



## Wylie ISD Curriculum

		• Not consumed and reusable
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<b>Subject Area</b>	Science	<b>Bundle #:</b>	2
<b>Grade/Level</b>	Biology	<b>Weeks:</b>	4-6

### Overview

TEKS - Texas Knowledge & Skills		
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p><b>4 The student knows that cells are the basic structures of all living things and have specialized parts that perform specific functions, and that viruses are different from cells and have different properties and functions</b></p> <p><b>9 The student knows metabolic processes and energy transfers that occur in living organisms.</b></p> <p><b>11 The student knows that organisms maintain homeostasis.</b></p>	<p><b>4A</b> Identify the parts of prokaryotic and eukaryotic cells.</p> <p><b>4B</b> Investigate and identify cellular processes.</p> <p><b>9B</b> Compare the energy flow in photosynthesis to the energy flow in cellular respiration.</p> <p><b>11A</b> Identify and describe the relationships between internal feedback mechanisms in the</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Distinguish between prokaryotic and eukaryotic cells</li> <li>• Summarize the cell theory</li> <li>• Identify and describe all cellular structures and their functions</li> <li>• Differentiate plant cells from animal cells</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Homeostasis</li> <li>• Permeability</li> <li>• Energy production (ADP &amp; ATP)</li> <li>• Transportation of molecules                             <ul style="list-style-type: none"> <li>▪ Active</li> <li>▪ Passive                                     <ul style="list-style-type: none"> <li>○ Diffusion</li> <li>○ Osmosis</li> </ul> </li> <li>▪ Facilitated diffusion</li> </ul> </li> <li>• Cellular Transport                             <ul style="list-style-type: none"> <li>○ Endocytosis</li> <li>○ Exocytosis</li> <li>○ Pinocytosis</li> </ul> </li> <li>• Function of Cellular structures</li> <li>• Synthesis of new molecules                             <ul style="list-style-type: none"> <li>○ Protein synthesis</li> <li>○ Inorganic molecules                                     <ul style="list-style-type: none"> <li>▪ HCl</li> </ul> </li> </ul> </li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Distinguish between the photosynthetic equation and the cellular respiration equation</li> <li>• Relate the light-dependent reaction and the light-independent reaction during photosynthesis to each other</li> <li>• Recognize the process of glycolysis and the role of ATP</li> <li>• Compare and contrast the processes, end products, and energy production in aerobic respiration and anaerobic respiration</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Identify and describe cellular structures and their functions</li> </ul>

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	maintenance of homeostasis.	<ul style="list-style-type: none"><li>○ Cell Membrane and Cell Wall</li><li>○ Mitochondria</li><li>○ Nucleus</li></ul>
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		<ul style="list-style-type: none"> <li>▪ Translation</li> <li>• Nucleic acids (DNA, RNA)             <ul style="list-style-type: none"> <li>▪ Function to store genetic information</li> <li>▪ Transcription</li> <li>▪ Replication</li> </ul> </li> </ul>
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<b>Subject Area</b>	Science	<b>Bundle #:</b>	4
<b>Grade/Level</b>	Biology	<b>Weeks:</b>	10-12

### Overview

TEKS - Texas Knowledge & Skills		
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p><b>5 The student knows how an organism grows and how specialized cells, tissues, and organs develop.</b></p> <p><b>6 The student knows the structures and functions of nucleic acids in the mechanisms of genetics.</b></p>	<p><b>5A</b> Compare cells from different parts of plants and animals to show specialization of structure and function.</p> <p><b>6E</b> Compare the processes of mitosis and meiosis and their significance to sexual and asexual reproduction.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Understand that sex cells undergo a specialized cell division</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Chromosome Structure             <ul style="list-style-type: none"> <li>▪ Frameshift Mutation</li> </ul> </li> <li>• Describe the process of mitosis</li> <li>• Recognize the role of mitosis in the production of somatic cells</li> <li>• Relate replication to cell division</li> <li>• Describe the process of meiosis</li> <li>• Recognize the role of meiosis in haploid gametes</li> <li>• Describe cancer as uncontrolled cell division</li> </ul>

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<b>Subject Area</b>	Science	<b>Bundle #:</b>	5
<b>Grade/Level</b>	Biology	<b>Weeks:</b>	13-15
<b>Overview</b>			
<b>TEKS - Texas Knowledge &amp; Skills</b>			
<b>Knowledge &amp; Skill Statement</b>	<b>Student Expectation</b>	<b>Student Learning Outcome Clarification</b>	
<p><b>6 The student knows the structures and functions of nucleic acids in the mechanisms of genetics.</b></p>	<p><b>6A</b> Describe components of deoxyribonucleic acid (DNA), and illustrate how information for specifying the traits of an organism is carried in the DNA.</p> <p><b>6D</b> Compare genetic variations observed in plants and animals.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Recognize the significance of nucleotide sequence in determining traits</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Describe Gregor Mendel’s work with pea plants</li> <li>• Explain Mendel’s three conclusions:               <ul style="list-style-type: none"> <li>▪ Principle of dominance</li> <li>▪ Law of segregation</li> <li>▪ Law of independent assortment</li> </ul> </li> <li>• Solve single-trait and double-trait genetic problems, using Punnett squares</li> <li>• Analyze genotypes and phenotypes               <ul style="list-style-type: none"> <li>▪ Probability and Ratio</li> </ul> </li> <li>• Solve different forms of dominance:               <ul style="list-style-type: none"> <li>▪ Codominance and Incomplete Dominance                   <ul style="list-style-type: none"> <li>○ Blood Types</li> </ul> </li> </ul> </li> </ul>	







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		<ul style="list-style-type: none"> <li>▪ Feeding type               <ul style="list-style-type: none"> <li>○ Autotroph</li> <li>○ Heterotroph</li> <li>○ Decomposers</li> </ul> </li> <li>▪ Forms of reproduction (asexual &amp; sexual)</li> <li>▪ Muticellular/Unicellular</li> </ul>
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<b>Subject Area</b>	Science	<b>Bundle #:</b>	9
<b>Grade/Level</b>	Biology	<b>Weeks:</b>	25-27

### Overview

### TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p><b>10 The student knows that, at all levels of nature, living systems are found within other living systems, each with its own boundary and limits.</b></p>	<p><b>10C</b> Analyze and identify characteristics of plant systems and subsystems.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Vascular system</li> <li>• Roots</li> <li>• Xylem</li> <li>• Phloem</li> <li>• Cuticle</li> <li>• Stoma</li> <li>• Guard cell</li> </ul>
<p><b>11 The student knows that organisms maintain homeostasis.</b></p>	<p><b>11B</b> Investigate and identify how organisms respond to external stimuli.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Plants</li> <li>• Describe how (organisms)plants respond to their environment               <ul style="list-style-type: none"> <li>▪ Light</li> <li>▪ Food</li> <li>▪ Obstacles</li> <li>▪ Temperature</li> <li>▪ Hydro</li> <li>▪ Touch</li> <li>▪ Chemicals</li> <li>▪ Gravity</li> </ul> </li> </ul>
<p><b>13 The student knows the significance of plants in the environment.</b></p>	<p><b>13A</b> Evaluate the significance of structural and physiological adaptations of plants to their environments.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Cuticle</li> <li>• Stomata</li> <li>• Seeds</li> <li>• Leaves</li> <li>• Roots</li> <li>• Vascular tissue</li> </ul>
	<p><b>13B</b> Survey and identify methods of</p>	<p>Including</p>





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		<ul style="list-style-type: none"><li>▪ Temperature</li><li>▪ Role of hormones (Fight or Flight)</li></ul>
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<p><b>11 The student knows that organisms maintain homeostasis.</b></p>	<p>body as a whole.</p> <p><b>11A</b> Identify and describe the relationships between internal feedback mechanisms in the maintenance of homeostasis</p> <p><b>11B</b> Investigate and identify how organisms respond to external stimuli.</p> <p><b>11C</b> Analyze the importance of nutrition, environmental conditions, and physical exercise on health.</p>	<ul style="list-style-type: none"> <li>• Nervous</li> <li>• Endocrine</li> <li>• Reproductive</li> <li>• Integumentary</li> <li>• Skeletal</li> <li>• Respiratory</li> <li>• Muscular</li> <li>• Excretory</li> <li>• Immune</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Positive and negative feedback systems               <ul style="list-style-type: none"> <li>▪ Change in heart rate</li> <li>▪ Osmotic balance</li> <li>▪ Body temperature</li> </ul> </li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Humans</li> <li>• Animals</li> <li>• Describe how organisms respond to their environment               <ul style="list-style-type: none"> <li>▪ Light</li> <li>▪ Food</li> <li>▪ Obstacles</li> <li>▪ Chemicals</li> <li>▪ Temperature</li> <li>▪ Hydro</li> <li>▪ Touch</li> <li>▪ Gravity</li> </ul> </li> <li>• Role of hormones (Fight or Flight)</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Analyze a food label</li> <li>• Body mass index (BMI)</li> </ul>
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<p><b>11 The student knows that organisms maintain homeostasis.</b></p> <p><b>12 The student knows that interdependence and interactions occur within an ecosystem.</b></p>	<p><b>11D</b> Summarize the role of microorganisms in maintaining and disrupting equilibrium.</p> <p><b>12A</b> Analyze the flow of energy through various cycles.</p> <p><b>12B</b> Interpret interactions among organisms exhibiting predation, parasitism, commensalism, and mutualism.</p> <p><b>12C</b> Compare variations, tolerances, and adaptations of plants and animals in different biomes.</p> <p><b>12D</b> Identify and illustrate that long-term survival of species is dependent on a resource base that may be limited.</p> <p><b>12E</b> Investigate and explain the interactions in an ecosystem.</p>	<p>Including</p> <ul style="list-style-type: none"> <li>• Diseases in plant and animal populations (bacterial &amp; viral) <ul style="list-style-type: none"> <li>▪ Pathogen</li> </ul> </li> <li>• Decaying process in an ecosystem</li> <li>• Bacterial role in digestion</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Carbon</li> <li>• Oxygen</li> <li>• Nitrogen</li> <li>• Water cycles</li> <li>• the flow of energy in ecosystems <ul style="list-style-type: none"> <li>▪ Energy web</li> <li>▪ Food web</li> </ul> </li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Symbiotic relationships <ul style="list-style-type: none"> <li>▪ Commensalisms</li> <li>▪ Mutualism</li> <li>▪ Predation</li> <li>▪ Parasitism</li> </ul> </li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Speciation</li> <li>• Niche</li> <li>• Ecosystem</li> <li>• Extinction</li> <li>• Abiotic and biotic factors</li> <li>• Natural selection</li> <li>• Physiological</li> <li>• Morphological</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Describe the effect of carrying capacity (K) on a population of organisms. <ul style="list-style-type: none"> <li>▪ Food</li> <li>▪ Water</li> <li>▪ Shelter</li> <li>▪ Space</li> </ul> </li> <li>• Graphs of populations (Interpret)</li> </ul> <p>Including</p> <ul style="list-style-type: none"> <li>• Food chains</li> <li>• Food webs</li> <li>• Food pyramids (ecological pyramids)</li> <li>• Autotrophs (producers)</li> <li>• Heterotrophs (consumers)</li> <li>• Herbivores</li> <li>• Carnivores</li> <li>• Omnivores</li> <li>• Decomposer</li> <li>• Solar energy drives ecosystems</li> <li>• Biological magnification (introduction of new species into an existing ecosystem)</li> </ul>
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