March K Unit 5: Weather

Content Area: **Science**
Course(s):
Time Period: **March**
Length: **4-5 Weeks**
Status: **Published**

Unit Overview

This unit explores weather.

Enduring Understandings

Weather controls the environment around us every day.

Essential Questions

What is weather and why is it important?

Instructional Strategies & Learning Activities

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- Unit 5: Weather

  Student Edition

  Weather: Unit Opener

  The Unit Opener for "Weather" introduces the unit project, Local Weather Forecasts. During this unit project, children will:
  - Compare local weather forecasts with the actual weather to determine when the forecasts are accurate and when they are not.
  - Collect data to use as evidence to answer a question.
  - Construct an argument to support a claim.

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  Unit 5: Weather

  Teacher Edition

  Weather: Unit Opener

The Unit Opener introduces the unit "Weather" and the unit project, Local Weather Forecasts.

- Unit 5: Weather

  Teacher Edition

  Weather: Unit At a Glance

  Unit at a Glance for "Weather" includes the unit table of contents, unit vocabulary words, and the vocabulary game, Act It Out. In this unit, children will:
  - use observations to describe different kinds of weather;
  - explore observable weather patterns;
  - use patterns as evidence to describe weather conditions;
  - ask questions to find out about different kinds of weather;
  - explore technologies meteorologists use to predict weather and severe weather conditions.

  Launch

- Unit 5: Weather

  Teacher Edition

  Weather: Integrating the NGSS* Three Dimensions of Learning

  This section details the Performance Expectations covered in the unit "Weather."

- Unit 5: Weather
  Teacher Edition

  Weather: 3D Unit Planning

  Planning resources are available for each lesson and hands-on activity in the unit "Weather."
  Launch

- Unit 5: Weather
  Teacher Edition

  Weather: Differentiate Instruction

  This page provides differentiated support for this unit's Science & Engineering Leveled Readers, "How Can We Describe Weather and Seasons?" and "Sun, Storm, Sun Again."

- Unit 5: Weather
  Teacher Edition

  Weather: Connecting with NGSS

  These opportunities for informal science learning provide local context and extend and enhance

concepts from the unit "Weather."
Launch

- Unit 5: Weather
Teacher Edition

  Weather: Unit Project: Local Weather Forecasts

  During the unit project "Local Weather Forecasts," children will:
    - Compare local weather forecasts with the actual weather to determine when the forecasts are accurate and when they are not.
    - Collect data to use as evidence to answer a question.
    - Construct an argument to support a claim.

  Launch

- Unit 5: Weather
Online Assessment

  Weather: Unit Pretest

  The interactive Unit Pretest for "Weather" focuses on prerequisite knowledge. The test is composed primarily of DOK 1 items that evaluate student preparedness for the upcoming content.

- Unit 5: Weather
    - Home Letter

      Weather: Home Letter

      This is the home letter for the unit "Weather."

    - Unit 5: Weather
    - Student Edition

      Weather: Unit Review

      The Unit Review assesses student understanding of key ideas and concepts from the unit "Weather."
      Launch

    - Unit 5: Weather
      Teacher Edition

      Weather: Unit Performance Task: Changing Temperatures

      During the Performance Task "Changing Temperatures," children will record and analyze data to determine a pattern in temperature changes during the day.

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Unit 5: Weather

Teacher Edition

Weather: Unit Review

The Unit Review assesses student understanding of key ideas and concepts from the unit "Weather."

- Unit 5: Weather
  You Solve It

  Plan a Trip!

  In Plan a Trip, students analyze weather patterns in the form of a forecast and apply an understanding of weather patterns to prepare for a trip. Students use the weather data to make clothing and activity suggestions for a trip.

- Unit 5: Weather
  You Solve It

  Plan a Trip! (Teacher)

  Teacher support materials are available for "Plan a Trip!" During this activity, students will analyze weather patterns in the form of a forecast and apply an understanding of weather patterns to prepare for a trip. Students use the weather data to make clothing and activity suggestions for a trip.

- Unit 5: Weather
  Student eBook

  Weather: Unit Review

  The Unit Review assesses student understanding of key ideas and concepts from the unit "Weather."

- Unit 5: Weather
  Teacher eBook

  Weather: Unit Performance Task: Changing Temperatures

  During the Performance Task "Changing Temperatures," children will record and analyze data to determine a pattern in temperature changes during the day.

- Unit 5: Weather
  Teacher eBook

Weather: Unit Review

The Unit Review assesses student understanding of key ideas and concepts from the unit "Weather."
Launch

- Unit 5: Weather
Leveled Readers - Blue

On-Level: How Can We Describe Weather and Seasons?

The leveled reader "How Can We Describe Weather and Seasons?" is designed for on-level readers and can be used to enrich key concepts from the unit "Weather."

- Unit 5: Weather
Leveled Readers - Green

Enrichment: Sun, Storm, Sun Again

The leveled reader "Sun, Storm, Sun Again" is designed for above-level readers and can be used to extend key concepts from the unit "Weather."

- Unit 5: Weather
Leveled Readers - Red

Extra-Support: How Can We Describe Weather and Seasons?

The leveled reader "How Can We Describe Weather and Seasons?" is designed for below-level readers and can be used to reinforce key concepts from the unit "Weather."

- Unit 5: Weather
Leveled Readers Teacher's Guide

Topic 7: Weather and Seasons

The Leveled Readers Teachers Guide provides teaching strategies and support (as well as reproducible English and Spanish worksheets) for the Unit 5 readers "How Can We Describe Weather and Seasons?" and "Sun, Storm, Sun Again." On-Level and Extra-Support worksheets focus on vocabulary development, while Enrichment worksheets reinforce and enrich content.

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    - Unit 5: Weather
    Assessment Guide

    Weather: Unit Test

    The Unit Test for "Weather" assesses students' ability to apply knowledge to solve problems and explain phenomena in relation to the Performance Expectations associated with the unit. In this unit, children:

- use observations to describe different kinds of weather;
- explore observable weather patterns;
- use patterns as evidence to describe weather conditions;
- ask questions to find out about different kinds of weather;
- explore technologies meteorologists use to predict weather and severe weather conditions.

- Unit 5: Weather
- Unit Project Worksheet

  Weather: Unit Project: Local Weather Forecasts

  This is the Unit Project worksheet for "Local Weather Forecasts." During this project, children will:
  - Compare local weather forecasts with the actual weather to determine when the forecasts are accurate and when they are not.
  - Collect data to use as evidence to answer a question.
  - Construct an argument to support a claim.

  Launch

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- Unit 5: Weather
  Unit Performance Task Worksheet

  Weather: Unit Performance Task: Changing Temperatures

  This is the Unit Performance Task worksheet for "Changing Temperatures." During this task, children will record and analyze data to determine a pattern in temperature changes during the day.

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Integration of Career Exploration, Life Literacies and Key Skills

	Different types of jobs require different knowledge and skills.
9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.
9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
9.4.2.CT.1	Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).

9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP2	Apply appropriate academic and technical skills.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology and Design Integration

Smartboard lessons and technology.

Online Student Textbook

Online Student Simulations

8.1.2.CS.1	Select and operate computing devices that perform a variety of tasks accurately and quickly based on user needs and preferences.
	Individuals collect, use, and display data about individuals and the world around them.
8.1.2.DA.1	Collect and present data, including climate change data, in various visual formats.
	Data can be used to make predictions about the world.
8.1.2.DA.3	Identify and describe patterns in data visualizations.
8.1.2.DA.4	Make predictions based on data using charts or graphs.

Interdisciplinary Connections

MA.K.CC.B.4	Understand the relationship between numbers and quantities; connect counting to cardinality.
MA.K.CC.C.6	Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies.
LA.RI.K.1	With prompting and support, ask and answer questions about key details in a text.
LA.RI.K.2	With prompting and support, identify the main topic and retell key details of a text.
LA.RI.K.3	With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.K.4	With prompting and support, ask and answer questions about unknown words in a text.
LA.RI.K.5	Identify the front cover, back cover, and title page of a book.
LA.RI.K.6	Name the author and illustrator of a text and define the role of each in presenting the ideas or information in a text.
LA.RI.K.7	With prompting and support, describe the relationship between illustrations and the text in which they appear (e.g., what person, place, thing, or idea in the text an illustration depicts).
LA.RI.K.8	With prompting and support, identify the reasons an author gives to support points in a text.

LA.RI.K.9	With prompting and support, identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
LA.RI.K.10	Actively engage in group reading activities with purpose and understanding.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

See differentiation suggestions in Instruction above, for struggling and advanced learners.

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

IEP and 504 accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a

standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Pre-test followed by interactive assessments

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

See assessments embedded in Instruction above.

Summative Assessments

summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of ways to combine these approaches.

Summative assessments for this unit:

See assessments embedded in Instruction above.

Instructional Materials

HMH Science Demensions program materials

Misc. items for hands on labs

Standards

K-ESS2	Earth Systems
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.
	Examples of qualitative observations could include descriptions of the weather (such as sunny, cloudy, rainy, and warm); examples of quantitative observations could include numbers of sunny, windy, and rainy days in a month. Examples of patterns could include that it is usually cooler in the morning than in the afternoon and the number of sunny days versus cloudy days in different months.
	Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.
	Analyzing and Interpreting Data
	Analyzing data in K–2 builds on prior experiences and progresses to collecting, recording, and sharing observations.
	Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
ESS2.D	Weather and Climate
	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time.
	Patterns
	Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
K-ESS3	Earth and Human Activity
K-ESS3-2	Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather.
ESS3.B	Natural Hazards
	Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events.

ETS1.A Defining and Delimiting an Engineering Problem