

Cycle 1	27 Days	
	Aug. 23 - Oct. 1, 2021	
<p><i>The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.</i></p>		
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 1 Biomolecules The focus of this unit is comparison of the functions of the different types of biomolecules: carbohydrates, lipids, proteins, and nucleic acids. Students identify the components of DNA as well as the role of enzymes.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p> <p><i>Enrichment Opportunities</i> Aug. 2-13</p> <p><i>Teachers Report to Work</i> Aug. 16</p> <p><i>Teacher Service Days</i> Aug. 16-17, Aug. 19-20</p> <p><i>Teacher Prep Day (no students)</i> Aug. 18</p> <p><i>Labor Day</i> Sept. 6</p> <p><i>Fall Holiday</i> Sept. 16</p> <p><i>Teacher Service Day (no students)</i> Sept. 17</p>	<p>Biological Content Standards:</p> <p>Ⓡ BIOL.9A Compare the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids.</p> <p>Ⓡ BIOL.6A 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.</p> <p>Ⓢ BIOL.9C Identify and investigate the role of enzymes.</p> <p>Biological Process Standards:</p> <p>Ⓢ BIOL.1A Demonstrate safe practices during laboratory and field investigations.</p> <p>Ⓢ BIOL.1B Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓢ BIOL.3B Communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials.</p> <p>Ⓢ BIOL.3C Draw inferences based on data related to promotional materials for products and services.</p> <p>Ⓢ BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</p> <p>Ⓢ BIOL.3F Research and describe the history of biology and contributions of scientists.</p>

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<p>Unit 2: Cell Structure and Function</p> <p>The focus of this unit is investigation and explanation of cellular processes, including homeostasis and transport of molecules. Students identify cells as the basic structures of all living things, and that they have specialized parts that perform specific functions such as transporting molecules and maintaining homeostasis.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <p>Ⓢ BIOL.4A Compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.</p> <p>Ⓡ BIOL.4B Investigate and explain cellular processes, including homeostasis and transport of molecules.</p> <p>Ⓢ BIOL.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter.</p> <p>Biological Process Standards:</p> <p>Ⓡ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓡ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>Ⓡ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓡ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓡ BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</p>

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<p>Unit 3: Components of DNA</p> <p>The focus of this unit is to identify the components of DNA and describe how genetic information is carried in DNA. Students examine explanations for the origin of DNA. Students recognize that DNA is found in all living organisms.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <p>Ⓡ BIOL.6A 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.</p> <p>Ⓢ BIOL.6B Recognize that components that make up the genetic code are common to all organisms.</p> <p>Biological Process Standards:</p> <p>Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓢ BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</p>	
<p>Unit 4: Cell Growth and Differentiation</p> <p>The focus of this unit is description of the cell cycle, DNA replication, and cellular differentiation. Students describe the cell cycle, including mitosis, the importance of the cell cycle to growth and how disruptions of the cell cycle can lead to diseases such as cancer. Students describe cell differentiation and factors that play a role in differentiation.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <p>Ⓡ BIOL.5A 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.</p> <p>Ⓢ BIOL.5B Describe the roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation.</p> <p>Ⓢ BIOL.5C Recognize that disruptions of the cell cycle lead to diseases such as cancer.</p> <p>Ⓢ BIOL.6G Recognize the significance of meiosis to sexual reproduction.</p> <p>Biological Process Standards:</p> <p>Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</p>	

Cycle 2	29 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Oct. 5 - Nov. 12, 2021	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 5: Viruses The focus of this unit is the comparison of the structures of viruses and cells. Students describe viral reproduction and the role of viruses in causing diseases.</p>	<p>2 class periods (90-min. each) or 4 class periods (45-min. each)</p> <p><i>Teacher Service Day (no students) Oct. 4</i></p>	<p>Biological Content Standards: Ⓡ BIOL.4C Compare the structure of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza.</p> <p>Biological Process Standards: Ⓡ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓡ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. Ⓡ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</p>
<p>Unit 6: Transcription and Translation The focus of this unit is the explanation of protein synthesis and gene expression. After identifying the components of the structure of DNA, students explain how DNA is transcribed and translated into amino acids to make proteins.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Biological Content Standards: Ⓢ BIOL.6C Explain the purpose and process of transcription and translation using models of DNA and RNA. Ⓢ BIOL.6D Recognize that gene expression is a regulated process.</p> <p>Biological Process Standards: Ⓡ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓡ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports. Ⓡ BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</p>

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:	
<p>Unit 7: Mutations: Changes in DNA The focus of this unit is identification and illustration of changes to the nucleotide sequence of DNA resulting in mutations. Although some are harmful, mutations result in the diversity of genes in the world, making natural selection and evolution possible.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Biological Content Standards: ® BIOL.6E Identify and illustrate changes in DNA and evaluate the significance of these changes.</p> <p>Biological Process Standards: Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p>	
<p>Unit 8: Genetic Combinations The focus of this unit is the prediction of the possible outcomes of monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance. Students recognize the significance of genetic variation as a result of the possible outcomes of various genetic combinations</p>	<p>4 class periods (90-min. each) or 8 class periods (45-min. each)</p>	<p>Biological Content Standards: ® BIOL.6F Predict possible outcomes of various genetic combinations such as monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance. Ⓢ BIOL.6G Recognize the significance of meiosis to sexual reproduction</p> <p>Biological Process Standards: Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports. Ⓢ BIOL.3D Evaluate the impact of scientific research on society and the environment. Ⓢ BIOL.3F Research and describe the history of biology and contributions of scientists.</p>	

Cycle 3	30 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Nov. 15, 2021 - Jan. 14, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 9: Natural Selection The focus of this unit is analysis and evaluation of the relationship of natural selection to adaptation and to the development of diversity in and among species. Students analyze and evaluate how elements of natural selection result in differential reproductive success in populations, not individuals.	5 class periods (90-min. each) or 9 class periods (45-min. each) <i>Thanksgiving Break</i> Nov. 22-26 <i>Enrichment Opportunities</i> Dec. 20-21 <i>Winter Break</i> Dec. 20-31 <i>MLK Jr. Day</i> Jan. 17 <i>Teacher Prep Day</i> (no students) Jan. 18	Biological Content Standards: Ⓢ BIOL.7C Analyze and evaluate how natural selection produces change in populations, not individuals. Ⓢ BIOL.7D 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. Ⓡ BIOL.7E Analyze and evaluate the relationship of natural selection to adaptation and to the development of diversity in and among species. Ⓢ BIOL.12B Compare variations and adaptations of organisms in different ecosystems. Biological Process Standards: Ⓡ BIOL.2A Know the definition of science and understand that it has limitations, Ⓡ BIOL.2B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories. Ⓡ BIOL.2C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new area of science and new technologies are developed. Ⓡ BIOL.2D Distinguish between scientific hypotheses and scientific theories.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 10: Evidence of Evolution</p> <p>The focus of this unit is the analysis and evaluation of the theory of biological evolution by examining evidence of common ancestry from DNA sequences, fossil records, biogeography, and anatomical and developmental homologies.</p>	<p>5 class periods (90-min. each) or 9 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <p>Ⓡ BIOL.7A Analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental.</p> <p>Ⓢ BIOL.7B Examine scientific explanations of abrupt appearance and stasis in the fossil record.</p> <p>Biological Process Standards:</p> <p>Ⓟ BIOL.2A Know the definition of science and understand that it has limitations,</p> <p>Ⓟ BIOL.2B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories.</p> <p>Ⓟ BIOL.2C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new area of science and new technologies are developed.</p> <p>Ⓟ BIOL.2D Distinguish between scientific hypotheses and scientific theories.</p>
<p>Unit 11: Other mechanisms of Evolution</p> <p>The focus of this unit is the analysis of other evolutionary mechanisms such as gene flow, genetic drift, mutation, and recombination.</p>	<p>1 class period (90-min. each) or 2 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <p>Ⓢ BIOL.7F Analyze other evolutionary mechanisms, including genetic drift, gene flow, mutation, and recombination.</p> <p>Biological Process Standards:</p> <p>Ⓟ BIOL.2A Know the definition of science and understand that it has limitations,</p> <p>Ⓟ BIOL.2B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories.</p> <p>Ⓟ BIOL.2C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new area of science and new technologies are developed.</p> <p>Ⓟ BIOL.2D Distinguish between scientific hypotheses and scientific theories.</p>

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 12: Biological Classification The focus of this unit is categorization of organisms using a hierarchical classification system based on similarities and differences among organisms at various taxonomic levels.	2 class periods (90-min. each) or 4 class periods (45-min. each)	Biological Content Standards: Ⓢ BIOL.8A Define taxonomy and recognize the importance of a standardized taxonomic system to the scientific community. Ⓡ BIOL.8B Categorize organisms using a hierarchical classification system based on similarities and differences shared among groups. Ⓢ BIOL.8C Compare characteristics of taxonomic groups, including archaea, bacteria, protists, fungi, plants, and animals. Biological Process Standards: Ⓡ BIOL.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.

Cycle 4	27 Days	
	Jan. 19 - Feb. 25, 2022	
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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 13: Plant Systems: Homeostasis and Biological Processes in Systems</p> <p>The focus of this unit is on description and investigation of the interactions that occur among systems in plants that perform various functions. Students compare metabolic processes and energy conversions that occur in plants and animals including photosynthesis and cellular respiration. Multiple levels of organization of biological systems will also be analyzed.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p> <p><i>Teacher Service Day (no students) Feb. 21</i></p>	<p>Biological Content Standards:</p> <ul style="list-style-type: none"> Ⓢ BIOL.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter. Ⓢ BIOL.10B Describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants. Ⓢ BIOL.10C Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. Ⓢ BIOL.11A Summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems. <p>Biological Process Standards:</p> <ul style="list-style-type: none"> Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 14: Animal Systems: Homeostasis and Biological Processes in Systems</p> <p>The focus of this unit is the description and investigation of the interactions that occur among systems in animals that perform various functions. Students identify metabolic processes and energy conversions that occur in animals. Multiple levels of organization of biological systems will also be analyzed.</p>	<p>5 class periods (90-min. each) or 10 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <ul style="list-style-type: none"> Ⓢ BIOL.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter. Ⓢ BIOL.9C Identify and investigate the role of enzymes. Ⓡ BIOL.10A Describe the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals. Ⓢ BIOL.10C Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. Ⓢ BIOL.11A Summarize the role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems. <p>Biological Process Standards:</p> <ul style="list-style-type: none"> Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 15: Matter and Energy Flow in Ecosystems The focus of this unit is on analysis of matter and energy flow between organisms and their environment, as well as describing how environmental change impacts ecosystem stability. Students analyze the flow of matter and energy through different trophic levels using various models and describe how environmental change can impact ecosystem stability.</p>	<p>3 class periods (90-min. each) or 6 class periods (45-min. each)</p>	<p>Biological Content Standards:</p> <ul style="list-style-type: none"> Ⓡ BIOL.12C Analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids. Ⓢ BIOL.12D Describe the flow of matter through the carbon and nitrogen cycles and explain the consequences of disrupting these cycles. Ⓡ BIOL.12E Describe how environmental change can impact ecosystem stability. Ⓢ BIOL.10C Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. <p>Biological Process Standards:</p> <ul style="list-style-type: none"> Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

Cycle 5	33 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Feb. 28 - Apr. 22, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 16: Ecosystem Relationships The focus of this unit is the interpretation of relationships among organisms in an ecosystem including commensalism, mutualism, parasitism, and predator-prey relationships.	3 class periods (90-min. each) or 6 class periods (45-min. each) <i>Enrichment Opportunities</i> Mar. 14-16 <i>Spring Break</i> Mar. 14-18 <i>Chávez-Huerta Day</i> Mar. 28 <i>Spring Holiday</i> Apr. 15	Biological Content Standards: Ⓡ BIOL.12A Interpret relationships, including predation, parasitism, commensalism, mutualism, and competition among organisms. Biological Process Standards: Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.
Unit 17: Variations and adaptations in Ecosystems The focus of this unit is the description of how events and processes that occur during ecological succession can change populations and species diversity. Students compare variations and adaptations of organisms that help them grow, reproduce, and survive in different ecosystems.	2 class periods (90-min. each) or 4 class periods (45-min. each)	Biological Content Standards: Ⓡ BIOL.11B Describe how events and processes that occur during ecological succession can change populations and species diversity. Ⓢ BIOL.12B Compare variations and adaptations of organisms in different ecosystems. Biological Process Standards: Ⓢ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology. Ⓢ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures. Ⓢ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓢ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.

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Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
Unit 18: EOC Review The focus of this unit is review of readiness standards in preparation for the Biology EOC.	8 class periods (90-min. each) or 16 class periods (45-min. each)	Biological Content Standards: Ⓡ BIOL.9A Compare the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids. Ⓡ BIOL.4B Investigate and explain cellular processes, including homeostasis and transport of molecules. Ⓡ BIOL.5A 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. Ⓡ BIOL.4C Compare the structure of viruses to cells, describe viral reproduction, and describe the role of viruses in causing diseases such as human immunodeficiency virus (HIV) and influenza. Ⓡ BIOL.6A 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. Ⓡ BIOL.6E Identify and illustrate changes in DNA and evaluate the significance of these changes. Ⓡ BIOL.6F Predict possible outcomes of various genetic combinations such as monohybrid crosses, dihybrid crosses, and non-Mendelian inheritance. Ⓡ BIOL.7A Analyze and evaluate how evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, including anatomical, molecular, and developmental. Ⓡ BIOL.7E Analyze and evaluate the relationship of natural selection to adaptation and to the development of diversity in and among species. Ⓡ BIOL.8B Categorize organisms using a hierarchical classification system based on similarities and differences shared among groups. Ⓡ BIOL.10A Describe the interactions that occur among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals. Ⓡ BIOL.10B Describe the interactions that occur among systems that perform the functions of transport, reproduction, and response in plants. Ⓡ BIOL.12C Analyze the flow of matter and energy through trophic levels using various models, including food chains, food webs, and ecological pyramids. Ⓡ BIOL.12E Describe how environmental change can impact ecosystem stability. Ⓡ BIOL.11B Describe how events and processes that occur during ecological succession can change populations and species diversity. Ⓡ BIOL.12A Interpret relationships, including predation, parasitism, commensalism, mutualism, and competition among organisms.

Cycle 5	33 Days Feb. 28 - Apr. 22, 2022	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
		<p>Biological Content Standards (most tested supporting):</p> <ul style="list-style-type: none"> Ⓢ BIOL.6B Recognize that components that make up the genetic code are common to all organisms. Ⓢ BIOL.6C Explain the purpose and process of transcription and translation using models of DNA and RNA. Ⓢ BIOL.6G Recognize the significance of meiosis to sexual reproduction. Ⓢ BIOL.7B Examine scientific explanations of abrupt appearance and stasis in the fossil record. Ⓢ BIOL.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter. Ⓢ BIOL.9C Identify and investigate the role of enzymes. Ⓢ BIOL.10C Analyze the levels of organization in biological systems and relate the levels to each other and to the whole system. <p>Biological Process Standards (most commonly assessed):</p> <ul style="list-style-type: none"> Ⓡ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data. Ⓡ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports. Ⓡ BIOL.3D Evaluate the impact of scientific research on society and the environment.

Cycle 6	31 Days	The recommended number of class periods is less than the number of days in the grading cycle to accommodate differentiated instruction, extended learning time, and assessment days. Complete instructional planning information and support are in the HISD Curriculum documents.
	Apr. 25 - June 7, 2022	
Unit	# Class Periods	Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:
<p>Unit 19 Project Based Learning</p> <p>The focus of this unit is the implementation of scientific investigations through real-life applications of current science issues after the End-of-Course exam.</p>	<p>13 class periods (90-min. each) or 26 class periods (45-min. each)</p> <p><i>Memorial Day</i> <i>May 30</i></p> <p><i>Teacher Prep Day</i> <i>(no students)</i> <i>June 8</i></p>	<p>Biological Process Standards:</p> <p>Ⓟ BIOL.1A Demonstrate safe practices during laboratory and field investigations.</p> <p>Ⓟ BIOL.1B Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</p> <p>Ⓟ BIOL.2A Know the definition of science and understand that it has limitations.</p> <p>Ⓟ BIOL.2B Know that hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories.</p> <p>Ⓟ BIOL.2C Know scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new area of science and new technologies are developed.</p> <p>Ⓟ BIOL.2D Distinguish between scientific hypotheses and scientific theories.</p> <p>Ⓟ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</p> <p>Ⓟ BIOL.2F Collect and organize qualitative and quantitative data and make measurements with accuracy and precision using tools such as data-collecting probes, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, balances, gel electrophoresis apparatuses, micropipettes, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, Petri dishes, lab incubators, dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures.</p> <p>Ⓟ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</p> <p>Ⓟ BIOL.2H Communicate valid conclusions supported by the data through methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports.</p> <p>Ⓟ BIOL.3A Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student.</p> <p>Ⓟ BIOL.3B Communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials.</p> <p>Ⓟ BIOL.3C Draw inferences based on data related to promotional materials for products and services.</p> <p>Ⓟ BIOL.3D Evaluate the impact of scientific research on society and the environment.</p> <p>Ⓟ BIOL.3F Research and describe the history of biology and contributions of scientists.</p>