

Is it a fruit or a vegetable and how well did it grow?

EDIBLE GARDEN PROGRAM (6-8)

Harvest and Evaluate the Garden **(ILS 12A, 19B and C, 21 A and B)**

Overview

The key question for this activity is, "Is it a fruit of a vegetable and how well did it grow?" And there is no better way for students to answer that than to grow and cook their own food. Using the garden and kitchen as the facilitators, they will inspire student inquiry and teach them about Sustainable Agriculture, specifically, local food production and consumption.

For the purpose of this curriculum sustainable agriculture shall be defined as follows: "Sustainable Agriculture is a system of food production, supported by consumers, where farming operations, practices and technologies *work in harmony* with the natural systems that sustain life on earth."

Suggested Grade Level

This curriculum is designed for middle school/junior high grade levels. The topics covered can be built upon in complexity throughout that age range.

Approximate Time

90 minutes

Objectives

1. The students will evaluate the garden for next year improvements.
2. The students will harvest the produce from their garden.
3. The students will learn the scientific and popular definition of a vegetable and a fruit.

Activity Abstract

The class will evaluate the success of the garden, harvest the fruits and vegetables from their garden, and learn to categorize them. The differences between the everyday and the scientific distinction between fruits and vegetables are explored.

Background Information

If only it were as simple as the difference between apples and oranges. But trying to tell the difference between a *fruit* and a *vegetable* often leaves people confused—and often makes guesswork out of complying with the admonition to eat 2–4 servings of fruit and 3–5 servings of vegetables a day. This is because *fruit* has two meanings—one popular and one scientific. In popular usage, a fruit is a plant part that is eaten as a dessert or a snack because it is sweet. This is why we consider apples and peaches fruit, but not peppers or lentils. But botanically speaking, a fruit is the mature (ripened) ovary of a



plant; it is a self-contained vehicle for reproduction of the type of plant from which it developed. A peach, for example, contains a pit that can sprout a new peach tree, while the seeds known as peas hold the potential for another pea vine. To a botanist, apples, peaches, peppers, peas, and cucumbers are all fruits.

A *vegetable* is a plant that is grown primarily because it produces an edible part, such as the leaf of spinach, the root of a carrot, the flower of broccoli, a tuber of a potato plant, or the stalk of rhubarb. By this reasoning, all fruits must come from vegetables. Of course any child knows that we usually make the further distinction that vegetables are by definition not very sweet and are not served for dessert.

Materials

- 1:7 adult:student ratio
- 3 poster boards each with a large picture of a flowering plant and all of its plant parts
- Knives for produce harvesting and internal examination
- Baskets for transporting produce
- Cutting board
- Garden journal and writing implement
- Garden Expert - A parent or Master Gardener from the University of Illinois Extension Office

Set-up

If possible, have a master gardener come and view the garden prior to the session to evaluate successes and failures.

Procedure (Session 1)

1. Discuss the following (and any additional parameters that may have affected the garden – pest problems that reduce produce quality or foliage and productivity, growing season length, light issues/plant location, weather issues, weeds, trellising. Have master gardener participate in conversation if possible.
2. Have students enter information into the garden journal – this will help in the planning for next year.
3. **Hands-on experience.** Have the students harvest the mature produce from the garden, placing it in baskets.
4. As the entire class, separate the produce they harvested into fruits and vegetables, putting the fruits in one basket and the vegetables in the other. Ask them what the similarities and differences are between the two groups. (It is not necessary that they make the seed/seedless distinction at this time.)
5. Have a few of the students help cut open the food to see if they can gather more information about the differences between the produce in the two baskets.
6. Contrast the food in the two baskets once again. Ask students if they would like to add any new information to their observations. Students should now be able to observe that one group has seeds and the other does not.
7. Tell students that everything in one basket is a fruit and in the second is vegetables. Have students come up with their own definition of a fruit and



- vegetable. Determine together whether their definitions fit all examples on the baskets. Refine definitions if necessary.
8. Divide the class into groups of seven students.
 9. Have the groups harvest more produce, or use that which they gathered in the baskets. Place the poster board picture of the flower plant on the ground. As a group have the students categorize the vegetables by placing them, one-at-a-time, on the corresponding plant part on the poster board (e.g., carrot by root, celery by stem).
 10. Using the same produce from the previous task, have the students divide the produce into two baskets, one fruit and one vegetable, using the popular meaning. For example, tomatoes and green peppers are generally considered vegetables, when scientifically they are classified as a fruit.

Extensions (optional)

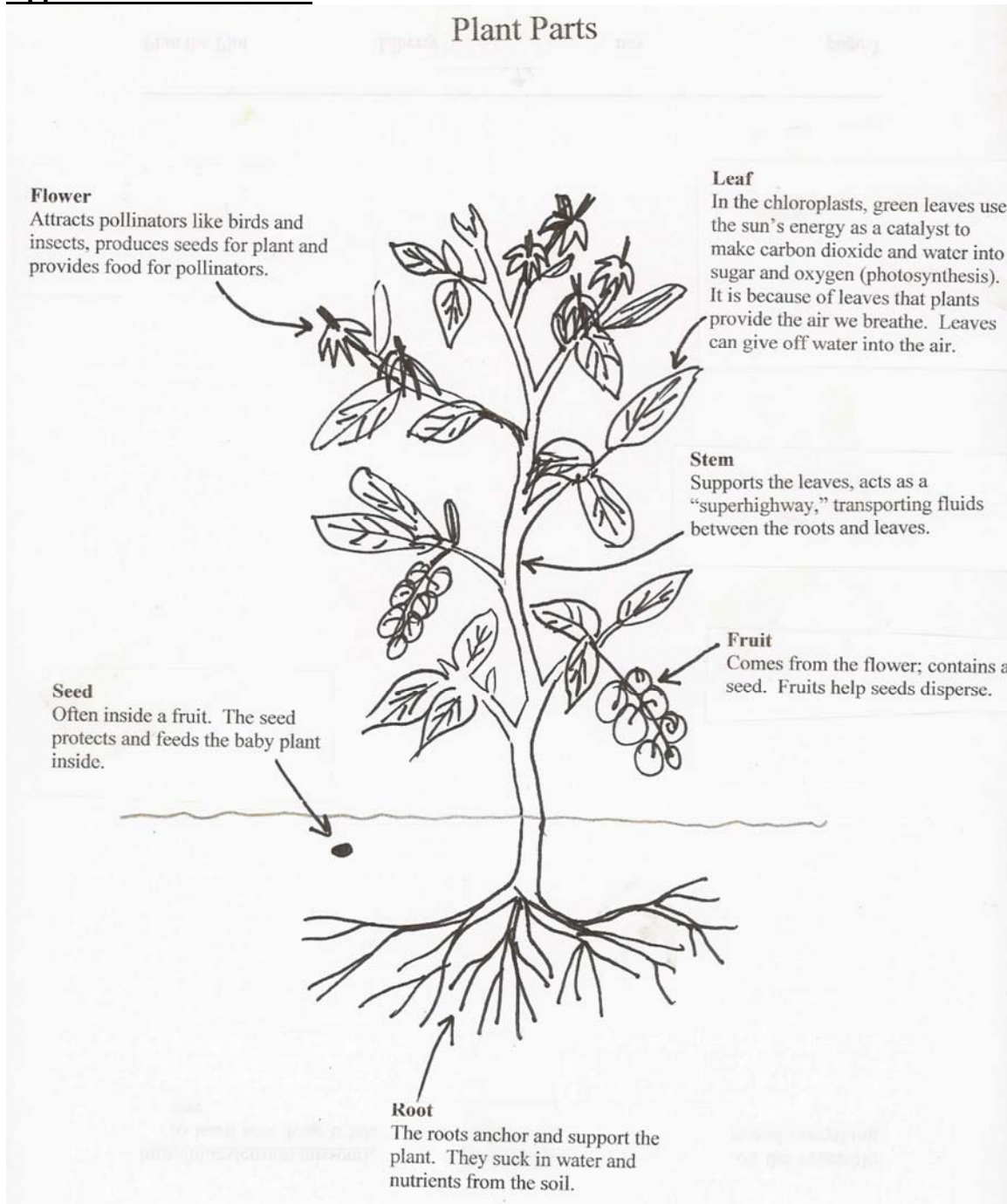
1. "Pollination" Activity found in this "Where does my Food Come From?" curriculum.
2. <<http://educate.si.edu/resources/lessons/siyc/pollen/start.html>> Partners in Pollination. This web site offers three lessons on pollination, reproduction plant parts and bees.
3. Send in for a free interactive CD-Rom. It has activities for grade levels K-6 which teachers about the food pyramid and nutritious foods. Mail your request on school letterhead to:
5 A Day Adventures
Dole Food Company
155 Bovet, Suite 476
San Mateo, CA 94402
4. For "5 A Day materials" such as brochures, magnets, stickers, and other items about nutritious foods, call Tri-Foods at 1-800-421-8871.
Fun with Fruits and Vegetables Cookbook is an easy to read recipe book. The first 25 booklets are free, and each additional booklet costs 20 cents. To order, call Dole Fresh Fruits in Utah at (801) 942-4783.

References

<http://www.urbanext.uiuc.edu/SchoolsOnline/index.html> This web site contains two curricula that students can access on the internet that complement this Activity. They are "The Great Plant Escape" and "My First Garden".



Appendix A. Plant Parts.



Appendix B: Fruit formation diagram.

