

SOUTH DAKOTA ALIGNMENT FOR NIH SUPPLEMENT HUMAN GENETIC VARIATION

<b>HUMAN GENETIC VARIATION</b>		
<b>South Dakota Core and Advanced Science Standards: Grades 9 – 12</b>		
<b>Activity</b>	<b>Standard</b>	<b>Supporting Skill</b>
All activities	9-12.N.1.1.1	Recognize scientific knowledge is not merely a set of static facts but is dynamic and affords the best current explanations.
5	9-12.N.1.1.2	Discuss how progress in science can be affected by social issues.
2, 3, 4	9-12.N.1.2.1	Research, communicate, and support a scientific argument.
2, 3, 4	9-12.N.1.2.2	Recognize and analyze alternative explanations and models.
2, 3	9-12.N.2.1.1	Identify the questions and concepts to guide the development of hypotheses.
2, 3, 4	9-12.N.2.1.4	Revise explanations and models based on evidence and logic.
2, 3	9-12.N.2.1.5	Use technology and mathematic skills to enhance investigations, communicate results, and defend conclusions.
2, 3	9-12.L.1.1.3	Students are able to relate cellular functions and processes to specialized structures within cells: storage and transfer of genetic information.
2, 3, 5	9-12.L.1.3.A	Students are able to explain how gene expression regulates cell growth and differentiation.
2, 3	9-12.L.2.2.	Students are able to describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species.
2	9-12.L.3.1.A	Students are able to relate genetic, instinct, and behavior patterns to biodiversity and survival of species.
2	9-12.S.1.1.	Students are able to explain ethical roles and responsibilities of scientists and scientific research.
2	9-12.S.1.2.	Students are able to evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues.
<b>South Dakota Core and Advanced Mathematics Standards: Grades 9 – 12</b>		
<b>Activity</b>	<b>Standard</b>	<b>Supporting Skill</b>
1, 2, 3	9-12.N.2.1.	Students are able to add, subtract, multiply, and divide real numbers including integral exponents.
1, 2, 3	9-12.N.2.1A.	Students are able to add, subtract, multiply, and divide real numbers including rational exponents.
2, 3	9-12.N.3.1.	Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.
2	9-12.N.3.2.1	Use properties of numbers that allow operational shortcuts for computational procedures.
1, 2, 3, 4	9-12.S.1.1.	Students are able to draw conclusions from a set of data.
1, 4	9-12.S.1.2A.	Students are able to analyze and evaluate graphical displays of data.
1, 4	9-12.S.1.3.	Represent a set of data in a variety of graphical forms and draw conclusions.

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**South Dakota Reading, Writing, Listening, Viewing ,and Speaking Standards: Grades 9 & 10**

**Grade 9**

Activity	Standard	Supporting Skill
All activities	9.R.1.1	Students can apply example clues to extend vocabulary.
All activities	9.R.2.2	Students can read fluently to comprehend grade-level text.
1, 2, 3, 4	9.R.5.2	Students can interpret procedural text to complete a multiple-step task.
2, 3, 4, 5	9.W.1.1	Students can write a thesis statement for an expository or persuasive document.
All activities	9.W.2.2	Students can identify and incorporate prepositional phrases in the writing process.
All activities	9.LVS.1.3	Students can clarify and defend positions with precise and relevant evidence within an informal setting.

**Grade 10**

All activities	10.R.1.1	Students can apply contrast clues to extend vocabulary.
All activities	10.R.2.1	Students can formulate associations between texts and experiences.
All activities	10.R.2.2	Students can read fluently to comprehend grade-level text.
2, 3, 4, 5	10.W.1.1	Students can write text using problem/solution and cause/effect organizational patterns.
All activities	10.W.2.2	Students can edit text for the correct use of pronouns and pronoun case.
2, 5	10.LVS.1.1	Students can analyze visual and auditory impact on the credibility and reliability of the message.

**South Dakota Health Education Standards: Grades 9 – 12**

Activity	Standard	Benchmark
4, 5	1.1.c	Evaluate the impact of various health practices on self and family.
4	1.2.a	Analyze the impact of personal health behaviors on the functioning of body systems.
4	1.2.c	Determine how to delay and/or reduce potential health problems during adulthood.
3, 4, 5	1.3.a	Evaluate the impact of national and international medical research.
5	1.3.b	Evaluate the impact of health requirements and policies which affect personal, family, and community health.
2, 3, 4, 5	1.3.c	Analyze various genetic conditions and health practices which may influence the cause or prevention of diseases.
3, 5	2.1.c	Evaluate the impact of technology on personal, family, and community health.
4	3.1.a	Analyze the short and long term consequences of risky and harmful behaviors.
4	3.1.c	Evaluate personal practices which promote life-long health and well being.
4	3.3.a	Analyze how personal choices can impact long range health.

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<b>All activities</b>	<b>4.1.b</b>	Model effective communication techniques when interacting with family, peers, and community.
<b>All activities</b>	<b>4.2.c</b>	Use pertinent and descriptive terminology when discussing health issues.
<b>2, 3, 4, 5</b>	<b>5.1.b</b>	Evaluate information/data to support or refute the cause/effect and significance of health issues.
<b>2, 3</b>	<b>5.1.c</b>	Analyze the impact/magnitude of national and international medical breakthroughs.
<b>2, 3, 5</b>	<b>5.2.c</b>	Analyze the impact various health plans/strategies may have on future populations and environments.