

7th grade Science Scope & Sequence

1 st Six Weeks	2 nd Six Weeks
<ul style="list-style-type: none"> ❖ Unit 0: The First Five Days (5 days) Aug. 14- Aug. 20 https://casel.org/wp-content/uploads/2017/01/Competencies.pdf ❖ Big Ideas: Develop classroom culture, building community, and establish rules and procedures <ul style="list-style-type: none"> ➤ Self-Awareness ➤ Self-Management ➤ Social Awareness ➤ Relationship Skills ➤ Responsible Decision-M ❖ Unit 1: Structure and function of Cells , Human Body Systems, (19 days) Aug. 21- Sept 19 <ul style="list-style-type: none"> ➤ Big Ideas: <ul style="list-style-type: none"> ▪ The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function ▪ At each level of structure, the interactions among the systems become more complex and more functions become possible. ▪ The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function ▪ Plant cells differ from animal cells in structure and function. ▪ Organisms require structures to meet their needs for obtaining, transforming, transporting, and removing the matter and energy used to sustain the organism, while cells have organelles to perform these functions ▪ Cells may be organisms that function independently or specialize to form tissues in organisms. ➤ Important Concepts: <ul style="list-style-type: none"> ▪ identify the main functions of the systems of the human organism, including circulatory, respiratory, skeletal, muscular, digestive, 	<ul style="list-style-type: none"> ❖ Unit 2: Stimulus & Response, Matter and Energy within an Organism (24 days) Sept 24- Nov. 1 <ul style="list-style-type: none"> ➤ Big Ideas: <ul style="list-style-type: none"> ▪ The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. ▪ Organisms respond to external stimuli found in the environment such as phototropism and fight or flight ▪ The student knows that interactions occur between matter and energy ▪ Plants absorb radiant energy and use it to power chemical reactions that form new bonds between the elements in carbon dioxide and water making glucose and releasing (diatomic) oxygen gas. ➤ Important Concepts: <ul style="list-style-type: none"> ▪ Illustrate the transformation of energy within an organism such as the transfer from chemical energy to thermal energy ▪ Cellular respiration as an energy transformation process; connect photosynthesis to cellular respiration as storing energy in chemical form and then releasing it into mechanical that transforms into thermal energy. . ▪ Behavioral adaptations include responses to external stimuli that enhance the likelihood of survival ▪ Plant Tropisms (e.g.: phototropism, geotropism, hydrotropism, thigmotropism) ▪ Plant Responses to internal stimuli Wilting from lack of water (review turgor pressure from cells unit), circadian rhythms continue without external stimuli in response to hormones, hormones that cause growth

7th grade Science Scope & Sequence

<p>excretory, reproductive, integumentary, nervous, and endocrine system</p> <ul style="list-style-type: none"> ▪ recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms <p>➤ Readiness TEKS: 7.12D</p> <p>➤ Supporting TEKS: 7.12C, 7.12F, 7.12B, 7.12E</p>	<ul style="list-style-type: none"> ▪ Food chains show the path of food energy from the sun to the producer to a series of consumers in an ecosystem, the diagram with arrows shows energy flow ▪ Energy pyramids show that only 10% of the energy stored by producers becomes part of the biomass in the bodies of the first level consumers <p>➤ Readiness TEKS: 7.6A, 7.7A</p> <p>➤ Supporting TEKS: 7.13A, 7.13B, 7.7B</p>
3rd Six Weeks	4th Six Weeks
<p>❖ Unit 3 Genetics, Variation within Species (24 days) Nov. 6- Dec. 19</p> <p>➤ Big Ideas:</p> <ul style="list-style-type: none"> ▪ The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. ▪ The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material ▪ Inherited traits (characteristics) of organisms are passed from parents to the offspring through genes <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> ▪ Compare the results of uniform or diverse offspring from asexual or sexual reproduction ▪ Define heredity as the passage of genetic instructions from one generation to the next generation ▪ Describe and notate Dominant vs Recessive alleles and predict outcomes of monohybrid crosses using Punnett squares <p>➤ Readiness TEKS: 7.14B, 7.11B, 7.12A</p> <p>➤ Supporting TEKS: 7.14A, 7.14C, 7.11A, 7.11C</p>	<p>❖ Unit 4: Plant Processes, Flow of Energy in an Ecosystem (24 days) Jan. 14-Feb. 21</p> <p>➤ Big Ideas:</p> <ul style="list-style-type: none"> ▪ Radiant energy from the Sun drives much of the flow of energy through living systems due to the process of photosynthesis in producers <p>➤ Important Concepts:</p> <ul style="list-style-type: none"> ▪ Plants absorb radiant energy and use it to power chemical reactions that form new bonds between the elements in carbon dioxide and water making glucose and releasing (diatomic) oxygen gas. ▪ Food chains show the path of food energy from the sun to the producer to a series of consumers in an ecosystem, the diagram with arrows shows energy flow. ▪ Energy role of: producer/autotroph, consumer/heterotroph (including: herbivore, carnivore, omnivore), and decomposers <p>➤ Readiness TEKS: 7.5A, 7.11B, 7.12A, 7.14B, 7.5B</p> <p>➤ Supporting TEKS: 7.7B, 7.13A, 7.13B</p>

7th grade Science Scope & Sequence

5 th Six Weeks	6 th Six Weeks
<p>❖ Unit 5: Biodiversity, Catastrophic Events and Effects of Human Activity (24 days) Feb. 24- Apr. 17</p> <ul style="list-style-type: none"> ➤ Big Ideas: <ul style="list-style-type: none"> ▪ Students should make a connection between biomes and biodiversity. ▪ The student knows that there is a relationship between organisms and the environment. ▪ Biodiversity relates to the variety of species in an ecosystem not the size of the populations of organisms. ▪ The student knows that natural events and human activity can impact Earth systems ➤ Important Concepts: <ul style="list-style-type: none"> ▪ observe and describe how different environments, including microhabitats in schoolyards and biomes, support different varieties of organisms ▪ If the population of a species decreases it has less of an impact on an ecosystem if there are other species that can fulfill its niche/energy role ▪ Ecoregions of Texas are areas of Texas with distinctive regional ecological factors, including climate, vegetation, soil, water, animals, and land use. ▪ The following are catastrophic events; however, the focus of study should be the results or effects of such events on ecosystems. Flooding, forest fires, drought, tornadoes, volcanoes, hurricanes, earthquakes, tsunamis, meteorites, asteroids, drastic climate changes, such as ice age or global warming ➤ Readiness TEKS: 7.10A 7.8A ➤ Supporting TEKS: 7.10B 7.10C 7.8C 	<p>❖ Unit 6: Weathering, Erosion, Deposition, Characteristics of our Solar System, STEM Investigations (24 days) Apr. 20- Jun. 2</p> <ul style="list-style-type: none"> ➤ Big Ideas: <ul style="list-style-type: none"> ▪ Ecoregions of Texas are areas of Texas with distinctive regional ecological factors, including climate, vegetation, soil, water, animals, and land use ▪ Erosion, weathering and deposition have effects on the ecoregions of Texas ▪ Proximity of the Sun to Earth, Systems and processes for cycling matter, presence of water in liquid state, and composition of the atmosphere are characteristics of Earth that allow life to exist. ➤ Important Concepts: <ul style="list-style-type: none"> ▪ The student knows that natural events and human activity can impact Earth systems. ▪ The student knows components of our solar system ➤ Readiness TEKS: 7.9A ➤ Supporting TEKS: 7.8B 7.9B <p style="text-align: right;">Processing Standards: _____ Taught Throughout</p>

7th grade Science Scope & Sequence
