

**NEBRASKA ALIGNMENT FOR NIH SUPPLEMENT EMERGING AND RE-EMERGING INFECTIOUS DISEASES**

<b>EMERGING AND RE-EMERGING INFECTIOUS DISEASES</b>		
<b>Nebraska Science Standards– Grades 9 - 12</b>		
<b>Activity</b>	<b>Standard</b>	<b>Example Indicator</b>
3, 4	12.1.1.a	Predict and evaluate how change within a system affects that system.
3	12.1.1.b	Design solutions to problems identified within a system.
3, 4	12.1.2.a	Create a physical, mental, or mathematical model to show how objects and processes are connected.
3, 4	12.1.2.b	Test the usefulness of a model by comparing its predictions to actual observations.
3, 4	12.1.2.c	Understand that the way data are displayed affects interpretation.
2, 3, 4	12.1.2.d	Evaluate the reasonableness of answers to problems.
3, 4	12.1.2.e	Understand that larger well-chosen samples produce more accurate estimates of the characteristics of the total population.
2, 3, 4	12.1.2.f	Understand that a correlation between two variables doesn't mean that either one causes the other.
2, 3, 4	12.1.5.a	Identify the series of changes that occur in objects, organisms, and natural and human designed systems.
3	12.1.5.b	Explain how a system at equilibrium is affected by change.
2, 3, 4	12.2.1.a	Formulate questions and identify concepts that guide scientific investigations.
2, 3, 4	12.2.1.b	Design and conduct scientific investigations.
2, 3, 4	12.2.1.c	Use technology and mathematics to improve investigations and communications.
1, 2, 3, 4	12.2.1.d	Formulate and revise scientific explanations and models using logic and evidence.
1, 2, 3, 4	12.2.1.e	Recognize and analyze alternative explanations and models.
All activities	12.2.1.f	Communicate and defend a scientific argument.
3	12.4.2.c	Investigate and explain how some mutations could help, harm, or have no effect on individual organisms.
3	12.4.3.a	Understand that the concept of biological evolution is a theory which explains the consequence of the interactions of: (1) the potential for a species to increase its numbers; (2) the genetic variability of offspring due to mutation and recombination of genes; (3) a finite supply of the resources of life; and (4) the ensuing selection by the environment of those offspring better able to survive and leave offspring.
3	12.4.3.b	Investigate and use the theory of biological evolution to explain diversity of life.
3	12.4.6.b	Investigate and describe how organisms respond to internal changes and external stimuli.

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3	12.4.6.c	Investigate and explain how the behavioral patterns of organisms have evolved through natural selection.
5	12.6.1.a	Propose designs and choose between alternative solutions of a problem.
5	12.6.1.c	Evaluate the solution and its consequences.
5	12.6.1.d	Communicate the problem, process, and solution.
3	12.6.2.a	Explain how science advances with the introduction of new technology.
3	12.6.2.b	Understand creativity, imagination, and a good knowledge base are all needed to advance the work of science and engineering.
3	12.6.2.c	Contrast the reasons for the pursuit of science and the pursuit of technology.
3, 4, 5	12.7.1.b	Investigate and explain how diseases are prevented, controlled, and cured.
3, 4, 5	12.7.1.d	Investigate and analyze risks and benefits in making decisions about personal and community health.
3, 4, 5	12.7.6.b	Investigate and understand that social issues and challenges may affect advancements in science and technology.
3	12.8.1.a	Demonstrate ethical scientific practices (e.g., informing research subjects about risks and benefits, humane treatment of animals, truthful reporting, public disclosure of work, and peer review).
2, 3	12.8.1.c	Recognize science as one way of answering questions and explaining the natural world.
2, 3, 4	12.8.2.b	Create scientific explanations consistent with experimental and observational evidence; make accurate predictions; strive to be logical; respect the rules of evidence; accept criticism; report methods and procedures; and make knowledge public.
1, 2, 3, 4	12.8.2.c	Understand that all scientific knowledge is, in principle, subject to change as new evidence becomes available.
1, 2, 3	12.8.3.b	Understand that changes in scientific knowledge evolve over time and almost always build on earlier knowledge.
2, 3, 4, 5	12.8.3.c	Understand that some advancements in science and technology have long-lasting effects on society.

**Nebraska Mathematics Standards – Grades 9 - 12**

Activity	Standard	Description
4, 5	12.1.2	Express the equivalent forms of numbers using exponents, radicals, scientific notation, absolute values, fractions, decimals, and percents.
4, 5	12.2.1	Solve theoretical and applied problems using numbers in equivalent forms, radicals, exponents, scientific notation, absolute values, fractions, decimals, and percents, ratios and proportions, order of operations,

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		and properties of real numbers.
4, 5	12.2.3	Perform estimations and computations of real numbers mentally, with paper and pencil, and with technology.
2, 3, 4	12.5.1	Select a sampling technique to gather data, analyze the resulting data, and make inferences.
2, 3, 4	12.6.4.d	Represent a problem in multiple formats (words, graphs, and symbols).
<b>Nebraska Reading / Writing Standards – Grade 12</b>		
<b>Activity</b>	<b>Standard</b>	<b>Example Indicator</b>
All activities	12.1.1.a	Read selections to develop and answer literal, inferential/interpretive, and critical questions.
2, 3, 4, 5	12.1.1.b	Interpret information from graphs, charts, and diagrams, such as maps, blueprints, or schematics.
All activities	12.1.1.c	Answer literal, inferential/interpretive, and critical questions.
All activities	12.1.2.b	Use electronic resources (CD-ROM, software, online resources, and multimedia presentation tools).
All activities	12.1.6.b	Analyze who, what, when, where, how, why, what if questions to interpret nonfiction text.
2, 3, 4, 5	12.1.6.c	Analyze information from charts, maps, and graphs.
All activities	12.2.1	Write using standard English (conventions) for sentence structure, usage, punctuation, capitalization, and spelling.
All activities	12.2.2.d	Write narrative, descriptive, and/or expository compositions.
All activities	12.2.4.a	Develop narrative, persuasive, descriptive, technical, and/or expository writing for a designated audience and purpose.
All activities	12.2.4.b	Write to describe, explain, persuade, inform, and/or entertain.
All activities	12.3.1.a	Participate in and lead group discussions.
All activities	12.3.1.b	Evaluate and monitor self and peer participation in group discussions.
<b>National Health Education Standards – Grades 9 – 12: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 2005 – August 2006</b>		
<b>Activity</b>	<b>Standard</b>	<b>Performance Indicator</b>
3, 4	1.12.1	Predict how healthy behaviors can impact health status.
2, 3, 4	1.12.5	Propose ways to reduce or prevent injuries and health problems.

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3, 4	1.12.7	Compare and contrast the benefits and barriers to practicing a variety of healthy behaviors.
4	1.12.8	Analyze personal susceptibility to injury, illness, or death if engaging in unhealthy behaviors.
4	1.12.9	Analyze the potential severity of injury or illness if engaging in unhealthy behaviors.
4	2.12.1	Analyze how family influences the health of individuals.
4	2.12.5	Evaluate the effect of media on personal and family health.
3, 4	2.12.8	Analyze the influence of personal values and beliefs on individual health practices and behaviors.
2, 3	2.12.9	Analyze how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
2, 3, 4, 5	2.12.10	Analyze how public health policies and government regulations can influence health promotion and disease.
2, 3, 4, 5	3.12.1	Evaluate the validity of health information, products, and services.
3, 4	5.12.1	Examine barriers that can hinder healthy decision-making.
3, 4	5.12.2	Determine the value of applying a thoughtful decision-making process in health related situations.
3	5.12.3	Justify when individual or collaborative decision-making is appropriate.
3, 4	5.12.5	Predict the potential short and long-term impact of each alternative on self and others.
3, 4	5.12.6	Defend the healthy choice when making decisions.
3, 4	5.12.7	Evaluate the effectiveness of health-related decisions.
2, 3, 4	7.12.1	Analyze the role of individual responsibility for enhancing health.
2, 3, 4	7.12.3	Demonstrate a variety of behaviors to avoid or reduce health risks to self and others.
3, 4, 5	8.12.2	Demonstrate how to influence and support others to make positive health choices.
2, 3, 4, 5	8.12.4	Adapt health messages and communication techniques to a specific target audience.