



School Garden Unit

Celebrate Harvest Garden Guide

LESSON: **Pollinators in the Garden**

GRADE: 2nd Grade

TIME: 45 minute sessions as needed

SUMMARY:

Today students will use their senses to observe unripe, ripe, and overripe produce. They will examine the seeds in the produce and learn about pollinators. In the garden, they will learn how to harvest produce, sort and count it, eat it in tasty recipes, and plan a garden party to celebrate their learning. Finally, they will reflect on their learning in the garden and make recommendations for next year.

GARDEN TASK: *Celebrate Harvest*

Management tip
<p>Plan to complete all activities outside in or near the school garden. Many materials such as trowels, harvest baskets, and kitchen tools could be stored in a small garden shed. Other materials could be easily transported in backpacks carried by student leaders.</p>

OBJECTIVES: Iowa Core Science

- **2-LS2-1.** Plan and conduct an investigation to determine if plants need sunlight and water to grow.
- **2-LS2-2.** Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.

Mathematics

- **2.MD.D.10.** Draw a picture and a bar graph to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presenting in a bar graph.

21st Century Skills

- **21.K-2.ES.3** Learn leadership skills and demonstrate integrity, ethical behavior, and social responsibility.
- **21.K-2.ES.5** Work productively and are accountable for their actions.

MATERIALS & RESOURCES:

- *The Reason for a Flower: A book about flowers, pollen, and seeds* by Ruth Heller
- Chart paper for tracking produce
- Harvest baskets or bags
- Trowels
- Spray bottles
- Garden gloves (optional)
- Examples of unripe, ripe, and overripe fruits and vegetables
- Bucket of soapy water or outdoor sink
- Kitchen tools for recipes – bowl, spoon, kitchen scissors or knives, plates and napkins, seasonings, additional ingredients, etc.
- Notecards / pencils
- Garden journal notebooks / colored pencils

PRESENTATION / INTRODUCTION:

Show students produce that is unripe, ripe, and overripe. Have them observe the color and size differences. Have them touch and smell it. What differences did you notice? Does the produce in our garden look like any of these? How can we determine if produce is ready to harvest? What indicators should we look for?

It is pretty amazing that plants can create so many tasty fruits and vegetables. Cut open one fruit and have students locate the seeds. Why are those seeds there? How did they get there? Read *The Reason for a Flower* or other books about pollination to learn how seeds and fruits are formed. Why are pollinators important? Some fruits such as raspberries and apples require a pollinator like a bee or hummingbird to bring pollen, while other plants like corn, peas, and tomatoes complete a similar process without pollinators. For six additional lessons about pollinators check out <http://www.teachers-going-green.com/teachers-going-green/resources/story-county-conservation>

DIRECTIONS:

1. **Harvest:** Visit the garden every few days and have students check for ripe produce. Students will work in the garden in small groups to harvest items

that are ready. Use chart paper to graph and analyze the number of items harvested. Additional ideas are located at the end of this lesson.

2. **Eat it in the garden!** Many recipes can be found online. Check out this school garden recipe book listing produce alphabetically: <http://dcgreens.org/wp-content/uploads/2013/10/Fun-Cook-Book.pdf> Other easy ideas:

- **Lettuce buffet** (fall and spring): Harvest several types of greens and arrange them on a plate as a lettuce salad.
- **Garden salsa** (summer): Mix chopped tomatoes, peppers, onions, cilantro, garlic, and black beans with salt and pepper. Each student receives a spoonful on a lettuce leaf to fold up and enjoy.
- **Flavored water**: Add crumpled mint leaves to a glass or bottle of water. Shake and enjoy! Or try slices of strawberries or cucumber.
- **Garden pasta salad**: Mix precooked whole wheat pasta with chopped broccoli, cucumber, summer squash, and Italian dressing.
- **Cucumber and tomato salad** (late summer and fall): Mix cucumber, cherry tomatoes, and Italian dressing.

Expert advice

Let them try their produce – even raw green pumpkin! Some students wanted to try it, we did not stop them, and it was a learning experience they will not soon forget.

3. **Celebrate**: As a culmination to the kids' hard work in the garden, host a garden party. Facilitate as students plan. Invite administrators, custodians, staff, parents, community volunteers, and other students to taste and see the students' work. Customize to your setting, but ideas include:
- Eat! Feature some of the students' favorite recipes using their produce.
 - Make art to take home – garden signs, wind chimes, sun prints, or mosaics are a just a few ideas.
 - Plant something – in the garden or to take home.
 - Display garden photographs taken by students as well as their journal entries and planning maps.
 - Publicly thank volunteers for their efforts.
 - Put them to work – encourage students to show guests how to harvest or pull up plants for a compost pile.

REFLECTION / GARDEN JOURNAL PROMPT:

1. **Adopt-a-Plant journal prompt:** Students will sketch and label their plant and its produce. Also have them sketch what that produce looks like as children eat it – is it used in a recipe?

Ask them to reflect on their investigation drawings throughout the garden season. How did plants grow differently with different amounts of sunlight or water? How much water would you recommend plants receive? How much sunlight? Why? What ideas do you have for future investigations?

2. **Draw a map of a future dream garden:** Based on what you learned from this garden project, what would your dream garden look like? What would you include or do differently? Save these and share with students next year!

Expert advice

Remember that the success of the garden is not measure by how much produce was grown, but by how much the students learned. Even plants that did not produce fruits and vegetables are valuable in the garden as compost that provides nutrients in the soil for next year's garden.

Harvesting Produce with Kids

1. **Is it ripe?** Produce will ripen at different times throughout the growing season. Encourage students to observe produce at different stages of ripeness. They can also compare grocery store produce to garden. What differences did you notice? How can we determine if produce is ready to harvest? Seed packets are another source for harvest information.
2. **Harvest methods:** How will we collect the fruits and vegetables? What tools will we need? Different crops require different harvesting methods. The main three ways to harvest are **cutting** (lettuce, herbs, etc.), **digging** (potatoes, carrots, etc.), and **picking at will** (peas, beans, berries, etc.).
 - **Leafy greens** such as lettuce and spinach will grow quickly compared to some other plants, and can have many harvests. Students may gently tear off leaves, or snip leaves with child sized scissors to ensure the whole plant is not pulled out.
 - **Potatoes and root crops** such as carrots and radishes are as fun as finding buried treasure. Use a trowel or digging fork to unearth them. Potatoes can be dug when the flowers or leaves of the plant have faded. Be careful not to slice them when digging. Have a couple of buckets of water available for scrubbing and rinsing.
 - **“At will” crops** such as peas, beans, tomatoes, and berries can be nibbled on throughout the harvest. Teach students to harvest carefully with two hands: one keeping the vine or branch steady and the other gently pulling the fruit.

How much do we harvest?

The amount to harvest depends on how many students are in the garden and when they will return. Ten leaves of lettuce is a generous salad for young children. On the other hand, finger salsa can be made with one piece of tomato and a snip of green onion piled on a piece of green pepper.

3. **How do we harvest?** Empower students by having them make decisions and do the work. Create procedures so tools are easy to get out and put away. Role play the following procedures for harvesting food, for example:
- During an introductory class meeting, students make decisions, facilitated by the teacher: What produce should be harvested today? What produce will each group pick? How much should they pick? What tools will they need? What should they do with their produce - wash it and eat it? Or collect it for a class recipe?
 - After reviewing harvest and safety procedures, students wash their hands in the bucket of soapy water.
 - From the tool shed, get the harvest baskets and any tools needed, such as trowels to go on a potato “treasure hunt.”
 - Go to the designated area of the garden and harvest the amount decided upon during the class meeting.
 - Use spray bottles or buckets of water to wash produce.
 - Eat it with fingers, or use kitchen tools from the shed to make simple garden recipes.

Tool safety

Review procedures for getting out, using, and storing garden tools. For example, pointy ends of trowels and shovels should always be down. Students will only walk while carrying tools. Teachers will pay close attention to students using tools and will give other jobs to students not following procedures.

4. **Food safety:** Proper hygiene is important. Students may view the following videos for potential hazards and precautions:

<http://www.safeproduce.cals.iastate.edu/elementary/>

For additional safety guidelines, view the USDA’s “**Food Safety Tips for School Gardens**”

<http://nfsmi.org/documentlibraryfiles/PDF/20110822025700.pdf>

When serving produce to students, review the USDA’s “**Best Practices: Handling Fresh Produce in Schools**”

https://www.fns.usda.gov/sites/default/files/foodsafety_bestpractices.pdf

For more tips and hints, check out *How to Grow a School Garden* by Arden Bucklin-Sporer and Rachel Kathleen Pringle.