

Grade 6 Science
Earth Systems
Activity 6: Plant Processes

Grade 6 Science - Living Systems
Activity #6
Plant Processes

Duration: 60 minutes

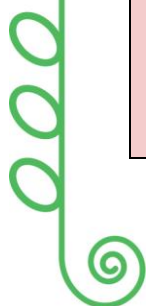
Objective	Overview:
<p>By the end of the activity, students should be able to:</p> <ul style="list-style-type: none"> - Describe the process of photosynthesis and identify its inputs and outputs. - Explain how plants and animals use the food and oxygen produced by photosynthesis. - Understand the role of chlorophyll in capturing sunlight. - Identify how plants store energy as starch. - Discuss the ecological importance of plants beyond food production. 	<ul style="list-style-type: none"> - This activity introduces students to the concept of photosynthesis. Students will explore how the process works and why it is important. Through discussions, demonstrations, and hands-on activities, students will gain a deeper understanding of the significant plant processes and what they do for all living things.

Science Guiding Question	Learning Outcome
In what ways are ecosystems complex?	Students investigate the characteristics and components of and interactions within ecosystems.
Knowledge	<ul style="list-style-type: none"> - Plants carry out the process of photosynthesis, which uses light, water, and carbon dioxide to produce oxygen and food in the form of sugar (glucose). - Plants and animals use the oxygen that is released during photosynthesis for respiration. - Chlorophyll in plants collects light needed for photosynthesis. - Sugar produced by plants through photosynthesis is often stored as starch. - Plants play a variety of roles in an ecosystem, such as: photosynthesizing, cleaning and filtering water, reducing soil erosion, providing food and shelter for animals.
Understanding	<ul style="list-style-type: none"> - Photosynthesis is a process that supports growth and survival in a variety of ecosystems.



Skills and Procedures	<ul style="list-style-type: none"> - Explain the process of photosynthesis and its importance in an ecosystem. - Design and perform a controlled experiment to show that a plant contains starch. - Examine ways that plants and animals rely on each other to meet their needs.
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ELA Guiding Question	Learning Outcome
<ul style="list-style-type: none"> - How can text form and structure improve understanding of content? - What relationships can be made between skillful oration and communication content, style, and delivery? 	<ul style="list-style-type: none"> - Students analyze how text form and structure clarify information and support connecting with self, others, and the world. - Students connect the quality and efficacy of oral communication to oral language skills.
Knowledge	<ul style="list-style-type: none"> - Texts can have more than one purpose and may have one that stands out. - Reading a variety of texts for enjoyment can support academic development. - Literary text forms can be digital or non-digital and include <ul style="list-style-type: none"> -articles -speeches -hybrids - First Nations, Metis and Inuit communication processes and protocols can preserve shared knowledge and include practices such as <ul style="list-style-type: none"> -ongoing conversations -sharing circles -respectfully acknowledging all voices -waiting to take turns -active listening -focusing on the idea rather than on who gave the idea -ending with consensus
Understanding	<ul style="list-style-type: none"> - Text genres, forms, and structures can enhance and influence the enjoyment and communication of ideas and information. - Oral traditions can enhance relationships and preserve shared knowledge.



Skills and Procedures	<ul style="list-style-type: none"> - Analyse the purpose of a variety of digital or non-digital texts. - Make connections between texts read for enjoyment and academic development. - Examine communication processes and protocols that contribute to the transmission or preservation of knowledge.
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Timing	Instructional Element	Student Tasks
Introduction (10 minutes)	<ul style="list-style-type: none"> - Think, Pair, Share: Have you ever wondered how plants make their own food—and why that matters to us? - Teacher circulates to listen to discussions. 	<ul style="list-style-type: none"> - Students participate in class discussion. - Students come to the board to answer questions if they are picked by the teacher.
Development (10 minutes)	<ul style="list-style-type: none"> - Teacher writes formula on the board and explains this is the formula for photosynthesis: Sunlight + Water + CO₂ → Glucose + Oxygen - Teacher plays two videos explaining photosynthesis: Photosynthesis The Dr. Binocs Show Learn Videos For Kids The simple story of photosynthesis and food - Amanda Ooten - Teacher asks students to think about the following questions during the videos: <ol style="list-style-type: none"> 1. What is the role of chlorophyll 2. What is glucose and starch 3. What is oxygen's role for respiration? 4. What do animals give plants for photosynthesis? - Teacher has a full class discussion so students can share their answers to the questions. 	<ul style="list-style-type: none"> - Students get into groups and match their biotic and abiotic cards with each other. - Students are prepared to explain relationships to the teacher when the teacher visits their group.



Independent Work (30 minutes)	<ul style="list-style-type: none"> - <i>Mini Lab / Demonstration:</i> Use file: 06 Leaf Starch Test - LAB - Teacher lets students complete a mini lab or watch the demonstration. - <i>Full Lab: Planting Seeds</i> Use File: 06 Planting Seeds - LAB - <i>If the teacher has time, it is suggested that they also complete the supplemental lab where students are planting seeds and creating a classroom garden.</i> 	<ul style="list-style-type: none"> - Students complete the worksheet. - Students participate in classroom discussion.
Conclusion: (10 minutes):	<ul style="list-style-type: none"> - Exit Ticket Question: - Teacher has students write 1–2 sentences to answer: <i>Explain why photosynthesis is important to animals.</i> 	<ul style="list-style-type: none"> - Students write 1-2 sentences to complete their exit slip.

Helpful resources:

<https://www.brainpop.com/topic/photosynthesis/>

<https://biomanbio.com/HTML5GamesandLabs/PhotoRespgames/photointeractivehtml5page.html>

