3rd Grade Science Curriculum Weather and Climate
Pacing 6 weeks

Big Ideas:

- Students are able to organize and use data to describe typical weather conditions expected during a particular season.
- Apply their understanding of weather related hazards and make a claim about the merit of the design solution that reduces the impact of such hazards.

Essential Questions

- What is typical weather in different parts of the world (during different times of the year)?
- How can the impact of weather-related hazards be reduced?

Vocabulary: Precipitation, Climate, Forecast, Meteorologist, Storm (i.e. Tornadoes, Monsoons,)

Students who demonstrate understanding can:

3-ESS2-1. **Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.**[Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.] [*Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.*]

3-ESS2-2. **Obtain and combine information to describe climates indifferent 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.**[Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.]

The performance expectations above were developed using the following elements from the NRC document *A Framework for K-12 Science Education*:

Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Analyzing and Interpreting Data Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used. • Represent data in tables and various graphical displays (bar graphs and pictographs) to reveal patterns that indicate relationships. (3-ESS2-1) **Engaging in Argument from Evidence** Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world (s). • Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-ESS3-1) **Obtaining, Evaluating, and Communicating Information** Obtaining, evaluating, and communicating information in 3–5	**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) **ESS3.B: Natural Hazards** • A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) *(Note: This Disciplinary Core Idea is also addressed by 4-ESS3-2.)*	**Patterns** • Patterns of change can be used to make predictions. (3-ESS2-1),(3-ESS2-2) **Cause and Effect** • Cause and effect relationships are routinely identified, tested, and used to explain change. (3-ESS3-1) - *Connections to Engineering, Technology, and Applications of Science* **Influence of Engineering, Technology, and Science on Society and the Natural World** • 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). (3-ESS3-1) - *Connections to Nature of Science*

builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods. • Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)		**Science is a Human Endeavor** • Science affects everyday life. (3-ESS3-1)

Connections to other DCIs in third grade: N/A

Articulation of DCIs across grade-levels:
K.ESS2.D (3-ESS2-1); **K.ESS3.B** (3-ESS3-1); **K.ETS1.A** (3-ESS3-1); **4.ESS2.A** (3-ESS2-1); **4.ESS3.B** (3-ESS3-1); **4.ETS1.A** (3-ESS3-1); **5.ESS2.A** (3-ESS2-1); **MS.ESS2.C** (3-ESS2-1),(3-ESS2-2); **MS.ESS2.D** (3-ESS2-1),(3-ESS2-2); **MS.ESS3.B** (3-ESS3-1)

Common Core State Standards Connections:

ELA/Literacy —

RI.3.1	Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. *(3-ESS2-2),(3-ESS3-1)*
RI.3.9	Compare and contrast the most important points and key details presented in two texts on the same topic. (3-ESS2-2)
W.3.1	Write opinion pieces on topics or texts, supporting a point of view with reasons. *(3-ESS3-1)*
W.3.7	Conduct short research projects that build knowledge about a topic. *(3-ESS3-1)*
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-ESS2-2)

Mathematics —

MP.2	Reason abstractly and quantitatively. (3-ESS2-1),(3-ESS2-2),*(3-ESS3-1)*
MP.4	Model with mathematics. (3-ESS2-1),(3-ESS2-2),*(3-ESS3-1)*
MP.5	Use appropriate tools strategically. *(3-ESS2-1)*
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-ESS2-1)*
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. (3-ESS2-1)