

Science - 7th Grade (TEKS - Aligned Course Objectives)

<u>Scientific Processes</u>			
OBJ	7	1	The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices
SE	7	1A	Demonstrate safe practices during field and laboratory investigations
SE	7	1B	Make wise choices in the use and conservation of resources and the disposal or recycling of materials
OBJ	7	2	The student uses scientific inquiry methods during field and laboratory investigations
SE	7	2A	Plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting and using equipment and technology
SE	7	2B	Collect data by observing and measuring
SE	7	2C	Organize, analyze, make inferences, and predict trends from direct and indirect evidence
SE	7	2D	Communicate valid conclusions
SE	7	2E	Construct graphs, tables, maps, and charts using tools including computers to organize, examine, and evaluate data
OBJ	7	3	The student uses critical thinking and scientific problem solving to make informed decisions
SE	7	3A	Analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information
SE	7	3B	Draw inferences based on data related to promotional materials for products and services
SE	7	3C	Represent the natural world using models and identify their limitations
SE	7	3D	Evaluate the impact of research on scientific thought, society, and the environment
SE	7	3E	Connect Grade 7 science concepts with the history of science and contributions of scientists
OBJ	7	4	The student knows how to use tools and methods to conduct science inquiry
SE	7	4A	Collect, analyze, and record information to explain a phenomenon using tools including beakers, petri dishes, meter sticks, graduated cylinders, weather instruments, hot plates, dissecting equipment, test tubes, safety goggles, spring scales, balances, microscopes, telescopes, thermometers, calculators, field equipment, computers, computer probes, timing devices, magnets, and compasses
SE	7	4B	Collect and analyze information to recognize patterns such as rates of change
<u>Science Concepts</u>			
OBJ	7	5	The student knows that an equilibrium of a system may change
SE	7	5A	Describe how systems may reach an equilibrium such as when a volcano erupts
SE	7	5B	Observe and describe the role of ecological succession in maintaining an equilibrium in an ecosystem
OBJ	7	6	The student knows that there is a relationship between force and motion
SE	7	6A	Demonstrate basic relationships between force and motion using simple machines including pulleys and levers
SE	7	6B	Demonstrate that an object will remain at rest or move at a constant speed and in a straight line if it is not being subjected to an unbalanced force
SE	7	6C	Relate forces to basic processes in living organisms including the flow of blood and the emergence of seedlings
OBJ	7	7	The student knows that substances have physical and chemical properties
SE	7	7A	Identify and demonstrate everyday examples of chemical phenomena such as rusting and tarnishing of metals and burning of wood

SE	7	7B	Describe physical properties of elements and identify how they are used to position an element on the periodic table
SE	7	7C	Recognize that compounds are composed of elements
OBJ	7	8	The student knows that complex interactions occur between matter and energy
SE	7	8A	Illustrate examples of potential and kinetic energy in everyday life such as objects at rest, movement of geologic faults, and falling water
SE	7	8B	Identify that radiant energy from the Sun is transferred into chemical energy through the process of photosynthesis
OBJ	7	9	The student knows the relationship between structure and function in living systems
SE	7	9A	Identify the systems of the human organism and describe their functions
SE	7	9B	Describe how organisms maintain stable internal conditions while living in changing external environments
OBJ	7	10	The student knows that species can change through generations and that the instructions for traits are contained in the genetic material of the organisms
SE	7	10A	Identify that sexual reproduction results in more diverse offspring and asexual reproduction results in more uniform offspring
SE	7	10B	Compare traits of organisms of different species that enhance their survival and reproduction
SE	7	10C	Distinguish between dominant and recessive traits and recognize that inherited traits of an individual are contained in genetic material
OBJ	7	11	The student knows that the responses of organisms are caused by internal or external stimuli
SE	7	11A	Analyze changes in organisms such as a fever or vomiting that may result from internal stimuli
SE	7	11B	Identify responses in organisms to external stimuli found in the environment such as the presence or absence of light
OBJ	7	12	The student knows that there is a relationship between organisms and the environment
SE	7	12A	Identify components of an ecosystem
SE	7	12B	Observe and describe how organisms including producers, consumers, and decomposers live together in an environment and use existing resources
SE	7	12C	Describe how different environments support different varieties of organisms
SE	7	12D	Observe and describe the role of ecological succession in ecosystems
OBJ	7	13	The student knows components of our solar system
SE	7	13A	Identify and illustrate how the tilt of the Earth on its axis as it rotates and revolves around the Sun causes changes in seasons and the length of a day
SE	7	13B	Relate the Earth's movement and the moon's orbit to the observed cyclical phases of the moon
OBJ	7	14	The student knows that natural events and human activity can alter Earth systems
SE	7	14A	Describe and predict the impact of different catastrophic events on the Earth
SE	7	14B	Analyze effects of regional erosional deposition and weathering
SE	7	14C	Make inferences and draw conclusions about effects of human activity on Earth's renewable, non-renewable, and inexhaustible resources