

<b>8<sup>th</sup> Grade Science Instructional Calendar 2016</b>			
<p><b>1. Creativity and innovation:</b> Students demonstrate creative thinking, construct knowledge, and develop innovative products and processes using technology.</p> <p><b>2. Communication and collaboration:</b> Students use digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning of others.</p> <p><b>3. Research and information fluency:</b> Students apply digital tools to gather, evaluate, and use information.</p> <p><b>4. Critical thinking, problem solving, and decision making:</b> Students use critical thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources.</p> <p><b>5. Digital citizenship:</b> Students understand human, cultural, and societal issues related to technology and practice legal and ethical behavior.</p> <p><b>6. Technology Operations and Concepts:</b> Students demonstrate and sound understanding of technology concepts, systems and operations.</p>			
Quarter 1	Quarter 2	Quarter 3	Quarter 4
<p><b>Units:</b>  <b>Standard 1: Physical Science</b>                      · Forces and Motion                      · Energy                      ·</p>	<p><b>Units:</b>  <b>Standard 1: Physical Science</b>  <b>Waves</b>  <b>Conservation of mass, physical and chemical changes</b></p>	<p><b>Units:</b>                      · <b>Standard 3: Earth Systems Science</b>                      · Earth, Sun, and Moon                      · Solar System  <b>Weather, Climate</b></p>	<p><b>Units:</b>  <b>Standard 2: Life Science</b>                      · Human Activity/Impact  <b>Life Science</b>                      · Genetics and Heredity</p>
<p><b>Evidence Outcomes</b></p> <p>1.1                      a. Predict and evaluate the movement of an object by examining the forces applied to it (DOK 1-2)                      b. Use mathematical expressions to describe the movement of an object (DOK 1-2)                      c. Develop and design a</p>	<p><b>Evidence Outcomes</b></p> <p>1.4                      a. Compare and contrast different types of waves (DOK 1-2)                      b. Describe for various waves the amplitude, frequency, wavelength, and speed (DOK 1)                      c. Describe the relationship between pitch and frequency in sound (DOK</p>	<p><b>Evidence Outcomes</b></p> <p>3.4                      a. Develop, communicate, and justify an evidence-based explanation using relative positions of Earth, Moon, and Sun to explain the following natural phenomenon:                      1. Tides                      2. Eclipses of the Sun and Moon                      3. Different shapes of the</p>	<p><b>Evidence Outcomes</b></p> <p>2.1                      a. Develop, communicate, and justify an evidence-based scientific example of how humans can alter ecosystems (DOK 1-3)                      b. Analyze and interpret data about human impact on local ecosystems (DOK 1-3)                      c. Recognize and infer bias in print and digital resources while researching</p>

<p>scientific investigation to collect and analyze speed and acceleration data to determine the net forces acting on a moving object (DOK 2-4)</p> <p>1.2</p> <p>a. Gather, analyze, and interpret data to describe the different forms of energy and energy transfer (DOK 1-2)</p> <p>b. Develop a research-based analysis of different forms of energy and energy transfer (DOK 1-3)</p> <p>c. Use research-based models to describe energy transfer mechanisms, and predict amounts of energy transferred (DOK 1-2)</p>	<p>1)</p> <p>d. Develop and design a scientific investigation regarding absorption, reflection, and refraction of light (DOK 2-4)</p> <p><b>1.3</b></p> <p>a. identify the distinguishing characteristics between a chemical and a physical change (DOK 1)</p> <p>b. Gather, analyze, and interpret data on physical and chemical changes (DOK 1-2)</p> <p>c. Gather, analyze, and interpret data that show mass is conserved in a given chemical or physical change (DOK 1-2)</p> <p>d. Identify evidence that suggests that matter is always conserved in physical and chemical changes (DOK 1)</p> <p>e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate physical and chemical changes (DOK 1-2)</p>	<p>Moon as viewed from Earth</p> <p>b. Analyze and interpret data to explain why we have seasons (DOK 1-2)</p> <p>c. Use models to explain the relative motions of Earth, Moon, and Sun over time (DOK 1-2)</p> <p><b>3.3</b></p> <p>a. Construct a scale model of the solar system, and use it to explain the motion of objects in the system such a planets, Sun, Moons, asteroids, comets, and dwarf planets (DOK 2-3)</p> <p>b. Describe methods and equipment used to explore the solar system and beyond (DOK 1)</p> <p>c. Design an investigation that involves direct observation of objects in the sky, and analyze and explain results (DOK 2-4)</p> <p>d. Research, critique, and communicate scientific theories that explain how the solar system was formed (DOK 1-3)</p> <p>e. Use computer data sets and simulations to explore objects in the solar system (DOK 1-2)</p>	<p>an environmental issue (DOK 1-3)</p> <p>d. Use technology resources such as online encyclopedias, online databases, and credible websites to locate, organize, analyze, evaluate, and synthesize information about human impact on local ecosystems (DOK 1-2)</p> <p>e. Examine, evaluate, question, and ethically use information from a variety of sources and media to investigate an environmental issue (DOK 1-2)</p> <p>2.2</p> <p>a. Develop, communicate, and justify an evidence-based scientific explanation for how genetic information is passed to the next generation (DOK 1-3)</p> <p>b. Use direct and indirect observations, evidence, and data to support claims about genetic reproduction and traits of individuals (DOK 1-3)</p> <p>c. Gather, analyze, and interpret data on transmitting genetic information (DOK 1-2)</p>
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