



BROWNELL TALBOT

Fourth Grade Prioritized Science Standards

The prioritized standards listed align with the NGSS (Next Generation Science Standards) Performance Expectations. The NGSS also includes a set of Science and Engineering Practices for grades kindergarten through 12. A practice of science is to ask and refine questions that lead to descriptions and explanations of how the natural and designed world(s) work and which can be empirically tested. Engineering questions clarify problems to determine criteria for successful solutions and identify constraints to solve problems about the designed world. Both scientists and engineers also ask questions to clarify ideas. (see the link at the bottom for detailed descriptions of those condensed practices, grades K-12)

LIFE SCIENCE		
Molecules to Organisms	Structure & Function	Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. (4-LS1-1) Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. (4-LS1-2)
EARTH SCIENCE		
Earth's Systems	Plate Tectonics & Large-Scale System Interactions	Analyze and interpret data from maps to describe patterns of Earth's features. (4-ESS2-2)
Earth & Human Activity	Natural Resources	Obtain and combine information to describe that energy and fuels are derived from natural resources and that their uses affect the environment. (4-ESS3-1)
	Natural Hazards	Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. (4-ESS3-2)
PHYSICAL SCIENCE		
Energy	Definitions	Use evidence to construct an explanation relating the speed of an object to the energy of that object. (4-PS3-1)
	Conservation & Transfer	Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. (4-PS3-2)
	Relationship Between Energy & Forces	Ask questions and predict outcomes about the changes in energy that occur when objects collide. (4-PS3-3)
	Chemical Processes & Everyday Life	Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. (4-PS3-4)
Waves & Their Application	Wave Properties	Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. (4-PS4-1)
	Information Technologies	Generate and compare multiple solutions that use patterns to transfer information. (4-PS4-3) (<i>secondary</i> 3-5-ETS1-3)
ENGINEERING		
Engineering Design	Defining & Delimiting a Problem	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. (3-5-ETS1-1)
	Developing Possible Solutions	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. (3-5-ETS1-2)
	Optimizing the Design Solution	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. (3-5-ETS1-3)