SDSA-Alt 11th Grade Achievement Level Descriptors / Performance Level Descriptors

Introducing	**Developing**	**Applying**	**Advancing**
A student performing at Introducing has not met most of the fundamental expectations of South Dakota's Science Standards Core Content Connectors at the end of 11th grade. A student at this level can access the Periodic Table, explore the motion of objects, study an ecosystem, explore different types of traits, explore plate tectonics, and explore human activity effects on Earth.	A student performing at Developing has partially met the expectations of South Dakota's Science Standards Core Content Connectors at the end of 11th grade. A student at this level can identify elements of the Periodic Table, recognize that forces affect objects, use a model to identify levels of organization in a living organism, recognize that traits are passed from parents to offspring, study what causes tectonic motion, and relate human activity to changes in amounts of natural resources.	A student performing at Applying has met the expectations of South Dakota's Science Standards Core Content Connectors at the end of 11th grade. A student at this level can recognize why elements are arranged the way they are in the Periodic Table, predict changes in the motion of an object, explore the structure and function of different organisms, examine thermal convection from the mantle to the crust, and relate human activity and changes in the occurrence of natural hazards.	A student performing at Advancing exceeds the expectations of South Dakota's Science Standards Core Content Connectors at the end of 11th grade. A student at this level can describe the patterns in the elements arranged in the Periodic Table, demonstrate how materials have different properties because of differences at the molecular level, explain similarities and differences in structure and function between organisms, identify multiple examples of evidence of a common ancestor, explain the motion of
Exposed to the Periodic Table	Identify elements of the Periodic Table	Recognize why elements are arranged the way they are in the Periodic Table	Describe the patterns in the elements arranged in the Periodic Table
Exposed to atomic structure	Identify electrons in atomic structure	Recognize importance of outermost electrons	Describe why outermost electrons are important for chemical and physical properties
Exposed to chemical reactions	Recognize when a chemical change takes place	Identify the outcome of a simple chemical reaction (ex. list of possible products)	Explain the outcome of a simple chemical reaction based on outermost electrons and the Periodic Table
Explore reaction rates	Recognize that changes in conditions will affect reaction rates	Identify effects of changing temperature on the reaction rate of a simple reaction	Identify other factors that can be changed to speed up or slow down a reaction
Recognize that matter cannot be destroyed	Exposed to a chemical equation	Identify a balanced chemical equation showing reactants and products	Explain why an equation must be balanced to show that matter is neither created nor destroyed
Explore the motion of objects	Recognize that forces effect objects	Predict changes in the motion of an object	Explain the law of momentum conservation and universal gravitation
Explore States of Matter	Identify that different States of Matter have different properties	Recognize that different Matter has different molecular structures and properties that determine different functions	Demonstrate how Matter have different properties because of differences at the molecular level
Experience the effects of energy	Identify different forms of energy	Differentiate between forms of energy	Demonstrate changes in energy, and changes in the electrical system
Explore the different levels of biological organization	Use a model to identify levels of biological organization	Explore the structure and function of different organisms	Explain similarities and differences in structure and functions between organisms
Study an ecosystem	Recognize how animals depend on other organisms to survive	Identify how modest changes affect stability in ecosystems	Predict changes in an ecosystem if there are modest vs. extreme changes
Explore different types of traits (biological phenotypes)	Recognize that traits are passed from parents to offspring	Recognize that DNA in all cells contain the instructions for traits passed from parents to offspring	Explain how traits can vary in a population because of how errors in cell division or environmental factors lead to evolution
Explore a Punnett square	Use a Punnett square to explore the probability of a particular trait appearing in offspring	Use a Punnett square to determine the possible outcomes of 2 traits passed on to offspring	Use a Punnett square to determine the probability of 2 traits passed on to offspring
Identify similarities of physical characteristics in different organisms.	Recognize patterns of physical characteristics in different organisms	Study changes in fossil records to identify evidence of a common ancestor	Identify multiple examples of evidence of a common ancestor
Explore a planet's motion	Recognize that the Earth and other planets and objects orbit the sun	Demonstrate the orderly motion of objects orbiting the sun	Relate Earth's orbital characteristics to other bodies in the solar system
Explore Earth's systems	Identify Earth's cycles	Use a model to show Earth's complex set of interconnected systems	Explain changes on Earth's surface caused by the interconnection of Earth's cycles
Exposed to plate tectonics	Study what causes tectonic motion	Examine thermal convection from the mantle to the crust	Explain how thermal convection from deep in the Earth causes the surface of the Earth to move or change
Identify properties of water	Connect properties of water to effects on Earth materials	Examine water properties and its effects on Earth's systems	Demonstrate how humans can affect the water cycle that results in benefits as well as hazards
Exposed to human activity's effects on Earth	Relate human activity to changes in amounts of natural resources	Relate human activity and changes in the occurrence of natural hazards	Describe how human activity is modifying Earth systems