Seattle Public Schools Science Standards

Models and Designs

(FOSS)

Grade 5

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.	***Properties of substances*** • use properties to sort natural materials and manufactured materials and objects (i.e., accurately measure physical quantities such as length, using tools such as rulers)	3.2, 3.3
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	***System*** • identify the parts of a system, how the parts go together, and how they depend on each other ***Energy sources and kinds*** • understand that energy keeps things running and comes in many forms (e.g., the energy source, the rubber band, is giving off energy to the energy receiver, the go-cart) ***Energy transfer and transformation*** • know that energy can be transferred between various forms or objects (e.g., elastic potential energy changing to energy of motion)	All lessons 3.2 – 4.3 3.2 – 4.3
1.3 – Understand how interactions within and among systems cause changes in matter and energy.	***Nature of forces*** • describe forces in terms of strength and direction ***Forces to explain motion*** • investigate and recognize factors that determine the effects of a push or pull on the motion of objects	3.2 – 4.3 3.2 – 4.3

EARTH SCIENCE

EARL #1 The student understands and uses scientific concepts and principles.

1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	***Components of the solar system*** • know that the earth is one of several planets that orbit the sun and the moon orbits the earth	1.1 – 1.3 Also FOSS *Science Stories*
1.3 – Understand how interactions within and among systems cause changes in matter and energy.	***History and evolution of the earth*** • recognize that fossils provide evidence of plants, animals, and environments that existed long ago	1.1 – 1.3 Also FOSS Science Stories

LIFE SCIENCE

EARL #1 The student understands and uses scientific concepts and principles.		
1.3 – Understand how interactions within and among systems cause changes in matter and energy.	***Biological evolution*** • know that fossil records show patterns of structural change in organisms over time	1.1 – 1.3 Also FOSS *Science Stories*

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.	***Questioning*** • ask questions about objects, organisms, and events in the environment ***Designing and conducting investigations*** • plan and conduct simple investigations, using appropriate tools, measures, and safety rules ***Evidence and explanation*** • use data to construct reasonable explanations ***Modeling*** • model objects, events, or processes by representing them with concrete objects, or other conceptual or physical constructs ***Communication*** • record and report observations, explanations, and conclusions using oral, written, and mathematical expression	All lessons All lessons 1, 3, 4 1.1 – 2.2 All lessons
2.2 – Apply science knowledge/skills to solve problems, meet challenges.	***Identifying problems*** • identify problems found in familiar contexts in which science/technology can be or has been used to design solutions ***Designing and testing solutions*** • propose, design, and test a solution to a problem ***Evaluating potential solutions*** • evaluate how well a design or a product solves a problem in relation to criteria	2.1 – 4.3 2.1 – 4.3 2.1 – 4.3

SCIENTIFIC THINKING

EARL #3 The student understands the nature and contexts of science and technology.		
3.1 – Understand the nature of scientific inquiry.	***Intellectual honesty*** • understand that all scientific observations should be reported accurately even when they contradict expectations ***Dealing with inconsistencies*** • explain why similar investigations may not produce similar results ***Evaluating methods of investigation*** • recognize that results of scientific investigations can	3.1 – 4.2 1.1 – 1.3, 3.1 – 4.2 3.1 – 4.3

	come from expected and unexpected sources ***Evolution of scientific ideas*** • know that ideas in science change as new scientific thinking, theories, and evidence arise	1.1 – 1.3
3.2 – Know that science and technology are human endeavors, interrelated to each other, to society and to the workplace.	***All peoples contribute to science and technology*** • know that science and technology have been practiced by all peoples throughout history ***Relationship of science and technology*** • recognize that people have invented tools for everyday life and for scientific investigations (specifically, understand that science is the exploration and investigation of the natural world and that technology is the process of designing solutions to human problems and inventing ways to adapt to the environment)	All lessons 3, 4