

# **Grade 4 Science - Earth Systems**

## **Activity #3**

### **Plant Needs**

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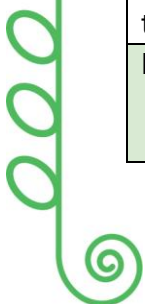
#### Plant Needs

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>- Understand the importance of sunlight for plant growth</li><li>- Understand the importance of water for plant growth</li><li>- Follow procedures to complete a lab</li></ul>	<ul style="list-style-type: none"><li>- This activity introduces students to the concept of how sunlight and water are vital to the growth of plants. Students will explore how plants react when manipulating sunlight and water. Through observations and reflections students will gain a deeper understanding of the connection of these two Earth systems to the life of plants and animals.</li></ul>

Science Guiding Question	Learning Outcome
How does Earth sustain life?	Students investigate the systems of Earth and reflect on how their interconnections sustain life.
<b>Knowledge</b>	<ul style="list-style-type: none"><li>- Organisms require warmth and energy from the Sun to live.</li><li>- Water is a basic need for plants and animals.</li><li>- First Nations, Metis and Inuit laws of nature include: how nature provides gifts of life, living in harmony with the land.</li></ul>
<b>Understanding</b>	<ul style="list-style-type: none"><li>- Earth's surface is warmed by the Sun, allowing for life.</li></ul>
<b>Skills and Procedures</b>	<ul style="list-style-type: none"><li>- Describe the importance of the amount of sunlight and warmth on a variety of organisms.</li><li>- Discuss ways that plants and animals use water to meet their basic needs.</li></ul>

Math Guiding Question	Learning Outcome
In what ways can communication be shaped by the choice of representation?	Students evaluate the use of scale in graphical representations of data.
<b>Knowledge</b>	<ul style="list-style-type: none"><li>- A statistical problem-solving process includes<ul style="list-style-type: none"><li>-formulating statistical questions</li><li>-collecting data</li></ul></li></ul>



	<ul style="list-style-type: none"> <li>-representing data</li> <li>-interpreting data</li> <li>- Common graphs include</li> <li>-pictographs</li> <li>-bar graphs</li> <li>-dot plots</li> </ul>
<b>Understanding</b>	<ul style="list-style-type: none"> <li>- Representation is a part of a statistical problem-solving process.</li> <li>- Representation can express many-to-one correspondence by defining a scale.</li> </ul>
<b>Skills and Procedures</b>	<ul style="list-style-type: none"> <li>- Engage in a statistical problem-solving process.</li> <li>- Select an appropriate scale to represent data.</li> <li>- Represent data in a graph using many-to-one correspondence.</li> <li>- Justify the choice of graph used to represent certain data.</li> </ul>

Teacher Materials	Student Materials	Safety Concerns
Smart board, Lab document, Lab materials	Pencils, lab materials	Gardening safety concerns

Timing	Instructional Element	Student Tasks
<b>Introduction</b> (10 minutes)	<p>Teacher hands out Lab worksheet-- Accompanying doc: "Earth Systems – LAB Planting Seeds"</p> <ul style="list-style-type: none"> <li>- Teacher introduces students to the experiment they will be starting today.</li> <li>- Teacher explains how plants need many things to grow, but we will be focusing on sunlight and water for this experiment.</li> </ul>	<ul style="list-style-type: none"> <li>- Students listen to the teacher and ask questions if they are unsure.</li> </ul>
<b>Development</b> (10 minutes)	<ul style="list-style-type: none"> <li>- Teacher does a demonstration of how students will be planting their seedlings, shows them where to find materials and answers any questions the students have.</li> </ul> <p><a href="#">How to repot a plant?   Beginners Guide to Repotting</a></p>	<ul style="list-style-type: none"> <li>- Students follow along with the demonstration and ask questions if necessary.</li> </ul>



<b>Independent Work</b>  (30 minutes)	<ul style="list-style-type: none"> <li>- Students are given time to follow procedures in the lab document to have all their samples ready for observation.</li> <li>- The teacher is circulating to make sure all the groups are successful.</li> </ul>	<ul style="list-style-type: none"> <li>- Students work as a group to follow the procedure in the lab document so that their experiment is ready for observations daily.</li> </ul>
<b>Conclusion</b>  (10 minutes)	<ul style="list-style-type: none"> <li>- Teacher explains to students how they will be continuing with the experiment for the next two weeks and that they will be taking care of the plants and making observations daily.</li> </ul>	<ul style="list-style-type: none"> <li>- Students listen to the teacher and get themselves organized with the group to take care of the plant and take daily observations.</li> </ul>

