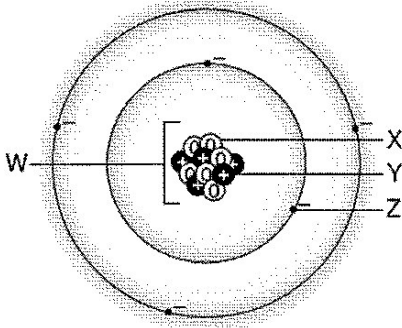


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Subject Area	Science	Bundle #:	1
Grade/Level	8	Weeks:	1-3
Overview			
TEKS - Texas Knowledge & Skills			
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification	
<p>8.8 The student knows that matter is composed of atoms.</p> <p>8.9 The student knows that substances have chemical and physical properties.</p>	<p>8.8A Describe the structure and parts of an atom.</p> <p>8.8B Identify the properties of an atom.</p>	<p>Including</p> <p>Including nucleus</p> <ul style="list-style-type: none"> • Protons (positive charge, 1 atomic mass unit) • Neutrons (no charge, 1 atomic mass unit) <p>Including electron cloud</p> <ul style="list-style-type: none"> • Nucleus • Electrons (negative charge, 0 atomic mass unit) • Valence electrons • Outer shell/Electron shell/Orbital shell <p>Diagrams</p> <ul style="list-style-type: none"> • Create and interpret diagrams to differentiate between different atoms <p style="text-align: center;">Boron Atom</p>  <p>Including</p> <ul style="list-style-type: none"> • Identify the differences between the following: <ul style="list-style-type: none"> ▪ Elements ▪ Compounds ▪ Molecules 	

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	<p>8.9A Demonstrate that substances may react chemically to form new substances.</p> <p>8.9B Interpret information on the periodic table to understand that physical properties are used to group elements.</p>	<ul style="list-style-type: none"> ▪ Atoms <p>Students should use information from the periodic table as well as diagrams and pictures of atoms to do the following:</p> <ul style="list-style-type: none"> • describe the structure of atoms including the masses, electrical charges and locations of protons and neutrons in the nucleus and electrons in the electron cloud; <p>identify that protons determine an element’s identity, and valence electrons determine its chemical properties including reactivity;</p> <ul style="list-style-type: none"> • Stable atom = neutral atom <p>Including</p> <ul style="list-style-type: none"> • Recognize that formulas and equations express what happens in a chemical reaction • Observe and recognize signs of chemical change: <ul style="list-style-type: none"> ▪ Color change ▪ Energy change ▪ Odor change ▪ New substance produced <ul style="list-style-type: none"> ○ Precipitate formation ○ Release of a gas <ul style="list-style-type: none"> ▪ Odor ▪ Bubbling <p>Including</p> <ul style="list-style-type: none"> • The horizontal rows on the Periodic Table as periods • The vertical columns on the Periodic Table as groups or families with similar properties. • Explain how elements are classified in the
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		Periodic Table as <ul style="list-style-type: none"> ▪ Metals ▪ Nonmetals ▪ Metalloids
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Subject Area	Science	Bundle #:	2
Grade/Level	8	Weeks:	4-6

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p>8.8 The student knows that matter is composed of atoms.</p> <p>8.9 The student knows that substances have chemical and physical properties.</p>	<p>8.8B Identify the properties of an atom.</p> <p>8.9A Demonstrate that substances may react chemically to form new substances.</p> <p>8.9C Recognize the importance of formulas and equations to express what happens in a chemical reaction.</p>	<p>Including</p> <ul style="list-style-type: none"> • Electrical charge <ul style="list-style-type: none"> ▪ Ions • Atomic number and atomic mass relationship to atomic particles <ul style="list-style-type: none"> ▪ Isotopes • Law of conservation of mass <p>Including</p> <ul style="list-style-type: none"> • Recognize that formulas and equations express what happens in a chemical reaction • Observe and recognize signs of chemical change: <ul style="list-style-type: none"> ▪ Color change ▪ Energy change ▪ Odor change ▪ New substance produced <ul style="list-style-type: none"> ○ Precipitate formation ○ Release of a gas <ul style="list-style-type: none"> ▪ Odor ▪ Bubbling • Differentiate between <ul style="list-style-type: none"> ▪ Subscripts ▪ Coefficients ▪ Chemical properties of matter <p>Including</p> <ul style="list-style-type: none"> • Use formulas to represent a chemical reaction <ul style="list-style-type: none"> ▪ Subscript ▪ Coefficient ▪ Yields ▪ Product ▪ Reactant • Classify substances as <ul style="list-style-type: none"> ▪ Elements ▪ Compounds ▪ Mixtures • Law of conservation of mass • Recognize balanced chemical equations <ul style="list-style-type: none"> • Recognize the uses of the symbols in a chemical equation • Identify types of reactions

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		<ul style="list-style-type: none"> • Synthesis • Replacement ▪ Decomposition
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Subject Area	Science	Bundle #:	3
Grade/Level	8	Weeks:	7-9

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p>8.9 The student knows that substances have chemical and physical properties.</p>	<p>8.9D Identify that physical and chemical properties influence the development and application of everyday materials.</p>	<p>Including</p> <ul style="list-style-type: none"> • Physical properties <ul style="list-style-type: none"> ▪ Elasticity ▪ Porosity ▪ Hardness ▪ Conductivity ▪ Solubility ▪ Density ▪ Viscosity ▪ Luster • Chemical Properties <ul style="list-style-type: none"> ▪ Reactivity ▪ Corrosiveness ▪ Flammability ▪ Oxidation
<p>8.10 The student knows that complex interactions occur between matter and energy.</p>	<p>8.10A Illustrate interactions between matter and energy.</p>	<p>Including</p> <ul style="list-style-type: none"> • Potential vs. Kinetic Energy <ul style="list-style-type: none"> ○ Identify potential energy ○ Identify kinetic energy ○ Multiple conversions between potential and kinetic energy • Specific heat • Relationship between heat and pressure • States of Matter <ul style="list-style-type: none"> ▪ Temperature and kinetic energy relationship • Thermal energy • Temperature • Law of conservation of matter and energy <p>Illustrate by drawing, physical demonstration, technology products, etc.</p>
	<p>8.10C Identify and demonstrate that loss or gain of heat energy occurs during exothermic and endothermic chemical reactions.</p>	<p>Including</p> <ul style="list-style-type: none"> • Endothermic reactions <ul style="list-style-type: none"> ▪ Energy is absorbed into the system <ul style="list-style-type: none"> ○ Photosynthesis ○ Cold pack • Exothermic reactions <ul style="list-style-type: none"> ▪ Energy is released from the system <ul style="list-style-type: none"> ○ Candle burning • Observe and recognize signs of a chemical change:

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		<ul style="list-style-type: none"> New substance produced Release of a gas Color change Precipitate formation Energy change Odor change
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Subject Area	Science	Bundle #:	4
Grade/Level	8	Weeks:	10-12

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p>8.7 The student knows that there is a relationship between force and motion.</p>	<p>8.7A Demonstrate how unbalanced forces cause changes in the speed or direction of an object's motion.</p> <p>8.7B Recognize that waves are generated and can travel through different media.</p>	<p>Including</p> <ul style="list-style-type: none"> • Speed <ul style="list-style-type: none"> ▪ Speed=Distance/Time • Force <ul style="list-style-type: none"> ▪ Force=Mass X Acceleration • Gravity <ul style="list-style-type: none"> ▪ Weight=Mass X Gravity • Acceleration <ul style="list-style-type: none"> ▪ Acceleration=Force/Mass • Inertia • Friction • Application of Newton's Three Laws • Students should have opportunities to interpret motion graphs and use information derived from the graphs to answer questions related to the motion of an object. They should have opportunities in the lab to create motion graphs from data that they collect and use the graph to support conclusions related to the motion. **Formula Chart should be used at all times!! <p>•</p> <p>Including</p> <ul style="list-style-type: none"> • Properties of Waves <ul style="list-style-type: none"> ▪ Amplitude ▪ Frequency ▪ Wavelength ▪ Crest ▪ Trough • Mechanical Waves <ul style="list-style-type: none"> ▪ Transverse waves <ul style="list-style-type: none"> ○ Water ▪ Longitudinal waves/ Compressional waves <ul style="list-style-type: none"> ○ Sound waves ▪ Needs a medium to travel through <ul style="list-style-type: none"> ○ Solid ○ Liquid ○ Gas • Electromagnetic <ul style="list-style-type: none"> ▪ Does not require a medium

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		<ul style="list-style-type: none"> ▪ Electromagnetic spectrum <ul style="list-style-type: none"> ○ Visible light ○ Radio ○ UV ○ X-Ray ○ Gamma ○ Infrared ○ Microwave • Behavior of waves <ul style="list-style-type: none"> ▪ Reflection ▪ Refraction ▪ Diffraction ▪ Interference <ul style="list-style-type: none"> ○ Destructive ○ Constructive
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Subject Area	Science	Bundle #:	5
Grade/Level	8	Weeks:	13-15
Overview			
TEKS - Texas Knowledge & Skills			
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification	
<p>8.12 The student knows that cycles exist in Earth systems.</p> <p>8.14 The student knows that natural events and human activities can alter Earth systems.</p>	<p>8.12A Analyze and predict the sequence of events in the lunar and rock cycles.</p> <p>8.14A Predict land features resulting from gradual changes.</p>	<p>Including</p> <ul style="list-style-type: none"> • Analyze the processes in the rock cycle <ul style="list-style-type: none"> ▪ Weathering <ul style="list-style-type: none"> ▪ Chemical vs. Physical ▪ Erosion ▪ Deposition ▪ Compaction ▪ Cementation ▪ Sedimentation ▪ Heat ▪ Pressure <p>Predictions should be written in the student’s journal. “If this happens/occurs then _____will occur. Discussions</p> <p>Including</p> <ul style="list-style-type: none"> • Topographical Maps • Beach erosion • Land subsidence • Plate tectonics 	

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		<ul style="list-style-type: none"> ▪ Mountain building <ul style="list-style-type: none"> ○ Volcanoes ▪ Sea floor spreading ▪ Boundaries <ul style="list-style-type: none"> ○ Convergent ○ Divergent ○ Transform ○ Subduction zone ▪ Continental drift <ul style="list-style-type: none"> ○ Alfred Wegener • Use pictures or models as shown in the DC school clarification
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Subject Area	Science	Bundle #:	6
Grade/Level	8	Weeks:	16-18

Overview

TEKS - Texas Knowledge & Skills		
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
8.10 The student knows that complex interactions occur between matter and energy.	8.10B Describe interactions among solar energy, weather, and ocean systems.	Including <ul style="list-style-type: none"> • Identify the role of oceans, the sun, and the weather in the water cycle <ul style="list-style-type: none"> ▪ Radiation ▪ Convection ▪ Conduction ▪ Climatic changes ▪ Air and water currents Students need to have opportunities to observe, predict and conclude roles systems play on Earth.
8.12 The student knows that cycles exist in Earth systems.	8.12B Relate the role of oceans to climatic changes.	Including <ul style="list-style-type: none"> • Hurricanes • Rainfall patterns

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	scientific theories of the origin of the universe.	<ul style="list-style-type: none"> • The Big Bang Theory
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Subject Area	Science	Bundle #:	8
Grade/Level	8	Weeks:	22-24
Overview			

TEKS - Texas Knowledge & Skills		
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
<p>8.11 The student knows that traits of species can change through generations and that the instructions for traits are contained in the genetic material of the organisms.</p>	<p>8.11A Identify that change in environmental conditions can affect the survival of individuals and of species.</p>	<p>Including</p> <ul style="list-style-type: none"> • Environmental conditions <ul style="list-style-type: none"> ▪ Natural events <ul style="list-style-type: none"> ○ Climate ▪ Competition/loss of habitat/food <ul style="list-style-type: none"> ○ Predation ▪ Human impact • Only species (populations) adapt <ul style="list-style-type: none"> ▪ Natural selection ▪ Mutations ▪ Evolution <p>Students should be familiar with the idea that the type of traits an organism displays has direct correlation to the types of ecosystem that is best for the organism’s survival. Students should be able to describe the best ecosystem for an organism and the traits.</p>
<p>8.6 The student knows that interdependence occurs among living systems.</p>	<p>8.11B Distinguish between inherited traits and other characteristics that result from</p>	<p>Including</p> <ul style="list-style-type: none"> • Natural selection (survival of the fittest)

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	<p>interactions with the environment</p> <p>8.6C Describe interactions within ecosystems.</p>	<ul style="list-style-type: none"> ▪ Adaptations ▪ Variations • Learned Behaviors • Inherent Behaviors (innate) <p>Students should understand that inherited traits can change over generations due to genetic variations and survival of the fittest. Learned traits are developed due to interactions with the environment. Students should be able to distinguish between learned and inherited traits. Traits and behaviors work together to function as a living thing.</p> <p>Including</p> <ul style="list-style-type: none"> • Predator-prey • Mutualism • Commensalism • Parasitism • Compare and contrast: <ul style="list-style-type: none"> ▪ Producers <ul style="list-style-type: none"> ○ Autotrophs ▪ Consumers <ul style="list-style-type: none"> ○ Heterotrophs ○ Introduce primary consumers ○ Introduce secondary consumers ▪ Decomposers • Analyze the various types of relationships in a food chain or web <ul style="list-style-type: none"> ▪ 10% rule
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Subject Area	Science	Bundle #:	9
Grade/Level	8	Weeks:	25-27

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
8.11 The student knows that traits of species can change through generations and that the instructions for traits are contained	8.11B Distinguish between inherited traits and other characteristics that result from interactions with the environment.	Including <ul style="list-style-type: none"> • Genotype • Phenotype

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<p>in the genetic material of the organisms.</p>	<p>8.11C Make predictions about possible outcomes of various genetic combinations of inherited characteristics.</p>	<p>Including</p> <ul style="list-style-type: none">• Draw Punnett squares and use them to predict phenotype and genotype of monohybrid crosses.<ul style="list-style-type: none">▪ Probability▪ Ratios/Percentages• Distinguish between dominant and recessive traits• Distinguish between homozygous/pure and heterozygous/hybrid<ul style="list-style-type: none">▪ Homozygous dominant▪ Homozygous recessive▪ Heterozygous• Distinguish between incomplete dominance and co-dominance• Identify some characteristics that can be passed on (inherited) from parents to offspring• Pedigree
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Subject Area	Science	Bundle #:	10
Grade/Level	8	Weeks:	28-30
Overview			
TEKS - Texas Knowledge & Skills			
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification	
<p>8.6 The student knows that interdependence occurs among living systems.</p>	<p>8.6A Describe interactions among systems in the human organism.</p> <p>8.6B Identify feedback mechanisms that maintain equilibrium of systems.</p>	<p>Including</p> <ul style="list-style-type: none"> • Interactions among systems to regulate metabolism and to maintain homeostasis. <ul style="list-style-type: none"> ▪ Respiratory/circulatory ▪ Endocrine/muscular ▪ Digestive/excretory • Interactions among systems to maintain balance or structure. <ul style="list-style-type: none"> ▪ Skeletal ▪ Muscular ▪ Nervous <p>Including</p> <ul style="list-style-type: none"> • Negative feedback mechanisms <ul style="list-style-type: none"> ▪ To maintain body temperature <ul style="list-style-type: none"> ○ Shivering ○ Sweating ○ Panting ▪ Maintaining blood sugar levels ▪ Glucose levels controlled with insulin ▪ Regulate breathing - respiration ▪ Regulate heart rate ▪ Regulate hunger ▪ Regulate thirst ▪ Chemical reactions • Positive Feedback mechanisms <ul style="list-style-type: none"> ▪ Blood clotting ▪ Changes during childbirth 	

For use by faculty and staff of Wylie Independent School District, Wylie, TX

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Subject Area	Science	Bundle #:	11
Grade/Level	8	Weeks:	31-33
Overview			
TEKS - Texas Knowledge & Skills			
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification	
8.12 The student knows that cycles exist in Earth systems.	8.12C Predict the results of modifying the Earth's nitrogen, water, and carbon cycles.	Including <ul style="list-style-type: none"> • Analyze & Predict changes and interactions in: <ul style="list-style-type: none"> ○ Carbon Cycle ○ Nitrogen Cycle ○ Water Cycle • Predict how modifications in these cycles would affect human or plant life <ul style="list-style-type: none"> ▪ Acid rain ▪ Ozone layer depletion ▪ Greenhouse effect <ul style="list-style-type: none"> ○ Melting of the Polar Ice Caps • Explain how humans are currently affecting these cycles <ul style="list-style-type: none"> ▪ Pollution 	

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Subject Area	Science	Bundle #:	12
Grade/Level	8	Weeks:	34-36
Overview			
TEKS - Texas Knowledge & Skills			
Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification	
8.14 The student knows that natural events and human activities can alter Earth systems.	8.14B Analyze how natural or human events may have contributed to the extinction of some species. 8.14C Describe how human activities have modified soil, water, and air quality.	Including <ul style="list-style-type: none">• Natural events<ul style="list-style-type: none">▪ Flooding▪ Drought▪ Volcanoes▪ Earthquakes▪ Climatic change▪ Meteorites▪ Wildfires• Human events<ul style="list-style-type: none">▪ Encroachment▪ Over hunting▪ Pollution Including <ul style="list-style-type: none">• Water pollution• Soil pollution• Air pollution• Low level ozone	