

**Seattle Public Schools Science Standards**  
**Plant Growth and Development**  
 (Science and Technology for Children)  
**Grade 3**

LIFE  
SCIENCE

<b>EARL #1 The student understands and uses scientific concepts and principles.</b>		
<b>Component</b>	<b>Benchmarks</b>	<b>Lesson #s</b>
1.1 – Use properties to identify, describe, and categorize substances, materials, and objects, and use characteristics to categorize living things.	<p><b><i>Basis of biological diversity</i></b></p> <ul style="list-style-type: none"> <li>observe and describe the life cycle that begins with a seed and proceeds through the production of seeds</li> <li>describe the distinct stages in the life cycle of a plant</li> <li>investigate the relationship of plant features (e.g., roots, stems, flowers, and leaves)</li> </ul>	All lessons
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	<p><b><i>Structure and organizations of living systems</i></b></p> <ul style="list-style-type: none"> <li>observe that organisms (e.g., plants) are composed of many parts that can look different from each other and perform unique functions</li> </ul> <p><b><i>Molecular basis of heredity</i></b></p> <ul style="list-style-type: none"> <li>investigate how plants reproduce through pollination</li> <li>observe how seeds grow into new plants and resemble the parent plant</li> </ul>	2, 4, 6, 10, 12  10 – 12, 16
1.3 – Understand how interactions within and among systems cause changes in matter and energy.	<p><b><i>Life processes and the flow of matter and energy</i></b></p> <ul style="list-style-type: none"> <li>observe that plants need light energy in order to stay alive and grow</li> </ul> <p><b><i>Interdependence of life</i></b></p> <ul style="list-style-type: none"> <li>experiment with plants showing particular environments and how some plants thrive, some struggle to live, and others die</li> </ul>	3 – 12, 14  8

PHYSICAL  
SCIENCE

<b>EARL #1 The student understands and uses scientific concepts and principles.</b>		
1.1 – Use physical properties to identify, describe, and categorize substances, materials, and objects, and uses characteristics to categorize living things.	<p><b><i>Properties of substances</i></b></p> <ul style="list-style-type: none"> <li>accurately measure and record physical quantities (e.g., growth of plants)</li> </ul>	5, 7, 15, 16

**SCIENCE  
SKILLS/  
PROCESSES**

<b>EARL #2 The student understands the skills and processes of science and technology.</b>		
2.1 – Develop the abilities necessary to do scientific inquiry.	<p><b>Questioning</b></p> <ul style="list-style-type: none"> <li>ask questions about objects, organisms, and events in the environment</li> </ul>	3 – 12, 16
	<p><b>Designing and conducting investigations</b></p> <ul style="list-style-type: none"> <li>plan and conduct simple investigations, using appropriate tools, measures, and safety rules</li> </ul> <p><b>Evidence and explanation</b></p> <ul style="list-style-type: none"> <li>use data to construct reasonable explanations</li> </ul> <p><b>Modeling</b></p> <ul style="list-style-type: none"> <li>model systems, events, or processes by representing them with concrete objects, analogies, or other conceptual or physical constructs (e.g., graphic organizers)</li> </ul> <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>record and report observations, explanations, and conclusions using oral, written, and mathematical expression</li> </ul>	3 – 12, 15 – 16 5 – 7, 15 13, 14 5 – 7, 10, 12
2.2 – Apply science knowledge and skills to solve problems or meet challenges.	<p><b>Identifying problems</b></p> <ul style="list-style-type: none"> <li>identify problems in which science and technology can and have been used to find solutions</li> </ul>	16

**SCIENTIFIC  
THINKING**

<b>EARL #3 The student understands the nature and contexts of science and technology.</b>		
3.1 – Understand the nature of scientific inquiry.	<p><b>Intellectual honesty</b></p> <ul style="list-style-type: none"> <li>understand that all scientific observations should be reported accurately even when they contradict expectations</li> </ul>	2, 5 – 7, 10, 12
	<p><b>Limitations of science and technology</b></p> <ul style="list-style-type: none"> <li>distinguish between questions that can be answered with science and technology and those that cannot</li> </ul>	All lessons
	<p><b>Dealing with inconsistencies</b></p> <ul style="list-style-type: none"> <li>explain why similar investigations may not produce similar results</li> </ul>	2 – 5
	<p><b>Evaluating methods of investigation</b></p> <ul style="list-style-type: none"> <li>recognize that results of scientific investigations can come from expected and unexpected sources (e.g., through sharing results of investigations)</li> </ul> <p><b>Evolution of scientific ideas</b></p> <ul style="list-style-type: none"> <li>know that ideas in science change as new scientific thinking, theories, and evidence arise</li> </ul>	6, 7, 10 – 12, 15 16
3.2 – Know that science and technology are human endeavors, interrelated to	<p><b>All peoples contribute to science and technology</b></p> <ul style="list-style-type: none"> <li>begin to understand how science and technology have been practiced by all peoples throughout</li> </ul>	1, 2 – 8, 10 – 12, 16

<p>each other, to society and to the workplace.</p>	<p>history</p> <p><b><i>Relationship of science and technology</i></b></p> <ul style="list-style-type: none"> <li>• recognize that people have invented tools for everyday life and for scientific investigations</li> </ul> <p><b><i>Careers and occupations using science, mathematics, and technology</i></b></p> <ul style="list-style-type: none"> <li>• identify the knowledge and skills of science, math, and technology used in common occupations</li> </ul>	<p>3 – 4, 16</p> <p>10</p>
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