School Garden Unit
Celebrate Harvest Garden Guide

LESSON: Fruity Life Cycles

GRADE: 3rd Grade **TIME: 45 minute sessions as needed**

SUMMARY:

Today students will use their senses to observe and identify unripe, ripe, and overripe produce. They will learn the role fruits, seeds, and pollination play in life cycles. In the garden, they will learn how to harvest produce, 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
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.

OBJECTIVES: Iowa Core

Science

- **3-LS1-1.** Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- **3-LS4-3.** Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.

21st Century Skills

- **21.3-5.ES.3** Practice leadership skills, and demonstrate integrity, ethical behavior, and social responsibility in all activities.
- **21.3-5.ES.5** Demonstrate productivity and accountability by producing quality work.

MATERIALS & RESOURCES:

- 3 tomatoes – 1 unripe, 1 ripe, and 1 overripe tomatoes (or other fruit) in boxes
- *The Reason for a Flower: A book about flowers, pollen, and seeds* by Ruth Heller or *From Seed to Plant* by Gail Gibbons
- Harvest baskets or bags
- Trowels
- Spray bottles
- Garden gloves (optional)
- 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:

It's almost time to harvest, but how will we know when it is ready? Tell students there are three tomatoes – they will determine which one is unripe, ripe, and overripe. Divide students into three groups:

- Blindfold one group and have them *touch* the tomatoes, noting differences in how they feel.
- Blindfold another group and have them *smell* the tomatoes, noting differences.
- The third group may only *look* at the tomatoes, observing differences.

Based on their observations, each group should determine which tomato is ripe. Then, each student should get together with students from the two other groups and discuss their findings. What differences did you notice? How can we determine if produce is ready to harvest? What indicators should we look for?

Cut one tomato open. Have students locate the seeds. Not only does fruit taste good, but it serves an important role for plants. In a plant's life cycle, what role does fruit play?

- The seeds for the next generation of fruit are formed through a process called pollination. Read *The Reason for a Flower* or *From Seed to Plant*.

- For six additional lessons about pollinators check out http://www.teachers-going-green.com/teachers-going-green/resources/story-county-conservation

As we cook and eat today, look for seeds and think about fruits being a structure where seeds are housed.

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. 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. Ask them to reflect on their drawings throughout the garden season. Which plants survived well in this habitat? Which varieties did not survive as well? What evidence did you observe?

   Draw a model illustrating the life cycle of garden plant. How is this life cycle similar or different than other plants? How does it compare to the life cycle of animals?

2. **Give advice to future gardeners:** If you could give advice to the students who will care for this garden next year, what would you tell them? What would you recommend? What would you do differently? Write advice on notecards and create a class poster with their words of wisdom.

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.