<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
<th>Biological Content Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 1 Biomolecules</td>
<td>3 class periods (90-min. each) or 6 class periods (45-min. each)</td>
<td>The student will:</td>
<td>⑩ BIOL.9A Compare the functions of different types of biomolecules, including carbohydrates, lipids, proteins, and nucleic acids.</td>
</tr>
<tr>
<td></td>
<td>Teachers Report to Work Aug. 24</td>
<td></td>
<td>⑩ 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.</td>
</tr>
<tr>
<td></td>
<td>Labor Day Sept. 7</td>
<td></td>
<td>⑩ BIOL.9C Identify and investigate the role of enzymes.</td>
</tr>
<tr>
<td></td>
<td>Teacher Service Day (no students) Sept. 28</td>
<td></td>
<td>Biological Process Standards:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.1A Demonstrate safe practices during laboratory and field investigations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.1B Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</td>
</tr>
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<td></td>
<td></td>
<td>⑩ 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.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.3B Communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.3C Draw inferences based on data related to promotional materials for products and services.</td>
</tr>
<tr>
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<td></td>
<td>⑩ BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>⑩ BIOL.3F Research and describe the history of biology and contributions of scientists.</td>
</tr>
<tr>
<td>Unit</td>
<td># Class Periods</td>
<td>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</td>
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</tr>
<tr>
<td>Unit 2: Cell Structure and Function</td>
<td>3 class periods (90-min. each) or 6 class periods (45-min. each)</td>
<td>The student will:</td>
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<tr>
<td></td>
<td></td>
<td>Biological Content Standards:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© BIOL.4A Compare and contrast prokaryotic and eukaryotic cells, including their complexity, and compare and contrast scientific explanations for cellular complexity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© BIOL.4B Investigate and explain cellular processes, including homeostasis and transport of molecules.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© BIOL.9B Compare the reactants and products of photosynthesis and cellular respiration in terms of energy, energy conversions, and matter.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biological Process Standards:</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© BIOL.2E Plan and implement descriptive, comparative, and experimental investigations, including asking questions, formulating testable hypotheses, and selecting equipment and technology.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© 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.</td>
<td></td>
</tr>
<tr>
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<td></td>
<td>© BIOL.2G Analyze, evaluate, make inferences, and predict trends from data.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© 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.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>© BIOL.3E Evaluate models according to their limitations in representing biological objects or events.</td>
<td></td>
</tr>
</tbody>
</table>

Cycle 1
28 Days
Sept. 8 - Oct. 16, 2020

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.
# Scope and Sequence

## Science – Biology

**Cycle 1**

<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
</tr>
</thead>
</table>
| Unit 3: Components of DNA | 2 class periods (90-min. each) or 4 class periods (45-min. each) | **Biological Content Standards:**  
® **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.6B** Recognize that components that make up the genetic code are common to all 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.  
® **BIOL.3E** Evaluate models according to their limitations in representing biological objects or events.

## Unit 4: Cell Growth and Differentiation

| | | **Biological Content Standards:**  
® **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.5B** Describe the roles of DNA, ribonucleic acid (RNA), and environmental factors in cell differentiation.  
® **BIOL.5C** Recognize that disruptions of the cell cycle lead to diseases such as cancer.  
® **BIOL.6G** Recognize the significance of meiosis to sexual reproduction.  

**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.

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.
<table>
<thead>
<tr>
<th>Cycle 2</th>
<th>29 Days</th>
<th>Oct. 19 - Dec. 4, 2020</th>
<th>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.</th>
</tr>
</thead>
</table>
| Unit 5: Viruses | 2 class periods (90-min. each) or 4 class periods (45-min. each) | 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.  
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.  
Teacher Service Day (no students) Oct. 21  
Thanksgiving Break Nov. 23-27 |
| Unit 6: Transcription and Translation | 3 class periods (90-min. each) or 6 class periods (45-min. each) | 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.  
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.  
|
## 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.

<table>
<thead>
<tr>
<th># Class Periods</th>
<th>Biological Content Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 class periods (90-min. each) or 6 class periods (45-min. each)</td>
<td>© BIOL.6E Identify and illustrate changes in DNA and evaluate the significance of these changes.</td>
</tr>
</tbody>
</table>

## 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.

<table>
<thead>
<tr>
<th># Class Periods</th>
<th>Biological Content Standards:</th>
</tr>
</thead>
</table>
| 4 class periods (90-min. each) or 8 class periods (45-min. each) | © 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 |

## Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)

### Biological Content Standards:
- © 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.6G Recognize the significance of meiosis to sexual reproduction.

### 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.
## Cycle 3

<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Biological Content Standards</th>
</tr>
</thead>
</table>
| Unit 9: Natural Selection | 4 class periods (90-min. each) or 8 class periods (45-min. each) | ⚫ 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. |

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.

The student will:

- **Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)**

### Winter Break
Dec. 21 - Jan. 1

### MLK Jr. Day
Jan. 18

### Teacher Prep Day
(no students)
Jan. 29
## Cycle 3
### Unit 10: Evidence of Evolution
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.

<table>
<thead>
<tr>
<th># Class Periods</th>
<th>Biological Content Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 class periods (90-min. each) or 8 class periods (45-min. each)</td>
<td>⚫ 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.7B Examine scientific explanations of abrupt appearance and stasis in the fossil record.</td>
</tr>
</tbody>
</table>

### Unit 11: Other mechanisms of Evolution
The focus of this unit is the analysis of other evolutionary mechanisms such as gene flow, genetic drift, mutation, and recombination.

<table>
<thead>
<tr>
<th># Class Periods</th>
<th>Biological Content Standards:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 class periods (90-min. each) or 2 class periods (45-min. each)</td>
<td>⚫ BIOL.7F Analyze other evolutionary mechanisms, including genetic drift, gene flow, mutation, and recombination.</td>
</tr>
</tbody>
</table>

### 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 areas of science and new technologies are developed.
- **BIOL.2D** Distinguish between scientific hypotheses and scientific theories.
<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit 12: Biological Classification</td>
<td>2 class periods (90-min. each) or 4 class periods (45-min. each)</td>
<td>The student will:</td>
</tr>
</tbody>
</table>

**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

**Unit**

**# Class Periods**

<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
</tr>
</thead>
</table>
| Unit 13: Plant Systems: Homeostasis and Biological Processes in Systems | **3 class periods** (90-min. each) or **6 class periods** (45-min. each) | **Biological Content Standards:**  
- **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.  

**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.  

**Teacher Service Day** (no students)  
Feb. 24  
**Spring Break**  
Mar. 15-19

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.
### Cycle 4

<table>
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<tr>
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<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
</tr>
</thead>
</table>
| Unit 14: Animal Systems: Homeostasis and Biological Processes in Systems | 5 class periods (90-min. each) or 10 class periods (45-min. each) | Biological Content Standards:  
- **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.  

**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.

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.
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</tr>
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<tbody>
<tr>
<td>Unit</td>
<td># Class Periods</td>
<td>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs) The student will:</td>
</tr>
</tbody>
</table>
| Unit 15: Matter and Energy Flow in Ecosystems | 4 class periods (90-min. each) or 8 class periods (45-min. each) | Biological Content Standards:  
® 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.  

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. |
## Cycle 5

<table>
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<th>Unit</th>
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<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
<th>The student will:</th>
</tr>
</thead>
</table>
| **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. | 2 class periods (90-min. each) or 4 class periods (45-min. each) | **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.  

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### Chávez-Huerta Day
Mar. 29  

### Spring Holiday
Apr. 2

| **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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### Mar. 22 - Apr. 30, 2021  
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.
### Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)

#### 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.

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**Unit 18: EOC Review**  
The focus of this unit is review of readiness standards in preparation for the Biology EOC.

**Unit** | **# Class Periods** | **Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)**
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Unit 18: EOC Review | 7 class periods (90-min. each) or 14 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

**28 Days**

Mar. 22 - Apr. 30, 2021

<table>
<thead>
<tr>
<th>Unit</th>
<th># Class Periods</th>
<th>Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td><strong>The student will:</strong></td>
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</table>

**Biological Content Standards (most tested supporting):**

- **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.

**Biological Process Standards (most commonly assessed):**

- **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.
<table>
<thead>
<tr>
<th>Cycle 6</th>
<th>29 Days</th>
<th>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 available in the HISD Curriculum documents.</th>
</tr>
</thead>
</table>
| Unit | # Class Periods | Texas Essential Knowledge and Skills/Student Expectations (TEKS/SEs)  
The student will: |
| Unit 19 | 12 class periods  
(90-min. each)  
or  
24 class periods  
(45-min. each) | Biological Process Standards:  
- **BIOL.1A** Demonstrate safe practices during laboratory and field investigations.  
- **BIOL.1B** Demonstrate an understanding of the use and conservation of resources and the proper disposal or recycling of materials.  
- **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.  
- **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.  
- **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.  
- **BIOL.3B** Communicate and apply scientific information extracted from various sources such as current events, published journal articles, and marketing materials.  
- **BIOL.3C** Draw inferences based on data related to promotional materials for products and services.  
- **BIOL.3D** Evaluate the impact of scientific research on society and the environment.  
- **BIOL.3E** Research and describe the history of biology and contributions of scientists. |
| Project Based Learning | Memorial Day  
May 31 |  
Teacher Prep Day  
(no students)  
June 14 |