

Biology

Standards	<p style="text-align: center;">Not Proficient</p> <p>Students who perform at this level have not demonstrated mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are not prepared for the next level of study.</p>	<p style="text-align: center;">Approaching Proficient</p> <p>Students who perform at this level demonstrate partial mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are minimally prepared for the next level of study.</p>	<p style="text-align: center;">* Proficient</p> <p>Students who perform at this level demonstrate mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are well prepared for the next level of study.</p>	<p style="text-align: center;">Advanced</p> <p>Students who perform at this level demonstrate superior mastery in academic performance, thinking abilities, and application of understandings that reflect the knowledge and skills specified by the grade/course level content standards and are significantly prepared for the next level of study.</p>
Embedded Inquiry	NOTE: embedded standards are taught and assessed as components that are integrated into the science content at each grade level or course.			
Embedded Technology and Engineering	NOTE: embedded standards are taught and assessed as components that are integrated into the science content at each grade level or course.			
Embedded Mathematics	NOTE: embedded standards are taught and assessed as components that are integrated into the science content at each grade level or course.			

<p style="text-align: center;">1.0 Cells</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Biology topic of Cells.</p>	<p>A student at this level can identify the structure and function of some cellular organelles and macromolecules found in prokaryotic and eukaryotic cells. He/she lists and describes the processes associated with cell regulation, growth, reproduction, and transport. The student can identify technologies that relate to cellular processes.</p>	<p>A student at this level can describe the structure and function of many cellular organelles and macromolecules found in prokaryotic and eukaryotic cells. He/she analyzes data found in illustrations and tables to explain the processes associated with cell regulation, growth, reproduction, and transport. The student can apply this knowledge to understand the applications of current biotechnologies.</p>	<p>A student at this level can compare the structure and function of numerous cellular organelles and macromolecules found in prokaryotic and eukaryotic cells. He/she develops models that illustrate processes associated with cell regulation, growth, reproduction, and transport. The student can apply this knowledge to describe the need for the development of new cellular technologies.</p>
<p style="text-align: center;">2.0 Interdependence</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Biology topic of Interdependence.</p>	<p>A student at this level can identify major interactions that occur between living things and abiotic factors of the environment. He/she recognizes that changes in an environmental variable can affect an ecosystem.</p>	<p>A student at this level can explain interactions that occur between living things and abiotic factors of the environment. He/she can describe the impact of altering a particular environmental variable on an ecosystem. The student recognizes that science, technology, and engineering are interrelated.</p>	<p>A student at this level can compare and contrast interactions that occur between different living things and particular abiotic factors of the environment. He/she can predict how changing multiple environmental variables may affect an ecosystem. The student can describe the dynamic relationship among science, technology, and engineering.</p>

<p style="text-align: center;">3.0 Flow of Matter and Energy</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Biology topics of Flow of Matter and Energy.</p>	<p>A student at this level can recognize that chemical cycling of matter and flow of energy through the biosphere are interrelated. He/she completes a scientific investigation to explore these processes.</p>	<p>A student at this level can explain relationships between the chemical cycling of matter and flow of energy through the biosphere. He/she designs and conducts a scientific investigation to explore these processes.</p>	<p>A student at this level can describe long-range effects of the chemical cycling of matter and flow of energy on the biosphere. He/she designs, conducts, and analyzes the results of a scientific investigation to explore these processes.</p>
<p style="text-align: center;">4.0 Heredity</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Biology topic of Heredity.</p>	<p>A student at this level recognizes a relationship among nucleic acids, genes, chromosomes, proteins, and hereditary traits. He/she can apply simple tools and techniques to predict the probability of inheriting a particular genetic trait. The student can identify some emerging genetic technologies and recognize their impact on social, ethical, political, and economic systems.</p>	<p>A student at this level can create a model that illustrates the relationships among nucleic acids, genes, chromosomes, proteins, and hereditary traits. He/she uses statistical methods to predict the probability of inheriting a simple genetic trait. The student can evaluate the impact of emerging genetic technologies on social, ethical, political, and economic systems.</p>	<p>A student at this level can explain detailed interrelationships among nucleic acids, genes, chromosomes, proteins, and hereditary traits. He/she selects and applies appropriate statistical methods to predict the probability of inheritance patterns. The student can analyze and debate the impact of various genetic technologies on social, ethical, political and economic systems.</p>

<p style="text-align: center;">5.0 Biodiversity and Change</p>	<p>A student at this level has not demonstrated a basic understanding of the principles associated with the Biology topics of Biodiversity and Change.</p>	<p>A student at this level understands that the amount of biodiversity is controlled by environmental factors and influenced by humans. He/she recognizes that genetic variation within a population affects an individual's potential to survive and reproduce and the population's ability to respond to a changing environment. The student identifies key elements and assumptions found in accepted models of evolution and taxonomic systems.</p>	<p>A student at this level understands the causal relationship between the amount of biodiversity and natural and human impact on the environment. He/she can describe the connections among the amount of genetic variation in a population, individual survival and reproduction, and the evolution of a species. The student can determine which evolutionary models and taxonomic systems are best supported by scientific data.</p>	<p>A student at this level understands the potential impact of specific environmental changes on the level of biodiversity. He/she can explain causes of genetic variation and relationships among variation, adaptation, natural selection, and evolutionary change. The student evaluates evolutionary models and taxonomic systems using scientific data and discoveries from the field of genetics.</p>
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