

First Grade Science Circus

Topic: Plants

Grade level: First

Date: October 31, 2008

NSES: Science Teaching Standards A to E
Assessment in Science Education A to E
Science Content Standard K-4 A, C

- SOL: 1.1 The student will conduct investigations in which
- a) differences in physical properties are observed using the senses
 - d) observations and data are communicated orally and with simple graphs, pictures, written statements, and numbers;
 - f) predictions are based on patterns of observation rather than random guesses;
 - g) simple experiments are conducted to answer questions;
 - h) inferences are made and conclusions are drawn about familiar objects and events.
- 1.4 The student will investigate and understand that plants have life needs and functional parts and can be classified according to certain characteristics. Key concepts include
- a) needs (food, air, water, light, and a place to grow)
 - b) parts (seeds, roots, stems, leaves, blossoms, fruits); and
 - c) characteristics (edible/non-edible, flowering/non-flowering, evergreen/deciduous).

Daily Question: What are different characteristics of plants?

Procedures for Learning Experience	Guiding Questions	Materials Needed	Evaluation (Assessment)	Approximate Time Needed
<p>Engagement: Students will sit on the red carpet and be asked introductory questions about plants. This will also allow for any prior knowledge the students have about plants to be shared with the class. The guiding questions will get them thinking about what they will be exploring at each station. A healthy plant will be at the front of the room for them to see. The students will then be split into their four groups to complete the exploration part of the circus. Brief descriptions of each station will be given to provide some guidance to the students.</p>	<p>What do plants need to survive? What are the different parts of plants? Can you think of any plants that you eat? How do living things change throughout their life?</p>	<p>Healthy plant from station 4</p>	<p>Students responses to the guiding questions asked.</p>	<p>5-10 minutes</p>
<p>Exploration: The students will be split into four groups and complete each of the activities with the guidance of a teacher. The student will spend 10 minutes at each station. They will read, with the help of a teacher, the student card and follow the instructions at each station. There will be a worksheet to complete at each station.</p> <p>1- Life Cycles 2- Parts of a Plant 3- Edible Plant Parts 4- Plant Survival</p>	<p>See student cards</p>	<p>Timer Also see teacher cards</p>	<p>Student participation at each station. Completion of worksheets. Responses to guiding questions.</p>	<p>10 minutes per station 40 minutes total</p>

<p>Explanation: Have the students come back to the carpet at the front of the room. Discuss what they explored at each station and have them answer questions about what they learned.</p> <p>Life Cycles: Discuss how the different life cycles they explored are the same and different. Make a connection with plant life cycles to the human life cycle. Have them identify which part of the life cycle corresponds to each season.</p> <p>Parts of a Plant: Have students identify the parts of a plant. Discuss the role of each part of the plant.</p> <p>Edible Plant Parts: Discuss each part that the students tasted and have them identify which part of the plant it is. Discuss other plants that are edible. Make sure students know that not all plants are edible.</p> <p>Plant Survival: Discuss the basic needs of plants and what happens to them if one of these needs is not met. Identify the conditions of growth for each of the 3 plants and how it affected the plant. Discuss what other things plants need to grow and relate to what humans need to grow.</p>	<p>See teacher/activity cards for guiding questions, as well as more detailed forum questions</p> <p>What are the basic stages that each plant goes through during its life? What are the main parts of a plant? Are they the same for all plants? What parts of plants are edible? Are all plants edible? What do plants need to survive? What happens if one of these things is taken away?</p>	<p>Materials from teacher cards</p>	<p>Students' responses to questions.</p> <p>Participation in answering the questions.</p>	<p>30 minutes</p>
<p>Extension: After all stations and questions have been discussed, have students go back to their seats. The students will be growing pumpkin seeds and watching them sprout over the course of the next two weeks. Students will be given a Ziploc bag, a paper towel, and some pumpkin seeds. The bag will be labeled with the students' name. They will moisten the paper towel and place it in the bag. The pumpkin seeds will be</p>	<p>What changes do you think you will see in your pumpkin seeds?</p> <p>Where in the classroom do you think the pumpkin seeds should be placed? Why? Why does the paper towel</p>	<p>Ziploc bags Pumpkin seeds Paper towels Journal to record observations</p>	<p>Student observations of pumpkin seeds in journal.</p>	<p>5-10 minutes to set up in the bag</p> <p>*2 weeks to grow pumpkin seeds</p>

placed on top of the paper towel in the bag. *They will then be placed aside and the students will keep a journal each day of the changes they observe in their pumpkin seeds.	need to be wet? Do you think a pumpkin will grow from your pumpkin seed?			
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Notes: The students will be divided into 4 groups by drawing one of four pictures out of a bag: pumpkin, acorn, apple, and flower. There are four tables and one station will be set-up at each table. One teacher will be with each group at all times to guide the students and make sure they stay on task. This activity will be the introductory lesson on life processes for the students. They will then continue to learn more about plant life processes as well as learn about animal life processes. The students will have to wash their hands before and after dealing with the different foods and materials at the stations. Any students with nut and/or food allergies will not have any contact with the foods they are allergic to and alternate materials will be provided to those students. Those students who require extra help to complete activities will receive it from the teacher. Those students who have difficulty reading will be read the card by the teacher. The teacher will also help keep the students focused on the activity and make sure it gets completed to the best of their ability.

Rubric for Science Circus

Name _____

	1 point	2 points	3 points
Comprehension of plant life cycles	The student does not participate in the ordering of plant life cycles and can not identify the correct stages of the life cycles.	The student participates in the ordering of plant life cycles, but can only identify two or fewer stages of the life cycles in the correct order.	The student participates in the ordering of plant life cycles and can identify which stage of the life cycle is first, second, etc.
Identification of plant parts	The student does not participate in identifying the various plant parts and can not identify and/or draw the parts of the plant.	The student participates in identifying the various plant parts (seed, root, stem, leaf, blossom), but can only identify and/or draw two or fewer parts of the plant.	The student participates in identifying the various plant parts (seed, root, stem, leaf, blossom) and can identify and/or draw an example of a plant with the labels corresponding to the parts.
Identification of edible plants	The student does not participate in identifying the edible plant parts (sunflower seeds, celery, carrot, lettuce, and apple) and can not give any examples of other edible plant parts.	The student participates in identifying the edible plant parts (sunflower seeds, celery, carrot, lettuce, and apple) and can give one example of other edible plant parts.	The student participates in identifying the edible plant parts (sunflower seeds, celery, carrot, lettuce, and apple) and can give two or more examples of other edible plant parts.
Identification and comprehension of plant needs	The student does not participate in identifying the needs that were met for the three plants and can not give any basic needs of plants.	The student participates in identifying the needs that were met for the three plants and can give at least one basic need of plants.	The student participates in identifying the needs that were met for the three plants and can give three or more basic needs of plants.
Behavior and participation during circus	The student requires more than two reminders to complete the task at hand, raise his/her hand to ask questions, listen, or work well with others.	The student requires one or two reminders to complete the task at hand, raise his/her hand to ask questions, listen, or work well with others.	The student does not require any reminders to complete the task at hand, raise his/her hand to ask questions, listen, and work well with others.

Score: _____/15

Notes for Student: