

Unit Plan: Sun

Stage 1: Desired Results	
Learning Expectations:	
Systems and Cycles Students in grade 7 focus on systems and cycles using their understanding of structures and functions, connections and relationships in systems, and flow of matter and energy developed in earlier grades. A focus on systems requires students to apply concepts and skills across disciplines, since most natural and designed systems and cycles are complex and interactive. They gain experience with plate tectonics, interactions of humans and Earth processes, organism systems to support and propagate life, ecosystem dynamics, motion and energy systems, and key technological systems used by society. Through grade 7, students begin a process of moving from a more concrete to an abstract perspective, since many of the systems and cycles studied are not directly observable or experienced. This also creates a foundation for exploring cause and effect relationships in more depth in grade 8. (MA STE Frameworks)	
Curriculum Frameworks and Learning Standards	
MA: Science and Technology/Engineering <i>*see standards for classification statements and state assessment boundaries</i>	
• 7.MS-ESS2-4. Develop a model to explain how the energy of the Sun and Earth's gravity drive the cycling of water, including changes of state, as it moves through multiple pathways in Earth's hydrosphere.	
Enduring Understandings <i>Discovery Education Lesson Objectives</i>	Essential Questions <i>Discovery Education Overarching/Lesson Questions</i>
• Describe the main processes of the water cycle. • Explain how the force of gravity and energy from the sun drive the water cycle. • Explain how weather is related to water cycle processes. • Explain how energy from the sun drives wind and water currents. • Explain how energy from the sun is distributed around the globe.	• How do solar energy and gravity drive the processes of the water cycle?
Content	Skills (Science and Engineering Practices) <i>Massachusetts STE Frameworks - 2016</i>
WC Notes/Study Guide	• Asking questions (for science) and

	defining problems (for engineering). • Developing and using models. • Planning and carrying out investigations. • Analyzing and interpreting data. • Using mathematics and computational thinking. • Constructing explanations (for science) and designing solutions (for engineering). • Engaging in argument from evidence. • Obtaining, evaluating, and communicating information.
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Stage 2: Assessment Evidence	
Performance Tasks <i>Performance Expectations (NGSS)</i>	Other Evidence
• Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.	• Laboratory Experiments • Group Projects/Presentations • Interactive Gizmos • Quizzes/Tests • Formative Assessments

Stage 3: Learning Activities	
Optional Learning Activities	Vocabulary
• Activity Padlet • Water Cycle Model	Evaporation, condensation, transpiration, precipitation, gravity, energy, run-off, groundwater
Instructional Resources	
• Discovery Education • ExploreLearning Gizmos • Generation Genius • CK-12	

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