

Unit 2: Weather and Climate

Content Area: **Science**
Course(s):
Time Period: **Trimester**
Length: **Trimester 2**
Status: **Published**

General Overview, Course Description or Course Philosophy

In this unit, students investigate and make predictions about the weather through careful observation of the clouds and wind. Students also learn to differentiate between weather and climate and use models to reveal global climate patterns.

OBJECTIVES, ESSENTIAL QUESTIONS, ENDURING UNDERSTANDINGS

Objectives and Enduring Understandings:

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

Essential Questions:

- How is the weather where you live and how much did it rain in this season?
- What Are the Climates of the World?
- How can we prepare for floods and other weather related hazards?
- How does climate change impact our environment?

CONTENT AREA STANDARDS

SCI.3-5-ETS1-1	Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost.
SCI.3-5-ETS1-2	Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.
SCI.3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved.
3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
3-ESS3-1	Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

RELATED STANDARDS (Technology, 21st Century Life & Careers, ELA Companion Standards are Required)

MA.K-12.2	Reason abstractly and quantitatively.
MA.K-12.4	Model with mathematics.
MA.K-12.5	Use appropriate tools strategically.
LA.RI.3.1	Ask and answer questions, and make relevant connections to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
LA.RI.3.9	Compare, contrast and reflect on (e.g., practical knowledge, historical/cultural context, and background knowledge) the most important points and key details presented in two texts on the same topic.
MA.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.
MA.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 scaled bar graphs.
LA.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.
TECH.9.4.8.CT	Critical Thinking and Problem-solving
TECH.9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
TECH.9.4.8.CT.2	Develop multiple solutions to a problem and evaluate short- and long-term effects to determine the most plausible option (e.g., MS-ETS1-4, 6.1.8.CivicsDP.1).
TECH.9.4.8.CT.3	Compare past problem-solving solutions to local, national, or global issues and analyze the factors that led to a positive or negative outcome.

EVIDENCE OF LEARNING

Formative Assessments

- Chart data collected
- Teacher/student discussions
- Student analysis
- Student discussions
- Student reflection
- Student observations
- Partner questions
- Partner/group discussions
- discussion questions
- Lab activities
- Science notebook entries

- Vocabulary questions

Summative Assessments

Benchmark Assessments

- Multiple Choice Assessment administered at the end of each trimester (T1, T2, T3)

Alternative Assessments

- Oral Presentations
- Questions for Comprehension
- Performance Tasks
- Scientific Journals/Notebooks
- Self-Assessment
- WebQuests

RESOURCES (Instructional, Supplemental, Intervention Materials)

- Teacher Edition
- Student Lab Manual
- Student Notebooks
- Weather photographs
- Class chart of Key Terms
- Videos
- Climate-<https://njclimateeducation.org/lesson-plan/what-can-animation-teach-us-about-climate-change-animate-for-the-ani?queryID=7c07c46b1b13fc93c419007f9711b3f7>

INTERDISCIPLINARY CONNECTIONS

- Integrate quantitative or technical information expressed in words in a text. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.
- Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.
- Social Emotional Learning

- Sustainability
- Climate Change-<https://njclimateeducation.org/resource/elementary-globe-earth-systems-module?queryID=a5d19a743d4bfef20c3c11e73ddfbcc0>

ACCOMMODATIONS & MODIFICATIONS FOR SUBGROUPS

See link to Accommodations & Modifications document in course folder.

*In addition to IEP Accommodations & Modifications:

- Restate and review directions
- Student restates directions or information
- Oral responses
- Small group/ one to one
- Additional time
- Concrete examples
- Extra visuals
- Support auditory information with visuals
- Space for movement or breaks
- Extra verbal cues and prompts