

**NEBRASKA ALIGNMENT FOR NIH SUPPLEMENT CHEMICALS, THE ENVIRONMENT, AND YOU**

<b>CHEMICALS, THE ENVIRONMENT, AND YOU</b>		
<b>Nebraska Science Standards– Grade 8</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Example Indicator</b>
2, 4	8.1.1.a	Recognize and describe key parts and functions of any system.
2, 3	8.1.1.b	Analyze and predict the interactions within a system and between systems.
2, 3, 4	8.1.2.a	Collect, manipulate, and analyze data from an experiment.
2, 3, 4, 6	8.1.2.b	Observe and develop models (e.g., physical, mathematical, mental, and computer simulations).
2, 3, 4	8.1.2.c	Interpret and explain results of experimentation.
2, 3, 4	8.1.2.d	Analyze whether or not investigative procedures and conclusions are reasonable.
2, 3, 4	8.1.3.a	Select and use appropriate measurement units.
2, 4	8.1.3.c	Apply English and metric systems of measurement.
2, 3, 4, 6	8.2.1.a	Identify questions and identify concepts that guide scientific investigations.
2, 3, 4	8.2.1.b	Design and conduct a scientific investigation.
2, 3, 4, 6	8.2.1.c	Use appropriate tools and techniques to gather, analyze, and interpret data.
All lessons	8.2.1.d	Given evidence, develop descriptions, explanations, predictions, and models.
All lessons	8.2.1.e	Show the relationship between evidence and explanations.
All lessons	8.2.1.f	Recognize and analyze alternative explanations and predictions.
2, 3, 4, 6	8.2.1.g	Communicate scientific procedures and explanations.
2, 3, 4	8.2.1.h	Use mathematics in scientific inquiry.
1	8.3.1.c	Explain that all matter is composed of elements, which may combine in a variety of ways to form compounds.
4	8.4.1.a	Investigate and describe the levels of organizations: cells, tissues, organs, organ systems, whole organisms, and ecosystems.
3	8.4.1.c	Investigate and explain how cells sustain life through functions (e.g., growth and nutrition).
5	8.4.3.b	Investigate and explain how behavior is a response to internal and external stimuli determined by heredity and experience.

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1, 2, 3, 5	8.4.5.c	Investigate and explain how environmental changes created by nature and by humans may cause species extinction.
2, 5	8.2.a	Distinguish between scientific inquiry (asking questions about the natural world) and technological design (using science to solve practical problems).
5	8.6.2.d	Recognize that solutions have intended and unintended consequences.
1, 3, 4, 5, 6	8.7.1.a	Identify and research substances harmful to human beings in the natural environment (e.g., radon, lead, and nitrates).
4, 5, 6	8.7.1.b	Investigate and explain how personal choices can directly affect a person’s health (e.g., exercise, nutrition, and use of drugs).
4, 5, 6	8.7.4.a	Analyze a type of hazard (e.g., natural, chemical, or biological) to evaluate the options for reducing or eliminating human risk.
5, 6	8.7.4.b	Describe how perceptions of risks and benefits influence personal and social decisions (e.g., seat belt usage and waste disposal procedures).
1, 5	8.7.5.a	Explain that the effect of science on society is neither entirely beneficial nor entirely detrimental.
2, 3, 4, 6	8.8.1.b	Investigate and understand that science requires different abilities based on the type of inquiry and relies upon basic human qualities and scientific habits of mind.
2, 4	8.8.1.c	Explain the need for ethical codes followed by scientists (e.g., humane treatment of animals and truth in reporting).
2, 3, 4, 6	8.8.2.a	Formulate and test a hypothesis using observations, experiments, and models.
2, 3, 4, 5, 6	8.8.2.b	Use questioning, response to criticism, and open communication when defending a conclusion.
2, 3, 4, 6	8.8.2.c	Evaluate the results of scientific investigations, experiments, observations, theoretical models, and the explanations proposed by other scientists.
2, 3, 4, 5, 6	8.8.2.d	Understand that scientific theories are based on observations, governed by rules of reasoning, and used to predict events.

**Nebraska Mathematics Standards – Grades 5 – 8**

Lesson	Standard	Description
2	8.1.2.a	Find the equivalencies among fractions, decimals, and percents.
2	8.1.2.b	Solve problems with appropriate equivalencies.

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2, 4	8.2.1	Add, subtract, multiply, and divide decimals and proper, improper, and mixed fractions with common and uncommon denominators with and without the use of technology.
2, 4	8.2.2	Identify the appropriate operation and do the correct calculations when solving word problems.
2, 4	8.2.3	Solve problems involving whole numbers, integers, and rational numbers (fractions, decimals, ratios, proportions, and percents) with and without the use of technology.
2, 4	8.3.1	Select measurement tools and measure quantities for temperature, time, money, distance, angles, area, perimeter, volume, capacity, and weight/mass in standard and metric units at the designated level of precision.
2, 3, 4	8.5.1.a	Select appropriate representations of data when construction data displays (graphs, tables, or charts).
2, 3, 4	8.5.2	Read and interpret tables, charts, and graphs to make comparisons and predictions.

**Nebraska Reading / Writing Standards – Grade 8**

Lesson	Standard	Example Indicator
1, 2, 4, 5, 6	8.1.1.a	Monitor understanding during reading.
1, 2, 3, 4, 6	8.1.1.b	Interpret information from diagrams, charts, and graphs.
All lessons	8.1.1.c	Answer literal, inferential/interpretive, and critical questions.
1, 4, 5, 6	8.1.2.b	Use electronic resources (CD-ROM, software, online resources).
1, 2, 5, 6, 5	8.1.5.c	Generate how, why, and what-if questions in interpreting nonfiction text.
1, 2, 3, 4, 6	8.1.5.d	Follow written directions in technical reading.
All lessons	8.2.1	Write using standard English (conventions) for sentence structure, usage, punctuation, capitalization, and spelling.
All lessons	8.2.4.a	Develop narrative, persuasive, descriptive, technical, and/or expository writing for a designated audience and purpose.
All lessons	8.2.4.b	Write to describe, explain, and inform.
All lessons	8.3.1.a	Contribute knowledge and ask questions relevant to the topic discussed.
All lessons	8.3.1.b	Use subject-related vocabulary in discussions.
All lessons	8.3.1.d	Use discussion skills to assume leadership and participant roles.

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<b>All lessons</b>	<b>8.4.1.a</b>	Listen to take notes and process information.
<b>All lessons</b>	<b>8.4.1.b</b>	Follow multi-step oral directions.
<b>All lessons</b>	<b>8.4.1.c</b>	Use listening skills in practical settings.
<b>National Health Education Standards – Grades 6 – 8: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 2005 – August 2006</b>		
<b>Lesson</b>	<b>Standard</b>	<b>Performance Indicator</b>
<b>4, 5, 6</b>	<b>1.8.1</b>	Analyze the relationship between healthy behaviors and personal health.
<b>3, 5, 6</b>	<b>1.8.3</b>	Analyze how the environment impacts personal health.
<b>4</b>	<b>1.8.5</b>	Describe ways to reduce or prevent injuries and other adolescent health problems.
<b>5</b>	<b>1.8.7</b>	Describe the benefits and barriers to practicing healthy behaviors.
<b>4, 5</b>	<b>1.8.8</b>	Examine the likelihood of injury or illness if engaging in unhealthy behaviors.
<b>3, 4, 5</b>	<b>1.8.9</b>	Examine the potential seriousness of injury or illness if engaging in unhealthy behaviors.
<b>5</b>	<b>2.8.5</b>	Analyze how messages from the media influence personal and family health.
<b>5</b>	<b>2.8.8</b>	Explain the influence of personal values and beliefs on individual health practices and behaviors.
<b>4, 5, 6</b>	<b>2.8.9</b>	Describe how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
<b>5, 6</b>	<b>2.8.10</b>	Explain how school and public health policies can influence health promotion and disease prevention.
<b>4, 5, 6</b>	<b>3.8.1</b>	Analyze the validity of health information, products, and services.
<b>5, 6</b>	<b>3.8.4</b>	Describe situations that may require professional health services.
<b>4, 5, 6</b>	<b>4.8.1</b>	Apply effective verbal and nonverbal communication skills to enhance health.
<b>4, 5, 6</b>	<b>5.8.1</b>	Identify circumstances that can help or hinder healthy decision-making.
<b>4, 5, 6</b>	<b>5.8.2</b>	Determine when health-related situations require the application of a thoughtful decision-making process.
<b>6</b>	<b>5.8.3</b>	Distinguish when individual or collaborative decision-making is appropriate.
<b>4, 5</b>	<b>5.8.6</b>	Choose healthy alternatives over unhealthy alternatives when making a decision.
<b>4, 5</b>	<b>5.8.7</b>	Analyze the outcomes of a health-related decision.
<b>5</b>	<b>6.8.1</b>	Assess personal health practices.
<b>5</b>	<b>7.8.3</b>	Demonstrate behaviors to avoid or reduce health risks to self and others.

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<b>4, 5, 6</b>	<b>8.8.1</b>	State a health enhancing position on a topic and support it with accurate information.
<b>5, 6</b>	<b>8.8.2</b>	Demonstrate how to influence and support others to make positive health choices.
<b>4, 5, 6</b>	<b>8.8.4</b>	Identify ways that health messages and communication techniques can be altered for different audiences.