

Biology Scope & Sequence

<p style="text-align: center;">1st Six Weeks (25 Days)</p> <p style="text-align: center;">August 14th-September 19th</p>	<p style="text-align: center;">2nd Six Weeks (27 Days)</p> <p style="text-align: center;">September 24th-November 1st</p>
<ul style="list-style-type: none"> ❖ Unit 0: Getting Started (5 days) Aug. 14th-20th <ul style="list-style-type: none"> ➤ SEL, Safety, and Establish, Procedures, and Routines <ul style="list-style-type: none"> ■ Science Safety Rules ■ Lab rules and expectations ■ Equipment/Setup ■ Interactive Notebooks ■ Social and Emotional Learning ❖ Unit 1: Biomolecules (7 Days) Aug. 21st-29th ❖ Big Ideas: Biomolecules have a wide range of sizes and structures and perform a vast array of functions. <ul style="list-style-type: none"> ➤ Important Concepts: <ul style="list-style-type: none"> ■ Compare the functions of different types of biomolecules ■ Identify and Investigate the role of enzymes ➤ Readiness TEKS: B.9A ➤ Supporting TEKS: B.9C ❖ Unit 2: Cell Structure and Function and Viruses (13 Days) Sept. 3rd-19th <ul style="list-style-type: none"> ➤ Big Ideas: investigate the structure of prokaryotic and eukaryotic cells and viruses. ➤ Important Concepts: <ul style="list-style-type: none"> ■ Compare and contrast prokaryotic and eukaryotic cells ■ Compare and contrast scientific explanations for cellular complexity. Investigate and explain cellular processes. ■ Compare the structure of viruses to cells, describe viral reproduction, and the role of viruses in causing diseases. ➤ Readiness TEKS: B.4B, B.4C ➤ Supporting TEKS: B.4A 	<ul style="list-style-type: none"> ❖ Unit 3: Cell Growth & Differentiation (12 Days) Sept. 24th-Oct. 9th <ul style="list-style-type: none"> ➤ Big Ideas: explore cellular differentiation is the process where a cell changes from one cell type to another ➤ Important Concepts: <ul style="list-style-type: none"> ■ Stages of the cell cycle, including deoxyribonucleic acid (DNA) replication and mitosis. ■ The importance of the cell cycle to the growth of organisms. Roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation. ■ Disruptions of the cell cycle. ➤ Readiness TEKS: B.5A ➤ Supporting TEKS: B.5B, B.5C ❖ Unit 4: Components of DNA and Transcription and Translation (15 Days) Oct. 10th-Nov. 1st <ul style="list-style-type: none"> ➤ Big Ideas: explore DNA and the process in which cells make proteins is called protein synthesis ➤ Important Concepts: <ul style="list-style-type: none"> ■ Components of DNA. ■ Scientific explanations for the origin of DNA ■ Purpose and process of transcription and translation ➤ Readiness TEKS: B.6A ➤ Supporting TEKS: B.6B, B.6C, B.6D ➤ Spiral B.9C

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<p>3rd Six Weeks (26 Days)</p> <p>November 6th-December 19th</p>	<p>4th Six Weeks (31 Days)</p> <p>January 7th-February 21st</p>
<ul style="list-style-type: none"> ◆ Unit 5: Mutations and Changes in DNA and Meiosis & Genetic Combinations (24 Days) Nov. 6th-Dec. 17th <ul style="list-style-type: none"> ➤ Big Ideas: explore genes, meiosis and how meiosis leads to genetic diversity among a species, and predict outcomes of genetic crosses using Mendelian and non-Mendelian inheritance patterns. ➤ Important Concepts: <ul style="list-style-type: none"> ■ Changes in DNA and the significance of these changes. ■ Predict possible outcomes of various genetic combinations and recognize the significance of meiosis to sexual reproduction. ➤ Readiness TEKS: B.6E, B.6F ➤ Supporting TEKS: B.6G 	<ul style="list-style-type: none"> ◆ Unit 0: Getting Started (5 days) Jan. 7th-13th <ul style="list-style-type: none"> ➤ SEL, Safety, and Establish, Procedures, and Routines <ul style="list-style-type: none"> ■ Science Safety Rules ■ Lab rules and expectations ■ Equipment/Setup ■ Interactive Notebooks ■ Social and Emotional Learning ◆ Unit 6: Evidence of Evolution and Natural Selection (13 Days) Jan. 14th-31st <ul style="list-style-type: none"> ➤ Big Ideas: explore and evaluate the various lines of evidence that support the theory of evolution and explore various agents of microevolution ➤ Important Concepts: <ul style="list-style-type: none"> ■ Evidence of common ancestry among groups is provided by the fossil record, biogeography, and homologies, abrupt appearance and stasis in the fossil record and elements of natural selection. ■ Evolutionary mechanisms, including genetic drift, gene flow, mutation, and recombination. ➤ Readiness TEKS: B.7A, B.7E ➤ Supporting TEKS: B.7B, B.7C, B.7D, B.7F ◆ Unit 7: Biological Classification (13 Days) Feb.3rd -Feb. 21st <ul style="list-style-type: none"> ➤ Big Ideas: Students use dichotomous keys to gain an understanding of the importance of classification systems. ➤ Important Concepts: <ul style="list-style-type: none"> ■ Categorize organisms using a hierarchical classification system based on similarities and differences shared among groups ➤ Readiness TEKS: B.8B ➤ Supporting TEKS: B.8A, B.8C

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<p>5th Six Weeks (33 Days) February 24th-April 17th</p>	<p>6th Six Weeks (31 Days) April 20th-June 2nd</p>
<ul style="list-style-type: none"> ❖ Unit 8: Animal and Systems Homeostasis & Biological Processes in Systems: (19 Days) Feb. 24th-Mar. 27th <ul style="list-style-type: none"> ➤ Big Ideas: explore the complexity of the human species, development of plants, and analyze different levels of organization in biological systems and the role of microorganisms. <ul style="list-style-type: none"> ■ Interactions among systems that perform the functions of regulation, nutrient absorption, reproduction, and defense from injury or illness in animals ■ Levels of organization in biological systems ■ The role of microorganisms in both maintaining and disrupting the health of both organisms and ecosystems ➤ Readiness TEKS: B.10A, B.10B ➤ Supporting TEKS: B.10C, B.11A, B.9B, B.9C ❖ Unit 9: Matter and Energy Flow in Ecosystems and Relationships and Variations and Adaptations (14 Days) Mar. 30th-Apr. 17th <ul style="list-style-type: none"> ➤ Big Ideas: explore the food chain or web, explore symbiotic relationships between organisms in ecosystems, and determine how succession can lead to ecosystem stability, how humans impact ecosystems, and how environmental change impacts ecosystem. ➤ Important Concepts: <ul style="list-style-type: none"> ■ Flow of matter and energy through trophic levels ■ Flow of matter through the carbon and nitrogen cycles and environmental change that impact ecosystem stability. ■ Predation, commensalism, mutualism, and competition, among organisms. ■ Variations and adaptations of organisms in different ecosystems. Ecological succession can change populations and species diversity. ■ Variations and adaptations of organisms in different ecosystem. ➤ Readiness TEKS: B.11B, B.12A, B.12C, B.12E 	<ul style="list-style-type: none"> ❖ Unit 10: Making Connections to the EOC (15 Days) Apr. 20th-May 8th <ul style="list-style-type: none"> ➤ Big Ideas: TEKS Reviewed based on Data Collection from Benchmark & EOC ➤ Important Concepts: <ul style="list-style-type: none"> ■ TEKS Reviewed based on Data Collection from Benchmark & EOC ❖ Unit 11: Research and Investigate (14 Days) May 11th-29th <ul style="list-style-type: none"> ➤ Big Ideas: Students will research and investigate with their peers on topics like Ecological balance, forest conservation, climate change and the extinction of species. ➤ Important Concepts: <ul style="list-style-type: none"> ■ Ecological balance ■ Forest conservation ■ Climate change ■ Extinction of species Note: The process standards are embedded in concept standards so that the student, for at least 40% of instructional time, conducts laboratory and field investigations



CURRICULUM AND
INSTRUCTION

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➤ Supporting TEKS: B.12B, B.12D, Spiral B.11A	
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