



Alignment Document
State of Texas (TAKS)
And
Aventa Learning Life Science

Life Science
 2005-2007 Benchmark Blueprint

State Standard Number	State Standard Area / Description	Unit Name	Course Topic Description
1	The student will demonstrate an understanding of the nature of science.		
1.1	The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.		
1.1.A	demonstrate safe practices during field and laboratory investigations.	Life	Enrichment Activity: Chemistry of Living Things
		Heredity, Evolution, and the Diversity of Life	Enrichment Activity: How Temperature Affects Bacterial Growth
		Plants	How Vascular Plant Moves Nutrients
		Animals	Observations of a Mammal
		The Human Body	Does Digestion Begin in the Mouth?
1.2	The student uses scientific methods during field and laboratory investigations.		
1.2.A	plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;	Life	Enrichment Activity: Chemistry of Living Things
		Heredity, Evolution, and the Diversity of Life	Enrichment Activity: How Temperature Affects Bacterial Growth
		Plants	How Vascular Plant Moves Nutrients
		Animals	Observations of a Mammal



		The Human Body	Does Digestion Begin in the Mouth?
1.2.B	collect data and make measurements with precision;	Life	Enrichment Activity: Chemistry of Living Things
		Heredity, Evolution, and the Diversity of Life	Enrichment Activity: How Temperature Affects Bacterial Growth
		Plants	How Vascular Plant Moves Nutrients
		Animals	Observations of a Mammal
		The Human Body	Does Digestion Begin in the Mouth?
1.2.C	organize, analyze, evaluate, make inferences, and predict trends from data; and	Life	Enrichment Activity: Chemistry of Living Things
		Heredity, Evolution, and the Diversity of Life	Enrichment Activity: How Temperature Affects Bacterial Growth
		Plants	How Vascular Plant Moves Nutrients
		Animals	Observations of a Mammal
		The Human Body	Does Digestion Begin in the Mouth?
1.2.D	communicate valid conclusions.	Life	Enrichment Activity: Chemistry of Living Things
		Heredity, Evolution, and the Diversity of Life	Enrichment Activity: How Temperature Affects Bacterial Growth
		Plants	How Vascular Plant Moves Nutrients
		Animals	Observations of a Mammal
		The Human Body	Does Digestion Begin in the Mouth?
1.3	The student uses critical thinking and scientific problem solving to make informed decisions.		
1.3.A	analyze, review, [and critique] scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information; and		
1.3.B	draw inferences based on data related to [promotional materials for] products and services.		
2	The student will demonstrate an understanding of the organization of living systems.		



2.4	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.		
2.4.B	investigate and identify cellular processes including homeostasis, permeability, energy production, transportation of molecules, disposal of wastes, function of cellular parts, and synthesis of new molecules.	Life	The Structure of Viruses and Cells
		Life	Cell Processes
2.6	The student knows the structures and functions of nucleic acids in the mechanisms of genetics.		
2.6.A	describe components of deoxyribonucleic acid (DNA), and illustrate how information for specifying the traits of an organism is carried in the DNA;	Life	Cell Reproduction
		Heredity and Evolution	Heredity
2.6.C	identify and illustrate how changes in DNA cause mutations [and evaluate the significance of these changes]; and	Life	Cell Reproduction
2.6.D	compare genetic variations observed in plants and animals.	Heredity and Evolution	Evolution
2.8	The student knows applications of taxonomy and can identify its limitations.		
2.8.C	identify characteristics of kingdoms including monerans, protists, fungi, plants, and animals.	Diversity of Life	Classifying Living Things
2.10	The student knows that, at all levels of nature, living systems are found within other living systems, each with its own boundary and limits.		
2.10.A	interpret the functions of systems in organisms including circulatory, digestive, nervous, endocrine, reproductive, integumentary, skeletal, respiratory, muscular, excretory, and immune.	The Human Body	Bones, Muscles, and Skin
		The Human Body	Nutrients and Digestion
		The Human Body	The Circulatory System
		The Human Body	Respiration and Excretion
		The Human Body	The Nervous System and Endocrine System
		The Human Body	Reproduction and Growth
		The Human Body	Immunity



3	The student will demonstrate an understanding of the interdependence of organisms and the environment.		
3.4	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. The		
3.4.C	compare the structures and functions of viruses to cells and describe the role of viruses in causing diseases and conditions such as acquired immune deficiency syndrome, common colds, smallpox, influenza, and warts; and	Life	Viruses and Cells
3.4.D	identify and describe the role of bacteria in maintaining health such as in digestion and in causing diseases such as in streptococcus infections and diphtheria.	Diversity of Life	Bacteria
3.7	The student knows the theory of biological evolution.		
3.7.B	illustrate the results of natural selection in speciation, diversity, phylogeny, adaptation, behavior, and extinction.	Heredity and Evolution	Evolution
3.12	The student knows that interdependence and interactions occur within an ecosystem.		
3.12.B	interpret interactions among organisms exhibiting predation, parasitism, commensalism, and mutualism; and	Ecology	Life and the Environment
3.12.E	investigate and explain the interactions in an ecosystem including food chains, food webs, and food pyramids.	Ecology	Life and the Environment
3.13	The student knows the significance of plants in the environment.		
3.13.A	evaluate the significance of structural and physiological adaptations of plants to their environments.	Plants	The Seed Plant
4	The student will demonstrate an understanding of the structures and properties of matter.		
4.7	The student knows relationships exist between properties of matter and its components.		
4.7.A	investigate and identify properties of fluids including density, viscosity, and buoyancy; and		



4.7.E	classify samples of matter from everyday life as being elements, compounds, or mixtures.		
4.8	The student knows that changes in matter affect everyday life.		
4.8.A	distinguish between physical and chemical changes in matter such as oxidation, digestion, changes in states, and stages in the rock cycle; and		
4.8.C	investigate and identify the law of conservation of mass.		
4.9	The student knows how solution chemistry is a part of everyday life. The		
4.9.A	relate the structure of water to its function [as the universal solvent]; and		
4.9.D	demonstrate how various factors influence solubility including temperature, pressure, and nature of the solute and solvent.		
5	The student will demonstrate an understanding of motion, forces, and energy.		
5.4	The student knows concepts of force and motion evident in everyday life.		
5.4.A	calculate speed, momentum, acceleration, work, and power in systems such as in the human body, moving toys, and machines; and		
5.4.B	investigate and describe [applications of] Newton's laws such as in vehicle restraints, sports activities, geological processes, and satellite orbits.		
5.5	The student knows the effects of waves on everyday life.		
5.5.A	demonstrate wave types and their characteristics through a variety of activities such as modeling with ropes and coils, activating tuning forks, and interpreting data on seismic waves.		
5.6	The student knows the impact of energy transformations in everyday life.		
5.6.A	describe the law of conservation of energy;		
5.6.B	investigate and demonstrate the movement of heat through solids, liquids, and gases by convection, conduction, and radiation; and		
5.6.F	investigate and compare series and parallel circuits.		