

USING TECHNOLOGY TO STUDY CELLULAR AND MOLECULAR BIOLOGY

South Dakota Core and Advanced Science Standards: Grades 9 – 12

| Lesson | Standard | Supporting Skill |
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| 2, 3 | 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. |
| 3 | 9-12.N.1.2.1 | Research, communicate, and support a scientific argument. |
| 2, 3 | 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. |
| 3 | 9-12.N.2.1.2 | Analyze primary sources of information to guide the development of the procedure. |
| 1, 2, 3 | 9-12.N.2.1.3 | Select and use appropriate instruments to extend observations and measurements. |
| 2, 3 | 9-12.N.2.1.4 | Revise explanations and models based on evidence and logic. |
| 1, 2, 3 | 9-12.N.2.1.5 | Use technology and mathematic skills to enhance investigations, communicate results, and defend conclusions. |
| 1 | 9-12.N.2.3.A | Use significant digits to illustrate precision in measurement. |
| 1, 4 | 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. |
| 1, 4 | 9-12.S.2.1. | Students are able to describe immediate and long-term consequences of potential solutions for technological issues. |

South Dakota Core and Advanced Mathematics Standards: Grades 9 – 12

| Lesson | Standard | Supporting Skill |
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| 1 | 9-12.M.1.1. | Students are able to choose appropriate unit label, scale, and precision. |
| 1 | 9-12.N.2.1. | Students are able to add, subtract, multiply, and divide real numbers including integral exponents. |
| 1 | 9-12.N.2.1A. | Students are able to add, subtract, multiply, and divide real numbers including rational exponents. |
| 1 | 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. |
| 1 | 9-12.N.3.2.1 | Use properties of numbers that allow operational shortcuts for computational procedures. |
| 2 | 9-12.S.1.1. | Students are able to draw conclusions from a set of data. |
| 2 | 9-12.S.1.2A. | Students are able to analyze and evaluate graphical displays of data. |
| 2 | 9-12.S.1.3. | Represent a set of data in a variety of graphical forms and draw conclusions. |

| South Dakota Reading, Writing, Listening, Viewing ,and Speaking Standards: Grades 9 & 10 | | |
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| Grade 9 | | |
| Lesson | Standard | Supporting Skill |
| 1, 3, 4 | 9.R.1.1 | Students can apply example clues to extend vocabulary. |
| 1, 3, 4 | 9.R.2.2 | Students can read fluently to comprehend grade-level text. |
| 1, 2, 3 | 9.R.5.2 | Students can interpret procedural text to complete a multiple-step task. |
| 3, 4 | 9.W.2.2 | Students can identify and incorporate prepositional phrases in the writing process. |
| 3 | 9.LVS.1.3 | Students can clarify and defend positions with precise and relevant evidence within an informal setting. |
| Grade 10 | | |
| 1, 3, 4 | 10.R.1.1 | Students can apply contrast clues to extend vocabulary. |
| 1, 3, 4 | 10.R.2.1 | Students can formulate associations between texts and experiences. |
| 1, 3, 4 | 10.R.2.2 | Students can read fluently to comprehend grade-level text. |
| 3, 4 | 10.W.1.1 | Students can write text using problem/solution and cause/effect organizational patterns. |
| 3, 4 | 10.W.2.2 | Students can edit text for the correct use of pronouns and pronoun case. |
| 3 | 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 | | |
| Lesson | Standard | Benchmark |
| 1, 3, 4 | 2.1.c | Evaluate the impact of technology on personal, family, and community health. |
| All lessons | 4.1.b | Model effective communication techniques when interacting with family, peers, and community. |
| 3 | 4.2.c | Use pertinent and descriptive terminology when discussing health issues. |
| 3 | 5.1.b | Evaluate information/data to support or refute the cause/effect and significance of health issues. |
| 1, 4 | 5.1.c | Analyze the impact/magnitude of national and international medical breakthroughs. |