Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

Components	
Unit Name	Organisms and the Environment
TEKS	(1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following school and home safety procedures and environmentally appropriate practices. The student is expected to: (A) demonstrate safe practices as described in the Texas Safety Standards during classroom and outdoor investigations, including observing a schoolyard habitat; and (B) Make informed choices in the use and conservation of natural resources by recycling or reusing materials such as paper, aluminum cans, and plastics. (2) Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and outdoor investigations. The student is expected to: (A) plan and implement descriptive investigations, including asking and answering questions, making inferences, and selecting and using equipment or technology needed, to solve a specific problem in the natural world; (B) collect data by observing and measuring using the metric system and recognize differences between observed and measured data; (C) construct maps, graphic organizers, simple tables, charts, and bar graphs using tools and current technology to organize, examine, and evaluate measured data; (D) analyze and interpret patterns in data to construct reasonable explanations based on evidence from investigations; (E) demonstrate that repeated investigations may increase the reliability of results; and (F) Communicate valid conclusions supported by data in writing, by drawing pictures, and through verbal discussion. (3) Scientific investigation and reasoning. The student knows that information, critical thinking, scientific problem solving, and the contributions of scientists are used in making decisions. The student is expected to: (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student; (D) Connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists. contributions of scientists (4) Scientific investigation and reasoning. The student knows how to use a variety of tools and methods to conduct science inquiry. The student is expected to: (A) collect, record, and analyze information using tools, including microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, wind vanes, rain gauges, pan balances, graduated cylinders, beakers, spring scales, hot plates, meter sticks, compasses, magnets, collecting nets, notebooks, sound recorders, and Sun, Earth, and Moon system models; timing devices, including clocks and stopwatches; and materials to support observation of habitats of organisms such as terrariums and aquariums; and (B) Use safety equipment as appropriate, including safety goggles and gloves.

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

	(9) Organisms and environments. The student knows that organisms have characteristics that help them survive and can describe patterns, cycles, systems, and relationships within the environments. The student is expected to: (A) observe and describe the physical characteristics of environments and how they support populations and communities within an ecosystem; (B) identify and describe the flow of energy in a food chain and predict how changes in a food chain affect the ecosystem such as removal of frogs from a pond or bees from a field; and (C) Describe environmental changes such as floods and droughts where some organisms thrive and others perish or move to new locations. (10) Organisms and environments. The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to: (A) explore how structures and functions of plants and animals allow them to survive in a particular environment; (B) explore that some characteristics of organisms are inherited such as the number of limbs on an animal or flower color and recognize that some behaviors are learned in response to living in a certain environment such as animals using tools to get food; and (C) Investigate and compare how animals and plants undergo a series of orderly changes in their diverse life cycles such as tomato plants, frogs, and lady bugs.
Generalizations/ Enduring Understandings	Students need to understand that plants have systems and compete for resources within their ecosystem. Students need to understand that a habitat consists of plants, animals, and nonliving material. Students need to understand that there are different ecosystems in the world and be aware of how they work and how living organisms adapt. Students must demonstrate knowledge of **interactions** within **ecosystems**. This includes understanding what animals and plants need, how they meet these needs, and how meeting these needs changes the environment. A rabbit is a **primary consumer (herbivore)** in a habitat where grasses are the **producers** (autotrophy). A coyote, a secondary **Consumer (carnivore), preys** on the rabbit in this habitat. The rabbit is considered both a consumer and prey. **Biomes** are the world's major communities, classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment : ***Aquatic***: freshwater, marine, estuaries ***Desert***: hot, dry, cold, coastal ***Forest***: coniferous, deciduous ***Rainforest****:* ***Grassland*****:** savanna, temperate ***Tundra*****:** arctic, alpine Students need to understand that adaptations enable animals to survive.

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

	Students need to understand that all living things depend on other living things to meet their needs for survival. Students need to be aware that in a **food chain** or **food web**, the arrows are used to indicate **energy** flow. Therefore, each arrow points to the organism that is taking in, or ingesting, the energy. **Food webs** are made of several food chains and often include producers who make their own food, consumers who eat producers and other consumers, and decomposers that clean and recycle chemicals. Students need to understand how a change in one part of the earth may affect the other parts and their living organisms. Students understand that interdependence can exist among various populations of living organisms within a major ecosystem. Students need to understand that organisms with similar needs compete with one another for resources such as oxygen, water, food, or space. Environmental changes are often caused by humans or by nature. **Human influences** causing environmental change may include conservation, preservation, pollution, deforestation, development (urbanization), introduction of foreign species, irrigation, utilizing air conditioning and heating, using tools and technology. **Natural disasters** Students need to understand environmental changes in which some organisms thrive, become ill, or perish. For example environmental changes that could include fire, drought, storm, tsunami, flood, earthquake, volcano, tornado and hurricane
Concepts	**Growth and Heredity** amphibian, animal, organism, behavior, bilateral symmetry, characteristic, classify, cocoon, gland, growth, insect, invertebrate, larva, metamorphosis, minerals, molt, predator, prey, pupa, reproduce, reptile, spider, survive, feature, female, gene, generation, heredity, inherit, life cycle, reproduce, trait, transfer **Needs of Living Things** air, behavior, carbon dioxide, disease, energy (organisms), environment, fertilize, flower, food chain, gills, heterotroph, instinct, light, minerals, nitrogen, nutrients, photosynthesis, pistil, pollen, react, stimulus, structure, sugar, survive, trait, vein (plants), water, adaptation, carbon dioxide, chlorophyll, chloroplast, energy (organisms), fertilize, freshwater, hibernate, migration, mineral, nitrogen, nutrients, organism, oxygen, photosynthesis, plant, reproduce, respiration, stomata, survive, water, Arctic, air, environment, grassland, habitat, hibernate, light, marine, matter, migration, organism, producer, range, skin, soil, survive, system, water **Interactions and Changes in the Environment (Food Chains and Changes in Ecosystem)** autotroph, bacteria, biological diversity, carnivore, consumer, decay, decompose, energy (organisms), energy pyramid, food chain, food web, grassland, herbivore, light, nutrients, omnivore, photosynthesis, predator, prey, producer, system, ecosystem, period, pollute, season, water

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

Guiding/ Essential Questions	1. What do living organisms need in order to survive? 2. How does an organism change as it grows? 3. What are the stages of plant or animal life cycles? 4. How are animals classified? 5. What traits are learned or inherited? 6. How do parts of a living system help the organism survive, adapt, and reproduce in a given environment? 7. What are the structures and functions of plants that help them to survive? 8. What is an ecosystem? 9. How is energy transferred in a food web? 10. What are some habitats within a major ecosystem? 11. How do animals in nature depend on other living things? 12. How do plants and animals change during their life cycles? 13. How would a living organism be affected if it was placed in a different ecosystem? 14. How does the predator-prey relationship change an ecosystem? 15. How do adaptations differ in various types of ecosystems? 16. What are some adaptions that help plants and animals to survive in their habitats? 17. What would cause a living organism to become endangered or extinct? 18. How might a natural disaster affect an ecosystem? 19. How do human influences affect ecosystems where organisms live?
Learning Targets	**On separate document** The students will observe and describe the way organisms live and survive in their ecosystem. **ELA Connection: write notes to be used later in discussion or writing** The students will compare and contrast organisms in their various stages of their life cycle. **ELA Connection: gather and internalize information and then write it in own words**

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

Formative/ Summative Assessment	Does it Have a Life Cycle? Page 111 (Teacher Notes page 112-116) Baby Mice page 129 (Teacher Notes 130-136) Habitat Change page 143 (Teacher Notes 144-148) **Discovery Education: Unit Assessments** Growth and Heredity: http://tools.discoveryeducation.com/assessment/viewAssessment.cfm?guidAssetID=5be915bf-3c97-487d-b5fb-f6326b81f1f6&blnPopup=1 Interactions and Changes in the Environment: http://tools.discoveryeducation.com/assessment/viewAssessment.cfm?guidAssetID=1a40d0bc-67da-4512-a9f6-3769b9c99f3e&blnPopup=1 Needs of Living Things: http://tools.discoveryeducation.com/assessment/viewAssessment.cfm?guidAssetID=c4299423-bd4c-45ab-a08a-85ce0c074b47&blnPopup=1
Processes and Skills	1. Collect information through measuring 2, Demonstrate safe practices 3. Analyze and interpret for reasonable conclusions. 4. Construct graphs, tables, and charts 5. Predict 6. Classify 7. Identify and control variables 8. Interpret data

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

Facts	Living things grow and change. Living things make more of their own kind. An environment is everything that surrounds an organism. All living things respond to their environment in some way. Plants produce their own food. Learned traits are one that have been learned through teaching or experience. **Inherited traits** of animals may include eye color, fur/hair, color, texture, height, spots (markings), tail, beaks/feet, and/or fins. **Inherited traits of plants** may include shape of leaves, type of flower, color, seed type, texture, fruit type, size, and bark. The life cycle is all of the stages in an organism's life; the likenesses between offspring and parents can be inherited or learned. Plants originate from cuttings, seeds, and bulbs. Gravity causes the roots to grow down and stems to grow up towards the sun. Living things are part of food chains which are part of food webs. Organisms compete with each other for resources. Living things can adapt by using structures or functions that allow them to reproduce and survive. Living things need other living things and certain nonliving things in order to survive. Living things can adapt by using structures or functions that allow them to reproduce and survive. Plants and animals adapt to different conditions by responding to light, water, gravity, seasonal changes, and other living things. All living things go through a life cycle. Living things make adaptations to protect themselves, in order to find food and reproduce. Living things and their physical environments make up ecosystems.
Language of Instruction	Ecosystem, community, population, habitat, niche, adaptation, camouflage, perish, relocate, endangered, extinct, characteristics, organism, development, respond, environment, communicate, energy, oxygen, migrate, hibernate , leaves, seed, identifiable characteristics, markings, tail, beak, feet, height, texture, color, eye color Crustaceans, rollers, hikers, isopods, life cycle, metamorphosis, inherited trait, learned trait, embryo, germinate, flowering plant, conifer leaves, seed, , identifiable characteristics, markings, tail, beak, feet, height, texture, color, eye color Mineral, system, cell, cytoplasm, cell membrane, nucleus, tissue, organ, leaves, seed, identifiable characteristics, markings, tail, beak, feet, height, texture, color, eye color,
Resources	
Interactive Science Notebook	What properties do leaves have? How is it possible to measure the height of a tree? Pill bug project journal Where pill bugs would most likely be found in our school environment? What are some habits of pill bugs?

CG

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

	Pill bug project journal How are insects adapted to eating certain types of food?
Student Investigations/ Student Products	http://www.mysciencebox.org/explore/results/taxonomy%3A50
Core Labs	Interactive Science Notebook/ Safety /Tools of Science /Mass-queried Ball Shady Characters / /Herb and Woody Leaf Collection/Leaf Facts Cones and Needles New Plant Discovery / Photosynthesis Isopods-Pill bugs / Invertebrates Metamorphosis; Life Cycle/ Table Manners/ Insect Mouth Parts/ Micro viewers/Vertebrate –Frogs-Sticky Tongues Predator-Prey Roadrunner/Inherited Traits
Core Labs Extensions	**Science Lab Connections** **Leaf Collection/Leaf Facts/Cones and Needles:** As a botanist (a person who studies plants), write complete sentences about the diversity of leaves. Use your lab notes and think about how leaves are compared to each other. In your report, begin each sentence with a capital letter; edit your sentences for word choice and punctuation before submitting your writing. Brainpop Video Click to view the video. **New Plant Discovery/Photosynthesis:** Write about the parts of the plant and tell what they do for the plant. Write about how the plant that you created in lab made a difference in its environment. Be sure to edit your report for correct punctuation. **Isopods-Pill Bugs/Invertebrates/Metamorphosis; Life Cycle:** Write about your experiences with the isopod preferences. In your investigations, what did the isopod like best? Write about special adaptations that the isopod has that helps it survive in its environment. Use your information page with the diagram to help you. Be sure to edit your sentences for subject/verb agreement before submitting your response. **Table Manners/Insect Mouth Parts/Micro viewers:** Write a short story that tells how insects are able to obtain food using their adaptations. In lab, we observed their mouth parts in a micro viewer and investigated how they eat using models of their mouth parts. Use any or all of the kinds of mouth parts in your story. Be sure to revise your story using details. **Vertebrate - Frogs - Sticky Tongues - Life Cycle**: Write about the life cycle of the frog and add at least 2 of its adaptations for survival. The following Brain Pop Jr. video about frogs may be helpful in your response. http://www.brainpopjr.com/science/animals/frogs/

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

Booklist	**Habitats and Life Cycle** Red-Eyed Tree Frog by Joy Cowely Frogs by Gail Gibbons A River Ran Wild: An Environmental History by Lynne Cherry River Friendly River Wild by Jane Kurtz **Food Chains:** Here is the African Savana by Madeleine Dunphy Butternut Hollow Pond by Brian J. Heinz Who Eats What?: Food Chains and Food Webs by Patricia Lauber **Plants:** Jack's Garden by Henry Cole Seeds by Ken Robbins Cactus Hotel by Brenda Z. Guiberson
Textbook Correlation	Discovery Techbook- Living Sciences **Unit: Growth and Heredity** • **Growth and Development**- There is so much to learn about the ways animals grow and develop. In this concept, you'll learn some interesting facts about the animals you see at the zoo and in your own neighborhood. (Sessions 1-5) • **Similarities of Parents and Offspring-** Every creature on Earth produces offspring and has a method for passing on its particular traits. In this lesson, you'll examine the similarities of parents and their offspring. (Sessions 1-3) **Unit: Needs of Living Things** • **Basic Needs of Animals-**All animals have basic needs. If any of the basic needs of animals are not provided, the animal can get sick and die. In this concept, you'll learn about the basic needs of animals and what happens when certain needs are not met. (Sessions 1-6) • **Basic Needs of Plants-** All living things have some basic needs, like food and water. Plants need some of the same things we need to survive. In this concept, you'll learn a lot more about plants and what they need to live. (Sessions 1-5) • **Habitat Characteristics-** Animals in the wild might live in the mountains, the ocean, the jungle, the forest, or somewhere else. Think about the rocks and the water and the weather in that place. In this concept, you'll explore the elements that make up an animal's habitat. (Sessions 1-5) **Unit: Interactions and Changes in the Environment** • **Parts of a Food Chain-** How do animals in nature get food? All living things need food for energy. In this concept, you'll learn how a food chain can help us understand how living things get energy. (Sessions 1-5)

Highland Park Science Curriculum Third Grade
1ST NINE WEEKS

	• **Conserving our Resources** (Sessions 1-4) • **Short-Term Changes in Ecosystems-** The plant and animal world is also always changing. Some of those changes are really slow. In this concept, you'll learn about the short-term changes that can happen in an ecosystem and how plants and animals respond to those changes. (Sessions 1-5)
Health Coordinated School Health Program	**Coordinated School Health Program** *Healthy and Wise: Elementary Online;* Monthly Newspaper- Sports, Exercise, Food, Health Research/Updates, Body Basics, Safety/Health Awareness, Relationships/Social/ Mental Health www.caprockpress.com Grade 3 Health Textbook http://www.macmillanmh.com/health/2005/student/level1.php?isbn=002280384X&st=tx
Health TEKS	(2) Health behaviors. The student recognizes and performs behaviors that reduce health risks throughout the life span. The student is expected to: (A) explain the need for obeying safety rules at home, school, work, and play such as bike safety and avoidance of weapons; (B) describe the harmful effects of alcohol, tobacco, and other drugs on physical, mental, and social health and why people should not use them; (C) identify reasons for avoiding violence, gangs, weapons and drugs; (D) identify examples of abuse and describe appropriate responses; and (E) Describe the importance of taking personal responsibility for reducing hazards, avoiding accidents, and preventing accidental injuries. (3) Health behaviors. The student knows and engages in behaviors that prevent disease and speed recovery from illness. The student is expected to: (A) identify health behaviors that prevent the spread of disease and avoid behaviors that cause the transmission of disease; (B) explain the body's defense systems and how they fight disease; and (C) Explain actions to take when illness occurs such as informing parents/adults. (4) Health information. The student names the basic structures and functions of the human body and explains how they relate to personal health throughout the life span. The student is expected to: (A) list and explain the stages of growth and development; (B) name and locate major components of the body systems; and (C) Explain the interrelationships of the body systems. 5) Health information. The student knows how to access health information. The student is expected to: (A) demonstrate the ability to locate resources from parents and family members, school, and the community; and (B) Demonstrate the ability to locate school and community health helpers. (6) Influencing factors. The student understands factors that influence individual and community health. The student is expected to: (A) relate how protecting the environment promotes individual and community health; (B) identify common health problems that result from unhealthy environments such as skin cancer, poisoning, and respiratory illness; (C) identify ways to protect personal health from environmental hazards such as lead removal and no-smoking laws; and (D) Describe roles and responsibilities of family members in promoting and practicing health behaviors.