Let’s Build a Plant!

Grade(s): 1-4

Subject: Science

GPS: S1L1

Time Required: 45 Minutes

Setting: Indoors

Materials:
Copy of picture pages
Yarn
Scissors

Objectives:
Students will learn the parts of a plant, what a plant needs to grow, and how non-native invasive plants can be harmful to native plants.

Vocabulary:
Root – the plant part that is below ground
Stem – the plant part that provides support for the plant
Leaf – the plant part that makes food for the plant
Flower – the plant part that makes seeds
Native Plant – a plant that grows naturally in a specific area
Weed – an unwanted plant that can be harmful to other plants
Plant Steward – a person that helps care for and protect plants

Background:
Most native plants consist of basic parts including roots, stems, leaves, and flowers. Plants have certain requirements that they need in order to live and reproduce. These are sunlight, water, nutrients, and air (carbon dioxide). Many things in a plant’s habitat can interfere with the plant meeting these survival requirements (insects, animals, and disease). This is a normal part of nature. However, man has affected the survival of some native plants with the introduction of non-native, invasive plants. The non-native invasive plants compete with the native plants for sunlight, water, nutrients, and space. Non-native invasive plants often grow and reproduce faster than natives, and they have fewer, if any, predators. Non-native invasives can take over a habitat and result in the absence of native plants in the ecosystem.

Preparation for Activities:
Use the copy pages to make pictures of the parts of a plant, the needs of a plant, the weeds and the stewards – one for each student. Include multiple copies of roots, leaves, and
flowers. Cut the yarn in lengths to tie or tape to the pictures so they will hang around each student’s neck.

**Discussion:**
Discuss the parts of a plant with the students. Draw a picture on the board to illustrate. Ask the students what things are needed by the plant to help it grow.

Explain to each student that as a plant grows other things in nature may get in the way of this growth (not enough water, eaten by insect, etc.). Discuss how scientists that study plants have discovered that certain weeds (non-native invasive plants) are bad for the growth of native plants.

**Activity:**
Tell the students that they are going to “build a plant”. Each student has one of four roles: 1) a part of the plant; 2) something a plant needs to grow; 3) a weed; 4) a friend to plants – a steward. Pass out one picture to each student. Have the students stand in 4 different groups with their related roles: parts, needs, weeds, friends.

Now “build the plant”.
- Have the “roots” sit on the floor beside each other in a half circle facing outward.
- The “stem or trunk” stands tall and strong behind the “roots” with its arms raised like branches.
- The “leaves” stand beside the “stem” and touch his/her arms (the branches). The leaves can sway back and forth like the wind is blowing.
- Have the “flowers” hold onto the “leaves” arms.
- The plant is complete!

Remind the students that the plant needs four things to grow.
- Have the “sun” stand in front of the plant with his/her hands on their hips and “shine” on the plant.
- The “water and nutrients” sit at the feet of the “roots”.
- The “air” walks around the entire plant.
- The plant has the four things it needs to grow!

Suddenly, the “weeds” appear!
- The kudzu “weed” stands between the “sun” and the plant blocking the sunlight.
- The Chinese Privet “weed” and the Japanese honeysuckle “weed” take the “water and nutrients” by the hand and take them away from the plant.
- The Princesstree “weed” takes the “air” by the hand and takes it away from the plant.
- The plant no longer has what it needs to live and grow and it starts to die. Have the parts of the plant squat.

Help is on the way!
- Each friend of the plant, the stewards, holds the hand of the “weeds” and takes them far away from the plant (this represents pulling up the weeds). Now the “sun,
The plant parts stand tall and strong because the plant is safe and healthy! Thank you stewards for saving the native plant!

Evaluation:
Have the students draw the parts of a plant and the things that it needs to live.
In fall or spring pull up a few weeds and have the students look at the weeds and name the parts of the plant.
Ask students to differentiate between plants and weeds.

Extensions:
Colors of the Rainbow: Place a stalk of celery in a jar with water and food coloring. Make several jars with a different color in each jar. Explain to the students that a plant takes water and nutrients up through its roots, into its stems and leaves. Tell the students that since this water is a color they will be able to see it travel slowly up the stem and into the leaves. Look at the plants every 15 minutes until the process is complete.

References:
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http://www.gaeppc.org/list.cfm
http://www.invasive.org/
http://www.dcr.virginia.gov/natural_heritage/invspfactsheets.shtml
http://dictionary.reference.com/
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Nonnative Invasive Plants of Southern Forests by James H Miller