

NORTH DAKOTA ALIGNMENT FOR NIH SUPPLEMENT CELL BIOLOGY AND CANCER

CELL BIOLOGY AND CANCER		
North Dakota Science Content Standards: Grades 9 – 10		
Activity	Standard	Benchmark Expectations
2, 3, 4	9-10.1.1.	Explain how models can be used to illustrate scientific principles.
2	9-10.1.2.	Describe the interaction of components within a system (e.g., interactions between living and nonliving components of an ecosystem, interaction between organelles of a cell).
2	9-10.1.6.	Identify principles governing evolution and equilibrium within systems (e.g., cause and effect, positive and negative feedback).
2, 3, 4	9-10.2.1.	Explain how scientific investigations can result in new ideas.
4	9-10.2.2.	Use appropriate safety equipment and precautions during investigations (e.g., goggles, apron, eye wash station).
2, 3, 4	9-10.2.3.	Identify questions and concepts that guide scientific investigations.
3, 4	9-10.2.4.	Formulate a testable hypothesis for a simple investigation.
3, 4	9-10.2.5.	Identify the independent and dependent variables, the control, and the constants when conducting an experiment.
3, 4	9-10.2.6.	Design and conduct a guided investigation.
3, 4	9-10.2.7.	Maintain clear and accurate records of scientific investigations.
1, 3, 4	9-10.2.8.	Analyze data found in tables, charts, and graphs to formulate conclusions.
2, 3, 4	9-10.4.5.	Explain the relationship between spontaneous changes in DNA and a source of genetic variation.
3, 4	9-10.6.1.	Use appropriate technologies and techniques to solve a problem (e.g., computer-assisted tools, Internet, research skills).
4	9-10.6.3.	Explain how emerging technologies (e.g., genetic manipulation, biofuels, and hydrogen fuels) may impact society and the environment.
1, 3, 4	9-10.7.1.	Explain how personal health is related to fitness, substance abuse, sexual activity, and nutrition.
2, 5	9-10.8.1.	Identify the role of scientists in theoretical and applied science (e.g., careers, employment possibilities).
2	9-10.8.3.	Explain how individuals and groups, from different disciplines in and outside of science, contribute to science at different levels of complexity.
North Dakota Mathematics Content Standards: Grades 9 – 10		
Activity	Standard	Benchmark Expectations
3	9-10.1.8.	Apply estimation skills to predict realistic solutions to problems.
1, 3	9-10.1.9.	Select and use a computational technique (i.e., mental calculation, paper-and-pencil, or technology) to solve problems involving real numbers.

NORTH DAKOTA ALIGNMENT FOR NIH SUPPLEMENT CELL BIOLOGY AND CANCER

3	9-10.1.10.	Explain the reasonableness of a problem's solution and the process used to obtain it.
3	9-10.3.1.	Construct appropriate displays of given data, i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots.
3	9-10.3.2.	Interpret a given visual representation (i.e., circle graphs, bar graphs, histograms, stem-and-leaf plots, box-and-whisker plots, and scatter plots) of a set of data.
3	9-10.5.13.	Interpret a graphical representation of a real-world situation.
3	9-10.5.14.	Draw conclusions about a situation being modeled.

North Dakota ELA Content Standards: Grades 9 – 10

Grade 9

Activity	Standard	Benchmark Expectations
All activities	9.2.7.	Access prior knowledge to interpret meaning.
All activities	9.2.8.	Read for a variety of purposes and intents e.g., to become life-long readers, to model forms of writing.
All activities	9.2.15.	Build vocabulary by reading a variety of grade-level texts and applying new vocabulary.
2, 3, 4	9.3.1.	Write expository texts e.g., essays, directions, and letters.
5	9.3.3.	Develop a composition detailing an opinion.
2, 3, 4, 5	9.3.6.	Elaborate ideas through word choice and description using grade-level vocabulary.
2, 3, 4, 5	9.3.8.	Use supporting details.
2, 3, 4, 5	9.3.10.	Edit and revise compositions for proper mechanics and grammar, syntax, diction, and order.
2, 3, 4, 5	9.3.11.	Arrange paragraphs in a logical progression.
All lessons	9.4.4.	Engage in a group discussion.
All lessons	9.4.5.	Use critical listening skills i.e., reflection.
2, 3, 4, 5	9.5.2.	Access media (e.g., television, film, music, electronic databases, videos, DVDs, comics, visual and performing arts, newspapers, and periodicals) for a variety of purposes.
2, 3, 4, 5	9.6.3.	Use conventions of punctuation.

Grade 10

All activities	10.2.3.	Read for a variety of purposes and intents e.g., to become life-long readers, to model forms of writing.
2, 3, 4	10.3.1.	Write expository texts including research papers.
5	10.3.2.	Defend a personal opinion using facts as support.
2, 3, 4, 5	10.3.4.	Organize the ideas and details of a composition according to purpose.
2, 3, 4, 5	10.3.5.	Elaborate ideas through word choice and description using grade-level vocabulary.

NORTH DAKOTA ALIGNMENT FOR NIH SUPPLEMENT CELL BIOLOGY AND CANCER

2, 3, 4, 5	10.3.7.	Use a variety of supporting details.
2, 3, 4, 5	10.3.8.	Use language appropriate to the format of the composition.
2, 3, 4, 5	10.3.11.	Edit and revise compositions with attention to content.
All lessons	10.4.3.	Formulate questions in response to a verbal message.
2, 3, 4, 5	10.5.2.	Use media (e.g., television, film, music, electronic databases, videos, DVDs, comics, visual and performing arts, newspapers, and periodicals) for a variety of purposes.
North Dakota Health Content Standards: Grades 9 – 12		
Activity	Standard	Benchmark
1, 2, 4, 5	9-12.1.4.	Explain the impact of personal health behaviors on the functioning of body systems (e.g., stress weakens the immune system, lack of exercise may lead to obesity, tobacco use may lead to cancer, risky behaviors may lead to HIV/AIDS or STDS).
4, 5	9-12.2.1.	Assess healthy versus unhealthy behaviors and their relationships to health promotion and disease prevention (e.g., active lifestyle vs. sedentary lifestyle, healthy diet vs. fad diets).
1, 2, 4, 5	9-12.2.3.	Explain ways individuals can take responsibility for enhancing their own health (e.g., personal responsibility for dietary choices and reading labels, participating in physical activities, stress reduction, abstinence).
2, 3, 4, 5	9-12.2.5.	Describe how prevention and treatment of health problems are influenced by research and medical advances (e.g., recent improvements in the treatment of cancer, diabetes, and heart disease; advanced surgical techniques; HIV/AIDS).
4, 5	9-12.3.3.	Explain how public health policies and government regulations (e.g., food and drug labeling, safe food handling and production regulations, community immunization programs, regulations regarding waste disposal) influence health.
All activities	9-12.4.1.	Demonstrate effective verbal and nonverbal communication skills to enhance health.
4, 5	9-12.5.3.	Apply the decision-making process (e.g., gathering facts, assessing the alternatives, implementing a decision, evaluating the outcome) as it relates to a healthy lifestyle.
1, 4, 5	9-12.5.5.	Compare the short and long term impacts of alternative choices (e.g., pop vs. water, smoking vs. non-smoking, seatbelt vs. not wearing a seatbelt, abstinence vs. sexual activity) in health-related situations.
1, 2, 4	9-12.5.6.	Explain consequences regarding the use, misuse, and abuse of alcohol, tobacco, and other drugs (e.g., adverse consequences for individuals, families, and the community).
2, 4	9-12.6.1.	Describe situations (e.g., diabetes, chronic depression, prenatal and postnatal care, alcohol or drug-related problems, child abuse) that require professional health services in the areas of prevention, treatment, and rehabilitation.
All activities	9-12.6.2.	Describe resources (e.g., reputable Internet sites such as Centers for Disease Control, Attorney General, and National Institute of Health, Chamber of Commerce, or public health organizations) to access valid and reliable health information, products, and services both in and outside of the community.
5	9-12.7.1.	Explain how an individual can improve or sustain community health initiatives and or services (e.g., exercising voting privileges on health-related matters; assisting in the development of health policies or laws; evaluating community

NORTH DAKOTA ALIGNMENT FOR NIH SUPPLEMENT CELL BIOLOGY AND CANCER

		health services and presenting concerns to legislators).
4, 5	9-12.7.4.	Apply strategies (e.g., utilizing peer and societal norms, data, surveys) to express information and opinions about health issues.