Grade K: Weather and Climate

Stage 1 Desired Results

ESTABLISHED GOALS:

Competencies:

Nature of Science and Engineering

- ***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.***

Patterns

- ***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.***

Cause & Effect

- ***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.***

Content Standards:

- K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface
- K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.*
- K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time.
- K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.

Transfer

*Students will be able to independently use their learning to **make informed decisions based upon local weather conditions and patterns.***

Meaning

ENDURING UNDERSTANDINGS

Students will understand that…

- *patterns in the natural world can be observed, used to describe phenomena, and used as evidence.*
- *events have causes that generate observable patterns.*
- *people encounter questions about the natural world every day.*
- *people depend on various technologies in their lives; human life would be very different without technology.*

ESSENTIAL QUESTIONS

- Is it important to know what the weather will be?

Acquisition

Students will know…

- *that sunlight warms Earth's surface.*
- *that weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time.*
- *that people measure these conditions to describe and record the weather and to notice patterns over time.*
- *that some kinds of severe weather are more likely than others in a given region.*
- *that weather scientists forecast severe weather so that the communities can prepare for and respond to these events.*
- *that asking questions, making observations, and gathering information are helpful in thinking about problems.*

Students will be skilled at…

- *observing daily changes in temperature and weather to record data (daily temperature and the appearance of the sky), etc.*
- *asking questions, based on observations, to find more information about weather.*
- *comparing daily changes and generalizing weather patterns over time (seasons, etc.).*
- *observing and explaining how shade (or other patterns of weather) is created.*
- *generalizing weather patterns over time.*
- *using data to make inferences and predictions about local weather patterns over time.*
- *communicating observations and patterns of local weather conditions.*
- *creating a model/structure which protects a "creature" from the warming effects of (sun) light.*

vocabulary: autumn (fall), blizzard, big, cloud(y), cold, compare, cool, cycle, design, dry, egg, engineer, experiment, hatch, hot, hurricane,

	inventor, investigate, light, lightning, melt, mild, mirror, model, nest, observe, pattern, predict, rain(y), season, shade, shadow, short, small, snow(y), spring, storm, summer, sun(ny), sunlight, tall, temperature, thin, thunder, tornado, warm, weather, wide, wind(y), winter	
Content Area Literacy Standards		***21st Century Skills***
not applicable		• *reason effectively* • *make judgments and decisions* • *solve problems* • *think creatively* • *communicate clearly*

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.K.1 With prompting and support, ask and answer questions about key details in a text. • W.K.7 Participate in shared research and writing projects (e.g., explore a number of books by a favorite author and express opinions about them). • SL.K.3 Ask and answer questions in order to seek help, get information, or clarify something that is not understood.	• MP.5 MP.2 Reason abstractly and quantitatively. • MP.4 Model with mathematics. • K.CC Counting and Cardinality • K.CC.A Know number names and the count sequence. • K.MD.A.1 Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. • K.MD.A.2 Directly compare two objects with a measurable attribute in common, to see which object has "more of"/"less of" the attribute, and describe the difference. K.MD.B.3 Classify objects into given categories; count the number of objects in each category and sort the categories by count.
Technology Integration	***District Materials***