Unit 2 Stormy Skies

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

Unit Overview

Unit 2 should be taught over the course of Trimester 2. Unit 2 includes the Science standards from Mystery Science Unit 2 (Stormy Skies).

Description: The Big Idea: *Stormy Skies*

Unit 2	Topic
Anchor Phenomenon	Anchor Phenomenon
Lesson 1	Water Cycle & Phases of Mat Where do clouds come from
Lesson 2	Local Weather Patterns & Weather I How can we predict when it's going
Lesson 3	Seasonal Weather Patterns Where's the best place to build a s
Lesson 4	Climate & Global Weather Patt

	Why are some places always
Lesson 5	Natural Hazards & Engineeri How can you keep a house from blowing aw
Performance Task	Performance Task

Priority 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.

SCI.3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.
SCI.3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.
SCI.3-ESS3-1	Make a claim about the merit of a design solution that reduces the impacts of climate change and/or a weather-related hazard.

Learning Goals (Targets and Lesson)

Trimester 2 ~ Mystery Science Unit 2 (Stormy Skies)

Time Frame	Lesson	Standard(s)	Target	Assessments	Resources
					Mystery Science Labs & Worksheets: See-Think-Wonder worksheet Stormy Skies Teacher Guide teacher only resource Summer Ice Storm worksheet Summer Ice Storm Answer Key teacher only resource Summer Ice Storm Hail Protection worksheet This will not be needed until after Lesson 4.
	Anchor Phenomenon	3-ESS2-1, 3-ESS2-2, 3-ESS3-1			
Unit 2 ~ Stormy Skies	Lesson 1 Water Cycle & Phases of Matter	Foundational for 3-ESS2-1. Represent data in tables and graphical displays	I can consider the cause and effect relationship	Lesson 1 Exit Ticket	Mystery Science Labs & Worksheets: Gas Trap

(5-10 weeks)	Where do clouds come from? Students carry out an investigation by using a model to observe evaporation. They engage in argument from evidence using observations from their investigation to explain what clouds are. Lesson 2	to describe typical weather conditions expected during a particular season.	between heated liquid water and the evaporation of gas water that forms into clouds.	Answer Key	Experiment printout Clean-up Supplies (Eg. Paper Towels) Container for Water Scissors Clear Plastic Cups w/ Lids (16 oz)
	Local Weather Patterns & Weather Prediction How can we predict when it's going to storm? Students obtain and communicate information about different types of clouds by creating a Storm Spotter's Guide. They engage in argument from evidence by using this	Foundational for 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season	I can explore patterns of changing clouds as a way to predict weather.	Lesson 2 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Storm Spotter's Guide worksheet Will it Storm? Worksheet Will it Storm? Answer Key teacher-only resource Scissors

information to analyze multiple scenarios and determine if a storm will occur and why. Lesson 3 Seasonal Weather Patterns Where's the best place to build a snow fort? Students obtain past winter weather information from three different locations. They organize the data into a table so that they can compare the locations. Then, they analyze the data to decide on the best location for a snow fort festival the following year.	3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	I can explore temperature patterns of the past to predict temperatures and weather conditions that will occur in the future for particular regions.	Lesson 3 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Thermometers (Fahrenheit) worksheet What's the Weather Answer Key teacher-only resource What's the Weather Chart worksheet Crayons
Lesson 4 Climate & Global Weather Patterns Why are some places always	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	I can recognize climate across the world as an observable pattern.	Lesson 4 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: America's Map & Climates (Fahrenheit & Celsius) printout Asia & Australia

hot? Students obtain and evaluate information about multiple location's weather. They communicate the information by color coding a map based on climate. Students analyze and interpret the data to determine climate patterns across the world.	to describe typical weather conditions expected during a particular season			Map & Climates (Fahrenheit & Celsius) printout Europe & Africa Map & Climates (Fahrenheit & Celsius) printout Maps & Climates Answer Key (Fahrenheit Only) teacher only resource Colored Pencils Rulers
Lesson 5 Natural Hazards & Engineering How can you keep a house from blowing away in a windstorm? Students define problems that strong winds cause. They develop and use a model of a home in order to design a solution that keeps the roof attached to the home and	3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. 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. 3-5-ETS1-2. Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the	I can identify the cause and effect relationship between strong winds and the problems they cause.	Lesson 5 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Design a Windproof House worksheet Paper House Model printout Windmaker printout Blank Paper (8.5 x 11") Scissors Dot Stickers Paper Clips Toothpicks

stops the home from blowing away in the wind. They test and improve their prototype.	criteria and constraints of the problem. 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		
			Mystery Science Labs & Worksheets: Future Hailstorm Prediction worksheet Hailstorm Data Packet- For 2023/24 School year- updated with data from 2022 worksheet Past Hailstorm Patterns worksheet Stormy Skies Teacher Guide teacher only resource
Performance Task	3-ESS2-1, 3-ESS2-2, 3-ESS3-1	Unit Assessment Answer Key	

Learning Targets

- I can consider the cause and effect relationship between heated liquid water and the evaporation of gas water that forms into clouds.
- I can explore patterns of changing clouds as a way to predict weather.
- I can explore temperature patterns of the past to predict temperatures and weather conditions that

will occur in the future for particular regions.

- I can identify the cause and effect relationship between strong winds and the problems they cause.
- I can recognize climate across the world as an observable pattern.

Essential Questions

- Unit 2 Lesson 1: Where do clouds come from?
- Unit 2 Lesson 2: How can we predict when it's going to storm?
- Unit 2 Lesson 3: Where's the best place to build a snow fort?
- Unit 2 Lesson 4: Why are some places always hot?
- Unit 2 Lesson 5: How can you keep a house from blowing away in a windstorm?
- Unit 2 Lesson 5B: Can We Evaluate a Solution to a Problem Impacting an Ecosystem?

Materials and Resources

- Google Drive ~ 3rd Grade Team Drive
- Mystery Science ~ Online

Unit Assessments

- Lesson 1 Exit Ticket
- Lesson 2 Exit Ticket
- Lesson 3 Exit Ticket
- Lesson 4 Exit Ticket
- Lesson 5 Exit Ticket
- Unit 2 Assessment

Learning Plan

Trimester 2 ~ Mystery Science Unit 2 (Stormy Skies)

Time Frame	Lesson	Standard(s)	Target	Assessments	Resources
	Anchor Phenomenon	3-ESS2-1, 3-ESS2-2, 3-ESS3-1			Mystery Science Labs & Worksheets: See-Think-Wonder

					worksheet Stormy Skies Teacher Guide teacher only resource Summer Ice Storm worksheet Summer Ice Storm Answer Key teacher only resource Summer Ice Storm Hail Protection worksheet This will not be needed until after Lesson 4.
Unit 2 ~ Stormy Skies (5-10 weeks)	Lesson 1 Water Cycle & Phases of Matter Where do clouds come from? Students carry out an investigation by using a model to observe evaporation. They engage in argument from evidence using observations from their investigation to explain what clouds are.	Foundational for 3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	I can consider the cause and effect relationship between heated liquid water and the evaporation of gas water that forms into clouds.	Lesson 1 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Gas Trap Experiment printout Clean-up Supplies (Eg. Paper Towels) Container for Water Scissors Clear Plastic Cups w/ Lids (16 oz)
	Lesson 2	Foundational for 3-ESS2-1. Represent data in tables and graphical displays	I can explore patterns of changing clouds as a way to	Lesson 2 Exit Ticket	Mystery Science Labs & Worksheets:

Local Weather Patterns & Weather Prediction How can we predict when it's going to storm? Students obtain and communicate information about different types of clouds by creating a Storm Spotter's Guide. They engage in argument from evidence by using this information to analyze multiple scenarios and determine if a storm will occur and why. Lesson 3	to describe typical weather conditions expected during a particular season	predict weather.	Answer Key	Storm Spotter's Guide worksheet Will it Storm? Worksheet Will it Storm? Answer Key teacher-only resource Scissors
Seasonal Weather Patterns Where's the best place to build a snow fort? Students obtain past winter weather information from three different locations. They	3-ESS2-1. Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	I can explore temperature patterns of the past to predict temperatures and weather conditions that will occur in the future for particular regions.	Lesson 3 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Thermometers (Fahrenheit) worksheet What's the Weather Answer Key teacher-only resource What's the Weather Chart worksheet Crayons

organize the data into a table so that they can compare the locations. Then, they analyze the data to decide on the best location for a snow fort festival the following year.				
Lesson 4 Climate & Global Weather Patterns Why are some places always hot? Students obtain and evaluate information about multiple location's weather. They communicate the information by color coding a map based on climate. Students analyze and interpret the data to determine climate patterns across the world.	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	I can recognize climate across the world as an observable pattern.	Lesson 4 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: America's Map & Climates (Fahrenheit & Celsius) printout Asia & Australia Map & Climates (Fahrenheit & Celsius) printout Europe & Africa Map & Climates (Fahrenheit & Celsius) printout Maps & Climates Answer Key (Fahrenheit Only) teacher only resource Colored Pencils Rulers
Lesson 5 Natural Hazards & Engineering How can you keep a house from	3-ESS3-1. Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard. 3-5-ETS1-1. Define	I can identify the cause and effect relationship between strong winds and the problems they cause.	Lesson 5 Exit Ticket Answer Key	Mystery Science Labs & Worksheets: Design a Windproof House worksheet Paper House

blowing away in a windstorm? Students define problems that strong winds cause. They develop and use a model of a home in order to design a solution that keeps the roof attached to the home and stops the home from blowing away in the wind. They test and improve their prototype.	a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. 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. 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		Model printout Windmaker printout Blank Paper (8.5 x 11") Scissors Dot Stickers Paper Clips Toothpicks
Performance Task	3-ESS2-1, 3-ESS2-2, 3-ESS3-1	Unit Assessment Answer Key	Mystery Science Labs & Worksheets: Future Hailstorm Prediction worksheet Hailstorm Data Packet- For 2023/24 School year- updated with data from 2022 worksheet Past Hailstorm Patterns

worksheet

Stormy Skies Teacher Guide
teacher only resource

Strategies for Multilingual Learners

- Communicating High Expectations for Each Student to Close the Achievement Gap
- Establishing & Maintaining Effective Relationships in a Student Centered Classroom
- Helping Students Engage in Cognitively Complex Tasks
- Helping Students Examine Similarities & Differences
- Helping Students Examine their Reasoning
- Helping Students Practice Strategies, Skills, & Processes
- Helping Students Process New Content
- Helping Students Revise Knowledge
- Identifying Critical Content from the Standards
- Organizing Students to Interact with Contact
- Previewing New Content
- Providing Feedback & Celebrating Success
- Reviewing Content
- Using Engagement Strategies
- Using Formative Assessment to Track Progress
- Using Questions to Help Students Elaborate on Content

Strategies for Students in Need of Intervention

- Centers to reinforce skill instruction/ skill enrichment
- Choice boards/ Activity Menu for assignments
- Extend pacing of weekly lessons to a week and a half to 2 weeks
- Flexible grouping as needed based on ability, interest, need
- Highlight key terms
- Independent Study on topic of interest
- Provide Word bank for vocabulary assessment
- Provide written notes/directions
- Tiered Lessons/activities
- Use graphic organizers (ex. Venn Diagram, Cause/Effect chart)
- Use of visual aids (For example: Powerpoints, images to connect to vocabulary, flashcards, anchor

charts)

- Vocabulary matching words to definitions

Strategies for Enrichment

- Students can complete Mystery Science Mini-Lessons

Technology Integration

- Carolina Science Website

TECH.8.1.5.A.1	Select and use the appropriate digital tools and resources to accomplish a variety of tasks including solving problems.
TECH.8.1.5.A.3	Use a graphic organizer to organize information about problem or issue.
TECH.8.1.5.B.CS2	Create original works as a means of personal or group expression.
TECH.8.1.5.C.CS1	Interact, collaborate, and publish with peers, experts, or others by employing a variety of digital environments and media
TECH.8.1.5.C.CS2	Communicate information and ideas to multiple audiences using a variety of media and formats.

Interdisciplinary Connections

MA.3.NBT	Number and Operations in Base Ten
MA.3.NF	Number and Operations—Fractions
LA.W.3.1	Write opinion pieces on topics or texts, supporting a point of view with reasons.
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.
MA.3.MD.B.4	Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units— whole numbers, halves, or quarters.
LA.W.3.2	Write informative/explanatory texts to examine a topic and convey ideas and information clearly.
LA.SL.3.4	Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace.
LA.SL.3.5	Use multimedia to demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.
LA.3.CCSS.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.
LA.3.CCSS.ELA-Literacy.RI.3.2	Determine the main idea of a text; recount the key details and explain how they support the main idea.
LA.3.CCSS.ELA-Literacy.RI.3.3	Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect.

LA.3.CCSS.ELA-Literacy.RI.3.5	Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
LA.3.CCSS.ELA-Literacy.RI.3.7	Use information gained from illustrations (e.g., maps, photographs) and the words in a text to demonstrate understanding of the text (e.g., where, when, why, and how key events occur).

21st Century Life & Career Ready Practice

CAEP.9.2.4.A.1	Identify reasons why people work, different types of work, and how work can help a person achieve personal and professional goals.
CAEP.9.2.4.A.2	Identify various life roles and civic and work - related activities in the school, home, and community.
CAEP.9.2.4.A.3	Investigate both traditional and nontraditional careers and relate information to personal likes and dislikes.
CAEP.9.2.4.A.4	Explain why knowledge and skills acquired in the elementary grades lay the foundation for future academic and career success.