



AG IN THE BAG: Soil Lesson Plan (6-8)

Essential Question(s): What is an ecosystem? What are the 5 essentials that all plants need to survive? Why are producers so important to an ecosystem?

Objective: Next Generation Science Standards	Materials/Resources	Essential Vocabulary
<p>MS-LS1-5. Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.</p>	<ul style="list-style-type: none"> • Computer, tablet, or Chromebook • Concept Map Sheet • Labels for the game - food, water, shelter, and space 	<p>water soil space air sunlight/light leaves roots stems flower germination water cycle precipitation evaporation condensation transpiration accumulation infiltration photosynthesis abiotic biotic ecosystem food web food chain</p>
Learning Experience		
<p>Background Information: Plants need 5 basic essential things-water,</p>	<p>Engage: Activating Strategy: Journal Write - What do we need to survive? Do you think plants are living things? Show video after discussion.</p> <p>http://studyjams.scholastic.com/studyjams/jams/science/ecosystems/ecosystems.htm</p>	

soil(nutrients), sunlight, space, and air.

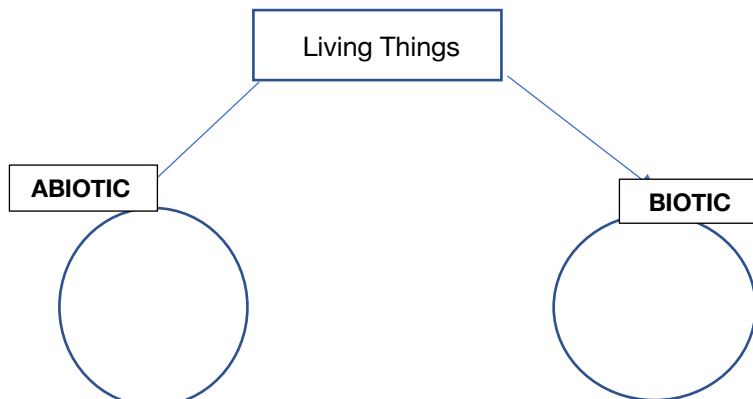


Without these essential items a plant will not be able to survive. Students should form a connection between what we need as consumers compared to what plants need as producers. Plants are an essential part of the ecosystem and if they began to deplete then the Earth's ecosystem will no longer exist.

To deepen the understanding, students need to understand that all living things need abiotic (non-living) and biotic (living) factors to be successful in their ecosystem. The interactions between a producer (organisms that make their own food) and consumers (organisms that cannot produce their own food) are important to how well the ecosystems will develop or grow. Along with these organisms there exist, decomposers, organisms that breakdown dead organisms into the soil, which adds nutrients for the producers.

Explore: Activities:

- 5 Essentials: <https://youtu.be/dUBIQ1fTRzI>
- Abiotic and biotic- Concept Map- <https://youtu.be/sKJoXdrOT70>



- Water Cycle Rap- <https://youtu.be/KM-59IjA4Bs>
- Oh Deer Game-<https://youtu.be/wuoOBqXLDdM>; https://youtu.be/G_79b-8y8vY
Oh Deer Game-Oh Deer Game-Tag game (play outside)- Game is played without partners. Pick at least 5 students to be the deer, everyone else will be environmental resources. The deer will need to survive (water, shelter, space, food). The deer are in front of a resource (the other students). The deer tags a resource, once that happens the resource becomes a deer (circle of life), if the deer does not get a resource then they don't survive and sit down. This activity will provide the students a visual of how important resources are to living things.

Explain: Results:

After students have played the game, in groups have them discuss how this game would involve producers that cannot move to get their water, soil, air, space, and sunlight. Provide a plant example (examples could be snake plant, any type of flowering plant, fern, etc) for them to observe so they can develop their own conclusions. Discuss the following questions as a whole group: What are the 5 essential things plants need to survive? What would happen if all the producers began to die out in the world?

Elaborate: Extending:

- Create an e-book about the 5 essentials for plants for a 4th grader.

Evaluate: Summarizing Strategy:

Exit ticket- State 3 things you learned about plants, 2 things you found interesting, and 1 question you still have about plant survival

More Resources:



<https://blog.soil3.com/gardening-with-children-teaching-ideas>

https://blog.soil3.com/expert-gardener-tips-for-keeping-deer-away?utm_campaign=Soil3&utm_medium=email&hsmi=77802976&hsenc=p2ANqtz--K0zD8CDDGwYH_QwykDEwx3IYJAEHRPO_TN2nY59IYe5ASQOHpa6jiniicbae4pCMLueZEM3IX-w4FZZmppgX1R9r17A&utm_content=77802976&utm_source=hs_automation

Student

Misconceptions:

- Plants are not living things.
- Consumers can produce their own food-example going into the kitchen to make a sandwich.
- Plants do not grow.

Differentiation Strategies

Virtual Connections

- **Discussion Board-** Journal Write-What do we need to survive? Do you think plants are living things?
- 5 Essentials: <https://youtu.be/dUBIQ1fTRzI>

STEM Opportunities

Create an e-book about the 5 essentials for plant for a 4th grader. Include what will happen to the producers if we continue to pollute the environment.

- Abiotic and biotic- Concept Map- <https://youtu.be/sKJoXdrOT70>
- Water Cycle Rap- <https://youtu.be/KM-59ljA4Bs>
- Oh Deer Game- <https://youtu.be/wuoOBqXLDdM>; https://youtu.be/G_79b-8y8vY
Oh Deer Game-Oh Deer Game-Tag game (play outside)- Game is played without partners. Pick at least 5 students to be the deers, everyone else will be environmental resources the deer will need to survive (water, shelter, space, food). The deer are in front of a resource (the other students). The deer tags a resource, once that happens the resource becomes a deer (circle of life), if the deer does not get a resource then they die and sit down. This activity will provide the students a visual of how important resources are to living things.
- After students have played the game, in groups have them discuss how this game would involve producers that cannot move to get their water, soil, air, space, and sunlight. Provide a plant example for them to observe so they can develop their own conclusions. Discuss the following questions as a whole group: What are the 5 essential things plants need to survive? What would happen if all the producers began to die out in the world?
- Exit ticket- State 3 things you learned about plants, 2 things you found interesting, and 1 question you still have about plant survival

Assessment(s) Options:

3-2-1 Activity and E-Book(rubric attached)

Teacher Reflection: (Teacher use Only-Next steps for the lesson)

Resources:

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>

Thinking Map Examples:

<https://1.cdn.edl.io/F0jBiCPoPKD1cf5bW14MkkIQDUyAHn05tEQMtNvYdZNS4HbJ.pdf>

Abiotic/Biotic Factors-Peekaboo Kidz: <https://youtu.be/sKJoXdrOT70>

5 Essentials Things Plants Need Songs: <https://youtu.be/dUBIQ1fTRzI>

Water Cycle Rap: <https://www.gonoodle.com/>; <https://youtu.be/KM-59ljA4Bs>

Oh Deer Game: <https://youtu.be/wuoOBqXLDdM>