

Grade 3: Weather and Climate

Stage 1 Desired Results		
ESTABLISHED GOALS: <u>Competencies:</u> <u>Nature of Science and Engineering</u> - Students will demonstrate the ability to work collaboratively and individually to generate testable questions or define problems, plan and conduct investigations using a variety of research methods in various settings, analyze and interpret data, reason with evidence to construct explanations in light of existing theory and previous research, and effectively communicate the research processes and conclusions. <u>Patterns</u> - Students will demonstrate the ability to observe and describe patterns in natural and human designed phenomena and use those patterns to support claims about the observed or predicted relationships among phenomena. <u>Cause & Effect</u> - Students will demonstrate the ability to investigate, explain, and evaluate potential causal relationships by using evidence to support claims and predictions about the mechanisms that drive those relationships. <u>Content Standards:</u> 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season. 3-ESS2-2. Obtain and combine information to describe climates in different regions of the world. 3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.	Transfer	
	<i>Students will be able to independently use their learning to make informed decisions regarding changes in weather and climate.</i>	
	Meaning	
	ENDURING UNDERSTANDINGS <i>Students will understand that...</i> - patterns of change can be used to make predictions. - cause and effect relationships are routinely identified, tested, and used to explain change. - engineers improve existing technologies or develop new ones to increase their benefits (e.g., better artificial limbs), decrease known risks (e.g., seatbelts in cars), and meet societal demands (e.g., cell phones). - Science affects everyday life.	ESSENTIAL QUESTIONS Can the weather be controlled?
	Acquisition	
	<i>Students will know...</i> - that 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. - that climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. - that weather and climate conditions on the ground can be very different than the conditions high in the air. - that a variety of natural hazards result from natural processes. - that humans cannot eliminate natural hazards but can take steps to reduce their impacts. <u>student vocabulary:</u> boil, Celsius, climate, cloud, cumulonimbus cloud, cumulus cloud, condensation, degree, dry climate (desert climate),	<i>Students will be skilled at...</i> - collecting and representing regional weather data in tables and graphical displays. - comparing weather patterns across different regions of the world, and describe patterns that indicate relationships. - organizing and using data to describe typical weather conditions expected during a particular season. - predicting when it is going to storm. - presenting a design solution that reduces the impact of a weather-related hazard. - making claims about the merit of a design solution to reduce the impact of hazards.

	<i>dust storm, equator, evaporation, Fahrenheit, fog, freeze, freezing point, gas, hail, hazard, hurricane, impact, liquid, map, matter, mild climate, natural hazard, nimbostratus cloud, polar climate, rain, region, season, snow, snowstorm, solid, states of matter, storm, stratus cloud, summer, temperature, thermometer, thunderstorm, temperate climate, tornado, tropical climate, water vapor, weather, windstorm, winter</i> <i>teacher vocabulary: construction engineer, data, design, engineer, experiment, measure, model, observe, pattern, predict</i>	
Content Area Literacy Standards		21st Century Skills
<i>not applicable</i>		• <i>collect and analyze data</i> • <i>solve problems</i> • <i>think creatively</i> • <i>collaborate with others</i> • <i>implement innovations</i>

Stage 2 - Evidence	
Evaluative Criteria	Assessment Evidence
	PERFORMANCE TASK(S):
	OTHER EVIDENCE:

Stage 3 – Learning Plan	
Summary of Key Learning Events and Instruction	
Language Arts Integration	Mathematics Integration
• RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. • RI.3.9 Compare and contrast the most important points and key details presented in two texts on	• MP.2 Reason abstractly and quantitatively. • MP.4 Model with mathematics. • MP.5 Use appropriate tools strategically.

the same topic. • W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. • W.3.7 Conduct short research projects that build knowledge about a topic. • W.3.8 Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.	• 3.MD.A.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. • 3.MD.B.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in bar graphs.
<i>Technology Integration</i>	<i>District Materials</i>