

Stage 1 - Desired Results			
<p>ESTABLISHED GOALS (CCSS)</p> <p>RST 9.2 - Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.</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 9.4 - Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9-10 texts and topics</i>.</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,</p>	<p><i>Transfer</i></p>		
	<p>Students will be able to independently use their learning to...</p> <p>Identify and describe the different layers of the atmosphere. Measure and explain changes and causes of changes in atmospheric pressure. Show how the principle gases that makeup the atmosphere are added and removed. Take steps to prevent air pollution. Describe the effects of solar radiation on the atmosphere. Identify the global prevailing winds and describe their origin. Explain the effects of moisture in the atmosphere on our daily weather. Identify major cloud types. Describe different air masses, the results of their interaction, and how that is shown on a weather map. Demonstrate the use of various different weather instruments, and how to interpret the data collected from them to get current conditions or forecast future conditions of the atmosphere. Compare & contrast the major climate zones.</p>		
	<p><i>Meaning</i></p>		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <p>The atmosphere consists of several distinct zones which are categorized by changes in temperature with increasing altitude.</p> <p>Atmospheric pressure decreases with increasing altitude.</p> <p>Gases in the mixture of air are kept balanced through natural cycles.</p> <p>Solar radiation heats the atmosphere and the surface of the earth.</p> <p>Uneven heating and cooling on the earth results in global prevailing winds.</p> <p>Moisture in the atmosphere is an important part of the water cycle and factor that determines weather conditions.</p> </td> <td style="width: 50%; vertical-align: top;"> <p>ESSENTIAL QUESTIONS:</p> <p>What is the composition of the atmosphere?</p> <p>How are atmospheric gases taken from and added to the atmosphere?</p> <p>What are the distinct layers of the atmosphere and are the characteristics of each?</p> <p>How is solar energy distributed in the atmosphere?</p> <p>What is the greenhouse effect?</p> <p>What causes wind?</p> <p>What conditions create the global wind patterns?</p> <p>What local conditions can affect wind patterns?</p> <p>Describe the processes of evaporation and condensation in the atmosphere.</p> <p>What is humidity?</p> <p>What are the different major cloud types?</p> <p>How do clouds or fog form?</p> <p>What is an air mass?</p> <p>Where do the different air masses originate?</p> <p>What types of weather and climate are associated with each air mass?</p> </td> </tr> </table>	<p>UNDERSTANDINGS</p> <p><i>Students will understand that...</i></p> <p>The atmosphere consists of several distinct zones which are categorized by changes in temperature with increasing altitude.</p> <p>Atmospheric pressure decreases with increasing altitude.</p> <p>Gases in the mixture of air are kept balanced through natural cycles.</p> <p>Solar radiation heats the atmosphere and the surface of the earth.</p> <p>Uneven heating and cooling on the earth results in global prevailing winds.</p> <p>Moisture in the atmosphere is an important part of the water cycle and factor that determines weather conditions.</p>	<p>ESSENTIAL QUESTIONS:</p> <p>What is the composition of the atmosphere?</p> <p>How are atmospheric gases taken from and added to the atmosphere?</p> <p>What are the distinct layers of the atmosphere and are the characteristics of each?</p> <p>How is solar energy distributed in the atmosphere?</p> <p>What is the greenhouse effect?</p> <p>What causes wind?</p> <p>What conditions create the global wind patterns?</p> <p>What local conditions can affect wind patterns?</p> <p>Describe the processes of evaporation and condensation in the atmosphere.</p> <p>What is humidity?</p> <p>What are the different major cloud types?</p> <p>How do clouds or fog form?</p> <p>What is an air mass?</p> <p>Where do the different air masses originate?</p> <p>What types of weather and climate are associated with each air mass?</p>
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<p>quantitatively, orally) evaluating the credibility and accuracy of each source.</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>There are a number of different cloud types depending on their location, formation, and moisture content.</p> <p>Interaction between different air masses result in changes in the weather.</p> <p>Weather instruments constantly collect data about changes in weather variables. There are different climate zones around the globe.</p>	<p>What is a front?</p> <p>What are the different types of fronts and how are they created?</p> <p>What are the different climate zones and what are the major factors that affect them?</p>
Acquisition		
	<p><i>Students will know...</i></p> <p><i>We live within the Troposphere where weather occurs.</i></p> <p><i>The atmosphere protects us from the vacuum of space, and has been stable for a long period of time.</i></p> <p><i>Infrared heat energy and carbon dioxide compounds provide a greenhouse effect that keep us warm.</i></p> <p><i>Warm air rises, cold air sinks, resulting in movement of the air, which results in wind.</i></p> <p><i>The water cycle, including evapotranspiration, condensation, and precipitation plays a large role in determining the weather.</i></p> <p><i>Air masses are large bodies of air with uniform temperature and humidity.</i></p>	<p><i>Students will be skilled at...</i></p> <p>Identifying and describing the various layers of the atmosphere.</p> <p>Explaining the role of the water cycle in climate and weather.</p> <p>Interpreting the UV Index and Wind Chill factors.</p> <p>Interpreting patterns of global winds.</p> <p>Use a labeled weather map to interpret weather conditions and forecast weather.</p> <p>Use local weather data to interpret patterns in the weather and create graphs to show those patterns.</p>

	<p><i>Certain conditions result in severe weather, and the dangers associated with them.</i></p> <p><i>Tracking movement and interaction of air masses allows Meteorologists to forecast the weather.</i></p> <p><i>We live in a middle-latitude climate that experiences both tropical and polar conditions.</i></p>	
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Stage 2 – Evidence

Evaluative Criteria	Assessment Evidence				
PERFORMANCE TASKS	<p>CURRICULUM EMBEDDED PERFORMANCE ASSESSMENT (PERFORMANCE TASKS): Assignments providing practice in interpreting various weather data.</p> <p>Collect local weather statistics for two weeks, and create graphs, and write a narrative describing and showing what happened with the weather during that time, and identify any associated patterns.</p>				
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Stage 3 – Learning Plan

<p>Notes/discussion on the composition of the atmosphere, different conditions of the atmosphere, moisture in the atmosphere, solar radiation in the atmosphere, global wind patterns, severe weather, weather forecasting, and climate.</p> <p>UV Index activity.</p> <p>Wind chill activity</p> <p>Prevailing Winds activity</p> <p>Weather map interpretation</p> <p>Local weather statistics project.</p>
