Beneficial Bugs at Molly's Organic Farm: Make Honey Taffy

Introduction

In the book, Molly encounters several organic farm helpers including ladybugs, spiders, ground beetles, and praying mantises. These bugs are considered beneficial because they help farmers to control other bugs. Honeybees, bumblebees, moths and butterflies are also helpful because they pollinate the flowers. In this activity students learn about the most prolific of the pollinators the honeybee and make a yummy treat from honey.

Materials Needed

- 2 C Honey, ½ tsp. baking soda, 2 tsp. vinegar, 1/8 tsp. salt & 1 ½ Tbs. butter for taffy
- Bee diagram for labeling

Key Concepts

- Students will identify the major structures of insects (honeybees) –arms, wings and legs.
- Students learn what nectar, honey and pollen are; where the come from and how bees and flowers share a mutually beneficial relationship.

Procedure

1. Introduce students to the honeybee and explain that this insect is responsible for pollinating 1/3 of the worlds food supply. Show students drawings and photos of honeybees and provide a bee diagram for students. Have students identify and label the major structures of the honeybee (wings, body, antennae).
2. Explain how bees collect nectar from flowers while distributing pollen from the flowers. After the honeybees collect nectar they mix it with enzymes and deposit it in honeycomb. Then bees remove excess moisture from the mixture by fanning it with their wings- the result honey!
3. Make the honey taffy. You can either make with group or prepare in advance and have students work with the taffy when it is cool. Cook the honey and vinegar in a saucepan, stir until syrup becomes brittle when tested in cold water. Remove from heat and add butter, salt and baking soda. Stir until it stops foaming. Pour into buttered pan. When cool pull taffy until it is light in color and cut into small squares. Enjoy!

Nature Connections

- Discuss the issues facing the honeybees. You can visit http://kids.nationalgeographic.com/kids/stories/animalsnature/honey-bee-mystery/ for a kids friendly article on the plight of the bees.

- Brainstorm things that children can do to help honeybees in their own backyard such as putting out a bee bath, asking for local honey or building a bee colony.

Additional Resources

Visit this site to get a diagram of the honeybee body parts: **http://ag.arizona.edu/pubs/insects/ahb/act2.gif**

For an excellent website linking honeybees with national science and geography standards visit: **http://www.scholastic.com/browse/unitplan.jsp?id=283**

Fruit or Vegetable?

Introduction

Students play a kinesthetic game of standing up and sitting down as they decide whether a garden plant is a "fruit" as well as a "vegetable." This is a good activity to do after students learn about plant parts. See next page: Supplemental Information for Fruit or Vegetable.

Materials Needed

- Molly's Organic Farm

Key Concepts

- The term "fruit" is a scientific term. It refers to the part of the plant that contains the seeds.
- The term "vegetable" is a cooking term. It refers to a plant or part of a plant that is used for food, including the flowers, fruits, leaves, roots, or stems.

For standards correlation please see our website.

Procedure

1. Show pages 20-21 of Molly's Organic Farm. Ask students, "Is a pumpkin a fruit or vegetable?" Take responses and then explain that the word "vegetable" is a cooking term that refers to a plant or part of a plant that is used for food. The word "fruit" commonly refers only to "sweet fruits" like apples, blueberries, oranges, and cherries. But actually a fruit is a scientific term for the part of the plant that contains the seeds. Because we eat pumpkin (think pumpkin pie!) AND it contains seeds, a pumpkin is BOTH a fruit and a vegetable.
2. Going page-by-page, help students identify each food that is growing on Molly's farm.
3. Once you reach the end of the book, go back to beginning, pointing to the plant, saying its name, and asking, "fruit or vegetable?" Students stay seated if the food is only a vegetable; they stand up if the food is also a fruit. See Supplemental Information page for answers.
4. End the lesson by asking students to share with the class one of their favorite fruits and vegetables. They may also explain how they like to eat it. For example, hot corn on the cob with butter and salt.

Nature Connections

- Bring in a variety of fruits, including sweet fruits such as an apple, orange, and melon, as well as other fruits such as a green pepper, summer squash, pumpkin, cucumber, and tomato. Cut fruits open to show the seeds. Have students work in small groups to take the seeds out of the fruits and compare their sizes and shapes.

Additional Resources

The USDA recommends that we fill half of our plate with fruits and vegetables. The Fruits & Veggies More Matters website has offers tips for helping kids eat more fruits and veggies. **http://www.fruitsandveggiesmorematters.org/**

"Eating a Rainbow" is an easy way to encourage kids to eat a variety of fruits of vegetables. This squidoo website provides links to various "rainbow" resources: **http://www.squidoo.com/eat-a-rainbow**

Supplemental Information for Fruit or Vegetable?

Fruit or Vegetable?

Fruits and vegetables are listed in the order in which they appear in the book:

- chard—vegetable
- onion—vegetable
- lettuce—vegetable
- beet—vegetable
- cabbage—vegetable
- cauliflower—vegetable
- broccoli—vegetable
- green bean— both fruit and vegetable
- sunflower—neither fruit nor vegetable…we only eat the ripened seeds
- cucumber— both fruit and vegetable
- corn—both fruit and vegetable (The fruit of the sweet corn plant is the corn kernel, a type of fruit called a caryopsis. The ear is a collection of kernels on the cob.
- tomato— both fruit and vegetable
- pepper— both fruit and vegetable
- apple—fruit
- peach—fruit
- zucchini—both fruit and vegetable
- radish—vegetable
- eggplant—both fruit and vegetable
- pumpkin— both fruit and vegetable

Activities based on the book Molly's Organic Farm by Carol L. Malnor and Trina L. Hunner

Plant Part-y Salad

Introduction

Students work at stations to prepare vegetables for a big salad as a fun way to review the parts of plants. Note: An adult helper should be available to supervise students while cutting or grating. See Supplemental Information for Plant Part-y Salad.

Materials Needed

- Plant part vegetables, washed
- Cutting boards, knives, graters
- Big salad bowl and serving utensils
- Bowls and eating utensils
- (optional) Salad dressing

Key Concepts

- Plants are composed of roots, stems, leaves, flowers, fruits, and seeds.
- Various parts of plants are used for food.

For standards correlation please see our website.

Procedure

1. Set up stations for Roots, Stems, Leaves, Flowers, Fruits, and Seeds with plant part vegetables, equipment needed for preparing the vegetables, and directions. (See attached list.)
2. Have students identify the various vegetables shown growing in Molly's Organic Farm. Identify the part of the plant that is eaten.
3. Divide the class evenly among the stations. Have students prepare the vegetables with the help of an adult.
4. When the vegetables are prepared, add them together in a big bowl. Serve.
5. Optional: While eating, play the songs "Roots, Stems, and Leaves" and "Dirt Made My Lunch," by the Banana Slug String Band. (See Additional Resources below.)

Nature Connections

- Plant a crop of each of the "Plant Part-y Salad" ingredients in your school's garden.
- Make "Plant Part-y" soup using all of the plant parts.

Additional Resources

The website "Songs for Teaching" lists and sells music that supports classroom science concepts. Download or purchase the "Dirt Made My Lunch" CD by the Banana Slug String Band.
http://www.songsforteaching.com/

Supplemental Information for Plant Part-y Salad

Stations for a Plant Part-y Salad

Roots

- Plants for salad: **carrots, radishes, green onions, beets**
- Equipment: graters, knives, cutting boards
- Directions: Grate carrots, slice radishes and green onions. If young and tender, beets may also be grated.

Stems

- Plants: **celery, asparagus**
- Equipment: cutting boards and knives
- Directions: Dice celery and cut asparagus into small pieces.

Leaves

- Plants for salad: **lettuce**, and other leaf crops such as **cabbage, spinach, chard**
- Equipment: large salad bowl
- Directions: Tear washed lettuce leaves directly into the salad bowl.

Flowers

- Plants for salad: **broccoli and cauliflower**
- Equipment: cutting boards, knives
- Directions: Cut broccoli and cauliflower heads into small pieces.

Fruits

- Plants for salad: **tomatoes, beans, cucumbers**, and **apples**
- Equipment: cutting boards, knives
- Directions: Cut tomatoes into wedges. Cut green beans and apples into small pieces. Peel and slice cucumber.

Seeds

- Plants for salad: **sunflower seeds, pumpkin seeds, peas, corn**
- Equipment: cutting boards and knives
- Directions: Shell peas and cut corn kernels from ears. Have bowls of pumpkin and sunflower seeds to sprinkle into the salad after all vegetables have been added.

The Seasons at Molly's Organic Farm

Introduction

In the book, Molly journeys through an organic farm throughout the four seasons. In spring she finds hearty greens like chard, in summer she encounters corn, come fall she scrambles among the pumpkins and in winter she settles into a cozy farmer's home away from the icy fields. This activity reinforces concepts about the seasons by having students make watercolor sketches of seasonal vegetables.

Materials Needed

- Watercolors
- Watercolor or other heavy paper
- Brushes
- Vegetables/Photos/drawings of vegetables found in spring, summer, fall and winter.

Key Concepts

- Identification of the 4 seasons
- The earth has seasons because of the tilt of the earth's axis.
- Plants need water, sunlight and soil to grow.

For standards correlation please see our website.

Procedure

1. Have a discussion with students about what the weather is like in each of the four seasons. Make a list of descriptive words for each season. Discuss how the earth's seasons are the result of the tilt of the earth's axis. Because the axis is tilted, different parts of the globe are oriented towards the sun at different times of the year. Discuss that summer is warmer than winter (in each hemisphere) be cause the days are longer than the nights during the summer. During the winter, the suns rays hit earth at an extreme angle and days are very short.
2. Discuss with students what plants need in order to grow. Ask them what season they are more likely to see vegetables growing in their gardens and why.
3. Give students a piece of paper folded into 4. Have them label each quadrant spring, summer, fall and winter. Look through Molly's Organic Farm for seasonal vegetables. Then using vegetables, photos or illustrations have them draw and paint a vegetable they might find in that season. For winter they can paint an icy field.

Nature Connections

- Have students visit their local grocery store and look at where the fruit and vegetables come from. Are they produced locally or did they travel a long ways to reach their plates. Discuss how different climates and growing conditions can produce different fruits and vegetables.

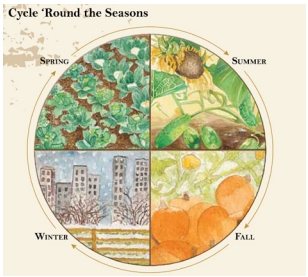
- Have students brainstorm fruits and veg etables that they have seen growing in their local area or at their local farmer's market.

Additional Resources

By purchasing foods that are local and in season you eliminate the environmental damage caused by shipping foods for thousands of miles. For tips on eating seasonally visit **www.sustainabletable.org**

To find out how far your food travels visit **www.nrdc.org** and search food miles.

For more seasonal activities visit **www.enchantedlearning.com**



Sense-ational

Introduction

The text of ***Molly's Organic Farm*** is rich with sensory words as it describes Molly's exploration of the farm. A gate creaks open (hearing), Molly looks (seeing), Molly sniffs compost (smelling), the sun is hot (feeling), and Molly eats treats (tasting). In this activity, students match sensory words from the story with one of the five senses. See next page: Supplemental Information for Sense-ational.

Materials Needed

- Molly's Organic Farm

Key Concepts

- The five sense organs are the eyes, ears, nose, mouth or tongue, and skin or hands.
- We gather information about our environment through our senses.

For standards correlation please see our website.

Procedure

1. Review the five senses.
2. Read aloud the examples of Molly using her five senses on page 30. Show the class the related pages in the story, especially the small boxes that highlight Molly's nose, tongue, paws, and eyes.
3. Using the Sensory Word List (see next page: Supplemental Information) read a word and have students
   do a corresponding motion:
   Seeing—point to eyes
   Hearing—point to ears
   Smelling—point to nose
   Tasting—stick out tongue

Nature Connections

- Take a walk outside, preferably in natural location. Focus on one sense at a time. Note: Unless you're in a garden, it may be challenging to experience the environment through sense of taste.
- Animals have amazing senses. Practice Owl Eyes, Deer Ears, Raccoon Touch, and Dog Nose at **http://www.outdoor-nature-child.com/nature-awareness.html**

Additional Resources

Five Senses: activities from SEDL
http://www.sedl.org/scimath/pasopartners/senses/

More sensory activities at Cool Kids
http://www.cool-kids-craft-ideas.com/sensory-activities.html

Neuroscience for Kids
http://faculty.washington.edu/chudler/chsense.html

Supplemental Information for Sense-ational

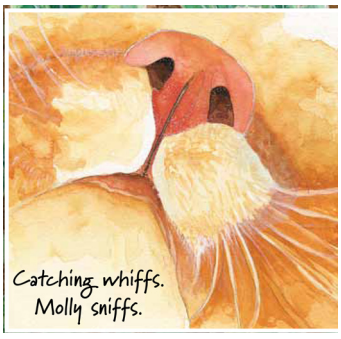
Sense-ational

Sensory Word List

cold—feeling—wave hands
whoosh—hearing—touch ears
creak—hearing—touch ears
crash—hearing—touch ears
bangs— hearing—touch ears
looks—seeing—point to eyes
whiffs—smelling—touch nose
scent—smelling—touch nose
buzzzzz—hearing—touch ears
sipping—tasting—stick out tongue
eating—tasting—stick out tongue
cool—feeling—wave hands
hot—feel—wave hands
silky—feel—wave hands
bulging—see—point to eyes
giggle—hear—point to ears
colorful—see—point to eyes
round and full—see—point to eyes
whizzes—hear—point to ears
hissing scream—hear—point to ears
warm touch—feel—wave hands
cuddling—feel—wave hands
purrs—hear—point to ears

Amazing Animal Senses

- A butterfly tastes through its feet.
- A cricket hears with its legs.
- Many crabs have eyes on the end of stalks.
- A chameleon can see in two different directions at the same time.
- A grasshopper has hairs all over its body to detect (feel) air movement.



Additional Resources

To find out more amazing animal senses go to **http://faculty.washington.edu/chudler/amaze.html**

Molly's Organic Farm

By Carol L Malnor & Trina Hunner
Illustrated by Trina Hunner

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