

1st Grade - Elementary Science Bundle # 2

Title	Suggested Dates
Natural Resources (rocks & soil), continues into Bundle 3	9/14/09 – 10/02/09 (14 days)



Big Idea/Enduring Understanding	Guiding Questions
<p>The natural world consists of materials that we use in our everyday life.</p> <p>The natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems.</p>	<p>How do we use natural materials in our everyday lives? Such as rocks?</p> <p>What observations can we make about different rocks in order to sort them?</p> <p>How are rocks reused?</p>

The resources included here provide teaching examples and/or meaningful learning experiences to address the District Curriculum. In order to address the TEKS to the proper depth and complexity, teachers are encouraged to use resources to the degree that they are congruent with the TEKS and research-based best practices. Teaching using only the suggested resources does not guarantee student mastery of all standards. Teachers must use professional judgment to select among these and/or other resources to teach the district curriculum.

Knowledge & Skills with Student Expectations	District Specificity/Examples	Suggested Resources (See note above)
<p>This bundle and Bundle 3 cover Natural Resources with a focus on soil and water. Lessons and resources can be blended for both topics within both bundles or can be separated (i.e. Bundle 2 – rocks and Bundle 3 – soil)</p>		
<p>NEW TEKS 1.7 Earth and Space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems.</p> <p>1.7a – observe, compare, describe and sort components of soil by size, texture, and color</p> <p>CURRENT TEKS 1.10 The student knows that the natural world includes rocks, soil, and water. 1.10b observe and describe differences in rocks and soil</p>	<p>TEACHER NOTE: students should use senses and appropriate science equipment; use both provided and authentically collected samples</p> <p>Including</p> <ul style="list-style-type: none"> • Rocks – Color, Texture, Size, Mass (relative) • Soil – Color, Texture, size (relative particle size) 	<p>Resources listed here apply to the entire bundle.</p> <p>Science Notebooks</p> <p>IF I TRY (Intranet)</p> <p>KLEW/ Claims & Evidence</p> <p>PISD Elem Science Homepage</p> <p>Texas Science Safety Standards</p>
<p>NEW TEKS 1.7 Earth and Space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems.</p> <p>1.7c – gather evidence of how rocks, soil, and water help to make useful products</p>	<p>Including</p> <ul style="list-style-type: none"> • Uses of <ul style="list-style-type: none"> ○ Rocks: construction tools, art/jewelry, seasoning (salt) ○ Soil – support for plants, agriculture (food/nutrients), construction • Recycle <ul style="list-style-type: none"> ○ Composting soil 	<p>PISD K-5 Equipment Alignment</p> <p style="text-align: center;">REQUIRED GRADE LEVEL SIGNATURE RESOURCE</p> <p>GeoScience - Change Over Time “Rock Investigators” (Master copies of this lesson can be found in</p>

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<p>CURRENT TEKS 1.10 The student knows that the natural world includes rocks, soil, and water. 1.10c identify how rocks, soil, and water are used and how they can be recycled.</p>		<p>your campus library) (best as a rock resource)</p> <p>TAKScopes Scope: 1.10bc – Rocks, Soil, and Water (this scopes work for Bundles 2,3, and 4) FOSS – Pebbles, Sand, and Silt (best as a soil resource)</p>
<p>NEW TEKS 1.5 Matter and energy. The student knows that objects have properties and patterns. 1.5a – classify objects by observable properties of the materials from which they are made such as larger and smaller; heavier and lighter; shape, color, and texture</p> <p>CURRENT TEKS 1.5 The student knows that organisms, objects, and events have properties and patterns. 1.5a sort objects and events based on properties and patterns</p>	<p>Including</p> <ul style="list-style-type: none"> • Rocks <ul style="list-style-type: none"> ○ Using both senses and scientific equipment ○ Using both provided rock samples and authentically collected rock samples • Soil <ul style="list-style-type: none"> ○ Using both senses and scientific equipment ○ Use both provided soil samples (sand, potting soil, clay) and authentically collected soil samples ○ By size, texture, and color (relative particle size) 	<p>Brain Pop Jr. – Rocks and Minerals Brain Pop Jr. – Soil</p> <p>United Streaming Uses of Rocks and Minerals Getting to Know Soil</p> <p>AIMS 1st Grade Texas Core Curriculum “My Rock” “Rock Groups” “Find and Sort” “Soil Search” “Two Soils” “Dirt Drawings”</p>
<p>CURRENT TEKS 1.8 The student distinguishes between living organisms and nonliving objects. 1.8b compare living organisms and nonliving objects</p>	<p>TEACHER NOTE: this is a connecting TEKS in this bundle; review what makes something living vs non-living by applying to rocks (soil & water).</p>	
<p>NEW TEKS 1.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices. 1.1a – recognize and demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations including wearing safety goggles, washing hands, and using materials appropriately 1.1b – recognize the importance of safe practices to keep self and others safe and healthy</p> <p>CURRENT TEKS 1.1 Conducts classroom and field investigations following home and school safety procedures</p>	<p>No tasting or touching unless instructed Safe smelling – wafting Goggles Wait for teacher directions No glassware Students do not handle hot water, hot plates or burners. Washing hands after science activities</p> <p>Review investigation safety procedures [directly point out precautions, possible safety risks, specific guidelines for the lesson] for both indoor and outdoor activities, as applicable. In addition, encourage students to identify these on their own throughout the year [document in science notebooks via words and/or pictures]</p> <p>Soil may not be stored for more than 1 year. Within the year, soil may be moistened, dried, reused, etc.</p>	

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<p>1.1a demonstrate safe practices during classroom and field investigations.</p>		
<p>NEW TEKS 1.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures and uses environmentally appropriate and responsible practices.</p> <p>1.1c – identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals</p> <p>CURRENT TEKS 1.1 Conducts classroom and field investigations following home and school safety procedures 1.1b learn how to use and conserve resources and materials</p>	<p>TEACHER NOTE: When possible, return natural items to their environment (i.e. rocks back to garden)</p> <p>Soil (provided or authentically collected) should be relocated to appropriate natural area at end of school year.</p> <p>Make note of and teach use of district-wide recycling resource.</p>	
<p>NEW TEKS 1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.</p> <p>1.2a – ask questions about organisms, objects, and events observed in the natural world</p> <p>CURRENT TEKS 1.2 Develops abilities necessary to do scientific inquiry in the field and in the classroom 1.2a ask questions about organisms, objects, and events.</p>	<p>Teacher guide and model the process using the Think-Aloud technique</p> <p>Variety of question types should be explored: closed and open ended</p> <p>Develop questions using resources such as Science Notebooks, KLEW charts and students sharing with one another</p> <ul style="list-style-type: none"> • Should primarily be oral – model writing • Conduct as a group rather than independently <p>EX: “I wonder which rock weighs more...” OR “Do these soils feel differently when they are wet...” (student then observes and documents verbally and through notebook)</p>	
<p>NEW TEKS 1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.</p> <p>1.2b - plan and conduct simple descriptive investigations such as ways objects move</p> <p>CURRENT TEKS 1.2 Develops abilities necessary to do scientific</p>	<p>Should occur both indoors and outdoors.</p> <p>Students are not held accountable for Scientific Method and do not need to know the terms, although teachers can use them interchangeably.</p> <p>Formal and informal terms in all areas of science should be used interchangeably for exposure.</p> <p>Teacher explicitly model the relationship between the question and the materials and steps used in the investigation. EX: Question on which rock weighs more –</p>	

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<p>inquiry in the field and in the classroom 1.2b plan and conduct simple descriptive investigations.</p>	<ul style="list-style-type: none"> • Materials – need the rocks and a tool to compare their weight • Steps – show the order of steps used in comparing the rocks on the balance • Model writing the materials and steps on a chart <p>Whole group setting: As the year progresses, facilitate students in helping choose the materials, tools and steps they would take to answer their questions</p>	
<p>NEW TEKS 1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.</p> <p>1.2c - collect data and make observations using simple equipment such as hand lenses, primary balances, and non-standard measurement tools</p> <p>CURRENT TEKS 1.2 Develops abilities necessary to do scientific inquiry in the field and in the classroom 1.2c gather information using simple equipment and tools to extend the senses</p>	<p>Tools and equipment, including senses, should be used in authentic learning settings including outside field investigations</p> <p>Teacher model student recording of data (pictures, words)</p> <ul style="list-style-type: none"> • Create a big book of the science notebook to model recording <ul style="list-style-type: none"> ○ Investigation steps ○ Materials ○ Ideas <p>Support students as they move from initially copying compiled information into making their own authentic entries into their notebooks</p> <p>As the year progresses, more natural and authentic use of notebooks before, during, and after lessons/investigations/activities should be integrated (in “science” and other applicable connections throughout the day).</p>	
<p>NEW TEKS: 1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations</p> <p>1.2d - record and organize data using pictures, numbers, and words</p> <p>1.2e - communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations</p> <p>CURRENT TEKS 1.2 Develops abilities necessary to do scientific inquiry in the field and in the classroom 1.2d construct reasonable explanations and draw conclusions. 1.2e communicate explanations about investigations.</p>	<p>Communicate both verbally and in science notebook (pictures, words, copying information from class discussion and teacher modeled big book science notebook entry)</p> <p>Mini-lessons can be used to model specific graphic organizers as they are needed. Students begin to record into their science notebooks by copying and authentic entries</p> <p>Can use KLEW charts to model connections between What they LEARNED – and the EVIDENCE for what they learned – or what was observed that supports their new ideas</p> <p>This idea is the same as Claims/Evidence. What is the evidence to the claim? What was observed? This integrates well with ELA.</p> <p>Encourage students to always support their ideas with evidence – from activities, observations, reading, etc.</p>	

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<p>NEW TEKS: 1.3 Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving.</p> <p>1.3a - identify and explain a problem such as finding a home for a classroom pet and propose a solution in his/her own words.</p> <p>CURRENT TEKS 1.3 Knows that information and critical thinking are used in making decisions 1.3a make decisions using information. 1.3b discuss and justify the merits of decisions. 1.3c explain a problem in his/her own words and identify a task and solution related to the problem.</p>	<p>Introduce the fact that you can solve a problem or answer a question <u>through a systematic approach</u>. This is not necessarily “the Scientific Method”, but simply an organized approach to problem-solving. Student should use and reference their Science Notebooks and one another</p> <p>Student entries should be their elaboration based on class discussion EX: From field experience: Are all big rocks heavy? How do we use rocks at our school? How many different colors of soil can we find around our school?</p> <p>Model using the Think-Aloud technique (processes and steps to decision-making)</p>	
<p>NEW TEKS: 1.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world.</p> <p>1.4a - collect, record, and compare information using tools, including cameras; computers; hand lenses; non-standard measuring items such as paper clips and clothespins, weather tools such as classroom demonstration thermometers and weather vanes; primary balances; cups; bowls, timing devices including clocks and timers; magnets; collecting nets; notebooks; materials to support observations of habitats of organisms such as aquariums and terrariums; and safety goggles</p> <p>CURRENT TEKS 1.4 Uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured 1.4a collect information using tools including hand lenses, clocks, computers, thermometers, and balances</p>	<p>Tools that support hands-on investigation must be taught, modeled, guided and used.</p> <p>Continue direct teach on use and developing understanding for use of hand lens; students gain enough experience to independently use hand lens when appropriate</p> <p>Students should also use primary balances for relative mass (teacher modeled, guided) and non-standard units of measurement for length</p> <p>Additional tools should be utilized as appropriate (i.e. digital cameras for documentation of outdoor samples that are unable to be moved)</p>	
<p>NEW TEKS: 1.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to</p>		

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<p>investigate the natural world</p> <p>1.4b – measure and compare organisms and objects using non-standard units</p> <p>CURRENT TEKS 1.4 Uses age-appropriate tools and models to verify that organisms and objects and parts of organisms and objects can be observed, described, and measured 1.4b record and compare collected information 1.4c measure organisms and objects and parts of organisms and objects, using non-standard units such as paperclips, hands, and pencils</p>		
<p><i>NEW TEKS</i> 1.8 Earth and space. The student knows that the natural world includes the air around us and objects in the sky.</p> <p><i>1.8a - record weather information, including relative temperature, such as hot or cold, clear or cloudy, calm or windy, and rainy or icy</i></p> <p><i>1.8c - identify characteristics of the seasons of the year</i></p> <p><i>CURRENT TEKS</i> 1.7 Science concepts. The student knows that many types of change occur. <i>1.7c observe and record changes in weather from day to day and over seasons</i></p>	<p><i>Keep daily weather log (as part of morning weather / calendar routine).</i></p> <p><i>This models and provides experience gathering and recording data over time. The data will be used during Bundle 8 when there is more of a direct focus on weather.</i></p>	