

NATIONAL SCIENCE EDUCATION STANDARDS

Science Projects for Holidays Throughout the Year

GRADE	CATEGORY	SUB-CATEGORY	STANDARD
K-4	History and Nature of Science	Science As A Human Endeavor	Men and women have made a variety of contributions throughout the history of science and technology.
K-4	History and Nature of Science	Science As A Human Endeavor	Science and technology have been practiced by people for a long time.
K-4	Physical Science	Light, Heat, Electricity, and Magnetism	Electricity in circuits can produce light, heat, sound, and magnetic effects. Electrical circuits require a complete loop through which an electrical current can pass.
K-4	Physical Science	Light, Heat, Electricity, and Magnetism	Light travels in a straight line until it strikes an object. Light can be reflected by a mirror, refracted by a lens, or absorbed by the object.
K-4	Physical Science	Position and Motion of Objects	An object's motion can be described by tracing and measuring its position over time.
K-4	Physical Science	Position and Motion of Objects	Position of an object can be described by locating it relative to another object or the background.
K-4	Physical Science	Position and Motion of Objects	The position and motion of objects can be changed by pushing or pulling. The size of the change is related to the strength of the push or pull.
K-4	Physical Science	Properties of Objects and Materials	Materials can exist in different states- solid, liquid, and gas. Some common materials such as water, can be changed from one state to another by heating or cooling.
K-4	Physical Science	Properties of Objects and Materials	Objects are made of one or more materials, such as paper, wood, and metal. Objects can be described by the properties of the materials from which they are made, and those properties can be used to separate or sort a group of objects or materials.

K-4	Physical Science	Properties of Objects and Materials	Objects have many observable properties, including size, weight, shape, color, temperature, and the ability to react with other substances. Those properties can be measured using tools, such as rulers, balances, and thermometers.
K-4	Science and Technology	Abilities of Technological Design	Communicate a problem, design, and solution.
K-4	Science and Technology	Abilities of Technological Design	Evaluate a product or design.
K-4	Science and Technology	Abilities of Technological Design	Identify a simple problem.
K-4	Science and Technology	Abilities of Technological Design	Implementing proposed solutions.
K-4	Science and Technology	Abilities of Technological Design	Propose a solution.
K-4	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Ask a question about objects, organisms, and events in the environment.
K-4	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Communicate investigations and explanations.
K-4	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Employ simple equipment and tools to gather data and extend the senses.
K-4	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Plan and conduct a simple investigation.
K-4	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Use data to construct a reasonable explanation.
5-8	History and Nature of Science	History Of Science	Many individuals have contributed to the traditions of science.
5-8	History and Nature of Science	Science As A Human Endeavor	Women and men of various social and ethnic backgrounds-and with diverse interests, talents, qualities, and motivations-engage in the activities of science, engineering, and related fields such as the health professions.
5-8	Physical Science	Motions And Forces	An object that is not being subjected to a force will continue to move at a constant speed and in a straight line.
5-8	Physical Science	Motions And Forces	The motion of an object can be described by its position, direction of motion, and speed. That motion can be measured and represented on a graph.

5-8	Physical Science	Properties And Changes Of Properties In Matter	A substance has characteristic properties, such as density, a boiling point, and solubility, all of which are independent of the amount of the sample. A mixture of substances often can be separated into the original substances using one or more of the characteristic properties.
5-8	Physical Science	Properties And Changes Of Properties In Matter	Substances react chemically in characteristic ways with other substances to form new substances (compounds) with different characteristic properties. In chemical reactions, the total mass is conserved. Substances often are placed in categories or groups if they react in similar ways; metals is an example of such a group.
5-8	Physical Science	Transfer Of Energy	Electrical circuits provide a means of transferring electrical energy when heat, light, sound, and chemical changes are produced.
5-8	Physical Science	Transfer Of Energy	Light interacts with matter by transmission (including refraction), absorption, or scattering (including reflection). To see an object, light from that object-emitted by or scattered from it-must enter the eye.
5-8	Science and Technology	Abilities In Technical Design	Communicate the process of technological design.
5-8	Science and Technology	Abilities In Technical Design	Design a solution or product.
5-8	Science and Technology	Abilities In Technical Design	Evaluate completed technological designs or products.
5-8	Science and Technology	Abilities In Technical Design	Identify appropriate problems for technological design.
5-8	Science and Technology	Abilities In Technical Design	Implement a proposed design.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Communicate scientific procedures and explanations.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Design and conduct a scientific investigation.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Develop descriptions, explanations, predictions, and models using evidence.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Identify questions that can be answered through scientific investigations.

5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Recognize and analyze alternative explanations and predictions.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Think critically and logically to make the relationships between evidence and explanations.
5-8	Science as Inquiry	Abilities Necessary To Do Scientific Inquiry	Use appropriate tools and techniques to gather and analyze, and interpret data.