



Science – Eighth Grade 2024-25

First Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
<p>Week 1, Aug 5-9</p> <p>8.PS2.1 Design and conduct investigations depicting the relationship between magnetism and electricity in electromagnets, generators, and electrical motors, emphasizing the factors that increase or diminish the electric current and the magnetic field strength.</p> <p>8.ETS1.1 Develop a model to generate data for ongoing testing and modification of an electromagnet, a generator, and a motor such that an optimal design can be achieved.</p>	<p>DCI: Relationship between magnetism and electricity in electromagnets, generators, & electrical motors; factors that increase/decrease the electric current or magnetic field strength</p> <p>CCC: Cause and effect</p> <p>SEP: Asking questions (for science) and defining problems (for engineering)</p> <p>DCI: Electromagnetism/Electromagnetic Induction</p> <p>CCC: Structure and function</p> <p>SEP: Analyzing and interpreting data</p>
<p>Week 2, Aug 12-16</p> <p>8.PS2.1/ETS1.1 Continued</p> <p>Assessment: Electricity and Magnetism 2023 (Canvas)</p>	
<p>Week 3, Aug 19-23</p> <p>8.PS2.2 Conduct an investigation to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.</p>	<p>DCI: Non-Contact Forces: Gravitational force, electricity, and magnetism</p> <p>CCC: Cause and effect</p> <p>SEP: Planning and carrying out controlled investigations</p>

<p>Week 4, Aug 26-30</p> <p>8.PS2.3 Create a demonstration of an object in motion and describe the position, force, and direction of the object.</p>	<p>DCI: Motion maps (position, force, direction)</p> <p>CCC: Systems and system models</p> <p>SEP: Developing and using models</p>
<p>Week 5, Sept 3-6 (4-day week)</p> <p>8.PS2.4 Plan and conduct an investigation to provide evidence that the change in an object's motion depends on the sum of the forces on the object and the mass of the object.</p>	<p>DCI: Newton's Second Law of Motion</p> <p>CCC: Cause and effect</p> <p>SEP: Planning and carrying out investigations</p>
<p>Week 6, Sept 9-13</p> <p>8.PS2.4 Continued</p> <p>8.PS2.5 Evaluate and interpret that for every force exerted on an object there is an equal force exerted in the opposite direction.</p>	<p>DCI: Newton's Third Law of Motion</p> <p>CCC: Systems and system models</p> <p>SEP: Developing and using models</p>
<p>Week 7, Sept 16-20</p> <p>8.PS2.5 Continued</p> <p>Assessment: Forces and Motion 2023 (Canvas)</p>	
<p>Week 8, Sept 23-27</p> <p>District Science Checkpoint Assessment 1 (all Qtr 1 standards)</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

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
<p>Week 1, Oct 14-18</p> <p>8.PS4.1 Develop and use models to represent the basic properties of waves including frequency, amplitude, wavelength, and speed.</p>	<p>DCI: Properties of waves</p> <p>CCC: Patterns</p> <p>SEP: Using mathematics and computational thinking</p>
<p>Week 2, Oct 21-25</p> <p>8.PS4.2 Compare and contrast mechanical waves and electromagnetic waves based on refraction, reflection, transmission, absorption, and their behavior through a vacuum and/or various media.</p>	<p>DCI: Mechanical vs electromagnetic waves</p> <p>CCC: Patterns</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 3, Oct 28-Nov 1</p> <p>8.PS4.3 Evaluate the role that waves play in different communication systems.</p> <p>Assessment: Waves Test 2023 (Illuminate)</p>	<p>DCI: Digitizing information</p> <p>CCC: Structure and function</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 4, Nov 4-8 (4-day week)</p> <p>8.ESS1.1 Research, analyze, and communicate that the universe began with a period of rapid expansion using evidence from the motion of galaxies and composition of stars.</p>	<p>DCI: The universe began with a period of rapid expansion (e.g., motion of galaxies, composition of stars)</p> <p>CCC: Energy and matter</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 5, Nov 11-15</p> <p>8.ETS1.2 Research and communicate information to describe how data from technologies (telescopes, spectrosopes, satellites, and space probes) provide information about objects in the solar system and universe.</p>	<p>DCI: Technology providing dynamic views of our universe</p> <p>CCC: Scale, proportion, and quantity</p> <p>SEP: Obtaining, evaluating, and communicating information</p>

<p>Week 6, Nov 18-22</p> <p>8.ESS1.2 Explain the role of gravity in the formation of our sun and planets. Extend this explanation to address gravity's effect on the motion of celestial objects in our solar system and Earth's ocean tides.</p>	<p>DCI: Gravity's role in forming stars and planets and their motion</p> <p>CCC: Systems and system models</p> <p>SEP: Developing and using models</p>
<p>Week 7, Nov 25-26 (2-day week)</p> <p>Assessment: Space 2023 (Canvas)</p>	
<p>Week 8, Dec 2-6</p> <p>8.ESS2.2 Evaluate data collected from seismographs to create a model of Earth's structure</p>	<p>DCI: Seismographs/seismic waves</p> <p>CCC: Structure & function</p> <p>SEP: Developing and using models</p>
<p>Week 9, Dec 9-13</p> <p>8.ESS2.3 Describe the relationship between the processes and forces that create igneous, sedimentary, and metamorphic rocks.</p>	<p>DCI: Formation of igneous, sedimentary, and metamorphic rocks</p> <p>CCC: Stability and change</p> <p>SEP: Developing and using models</p>
<p>Week 10, Dec 16-20 (4.5-day week)</p> <p>District Science Checkpoint Assessment 2 (all Qtr 2 standards)</p> <p>Re-testing in Groups/Data Conferences</p>	



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Third Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
<p>Week 1, Jan 7-10 (4-day week)</p> <p>8.ESS2.4 Gather and evaluate evidence that energy from the earth's interior drives convection cycles within the asthenosphere which creates changes within the lithosphere including plate movements, plate boundaries, and sea-floor spreading</p>	<p>DCI: Earth's convection cycles within the asthenosphere results in lithospheric changes</p> <p>CCC: Energy and matter</p> <p>SEP: Developing and using models</p>
<p>Week 2, Jan 13-17</p> <p>8.ESS2.4 Continued</p> <p>Unit Assessment (8.ESS2.2-4)</p>	
<p>Week 3, Jan 21-24 (4-day week)</p> <p>8.ESS2.5 Construct a scientific explanation using data that explains the gradual process of plate tectonics accounting for A) the distribution of fossils on different continents, B) the occurrence of earthquakes, and C) continental and ocean floor features (including mountains, volcanoes, faults, and trenches).</p>	<p>DCI: Tectonic theory</p> <p>CCC: Cause and effect</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 4, Jan 27-31</p> <p>8.ESS2.5 Continued</p> <p>8.ESS3.2 Collect data, map, and describe patterns in the locations of volcanoes and earthquakes related to tectonic plate boundaries, interactions, and hotspots.</p>	<p>DCI: Relationship between tectonic theory and the location of volcanoes and earthquakes</p> <p>CCC: Patterns</p> <p>SEP: Using mathematics and computational thinking</p>
<p>Week 5, Feb 3-7 (4-day week)</p> <p>8.ESS3.2 Continued</p>	

<p>Week 6, Feb 10-14</p> <p>8.ESS3.1 Interpret data to explain that earth's mineral, fossil fuel, and groundwater resources are unevenly distributed as a result of geologic processes.</p> <p>Unit assessment (8.ESS2.5, 8.ESS3.1-2)</p>	<p>DCI: Relationship between the formation processes of earth's natural resources and their location</p> <p>CCC: Cause and effect</p> <p>SEP: Constructing explanations and designing solutions</p>
<p>Week 7, Feb 18-21 (4-day week)</p> <p>8.LS4.1 Analyze and interpret data for patterns in the fossil record that document the existence, diversity, extinction, and change in life forms throughout Earth's history</p>	<p>DCI: Evidence from fossil record</p> <p>CCC: Patterns</p> <p>SEP: Analyzing and interpreting data</p>
<p>Week 8, Feb 24-28</p> <p>8.ESS2.1 Analyze and interpret data to support the assertion that rapid or gradual geographic changes lead to drastic population changes and extinction events</p>	<p>DCI: Geographic changes that drive the processes of natural selection & adaptation</p> <p>CCC: Scale, proportion, and quantity</p> <p>SEP: Analyzing and interpreting models</p>
<p>Week 9, Mar 3-7</p> <p>8.ESS2.1 Continued</p> <p>District Science Checkpoint Assessment 3 (all Qtr 3 standards)</p> <p>Re-testing in Groups</p> <p>Data Conferences</p>	
<p>Quarter 4, Week 1, Mar 10-14</p> <p>8.LS4.2 Construct an explanation addressing similarities and differences of the anatomical structures and genetic information between extinct and extant organisms using evidence of common ancestry and patterns between taxa</p>	<p>DCI: Cladograms (evidence of common ancestry)</p> <p>CCC: Patterns</p> <p>SEP: Constructing explanations and designing solutions</p>



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Fourth Quarter

SCIENCE	THREE DIMENSIONS (DCI, CCC, SEP)
<p>Week 2, Mar 24-28</p> <p>8.LS4.3 Analyze evidence from geology, paleontology, and comparative anatomy to support that specific phenotypes within a population can increase the probability of survival of that species and lead to adaptation</p>	<p>DCI: Variability of traits within a population</p> <p>CCC: Cause and effect</p> <p>SEP: Engaging in argument from evidence</p>
<p>Week 3, Mar 31-Apr 3 (4-day week)</p> <p>8.LS4.4 Develop a scientific explanation of how natural selection plays a role in determining the survival of a species in a changing environment</p>	<p>DCI: Natural selection</p> <p>CCC: Structure and function</p> <p>SEP: Developing and using models</p>
<p>Week 4, Apr 7-11</p> <p>8.LS4.5 Obtain, evaluate, and communicate information about the technologies that have changed the way humans use artificial selection to influence the inheritance of desired traits in other organisms.</p> <p>Unit Assessment (8.LS4.1-5, 8.ESS2.1)</p>	<p>DCI: Artificial selection</p> <p>CCC: Cause and effect</p> <p>SEP: Obtaining, evaluating, and communicating information</p>
<p>Week 5, Apr 14-17 (4-day week)</p> <p>STEM PBL/Project/Enrichment</p>	
<p>Week 6, Apr 21-25</p> <p>Earth Day April 22</p> <p>STEM PBL/Project/Enrichment</p>	
<p>Week 7, Apr 28-May 2</p> <p>STEM PBL/Project/Enrichment</p>	
<p>Week 8, May 5-9</p> <p>STEM PBL/Project/Enrichment</p>	

Week 9, May 12-16 STEM PBL/Project/Enrichment	
Week 10, May 19-23 (4.5-day week) STEM PBL/Project/Enrichment	