



## 2<sup>nd</sup> Grade - Elementary Science Bundle 5

<b>Title</b>			<b>Suggested Dates</b>
<b>Plants</b>			Nov 15 – Dec 3 (12 days)
<a href="#">Link to Integrated Process Skills</a> <a href="#">Link to Assessment</a> <a href="#">Link to Related Assurance Words</a> <a href="#">Link to Related Literature</a> <a href="#">Link to Universal Design</a>			

Big Idea/Enduring Understanding	Guiding Questions
Plants have parts, or characteristics that help them meet their needs.	How do the parts of a plant help it survive?
Plants have basic needs including air, sunlight, water, nutrients, and space.	Does the absence or removal of plant parts affect the plant’s health and survival?
	What does a plant need to survive?

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><b>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. The student is expected to:</b></p> <p>2.9a identify the basic needs of plants <del>and animals</del></p>	<p>Including:</p> <ul style="list-style-type: none"> <li>• Air</li> <li>• Water</li> <li>• Nutrients</li> <li>• Sunlight (light)</li> <li>• Space</li> </ul>	<p><a href="#">TAKScopes 2.9a Basic Needs</a></p> <p><u>AIMS 2<sup>nd</sup> Grade Earth Science Core Curriculum:</u>            “Pets Rock” (Review of Living/.NonLiving), page 11            “Parts”, page 33            “Plant Parts”, page 123            “Inside a Seed”, page 132            “Seeds”, page 139            “Root Study”, page 148            “Stem Study”, page 154            “Leaf Safari”, page 173            “Evergreen Branch”, page 179            “Flowers”, page 201            “Plant Parts”, Page 202            “Searching for Stems”, page 161            “Observe a Leaf”, page 169            “Plant Park Mark Up, page 202</p> <p><u>AIMS 1<sup>st</sup> Grade Earth Science Core Curriculum:</u>            “Designer Plants”, page 189</p> <p><u>Gateway, 2<sup>nd</sup> Grade</u>            5:1 Plants (review, properties), page 108</p>

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		6.1 Needs and Resources, page 126
<p><b>2.10 Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environments. The student is expected to:</b></p> <p>2.10b observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant</p>	<p><b>Including:</b></p> <ul style="list-style-type: none"> <li>• Leaves</li> <li>• Roots</li> <li>• Stems</li> <li>• Protection (thorns, bark, thistles)</li> <li>• Flowers</li> <li>• Seeds</li> </ul>	<p><a href="#">TAKScopes 2.10b Plant Characteristics</a></p> <p><a href="#">BrainPop Jr: Parts of a Plant</a></p> <p><b>United Streaming:</b>            “The Magic School Bus Gets Planted”            “A First Look: Plants”            “How Plants Grow”            “Debbie Greenthumb: How Plants Grow”  <i>(segments: Three main parts of a Plants: Roots, Stems, Leaves)</i>            Peep and the Big Wide World: Peep Plants a Seed (basic needs)            Stage One Science: Growing            (segment What Helps Seeds to Grow)</p>
<p><b>2.5 Matter and energy. The student knows that matter has physical properties and those properties determine how it is described, classified, changed, and used. The student is expected to:</b></p> <p>2.5a classify matter by physical properties including shape, relative mass and temperature, texture</p>	<p><i>As this relates to plants and plant parts</i></p>	
<p><b>Scientific Investigation and Reasoning</b> <span style="float: right;"><a href="#">Back to Top</a></span></p> <p style="text-align: center;">The Process TEKS are integrated with and taught THROUGH the content TEKS.</p>		
<p><b>2.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:</b></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><b>Review outdoor and plant safety</b></p> <p>Including:</p> <ul style="list-style-type: none"> <li>• No tasting or touching unless instructed</li> <li>• Safe smelling – wafting</li> <li>• Goggles, as needed</li> <li>• Wait for teacher directions</li> <li>• No glassware</li> <li>• Students do not handle hot water, hot plates or burners.</li> <li>• Wash hands after science activities</li> <li>• Safe use of tools, such as scissors</li> <li>• Review investigation safety procedures               <ul style="list-style-type: none"> <li>○ directly point out precautions, possible safety risks, specific guidelines for the lesson for both indoor and outdoor activities, as applicable.</li> <li>○ encourage students to identify these on their own</li> </ul> </li> </ul>	<p><a href="#">PISD Science Safety Page</a></p> <p><a href="#">Texas Science Safety Standards</a></p> <p><a href="#">DuPont Science Safety Zone</a></p>

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	throughout the year [document in science notebooks via words and/or pictures]	
<p><b>2.2 Scientific investigation and reasoning. The student develops abilities necessary to do scientific inquiry in classroom and outdoor investigations. The student is expected to:</b></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>2.2f compare results of investigations with what students and scientists know about the world</p>	<p><b>As this relates to plants and plant parts</b> Example: How do stems help plants?</p> <p>Classroom Techniques:</p> <ul style="list-style-type: none"> <li>• A minimum of 3 models / examples should be used enabling different modalities of learning</li> <li>• Teacher uses “think aloud” technique throughout the investigation</li> <li>• Use a variety of questions (both open and closed)</li> <li>• Both academic and informal science language should be used to develop appropriate vocabulary in context</li> <li>• Explicitly model the relationship between the question, materials, and steps in the investigation</li> </ul>	<p><a href="#">What are descriptive, comparative, and experimental investigations?</a></p> <p><a href="#">KLEW/ Claims &amp; Evidence</a></p>
<p><b>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. The student is expected to:</b></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><b>Example:</b> <b>We are going out of town (on a long school break, etc). How do I help my plants meet their needs while I am gone?</b></p> <p><b>Related career: Botanist</b></p>	<p><a href="#">Using Socratic Seminars for higher-order thinking and discussion</a></p> <p><a href="#">Multisensory Strategies for Science Vocabulary by Sandra Husty and Julie Jackson</a> includes Bag &amp; Tag</p>
<p><b>2.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</b></p>	<p><b>Including:</b></p> <ul style="list-style-type: none"> <li>• Notebooks</li> <li>• Hand lens</li> <li>• Rulers</li> </ul>	<p><a href="#">How to Make a Soda Bottle Terrarium</a></p> <p><a href="#">TLC Bottle Terrarium</a></p>

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<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>	<ul style="list-style-type: none"> <li>• Goggles</li> <li>• Terrariums</li> </ul>	
<b>Related Assurance Words</b>		<a href="#">Back to Top</a>
function, protection characteristic, classify, communicate, compare, demonstrate, dispose, measure, observation, patterns, predict		
<b>Related Literature</b>		<a href="#">Back to Top</a>
<p><u>Make it Grow</u> by Melinda Lilly  <u>A Seed in Need</u> by Sam Godwin            “Plant Parts” series [<u>Stems</u>, <u>Leaves</u>, <u>Roots</u>, <u>Flowers</u>, <u>Fruits</u>, and <u>Seeds</u>] by Vijaya Bodach</p>		
<b>Assessment Support</b>		<a href="#">Back to Top</a>
<b>Assessment Probes</b>	<b>Performance Assessment</b>	
<u>Uncovering Student Ideas in Science</u> , Vol 2 (Page Keeley) “Is It a Plant?” (eliminate some examples), page 93 “Plants in the Dark and Light”, page 109		
<b>Scenario / Open Ended</b>	<b>Multiple Choice</b>	
	Gateway, 2 <sup>nd</sup> Grade, page 115: BLM 3 Assessment Plants Gateway, 2 <sup>nd</sup> Grade, page 134: BLM 6 Assessment Needs and Resources	