



Grade K Science
Unit 1 Physical Science
Topic 2 Matter - 27 days

Unit Overview: In this unit students will connect and expand on their ideas of physical science. Topic 1 will have students using their basic experiences in science to understand pushes and pulls. Students will investigate and describe the movement of objects; learn about the various types of motion; predict, explore, and describe changes in motion and what caused the changes. **Topic 2** is matter. Students will learn their senses to observe and describe matter. Students will progress to learn about different types of matter and that objects are matter. Finally, students will learn about the three states of matter and will recognize objects in these states in the world around them.

Topic Essential Question: How can you classify different objects?

Lessons

- Topic Launch/Quest Kickoff
- Lesson 1 Senses
- Lesson 2 Objects
- Lesson 3 Solids, Liquids, and Gases
- Topic Close –Assessment, Quest Findings

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-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.

Higher Order Thinking (HOTS)

Higher Order Thinking Skills (HOTS) will be identified within each topic plan. Kindergarten HOTS include:

- sequencing
- categorizing
- identifying patterns
- cause and effect
- researching
- brainstorming
- use of scientific method
- inferencing
- academic vocabulary

Grade K Unit 1 Physical Science

<p>Topic Opener PE: K-PS1-1, K-2-ETS1-1 SEP: Asking Questions and Defining Problems* Planning and Carrying Out Investigations* Analyzing and Interpreting Data*</p> <p>DCI: PS1.A- Structure and Properties of Matter</p> <ul style="list-style-type: none">• 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. <p>ETS1.A- Defining and Delimiting Engineering Problems</p> <ul style="list-style-type: none">• 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. <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas Highlighted labs are important to the understanding of the instructional concepts in this lesson and must be completed during Science instructional time.</p> <ul style="list-style-type: none">• uConnect Lab - What is the object?*• Quest Kickoff – A Messy Classroom• Leveled Readers• STEM Engineering Reader• Science Song – A “Matter” of Lemonade
<p>Lesson 1- Senses PE: K-2-ETS1-1, K-2ETS1-2 SEP: Planning and Carrying Out Investigations* Analyzing and Interpreting Data* Asking Questions and Defining Problems*</p> <p>DCI: ETS1.A- Defining and Delimiting Engineering Problems</p> <ul style="list-style-type: none">• 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. <p>CCC: Cause and Effect*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas Guiding Objective</p> <ul style="list-style-type: none">• Students will name the five senses. <p>Vocabulary</p> <ul style="list-style-type: none">• senses• structure• function <p>Connect</p> <ul style="list-style-type: none">• TE/SB p. 42• Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none">• TE/SB pp. 43-44• uInvestigate Lab- How does it feel?*• Video – Senses• Literacy Toolbox – Main Idea and Detail <p>Synthesize</p> <ul style="list-style-type: none">• TE/SB pp. 45, 47• Interactivity- We Observe Using Our Senses• Quest Connection*• Quest Check-In – What can our senses tell us about structure and function?* <p>Demonstrate</p> <ul style="list-style-type: none">• TE/SB p.46• Lesson 1 Quiz

Grade K Unit 1 Physical Science

<p>Lesson 2 Objects</p> <p>PE: K-PS1-1, K-2-ETS1-1</p> <p>SEP: Planning and Carrying Out Investigations* Analyzing and Interpreting Data* Asking Questions and Defining Problems*</p> <p>DCI:</p> <p>PS1.A- Structure and Properties of Matter</p> <ul style="list-style-type: none">• 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. <p>ETS1.A- Defining and Delimiting Engineering Problems</p> <ul style="list-style-type: none">• 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 <p>CCC: Energy and Matter*</p> <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas</p> <p>Guiding Objectives</p> <ul style="list-style-type: none">• Students will use their senses to observe objects.• Students will sort objects into groups according to their properties. <p>Vocabulary</p> <ul style="list-style-type: none">• matter• change• shape <p>Connect</p> <ul style="list-style-type: none">• TE/SB p. 48• Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none">• TE/SB pp. 49-50• Video - Objects• uInvestigate Lab - How are objects the same?* <p>Synthesize</p> <ul style="list-style-type: none">• TE/SB pp. 51-53• Interactivity - How can you sort objects?*• Literacy Toolbox – Main Idea and Detail• Quest Connection <p>Demonstrate</p> <ul style="list-style-type: none">• TE/SB pp.53-54• Lesson 2 Quiz• Quest Check-In - How can you observe and sort objects? *
<p>Lesson 3 Solids, Liquids, and Gases</p> <p>PE: K-PS1-1, K-2-ETS1-1</p> <p>SEP: Planning and Carrying Out Investigations* Analyzing and Interpreting Data* Asking Questions and Defining Problems*</p> <p>DCI:</p> <p>PS1.A- Structure and Properties of Matter</p> <ul style="list-style-type: none">• 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. <p>ETS1.A- Defining and Delimiting Engineering Problems</p> <ul style="list-style-type: none">• 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 <p>*Denotes Higher Order Thinking Skill</p>	<p>Savvas</p> <p>Guiding Objectives</p> <ul style="list-style-type: none">• Students will observe the three states of matter. <p>Vocabulary</p> <ul style="list-style-type: none">• solid• liquid• gas <p>Connect</p> <ul style="list-style-type: none">• TE/SB p. 56• Jumpstart Discovery <p>Investigate</p> <ul style="list-style-type: none">• TE/SB pp. 57-59• Video – Solids, Liquids, and Gases• uInvestigate Lab – What can you observe about water? * <p>Synthesize</p> <ul style="list-style-type: none">• TE/SB p. 59• Interactivity – Matter at the Park*• Quest Connection* <p>Demonstrate</p> <ul style="list-style-type: none">• TE/SB pp.60-61• Quest Check-in – How will you sort solids, liquids, and gases?*• Lesson 3 Quiz

<p>Topic Close</p> <ul style="list-style-type: none"> • Assessment and Remediation TE/SE pp. 66-69 • Quest Finding p.64 	<p>Topic 2 Enrichment</p> <p>Topic 2- Lesson 1 Enrichment- TE p. 47 - This activity extends student understanding of the lesson by encouraging them to explore how scratch and sniff works and the new ways its being used.</p> <p>Enrichment Skill- Brainstorming</p> <p>Topic 2- Lesson 2 Enrichment- TE p. 53 - This activity provides students opportunities to sort objects by temperature.</p> <p>Enrichment Skill- Categorize</p> <p>Topic 2- Lesson 3 Enrichment- TE p. 61 - This activity extends student understanding of the lesson providing them an opportunity to learn about bubbles through academic vocabulary (Solid, liquid, gas).</p> <p>Enrichment Skill- Academic vocabulary</p>
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<p>English Language Learners (ELL) Enhancements</p> <p>To access hyperlinked material, you must be logged into your BPS Google Drive</p>	<p>Listening</p> <ul style="list-style-type: none"> • Cross- Linguistic Practices: Gives students opportunities to make connections between what they hear and their home language (For example, allow students to listen to a passage and identify cognates.) • Activating Prior Knowledge Activating prior knowledge means both eliciting from students what they already know and building initial knowledge that they need in order to access upcoming content • Activating Prior Knowledge • Visuals - GIFs, pictures- will assist students in understanding what they are listening to. Use visual thinking strategies to set the lens for learning. • Video to review or introduce a topic – use closed captioning to help students see the words and pronunciations while they listen to the content. • Word stretching / Vowel stretching when instructing allows student to listen closely to the pronunciation of the word • Performance Level Descriptors this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of listening Scroll for grade K. <p>Speaking</p> <ul style="list-style-type: none"> • Sentence Stems/Frames - to begin a sentence - such as <i>Evolution is...</i> or <i>I think that evolution is...</i> • Academic Conversation Starters: Have a visual of a list of academic sentence starters that students can refer to in a discussion. • Choral Reading - To build fluency, self-confidence and motivation with reading/speaking • Create movement to go with the word. Movement can be a motivating factor, as well as a kinesthetic tool for conceptualizing the rhythm and flow of fluent reading while triggering brain function for optimal learning • Performance Level Descriptors This document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of speaking. Scroll for grade K. <p>Reading</p> <ul style="list-style-type: none"> • Supplementary Text to help reinforce concepts. • Visual Aids - Pictures or models to support vocabulary words and concepts • Video to review or introduce a topic - use closed captioning to help students read along while they listen to the content. • 4 Square / Frayer models to help students gain a deeper understanding of vocabulary. • Highlighting important text to assist students in answering questions after the reading. • Chunking-Break reading of text into chunks or paragraphs
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Grade K Unit 1 Physical Science

	<ul style="list-style-type: none"> ● Performance Level Descriptors this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of reading. Scroll for grade K. ● Vocabulary Morphology- Morphology relates to the segmenting of words into affixes (prefixes and suffixes) and roots or base words, and the origins of words. Understanding that words connected by meaning can be connected by spelling can be critical to expanding a student’s vocabulary
	<p>Instructional Accommodations (depending on the student’s needs)</p> <ul style="list-style-type: none"> ● Extended time for tests in class, projects and assignments ● Directions read. Broken down as necessary ● Model how to complete the activity in the lesson ● Oral simplification of directions or questions ● Translated version of test when available. Student may have both version English and native language version ● Use of approved bilingual glossaries from NYS in each subject

<p>Special Education Modifications Special Education students must have accommodations as per Individual Educational Plan (IEP)</p>	<p>Instructional</p> <ul style="list-style-type: none"> ● Pre-teach vocabulary ● Use picture vocabulary ● Scaffold Depth of Knowledge questions ● Provide copy of notes/notes in “cloze” form ● Use of Think, Pair, and Share strategy to help process information ● Scaffold written assignments with the use of graphic organizers ● Allow for multiple ways to respond (verbal, written, response board) ● Provide model of performance task ● Modify informational text to fit the needs of the students ● Provide a digital or paper interactive notebook ● Present complex tasks in multiple ways ● Provide mnemonic strategies for scientific concepts
	<p>Technology:</p> <ul style="list-style-type: none"> ● Audio reading of text ● Text to type functions ● Videos to clarify/visualize science concepts ● Record class lecture/discussions and make accessible to student ● Nearpod- interactive presentations of notes
	<p>In Class Assessments</p> <ul style="list-style-type: none"> ● Provide multiple options for projects ● Use of timer in class ● Break all complex tasks into chunks

<p>Step Up to Writing Step Up to Writing materials can be found in BPS Science K-12 Schoology Folder K Resources K Curriculum Materials SUTW materials</p>	<ul style="list-style-type: none"> ● Easy Two-Column Notes ● Breaking Down Definitions ● Paragraph Frame- What I Learned ● Performance Level Descriptors this document provides teachers with a description of what output they can expect from students based on earned NYSESLAT levels in the modality of writing. Scroll for grade K.
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Grade K Unit 1 Physical Science

Culturally and Linguistically Responsive Teaching (CLRT) in the Science Classroom

- 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