

**PUSD Science District Instructional Guides (Date Updated: \_\_\_\_\_)**

<b>Grade Level: 6</b>		<b>Quarter 1</b>			
<b>Unit Title: Space Standards</b>		<b>Essential Questions: How does the Sun provide energy to the Earth? How can we use a scale model to replicate the Solar System?</b>			
		<b>Phenomena: NGSS Phenomena <a href="https://www.ngssphenomena.com/">https://www.ngssphenomena.com/</a></b>			
<b>Standards</b>	<b>Cross Cutting Concepts</b>	<b>Objectives (I Can)</b>	<b>Key Vocabulary</b>	<b>Resources (Activities/Lessons/Experiments)</b>	<b>Assessments</b>

<ul style="list-style-type: none"> <li>6. E2U1.7 Use ratios and proportions to analyze and interpret data related to scale, properties, and relationships among objects in our solar system.</li> <li>6.E2U1.8 to explain how constellations and other night sky patterns appear to move due to Earth's rotation and revolution.</li> <li>6.E2U1.9 Develop and use models to construct an explanation of how eclipses, moon phases, and tides occur within the Sun-Earth-Moon system.</li> <li>6.E2U1.10 Use a model to show how the tilt of Earth's axis causes variations in the length of the day and gives us rise to seasons.</li> </ul>	<ul style="list-style-type: none"> <li>Patterns</li> <li>Cause and effect</li> <li>Systems and system models</li> <li>Energy and matter</li> <li>Structure and function</li> <li>Scale and proportion and quantity</li> <li>Systems and system models</li> <li>Stability and change</li> </ul>	<ul style="list-style-type: none"> <li>I can use ratios and proportions to interpret data related to scale, properties and relationships among objects in our solar system.</li> <li>I can explain how constellations and night sky patterns appear to move due to the rotation and revolution of the Earth.</li> <li>I can develop and use models to to construct an explanation of how eclipses, moon phases and tides occur within the Sun-Earth-Moon system.</li> <li>I can use a model to show how the tilt of Earth's axis causes variations in the length of the day and gives us rise to seasons.</li> </ul>	<p>Earth Transparent Radiation Wavelength Infrared Greenhouse Effect Axis Rotation Revolution Seasons Orbit Solar System Asteroids Gravity Eclipse Tides Stars Galaxy Constellation Equinox Solstice Planet Dwarf Planet Meteor Meteorite Meteoroid Nebula White Dwarf Red Giant Comet Light Year Neutron Star Black Hole</p>	<p>Nitty Gritty Science Curriculum</p> <p>Arizona Science Center STAR Curriculum</p> <p>BetterLessons.com</p> <p>Mystery Doug Videos</p> <p>NASA Teacher Resources</p>	<p>Nitty Gritty Mini-Quizzes</p> <p>Nitty Gritty Tests</p> <p>Formative assessments created by Team.</p> <p>BetterLesson.Com assessment piece with lessons.</p>
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			Telescope Astrobiology		
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<b>Grade Level: 6</b>		<b><u>Quarter 1-2 POA/ Lesson plans</u></b>			
<b>Unit Title: Space Standards</b>		<b>Cross Cutting Concepts: Patterns; cause and effect; systems and system models; energy and matter; structure and function.</b>			
		<b>Phenomena: NGSS Phenomena <a href="https://www.ngssphenomena.com/">https://www.ngssphenomena.com/</a></b>			
<b>Standards</b>	<b>Essential Questions</b>	<b>Objectives (I Can)</b>	<b>Key Vocabulary</b>	<b>Resources (Activities/Lessons/Experiments)</b>	<b>Assessments</b>

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		<ul style="list-style-type: none"><li>I can plan and carry out an investigation to demonstrate that variations in temperature and/or pressure that variations in temperature and/or pressure affect changes in state of matter.</li></ul>	Evaporation Condensation Freezing Point Melting Point Particles Speed Microscope Atoms		
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**Grade Level: 6**

**Quarter 3**

<b>Unit Title: Space Standards</b>		<b>Cross Cutting Concepts: Patterns; cause and effect; systems and system models; energy and matter; structure and function.</b>			
		<b>Phenomena: NGSS Phenomena <a href="https://www.ngssphenomena.com/">https://www.ngssphenomena.com/</a></b>			
<b>Standards</b>	<b>Essential Questions</b>	<b>Objectives (I Can)</b>	<b>Key Vocabulary</b>	<b>Resources (Activities/Lessons/Experiments)</b>	<b>Assessments</b>

<p>6.P1U1.3 Develop and use models to represent that matter is made up of smaller particles called atoms.</p>	<p>How can models help us to deepen our understanding of how matter is made up of smaller particles or atoms?</p>	<p>I can develop and use models to represent how matter is made up of atoms.</p>	<ul style="list-style-type: none"> <li>● Scientific method</li> <li>● Hypothesis</li> <li>● Experiment</li> <li>● Dependent variable</li> <li>● Independent variable</li> <li>● Model</li> <li>● Technology</li> </ul>	<p>Nitty Gritty Science Curriculum</p> <p>Arizona Science Center STAR Curriculum</p> <p>BetterLessons.com</p> <p>Mystery Doug Videos</p> <p>NASA Teacher Resources</p> <p>Brainpop</p> <p>Thekidsshouldseeethis.com</p>	<p>Nitty Gritty Mini-Quizzes</p> <p>Nitty Gritty Tests</p> <p>Formative assessments created by Team.</p> <p>BetterLesson.Com assessment piece with lessons.</p>
<p>6.P1U1.4 Develop and use model to predict how forces act on objects at a distance.</p>	<p>How can using models help us to predict how forces act on objects at a distance?</p>	<p>I can use and develop models to predict how forces act on objects at a distance.</p>	<ul style="list-style-type: none"> <li>● Volume</li> <li>● Volume</li> <li>● Mass</li> <li>● Density</li> <li>● Bar graph</li> <li>● Circle graph</li> <li>● Line graph</li> </ul>	<p>NASA Teacher Resources</p>	
<p>6.P4U2.5 Analyze how humans use technology to store (potential) and/or use (kinetic) energy.</p>	<p>How can we understand better how humans use and store energy with technology?</p>	<p>I can analyze how humans use technology to store and use energy.</p>	<ul style="list-style-type: none"> <li>● Distance</li> <li>● Displacement</li> <li>● Average speed</li> <li>● Instantaneous speed</li> <li>● Velocity</li> <li>● Net force</li> <li>● Balanced</li> </ul>		



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|  |  |  | <ul style="list-style-type: none"><li>• Centripetal force</li><li>• Newton's 1st law</li></ul> |  |  |
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<b>Grade Level: 6</b>		<b>Quarter 4</b>			
<b>Unit Title: Space Standards</b>		<b>Cross Cutting Concepts: Patterns; cause and effect; systems and system models; energy and matter; structure and function.</b>			
		<b>Phenomena: NGSS Phenomena <a href="https://www.ngssphenomena.com/">https://www.ngssphenomena.com/</a></b>			
<b>Standards</b>	<b>Essential Questions</b>	<b>Objectives (I Can)</b>	<b>Key Vocabulary</b>	<b>Resources (Activities/Lessons/Experiments)</b>	<b>Assessments</b>

<p>6.L2U3.12 Engage in argument from evidence to support a claim about the factors that cause species to change and how humans can impact those factors.</p>	<p>How can you use evidence to support a claim that there are factors that cause species to change including those that humans produce?</p>	<p>I can use evidence to support my claim about the different factors that cause species to change and how humans impact those factors.</p>	<p>ecology sunlight autotroph photosynthesis chemosynthesis producer heterotroph consumer herbivore carnivore omnivore</p>	<p>Nitty Gritty Science Curriculum  Arizona Science Center STAR Curriculum  BetterLessons.com  Mystery Doug Videos</p>	<p>Nitty Gritty Mini-Quizzes  Nitty Gritty Tests  Formative assessments created by Team.  BetterLesson.Com assessment piece with lessons.</p>
<p>6.L2U1.13 Develop and use models to demonstrate the interdependence of organisms and their environment including biotic and abiotic factors.</p>	<p>How do biotic and abiotic factors affect organisms and their environments? How can we use models to demonstrate the interdependence of organisms and their environment?</p>	<p>I can use models to demonstrate the interdependence of and their environment.</p>	<p>detrivore decomposer food chain food web biological pyramid energy pyramid biomass pyramid pyramid of numbers water cycle carbon cycle</p>	<p>NASA Teacher Resources  Brainpop  Thekidsshouldsethis.com</p>	

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