ED5640 (CRN 14617) – Professional Development for Teachers

Teaching Environmental Education Workshop Series ~ February-April 2010

Lesson Plan Format

Title: What do plants need to grow?

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Target Grade: Kindergarten

Duration (number of classroom periods + length of period)

Three classroom periods / 30 minutes per period.

Lesson Overview:

Students should understand and recognize proper plant care and the essential factors plants need to grow. Understand similarities and differences between plant and animal needs.

Student Learning Objectives:

- Recognize that plants need air, water, light, nutrients, and a space to grow, and that many need to be cared for to grow.
- Observe and compare the growth of plants.
- Compare the common needs of plants and animals.

Grade Level Content Expectations addressed:

Life Science: Organization of Living Things

K Standard L.O.L: Develop an understanding that plants and animals (including humans) have basic requirements for maintaining life, which include the need for air, water, and a source of energy.
L.O.L.E.1 Life Requirements – Organisms have basic needs. Animals and plants need air, water, and food. Plants also require light. Plants and animals use food as a source of energy and as a source of building material for growth and repair.

L.O.L.00.11 Identify that living things have basic needs.

Activities: Compare plant growth in different conditions.

Take students on a walk through a garden. Talk about where the plants in nature get the air, light, soil, and water they need. Then the students conduct an investigation by comparing plant growth in different conditions. Prepare one small plant that needs a lot of light and water for each student and divide the students into groups of three. Ask questions to facilitate discussions:

Discussion 1.

“What do you need in order to grow big and strong?”

“What does your dog need to grow big and strong?”

“Plants need some of the same things we need. Can you tell me one thing that a plant needs?”

Discussion 2.

“How do you get the food and water you need?”

“How does your dog get the food and water it needs?”

“How does a plant get the food and water it needs?”

Describe how the plants they have look today as they are starting the activity. Make sure to guide students to understand that the plants look similar. Then explain what we are going to do to each of the three plants in their group.

Experiments:

Give each group three cards with pictures and words under the pictures: a card with a picture of water and light (the words water and light under the picture), a card with only a picture of light (the word light under the picture), and a card with only a picture of water (the word water under the picture). Have students tape one card on each pot of the plant so each group will have three plants with three different picture cards. Also give each group a brown bag with a picture card of water (the word water under the picture).

a. Plants need sunlight to make food and grow.
1) Put the plant with the picture card of only water in a sunny window, water the plant, and then cover the plant with the brown bag that has the picture card of only water.
2) Water the plant when it is dry, but always keep it under the brown bag.
3) Watch what happens over the next few weeks.

b. Plants need water to grow.
   1) Put the plant with the picture card of only sun next to the plant with the brown bag.
   2) DO NOT water the plant.
   3) Check everyday to see what happens to the plant.

c. Plants need sunlight, water, and food to live and grow.
   1) Put the plant with the picture card of sun and water next to the two plants.
   2) Watch what happens over the next few weeks.

Then ask the students to make predictions about the plants:

“What do you think will happen to the plants that has no light?”

“What do you think will happen to the plants that has no water?”

After one week, have each group of students describe and compare their three plants. To emphasis the process skills of comparison and observation, explain to students that when they compare, they are looking at how objects are alike and how they are different. Students can use their senses such as sight and touch to make observations and then use those observations to compare. As a follow-up activity, students can return the plants to their different conditions and continue observing the plants without water or light.

**Student Assessment:**

Informal Assessment: Observe whether students remember how to treat each plant. Also check that the students’ observations and comparisons correctly describe each plant.

Formal Assessment: Give each student a worksheet: A lady stands in front of a flower garden with a watering can. Tell the students that they need to show that flowers need sunshine and water to grow by drawing on this worksheet.

**Special Comments or Tips:**

- Use three of the same kind of plants, such beans that need a lot of light and water.
- During the observation period, have students water the plants as directed and give the same amount of water.
Flowers need sunshine and water to grow.