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| **Strand** | **Level 1**  **South Dakota Grade 8 Science Achievement Level Descriptors**  Students at this level of science have not met most of the fundamental skills of the South Dakota Science Standards. Some of the skills demonstrated may include: | **Level 2**  Students at this level of science partially meet the skills of the South Dakota Science Standards. Some of the skills demonstrated may include: | **Level 3**  Students at this level meet the science skills of the South Dakota Science Standards. Some of the skills demonstrated may include: | **Level 4**  Students at this level exceed the skills of the South Dakota Science Standards. Some of the skills demonstrated very consistently may include: |
| **Physical**  **Science** | * Identifies if a property is physical or chemical * Defines kinetic and potential energy | * Recognizes simple atomic structures * Defines a chemical reaction * Defines Newton's laws of motion * Identifies different forces in an interaction * Identifies insulators and conductors in energy transfers * Identifies parts of a wave * Recognizes wave behaviors such as reflection, absorption, and transmission through various media | * Applies physical and chemical properties of matter * Identifies possible reactions and any changes that have taken place * Understands energy and matter are conserved during a chemical reaction * Applies Newton's Laws of Motion to various problems * Illustrates how different forces affect interactions * Describes how thermal energy affects physical and chemical properties of matter | * Able to prove the law of conservation of mass * Describes wave properties in various media |
| **Life Science** | * Knows cell is basic building block of life * Knows photosynthesis occurs in plants | * Lists organisms characteristics and behaviors and how they might influence reproduction * Understands energy for many living things comes from photosynthesis * Understands energy is released through digestion and chemical reactions * Recognizes the evolutionary relationships between various organisms as reflected in the fossil records | * Explains that the body is a set of subsystems with a cell as the basic building block * Describes an organisms characteristics and behaviors and how they might influence reproduction * Explains how environmental and genetic factors might influence the growth of organisms * Identifies the effects of resource availability on organisms and groups of organisms in an ecosystem * Utilizes processes of photosynthesis and cellular respiration in the flow of energy | * Traces evolutionary pathways of common organisms and describes their changes over time |
| **Earth and Space Science** | * Identifies seasons on earth * Identifies severe weather patterns | * Defines how gravity affects our solar system * Recognizes the expenditure of energy in the cycling of Earth's materials * Identifies Earth's rotation and heat from the sun and how they interact with regional climates * Summarizes how the human population affects Earth's systems | * Explains cycles in lunar phases, solar and lunar eclipses, and seasons on the Earth * Explains how gravity is pivotal to motion in all galaxies, including our solar system * Explains how Earth's rotation, and heat from the sun helps atmospheric and oceanic currents affect regional climates * Relates how knowledge of past catastrophic natural disaster data can help predict future events * Interprets evidence on how the human population has consumed natural resources and impacted the Earth's systems | * Explains how seasons are affected by climate change. * Evaluate climate changes using evidence of energy transfer into and out of the Earth's systems |