



Science – Seventh Grade 2024-25

First Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
<p>Week 1, Aug 5-9</p> <p>Unit 1: Atoms</p> <p>7.PS1.1 Develop and use models to illustrate the structure of atoms, including the subatomic particles with their relative positions & charge.</p>	<p>DCI: Atomic structure/subatomic particles</p> <p>CCC: Patterns</p> <p>SEP: Developing and using models</p>
<p>Week 2, Aug 12-16</p> <p>7.PS1.1 Continued</p> <p>7.PS1.2 Compare and contrast elemental molecules and compound molecules.</p>	<p>DCI: Elements and compounds</p> <p>CCC: Structure and function</p> <p>SEP: Developing and using models</p>
<p>Week 3, Aug 19-23</p> <p>7.PS1.2 Continued</p> <p>7.PS1.3 Classify matter as pure substance or mixtures based on composition.</p>	<p>DCI: Pure substances and mixtures</p> <p>CCC: Stability and change</p> <p>SEP: Engaging in argument from evidence</p>
<p>Week 4, Aug 26-30</p> <p>7.PS1.3 Continued</p> <p>Unit 1 Assessment Atoms (7.PS1.1-3)</p>	
<p>Week 5, Sept 3-6 (4-day week)</p> <p>Unit 2: Matter</p> <p>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.</p>	<p>DCI: Law of Conservation of Mass</p> <p>CCC: Energy and matter</p> <p>SEP: Constructing explanations & designing solutions</p>

<p>Week 6, Sept 9-13</p> <p>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.</p>	<p>DCI: Using the periodic table to determine physical and chemical properties of matter</p> <p>CCC: Patterns</p> <p>SEP: Developing and using models</p>
<p>Week 7, Sept 16-20</p> <p>7.PS1.6 Create and interpret models of substances whose atoms represent the states of matter with respect to temperature and pressure.</p>	<p>DCI: The temperature and pressure of different states of matter</p> <p>CCC: Cause and effect</p> <p>SEP: Developing and using models</p>
<p>Week 8, Sept 23-27</p> <p>Unit 2 Assessment Matter (7.PS1.4-6)</p> <p>District Science Checkpoint Assessment 1</p>	
<p>Week 9, Sept 30-Oct 4</p> <p>Re-testing in Groups</p> <p>Data Conferences</p> <p>Begin teaching the next standard</p>	



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Second Quarter

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<p>Week 1, Oct 14-18</p> <p>Unit 3: Cell Structures</p> <p>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.</p>	<p>DCI: The contribution of major cell organelles to life activities</p> <p>CCC: Structure and function</p> <p>SEP: Developing and using models</p>
<p>Week 2, Oct 21-25</p> <p>7.LS1.2 Conduct an investigation to demonstrate how the cell membrane maintains homeostasis through the process of passive transport.</p> <p>Unit 3 Assessment Cell Structure (7.LS1.1-2)</p>	<p>DCI: Homeostasis of the cell membrane through passive transport</p> <p>CCC: Energy and matter</p> <p>SEP: Constructing explanations & designing solutions</p>
<p>Week 3, Oct 28-Nov 1</p> <p>Unit 4: Organization of Cells</p> <p>7.LS1.3 Evaluate evidence that cells have structural similarities and differences in organisms across kingdoms. <u>(focus on cellular differences in Kingdoms)</u></p>	<p>DCI: Structural similarities and differences in organisms across kingdoms</p> <p>CCC: Energy and matter</p> <p>SEP: Construction explanations and designing solutions</p>
<p>Week 4, Nov 4-8 (4-day week)</p> <p>7.LS1.4 Diagram the hierarchical organization of multicellular organisms from cells to organism.</p> <p>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).</p>	<p>DCI: Hierarchy of multicellular organisms</p> <p>CCC: Systems and system models</p> <p>SEP: Developing and using models</p> <p>DCI: Organ systems' support of life and equilibrium maintenance</p> <p>CCC: Stability and change</p> <p>SEP: Constructing explanations and designing solutions</p>

<p>Week 5, Nov 11-15 7.LS1.5 continued</p> <p>Unit 4 Assessment (7.LS1.3-5)</p>	
<p>Week 6, Nov 18-22 Unit 5: Adaptations/Reproduction 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.</p>	<p>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</p>
<p>Week 7, Nov 25-26 (2-day week) 7.LS1.7 Evaluate and communicate evidence that compares and contrasts the advantages and disadvantages of sexual and asexual reproduction.</p>	<p>DCI: Advantages and disadvantages of sexual and asexual reproduction CCC: Cause and effect SEP: Obtaining, evaluating, and communicating information</p>
<p>Week 8, Dec 2-6 7.LS1.7 continued</p> <p>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.</p>	<p>DCI: Function and result of mitosis CCC: Energy and matter SEP: Constructing explanations and designing solutions</p>
<p>Week 9, Dec 9-13 7.LS1.8 continued</p> <p>Unit 5 Assessment (7.LS1.6-8, ETS2.1)</p>	
<p>Week 10, Dec 16-20 (4.5 days) District Science Checkpoint Assessment 2</p> <p>Re-testing in Groups Data Conferences</p>	



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Third Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
Week 1, Jan 7-10 (4-day week) Unit 6: Genetics 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 2, Jan 13-17 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. <ol style="list-style-type: none">DNA/Genes/ChromosomesGenotype vs PhenotypeMutations: 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
Week 3, Jan 21-24 (4-day week) 7.LS3.2 Distinguish between mitosis & meiosis and compare the resulting daughter cells.	DCI: Results of mitosis and meiosis CCC: Cause and effect SEP: Developing and using models
Week 4, Jan 27-31 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, Feb 3-7 7.LS3.3 Continued Unit 6 Assessment (7.LS3.1-3)	

<p>Week 6, Feb 10-14</p> <p>7.ESS3.1 Graphically represent the composition of the atmosphere as a mixture of gasses and discuss the potential for atmospheric change.</p> <p>Unit 7: Cycles of Matter</p> <p>7.LS1.9 Construct a scientific explanation based on compiled evidence for the processes of photosynthesis, cellular respiration, and anaerobic respiration in the cycling of matter and flow of energy into and out of organisms.</p>	<p>DCI: Atmospheric composition and the potential for atmospheric change</p> <p>CCC: Structure and function</p> <p>SEP: Using mathematics and computational thinking</p> <p>DCI: Photosynthesis, cellular respiration, and anaerobic respiration</p> <p>CCC: Energy and matter</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 7, Feb 18-21 (4-day week)</p> <p>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.</p>	<p>DCI: Cycling of matter, including the flow of energy among biotic and abiotic parts of an ecosystem</p> <p>CCC: Energy and matter</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 8, Feb 24-28</p> <p>7.ESS3.2 Engage in a scientific argument through graphing and translating data regarding human activity and climate</p> <p>Unit 7 Assessment Assessment Cycle of Matter (7.LS1.9, 7.LS2.1, 7.ESS3.1-2)</p>	<p>DCI: Human activity and climate</p> <p>CCC: Patterns</p> <p>SEP: Engaging in argument from evidence</p>
<p>Week 9, Mar 3-7</p> <p>District Science Checkpoint Assessment 3</p> <p>Re-testing in Groups Data Conferences</p>	
<p>Quarter 4, Week 1, Mar 10-14</p> <p>PBL/Project/Enrichment - Physical Science standards</p>	



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Fourth Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
Week 2, Mar 24-28 PBL/Project/Enrichment - Life Science standards	
Week 3, Mar 31-Apr 3 (4-day week) PBL/Project/Enrichment - Earth Science standards	
Week 4, Apr 7-11 STEM PBL/Project/Enrichment	
Week 5, Apr 14-17 (4-day week) STEM PBL/Project/Enrichment	
Week 6, Apr 21-25 Earth Day April 22 STEM PBL/Project/Enrichment	
Week 7, Apr 28-May 2 STEM PBL/Project/Enrichment	
Week 8, May 5-9 STEM PBL/Project/Enrichment	
Week 9, May 12-16 STEM PBL/Project/Enrichment	
Week 10, May 19-23 (4.5-day week) STEM PBL/Project/Enrichment	