

## Garden Lesson: Exploring Plant Parts

Season: Fall

Grades: Preschool, Kindergarten & 1<sup>st</sup>

### Ohio Science Concept

- Kindergarten: Daily and seasonal changes- weather changes are short and long term.
- 1<sup>st</sup> Grade: Motion and materials- objects can be moved in a variety of ways.
  - Basic needs of living things- living things only survive in environments that meet their needs.

### Science Inquiry and Application

- Observe and ask questions about the natural environment
- Employ simple equipment and tools to gather data and extend the senses
- Communicate observations

### Next Generation Science Standards

- K-LS1-1: Use observations to describe patterns of what plants and animals need to survive.
- 1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants use their external parts to help them survive, grow and meet their needs

### Ohio Mathematics Standards

- Kindergarten: Describe, compare, create and compose shapes
- 1<sup>st</sup> Grade: Reason with shapes and their attributes

### Objectives

Students will...

- Observe, identify and document the different parts of a plant
- Engage in making connections between plant parts and the foods they eat
- Use senses of sight, touch, smell and taste to compare and contrast plant parts of different species

### Materials

- Transition signal (bell, chime, etc.)
- Introduction: plant with visible roots, stem and leaves
- *Observe Station*: collected fallen leaves, crayons, paper, clipboards
- *Explore Station*: roots to taste (radishes, carrots), leaves to taste (lettuce, spinach), napkins, clean hands
- *Garden Station*: trowels, “Different Root Types” handout, hand lenses, (gloves are optional)

### Overview

In this lesson, students build a deeper connection with their school garden by identifying and examining the roots and leaves of plants growing in the garden. Students also enjoy the edible nature of roots and leaves that are freshly harvested from the fall garden! At the Observe Station students investigate leaf diversity and function while creating leaf rubbings. At the Explore Station students experience harvesting and tasting crops growing in the garden while identifying the plant part being eaten. At the Garden Station students examine different root systems and practice proper weeding techniques. Questions and ideas branching from how the plant parts contribute to plant survival and how they change in different seasons are investigated at each station.

*Building Community through Gardening, Education & Environmental Stewardship*



## Garden Lesson: Exploring Plant Parts

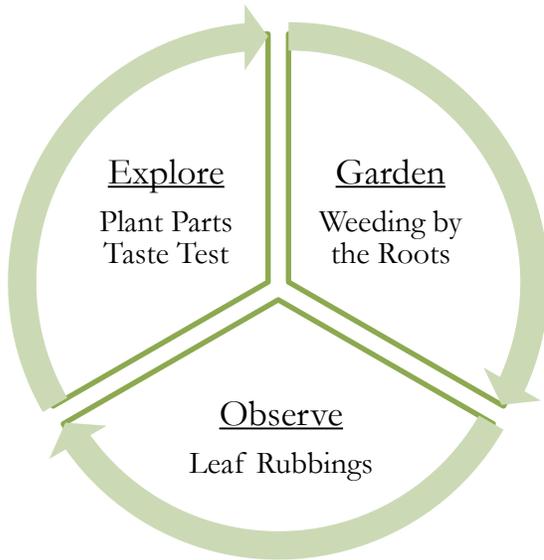
Season: Fall

Grades: Preschool, Kindergarten & 1<sup>st</sup>

### Outline

- 5 minutes Introduction
- Welcome & review expectations
  - What are the different parts of the plant? Are plants living or nonliving? What do plants need to survive? How do the different parts help the plant survive?
  - Break into three groups for station time

20 minutes Station Rotation (5 minutes per station + 1 minute for transition)



### Observe: Leaf Rubbings

Materials: collected fallen leaves, crayons, paper, clipboards

- Ask the students to explain why leaves are important; what do they do for the plant? What is happening to the leaves on the trees in fall?
- Pass around a variety of collected fallen leaves and point out the difference in shape, size and texture
- Demonstrate how to put the leaf under the paper and rub with a crayon to create the image on the paper
- Allow the students to collect three leaves from the garden and create their own leaf rubbing work of art

### Explore: Plant Parts Taste Test

Materials: roots to taste (radishes, carrots), leaves to taste (lettuce, spinach), napkins, clean hands

- Review the parts of a plant and ask students to explain why each part is important (roots: take in water, nutrients, and minerals from the soil, provide support for the plant/leaves: turn sunlight into sugars for energy)
- Ask students to list fruits and vegetables they enjoy and to say which part of the plant it comes from
- Pass around the roots and leaves for tasting, encouraging the students to use their senses to describe how each smells, feels, looks and tastes

### Garden: Weeding by the Roots

Materials: trowels, "Different Root Types" handout, hand lenses, (gloves are optional)

- Review what roots do for the plant to help it survive & show the handout with different types of root systems
- Pull out a few weeds and pass them around for the students to examine the roots

5 minutes Conclusion: What Can You Do?

- While you collect the materials, ask the students to give ideas on how they can help the garden as the seasons change
- Ask if the students have any questions

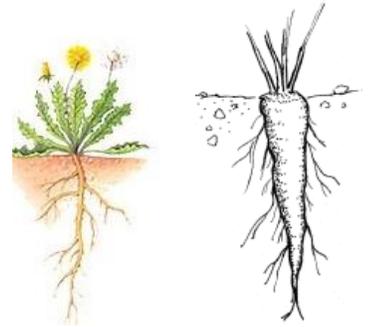
*Building Community through Gardening, Education & Environmental Stewardship*



*Adapted from: Life Lab Science Program*

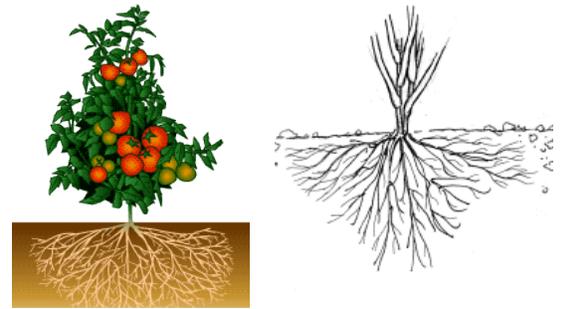
## Tap Roots

- Plants with tap roots have one big, long root.
- Plants with tap roots will not be knocked over by the wind or animals.
- Plants with tap roots can reach nutrients and water deep in the soil.



## Fibrous Roots

- Plants with fibrous roots have many small roots.
- If animals eat the leaves and stem of a plant with fibrous roots, some of the roots will stay behind to start growing again.
- Plants with fibrous roots can gather many nutrients and water from the top layer of the soil.



## Food Storage Roots

- Plants with food storage roots have one main root that grows long and wide.
- Plants with food storage roots keep animals above ground from eating the food they make.
- Plants store food in their roots to use during the winter, when there is little sunlight and the plants can't make very much food.
- Food storage roots are actually a type of tap root!



*Building Community through Gardening, Education & Environmental Stewardship*

