

## Lesson 2: The Growing Plant

### **Common Core:**

Next Generation Science Standards:

NGSS.K.LS1.1

Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]

**Time:** 1hr

### **Objectives:**

To describe what a growing plant needs to stay healthy.

To explain what might happen to a plant if it is lacking one of these things.

### **Key words:** Vocab Tree

Mineral; Pollinator; Carbon dioxide; Oxygen (*differentiation CO<sub>2</sub> and O<sub>2</sub>*)

*(Using Key words: Students can create a glossary, in books or on wall in classroom. Students are encouraged to practice using vocab in written or verbal sentences - perhaps writing example sentences and displaying them. Students could earn points for using the vocab in novel sentences each week).*

### **Resources:**

- Large image of plant (students may have created this themselves)
- PowerPoint - 'What's Wrong With Me?'
- soil
- creative pots that students bring in

### **Activities:**

#### **Introduction**

#### **Group Activity**

In groups of 4, each student has a piece of paper. Ask all students to imagine in their heads a plant. At the top they draw the flowers and/or fruit of their plant. They then fold over the paper so their drawing is hidden, but a small section of stem is visible. The paper is then passed to the next person in the group. This person draws the leaves, and then folds the paper over, leaving a little bit of stem visible. The next person draws the stem and gives the plant a name, and the fourth draws the roots. The folded paper is then passed to the first person again, who opens it up to see the whole plant. Share the outcomes. Display or stick in books.

#### **Class Discussion**

Put a large image of a plant on the board or via ppt. Students have post it notes and write on

them what the plant needs. Students bring these up and stick them onto the plant.

(light; space; minerals[nutrients]; water; warmth; carbon dioxide; oxygen; pollinators, love)

### **Group Activity**

#### What is Wrong With Me?

Show each image from Ppt, 'What's Wrong with Me?.' Discuss what might be wrong with each plant.

*Further Discussion - forced growing - why is it grown in the dark, why is it special? (It helps certain plants like rhubarb grow faster as they seek the sunlight)*

### **Individual Activity**

Imagine you are a healthy plant in a farmer's field. Write a letter to your less healthy cousin, who is growing a few fields away. In your letter, describe how your cousin can be healthier. Remember to include details about space, light, water, nutrients, etc.

*(Advanced Assessment - ensure higher ability students format their letters correctly, with addresses, and dates.)*

After 15 minutes, students swap letters and peer critique, looking for good content, correct spelling and punctuation, and creativity. Students get their own letters back and work on improvements. Some are read out to the class.

### **Recap**

- Students can analyse whether their group plant drawings would be viable - Are the roots big enough to absorb enough water and nutrients? Would the leaves be big enough to collect enough sunlight? Is the stem strong enough? Are the flowers attractive to pollinators? Etc.)
- What are greenhouses used for? Who uses them? Where? Why?

### **Further Activity or Homework**

Imagine you receive a letter from a lady living in a 4th floor apartment in a city. She is desperate to grow some food for herself, but she doesn't have garden space. Give her a list of the objects she will need and how she can easily grow herself some herbs and vegetables in the limited space she has.

#### **Assessment:**

Language Arts (writing, creative thinking); Peer critique.

#### **Healthy Growing Session (if participating):**

Prepare pots that each student brought in for plants. Poke holes in bottom, paint, decorate, etc.

What do these pots need?

Where should they be placed?

How often do we need to pay attention to them - students could draw up a schedule for who will water them, to display in the classroom (What about weekends/school holidays?)

How will we make sure we know what we have planted where?

Students can create tables for monitoring the growth - the plants could be placed in different places to compare the effects of light / space / water on growth rate.