Gateways to Science STAAR Edition, Grade 7
TEKS Science Concepts—Lesson Checklist

TEKS		Lessons
Matter and Energy		
7.5A	Recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis	4.3 Energy Transformation through Photosynthesis
7.5B	Demonstrate and explain the cycling of matter within living systems such as in the decay of biomass in a compost bin	2.7 Cycling of Matter
7.5C	Diagram the flow of energy through living systems, including food chains, food webs, and energy pyramids	2.5 Flow of Energy
Matter and Energy		
7.6A	Identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur	5.2 Breakdown of Organic Molecules
7.6B	Distinguish between physical and chemical changes in matter in the digestive system	5.1 Physical and Chemical Changes in Digestion
7.6C	Recognize how large molecules are broken down into smaller molecules such as carbohydrates can be broken down into sugars	5.2 Breakdown of Organic Molecules
Force, Motion, and Energy		
7.7A	Contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still	5.4 Work/Skeletal and Muscular Systems
7.7B	Illustrate the transformation of energy within an organism such as the transfer from chemical energy to heat and thermal energy in digestion	5.2 Breakdown of Organic Molecules
7.7C	Demonstrate and illustrate forces that affect motion in everyday life such as emergence of seedlings, turgor pressure, and geotropism	4.3 Energy Transformation through Photosynthesis 3.4 Ecological Succession
Earth and Space		
7.8A	Predict and describe how different types of catastrophic events impact ecosystems such as floods, hurricanes, or tornadoes	3.1 Catastrophic Events
7.8B	Analyze the effects of weathering, erosion, and deposition on the environment in ecoregions of Texas	3.2 Weathering, Erosion, and Deposition
7.8C	Model the effects of human activity on groundwater and surface water in a watershed	3.3 Groundwater and Surface Water
Earth and Space		
7.9A	Analyze the characteristics of objects in our solar system that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere	2.1 What Allows Life to Exist?
7.9B	Identify the accommodations, considering the characteristics of our solar system, that enabled manned space exploration	5.8 Humans and Space Exploration

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Organisms and Environments		
7.10A	Observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms	2.3 Schoolyard Microhabitat 2.4 Environments and Organisms
7.10B	Describe how biodiversity contributes to the sustainability of an ecosystem	2.6 Biodiversity
7.10C	Observe, record, and describe the role of ecological succession such as in a microhabitat of a garden with weeds	3.4 Ecological Succession
Organisms and Environments		
7.11A	Examine organisms or their structures such as insects or leaves and use dichotomous keys for identification	2.2 Dichotomous Key
7.11B	Explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb	2.8 Variations within Populations
7.11C	Identify some changes in genetic traits that have occurred over several generations through natural selection and selective breeding such as the Galapagos Medium Ground Finch (Geospiza fortis) or domestic animals	2.9 Natural Selection 4.8 Selective Breeding
Organisms and Environments		
7.12A	Investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants	4.3 Energy Transformation through Photosynthesis 5.7 Internal Structures
7.12B	Identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems	5.1 Physical and Chemical Changes in Digestion 5.3 Circulatory and Respiratory Systems 5.4 Work/Skeletal and Muscular Systems 5.5 Maintaining Balance
7.12C	Recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms	5.6 Levels of Organization
7.12D	Differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole	4.2 Plant and Animal Cells 4.1 Cells
7.12E	Compare the functions of a cell to the functions of organisms such as waste removal	4.1 Cells 5.6 Levels of Organization
7.12F	Recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life	4.1 Cells

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Organisms and Environments		
7.13A	Investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight	2.8 Variations within Populations 3.4 Ecological Succession 5.5 Maintaining Balance
7.13B	Describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance	5.5 Maintaining Balance
Organisms and Environments		
7.14A	Define heredity as the passage of genetic instructions from one generation to the next generation	4.5 Inherited Traits 4.6 Understanding Traits and Genes
7.14B	Compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction	4.4 Reproduction in Organisms 4.7 Diversity of Offspring
7.14C	Recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus	4.5 Inherited Traits 4.8 Selective Breeding