

CHEMICALS, THE ENVIRONMENT, AND YOU		
Illinois Learning Standards Science – Stage G – Grades 6, 7, 8		
Lesson	Standard	Performance Descriptor
2, 3, 4, 6	11A.1	Formulate contextual hypotheses generating an if-then, cause- effect premise, differentiating qualitative and quantitative data and their applicability, using conceptual/mathematical/ physical models, or previewing existing research as primary reading sources.
2, 4	11A.2	Design inquiry investigation, which addresses proposed hypothesis, determining choice of variables, preparing data-collecting format, or incorporating all procedural and safety precautions, materials and equipment handling directions.
2, 4	11A.3	Conduct inquiry investigation choosing applicable metric units of measurement with estimated scale and range of results for student-generated data tables, using direct, indirect, or remote technologies for observing and measuring, conducting sufficient multiple trials, or recording all necessary data and observations objectively.
1, 2, 3, 4, 6	11A.4	Interpret and represent analysis of results to produce findings, observing trends within data sets, evaluating data sets to explore explanations of outliers or sources of error, or analyzing observations and data which may support or refute inquiry hypothesis.
2, 3, 4, 6	11A.5	Report and display the process and findings of inquiry investigation, presenting oral or written final report for peer review, generating further questions for alternative investigations or procedural refinements, or evaluating other investigations for consolidation/refinement of procedures or data explanation.
4	12A.1	Apply scientific inquiries or technological designs to examine the cellular-to-organism interrelationships, comparing the increasingly complex structure and function of cells, tissues, organs and organ systems, demonstrating the processes for biological classification, analyzing normal and abnormal growth and health in organisms (with a focus on humans), describing how physiological systems carry out vital functions (e.g., respiration, digestion, reproduction, photosynthesis, excretion, and temperature regulation).
1, 4	12A.4	Apply scientific inquiries or technological designs to examine the cellular coordination of responses, describing how the nervous system communicates between cells within the whole organism, tracing stimulus-response paths in various nervous systems, or analyzing the effect of substances (e.g., oxygen, food, blood, hormones, drugs) circulating through the body.
1	12C.3	Apply scientific inquiries or technological designs to explore the basic structure of matter measuring mass and volumes of common solids (regular and irregular) and liquids to introduce density ratios, comparing ratios of

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		different masses and different volumes of the same kinds of samples, relating how historic models of elemental matter from ancient Greeks to medieval alchemists evolved to current representations and explanations, classifying comparable properties of representative elements or similar compounds (mixtures, acids, bases, salts, metals, non-metals), or constructing simple chemical structure models to explain chemical combinations, states, and properties.
2, 3, 4, 5, 6	13A.1	Apply appropriate principles of safety, identifying potentially hazardous chemical combinations in the home or classroom, suggesting responses and reactions in home and classroom settings in case of threatening chemical scenarios, following all necessary safety precautions, cleaning and disposal procedures for scientific investigations, demonstrating safe transport, precise use, and appropriate storage for scientific equipment, or providing safe and ethical care for all classroom organism collections.
2, 3, 4	13A.2	Apply scientific habits of mind, generating questions and strategies to test science concepts using critical and creative thinking, identifying instances of how scientific reasoning, insight, skill, creativity, intellectual honesty, tolerance of ambiguity, skepticism, persistence, and openness to new ideas have been integral to scientific discoveries and technological improvements, or comparing scientist's work and habits of mind to work in other careers.
All lessons	13A.3	Analyze cases of scientific studies, studying historic examples of valid investigations from curricular life, environmental, physical, earth, and space sciences, finding examples of faulty or biased scientific reasoning which distorted scientific understanding, or citing experimental and observational strategies in direct, indirect, and remote investigations.
1, 5, 6	13B.2	Explore the interactions of science and technology in multicultural, societal, and economic settings, analyzing how the introduction of a new technology has affected human activities worldwide, or associating personal biographic information about science leaders from around the world.
Illinois Learning Standards Science – Stage H – Grades 7, 8, 9		
Lesson	Standard	Performance Descriptor
2, 3, 4, 6	11A.1	Formulate issue-specific hypothesis, generating inquiry questions for an issue investigational premise, differentiating qualitative and quantitative data and their applicability, using conceptual/mathematical/physical models, or previewing associated research.
2, 4	11A.2	Design scientific issue investigation which addresses proposed hypothesis(es), proposing applicable survey instruments, or selecting associated research, analysis, and communication components.

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2, 4	11A.3	Conduct issue investigation, using technologies for data collection and assimilation, following established formats for random sampling, or following all procedural and safety precautions, materials and equipment handling directions.
1, 2, 3, 4, 6	11A.4	Interpret and represent analysis of results evaluating data sets to explore explanations of unexpected responses and data concurrence, evaluating survey validity and reliability, or analyzing research and data for supporting or refuting the hypothesis.
2, 3, 4, 6	11A.5	Report, display and defend the process and findings of issue investigation, presenting oral or written final report for action response options for peer review, generating further questions or issues for consideration, or evaluating other resolutions or responses for action for applicable correlations, consolidation or explanations.
2, 3, 4	11B.3	Collect and record data accurately, using consistent metric measuring and recording techniques with necessary precision, recording data accurately in appropriate format, or graphing data appropriately according to the tested variables.
2, 3, 4	12A.4	Apply scientific inquiries or technological designs to explore social and environmental responses of organisms, describing learned and inherited behaviors and responses across kingdoms and between/among phyla, explaining cyclic behaviors and responses in various species, or examining social behaviors of insects and vertebrates.
1	12C.3	Apply scientific inquiries or technological designs to examine the chemical and physical characteristics of matter, constructing and discussing models and charts that explain these properties, investigating the relationships among atoms, molecules, elements, and compounds, classifying objects and mixtures based on these properties, explaining the organization of elements in the Periodic Table, or investigating the properties of gases at varying temperatures and pressures.
2, 3, 4, 5, 6	13A.2	Apply scientific habits of mind to curricular investigations in life, environmental, physical, earth, and space sciences, evaluating evidence, inferring statements based on data, questioning sources of information, explaining necessity of manipulating only one variable at a time, or retrieving mathematical data accurately for scientific analysis.
5, 6	13A.3	Analyze scientific studies referenced in curricular investigations in life, environmental, physical, earth, and space sciences, reviewing experimental procedures or explanations for possible faulty reasoning or unproven statements (e.g., power line magnetic fields, abiogenesis models), distinguishing relationships of scientific theories, models, hypotheses, experiments, and methodologies, or distinguishing fact from opinion and science from pseudoscience.
5, 6	13B.3	Explore policies which affect local science or technology issues, researching applicable issue of local concern (e.g., subdivision development, groundwater contamination), developing classroom criteria to measure effectiveness of policies, developing survey instruments to assess depths of informed opinions on issues, collecting pertinent data from expert local sources, or analyzing data and policy correlation.

Illinois Learning Standards Mathematics – Stage G – Grades 6, 7, 8

Lesson	Standard	Performance Descriptor
	6A.1	Represent any large number using scientific notation.
2, 4	6B.7	Solve multi-step number sentences and word problems with rational numbers using the four basic operations.
2, 4	6C.1	Select, use, and justify appropriate operations, methods, and tools to compute or estimate with integers and familiar rational numbers.
2, 4	6D.1	Work flexibly with fractions, decimals, and percents to solve number sentences and word problems (e.g., 50% of 10 is the same as $\frac{1}{2}$ of 10 is the same as 0.5×10).
2, 4	6D.2	Create and explain ratios and proportions that represent quantitative relationships.
4	6D.3	Create and explain a variety of equivalent ratios to represent a given situation.
2, 4	6D.4	Develop, use, analyze, and explain methods for solving numeric or word problems involving proportions.
2	7A.1	Select and justify the choice of either U.S. customary or metric systems of measurement according to the situation (e.g., measure fabric in yards, measure dry chemicals in grams).
2, 4	7C.1	Select and use appropriate units and tools to measure volume, surface area, and mass/weight accurately for a given situation.
4	8C.1	Solve arithmetic and linear equations using the properties of equality and inequality.
2, 3, 4	10A.1	Construct, read, interpret, infer, predict, draw conclusions, and evaluate data from various displays, including box and whiskers plots.
2, 3, 4	10B.1	Select and use appropriate data gathering techniques.

Illinois Learning Standards English Language Arts – Stage G – Grades 6, 7, 8

Lesson	Standard	Performance Descriptor
All lessons	1B.2	Make connections to real world situations or related topics before and during reading.
2, 3, 4	1B.3	Define and analyze information needed to carry out a procedure.
1, 2, 3, 4, 6	1B.5	Infer and draw conclusions about text supported by textural evidence and experience.

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All lessons	1C.1	Use inferences to improve and/or expand knowledge obtained from text and ask open-ended questions to improve critical thinking skills.
All lessons	1C.2	Synthesize key points and supporting details to form conclusion and to apply text information to personal experience.
All lessons	1C.12	Use text information to interpret tables, maps, visual aids, or charts.
2, 3, 4	3B.2	Analyze audience and purpose for writing, and choose the appropriate form (e.g., letters, editorials, reviews, poems, reports, narratives).
1, 2, 3, 4	3C.1	Compose expository writing that supports a topic or thesis statement with evidence (e.g., newspaper article, pamphlet, report, brochure, manual, business letter).
1, 2, 3, 4	3C.4	Use appropriate language, details, and format for a specified audience (e.g., gender, age, prior knowledge, interest).
All lessons	4A.7	Separate main ideas, facts, and supporting details in oral messages.
All lessons	4A.9	Synthesize, analyze, and evaluate information.
All lessons	4A.10	Paraphrase and summarize, in both oral and written form, information in formal/informal presentations.
All lessons	4A.11	Ask and respond to relevant questions.
2, 3, 4	4A.12	Follow a multi-step set of instructions to complete a task.
All lessons	4B.10	Identify and use discussion techniques to arrive at a consensus of opinion.
2, 3, 4	5A.2	Formulate questions to direct research.
All lessons	5C.2	Evaluate use of text, graphic materials, and visual aids to present information.
3	5C.4	Design and present a project (e.g., written report, graphics, visuals, multi-media presentations).

Illinois Learning Standards Health – Stage G – Grades 6, 7, 8

Lesson	Standard	Performance Descriptor
1	22A.4	Talk about various careers that promote health and safety or prevent illness.
1, 4, 5, 6	22A.6	Describe behaviors/choices that reduce health risks (sleep, nutrition, activity, stress management, hygiene).
4, 5, 6	22B.3	Evaluate the reliability of health-related information.
1, 4, 5, 6	22B.5	Recognize the seriousness of signs and symptoms of illnesses.
1, 4, 5	22C.4	Recognize food borne illnesses and diseases caused by environmental factors.

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4	23A.4	List ways that the body's systems work together.
4, 5, 6	23B.4	List choices that have a positive influence on health.
4, 5, 6	23B.5	List choices that have a negative influence on health.
4, 5, 6	23C.1	Describe situations and/or choices affecting the use, misuse, or abuse of substances that will affect physical, mental, emotional, and social growth and development.
4, 5, 6	24B.2	Apply the decision-making model to solve a health problem.
6	24C.1	Find school and community health-related resources available for assistance when in need.