


1st Grade - Elementary Science Bundle # 10

Title		Suggested Dates
Energy		3/22/10 – 4/16/10 (19 days)

Big Idea/Enduring Understanding	Guiding Questions
We use force, motion and energy in our everyday lives.	Why are light, heat, sound and magnetic force important to everyday life? How do we use different forms of energy? How does energy change materials?

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>NEW TEKS 1.6 Force, Motion, and Energy. The student knows that force, motion, and energy are related and are a part of everyday life.</p> <p>1.6a identify and discuss how different forms of energy such as light, heat, and sound are important to everyday life</p>	<p>Recognize the importance of energy in daily life</p> <p>Heat Light Sound Magnetic</p>	<p>The resources apply, as applicable, throughout the entire bundle.</p> <p>Science Notebooks</p> <p>IF I TRY (Intranet)</p> <p>KLEW/ Claims & Evidence</p>
<p>NEW TEKS: 1.5 Matter and Energy. The student knows that objects have properties and patterns.</p> <p>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 Science concepts. The student knows that organisms, objects, and events have properties and patterns.</p> <p>1.5a sort objects and events based on properties and patterns</p>	<p>Object sort examples: changes same with heat, keeps shape with heat see through it / not see through it bright / shiny with light, dull or no change with light makes a sound on its own / does not make a sound on its own types of sounds types of sounds made when striking a [hanger, desk, book] loud, medium, soft sounds magnetic / non-magnetic</p> <p>Event sort examples: When / how do we use heat in our daily life; is there a pattern? When / how do we use light in our daily life; is there a pattern? When / how do we use sound in our daily life; is there a pattern? When / how do we use magnets in our daily life; is there a pattern?</p> <p>Organism sort examples:</p>	<p>PISD Elem Science Homepage</p> <p>PISD K-5 Equipment Alignment</p> <p>TAKScopes Physical Changes Changes from Heat</p> <p style="background-color: yellow;">REQUIRED SIGNATURE LESSON</p> <p>Bridging to TAKS – Matter “Pets Matter” (connect to idea that matter has properties that can be measured) Master copy of lesson can be found in every campus library; all campuses have the kit.</p> <p>Heat center activities: www.kidport.com/Grade1Math/MeasureGeo/G1-M-MG1-1-3.htm</p>

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	<p>How do different types of animals use heat? adjust their heat (i.e. perspiring, panting, seeking warm shelter, sunning on a rock)</p> <p>New 1.5a TEACHER NOTE: such as: sound properties, magnetic properties, reflective properties (light: dull, shiny, bright, etc)</p>	<p>www.bbc.co.uk/schools/scienceclips/ages/5-6/sound_hearing.shtml</p> <p>Physical Changes center activities: www.bbc.co.uk/schools/scienceclips/ages/9_10/c_hanging_state_fs.shtml</p>
<p>NEW TEKS: 1.5 Matter and Energy. The student knows that objects have properties and patterns.</p> <p>1.5b predict and identify changes in materials caused by heating and cooling such as ice melting, water freezing, and water evaporating</p> <p>CURRENT TEKS 1.7 Science concepts. The student knows that many types of change occur. 1.7a observe, measure, and record changes in size, mass, color, position, quantity, sound, and movement 1.7b identify and test ways that heat may cause change such as when ice melts</p>	<p>1.7a TEACHER NOTE: connect back to experiences in Bundle 9, continue experiences</p> <p>1.7b and new 1.5b – add note connecting back to bundle 9 and expand idea to daily life (such as choice of building materials, leaving certain objects in your car, wearing shoes on concrete or on the beach in the summer, wearing dark or light colors when it is hot, car colors)</p> <p>Predicting examples: choosing playground equipment or whether or not to slide based on how hot it is (relate back to discussions on weather and sun)</p>	<p>www.bbc.co.uk/schools/scienceclips/ages/8_9/solid_liquids_fs.shtml</p> <p><u>AIMS 1st Grade Texas Core Curriculum Physical Science Book</u> Made of Matter All Sorts of Stuff Going Nuts Icy Hot The Beat of the Drum Eggs Full of Sound</p> <p><u>United Streaming</u> – A First Look: Magnets The Magic Of Magnetism</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>1.1a 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</p> <p>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>1.1a demonstrate safe practices during classroom and field investigations</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>Be cognizant of touching hot objects, producing too loud of sounds for space provided, slamming fingers between magnets, and cautious with reflected light</p>	<p><u>PISD Safety Website</u> -Safety Contracts, games, etc -Science Safety is Elementary (for teachers) -Safety in the Elementary Classroom (for teachers)</p> <p><u>DuPont Science Safety Zone website</u></p> <p><u>Texas Science Safety Standards</u></p>

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<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>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: “What type of movement makes a louder sound?” OR “Which piece of playground equipment feels warmer on a sunny day? (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 inquiry in the field and in the classroom. 1.2b plan and conduct simple descriptive investigations</p>	<p>Should occur both indoors and outdoors. 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> <ul style="list-style-type: none"> • Materials – need the rocks and a tool to compare their 	

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	<p style="text-align: center;">weight</p> <ul style="list-style-type: none"> • 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>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>Encourage students to always support their ideas with evidence – from activities, observations, reading, etc.</p>	
<p>NEW TEKS: 1.3 Scientific investigation and reasoning. The student knows that information and critical thinking</p>	<p>Introduce the fact that you can solve a problem or answer a question <u>through a systematic approach</u></p>	

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<p>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>Student should use and reference their Science Notebooks and one another</p> <p>Student entries should be their elaboration based on class discussion EX: “Should I put the magnet on the computer?”. “Should we ever control the loudness of sounds?”</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 and guided) and used. Focus on use and develop understanding for use of hand lens;</p> <p>Students gain enough experience to independently use hand lens when appropriate</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>1.4b measure and compare organisms and objects using non-standard units</p>		

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<p>CURRENT TEKS</p> <p>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.</p> <p>1.4b record and compare collected information</p> <p>1.4c measure organisms and objects and parts of organisms an objects, using non-standard units such as paperclips, hands, and pencils</p>		
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