



Revision Date	April 21, 2020
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Department of Curriculum & Instruction

First Grade Science

Unit	1 - 07 Investigating Organisms and Environments
Time Frame	3/15-3/26
Big Ideas	<ol style="list-style-type: none"> Plants have structures (parts) with specific functions (jobs) that help them survive within their environments. Living things have basic needs that must be met in order to survive, while nonliving things do not. We can sort and classify living and nonliving things based on whether or not they have basic needs and the ability to produce offspring.
Essential Questions	<ol style="list-style-type: none"> What are some plants parts (structures) that help them survive within their environment? What basic needs must be met for living things to survive? How can we sort and classify living things and nonliving things?

TEKS / Student Expectations	Skills	Concepts
<p>TEKS 1.9A (9) Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to sort and classify living and nonliving things based upon whether they have basic needs and produce offspring.</p>	Sort, Classify	<p>LIVING AND NONLIVING THINGS</p> <ul style="list-style-type: none"> • Whether they have basic needs • Animals and plants have basic needs • Basic needs of animals <ul style="list-style-type: none"> ○ Water ○ Food ○ Shelter • Basic needs of plants <ul style="list-style-type: none"> ○ Air ○ Water ○ Sunlight ○ Space ○ Nutrients • Nonliving things do not have basic needs • Whether they produce offspring • Living things (organisms) produce offspring <ul style="list-style-type: none"> ○ Animals ○ Plants <p>Nonliving things do not produce offspring</p>

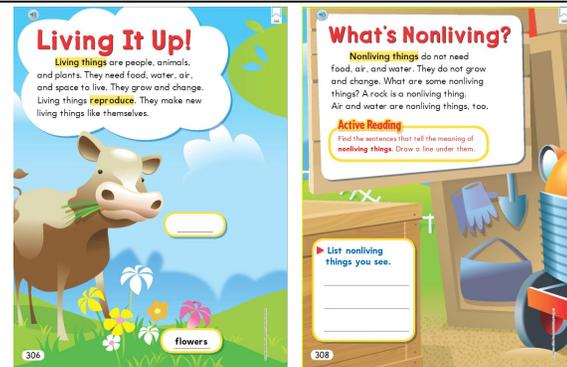


<p>TEKS 1.9B Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver.</p>	<p>Analyze, Record</p>	<p>EXAMPLES OF INTERDEPENDENCE FOUND IN VARIOUS SITUATIONS</p> <ul style="list-style-type: none"> ● Terrariums / aquariums ● Pet and care giver ● In an ecosystem ● Types of interdependence (beneficial relationships between organisms) ● Animals depend on plants ● Food / nutrients ● Air (oxygen) ● Shelter ● Animals depend on other animals ● Food / nutrients ● Plants depend on animals <p>Pollination (e.g., plants pollinated by bees)</p>
<p>TEKS 1.9C Organisms and environments. The student knows that the living environment is composed of relationships between organisms and the life cycles that occur. The student is expected to gather evidence of interdependence among living organisms such as energy transfer through food chains or animals using plants for shelter.</p>	<p>Gather</p>	<p>EVIDENCE OF INTERDEPENDENCE AMONG LIVING ORGANISMS</p> <ul style="list-style-type: none"> ● Energy transfer through food chains (Sun to producer to consumer to consumer) ● Food chain – a representation of the flow of energy from the Sun through producers to consumers in an environment ● Producer – an organism that makes its own food (e.g., plants) ● Consumer – an organism that eats other organisms (plants and / or animals) for food ● Animals use of plants for shelter <p>Trees for housing</p>
<p>TEKS 1.2(C) The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to collect data and make observations using simple tools.</p>	<p>Collect</p> <p>Make</p>	<p>The student will be required to collect data and learn how to appropriately use them.</p> <p>The students will be making observations using the tools such as measuring length with nontraditional measuring devices.</p>
<p>TEKS 1.2(D) The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to record and organize data and observations using pictures, numbers, and words.</p>	<p>Record</p> <p>Organize</p>	<p>Students should start learning how to record data, they can draw pictures, make tally marks, use picture graphs, use real world objects, numbers, words.</p>
<p>TEKS 1.3(C) The student knows that information and critical thinking are used in scientific problem solving. The student is expected to describe what scientists do.</p>	<p>describe</p>	<p>They should be able to describe the actions of a good scientist that are similar to the tasks that they do in the classroom. These tasks include:</p> <ul style="list-style-type: none"> ● Questioning ● Observing ● Measuring ● Classifying ● Investigating



		<ul style="list-style-type: none"> Predicting Communicating
<p>TEKS 1.4(A) The student uses age-appropriate tools and models to investigate the natural world. The student is expected to collect, record, and compare information using tools, including computers, hand lenses, primary balances, cups, bowls, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers and wind socks; and materials to support observations of habitats of organisms such as aquariums and terrariums.</p>	<p>Collect Record Compare</p>	<p>INFORMATION USING TOOLS</p> <ul style="list-style-type: none"> Computers Hand lenses Collecting nets Notebooks Materials to support observations of habitats of organisms Aquariums <p>Terrariums</p>

<p>Tier I Instructional Strategies – Classroom Instruction for All Students</p>
<p>Prior Content Connections</p> <p>Kindergarten</p> <ul style="list-style-type: none"> K.9A – Differentiate between living and nonliving things based upon whether they have basic needs and produce offspring K.9B – Examine evidence that living organisms have basic needs such as food, water, and shelter for animals and air, water, nutrients, sunlight, and space for plants <p>Misconceptions:</p> <p>Students may think that any object that moves is living (machines, smoke, clouds, fire, or moving water), rather than understanding that living organisms are alive and have basic needs.</p> <p>Students may think that grass, trees, and other plants die in the winter and are born in the spring, rather than understanding that plants grow throughout the year.</p> <p>Students may think that living and growing movement makes an animal alive or that a seed is dead, rather than understanding that plants grow from seeds.</p> <p>Students may infer that plants are not alive because they do not move, rather than plants having basic needs and the ability to reproduce.</p> <p>Students may think that plants must have soil to grow, rather than understanding that some plants grow in water or other mediums.</p> <p>Students may think that plants don't grow in the winter, rather than understanding that plants grow all year.</p> <p>This large unit is designed to allow you to spend time talking about plants, ecosystems, and how plants grow. It is especially long to give you adequate time to grow plants in different ecosystems and allow for the students to see the needs of plants in reality.</p> <p>1.9A Start with the living and nonliving. The textbook does this really well. (see example from the Thinkcentral Textbook below)</p>



You can show the textbook lessons for this as well as take them outside to find samples. Don't let them pick plants or touch animals without notifying you first. Build a table that they can sort these items into.

Living	Nonliving
Flower	Sidewalk
Dog	Car
Me	Air

Talk about basic needs of animals and plants – food, water, space, air, etc. Discuss how the animals and plants depend on these resources to survive. Show books like “the picnic” by C. Baines; or “One small place in a tree” by B. Brenner. These books can help with the students hearing about ecosystems and interdependence.

1.9B – Use magazine or pictures in books to classify things as either living or nonliving. Use the following table to help.

Living	Nonliving
Grow and change	Doesn't grow or change
Reproduces	Doesn't reproduce
Needs air	Doesn't need air
Needs water	Doesn't need water
Needs food	Doesn't need food

For the animals, start with picture cards of different animals and talk about what they think the needs of the animals are, make a list of the needs.



This is from the Thinkcentral textbook. It is a lab where the students learn about the animal's adaptations and how they help the animal survive in its environment.

1.9C – This standard is about how the previous two coexist. You can talk to the students about the equipment they can use to show interdependence. Use a terrarium and an aquarium to describe how fish need water to survive, and the tank provides them with stability. Discuss building a habitat (while doing so) in a terrarium. Have students design their own “habitat”. What would they need to put in there to survive? Use magazines and cut out pictures or draw them on a sheet of butcher paper. You could also have students build a model of their environment.

Critical Writing Prompts



1. Look at the picture of the fish. What does it do all day? How do you know it is living?
You want to start growing plants at home. Write a list of the things you'll need to tell your parents so you can grow some food.

Vocabulary

Aquarium – a transparent tank of water where fish and other plants and animals can grow and be displayed indoors

Nutrients – substances that an organism needs to live, survive, and grow

Environment
Grow



Basic needs – required for an organism to survive; air, water, nutrients, light, food, shelter (for animals), etc.	Offspring – a living organism that is made when a plant or animal reproduces	Light
Characteristic – a feature that helps to identify, tell apart, or describe; a distinguishing mark or trait; a physical attribute	Organism – a living thing that can function on its own	Movement
Consumer – an organism that eats other organisms (plants and / or animals) for food	Producer – an organism that makes its own food (e.g., plants)	Objects
Depend – relying entirely on someone or something	System – a collection of parts that work together	Plant
Ecosystem – the living and nonliving components of an environment	Terrarium – a habitat where plants and animals can grow and be displayed indoors	Shelter
	Air	Space
		Survival
		Water

Resources

**The suggested resources are one of many ways to address the TEKS student expectation.*

[ThinkCentral textbook](#)

[Cornell](#) university study on gardening and student's growth