



2nd Grade - Elementary Science Bundle # 7

Title		
Animals		Suggested Dates Jan 4 – Jan 28 (19 days)
Link to Integrated Process Skills	Link to Assessment	Link to Related Assurance Words

Big Idea/Enduring Understanding	Guiding Questions
<p>Animals have parts, or characteristics that help them meet their needs.</p> <p>Animals basic needs include food, shelter, water, air, and space.</p> <p>Some insects have unique stages of change during their life cycles.</p>	<p>How do the parts of animals help it survive?</p> <p>Does the absence or loss of an animal part affect the animal’s health and survival?</p> <p>What are some of the unique stages of an insect’s life cycle?</p> <p>What does an animal need to survive?</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>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:</p> <p>2.9a identify the basic needs of plants and animals</p>	<p>Including:</p> <ul style="list-style-type: none"> • Food (nutrients) • Water • Shelter / Space • Species: produce offspring 	<p>FOSS Kit: Insects Investigation 4: Silkworms</p> <p>FOSS Kit: Insects and Plants Investigation 4: Silkworms Investigation 5: Butterflies</p>
<p>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:</p> <p>2.10a observe, record and compare how the physical characteristics and behaviors of animals help them meet their basic needs such as fins help fish move and balance in the water</p>	<p>Including (physical features)</p> <ul style="list-style-type: none"> • Beaks, mouth with teeth, mouth without teeth, teeth type • Limbs (arms, legs, wings, etc) • Eyes (# of, location) • Hands, claws, paws, feet, hooves • Tails (no tail, type of tail, use of tail) • Fins (motion, location, # of), flippers • Head (features of, size of, shape of) • Body covering: fur / hair, scales, skin, feathers • Nose • Ear(s) or other auditory organ <p>Including (behaviors)</p> <ul style="list-style-type: none"> • Response to environmental / climate factors 	<p>FOSSWEB: Insects: Insect Hunt</p> <p>AIMS 2nd Grade Life Science Core Curriculum: “Parts”, page 33 “An Arm and A Leg”, page 42 “Creative Creatures”, Page 49 “Teeth that Cut, Tear, and Grind”, page 61 “Undercover”, page 80 “Fish and Their Fins”, page 88 “Gulping Goldfish”, page 98 “A Bat Fact”, page 105 “Sensational Ears”, page 110 “Humpback Habits”, page 116</p> <p>Gateway – 2nd Grade</p>

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	<ul style="list-style-type: none"> ○ Migration (allows an animal to move to a more suitable climate and obtain food (migration is not limited to flying)) ○ Hibernation / Dormancy (allows an animal to remain in current environment during portions of the year when less food is available / changing climate conditions) ● Protection / defense behaviors ● Eating / hunting behaviors ● Group structures (alone, in packs, partners, etc) ● Habitats (means of finding, building, maintaining) <p>NOTE: Connect structures to processes: point out the physical characteristics enable the behaviors</p> <p>NOTE: Good opportunity to compare / contrast migration and hibernation / dormancy as different methods of meeting similar needs)</p>	<p>5:2 Animals, page 116 6.2 External Characteristics, page 136</p> <p>BrainPopJr: “Caring for Pets” (basic needs)</p> <p>United Streaming: “Concepts in Nature: Where Animals Live” (shelter) “Animal Features and Their Functions” “Animal Adaptations”</p>
<p>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:</p> <p>2.10c investigate and record some of the unique stages that insects undergo during their life cycle</p>	<p>Including “Unique” life cycle examples:</p> <ul style="list-style-type: none"> ● Butterfly ● Silkworm <p>Including regular life cycles:</p> <ul style="list-style-type: none"> ● Praying mantis ● Silverfish 	<p>AIMS 1st Grade Life Science Core Curriculum: “Silkworms”, page 143</p> <p>The Children's Butterfly Site</p> <p>Life Cycle of Butterflies and Moths (includes pictures)</p> <p>Teacher Background: Silkworm Moths</p> <p>Teacher Resources: Silkworms</p> <p>United Streaming: “The Lives of Butterflies” “Insect Life Cycles: Metamorphosis” (includes butterflies and silkworms)</p>
<p>Scientific Investigation and Reasoning</p>		<p>Back to Top</p>
<p>2.1 Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:</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>Review outdoor and animal safety</p> <p>Including:</p> <ul style="list-style-type: none"> ● No tasting or touching unless instructed ● Safe smelling – wafting ● Goggles, as needed ● Wait for teacher directions ● No glassware ● Students do not handle hot water, hot plates or burners. ● Wash hands after science activities ● Safe use of tools, such as scissors 	<p>Elementary Science and Animal Safety: Campus share folder > Sci Curr Information > Safety</p> <p>PISD Science Safety Page</p> <p>Texas Science Safety Standards</p> <p>DuPont Science Safety Zone</p>

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<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>	<ul style="list-style-type: none"> • Review investigation safety procedures <ul style="list-style-type: none"> ○ directly point out precautions, possible safety risks, specific guidelines for the lesson for both indoor and outdoor activities, as applicable. ○ encourage students to identify these on their own throughout the year [document in science notebooks via words and/or pictures] 	
<p>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:</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>Descriptive Investigation example: How do butterflies change during their life cycle?</p> <p>Comparative Investigation sample: Compare teeth shapes of different animals</p> <p>Classroom Techniques:</p> <ul style="list-style-type: none"> • A minimum of 3 models / examples should be used enabling different modalities of learning • Teacher uses “think aloud” technique throughout the investigation • Use a variety of questions (both open and closed) • Both academic and informal science language should be used to develop appropriate vocabulary in context • Explicitly model the relationship between the question, materials, and steps in the investigation 	<p>What are descriptive, comparative, and experimental investigations?</p> <p>KLEW/ Claims & Evidence</p>
<p>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:</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>Related Careers:</p> <ul style="list-style-type: none"> • Zoologist • Entomologist • Biologist • Herpetologist 	<p>Using Socratic Seminars for higher-order thinking and discussion</p> <p>Multisensory Strategies for Science Vocabulary by Sandra Husty and Julie Jackson includes Bag & Tag</p>

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<p>2.4 Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:</p> <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>Including:</p> <ul style="list-style-type: none"> • Hand lens • Notebooks • Collecting nets • Materials to support the observations of habitats of organisms such as terrariums and aquariums 	<p>How to Make a Soda Bottle Terrarium</p> <p>TLC Bottle Terrarium</p>
Related Assurance Words		Back to Top
behavior(s), characteristic, classify, communicate, compare, demonstrate, dispose, function, habitat, hibernation / dormancy, migration, motion / movement, patterns, predict, protection		
Assessment		Back to Top
<i>Assessment Probes</i>		
<p>Uncovering Student Ideas in Science, Vol 1 (Page Keeley) Is it an animal, page 117</p>		