

**Grade 6 Science**  
**Earth Systems**  
*Activity 7: Plant Processes*

**Grade 6 Science - Living Systems**  
**Activity #7**  
**Plant Processes**

Duration: 60 minutes

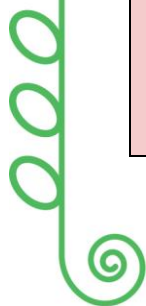
Objective	Overview:
<p>By the end of the activity, students should be able to:</p> <ul style="list-style-type: none"> <li>- Describe the process of photosynthesis and identify its inputs and outputs.</li> <li>- Explain how plants and animals use the food and oxygen produced by photosynthesis.</li> <li>- Understand the role of chlorophyll in capturing sunlight.</li> <li>- Identify how plants store energy as starch.</li> <li>- Discuss the ecological importance of plants beyond food production.</li> </ul>	<ul style="list-style-type: none"> <li>- 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.</li> </ul>

Science Guiding Question	Learning Outcome
In what ways are ecosystems complex?	Students investigate the characteristics and components of and interactions within ecosystems.
<b>Knowledge</b>	<ul style="list-style-type: none"> <li>- 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).</li> <li>- Plants and animals use the oxygen that is released during photosynthesis for respiration.</li> <li>- Chlorophyll in plants collects light needed for photosynthesis.</li> <li>- Sugar produced by plants through photosynthesis is often stored as starch.</li> <li>- 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.</li> </ul>
<b>Understanding</b>	<ul style="list-style-type: none"> <li>- Photosynthesis is a process that supports growth and survival in a variety of ecosystems.</li> </ul>



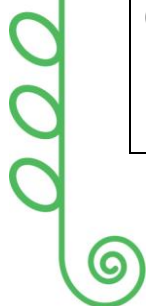
<b>Skills and Procedures</b>	<ul style="list-style-type: none"> <li>- Explain the process of photosynthesis and its importance in an ecosystem.</li> <li>- Design and perform a controlled experiment to show that a plant contains starch.</li> <li>- Examine ways that plants and animals rely on each other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



<b>Skills and Procedures</b>	<ul style="list-style-type: none"> <li>- Analyse the purpose of a variety of digital or non-digital texts.</li> <li>- Make connections between texts read for enjoyment and academic development.</li> <li>- Examine communication processes and protocols that contribute to the transmission or preservation of knowledge.</li> </ul>
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<b>Timing</b>	<b>Instructional Element</b>	<b>Student Tasks</b>
<b>Introduction</b> (5 minutes)	<ul style="list-style-type: none"> <li>- The teacher has already talked about chlorophyll, oxygen, glucose, starch, and photosynthesis in a prior lesson.</li> </ul> <p><b>Whiteboard Matching Game</b></p> <ul style="list-style-type: none"> <li>- The teacher writes the following definitions on the board, one at a time:  “Green and captures light from the sun” (chlorophyll)  “Sugar energy created by plant” (glucose)  “Process where light is converted to chemical energy” (photosynthesis)  “The product released after photosynthesis” (oxygen)  “A large reserve of energy in the plant” (starch)</li> <li>- Teacher asks students to write the answer on their own personal white boards and display them for the teacher to check.</li> </ul>	Students listen to the teacher and answer questions on their personal whiteboards.
<b>Development</b> (30 minutes)	<p><b>Photosynthesis Skit</b></p> <ul style="list-style-type: none"> <li>- Teacher puts students into groups.</li> <li>- Teacher tells students that they need to prepare a skit showing the journey of sunlight, CO<sub>2</sub>, and water into a plant and how oxygen and glucose come out in a garden situation. (You can modify the activity into a comic strip or poster for students who can’t present)</li> <li>- Teacher tells students that in their skit they must include: chlorophyll, sunlight, sugar, oxygen, starch storage, and how animals benefit.</li> </ul>	Students get into groups and prepare and present skits. Students listen respectfully to other groups.
<b>Independent Work</b> (15 minutes)	<ul style="list-style-type: none"> <li>- After the short skits are presented, the teacher keeps students in their same groups and gives each group some poster paper.</li> <li>- The teacher tells the groups that they need to write down all the ways plants help our ecosystems.</li> </ul>	Students work in groups to complete posters.



	<ul style="list-style-type: none"> <li>- Teacher explains they need to write a conclusion that talks about how a classroom garden or home garden (Large or small) would be beneficial for everyone.</li> <li>- Teacher provides prompts for the students: Photosynthesis Water filtration Preventing erosion Providing food and shelter</li> <li>- The teacher displays each group's poster around the room so that the other groups can see what others have said.</li> </ul>	
<b>Conclusion:</b> (10 minutes):	<ul style="list-style-type: none"> <li>- <b>Journal Entry</b></li> <li>- What would happen if there were no plants? (Teacher is looking for students to draw attention to effects on animals, humans, air, and water)</li> </ul>	Students write their journal entries.

Helpful resources:

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

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

