Subject Area	Science	**Bundle #:**	1
Grade/Level	6	**Weeks:**	1-3

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.8
The student knows that complex interactions occur between matter and energy.
	6.8 A
	Define matter and energy
		6.8 A
		Including:
		• Matter is anything that has mass and takes up space.
		  ○ Solid
		  ○ Liquid
		  ○ Gas
		• Composition of Matter
		  ○ Abiotic (non-living) matter is made of atoms
		  ○ Biotic (living) matter is made of cells
		• Law of Conservation of Mass

Subject Area	Science	**Bundle #:**	2
Grade/Level	6	**Weeks:**	4-6

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.7
The student knows that substances have physical and chemical properties.
	6.7A
	Demonstrate that new substances can be made when two or more substances are chemically combined and compare the properties of the new substances to the original substances.
		6.7 A
		Including:
		• Examples:
		  ○ Rust
		  ○ Tarnish
		  ○ Oxidation
		  ○ Ash
		• Evidence of a chemical reaction
		  ○ Color change
		  ○ Release of gas
		  ○ Release of light/heat
		  ▪ Exothermic reactions release heat
		  ▪ Endothermic reactions absorb heat

	6.7B
	Classify substances by their physical and chemical properties.
		6.7B
		Including:
		• Physical properties
		  ○ Color
		  ○ Shape
		  ○ Texture
		  ○ Density
		  ▪ Density=Mass/Volume
		  ○ States of matter
		  ▪ Solid
		  ▪ Liquid
		  ▪ Gas
		• Chemical properties
		  ○ Reactivity – reaction that produces a new substance
		  ○ Flammability (burns)
		  ○ Oxidation
		  ▪ Rust
		  ▪ Tarnish

Subject Area	Science	**Bundle #:**	3
Grade/Level	6	**Weeks:**	7-9

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.8 The student knows that complex interactions occur between matter and energy.	**6.8A** Define energy.	**6.8A**
		Including:
		• Energy is the ability to do work (energy has the ability to cause change).
		  o Mechanical (the sum of potential and kinetic energy)
		  ▪ Potential
		  ▪ Kinetic
		  o Sound
		  o Electrical
		  o Thermal
		  o Light
		  ▪ Electromagnetic
		  ▪ Solar
		  o Chemical
		  o Nuclear

6.9 The student knows that obtaining, transforming, and distributing energy affects the environment.	**6.9 A** Identify energy transformations occurring during the production of energy for human use.	**6.9 A**
		Including:
		• Law of conservation of energy
		  o Electrical energy to heat energy
		  o Heat energy to electrical energy
		• Recognize that heat is often one of the products during an energy conversion

	6.9 B Compare methods used for transforming energy in devices.	**6.9 B** Including: • Water heaters • Cooling systems • Hydroelectric power plants • Wind power plants • Burning fossil fuels o Greenhouse effect • Solar Cells • Generators • Turbines • Recognize that some systems transform energy more efficiently than others • Controlling nuclear reactions

	6.9 C
	Research and describe energy types from their source to their use and determine if the type is renewable, non-renewable, or inexhaustible.
		6.9 C
		Including:
		• Non-renewable
		  o Fossil fuels
		• Inexhaustible and renewable
		  o Solar
		  o Wind
		  o Hydroelectric

		○ Geothermal

Subject Area	Science	**Bundle #:**	4
Grade/Level	6	**Weeks:**	10-12

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
6.6 **The student knows that there is a relationship between force and motion.**	**6.6 A** Identify and describe the changes in position, direction of motion, and speed of an object when acted upon by force.	**6.6 A** Including: • Velocity • Acceleration • Distance • Displacement • Speed • Newton's 3 laws of motion • Inertia • Reference point

	6.6 B
	Demonstrate that changes in motion can be measured and graphically represented.
		6.6 B
		Including:
		• Graph: Speed
		  ○ Constant speed
		  ○ Changing speed
		• Speed=distance/time
		  ○ Average speed
		• Velocity
		  ○ Speed and direction
		• Acceleration
		  ○ Initial speed = 0
		  ○ Final speed = average speed
		  ○ (fs – is)/t

Subject Area	Science	**Bundle #:**	5
Grade/Level	6	**Weeks:**	13-15

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.5 The student knows that systems may combine with other systems to form a larger system.	**6.5 A** Identify and describe a system that results from the combination of two or more systems.	**6.5 A**
		Including:
		• Structures
		  ○ Sediment
		  ○ Sedimentary rocks
		  ○ Igneous rocks
		  ○ Metamorphic rocks
		• Cycle
		  ○ Rock cycle
		• Processes
		  ○ Weathering
		  ○ Erosion
		  ○ Deposition
		  ○ Cementation
		  ○ Heat and pressure
		  ○ Melting

	6.5 B Describe how the properties of a system are different from the properties of its parts.	**6.5 B** Including: • The rock cycle vs. individual types of rocks

6.6 The student knows that there is a relationship between force and motion.	**6.6 C** Identify forces that shape features of the Earth.	**6.6 C**
		Including:
		• Uplifting
		• Plate tectonic theory
		• Movement of water
		• Volcanic activity
		• Ring of Fire
		• Erosion
		• Weathering
		  ○ Chemical
		  ○ Mechanical

6.14 The student knows the structures and functions of Earth systems.	**6.14 A** Summarize the rock cycle.	**6.14 A**
		Including:
		• Types of rock
		  ○ Sedimentary
		  ○ Metamorphic
		  ○ Igneous
		  ▪ Magma
		  ▪ Lava
		• Rock Cycle Processes
		  ○ Weathering
		  ○ Erosion
		  ○ Deposition
		  ○ Cementation
		  ○ Heat and pressure
		  ○ Melting

Subject Area	Science	**Bundle #:**	6
Grade/Level	6	**Weeks:**	16-18

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.8 The student knows that complex interactions occur between matter and energy.	**6.8 A** Define matter and energy.	**6.8 A**
		Including:
		• Matter is anything that has mass and takes up space.
		  ○ Review solids, liquids, and gases
		  ○ Plasma (stars)

6.13 The student knows components of our solar system.	**6.13 A** The student knows components of our solar system.	**6.13 A**
		Including:
		• Objects in space
		  ○ Sun (a star)
		  ○ Planets
		  ○ Meteorites
		  ○ Comets
		  ○ Asteroids
		  ○ Moons
		• Compare and contrast the characteristics of objects in space by:
		  ○ Location
		  ○ Size/mass
		  ○ Shape
		  ○ Density (terrestrials vs. gas giants)
		  ○ Temperature
		  ○ Atmosphere
		  ○ Number of Moons
		  ○ Gravitational Pull
		• Earth
		  ○ Seasons are caused by the tilt and rotation of Earth on its axis
		  ○ Length of day is caused by the tilt and rotation of Earth on its axis

	6.13 B Describe types of equipment and transportation needed for space travel.	**6.13 B**
		Including:
		  ○ Space shuttles
		  ○ Space probes
		  ○ Rockets
		  ○ Space station

Subject Area	Science	**Bundle #:**	7
Grade/Level	6	**Weeks:**	19-21

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.5 The student knows that systems may combine with other systems to form a larger system.	**6.5 A** Identify and describe a system that results from the combination of two or more systems.	**6.5 A**
		Including:
		• Structures
		  ○ Cells
		  ○ Tissues
		  ○ Organs
		  ○ Organ systems
		  ○ Organisms
		  ○ Populations
		• Cycles
		  ○ Life cycle
		• Processes
		  ○ Growth
		  ○ Reproduction – **only** as refers to the idea of cells duplicating, people reproducing to form
		  ○ populations, etc.

	6.5 B Describe how the properties of a system are different from the properties of its parts.	**6.5 B**
		Including:
		• Small scale
		  ○ Properties of a cell are different from the properties of the individual organelles, etc.
		• Large scale
		  ○ Properties of a population are different from the
		  ○ individual organisms that make it up.

6.10 The student knows the relationship between structure and function in living systems.	**6.10 A** Differentiate between structure and function.	**6.10 A**
		Including:
		• Main idea
		  ○ Structure = form/shape
		  ○ Function = role/job
		• Cell structure and function
		  ○ Cell membrane
		  ▪ Function protects cell
		  ▪ Structure-thin outer coating that surrounds
		  ○ Nucleus
		  ▪ Function: holds DNA-genetic material
		  ▪ Structure-circular/central
		  ○ Cilia
		  ▪ Function-provides locomotion

	6.10 B Determine that all organisms are composed of cells that carry on functions to sustain life.	▪ Structure-multiple, small hair like structures o Flagellum ▪ Function-provides locomotion ▪ Structure-singular and whip-like o Organelles ▪ Function-provides energy ▪ Structure-dual membrane with multiple folds ▪ Vacuole- ▪ Function –storage ▪ Structure-sack or bubble-like ▪ Endoplasmic reticulum- ▪ Function-performs chemical reactions that alters proteins ▪ Structure-looks like a stack of pancakes near nucleus ▪ Ribosome- ▪ Function -creates proteins ▪ Structure- small, bead-like ▪ Golgi apparatus- ▪ Function-sorts, packages and transports protein ▪ Structure – pancake-like ▪ Chloroplasts- ▪ Function -transform solar energy to food energy (sugar) ▪ Structure-bean shape and green • Plant cells differ from animal cells in structure and function o Cell walls o Chloroplasts o Large vacuoles • The shape of a cell is directly related to the function of that cell. o Nerve (long, telephone wire like to carry information) o Muscle (long, connecting fibers to pull and contract) o Red Blood (round and cup like to carry oxygen) **6.10 B** Including • Cell theory (impossible to prove where the first cell originated) o All organisms are composed of cells. o The cell is the basic unit of life in biotic (living) organisms. o Cells come from other cells by cell reproduction – no specifics necessary • Cell structure and function ▪ Cell membrane ▪ Cell wall ▪ Nuclear membrane and nucleus ▪ Cytoplasm

	6.10 C Identify how structure complements function at different levels of organization.	▪ Organelles o Mitochondria o Chloroplasts o Vacuole o Endoplasmic reticulum o Ribosomes o Golgi apparatus • Plant cells differ from animal cells in structure and function ▪ Cell walls ▪ Chloroplasts ▪ Large vacuoles • The shape of a cell is directly related to the function of that cell. ▪ Nerve (long, telephone wire like to carry information) ▪ Muscle (long, connecting fibers to pull and contract) o Red Blood (round and cup like to carry oxygen) **6.10 C** Including • Cells o Many different types of cells that complete different functions • Tissues o Different tissues form different organs - function • Organs o Lungs contain a myriad of alveoli which allow for a high rate gas exchange • Organ systems o Shape of heart and blood vessels works together to carry blood efficiently • Organisms o Adaptation o Mutations • Populations o Flock o Herd

Subject Area	Science	**Bundle #:**	8
Grade/Level	6	**Weeks:**	22-24

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification
6.11 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.	**6.11 A** Identify some changes in traits that can occur over several generations through natural occurrence and selective breeding.	**6.11 A** Including: • Adaptations o Changes in traits due to natural occurrence. ▪ Plant Ex. Cactus – survival strategies (spines vs. no spines) Ex. Leaf and flower varigations attract pollunating insects ▪ Animal Ex. Giraffes evolved longer necks Ex. Darwin and finches o Changes in traits due to selective breeding. Plant o Ex. Hybrid rose bushes Ex. Mendel and pea plants ▪ Animal Ex. Variety of dog breeds Ex. Cows bred to produce more milk (ch. 14 sec 2 figure 16)
6.12 The student knows that the responses of organisms are caused by internal or external stimuli.	**6.11 B** Identify cells as structures containing genetic material.	**6.11 B** Including: • Cells contain genetic material in the nucleus. o Genetic material appears as nuclear chromosomes o Genes are sections of chromosomes o Genetic material is composed of DNA within the chromosomes
	6.11 C Interpret the role of genes in inheritance.	**6.11 C** Including: • Inherited traits of organisms are passed from parents to the offspring through genes. • Introduce dominant and recessive trait
	6.12 A Identify responses in organisms to internal stimuli such as hunger or thirst.	**6.12 A** Including: • Hunger • Thirst • Fever • Fear (fight or flight)
	6.12 B Identify responses in organisms to external stimuli.	**6.12 B** Including: • The presence or absence of heat o Shivering o Panting/sweating o Transpiring (plants in the water cycle)

	6.12 C Identify components of an ecosystem to which organisms may respond.	• The presence of light
		  ○ Pupil dilation
		  ○ Phototrophic (plants reaction to light)
		• Reflex reactions
		  ○ Blinking
		  ○ Sneezing
		6.12 C
		Including:
		• Identify stimulus/response of an organism to the following:
		  ○ Availability of food and water (migration)
		  ○ Behavior of predators (pack hunting)
		  ○ Behavior of prey (protecting young)

Subject Area	Science	**Bundle #:**	9
Grade/Level	6	**Weeks:**	25-27

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.5 The student knows that systems may combine with other systems to form a larger system.	**6.5 A** Identify and describe a system that results from the combination of two or more systems.	**6.5 A**
		Including:
		• Identify and describe the components of ecosystems:
		  ○ Cycles
		  ▪ Carbon dioxide cycle
		  ▪ Nitrogen cycle
		  ▪ Water cycle
		  ○ Systems and Factors
		  ▪ Organism
		  ▪ Population
		  • Population Size
		  • Population Density
		  • Population Spacing
		  • Limiting Factors
		  • Carrying Capacity
		  ▪ Community
		  ▪ Ecosystem
		  ▪ Biome
		  ▪ Biosphere

	6.5 B Describe how the properties of a system are different from the properties	**6.5 B** Including:

	of its parts.	• Ecosystems
		  ○ Biotic factors
		  ▪ Organisms
		  ▪ Populations
		  ▪ Communities
		  ▪ Ecosystems
		  ▪ Biomes
		  ▪ Biosphere
		  ○ Abiotic factors
		  ▪ Water
		  ▪ Light
		  ▪ Temperature
		  ▪ Air
		  ▪ Soil

Subject Area	Science	**Bundle #:**	10
Grade/Level	6	**Weeks:**	28-30

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.8
The student knows that complex interactions occur between matter and energy.
	6.8 B
	Explain and illustrate the interactions between matter and energy in the water cycle and in the decay of biomass.
	
	6.8 C
	Describe energy flow in living systems.
		6.8 B
		Including:
		• Decay of biomass
		  ○ Decomposition
		  ○ Formation of soil in a compost bin
		  ○ Production of heat
		6.8 C
		Including:
		• Identify and describe the roles of, and relationships between producers, consumers, and decomposers
		  ○ Symbiosis
		  ▪ Mutualism
		  ▪ Commensalism
		  ▪ Parasitism
		  ○ Focus on flow of energy using arrows
		  ▪ Food chains
		  ▪ Food webs
		  ○ Producers

		○ Consumers ▪ Predator/prey ▪ Carnivore ▪ Herbivore ▪ Omnivore ○ Decomposers ▪ Bacteria/fungi ○ Scavengers ○ Define niche as the role an organism fills within its environment. • Energy pyramid ○ 10% rule – only 10% of a trophic level's energy is passed on to the next level.

Subject Area	Science	**Bundle #:**	11
Grade/Level	6	**Weeks:**	31-33

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	**Student Expectation**	**Student Learning Outcome Clarification**
6.5 The student knows that systems may combine with other systems to form a larger system.	**6.5 A** Identify and describe a system that results from the combination of two or more systems.	**6.5 A** Including: • Water cycle ○ Structures ▪ Ponds, Lakes, Oceans, etc. ▪ Clouds ○ Cycles ▪ Water cycle ○ Processes ▪ Run-off ▪ Evaporation ▪ Transpiration ▪ Condensation ▪ Precipitation
	6.5 B Describe how the properties of a system are different from the properties of its parts.	**6.5 B** Including: • Properties of the water cycle versus individual components
6.8 The student knows that complex interactions occur between matter and energy.	**6.8 B** Explain and illustrate the interactions between matter and energy in the water cycle and in the decay of biomass.	**6.8 B** Including: • Water cycle ○ Precipitation ○ Condensation ○ Evaporation ○ Transpiration
6.14 The student knows the structures and	**6.14 B** Identify relationships between	**6.14 B**

functions of Earth systems.	groundwater and surface water in a watershed.	Including:
		• Structures
		  ○ Recharge zones
		  ○ Aquifers
		  ○ Springs
		  ○ Wells
		  ○ Geysers
		  ○ Water table
		• Processes
		  ○ Water cycle
		  ○ Percolation
		  ○ Runoff
		  ○ Water pollution
		  ○ Water use and conservation
		• Characteristics
		  ○ Porosity
		  ○ Permeability

Subject Area	Science	**Bundle #:**	12
Grade/Level	6	**Weeks:**	34-36

Overview

TEKS - Texas Knowledge & Skills

Knowledge & Skill Statement	Student Expectation	Student Learning Outcome Clarification

6.14
The student knows the structures and functions of Earth systems.
	6.14 C
	Describe components of the atmosphere, including oxygen, nitrogen, and water vapor, and identify the role of atmospheric movement in weather change.
		6.14 C
		Including:
		• Components of Atmosphere
		  ○ Oxygen (21% of atmosphere)
		  ○ Nitrogen (78% of atmosphere)
		  ○ Water, Argon, etc. (2% of atmosphere)
		• Layers of the atmosphere
		  ○ Troposphere
		  ○ Stratosphere
		  ○ Mesosphere
		  ○ Ionosphere
		  ○ Thermosphere
		  ○ Exosphere
		• Earth's Weather
		  ○ Temperature
		  ○ Movement of energy
		  ○ Atmospheric pressure
		  ○ Humidity

		○ Relative humidity ○ Precipitation ○ Wind ○ Clouds • Air Masses ○ Coriolis Effect ○ Fronts (tornadoes) ○ High and low pressure centers (hurricanes) ○ Conduction and convection