



AG IN THE BAG: Grow My Own Garden (6-8)

Essential Question(s): What do plants need to survive and reproduce?

Objective: Next Generation Science Standards	Materials/Resources	Essential Vocabulary
<p>MS-LS2-3 Develop a model to describe the cycling of matter and the flow of energy among living and nonliving parts of an ecosystem.</p>	<ul style="list-style-type: none"> • Computer, tablet, or Chromebook • Graphic Organizer • Lab sheet • Video Recording Device-cell phone, tablet, etc. 	<ul style="list-style-type: none"> • Producers • Soil • Sunlight • Water • Space • Air • Atmosphere • Glucose • Carbon dioxide • Greenhouse Effect • Flower • Leaf • Stem • Roots
Learning Experience		
<p>Background Information: Plants are an essential part of the ecosystem. Without plants an ecosystem is not balanced and that particular food web will be destroyed. What do plants need to survive? Plants need 5 essential things to</p>	<p>Engage: Activating Strategy: Create a word splash or picture about what you know about the 5 essentials things plants need:</p> <div data-bbox="505 1610 901 1871" data-label="Image"> A word splash on a black background with the words "water", "Sun", "air", "soil", and "nitrogen" written in various colors and fonts. </div>	

survive sunlight, soil(nutrients), water, space, and air. Like humans, plants need essential items to thrive in their environment. If the soil is not nutrient enough the plant will not grow or survive. If the plant acquires too much water, a plant drowns because the cells cannot absorb all the water. If the plant lacks sunlight (light in general) photosynthesis will not occur. Plants are producers and make their own food called glucose(sugar). Plants need room to grow and can experience over population, which is called overcrowding. Air for the plant is in the form of carbon dioxide, which they remove from the air.

Producers are vital to life because they can help reduce the Greenhouse Effect by removing carbon dioxide from the atmosphere, which is poisonous to humans and animals. Although the flower, leaf, and stem need carbon dioxide the roots need oxygen. Most plant holders only have the exit for water at the bottom and no air holes throughout the container for the roots to breath. The SOIL3 grow pouch has those essential holes in the material,

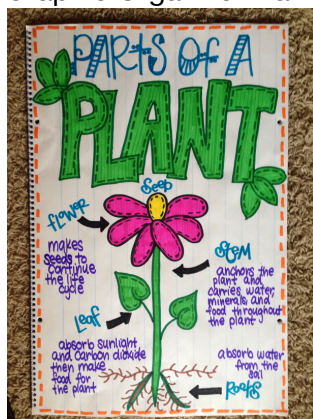
Explore: Activities:

Graphic Organizer

- 5 Essential things plants need to survive:



- Graphic Organizer-Parts of a plant and functions:



- Growing your garden with “The Plant Lady” - <https://youtu.be/7QwPPOhwdg4>
- Lab sheet- see attachment

Explain: Results:

- Data Collection from lab

Day	Growth in Inches	Journal-Observations for each day(use your recording device)
1		
2		
3		
4		
5		
6		
7		

because it is made from recycled materials.

For more information about planting directly into Soil3:

- <https://blog.soil3.com/planting-directly-in-soil3>
- <https://blog.soil3.com/tag/community-and-schools>

Student Misconceptions:

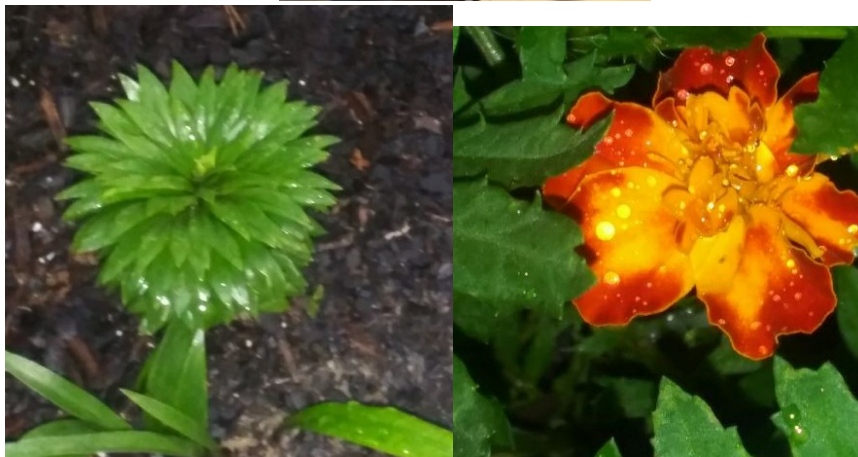
Elaborate: Extending:

Students will be working in partner groups for this assignment

- What day did you see the most growth? Why?
- What day did your plant bloom? Take a picture and post it here.
- Compare your plant to your partners, what similarities and difference did you notice? Why?
- What essential thing did you realize your planted needed the most? Why?
- What was your favorite part about the lab? Why?

Evaluate: Summarizing Strategy:

Create a video with your partner from your plant growth recordings of what you learned about plants and soil, using the lab questions to guide you.



Differentiation Strategies	
Virtual Connections	STEM Opportunities
<ul style="list-style-type: none"> Students can create their own word splash using this website- https://www.wordclouds.com/ Example: <div data-bbox="220 323 669 617" data-label="Image"> </div> Alternate Assessment-Use Flip Grid app to create a short video of what you have learned about compost(soil) and plants. https://info.flipgrid.com/ 	<p>Native American Gardening Techniques- Create your own garden based on the technique created by the Native Americans for growing food. Native Americans used a sophisticated way to maintain their crops of corn, beans, and squash which is called The Three Sisters. https://youtu.be/FwaNH6khB0k</p> <ul style="list-style-type: none"> https://www.agclassroom.org/teacher/matrix/lessonplan.cfm?lpid=297 https://extension.uga.edu/content/dam/extension/programs-and-services/school-gardens/documents/4-Historical-Creating-a-Three-Sisters-Garden.pdf https://kidsgardening.org/lesson-plans-three-sisters-garden/
Assessment(s) Options: Video, lab questions	
Teacher Reflection: (Teacher use Only-Next steps for the lesson)	
Resources: <ul style="list-style-type: none"> https://www.ducksters.com/science/biology/plant_defenses.php https://letstalkscience.ca/educational-resources/backgrounders/needs-plants https://www.dkfindout.com/us/animals-and-nature/plants/parts-flower/ https://www.soils4kids.org/about https://www.tes.com/lessons/JRIJ0uXBc6b5FQ/science Mr. Lee Rock Cycle Rap: https://youtu.be/rkGVE6wNAzo Bill Nye the Science Guy: : https://youtu.be/BsIHV__voMk Word Clouds-https://www.wordclouds.com/ https://www.pinterest.com/pin/67554063139349279/ https://youtu.be/FwaNH6khB0k 	