Grade K Science
Unit # 2 Earth Science

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Topic 3 (24 days) – Sunlight
Topic 4 (34 days) – Earth's Weather

Unit Overview: In this unit students will expand on their ideas about the sun and weather. Topic 3 has students discovering that the sun gives Earth heat and light. Students will also explore how the sun affects Earth's surface. In Topic 4 students will expand on their understanding of weather. Students will explore factors that affect different kinds of weather; recognize weather patterns and differences in these patterns in various places; recognize seasonal differences in temperature, storms, and plants; and finally model and explore storms.

Unit 1 NYSSLS Performance Expectations (PE)

K-PS1-1. Plan and conduct an investigation to test the claim that different kinds of matter exist as either solid or liquid, depending on temperature. [Clarification Statement: Emphasis should be on solids and liquids at a given temperature and that a solid may be a liquid at higher temperature and a liquid may be a solid at a lower temperature.] [Assessment Boundary: Only a qualitative description of temperature, such as hot, warm, and cool, is expected]

K-PS3-1. Make observations to determine the effect of sunlight on Earth's surface. [Clarification Statement: Examples of Earth's surface could include sand, soil, rocks, and water] [Assessment Boundary: Assessment of temperature is limited to relative measures such as warmer/cooler.]

K-PS3-2. Use tools and materials to design and build a structure that will reduce the warming effect of sunlight on an area.* [Clarification Statement: Examples of structures could include umbrellas, canopies, and tents that minimize the warming effect of the sun.]

K-ESS2-1. Use and share observations of local weather conditions to describe patterns over time. [Clarification Statement: 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 Boundary: Assessment of quantitative observations limited to whole numbers and relative measures such as warmer/cooler.]

K-ESS3-1. Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas, and grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

K-ESS3-2. Ask questions to obtain information about the purpose of weather forecasting to prepare for, and respond to severe weather. * [Clarification Statement: Emphasis is on local forms of severe weather and local resources available for preparedness measures.]
K-2-ETS1-3. Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.
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 object or tool.
K-2-ETS1-2. Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

Unit 1 NYSSLS Science and Engineering Practices (SEP)

- Analyzing and Interpreting Data
- Obtaining, Evaluating, and Communicating Information
- Developing and Using Models
- Planning and Carrying Out Investigations
- Asking Questions and Defining Problems

Unit 1 NYSSLS Disciplinary Core Ideas (DCI)

- **PS1.A: Structure and Properties of Matter**
  - Different kinds of matter exist and many of them can be either solid or liquid, depending on temperature. Matter can be described and classified by its observable properties. (K-PS1-1)
- **PS3.B: Conservation of Energy and Energy Transfer**
  - Sunlight warms Earth's surface. (K-PS3-1),(K-PS3-2)
- **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. (K-ESS2-1)
- **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. (K-2-ETS1-1)
  - Asking questions, making observations, and gathering information are helpful in thinking about problems. (K-2-ETS1-1)
  - Before beginning to design a solution, it is important to clearly understand the problem. (K-2-ETS1-1)
- **ETS1.B: Developing Possible Solutions**
  - (NYSED) Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas to other people (secondary to 2-LS2-2)

Unit 1 NYSSLS Cross Cutting Concepts (CCC)

- **Cause and Effect**
- **Patterns**

Resources

- **Pearson Elevate Science Book NY Grade K Topics 1-2**
- **PearsonRealize.com**
- **Pearson Lab materials**
- http://ngss.nsta.org/Classroom-Resources.aspx
- http://newyorkscienceteacher.com/sci/

Measurement of Student Learning

- Lesson Quiz
- Topic Assessment and Remediation
- Evidence-Based Assessment
- Quest Rubrics

Step Up to Writing

SUTW Strategy
Connect, Case Studies
Easy 2-Column Notes

Content Vocabulary
Breaking Down Definitions

Investigate/Synthesize/Quest
IVF Summary Sentences

Investigate/Synthesize/Quest
Four Step Summary Paragraph

Investigate/Synthesize/Quest
Color-Coding the Elements of Informative

Investigate/Synthesize/Quest
Explanatory Writing Informal Outlines

ELL Enhancements

Pearson Elevate Science Supports

Topic Differentiated Instruction in TE
Topic Remediation Summary in TE
Leveled Readers
ELL Support in TE
ELL Vocabulary Support in TE

Listening	Speaking	Reading	Writing	Accommodations
Build Background Knowledge Audio	Sentence Frames Academic conversation Starters	Supplementary Texts Visual Aids Video Standards-based questions	Sentence Frames Graphic Organizers Standards-based sentence stems	Extended time Directions read 3x Oral interpretation Translated version of test (may have both English and other) Responses in home language

Special Education Modifications

Pearson Elevate Science Supports

Topic Differentiated Instruction in TE
Topic Remediation Summary in TE
Leveled Readers

Instructional	Assistive technology	Assessment:	
Pre-teach vocabulary Use picture vocabulary	Computer for lengthy writing tasks Audio textbook	Scaffold written assignments Individual criteria for success Provide with review packet	

Picture examples of safety measures posted Pictures for each category of science Scaffold Depth of Knowledge questions Provide copy of notes/notes in" cloze" form Peer partner Extended time for written tasks/verbal response Break long tasks over multiple days Allow for multiple ways to respond (verbal, written, response board, scribe) Provide mock/model of performance task Model use of graphic organizers (fade until mastery) Modify informational text to shorter passages Provide model of exemplar lab write-up Provide interactive notebook Present complex tasks in multiple ways Model steps to read, interpret, and construct graphs Multiple opportunities to perform to repeat labs Provide advance organizer of class tasks	Videos to clarify concepts Recording device to record class lecture/discussions **Other** Arrange seating for maximum engagement and minimum distraction Accessible lab space (counter level)	Modify the number of questions Provide model of the task Provide multiple options for project Practice calculating density with sample problem before assessing student.	
Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom			
Pearson Elevate Science Supports **Pearson Elevate Science Resources**			

• Materials, resources, and/or discussions address diverse cultural backgrounds and real world applications
• Artifacts (posters, charts, etc.) in the science classroom are representative of the cultures of the student population
• All students are given an opportunity to engage in science discourse
• Teacher demonstrates high expectations for all students