Seattle Public Schools Science Standards

Sound

(Science and Technology for Children)

Grade 3

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.	***Sound, light, and waves*** • demonstrate that sound is caused by vibrations • experiment with and describe changes in sound patterns from high to low pitch (e.g., vibrations, echoes, volume, and pitch) • construct and observe a model to investigate the vibrations of the eardrum, which the brain interprets as sound	All lessons
1.2 – Recognize the components, structure, and organization of systems and the interconnections within and among them.	***System*** • demonstrate how the parts of a system interact to produce changes (e.g., making sounds with musical instruments)	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.	***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 systems, events, or processes by representing them with concrete objects, analogies, or other conceptual or physical constructs (e.g., graphic organizers) ***Communication*** • record and report observations, explanations, and conclusions using oral, written, and mathematical expression	All lessons 9 – 16 1 – 14 8, 14 All lessons
2.2 – Apply science knowledge and skills to solve problems or meet challenges.	***Identifying problems*** • identify problems in which science and technology can and have been used to find solutions (e.g., hearing aids, voice synthesizers, dog whistles, radios)	8, 14

	Designing and testing solutions • propose, design, and test a solution to a problem (e.g., sound making device) ***Evaluating potential solutions*** • evaluate how well a design or a product solves a problem	15, 16 15, 16

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 ***Limitations of science and technology*** • distinguish between questions that can be answered with science and technology and those that cannot ***Dealing with inconsistencies*** • explain why similar investigations may not produce similar results ***Evaluating methods of investigation*** • recognize that results of scientific investigations can come from expected and unexpected sources (e.g., through sharing results of investigations) ***Evolution of scientific ideas*** • know that ideas in science change as new scientific thinking, theories, and evidence arise	All lessons All lessons 4, 9, 16 3 – 16 All lessons
	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*** • begin to understand how 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 ***Careers and occupations using science, mathematics, and technology*** • identify the knowledge and skills of science, math, and technology used in common occupations	1 – 14 2, 10 – 12 4, 8, 14 – 16