

Seattle Public Schools Science Standards

Soils

(Science and Technology for Children)

Grade 2

PHYSICAL
SCIENCE

EARL #1 The student understands and uses scientific concepts and principles.		
Component	Benchmarks	Lesson #s
1.1 – Use properties to identify, describe, and categorize substances, materials, and objects, and use characteristics to categorize living things.	<p><i>Properties of substances</i></p> <ul style="list-style-type: none"> • identify and describe physical attributes of materials and objects (e.g., color, shape, size) • estimate and measure objects including length, weight, volume, using non-standard and standard units 	All lessons
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	<p><i>System</i></p> <ul style="list-style-type: none"> • identify the parts of a system, how the parts go together, and how they depend on each other (e.g., growing system, decomposition system) 	1, 2, 6, 7, 9 – 14, 16
	<p><i>Structure of matter</i></p> <ul style="list-style-type: none"> • know that matter is made of small particles (e.g., soil components) 	1 – 8, 13 – 16

LIFE
SCIENCE

EARL #1 The student understands and uses scientific concepts and principles.		
1.1 – Use properties to identify, describe, and categorize substances, materials, and objects, and use characteristics to categorize living things.	<p><i>Basis of biological diversity</i></p> <ul style="list-style-type: none"> • observe and describe changes in living things • describe how plants and animals have features that help them live in different environments • identify plant parts and their functions (e.g., roots take in water, stems offer support) 	1, 2, 7, 9 – 14, 16
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	<p><i>Molecular basis of heredity</i></p> <ul style="list-style-type: none"> • observe the parts of living things (e.g., anterior and posterior ends; roots, stems, leaves) 	2, 7, 9, 10, 13, 16
1.3 – Understand how interactions within and among systems cause changes in matter.	<p><i>Life processes and the flow of matter and energy</i></p> <ul style="list-style-type: none"> • recognize that plants use water, light, and nutrients • recognize that animals (e.g., worms) take in water, food, and oxygen to sustain life and almost all kinds of animal food can be traced back to plants 	2, 7, 10, 13, 16
	<p><i>Interdependence of life</i></p> <ul style="list-style-type: none"> • recognize that all organisms, including humans, have senses that help them detect internal and 	2, 7, 10, 13, 16

	<p>external cues necessary for survival</p> <ul style="list-style-type: none"> recognize that some organisms decompose dead organisms (e.g., worms eat dead plants) <p><i>Environmental and resource issues</i></p> <ul style="list-style-type: none"> recognize that animals need food, water, and waste removal. Some animal waste return valuable nutrients to the environment 	2, 7, 10, 13, 16
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**EARTH
SCIENCE**

EARL #1 The student understands and uses scientific concepts and principles.		
1.1 – Use properties to identify, describe, and categorize substances, materials, and objects, and use characteristics to categorize living things.	<p><i>Nature and properties of earth materials</i></p> <ul style="list-style-type: none"> observe and examine the properties of earth materials (e.g., soils, water) discover that soils have properties (e.g., color, texture, capacity to retain water, ability to support the growth of plants) 	All lessons
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	<p><i>Components and patterns of earth system</i></p> <ul style="list-style-type: none"> recognize that most soil is composed of organic and non-organic parts 	All lessons

**SCIENCE
SKILLS/
PROCESSES**

EARL #2 The student understands the skills and processes of science and technology.		
2.1 – Develop the abilities necessary to do scientific inquiry.	<p><i>Questioning</i></p> <ul style="list-style-type: none"> ask questions about objects, organisms, and events in the environment 	All lessons
	<p><i>Designing and conducting investigations</i></p> <ul style="list-style-type: none"> plan and conduct simple investigations, using appropriate tools, measures, and safety rules 	8, 14 - 16
	<p><i>Evidence and explanation</i></p> <ul style="list-style-type: none"> use data to construct reasonable explanations 	8, 14 – 16
	<p><i>Modeling</i></p> <ul style="list-style-type: none"> model systems, events, or processes by representing them with concrete objects (e.g., compost in a bag, root growth in a vial) 	2, 11 – 13
2.2 – Apply science knowledge and skills to solve problems or meet challenges.	<p><i>Communication</i></p> <ul style="list-style-type: none"> record and report observations, explanations, and conclusions using oral, written, and mathematical expression 	All lessons
	<p><i>Identifying problems</i></p> <ul style="list-style-type: none"> identify problems in which science and technology can be used to design solutions (e.g., composting, determining amount of growth) <p><i>Designing and testing solutions</i></p> <ul style="list-style-type: none"> propose, design, and test a solution to a problem (e.g., best growing medium) 	13, 16 13, 16

SCIENTIFIC
THINKING

	<p><i>Evaluating potential solutions</i></p> <ul style="list-style-type: none"> • evaluate how well a design or a product solves a problem (e.g., best growing medium) 	13, 16
<p>EARL #3 The student understands the nature and contexts of science and technology.</p>		
<p>3.1 – Understand the nature of scientific inquiry</p>	<p><i>Intellectual honesty</i></p> <ul style="list-style-type: none"> • understand that all scientific observations should be reported accurately even when they contradict expectations <p><i>Limitations of science and technology</i></p> <ul style="list-style-type: none"> • begin to distinguish between questions that can be answered with science and technology and those that cannot <p><i>Dealing with inconsistencies</i></p> <ul style="list-style-type: none"> • begin to explain why similar investigations may not produce similar results <p><i>Evaluating methods of investigation</i></p> <ul style="list-style-type: none"> • begin to recognize that results of scientific investigations can come from expected and unexpected sources 	<p>All lessons</p> <p>1, 3</p> <p>8 – 12, 14 – 16</p> <p>8 – 12, 14 – 16</p>
<p>3.2 – Know that science and technology are human endeavors, interrelated to each other, to society and to the workplace.</p>	<p><i>All peoples contribute to science and technology</i></p> <ul style="list-style-type: none"> • understand how science and technology are used or have been used by people <p><i>Relationship of science and technology</i></p> <ul style="list-style-type: none"> • recognize that people have invented tools for everyday life and for scientific investigations <p><i>Careers and occupations using science, mathematics, and technology</i></p> <ul style="list-style-type: none"> • identify the knowledge and skills of science, mathematics, and technology used in common occupations 	<p>13, 16</p> <p>3, 6, 7, 10 – 12,</p> <p>11, 13, 15</p>