

# Science Vertical Alignment, Prekindergarten – Grade 2

Grade Level	Prekindergarten	Kindergarten	Grade 1	Grade 2
Standards	Texas Prekindergarten Guidelines	Texas Essential Knowledge and Skills (TEKS)	Texas Essential Knowledge and Skills (TEKS)	Texas Essential Knowledge and Skills (TEKS)
Domain / Content Area	VI. Science Domain	Science	Science	Science
Sub-Domains / Strands	<ul style="list-style-type: none"> <li>A. Physical Science Skills</li> <li>B. Life Science Skills</li> <li>C. Earth and Space Science Skills</li> </ul>	<ul style="list-style-type: none"> <li>1. Scientific Investigation and Reasoning</li> <li>2. Matter and Energy</li> <li>3. Force, Motion, and Energy</li> <li>4. Earth Space</li> <li>5. Organisms and Environment</li> </ul>	<ul style="list-style-type: none"> <li>1. Scientific Investigation and Reasoning</li> <li>2. Matter and Energy</li> <li>3. Force, Motion, and Energy</li> <li>4. Earth Space</li> <li>5. Organisms and Environment</li> </ul>	<ul style="list-style-type: none"> <li>1. Scientific Investigation and Reasoning</li> <li>2. Matter and Energy</li> <li>3. Force, motion, and Energy</li> <li>4. Earth Space</li> <li>5. Organisms and Environment</li> </ul>

## Scientific Investigation and Reasoning (Part 1)

<b>Prekindergarten</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
No standard present in vertical progression	K(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. The student is expected to:	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. The student is expected to:	2(1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:
No standard present in vertical progression	K(1)(A) identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately; and	1(1)(A) identify, discuss, and demonstrate safe and healthy practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately; and	2(1)(A) identify, describe, and demonstrate safe practices as outlined in Texas Education Agency-approved safety standards during classroom and outdoor investigations, including wearing safety goggles or chemical splash goggles, as appropriate, washing hands, and using materials appropriately; and

## Scientific Investigation and Reasoning (Part 2)

<b>Prekindergarten</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
No standard present in vertical progression	K(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:	1(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:	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:
No standard present in vertical progression	K(2)(A) ask questions about organisms, objects, and events observed in the natural world;	1(2)(A) ask questions about organisms, objects, and events observed in the natural world;	2(2)(A) ask questions about organisms, objects, and events during observations and investigations;
No standard present in vertical progression	K(2)(B) plan and conduct simple descriptive investigations;	1(2)(B) plan and conduct simple descriptive investigations;	2(2)(B) plan and conduct simple descriptive investigations;
No standard present in vertical progression	K(2)(C) collect data and make observations using simple tools:	1(2)(C) collect data and make observations using simple tools:	2(2)(C) collect data and make observations using scientific tools:
No standard present in vertical progression	K(2)(D) record and organize data and observations using pictures, numbers, and words; and	1(2)(D) record and organize data and observations using pictures, numbers, and words; and	2(2)(D) record and organize data and observations using pictures, numbers, and words; and
No standard present in vertical progression	K(2)(E) communicate observations about simple descriptive investigations.	1(2)(E) communicate observations and provide reasons for explanations using student-generated data from simple descriptive investigations	2(2)(E) communicate observations and justify explanations using student-generated data from simple descriptive investigations; and

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No standard present in vertical progression	K(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:	1(2) Scientific investigation and reasoning. The student develops abilities to ask questions and seek answers in classroom and outdoor investigations. The student is expected to:	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:
No standard present in vertical progression	No standard present in vertical progression	No standard present in vertical progression	2(2)(F) compare results of investigations with what students and scientists know about the world.

### Scientific Investigation and Reasoning (Part 3)

<b>Prekindergarten</b>	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
No standard present in vertical progression	K(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:	1(3) Scientific investigation and reasoning. The student knows that information and critical thinking are used in scientific problem solving. The student is expected to:	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:
No standard present in vertical progression	K(3)(A) identify and explain a problem such as the impact of littering and propose a solution;	1(3)(A) identify and explain a problem and propose a solution	2(3)(A) identify and explain a problem and propose a task and solution for the problem
No standard present in vertical progression	K(3)(B) make predictions based on observable patterns in nature; and	1(3)(B) make predictions based on observable patterns; and	2(3)(B) make predictions based on observable patterns; and
No standard present in vertical progression	K(3)(C) explore that scientists investigate different things in the natural world and use tools to help in their investigations.	1(3)(C) describe what scientists do.	2(3)(C) identify what a scientist is and explore what different scientists do.

## Scientific Investigation and Reasoning (Part 4)

Prekindergarten	Kindergarten	Grade 1	Grade 2
A. Physical Science Skills	K(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:	1(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:	2(4) Scientific investigation and reasoning. The student uses age-appropriate tools and models to investigate the natural world. The student is expected to:
No standard present in vertical progression	K(4)(A) collect information using tools, including computing devices, hand lenses, primary balances, cups, bowls, magnets, collecting nets, and notebooks; timing devices; non-standard measuring items; weather instruments such as demonstration thermometers; and materials to support observations of habitats of organisms such as terrariums and aquariums; and	1(4)(A) 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; and	2(4)(A) collect, record, and compare information using tools, including computers, hand lenses, rulers, plastic beakers, magnets, collecting nets, notebooks, and safety goggles or chemical splash goggles, as appropriate; timing devices; weather instruments such as thermometers, wind vanes, and rain gauges; and materials to support observations of habitats of organisms such as terrariums and aquariums; and
No standard present in vertical progression	K(4)(B) use the senses as a tool of observation to identify properties and patterns of organisms, objects, and events in the environment.	No standard present in vertical progression	No standard present in vertical progression
VI.A.3. Child uses simple measuring devices to learn about objects.	No standard present in vertical progression	1(4)(B) measure and compare organisms and objects using non-standard units.	2(4)(B) measure and compare organisms and objects.

## Energy and Matter

Prekindergarten	Kindergarten	Grade 1	Grade 2
A. Physical Science Skills	K(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:	1(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:	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:
VI.A.1. Child observes, investigates, describes and discusses properties and characteristics of common objects.	K(5)(A) observe and record properties of objects, including bigger or smaller, heavier or lighter, shape, color, and texture; and	1(5)(A) classify objects by observable properties such as larger and smaller, heavier and lighter, shape, color, and texture;	2(5)(A) classify matter by physical properties, including relative temperature, texture, flexibility, and whether material is a solid or liquid;

Prekindergarten	Kindergarten	Grade 1	Grade 2
A. Physical Science Skills	K(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:	1(5) Matter and energy. The student knows that objects have properties and patterns. The student is expected to:	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:
No standard present in vertical progression	K(5)(B) observe, record, and discuss how materials can be changed by heating or cooling.	1(5)(B) predict and identify changes in materials caused by heating and cooling; and	2(5)(B) compare changes in materials caused by heating and cooling;
No standard present in vertical progression	No standard present in vertical progression	1(5)(C) classify objects by the materials from which they are made.	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	No standard present in vertical progression	2(5)(C) demonstrate that things can be done to materials such as cutting, folding, sanding, and melting to change their physical properties; and
No standard present in vertical progression	No standard present in vertical progression	No standard present in vertical progression	2(5)(D) combine materials that when put together can do things that they cannot do by themselves such as building a tower or a bridge and justify the selection of those materials based on their physical properties.

## Force, Motion, and Energy

<b>Prekindergarten</b> A. Physical Science Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
	K(6) Force, motion, and energy. The student knows that energy, force, and motion are related and are a part of their everyday life. The student is expected to:	1(6) Force, motion, and energy. The student knows that force, motion, and energy are related and are a part of everyday life. The student is expected to:	2(6) Force, motion, and energy. The student knows that forces cause change and energy exists in many forms. The student is expected to:
VI.A.4. Child observes, investigates, describes and discusses sources of energy including light, heat, and electricity.	K(6)(A) use the senses to explore different forms of energy such as light, thermal, and sound;	1(6)(A) identify and discuss how different forms of energy such as light, thermal, and sound are important to everyday life;	2(6)(A) investigate the effects on objects by increasing or decreasing amounts of light, heat, and sound energy such as how the color of an object appears different in dimmer light or how heat melts butter;
No standard present in vertical progression	K(6)(B) explore interactions between magnets and various materials;	1(6)(B) predict and describe how a magnet can be used to push or pull an object;	2(6)(B) observe and identify how magnets are used in everyday life; and
VI.A.2. Child observes, investigates, describes, and discusses position and motion of objects.	K(6)(C) observe and describe the location of an object in relation to another such as above, below, behind, in front of, and beside; and	No standard present in vertical progression	No standard present in vertical progression
VI.A.2. Child observes, investigates, describes, and discusses position and motion of objects.	K(6)(D) observe and describe the ways that objects can move such as in a straight line, zigzag, up and down, back and forth, round and round, and fast and slow.	1(6)(C) demonstrate and record the ways that objects can move such as in a straight line, zig zag, up and down, back and forth, round and round, and fast and slow.	2(6)(C) trace and compare patterns of movement of objects such as sliding, rolling, and spinning over time.

## Earth and Space (Part 1)

<b>Prekindergarten</b> C. Earth and Space Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
	K(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. The student is expected to:	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. The student is expected to:	2(1) Scientific investigation and reasoning. The student conducts classroom and outdoor investigations following home and school safety procedures. The student is expected to:
VI.C.4. Child demonstrates the importance of caring for our environment and our planet.	K(1)(B) demonstrate how to use, conserve, and dispose of natural resources and materials such as conserving water and reusing or recycling paper, plastic, and metal.	1(1)(B) identify and learn how to use natural resources and materials, including conservation and reuse or recycling of paper, plastic, and metals.	2(1)(B) 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.

## Earth and Space (Part 2)

<b>Prekindergarten</b> C. Earth and Space Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
	K(7) Earth and space. The student knows that the natural world includes earth materials. The student is expected to:	1(7) Earth and space. The student knows that the natural world includes rocks, soil, and water that can be observed in cycles, patterns, and systems. The student is expected to:	2(7) Earth and space. The student knows that the natural world includes earth materials. The student is expected to:
VI.C.1. Child observes, investigates, describes and discusses earth materials, and their properties and uses.	K(7)(A) observe, describe, and sort rocks by size, shape, color, and texture;	No standard present in vertical progression	2(7)(A) observe, describe, and compare rocks by size, texture, and color;
VI.C.1. Child observes, investigates, describes and discusses earth materials, and their properties and uses.	No standard present in vertical progression	1(7)(A) observe, compare, describe, and sort components of soil by size, texture, and color;	No standard present in vertical progression
VI.C.1. Child observes, investigates, describes and discusses earth materials, and their properties and uses.	K(7)(B) observe and describe physical properties of natural sources of water, including color and clarity; and	1(7)(B) identify and describe a variety of natural sources of water, including streams, lakes, and oceans; and	2(7)(B) identify and compare the properties of natural sources of freshwater and saltwater; and
VI.C.1. Child observes, investigates, describes and discusses earth materials, and their properties and uses.	K(7)(C) give examples of ways rocks, soil, and water are useful.	1(7)(C) identify how rocks, soil, and water are used to make products.	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	No standard present in vertical progression	2(7)(C) distinguish between natural and manmade resources.

## Earth and Space (Part 3)

<b>Prekindergarten</b> C. Earth and Space Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
	K(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:	1(8) Earth and space. The student knows that the natural world includes the air around us and objects in the sky. The student is expected to:	2(8) Earth and space. The student knows that there are recognizable patterns in the natural world and among objects in the sky. The student is expected to:
VI.C.3. Child observes and describes what happens during changes in the earth and sky.	K(8)(A) observe and describe weather changes from day to day and over seasons;	1(8)(A) record weather information, including relative temperature such as hot or cold, clear or cloudy, calm or windy, and rainy or icy;	2(8)(A) measure, record, and graph weather information, including temperature, wind conditions, precipitation, and cloud coverage, in order to identify patterns in the data;
	K(8)(B) identify events that have repeating patterns, including seasons of the year and day and night; and	No standard present in vertical progression	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	1(8)(C) identify characteristics of the seasons of the year and day and night; and	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	No standard present in vertical progression	2(8)(B) identify the importance of weather and seasonal information to make choices in clothing, activities, and transportation;
VI.C.2. Child identifies, observes, and discusses objects in the sky.	K(8)(C) observe, describe, and illustrate objects in the sky such as the clouds, Moon, and stars, including the Sun.	1(8)(B) observe and record changes in the appearance of objects in the sky such as the Moon and stars, including the Sun;	2(8)(C) observe, describe, and record patterns of objects in the sky, including the appearance of the Moon.
No standard present in vertical progression	No standard present in vertical progression	1(8)(D) demonstrate that air is all around us and observe that wind is moving air.	No standard present in vertical progression



## Organisms and Environments (Part 1)

<b>Prekindergarten</b> B. Life Sciences Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
	K(9) Organisms and environments. The student knows that plants and animals have basic needs and depend on the living and nonliving things around them for survival. The student is expected to:	1(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:	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:
No standard present in vertical progression	K(9)(A) differentiate between living and nonliving things based upon whether they have basic needs and produce offspring; and	1(9)(A) sort and classify living and nonliving things based upon whether they have basic needs and produce offspring;	No standard present in vertical progression
No standard present in vertical progression	K(9)(B) 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.	No standard present in vertical progression	2(9)(A) identify the basic needs of plants and animals;
No standard present in vertical progression	No standard present in vertical progression	1(9)(B) analyze and record examples of interdependence found in various situations such as terrariums and aquariums or pet and caregiver; and	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	1(9)(C) gather evidence of interdependence among living organisms such as energy transfer through food chains or animals using plants for shelter.	2(9)(C) compare the ways living organisms depend on each other and on their environments, such as through food chains.
VI.B.3. Child observes, investigates, describes and discusses the relationship of organisms to their environments.	No standard present in vertical progression	No standard present in vertical progression	2(9)(B) identify factors in the environment, including temperature and precipitation, that affect growth and behavior such as migration, hibernation, and dormancy of living things; and

## Organisms and Environments (Part 2)

<b>Prekindergarten</b> B. Life Sciences Skills	<b>Kindergarten</b>	<b>Grade 1</b>	<b>Grade 2</b>
K(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:	1(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:	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:	
VI.B.1. Child observes, investigates, describes and discusses the characteristics of organisms.	K(10)(A) sort plants and animals into groups based on physical characteristics such as color, size, body covering, or leaf shape;	No standard present in vertical progression	No standard present in vertical progression
No standard present in vertical progression	No standard present in vertical progression	1(10)(A) investigate how the external characteristics of an animal are related to where it lives, how it moves, and what it eats;	2(10)(A) observe, record, and compare how the physical characteristics and behaviors of animals help them meet their basic needs;
No standard present in vertical progression	K(10)(B) identify basic parts of plants and animals	1(10)(B) identify and compare the parts of plants;	2(10)(B) observe, record, and compare how the physical characteristics of plants help them meet their basic needs such as stems carry water throughout the plant; and
No standard present in vertical progression	K(10)(C) identify ways that young plants resemble the parent plant; and	1(10)(C) compare ways that young animals resemble their parents; and	No standard present in vertical progression
VI.B.2. Child describes life cycles of organisms.	K(10)(D) observe changes that are part of a simple life cycle of a plant: seed, seedling, plant, flower, and fruit.	1(10)(D) observe and record life cycles of animals such as a chicken, frog, or fish.	2(10)(C) investigate and record some of the unique stages that insects such as grasshoppers and butterflies undergo during their life cycle.