



Science – Seventh Grade 2023-24

First Quarter

Week 1, Aug 2-4 (3-day week) Physical Science Pre-Assessment Set up science journals	
Week 2, Aug 7-11 7.PS1.1 Develop and use models to illustrate the structure of atoms, including the subatomic particles with their relative positions & charge.	DCI: Atomic structure/subatomic particles CCC: Patterns SEP: Developing and using models
Week 3, Aug 14-18 7.PS1.2 Compare and contrast elemental molecules and compound molecules.	DCI: Elements and compounds CCC: Structure and function SEP: Developing and using models
Week 4, Aug 21-25 7.PS1.3 Classify matter as pure substance or mixtures based on composition.	DCI: Pure substances and mixtures CCC: Stability and change SEP: Engaging in argument from evidence
Week 5, Aug 28- Sept 1 Unit 1 Assessment (7.PS1.1-3) 7.PS1.4 Analyze and interpret chemical reactions to determine if the total number of atoms in the reactants and products support the Law of Conservation of Mass.	DCI: Law of Conservation of Mass CCC: Energy and matter SEP: Constructing explanations & designing solutions
Week 6, Sept 5-8 (4-day week) 7.PS1.4 Continued	
Week 7, Sept 11-15 7.PS1.5 Use the periodic table as a model to analyze and interpret evidence relating to physical and chemical properties to identify a sample of matter.	DCI: Using the periodic table to determine physical and chemical properties of matter CCC: Patterns SEP: Developing and using models
Week 8, Sept 19-22 (4-day week) 7.PS1.6 Create and interpret models of substances whose atoms represent the states of matter with respect to temperature and pressure.	DCI: The temperature and pressure of different states of matter CCC: Cause and effect SEP: Developing and using models
Week 9, Sept 25-29 Unit 2 Assessment (7.PS1.4-6)	
District Science Checkpoint Assessment 1	

Week 10, Oct 2-6

Life/Earth & Space Science Pre-Assessment



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Second Quarter

Week 1, Oct 16-20 7.LS1.1 Develop and construct models that identify and explain the structure and function of major cell organelles as they contribute to the life activities of the cell and organism.	DCI: The contribution of major cell organelles to life activities CCC: Structure and function SEP: Developing and using models
Week 2, Oct 23-27 7.LS1.2 Conduct an investigation to demonstrate how the cell membrane maintains homeostasis through the process of passive transport. Unit 3 Assessment (7.LS1.1-2)	DCI: Homeostasis of the cell membrane through passive transport CCC: Energy and matter SEP: Constructing explanations & designing solutions
Week 3, Oct 30-Nov 3 7.LS1.3 Evaluate evidence that cells have structural similarities and differences in organisms across kingdoms. (focus on cellular differences in Kingdoms)	DCI: Structural similarities and differences in organisms across kingdoms CCC: Energy and matter SEP: Construction explanations and designing solutions
Week 4, Nov 6-10 7.LS1.4 Diagram the hierarchical organization of multicellular organisms from cells to organism. 7.LS1.5 Explain that the body is a system comprised of subsystems that maintain equilibrium and support life through digestion, respiration, excretion, circulation, sensation (nervous and integumentary), and locomotion (musculoskeletal).	DCI: Hierarchy of multicellular organisms CCC: Systems and system models SEP: Developing and using models DCI: Organ systems' support of life and equilibrium maintenance CCC: Stability and change SEP: Constructing explanations and designing solutions

Week 5, Nov 13-17 7.LS1.5 continued Unit 4 Assessment (7.LS1.3-5)	
Week 6, Nov 20-21 (2-day week) 7.LS1.6 Develop an argument based on empirical evidence and scientific reasoning to explain how behavioral and structural adaptations in animals and plants affect the probability of survival and reproductive success.	DCI: Survival and reproductive success due to behavioral and structural adaptations of plants and animals CCC: Cause and effect SEP: Engaging in argument from evidence
Week 7, Nov 27 -Dec 1 7.LS1.7 Evaluate and communicate evidence that compares and contrasts the advantages and disadvantages of sexual and asexual reproduction. 7.LS1.8 Construct an explanation demonstrating that the function of mitosis for multicellular organisms is for growth and repair through the production of genetically identical daughter cells.	DCI: Advantages and disadvantages of sexual and asexual reproduction CCC: Cause and effect SEP: Obtaining, evaluating, and communicating information DCI: Function and result of mitosis CCC: Energy and matter SEP: Constructing explanations and designing solutions
Week 8, Dec 4-8 7.LS1.8 Continued 7.ETS2.1 Examine a problem from the medical field pertaining to biomaterials and design a solution taking into consideration the criteria, constraints, and relevant scientific principles of the problem that may limit possible solutions.	DCI: Problems involving biomaterials in the medical field CCC: Structure and function SEP: Asking questions (for science) and defining problems (for engineering)
Week 9, Dec 11-15 7.ETS2.1 Continued Unit 5 Assessment (7.LS1.6-8, ETS2.1) District Science Checkpoint Assessment 2	

Week 10, Dec 18-20 (2.5 days)

7.LS3.1 Hypothesize that the impact of structural changes to genes (i.e., mutations) located on chromosomes may result in harmful, beneficial, or neutral effects to the structure and function of the organism.

- 1. DNA/Genes/Chromosomes**
- 2. Genotype vs Phenotype**
- 3. Mutations: Benefit vs. Harm**

DCI: Harmful, beneficial, and neutral effects of structural changes to genes (i.e., mutations)

CCC: Structure and function

SEP: Developing and using models



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Third Quarter

Week 1, Jan 4-5 (2-day week) 7.LS3.1 Continued Hypothesize that the impact of structural changes to genes (i.e., mutations) located on chromosomes may result in harmful, beneficial, or neutral effects to the structure and function of the organism. 1. <i>DNA/Genes/Chromosomes</i> 2. <i>Genotype vs Phenotype</i> 3. <i>Mutations: Benefit vs. Harm</i>	DCI: Harmful, beneficial, and neutral effects of structural changes to genes (i.e., mutations) CCC: Structure and function SEP: Developing and using models
Week 2, Jan 8-12 7.LS3.1 Continued	
Week 3, Jan 16-19 (4-day week) 7.LS3.2 Distinguish between mitosis & meiosis & compare the resulting daughter cells.	DCI: Results of mitosis and meiosis CCC: Cause and effect SEP: Developing and using models
Week 4, Jan 22-26 7.LS3.3 Predict the probability of individual dominant and recessive alleles to be transmitted from each parent to offspring during sexual reproduction and represent the phenotypic and genotypic patterns using ratios.	DCI: Transmission of dominant and recessive alleles during sexual reproduction CCC: Cause and effect SEP: Using mathematics and computational thinking
Week 5, Jan 29- Feb 1 (4-day week) 7.LS3.3 Continued Unit 6 Assessment (7.LS3.1-3)	
Week 6, Feb 5-9 7.LS1.9 Construct a scientific explanation based on compiled evidence for the processes of photosynthesis, cellular respiration, and	DCI: Photosynthesis, cellular respiration, and photosynthesis CCC: Energy and matter

anaerobic respiration in the cycling of matter and flow of energy into and out of organisms.	SEP: Constructing explanations and designing solutions
Week 7, Feb 12-16 7.LS1.9 Continued	
Week 8, Feb 20-23 (4-day week) 7.LS2.1 Develop a model to depict the cycling of matter, including the flow of energy among biotic and abiotic parts of an ecosystem.	DCI: Cycling of matter, including the flow of energy among biotic and abiotic parts of an ecosystem CCC: Energy and matter SEP: Constructing explanations and designing solutions
Week 9, Feb 26-Mar 1 7.LS2.1 Continued District Science Checkpoint Assessment 3	
Week 10, Mar 4, 6-8 (4-day week) 7.ESS3.1 Graphically represent the composition of the atmosphere as a mixture of gasses and discuss the potential for atmospheric change.	DCI: Atmospheric composition and the potential for atmospheric change CCC: Structure and function SEP: Using mathematics and computational thinking



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Fourth Quarter

Week 1, Mar 18-22 7.ESS3.1 Continued	
Week 2, Mar 25-28 (4-day week) 7.ESS3.2 Engage in a scientific argument through graphing and translating data regarding human activity and climate	DCI: Human activity and climate CCC: Patterns SEP: Engaging in argument from evidence
Week 3, Apr 2-5 (4-day week) Unit 7 Assessment (7.LS1.9, 7.LS2.1, 7.ESS3.1-2) PBL/Project/Enrichment - Physical Science standards	
Week 4, Apr 8-12 PBL/Project/Enrichment - Life Science standards	
Week 5, Apr 15-19 PBL/Project/Enrichment - Earth Science standards	
Week 6, Apr 22-26 STEM PBL/Project/Enrichment	
Week 7, Apr 29-May 3 STEM PBL/Project/Enrichment	
Week 8, May 6-10 STEM PBL/Project/Enrichment	
Week 9, May 13-17 STEM PBL/Project/Enrichment	
Week 10, May 20-22 (2.5-day week) STEM PBL/Project/Enrichment	