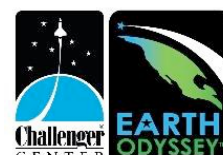


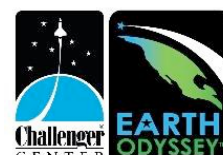
Standards Alignment: Mission

Mission	Next Generation Science Standards/ MA STE standards	Common Core Standards
Earth Odyssey	<p>MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet criteria and constraints of the problem.</p> <p>7.MS-ETS1-2. Evaluate competing solutions to a given design problem using a decision matrix to determine how well each meets the criteria and constraints of the problem. Use a model of each solution to evaluate how variations in one or more design features, including size, shape, weight, or cost, may affect the function or effectiveness of the solution.*</p> <p>MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify best characteristics of each can be combined into a new solution to better meet the criteria for success.</p> <p>Not included in MA standards</p>	<p>RST.6-8.1: Cite Specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p> <p>WHST.6-8.7: Conduct short research projects to answer a question including a self-generated question, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</p> <p>RI.7.1: Cite several pieces of textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p>

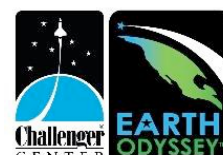


Standards Alignment: Team

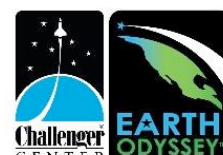
Team	Next Generation Science Standards/MA STE Standards	Common Core Standards
ATMO <i>Atmosphere</i>	<p>MS-PS1-3: Gather and make sense of information to describe that synthetic materials come from natural resources and impact society.</p> <p>Not included in MA Standards</p> <p>MS-ESS2-5: Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions.</p> <p>8.MS-ESS2-5. Interpret basic weather data to identify patterns in air mass interactions and the relationship of those patterns to local weather.</p> <p>MS-ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p> <p>8.MS-ESS2-6. Describe how interactions involving the ocean affect weather and climate on a regional scale, including the influence of the ocean temperature as mediated by energy input from the Sun and energy loss due to evaporation or redistribution via ocean currents.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical text texts, attending to the precise details of explanations or descriptions.</p> <p>SL.8.5: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.</p> <p>RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>
BIO <i>Biology</i>	<p>MS-LS1-6: Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.</p> <p>Not included in MA Standards</p> <p>MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p> <p>8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>SL.8.5: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.</p> <p>RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>



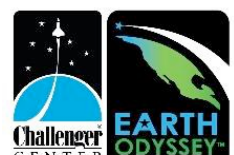
<p>CRYO <i>Cryology</i></p>	<p>MS-PS3-3: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. 7.MS-PS3-3. Apply scientific principles of energy and heat transfer to design, construct, and test a device to minimize or maximize thermal energy transfer. MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. 7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events. MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. 8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions. SL.8.5: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points. RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually. MP.2: Reason abstractly and quantitatively. RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>
<p>NRG <i>Energy</i></p>	<p>MS-ESS1-1: Develop and use model of the Earth- sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons. 6.MS-ESS1-1a. Develop and use a model of the Earth-Sun-Moon system to explain the causes of lunar phases and eclipses of the Sun and Moon. 8.MS-ESS1-1b. Develop and use a model of the Earth-Sun system to explain the cyclical pattern of seasons, which includes Earth’s tilt and differential intensity of sunlight on different areas of Earth across the year.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p>
<p>GEO <i>Geology</i></p>	<p>MS-PS3-3: Apply scientific principles to design, construct, and test a device that either minimizes or maximizes thermal energy transfer. 7.MS-PS3-3. Apply scientific principles of energy and heat transfer to design, construct, and test a device to minimize or maximize thermal energy transfer. MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. 7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.</p>	<p>RST.6-8.3: Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually. MP.2: Reason abstractly and quantitatively. RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>



<p>SAT <i>Satellite</i></p>	<p>MS-ETS1-2: Evaluate competing design solutions using a systematic process to determine how well they meet criteria and constraints of the problem.</p> <p>7.MS-ETS1-2. Evaluate competing solutions to a given design problem using a decision matrix to determine how well each meets the criteria and constraints of the problem. Use a model of each solution to evaluate how variations in one or more design features, including size, shape, weight, or cost, may affect the function or effectiveness of the solution.</p> <p>MS-ETS1-3: Analyze data from tests to determine similarities and differences among several design solutions to identify best characteristics of each can be combined into a new solution to better meet the criteria for success.</p> <p>Not included in MA Standards</p>	<p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>
<p>OCEAN</p>	<p>MS-ESS2-4: Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity.</p> <p>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.</p> <p>MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p> <p>7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.</p> <p>MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p> <p>8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>



<p style="text-align: center;">SW <i>Space Weather</i></p>	<p>MS-PS2-5: Conduct an investigation and evaluate the experimental design to provide evidence that fields exist between objects exerting forces on each other even though the objects are not in contact.</p> <p>7.MS-PS2-5. Use scientific evidence to argue that fields exist between objects with mass, between magnetic objects, and between electrically charged objects that exert force on each other even though the objects are not in contact.</p>	<p>WHST.6-8.7: Conduct short research projects to answer a question including a self-generated question, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p> <p>SL.8.5: Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.</p> <p>RST.6-8.7: Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>
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STANDARDS ALIGNMENT: PRE MISSION CONTENT

Lesson Plan	Next Generation Science Standards	Common Core Standards
<p>The Importance of the Sun</p>	<p>MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</p> <p>6.MS-ESS1-1a. Develop and use a model of the Earth-Sun-Moon system to explain the causes of lunar phases and eclipses of the Sun and Moon.</p> <p>8.MS-ESS1-1b. Develop and use a model of the Earth-Sun system to explain the cyclical pattern of seasons, which includes Earth’s tilt and differential intensity of sunlight on different areas of Earth across the year.</p> <p>MS-ETS1-1: Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.</p> <p>6.MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution. Include potential impacts on people and the natural environment that may limit possible solutions.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>RST.6-8.7: Integrate, quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>WHST.6-8.7: Conduct short research projects to answer a question, including a self-generating question, drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</p>
<p>Earth’s Atmosphere & Carbon Dioxide</p>	<p>MS-ESS3-2: Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.</p> <p>7.MS-ESS3-2. Obtain and communicate information on how data from past geologic events are analyzed for patterns and used to forecast the location and likelihood of future catastrophic events.</p> <p>MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p> <p>8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>6.EE.B.6: Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or depending on the purpose at hand, any number in a specified set.</p> <p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>RST.6-8.7: Integrate, quantitative or technical information expressed in words in a text with a version of that information expressed visually.</p> <p>MP.2: Reason abstractly and quantitatively.</p>



<p>The Water Cycle</p>	<p>MS-ESS2-4: Develop a model to describe the cycling of water through Earth’s system driven by energy from the sun and the force of gravity.</p> <p>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.</p> <p>MS-ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.</p> <p>8.MS-ESS2-6. Describe how interactions involving the ocean affect weather and climate on a regional scale, including the influence of the ocean temperature as mediated by energy input from the Sun and energy loss due to evaporation or redistribution via ocean currents.</p> <p>MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p> <p>8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>SL.8.5: Include multimedia components and visual display in presentations to clarify claims and findings and emphasize salient points.</p> <p>MP.2: Reason abstractly and quantitatively.</p> <p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts.</p>
<p>Remote Sensing and Communications</p>	<p>MS-ESS3-4: Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems.</p> <p>7.MS-ESS3-4. Construct an argument supported by evidence that human activities and technologies can mitigate the impact of increases in human population and per capita consumption of natural resources on the environment.</p> <p>MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.</p> <p>8.MS-ESS3-5. Examine and interpret data to describe the role that human activities have played in causing the rise in global temperatures over the past century.</p>	<p>RST.6-8.1: Cite specific textual evidence to support analysis of science and technical texts.</p> <p>WHST.6-8.1: Write arguments focused on discipline content.</p> <p>WHST.6-8.9: Draw evidence from informational texts to support analysis, reflection, and research.</p>

