1st Grade - Elementary Science Bundle # 7

Title	Suggested Dates
Animals / Interdependence	1/5/10 – 1/29/10 (16 days)

Big Idea/Enduring Understanding	Guiding Questions
Animals have structures and processes that allow them to survive within their environment. Animals and plants depend on each other for their survival.	How do young animals resemble their parents? How do animal parts help animals survive in their environment? How do animals and plants help each other survive? What can we observe about the life cycles of animals?

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)
NEW TEKS **1.10 Organisms and Environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environment.** 1.10a investigate how the external characteristics of animals are related to where it lives, how it moves, what it eats 1.10b identify and compare parts of plants 1.10c compare ways that young animal's resemble their parents CURRENT TEKS **1.6 The student knows that systems have parts and are composed of organisms and objects.** 1.6b observe and describe the parts of plants and animals	Including: limbs eyes hands (claws and other types) feet (hooves and other types) tails wings head (including beak vs teeth) body coverings ears **TEACHER NOTE**: Use a variety of animal types (live, pictures, videos, models, etc) aquatic, land, air mammal, fish, amphibian, bird, reptile, insect The focus is observing and describing parts rather than teaching and holding students accountable for animal categories. Inquiry provides the opportunity to sort/group animals based on similar features. This provides conceptual foundation for future application. Category names can be used during instruction, but are not explicitly taught until kingdom TEKS in middle school. Record in science notebooks	Resources listed here apply to the entire bundle. Science Notebooks IF I TRY (Intranet) KLEW/ Claims & Evidence PISD Elem Science Homepage PISD K-5 Equipment Alignment TAKScopes Scope: 1.6a,b Systems, Structures, and Processes: Plants and Animals (This generally focuses on animals and better suited for beginning of bundle) TAKScopes Scope: 1.9a Plant and Animal Characteristics (This compares plants and animals and basic needs and better suited for middle of bundle or just in front of Interdependence TEKS)

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CURRENT TEKS **1.6 The student knows that systems have parts and are composed of organisms and objects.** 1.6a sort organisms and objects according to their parts and characteristics	Including: limbs eyes hands (claws and other types) feet (hooves and other types) tails wings head (including beak vs teeth) body coverings ears EX: number of limbs, feathers or scales, method of motion, aquatic or land, different types of wings, etc **TEACHER NOTE**: Use a variety of animal types (live, pictures, videos, models, etc) aquatic, land, air mammal, fish, amphibian, bird, reptile, insect Record in science notebooks	TAKScopes Scope: 1.9b Interdependence (This is better suited for end of bundle addressing Interdependence TEKS www.bogglesworldesl.com/animal_body_parts.htm www.beaconlearningcenter.com/weblessons/CritterCraze/default.htm www.ecokids.ca/pub/eco_info/topics/frogs/chain_reaction/index.cfm BrainPop Jr.: Food Chain United Streaming: Creature Features: Special Features of Creatures Animal Life Cycles AIMS 1st Grade Texas Core Curriculum Dependency Details Arrive in Five NetTrekker Use search term *Plants* Select Website BBC Schools: Plants Activity Note: Promethean Board Friendly EnchantedLearning Frogs and Toads at Enchanted Learning The Egg Book
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.** 1.9a sort and classify living and nonliving things based upon whether or not they have basic needs and produce offspring CURRENT TEKS **1.8 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	Make connection back to: rocks and soil (nonliving) and plants (living) Including, but not limited to: • Basic needs of animals: o Nutrients (food), shelter, water, air (teacher note: oxygen) • Basic needs of plants: o Water, air (teacher note: carbon dioxide), sunlight, nutrients **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)	
NEW TEKS **1.10 Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environment**. 1.10a investigate how the external characteristics of	Including: limbs eyes hands (claws and other types) feet (hooves and other types) tails wings	

an animal are related to where it lives, how it moves, and what it eats CURRENT TEKS **1.9 The student knows that living organisms have basic needs.** 1.9a identify characteristics of living organisms that allow basic needs to be met	head (including beak vs teeth) body coverings ears EX: number of limbs, feathers or scales, method of motion, aquatic or land, different types of wings, etc	
NEW TEKS **1.10 Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environment.** 1.10c compare ways that young animals resemble their parents	including: body coverings body parts general shape	
NEW TEKS **1.10 Organisms and environments. The student knows that organisms resemble their parents and have structures and processes that help them survive within their environment.** 1.10d observe and record life cycles of animals such as a chicken, frog, or fish	"egg" life cycles; not teaching metamorphosis	
Interdependence **(completes and relates concepts from plants and animals)**		
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.** 1.9b analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver 1.9c gather evidence of interdependence among living organisms, such as energy transfer through food chains and animals using plants for shelter CURRENT TEKS **1.9 The student knows that living organisms have basic needs.** 1.9b compare and give examples of the ways living	Evidence should be gathered from a variety of sources including video, pictures, stories, authentic settings (parks, field trips, outdoor investigations, terrariums, aquariums, homes, etc) **TEACHER NOTE**: Food chains should be approached using "who eats who". Connect the idea of our eating providing us energy therefore what each member of the food chain eats provides them energy. Refrain from concentrating on energy path including sun, producers (gaining energy from the sun), and consumers. Keep the focus on "this animal would eat that animal which would eat that plant" The big picture is really about the fact that plants and animals are both integral to this system rather than focusing intensely on the food chain and energy flow itself. The food chain is an example of interdependence.	

organisms depend on each other for their basic needs	Identify various types of plant shelters, such as trees, cacti, insects and other microscopic organisms on plant leaves, stems, roots and other parts.	
These Scientific Investigation and Reasoning TEKS apply to both Animals and Interdependency		
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.** 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 1.1b recognize the importance of safe practices to keep self and others safe and healthy CURRENT TEKS **1.1 conducts classroom and field investigations following home and school safety procedures.** 1.1a demonstrate safe practices during classroom and field investigations	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 Adhere to all guidelines and safety precautions when dealing with any animal. Directly teach these to students including: approaching an unknown animal and how to approach a known animal Consider: allergies, guests, classroom pets, sending animals home, put link to current guidelines, etc	PISD Safety Website -Safety Contracts, games, etc -Science Safety is Elementary (for teachers) -Safety in the Elementary Classroom (for teachers) DuPont Science Safety Zone website Texas Science Safety Standards Using Animals in the Classroom (science curriculum folder in campus share folder)
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.** 1.1c identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals 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	**TEACHER NOTE:** Return organisms to their environment (i.e. live and safe capture of insect for observation) Make note of and teach use of district-wide recycling resource.	
NEW TEKS	Teacher guide and model the process using the Think-Aloud	

1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. 1.2a ask questions about organisms, objects, and events observed in the natural world 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.	technique Variety of question types should be explored: closed and open ended Develop questions using resources such as Science Notebooks, KLEW charts and students sharing with one another • Should primarily be oral – model writing • Conduct as a group rather than independently EX: How does this animal hear? Where does this animal live? OR "What parts of plants do animals eat?" OR "How do the animals in a garden differ from the animals in a pond?" (student then observes and documents verbally and through notebook)	
NEW TEKS **1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.** 1.2b plan and conduct simple descriptive investigations such as ways objects move 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	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. Formal and informal terms in all areas of science should be used interchangeably for exposure. Teacher explicitly model the relationship between the question and the materials and steps used in the investigation: EX: Question on which rock weighs more – • 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 Whole group setting: As the year progresses, facilitate students in helping choose the materials, tools and steps they would take to answer their questions	
NEW TEKS **1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.** 1.2c collect data and make observations using simple equipment such as hand lenses, primary balances,	Tools and equipment, including senses, should be used in authentic learning settings including outside field investigations Teacher model student recording of data (pictures, words) • Create a big book of the science notebook to model recording o Investigation steps o Materials	

and non-standard measurement tools 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	o Ideas Support students as they move from initially copying compiled information into making their own authentic entries into their notebooks	
NEW TEKS: **1.2 Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations.** 1.2d record and organize data using pictures, numbers, and words 1.2e communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations 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	Communicate both verbally and in science notebook (pictures, words, copying information from class discussion and teacher modeled big book science notebook entry) 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 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 Encourage students to always support their ideas with evidence – from activities, observations, reading, etc.	
NEW TEKS **1.3 Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving.** 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 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	Introduce the fact that you can solve a problem or answer a question through a systematic approach Student should use and reference their Science Notebooks and one another Student entries should be their elaboration based on class discussion Model using the Think-Aloud technique (processes and steps to decision-making)	
NEW TEKS **1.4 Scientific investigation and reasoning. The**	Tools that support hands-on investigation must be taught (modeled and guided) and used.	

student uses age-appropriate tools and models to investigate the natural world. 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 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	Equipment should be utilized as appropriate (i.e. digital cameras for documentation of outdoor wildlife; collecting nets and bug boxes for safe live capture and release observations of animals)	
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 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.** 1.4b record and compare collected information 1.4c measure organisms and objects and parts of organisms an objects, using non-standard units such as paperclips, hands, and pencils	Use animal models, pictures of animals (measure whole and parts), scale models, outlines of themselves on butcher paper, authentic parts (such as a seashell, bone, vacated wasp nest, bird nest, claw, teeth) Non-standard units of measurement: linear (relative length, size) relative mass	