


1st Grade - Elementary Science Bundle # 1

Title		Suggested Dates
Safety / Notebooks / Processes		8/25/09 – 9/11/09 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
<p>Safety should always be considered when exploring, learning, and using various tools and equipment both inside and outside of the classroom.</p> <p>Notebooks help us organize our thoughts, data, and learning.</p> <p>Science is an ongoing cycle of questioning and problem solving.</p>	<p>Why do we need to be careful when we are doing classroom or outdoor investigations?</p> <p>How do we organize our thoughts, information, connections, and other data?</p> <p>What skills and tools do we use as scientists?</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>Participation in learning activities both indoors and outside provides opportunity to be introduced to science process skills as well as appropriate safety behaviors. In addition to other resources, this bundle uses “living and non-living” as the vehicle for exploration of safety and processes, but is not the target TEKS. These concepts will be a more direct lesson during other bundles. Teaching process skills and practicing safety behaviors continue through all of the bundles.</p> <p>This list of Student Expectations is not linear. Integrating all of these pieces together provides the best learning and application of skills.</p>		
<p>Science Notebooks: As part of Bundle 1, students should be setting up their science notebook. This includes adding all of the components and making an initial entry. Initial entries should be made outside of a regular investigation and should be a lesson itself. Throughout the year, notebooks should be used as a teaching tool for various ELA skills and should be done through teacher modeling and group entries as well as individual entries.</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 identify and demonstrate safe practices as described in the Texas Science Safety Standards during classroom and outdoor investigations, including wearing safety goggles, washing hands, and using materials appropriately</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</p>	<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>PISD Safety Website</p>

1st Grade - Elementary Science Bundle # 1

<p>1.1b recognize the importance of safe practices to keep self and others safe and healthy</p> <p>CURRENT TEKS 1.1 Science Processes. The student conducts classroom and field investigations following home and school safety procedures 1.1a demonstrate safe practices during classroom and field investigations</p>	<p>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>	<p>-Safety Contracts, games, etc -Science Safety is Elementary (for teachers) -Safety in the Elementary Classroom (for teachers)</p> <p>DuPont Science Safety Zone website</p> <p>Texas Science Safety Standards</p> <p>PISD K-5 Equipment Alignment</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 Science Processes. The student 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>AIMS 1st Grade Texas Core Curriculum “Safety First”</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 Science Processes. The student 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 how ants move...” OR “I wonder what happens when I push the swing this way...” (student then observes and documents verbally and through notebook)</p>	<p>BrainPop Jr Science Skills - Making Observations</p>

1st Grade - Elementary Science Bundle # 1

<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 Science Processes. The student 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 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 Science Processes. The student 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>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</p>	<p>AIMS 1st Grade Texas Core Curriculum “Car Color Census” NOTE: Integrate with Math Bundle 1</p>

1st Grade - Elementary Science Bundle # 1

<p>1.2e communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations</p> <p>CURRENT TEKS 1.2 Science Processes. The student 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>What they LEARNED – and the EVIDENCE for what they learned – or what was observed that supports their new ideas 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>	
<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 Science Processes. The student 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.</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: From field experience: “Should we cut the tree down to place a swing set here?”</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>Tools that support hands-on investigation must be taught (modeled and guided) and used. Focus on use and develop understanding for use of senses as tools and specifically on the use and purpose of a hand lens.</p> <p>Students gain enough experience to independently use hand lens when appropriate</p>	<p>AIMS 1st Grade Texas Core Curriculum “Penny-Picking Changes”</p>

1st Grade - Elementary Science Bundle # 1

<p>CURRENT TEKS 1.4 Science Processes. The student 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 (Celsius/Fahrenheit), and primary and double pan balances for relative mass, bowls and cups (measuring cups second semester)</p>		
<p>NEW TEKS 1.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. 1.4b measure and compare organisms and objects using non-standard units</p> <p>CURRENT TEKS 1.4 Science Processes. The student 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 paper clips, hands, and pencils</p>	<p>Measure objects both indoors and outdoors (throughout the entire year). Measure using non-standard units (such as paperclips or clothespins) EX: Measure a piece of bark, a leaf, a rock, model of an animal, anything found outside, misc objects inside, etc</p> <p>Teacher modeled and guided</p>	<p>AIMS 1st Grade Texas Core Curriculum “Penny-Picking Changes”</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 Science Concepts. The student knows that organisms, objects, and events have properties and patterns. 1.5a sort objects and events based on properties and</p>		

1st Grade - Elementary Science Bundle # 1

<p>patterns 1.5b identify, predict, and create patterns including those seen in charts, graphs, and numbers</p>		
<p>NEW TEKS 1.9 Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur.</p> <p>1.9a sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring</p> <p>CURRENT TEKS 1.8 Science Concepts. The student distinguishes between living organisms and nonliving objects. 1.8a group living organisms and nonliving objects 1.8b compare living organisms and nonliving objects</p>	<p>TEACHER NOTE: Plants and animals are taught more directly in Bundle 5. This bundle is simply identifying whether the organism or object in front of you is living or non-living using the science process skills and looking at basic characteristics of all things living and non-living. While instruction includes some instruction specific to plants, animals, and objects, the focus of this bundle is not the in-depth study of the organisms, including producing offspring.</p> <p>Including, but not limited to:</p> <ul style="list-style-type: none"> • Basic needs of animals: <ul style="list-style-type: none"> ○ Nutrients (food), shelter, water, air (teacher note: oxygen) • Basic needs of plants: <ul style="list-style-type: none"> ○ Water, air (teacher note: carbon dioxide), sunlight, nutrients <p>TEACHER NOTE: As appropriate: have discussions about things that are not alive, but are made from things that were living (EX: the student may say that paper is made from a tree; pictures of living items and how we use them to represent (ex: it is a picture so it is not alive, but we can sort the pictures based on the living item(s) in the picture as a model or representation of something alive)</p>	<p>United Streaming “Living and Nonliving”</p> <p>AIMS 1st Grade Texas Core Curriculum “Schoolyard Survey” “Putting Pictures in Place” “Mixed Up Triplets” “Pocketbook Pictures”</p> <p>Plants as a vehicle for observation and process skills, not as the lesson. Plant lessons occur later in the bundles: NetTrekker: Use search term <i>Plants</i> Select Website BBC Schools: Plants Activity Note: Promethean Board Friendly</p>
<p>NEW TEKS 1.8 Earth and space. The student knows that the natural world includes the air around us and objects in the sky.</p> <p>1.8a record weather information, including relative temperature, such as hot or cold, clear or cloudy, calm or windy, and rainy or icy</p> <p>1.8c identify characteristics of the seasons of the year</p> <p>CURRENT TEKS 1.7 Science concepts. The student knows that many types of change occur. 1.7c observe and record changes in weather from day to day and over seasons</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>	