

KINDERGARTEN/ 1<sup>ST</sup> GRADE  
 SCIENCE  
 PLANT ANATOMY AND NEEDS

STAGE I DESIRED RESULTS		
<p><b>ESTABLISHED GOALS</b></p> <p><b>STRUCTURE AND FUNCTION</b>                      All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air. Plants also have different parts (roots, stems, leaves, flowers, fruits) that help them survive and grow. (LE.LS1A.a)</p> <p><b>INFORMATION PROCESSING</b>                      Animals have body parts that capture and convey different kinds of information needed for growth and survival. Animals respond to these inputs with behaviors</p>	<b>TRANSFER</b>	
	<p><i>Students will be able to independently use their learning to...</i></p> <ul style="list-style-type: none"> <li>-determine the needs of a plant in order for it to flourish and complete its life cycle.</li> <li>-identify a plant's parts in a variety of forms.</li> </ul>	
	<b>MEANING</b>	
	<p><b>UNDERSTANDINGS</b>  <i>Students will understand that...</i></p> <ul style="list-style-type: none"> <li>• A plant needs water, sunlight, air, and nutrients to grow.</li> <li>• Plants have roots, stems, leaves and sometimes flowers.</li> <li>• A plant goes through photosynthesis to produce its own food.</li> <li>• The use of fertilizer can be used to enhance plant growth.</li> </ul>	<p><b>ESSENTIAL QUESTIONS</b></p> <ul style="list-style-type: none"> <li>• Explanation: What are the examples of a plant that has seeds?</li> <li>• Interpretation: What does the color of the leaf reveal about the plant's health?</li> <li>• Application: How could we use what we know about the color of the</li> </ul>

<p>that help them survive. Plants also respond to some external inputs. (LE.LS1D.a)</p> <p><b>DEVELOPING POSSIBLE SOLUTIONS</b>          Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for solutions to a problem. (LE.ETS1B.a)</p> <p><b>OPTIMIZING THE DESIGN SOLUTION</b>          Because there is always more than one possible solution to a problem, it is useful to compare and test designs. (LE.ETS1C.a)</p>		<p>plant's leaf in order to help it become healthy again?</p> <ul style="list-style-type: none"> <li>• Perspective: What is the evidence for believing that the plant may need nutrients?</li> <li>• Empathy: What was the plant trying to tell us about its needs?</li> <li>• Self-Knowledge: How can I best show a care plan in order to meet the needs for this plant?</li> </ul>
<b>ACQUISITION</b>		
<p><b>NATIONAL ART STANDARDS</b></p> <p>b. With prompting and support, use nonrepresentational materials to create props, puppets, and costume pieces for dramatic play or a guided drama experience (e.g., process drama, story drama, creative drama). (TH:Cr1.1.K.)</p> <p>b. Express an idea, feeling, or image, through improvised movement moving alone or with a partner. (DA:Cr2.1.K)</p> <p><b>Reading Standards for Literature</b></p> <p>1. Ask and answer questions about key details in a text.</p> <p>2. a. Retell stories, including key details.</p> <p>b. Recognize and understand the central message or lesson.</p> <p><b>Reading Standards for Informational Text</b></p>	<p><i>Students will know...</i></p> <ul style="list-style-type: none"> <li>-Key terms- stem, root, leaves, flower, fertilizer, nutrients, pollinator, photosynthesis</li> <li>-The purpose of the stem, roots, leaves and flower</li> <li>-Specific deficiencies in which plants exhibit without certain needs.</li> <li>-The process of photosynthesis.</li> <li>-The purpose of fertilizer and its effects.</li> <li>-The importance of sunlight, air, water, and nutrients to a plant.</li> <li>-Definition of a pollinator.</li> </ul>	<p><i>Students will be skilled at...</i></p> <ul style="list-style-type: none"> <li>-identifying a plants needs depending on it's deficiency</li> <li>-labeling plant parts in various plants</li> <li>-designing a care plan in order to peak the health of a plant</li> <li>-understanding the process of photosynthesis</li> </ul>

<p>1. Ask and answer questions about key details in a text.</p> <p>2. Identify the main topic and retell key details of a text.</p> <p><b>Writing Standards</b></p> <p>2. Write informative/explanatory texts in which they name a topic, supply some facts about the topic, and provide some sense of closure.</p> <p><b>Production and Distribution of Writing</b></p> <p>5. With guidance and support from adults, focus on a topic, respond to questions and suggestions from peers, and add details to strengthen writing as needed.</p> <p><b>Research to Build and Present Knowledge</b></p> <p>7. Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).</p> <p>8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.</p>		
<b>STAGE 2 - EVIDENCE</b>		
<b>EVALUATIVE CRITERIA</b>	<b>ASSESSMENT EVIDENCE</b>	
<ul style="list-style-type: none"> <li>• Craftsmanship</li> <li>• Labeling</li> <li>• Sequencing</li> <li>• Prioritizing</li> <li>• Clear &amp; understandable explanation</li> </ul>	<p>PERFORMANCE TASK(S):</p> <p><u>Comparing Plants</u> – Students will compare the life cycle of two plants by journaling the plant’s growth. Students will label the plant parts in their journals as they emerge through the plant’s life cycle.</p>	

	<p><u>Mission to Save the Dying Plants</u>- Each group will be given a sick plant. Based on the condition of the plant, students will need to identify the problem and derive a solution in order to revive the plant. Students will record their ideas and thoughts as well as the care plan. The care plan will be executed in order to save the sick plant.</p> <p><u>Photosynthesis Song or Skit</u>- Students will work in groups in order to create a song or skit to demonstrate their understanding of photosynthesis. Students may use props or photos to reinforce thoughts and ideas.</p>
<ul style="list-style-type: none"><li>• Accuracy</li><li>• Justification</li></ul>	<p>OTHER EVIDENCE:</p> <ul style="list-style-type: none"><li>• Student self-reflections defending decisions made in creating, selecting media, and completing the skit or song.</li><li>• Teacher observations of the process of creating the care plan and justification of the students' steps.</li><li>• Quiz-Plant Parts and Needs</li><li>• Quiz-Pollinators</li></ul>

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**STAGE 3 - LEARNING PLAN**

*Summary of Key Learning Events and Instruction*  
(Please review your goals to ensure you connect back to them.)

Summary of Key Learning Events and Instruction Include a list and description.

Lesson 1

- Teacher will begin the lesson by bringing in a dying plant in need of nutrients to spark students’ interest.
- Introduce essential questions and vocabulary words for the unit
- Introduce parts of a plant through identifying parts of the living plant.
- Students will sort and identify parts of a plants that we eat. (lettuce-leaf, -potato-root, celery-stem, -broccoli-flower)

Lesson 2

- Teacher will continue to use the dying plant to continue the lesson.
- Review essential questions and vocabulary words for the unit through quiz-quiz-trade
- Review what plants need to live and build on schema with new knowledge.
- The students will discuss and brainstorm what could be wrong with the plant based on their schema and come up with a diagnosis.
- The students will then develop a care plan in order to bring the plant back to life and keep it healthy.

Lesson 3

- Teacher will bring in a new plant of a different type to compare to the existing dying plant.
- Review essential questions and vocabulary words for the unit through quiz-quiz-trade
- Students will illustrate both plants in their journals and record differences and similarities.
- The class will then plant the two varieties of plants and record growth as the plant emerges (2-8 week period)
- Students will research the plant types and record common diseases as well as key information about the selected plants.

Lesson 4

- Cheetos and Coffee Filters will be used to illustrate pollination before it is defined.
- Students will take a Cheeto and rub it in between their pointer finger and thumb and then visit other students (flowers) coffee filters and rub the orange residue on as many coffee filters as possible. The residue left will simulate pollination.
- Teacher will define pollination with assistance from students and list pollinators in the local area.
- Students will then be given clues in a group that will assist them in discovering which pollinator they have been given.
- The students will then illustrate the assigned pollinator and label the picture showing the process of pollination.

## HEATHER BORDELON

### Lesson 5

- Review essential questions and vocabulary words through stand up-hand up-pair up.
- Teacher will pull out the dying plant and draw attention to its leaf color.
- Students will then discuss the process of photosynthesis and the importance of leaves in the process.
- A video will be shown in order to reiterate its importance in the plant's life cycle.
- Groups will then collaborate and create a skit or song to help other students understand photosynthesis.
- Students will then deliver their finished project to classmates.

Rubrics & Materials:

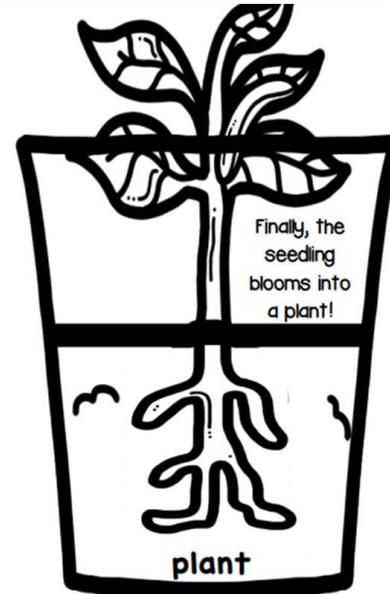
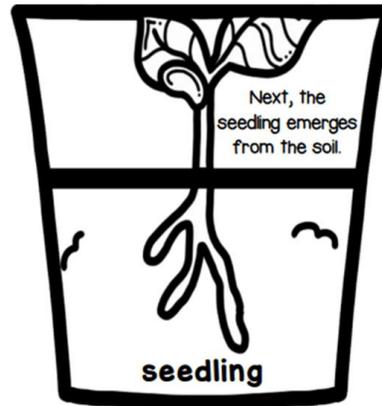
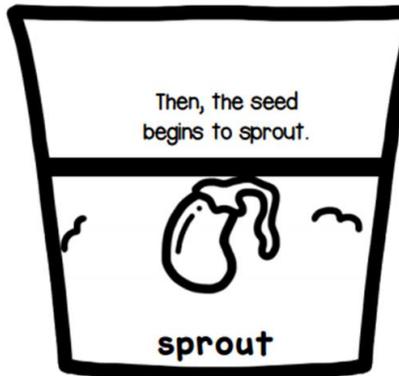
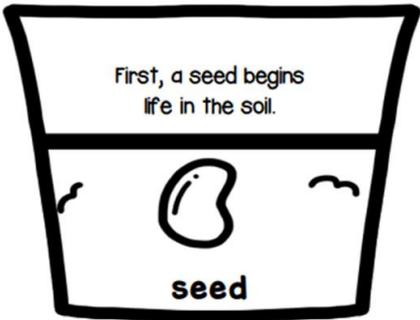
# Rubric for \_\_\_\_\_ Project

Areas Assessed	Great Work! 4	Good job! 3	Getting There! 2	Not quite 1
Organization	All materials are neat and information is easy to understand.	Most materials are neat and most information is easy to understand.	Some materials are neat and some information is easy to understand.	Materials are not neat and are difficult to understand.
Content	Subject area mastery is demonstrated through end result project.	Subject understanding is demonstrated through end result project.	Basic understanding of subject area material is met through end result project.	End result project demonstrates lack of understanding of subject area.
Teamwork	Each group member made contributions to project material and presentation.	Most group members Contributed to project materials and presentation.	Some group members Contributed to project materials and presentation.	Few group members Contributed to project materials and presentation.
Presentation	Information is presented with knowledge and creativity.	Information is presented with acceptable knowledge and creativity.	Information is presented with limited knowledge and minimal creativity.	Information is unclear or lacking and is presented with little creativity.

Name: \_\_\_\_\_

Final Score: \_\_\_\_\_





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Name: \_\_\_\_\_

### Plants KWL Chart

Directions: As we learn about plants, complete each section below.

What I already <b>KNOW...</b>	What I <b>WONDER...</b>	What I <b>LEARNED...</b>
		

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Name: \_\_\_\_\_

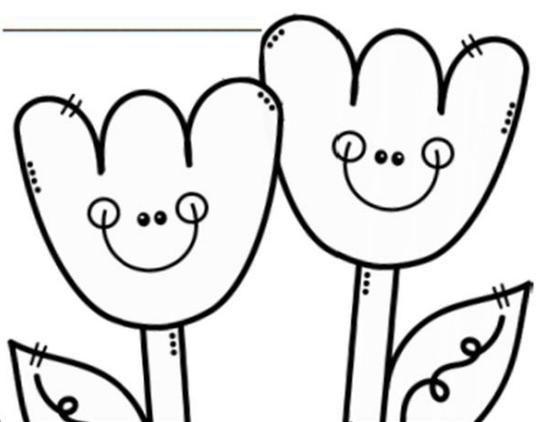
### Plant Venn Diagram

Directions: Compare and contrast two different plants. Complete the Venn Diagram.

Plant "A"      Plant "B"

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Name: \_\_\_\_\_



**This is how I can help a plant to grow:**

\_\_\_\_\_

\_\_\_\_\_

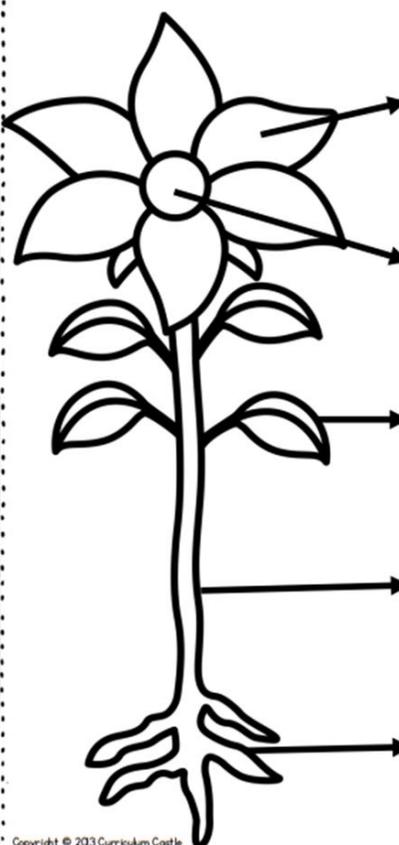
\_\_\_\_\_

\_\_\_\_\_

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Name: \_\_\_\_\_

**I Can EAT a Whole Plant**



flower
seed
leaf
stem
root

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# Pollination: BEE-ing a Plant Helper!

## Materials:

- cheesy Puffs or Cheetos
- cupcake liners
- glue sticks
- flower template



## Directions:

1. Print and copy the flower template (page 35). Cut in half and give each student one half sheet.
2. Have students paste one cupcake liner to the center of their flower.
3. Place a small handful of cheesy puffs inside each cupcake liner.
4. Instruct the student to touch the cheesy puffs with their fingers (if you desire, they can eat them as special treat)!
5. DO NOT allow them to lick or rub off the cheese powder that is remains on their fingertips.
6. They can now "visit" their neighbor's flowers by touching the petals with their fingers.
7. Have them observe how the cheese powder is being transferred to the different flowers.
8. Explain to them that this similar to the way a bee's legs would be covered in pollen. Part of a bee's job is to transfer pollen from flower to flower!

Name: \_\_\_\_\_



**Bee-ing a  
Plant Helper!**



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