

Winslow Township School District

Grade K Science

**Unit 4: Physical Science:
Earth and Its Weather**

Overview: In this unit of study, students will develop an understanding of patterns and variations in local weather and the use of weather forecasting to prepare for and respond to severe weather. The crosscutting concepts of patterns; cause and effect interdependence of science, engineering, and technology; and the influence of engineering, technology, and science on society and the natural world are called out as organizing concepts for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in asking questions, analyzing and interpreting data, and obtaining, evaluating, and communicating information. Students are also expected to use these practices to demonstrate understanding of the core ideas.

Overview	Standards for Science	Unit Focus	Essential Questions
<p><u>Unit 4</u></p> <p>Physical Science: Earth and Its Weather</p>	<ul style="list-style-type: none"> • K-ESS3-3 • K-ESS2-2 • K-2 ETS1-1 • WIDA 1,4 	<ul style="list-style-type: none"> • Use and share observations of local weather conditions to describe patterns over time • Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to, severe weather • Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool • Generate questions about the designed world and the purpose of weather 	<ul style="list-style-type: none"> • What is weather? • What is temperature? • How does weather change? • Why does weather change? • What is severe weather? • How can humans reduce their impact on the land, water, air and other living things in the local environment?
<p><i>Unit 4: Enduring Understandings</i></p>	<ul style="list-style-type: none"> • Weather can be measured by observing and recording weather data in order to identify patterns. • There is a cause and effect relationship within weather events. • Problems can be solved by: Defining simple problem. Developing new or improved object or tool. 		

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Curriculum Unit 4	Standards		Pacing	
			Days	Unit Days
Unit 4: Physical Science: Earth and Its Weather	K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.	10	36
	K-ESS2-2	Construct an argument supported by evidence for how plants and animals (including) humans) can change the environment to meet their needs.	10	
	K-2 ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved tool or object.	10	
	Assessment, Re-teach and Extension		6	

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Disciplinary Core Ideas	Indicator #	Indicator
<p>ESS3.C: Human Impacts on Earth Systems Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3- 3)</p> <p>ESS2.E: Biogeology Plants and animals can change their environment. (K-ESS2-2)</p> <p>ETS1.A: Defining and Delimiting Engineering Problems A situation that people want to change or create can be approached as a problem to be solved through engineering. Asking questions, making observations, and gathering information are helpful in thinking about problems. Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1)</p>	K-ESS3-3	Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.
	K-ESS2-2:	Construct an argument supported by evidence for how plants and animals (including) humans) can change the environment to meet their needs.
	K-2 ETS1-1	Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved tool or object.

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• Assessment Plan	
<ul style="list-style-type: none"> • Class discussions • Independent & group work/projects • Teacher and/or book series provided quizzes, tests, and a performance task to assess student mastery • Homework monitor and assess class work • Benchmark assessments • Teacher Observations • Performance Task 	<ul style="list-style-type: none"> • Short Constructed Responses • Observe the weather each day for a month. For week 1 through week 4, circle the symbol that shows the weather for that day. Then circle hot or cold to show the temperature. (individually or whole class) • What Will I Wear? Students should match pictures of clothes to appropriate weather.
Resources	Activities
<ul style="list-style-type: none"> • Chromebooks • HSP Science Teacher Manual • Lab Explorations • Big Books pg. • Leveled Readers • Songs on CD • Activity book • Vocab activities • vocab cards • Group discussions • Manipulatives • SMARTboard / Mimio Technology • Google Applications (Documents, Forms, Spreadsheets, Presentation) • Linkit • Readworks website • NJ Department of Education 	<ul style="list-style-type: none"> • Weather Observations: At the end of the month complete a graph of weather observations. Indicate the number of days different weather occurred during that month. • Watching Weather: Students will make their own weather station consisting of actual and simplified versions of real weather equipment. The weather station will consist of a thermometer and a student-made weather vane. They will use that equipment to make observations about the local weather. • Power Outage Safety: Match each picture and safety rule. • My Ready Kit: Cut and paste pictures of items that would be packed into a kit in case of an emergency.

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Instructional Best Practices and Exemplars

1. Identifying similarities and differences
2. Summarizing and note taking
3. Reinforcing effort and providing recognition
4. Homework and practice
5. Nonlinguistic representations

6. Cooperative learning
7. Setting objectives and providing feedback
8. Generating and testing hypotheses
9. Cues, questions, and advance organizers
10. Manage response rates

9.1 Personal Financial Literacy, 9.2 Career Awareness, Exploration, Preparation and Training & 9.4 Life Literacies and Key Skills

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).

9.4.2.DC.3: Explain how to be safe online and follow safe practices when using the internet (e.g., 8.1.2.NI.3, 8.1.2.NI.4).

9.4.2.DC.7: Describe actions peers can take to positively impact climate change (e.g., 6.3.2.CivicsPD.1).

9.4.2.IML.2: Represent data in a visual format to tell a story about the data (e.g., 2.MD.D.10).

9.4.2.IML.3: Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).

9.4.2.TL.7: Describe the benefits of collaborating with others to complete digital tasks or develop digital artifacts (e.g., W.2.6., 8.2.2.ED.2).

The implementation of the 21st Century skills and standards for students of the Winslow Township District is infused in an interdisciplinary format in a variety of curriculum areas that include, English language Arts, Mathematics, School Guidance, Social Studies, Technology, Visual and Performing Arts, Science, Physical Education and Health, and World Language.

Additional opportunities to address 9.1, 9.2 & 9.4:

Philadelphia Mint

<https://www.usmint.gov/learn/kids/resources/educational-standards>

Different ways to teach Financial Literacy.

<https://www.makeuseof.com/tag/10-interactive-financial-websites-teach-kids-money-management-skills/>

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Modifications for Special Education/504

Students with special needs: The students' needs will be addressed on an individual and grade level using a variety of modalities.

Accommodations will be made for those students who need extra time to complete assignment. Support staff will be available to aid students related to IEP specifications. 504 accommodations will also be attended to by all instructional leaders. Physical expectations and modifications, alternative assessments, and scaffolding strategies will be used to support this learning. The use of Universal Design for Learning (UDL) will be considered for all students as teaching strategies are considered.

- Small group instruction
- Audio books/ Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Modeling and guided practice
- Read directions aloud
- Repeat, rephrase and clarify directions
- Extended time as needed
- Break down assignments into smaller units
- Provide shortened assignments
- Modify testing format
- Repeat directions as needed
- Graphic organizers
- Study Guides, Study Aids and Re teaching as needed

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Modifications for At-Risk Students

Formative and summative data will be used to monitor student success. At first signs of failure, student work will be reviewed to determine support. This may include parent consultation, basic skills review and differentiation strategies. With considerations to UDL, time may be a factor in overcoming developmental considerations

- Audio books and Text-to-speech platforms
- Leveled texts/Vocabulary Readers
- Leveled informational texts via online
- Extended time as needed
- Read directions aloud
- Assist with organization
- Use of computer
- Emphasize/highlight key concepts
- Recognize success
- Provide timelines for work completion
- Break down multi-step tasks into smaller chunks
- Provide copy of class notes and graphic organizer

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English Language Learners	Modifications for Gifted Students
<p>All WIDA Can Do Descriptors can be found at this link: https://wida.wisc.edu/teach/can-do/descriptors</p> <p><input type="checkbox"/> Grade K WIDA Can Do Descriptors:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Listening <input type="checkbox"/> Speaking <input type="checkbox"/> Reading <input type="checkbox"/> Writing <input type="checkbox"/> Oral Language <p>Students will be provided with accommodations and modifications that may include:</p> <ul style="list-style-type: none"> • Relate to and identify commonalities in science studies in student’s home country • Assist with organization • Use of computer • Emphasize/highlight key concepts • Teacher Modeling • Peer Modeling • Label Classroom Materials - Word Walls 	<p>Students excelling in mastery of standards will be challenged with complex, high level challenges related to the topic.</p> <ul style="list-style-type: none"> • Raise levels of intellectual demands • Require higher order thinking, communication, and leadership skills • Differentiate content, process, or product according to student’s readiness, interests, and/or learning styles • Provide higher level texts • Expand use of open-ended, abstract questions • Critical and creative thinking activities that provide an emphasis on research and in-depth study • Enrichment Activities/Project-Based Learning/ Independent Study <p>Additional Strategies may be located at the links:</p> <ul style="list-style-type: none"> ❖ Gifted Programming Standards ❖ Webb’s Depth of Knowledge Levels and/or Revised Bloom’s Taxonomy ❖ REVISED Bloom’s Taxonomy Action Verbs

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Interdisciplinary Connections

Interdisciplinary Connections:

ELA Standards:

RI.K.1 With prompting and support, ask and answer questions about key details in a text. (K-ESS2-2)

W.K.1 Use a combination of drawing, dictating, and writing to compose opinion pieces in which they tell a reader the topic or the name of the book they are writing about and state an opinion or preference about the topic or book. (K-ESS2-2)

W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS2-2)

W.K.2 Use a combination of drawing, dictating, and writing to compose informative/explanatory texts in which they name what they are writing about and supply some information about the topic. (K-ESS3-3)

Math Standards:

MP.2 Reason abstractly and quantitatively.

K.CC Counting and Cardinality

Integration of Computer Science and Design Thinking NJSLS 8

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.

8.1.2.DA.1: Collect and present data, including climate change data, in various visual formats

8.1.2.DA.2: Store, copy, search, retrieve, modify, and delete data using a computing device.

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.

8.2.2.ITH.3: Identify how technology impacts or improves life.

8.2.2.ITH.5: Design a solution to a problem affecting the community in a collaborative team and explain the intended impact of the solution.