group drawing based upon anything that they could see. They were encouraged to practice their ability to look and translate the three dimensional world into a two dimensional drawing. As well, the children created mason bee houses to be placed around the school garden. For this project, they used small chunks of wood and hand crank drills. We then switched groups.

Week 4 – We took a short bus trip to the Plymbsbury State Forest where we hiked, took photographs, splashed in streams, hollered at each other through the culvert, rested on the moss, worked in journals and learned about what to do if ever lost in the woods.

Week 5 – Introduced the students to the art and work of Andy Goldsworthy with one of his books and a small clip from his movie, Rivers and Tides. Goldsworthy works outside in all elements, primarily using found materials and his hands to create extraordinary and impermanent works of art. From there, we proceeded outside to look at the unfurling ferns, make bark rubbings and balance stones. Students

created beautifully balanced stone sculptures individually or in pairs, according to their desires. This was a much loved activity.

Week 6 – As the final week, we primarily focused on creating the collages with all of their photographs taken over the previous five weeks. As well, students made necklaces with their clay pendants and were presented with their journals as well as a group photo. As always, we left plenty of time to play outside.

For the most part, we used simple materials and books that we already owned. We splurged on two cameras, snacks and photo developing at the end.

Supporting resources:

Four Winds diagram – “Parts of a Lima Bean”

MYO pollinator activity inspired by the Four Winds activity, MYO predator

<http://www.yale.edu/ynhti/curriculum/units/1980/5/80.05.10.x.html>

http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_027028.pdf

<http://onlinelibrary.wiley.com/doi/10.1111/j.1095-8339.2012.01250.x/abstract;jsessionid=4E88774C18E66714295433009B997026.f04t03?deniedAccessCu stomisedMessage=&userIsAuthenticated=false>

Naturally Curious: A Photographic Field Guide and Month-by-Month Journey through the Fields, Woods and Marshes of New England by Mary Holland

Hands-On Nature: Information and Activities for Exploring the Environment with Children Edited by Jenepher Lingelbach and Lisa Purcell, Illustrated by Susan Sawyer

Peterson Field Guides - Ferns of Northeastern and Central North America Second Edition

Common Mosses of the Northeast and Appalachians – Karl B. McKinight, Joseph R. Rohrer, Kirsten McKnight Ward, and Warren J. Perdrizet

Andy Goldsworthy: A Collaboration With Nature

Movie – “Andy Goldsworthy: Rivers and Tides – working with time”

Fedco, Johnny’s, and High Mowing Seed Catalogs