

NATIONAL SCIENCE EDUCATION STANDARDS

Safe Not Sorry! Chemical Safety Activity Handbook

GRADE	CATEGORY	SUB-CATEGORY	STANDARD
5-8	History and Nature of Science	Nature Of Science	It is part of scientific inquiry to evaluate the results of scientific investigations, experiments, observations, theoretical models, and the explanations proposed by other scientists.
5-8	History and Nature of Science	Nature Of Science	Scientists formulate and test their explanations of nature using observation, experiments, and theoretical and mathematical models.
5-8	Life Science	Structure And Function In Living Systems	Disease is a breakdown in structures or functions of an organism. Some diseases are the result of intrinsic failures of the system. Others are the result of damage by infection by other organisms.
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	Science and Technology	Abilities In Technical Design	Evaluate completed technological designs or products.
5-8	Science and Technology	Understanding About Science And Technology	Technological designs have constraints.
5-8	Science and Technology	Understanding About Science And Technology	Technology solutions have intended benefits and unintended consequences.

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	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.
5-8	Science as Inquiry	Understandings About Scientific Inquiry	Different kinds of questions suggest different kinds of scientific investigations. Some investigations involve observing and describing objects, organisms, or events; some involve collecting specimens; some involve experiments; some involve discovery of new objects and phenomena; and some involve making models.
5-8	Science as Inquiry	Understandings About Scientific Inquiry	Mathematics is important in all aspects of scientific inquiry.
5-8	Science as Inquiry	Understandings About Scientific Inquiry	Scientific explanations emphasize evidence, have logically consistent arguments, and use scientific principles, models, and theories. The scientific community accepts and uses such explanations until displaced by better scientific ones. When such displacement occurs science advances.
5-8	Science in Personal and Social Perspectives	Natural Hazards	Human activities also can induce hazards through resource acquisition, urban growth, land-use decisions, and waste disposal. Such activities can accelerate many natural changes.
5-8	Science in Personal and Social Perspectives	Personal Health	The potential for accidents and the existence of hazards imposes the need for injury prevention.

5-8	Science in Personal and Social Perspectives	Risks And Benefits	Important personal and social decisions are made based on perceptions of benefits and risks.
5-8	Science in Personal and Social Perspectives	Risks And Benefits	Risk analysis considers the type of hazard and estimates the number of people that might be exposed and the number likely to suffer consequences.
5-8	Science in Personal and Social Perspectives	Risks And Benefits	Students should understand the risks associated with natural hazards (fires, floods, tornadoes, hurricanes, earthquakes, and volcanic eruptions), with chemical hazards (pollutants in air, water, soil, and food), with biological hazards (pollen, viruses, bacterial, and parasites), social hazards (occupational safety and transportation), and with personal hazards (smoking, dieting, and drinking).