

Big Idea: Different weather conditions occur in different seasons and different climates occur in different regions of the world.							
Guiding Questions: Part A: Can we predict the kind of weather that we will see in the spring, summer, autumn, or winter? Part B: How can climates in different regions of the world be described? Part C: How can we protect people from weather-related hazards?							
21st Century Themes/Skills:							
DCI (Disciplinary Core Ideas)	Science and Engineering Practices	Crosscutting Concepts	Student Learning Objectives	Differentiated Activities (Consider the 5 Es)	Resources/Technology	Formative Assessments	Benchmark Assessment
ESS2.D: Weather and Climate Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1) Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)	Analyzing and Interpreting Data Represent data in tables and various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships.	Patterns Patterns of change can be used to make predictions. (3-ESS2-1),(3-ESS2-2)	Students will describe typical weather conditions expected during a particular season, using patterns of change to make predictions.	Engage: Weather forecasting video and class discussion with focus question	About Weather	-Activity Student Sheets of Responses (see links in Resources/Technology for each lesson) -Class discussion -Science journal entries -Predictions -Questions -Observations -Group collaboration -Planned and conducted experiments -Exit Slips (paper-based, Google Forms, Google Classroom post, etc.)	<i>Quiz #1 Temperature and Precipitation Unit Assessment</i> <i>Performance Task Assessment</i>
				Explore: Discovery Education About Weather Exploration to see that weather is affected by four main conditions in the atmosphere			
				Explain: Define as a class weather, atmosphere, season, temperature, air pressure, humidity, wind, and precipitation using the findings from Explore			
				Elaborate: Revisit About Weather interactive to identify and further explore the vocabulary terms			
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				Explore: Collecting Weather Data Activity (do this each day until the activity "Weather Analysis")	Collecting Weather Data Activity		
				Explain: The different weather tools we use in the weather data activity and how they help us to more accurately describe weather.			
				Elaborate: Continue collecting weather data over the next couple of days using weather tools. Use table and graph the data.			
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				Explore: Building own thermometer to examine how a thermometer works.	Lab Sheet Thermometer Activity		
				Explain: Describe what happened during the activity by answering lab sheets questions to explain how a thermometer works			
				Elaborate: Comparing different types of thermometers and how they work; discuss why some thermometers might vary by a few degrees; discuss Celsius and Fahrenheit			
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				Explore: Teacher water cycle in a jar demonstration; students complete Activity sheet describing what happens during each stage and what they are observing	Water Cycle in a Jar		
				Explain: Discuss observations and finding; define vocabulary terms of each stage of the water cycle			
				Elaborate: Water cycle in a bag activity; write stages on the bag to show and tape to the window			
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				Explore: Teacher demo of cloud in a jar: The purpose of this demo is for students to understand how a cloud forms. They should learn the three components necessary for cloud formation: moist air, cooling, and dust/particles.	Cloud in a Jar Teacher Demo		
				Explain: In order to form, clouds need moist air (evaporation), cooling and dust or particles in the air. If there are no particles in the air, then the water droplets have no object on which to condense. The smoke from the match provided these particles for cloud formation.			

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				Elaborate: Students will write a story about from the perspective of a cloud and how it formed.			
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				Explore: Students will watch the teacher demonstration and make observations of what is happening. Draw a diagram to explain thinking.	Toasty Wind Teacher Demo		
				Explain: The cause of wind; radiation and convection vocabulary terms			
				Elaborate: Connect to thunderstorms- It is the rising air that creates thunderstorms in the first place. When thunderstorms approach your first danger is generally lightning. (Thunderstorm safety focus)			
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				Explore: Demo for the students and have them record their observations for what happened with each set-up, draw models of what happened along with written explanations	Convection		
				Explain: Analyze the data and answer the questions on the lab sheet			
				Elaborate: Apply to real-world with air and ocean examples			
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				Explore: Complete the weather analysis data activity	Weather Analysis Data Activity		
				Explain: Analyze and explain how the charts and graphs help us to better view and interpret the data			
				Elaborate: Look at other graphs and charts of weather data to explain what they are showing			