

Stage 1 - Desired Results			
<p>ESTABLISHED GOALS (CCSS)</p> <p>RST 9.1 - Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</p> <p>RST 9.3 - Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p>RST 9.5 - Analyze the structure of the relationships among concepts in a text, including relationships among key terms</p> <p>RST 9.7 - Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.</p> <p>SL 9.2 - Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.</p> <p>SL 9.4 - Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.</p> <p>SL 9.5 - Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.</p>	<p>Transfer</p>		
	<p>Students will be able to independently use their learning to...</p> <p>Identify different types of telescopes and what they are used for. Describe the life cycle of a star and explain their different possible outcomes. Explain how there are no two stars alike. Recognize different star groupings. Describe the structure and characteristics of the Sun. Explain the origin of the Solar System, and what it is composed of. Describe details about the planets and moons of our solar system.</p>		
	<p>Meaning</p>		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>UNDERSTANDINGS</p> <p>Students will understand that...</p> <p>Astronomy is the study of the cosmos.</p> <p>Telescopes are used to observe and collect data from space.</p> <p>There are many variables that make up the characteristics of individual stars.</p> <p>The further you look into space, the further back in time you are looking.</p> <p>Stars go through cycles.</p> <p>Stars are grouped in various ways.</p> <p>The Sun is an average Main Sequence star.</p> <p>The Solar System is made up of the Sun and everything that orbits the Sun.</p> <p>A satellite is a body that orbits a larger body.</p> <p>Each planet is different from the others.</p> <p>There are two classifications of planets: Planets and Dwarf Planets.</p> </td> <td style="width: 50%; vertical-align: top;"> <p>ESSENTIAL QUESTIONS:</p> <p>Why are telescopes able to see more detail at greater distances than our eyes?</p> <p>What are some of the different types of telescopes and how do they work?</p> <p>What are the units of measurement used for distances in space?</p> <p>Explain some of the ways in which one star can be different from the next.</p> <p>Describe the life cycle of an average star.</p> <p>What might be the outcome of stars with a greater mass?</p> <p>Describe different ways in which stars are grouped and what they are called.</p> <p>Describe some of the specific characteristics of our Sun.</p> <p>What is our Solar System comprised of?</p> <p>Explain the Solar Nebula Theory</p> <p>How are the inner planets different from the outer planets?</p> <p>Describe our Moon</p> <p>How many moons do the other planets have?</p> </td> </tr> </table>	<p>UNDERSTANDINGS</p> <p>Students will understand that...</p> <p>Astronomy is the study of the cosmos.</p> <p>Telescopes are used to observe and collect data from space.</p> <p>There are many variables that make up the characteristics of individual stars.</p> <p>The further you look into space, the further back in time you are looking.</p> <p>Stars go through cycles.</p> <p>Stars are grouped in various ways.</p> <p>The Sun is an average Main Sequence star.</p> <p>The Solar System is made up of the Sun and everything that orbits the Sun.</p> <p>A satellite is a body that orbits a larger body.</p> <p>Each planet is different from the others.</p> <p>There are two classifications of planets: Planets and Dwarf Planets.</p>	<p>ESSENTIAL QUESTIONS:</p> <p>Why are telescopes able to see more detail at greater distances than our eyes?</p> <p>What are some of the different types of telescopes and how do they work?</p> <p>What are the units of measurement used for distances in space?</p> <p>Explain some of the ways in which one star can be different from the next.</p> <p>Describe the life cycle of an average star.</p> <p>What might be the outcome of stars with a greater mass?</p> <p>Describe different ways in which stars are grouped and what they are called.</p> <p>Describe some of the specific characteristics of our Sun.</p> <p>What is our Solar System comprised of?</p> <p>Explain the Solar Nebula Theory</p> <p>How are the inner planets different from the outer planets?</p> <p>Describe our Moon</p> <p>How many moons do the other planets have?</p>
<p>UNDERSTANDINGS</p> <p>Students will understand that...</p> <p>Astronomy is the study of the cosmos.</p> <p>Telescopes are used to observe and collect data from space.</p> <p>There are many variables that make up the characteristics of individual stars.</p> <p>The further you look into space, the further back in time you are looking.</p> <p>Stars go through cycles.</p> <p>Stars are grouped in various ways.</p> <p>The Sun is an average Main Sequence star.</p> <p>The Solar System is made up of the Sun and everything that orbits the Sun.</p> <p>A satellite is a body that orbits a larger body.</p> <p>Each planet is different from the others.</p> <p>There are two classifications of planets: Planets and Dwarf Planets.</p>	<p>ESSENTIAL QUESTIONS:</p> <p>Why are telescopes able to see more detail at greater distances than our eyes?</p> <p>What are some of the different types of telescopes and how do they work?</p> <p>What are the units of measurement used for distances in space?</p> <p>Explain some of the ways in which one star can be different from the next.</p> <p>Describe the life cycle of an average star.</p> <p>What might be the outcome of stars with a greater mass?</p> <p>Describe different ways in which stars are grouped and what they are called.</p> <p>Describe some of the specific characteristics of our Sun.</p> <p>What is our Solar System comprised of?</p> <p>Explain the Solar Nebula Theory</p> <p>How are the inner planets different from the outer planets?</p> <p>Describe our Moon</p> <p>How many moons do the other planets have?</p>		

<p>WHST 9.2a - Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p>WHST 9.2f - Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</p> <p>WHST 9.8 - Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</p> <p>RI 9.1 - Cite strong and thorough textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p>	<p>Students will know...</p> <p><i>The Universe is vast, and there is still so much to learn about space.</i></p> <p><i>There are different telescopes that collect various waves of the electromagnetic spectrum that provide information about objects we can both see and not see in space.</i></p> <p><i>There is a wide range of sizes, densities, temperatures, compositions, movements, and brightness of stars.</i></p> <p><i>A star's life cycle is determined in large part by its initial mass.</i></p> <p><i>Stars are grouped in asterisms, constellations, galaxies, Groups, and Superclusters.</i></p> <p><i>The solar system is made up of planets, moons, asteroids, comets, and meteoroids.</i></p>	<p style="text-align: center;">Acquisition</p> <p>Students will be skilled at...</p> <p>Explaining how a telescope is able to see more than our eyes.</p> <p>Identifying the different stages in the life cycle of a star.</p> <p>Identifying some constellations and relating the myths behind the names of them.</p> <p>Creating their own constellation.</p> <p>Creating a Hertzsprung-Russell Diagram and interpreting the data on it.</p> <p>Comparing the weight of an object on the different planets.</p> <p>Researching specific information about the physical characteristics of a planet.</p>
Stage 2 – Evidence		
Evaluative Criteria	Assessment Evidence	
PERFORMANCE TASKS	<p>CURRICULUM EMBEDDED PERFORMANCE ASSESSMENT (PERFORMANCE TASKS):</p> <p>Identify the different types of telescopes and explain how their design is better for viewing objects in space than the naked eye.</p> <p>Review a star lore myth other than those from Greek or Roman mythology and determine the natural phenomena and objects it is referring to.</p> <p>Create your own constellation from an existing pattern of stars in the sky, and write a myth explaining what it is and how it got in the sky.</p> <p>Plot an H-R Diagram, interpret what it shows, and determine our Sun's place on it and how it compares with other stars.</p> <p>Assemble a star finder and use it to determine the positions of the different constellations at different times throughout the year and throughout the night.</p>	

	Based on gravitational pull and rate of revolution, determine your weight and age on different planets in our solar system.			
	Research a planet topic to find out its location, physical characteristics, moons, and exploration. Prepare a 4-minute presentation for the class. Cite your sources correctly and provide an outline of your main ideas and examples.			
CLAIMS	<u>CLAIM 1</u>	<u>CLAIM 2</u>	<u>CLAIM 3</u>	<u>CLAIM 4</u>
DEPTH OF KNOWLEDGE LEVELS	<u>DOK 1</u>	<u>DOK2</u>	<u>DOK 3</u>	<u>DOK4</u>
ACHIEVEMENT LEVEL DESCRIPTORS	<u>ALD 1</u>	<u>ALD 2</u>	<u>ALD 3</u>	<u>ALD 4</u>

Stage 3 – Learning Plan	
Notes/discussion on telescopes, stars, star groups, the Sun, the Solar System, and the Moon.	
Telescope reading activity	
Star Lore activity	
Creating a constellation activity	
H-R Diagram	
Star Finder project	
Weight & Age on planets activity	
Solar System Research Project	