



Teacher Toolkit

Activity: Plant Part Functions

Presented by: Civic Garden Center of Greater Cincinnati

Grade Level(s) 2nd-3rd grade



Activity Description

Investigate the roots and leaves of plants growing in the garden, while also enjoying the edible nature of roots and leaves that are freshly harvested from the garden!

Ohio Standards Met

- Science, Grade 2: Interactions within habitats
- Science, Grade 3: Matter and forms of energy
- Science, Grade 3: basic needs of living things
- Math, Grade 2: Measure and estimate lengths in standard units
- Math, Grade 3: Reason with shapes and their attributes

Instructions

- Introduction
 - What are the different parts of the plant? What do plants need to survive? How do the different parts help the plant survive? Do plants impact their environment? How?
 - Break into three groups for each of the three stations (or do each station as a whole class).
- Station 1- Observe: Leaf Rubbings
 - 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 the fall?
 - Pass around a variety of collected fallen leaves and point out the difference in shape, size and texture.

Thanks to Greater Cincinnati Environmental Educators (GCEE) for collecting activities for the Teacher Toolkit



Instructions (continued)

- Station 1 (continued)
 - Demonstrate how to put the leaf under the paper and rub with a crayon to create the rubbed image on the paper.
 - Allow students to collect three leaves from the garden or school yard and create their own rubbing work of art.
 - Show students how to measure the height and width of each leaf and record the measurements next to the leaf rubbings.
- Station 2- Explore: Plant Parts Taste Test
 - Review the parts of the plant and ask students to explain why each part is important.
 - Roots: take in water, nutrients and minerals from the soil
 - Stem: provides support for the plant, transports materials
 - Leaves: turn sunlight into sugars for energy
 - Ask students to list fruits and vegetables that they enjoy and have them say which part of the plant it comes from.
 - Pass around the roots and leaves for tasting, encouraging students to use all of their senses to describe how each smells, feels, looks and tastes.
- Station 3- Garden: Weeding by the Roots
 - Review what roots do for the plant to help it survive.
 - Go over handout with different types of root systems.
 - Pull some weeds from the garden or schoolyard and pass them around for students to examine the roots.

Materials Needed

- Station 1
 - Collected fallen leaves
 - Crayons
 - Paper
 - Clipboards
- Station 2
 - Roots to taste (radishes, carrots)
 - Leaves to taste (lettuce, spinach)
- Station 3
 - Trowels
 - “Different Root Types” handout (see next page)
 - Hand lenses (if possible)

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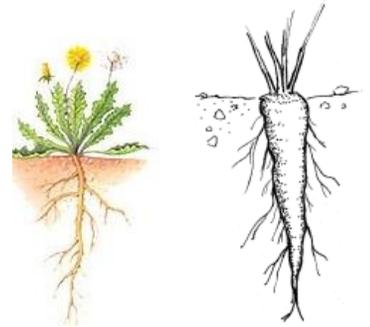


Different Root Types Handout

Adapted from: Life Lab Science Program

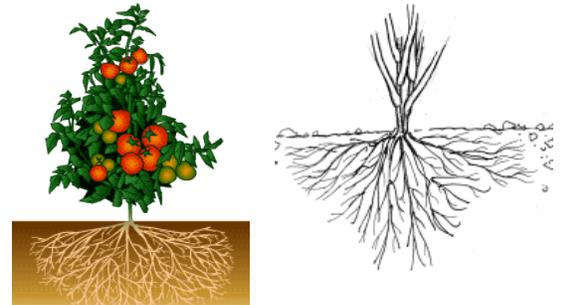
Tap Roots

- 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!



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