Biology Science Assessed Curriculum for 2024-2025 ONLY

** For the 2024-2025 school year, ALL of the new TEKS must be taught; however, only the content that overlaps with the assessed curriculum prior to the implementation of the new TEKS will be assessed during this school year. In this document, the content in the black font is eligible to be assessed in the 2024-2025 school year.

Biology Assessed Curriculum for the 2024-2025 School Year ONLY

Reporting Category 1: Cell Structure and Function Reporting AND Reporting Category 4: Biological Processes and Systems ⟶ Reporting Category 1: Biological Structures, Functions, and Processes

Old TEK	Before 2024-2025	New Level	New TEK	In 2024-2025	New Level
B.4.A	compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity	Supporting	B.5.B	compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity	Supporting
B.4.B	investigate and explain cellular processes, including homeostasis and transport of molecules;	Readiness	B.5.C	investigate homeostasis through the cellular transport of molecules	Readiness
B.4.C	compare the structures of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza.	Readiness	B.5.D	compare the structures of viruses to cells and explain how viruses spread and cause disease	Readiness
B.5.A	describe the stages of the cell cycle, including deoxyribonucleic acid (DNA) replication and mitosis, and the importance of the cell cycle to the growth of organisms	Readiness	B.6.A	explain the importance of the cell cycle to the growth of organisms, including an overview of the stages of the cell cycle and deoxyribonucleic acid (DNA) replication models	Readiness
B.5.B	describe the roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation	Supporting	B.6.B	explain the process of cell specialization through cell differentiation, including the role of environmental factors	Supporting
B.5.C	recognize that disruptions of the cell cycle lead to diseases such as cancer	Supporting	B.6.C	relate disruptions of the cell cycle to how they lead to the development of diseases such as cancer	Supporting

Reporting Category 1: Cell Structure and Function Reporting and Reporting Category 4: Biological Processes and Systems ⟶ Reporting Category 1: Biological Structures, Functions, and Processes (Continued)

Old TEK	Before 2024-2025	Old Level	New TEK	In 2024-2025	New Level
B.9.A	compare the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids	Readiness	B.5.A	relate the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids, to the structure and function of a cell;	Readiness
B.9.B	compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter	Supporting	B.11A	explain how matter is conserved and energy is transferred during photosynthesis and cellular respiration using models, including the chemical equations for these processes	Supporting
B.9.C	identify and investigate the role of enzymes	Supporting	B.11.B	investigate and explain the role of enzymes in facilitating cellular processes	Supporting
B.10.A	describe the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals	Readiness	B.12A	analyze the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals	Readiness
B.10.B	describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants	Readiness	B.12.B	explain how the interactions that occur among systems that perform functions of transport, reproduction, and response in plants are facilitated by their structures	Readiness
B.10.C	analyze the levels of organization in biological systems and relate the levels to each other and to the whole system	Supporting			

Reporting Category 2: Mechanisms of Genetics

Old TEK	Before 2024-2025	Old Level	New TEK	In 2024-2025	New Level
B.6.A	identify components of DNA, identify how information for specifying the traits of an organism is carried in the DNA, and examine scientific explanations for the origin of DNA	Readiness	B.7.A	identify components of DNA, explain how the nucleotide sequence specifies some traits of an organism, and examine scientific explanations for the origin of DNA	Readiness
B.6.B	recognize that components that make up the genetic code are common to all organisms;	Supporting	B.7.D	discuss the importance of molecular technologies such as polymerase chain reaction (PCR), gel electrophoresis, and genetic engineering that are applicable in current research and engineering practices	
B.6.C	explain the purpose and process of transcription and translation using models of DNA and RNA	Supporting	B.7.B	describe the significance of gene expression and explain the process of protein synthesis using models of DNA and ribonucleic acid (RNA)	Supporting
B.6.D	recognize that gene expression is a regulated process	Supporting			
B.6.E	identify and illustrate changes in DNA and evaluate the significance of these changes	Readiness	B.7.C	identify and illustrate changes in DNA and evaluate the significance of these changes	Readiness
B.6.F	predict possible outcomes of various genetic combinations such as monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance	Readiness	B.8.B	predict possible outcomes of various genetic combinations using monohybrid and dihybrid crosses, including non-Mendelian traits of incomplete dominance, codominance, sex-linked traits, and multiple alleles	Readiness
B.6.G	recognize the significance of meiosis to sexual reproduction.	Supporting	B.8.A	analyze the significance of chromosome reduction, independent assortment, and crossing-over during meiosis in increasing diversity in populations of organisms that reproduce sexually	Supporting

Reporting Category 3: Biological Evolution and Classification → Reporting Category 3: Biological Evolution

Old TEK	Before 2024-2025	Old Level	New TEK	In 2024-2025	New Level
B.7.A	analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental	Readiness	B.9.A	analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental	Readiness
B.7.B	examine scientific explanations of abrupt appearance and stasis in the fossil record	Supporting	B.9.B	examine scientific explanations for varying rates of change such as gradualism, abrupt appearance, and stasis in the fossil record	Supporting
B.7.C	analyze and evaluate how natural selection produces change in populations, not individuals	Supporting	B.10.A	analyze and evaluate how natural selection produces change in populations and not in individuals	Supporting
B.7.D	analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success	Supporting	B.10.B	analyze and evaluate how the elements of natural selection, including inherited variation, the potential of a population to produce more offspring than can survive, and a finite supply of environmental resources, result in differential reproductive success	Supporting
B.7.E	analyze and evaluate the relationship of natural selection to adaptation and to the development of diversity in and among species	Readiness	B.10.C	analyze and evaluate how natural selection may lead to speciation	Readiness
B.7.F	analyze other evolutionary mechanisms, including genetic drift, gene flow, mutation, and recombination.	Supporting	B.10.D	analyze evolutionary mechanisms other than natural selection, including genetic drift, gene flow, mutation, and genetic recombination, and their effect on the gene pool of a population.	Supporting
B.8.A	define taxonomy and recognize the importance of a standardized taxonomic system to the scientific community	Supporting			
B.8.B	categorize organisms using a hierarchical classification system based on similarities and differences shared among groups	Readiness			
B.8.C	compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals	Supporting			

Reporting Category 5: Interdependence within Environmental Systems → Reporting Category 4: Interdependence within Environmental Systems

Old TEK	Before 2024-2025	Old Level	New TEK	In 2024-2025	New Level
B.11.A	summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems	Supporting			
B.11.B	describe how events and processes that occur during ecological succession can change populations and species diversity	Readiness			
B.12.A	interpret relationships, including predation, parasitism, commensalism, mutualism, and competition, among organisms	Readiness	B.13.A	investigate and evaluate how ecological relationships, including predation, parasitism, commensalism, mutualism, and competition, influence ecosystem stability	Readiness
B.12.B	compare variations and adaptations of organisms in different ecosystems	Supporting			
B.12.C	analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids	Readiness	B.13.B	analyze how ecosystem stability is affected by disruptions to the cycling of matter and flow of energy through trophic levels using models;	Readiness
B.12.D	describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles	Supporting	B.13.C	explain the significance of the carbon and nitrogen cycles to ecosystem stability and analyze the consequences of disrupting these cycles	Supporting
B.12.E	describe how environmental change can impact ecosystem stability	Readiness	B.13.D	explain how environmental change, including change due to human activity, affects biodiversity and analyze how changes in biodiversity impact ecosystem stability	Readiness