


2nd Grade - Elementary Science Bundle #8

Title		Suggested Dates
Interdependence		2/1/10 – 2/19/10 (13 days)

Big Idea/Enduring Understanding	Guiding Questions
Living things depend upon their living things and their environment to meet their needs.	How do plants and animals depend upon each other to meet their needs? How do patterns of behavior help living things survive changes in their environment?

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 2.9 Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment.</p> <p>2.9c compare and give examples of the ways living organisms depend on each other and on their environments such as food chains within a garden, park, beach, lake, and wooded areas</p> <p>CURRENT TEKS 2.9 The student knows that living organisms have basic needs. 2.9b compare and give examples of the ways living organisms depend on each other and on their environments</p>	<p>Including</p> <ul style="list-style-type: none"> • Animals <ul style="list-style-type: none"> ○ Move seeds ○ Provide food for other animals ○ Provide clothing • Plants <ul style="list-style-type: none"> ○ Provide food for animals ○ Provide shelter for animals ○ Provide oxygen (do not teach photosynthesis) • Food Chain <ul style="list-style-type: none"> ○ Plants and animals depend on each other by providing nutrients and energy ○ Introduce – if one organism is removed, it will affect other organisms. 	<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 K-5 Equipment Alignment</p> <p>TAKScopes – entire bundle</p> <p>BrainPop Jr. Food Chains Hibernation Migration Seasons – (goes into hibernation and migration)</p>
<p>NEW TEKS 2.9 Organisms and environments. The student knows that living organisms have basic needs that must be met for them to survive within their environment.</p> <p>2.9b identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy</p>	<p>TEACHER NOTE: Introduce that basic needs are only beneficial if they are accessible or in the proper form in their environment (ie. water can't be salt water)</p> <p>Introduce “habitat” by showing that an organism’s DIRECT environment (home, shelter) is different from the “environment” in entirety...it is a part of the environment.</p> <p>Animals and plants obtain their basic needs from habitats within</p>	<p>AIMS 2nd Grade Texas Core Curriculum – Earth Science Book Season Cycles – This lesson asks the question “how do the seasons change how animals act?”</p> <p>AIMS 2nd Grade Texas Core Curriculum – Earth Science Book A Walk in the Park</p>

2nd Grade - Elementary Science Bundle #8

<p>of living things</p> <p>NEW TEKS: 2.8 Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky.</p> <p>2.8a measure, record, and graph weather information including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data</p> <p>CURRENT TEKS 2.7 Science concepts. The student knows that many types of change occur. 2.7d observe, measure, and record changes in weather, the night sky, and seasons</p>	<p>the environment.</p> <p>Compile data from daily weather logs (kept through the year as part of morning weather / calendar routine).</p> <p>Review this data to connect with 2.9b – discuss how changes in temperature and precipitation affect organisms</p>	<p>We Need Each Other – Reader’s Theater</p> <p>United Streaming Junior Oceanographer: Oceans, Weather and Climate Habitats: Home for Living Things Ocean Habitats: Shoreline Reef Desert Habitats Ocean Habitats: Light and Dark Zones Forest Habitats Plant Habitats Around the World Tropical Rainforest Habitat Junior Oceanographer: The Life in the Sea Let’s Explore: Down by the Water</p> <p>Lucas Miller and his Science Songs</p>
<p>CURRENT TEKS 2.6 The student knows that systems have parts and are composed of organisms and objects. 2.6c observe and record the functions of plant parts 2.6d observe and record the functions of animal parts</p>	<p>This is a review of the functions of animal and plant parts but focus on the particular structures and functions that have to do with interactions between organisms in the environment: especially those that support food chains</p> <p>Including</p> <ul style="list-style-type: none"> • Beaks/ teeth/ roots • Claws/ leaves • Coverings that protect from being eaten (scales, spines, thorns) <p>TEACHER NOTE: Kinder and 1st concentrate on identifying these parts – 2nd focuses on what these parts do (works with 2.6a,b)</p>	<p>Net Trekker Resources:</p> <ul style="list-style-type: none"> • Beal Early Childhood Center: Butterfly Information: http://www.shrewsbury-ma.gov/schools/beal/curriculum/butterfly/butterflyinfo.htm • New York Zoos and Aquariums: BuiLD YouR WiLD SeLF: http://www.buildyourwildself.com/ • Habitats: Ponds, Farms, Homes, Sea, Hedges, Woods: http://www.hitcchams.suffolk.sch.uk/habitat/s/ • The Great Habitat Match-Up: http://www.scholastic.com/magicschoolbus/games/habitat/habitat.htm • San Diego Zoo-Animals and Habitats: http://www.sandiegozoo.org/animalbytes/index.html
<p>CURRENT TEKS 2.5 The student knows that organisms, objects, and events have properties and patterns. 2.5b identify, predict, replicate, and create patterns., including those seen in charts, graphs, numbers</p>	<p>Address this TEK in reference to 2.9b – patterns of behavior related to environmental change</p> <p>Study patterns of data using:</p> <ul style="list-style-type: none"> ▪ Weather charts/ graphs ▪ Growth charts/graphs ▪ Time – as related to length of time of environmental changes such as droughts, etc. 	

2nd Grade - Elementary Science Bundle #8

	<ul style="list-style-type: none"> ○ Metric measurement including <ul style="list-style-type: none"> ▪ Length ▪ Temperature (Celsius) ▪ Mass ▪ Capacity <p>Record data using graphs, charts and labeled drawings in science notebooks.</p> <p>TEACHER NOTE: Combine with Math TEKS to use the same types of graphs in both subjects.</p>	
<p>CURRENT TEKS</p> <p>2.7 The student knows that many types of change occur.</p> <p>2.7a observe, measure, record, analyze, predict, and illustrate changes including size, mass, temperature, color, position, quantity, sound, and movement</p>	<p>This TEKS should relate to measurement of environmental change and changes made by organisms in response to environmental change or changes in populations and communities</p> <p>Including</p> <ul style="list-style-type: none"> • Size –for example: ruler, unifix cubes • Mass – for example: primary balance, double pan balance • Temperature – Celsius thermometer • Color –for example: shades, tint, and primary colors • Position –for example: right, left, up, down, under • Quantity – for example: number • Sound <ul style="list-style-type: none"> ○ Volume- Loudness ○ Pitch ○ Vibration • Movement – forward / backward / side to side/ up and down/ spinning • Time – night/day, afternoon/morning, beforelunch /after lunch, hour, half hour 	
<p>CURRENT TEKS</p> <p>2.6 The student knows that systems have parts and are composed of organisms and objects.</p> <p>2.6b manipulate, predict, and identify parts that, when put together, can do things they cannot do by themselves, such as a guitar and guitar strings</p>	<p>Integrate TEKS when discussing any system or tool such as <u>plants, animals</u>, balance, hand lens, etc</p> <p>The environment is a system of interaction between organisms and all other parts of the environment.</p> <p>Focus on the impact to all parts of this system when any organism or part of the system is removed.</p>	
<p>NEW TEKS:</p> <p>2.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety</p>	<p>No tasting or touching unless instructed</p> <p>Safe smelling – wafting</p> <p>Goggles</p> <p>Wait for teacher directions</p>	<p>PISD Safety Website</p> <p>-Safety Contracts, games, etc</p> <p>-Science Safety is Elementary (for teachers)</p> <p>-Safety in the Elementary Classroom (for teachers)</p>

2nd Grade - Elementary Science Bundle #8

<p>procedures.</p> <p>2.1a identify 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>2.1b describe the importance of safe practices</p> <p>2.1c identify and demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reuse or recycling of paper, plastic, and metal</p> <p>CURRENT TEKS</p> <p>2.1 Scientific processes. The student conducts classroom and field investigations following home and school safety procedures.</p> <p>2.1a demonstrate safe practices during classroom and field investigations</p> <p>2.1b learn how to use and conserve resources and dispose of materials</p>	<p>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>TEACHER NOTE: When possible, return natural items to their environment (i.e. rocks back to garden)</p> <p>Make note of and teach use of district-wide recycling resource.</p>	<p>DuPont Science Safety Zone website</p> <p>Texas Science Safety Standards</p>
<p>NEW TEKS:</p> <p>2.2 Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations.</p> <p>2.2a ask questions about organisms, objects, and events during observations and investigations</p> <p>2.2b plan and conduct descriptive investigations such as how organisms grow</p> <p>2.2c collect data from observations using simple equipment such as hand lenses, primary balances, thermometers, and non-standard measurement tools</p> <p>2.2d record and organize data using pictures, numbers, and words</p> <p>2.2e communicate observations and justify explanations using student-generated data from simple descriptive investigations</p>	<p>Should be modeled and guided by teacher – Think-Aloud technique Should be oral and/or written Should occur both indoors and outdoors.</p> <p>Tools and equipment, including senses, should be used in authentic learning settings including during an outside field investigation</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>Develop questions using resources such as Science Notebooks, KLEW charts and students sharing with one another</p> <p>Class discussion of observations is a critical element to allow students to elaborate and build understanding</p> <p>Model student recording of data (pictures, words) – with more support initially as students copy information compiled in class discussion by the teacher on a chart.</p>	

2nd Grade - Elementary Science Bundle #8

<p>2.2f compare results of investigations with what students and scientists know about the world</p> <p>CURRENT TEKS 2.2 Scientific processes. The student develops abilities necessary to do scientific inquiry in the field and the classroom. 2.2a ask questions about organisms, objects, and events 2.2b plan and conduct simple descriptive investigations 2.2d gather information using simple equipment and tools to extend the senses 2.2e construct reasonable explanations and draw conclusions using information and prior knowledge 2.2f communicate explanations about investigations 2.2c compare results of investigations with what students and scientists know about the world</p>	<p>Include a mini-lesson, ,as appropriate to model the use of a chosen graphic organizer as a tool to record data and enter into science notebooks</p>	
<p>NEW TEKS: 2.3 Scientific investigation and reasoning. The student knows that information and critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions.</p> <p>2.3a identify and explain a problem in his/her own words and propose a task and solution for the problem such as lack of water in a habitat</p> <p>2.3b make predictions based on observable patterns</p> <p>2.3c identify what a scientist is and explore what different scientists do</p> <p>CURRENT TEKS 2.3 Scientific processes. The student knows that information and critical thinking are used in making decisions. 2.3c explain a problem in his/her own words and identify a task and solution related to the problem 2.3a make decisions using information 2.3b discuss and justify the merits of decisions</p>	<p>Introduce the fact that you can solve a problem or answer a question <u>through a systematic approach</u></p> <p>Model using the Think-Aloud technique (processes and steps to decision-making)</p> <p>The key here is to support students as they observe the world and the results of their investigations and build their critical thinking by looking at those results as evidence that supports a concept.</p> <p>Use the KLEW graphic organizer to support this process.</p> <p>Use reflective discussions to develop and answer questions about the scientific concepts studied. Student entries should be their elaboration based on class discussion:</p> <p>Student should use their Science Notebooks and one another as a reference, a resource and a place to record ideas, learning, questions, etc.</p>	
<p>NEW TEKS: 2.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world.</p>	<p>Tools that support hands-on investigation must be taught, modeled, guided and used.</p> <p>Students will use science notebooks to record information and draw pictures of shadows, etc. Science notebooks need to be</p>	

2nd Grade - Elementary Science Bundle #8

<p>2.4a collect, record, and compare information using tools, including computers, hand lenses, rulers, primary balances, plastic beakers, magnets, collecting nets, notebooks, and safety goggles; timing devices, including clocks and stopwatches; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums</p> <p>2.4b measure and compare organisms and objects using non-standard units that approximate metric units</p> <p>CURRENT TEKS</p> <p>2.4 Scientific 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.</p> <p>2.4a collect information using tools including rulers, meter sticks, measuring cups, clocks, hand lenses, computers, thermometers, and balances</p> <p>2.4b measure and compare organisms and objects and parts of organisms and objects, using standard and nonstandard units</p>	<p>set-up early in the bundle to allow proper use. This should not be the initial lesson on notebook entries.</p> <p>Linear measurement using non-standard units of measure using pictures and shadows of different objects.</p> <p>Additional tools should be utilized as appropriate (i.e. digital cameras for documentation, pictures of primary source (shadows)</p>	
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