Prekindergarten Science Competencies and Progressions

The purpose of this document is to clarify what students should know and be able to do each grading period (GP).

TPKG	Competencies	GP1	GP2	GP3	GP4
VI.A.1, VI.A.2, VI.A.3, VI.A.4	**C1 - Physical Science** The student observes, investigates, and describes the properties of objects, the position and motion of objects, and the different sources of energy (light, heat, and electricity).	**X**	**X**	**X**	**X**
VI.B.1, VI.B.2, VI.B.3	**C2 - Life Science** The student observes, investigates, and describes the physical characteristics of organisms, the life cycles of organisms, and the relationship between organisms and their environment.	**X**			**X**
VI.C.1, VI.C.2, VI.C.3, V1.C.4	**C3 - Earth and Space Science** The student observes, investigates, and describes earth materials, objects in the sky, changes in the earth and sky, and how to care for the environment.	**X**	**X**	**X**	**X**

Learning Progression for Competency 1: Physical Science

The student observes, investigates, and describes the properties of objects, the position and motion of objects, and the different sources of energy (light, heat, and electricity).

Developing	Progressing	Proficient
• Begins to use senses to experience properties of objects and attempts to discuss characteristics of wood, cotton, fur, stone, leather, plastic, foil, etc. • Begins to observe and attempt to describe the different ways objects move, such as straight, zigzag, round and round, fast or slow, with adult prompting • Begins to Investigate what common objects will do in response to action; for example, whether materials will sink/float or	• Occasionally uses senses to experience properties of objects and discusses their characteristics and capabilities of materials such as wood, cotton, fur, stone, leather, plastic, foil, etc. • Observes and describes the different ways objects move, such as straight, zigzag, round and round, fast or slow, with some adult prompting • Investigates what common objects will do in response to action; for example, whether	• Consistently uses senses and sensory language to describe properties of objects and discusses their characteristics and capabilities of materials such as wood, cotton, fur, stone, leather, plastic, foil, etc. • Observes, measures, and describes how objects move depending on different surfaces or conditions, such as straight, zigzag, round and round, fast or slow, the car will not roll fast on the carpet, etc., independently • Investigates and predict what common objects

melt/freeze, with adult prompting • Explores objects such as magnets, balances, eyedroppers, beakers/jars, etc., with adult support	materials will sink/float or melt/freeze, with some adult prompting • Knows the function of specific tools *(e.g., a thermometer measures temperature, a balance measure weight, a hand lens is used to observe detailed properties, etc.)* • Explores objects such as magnets, balances, eyedroppers, beakers/jars, etc., with some adult support	will do in response to an action; for example, whether materials will sink/float or melt/freeze, independently • Knows the function of specific tools *(e.g., a thermometer measures temperature, a balance measure weight, a hand lens is used to observe detailed properties, etc.)* • Explores objects by appropriately using magnets, balances, eyedroppers, beakers/jars, etc., independently

For additional examples of child behaviors across the progressions, reference the 2022 Texas Prekindergarten Guidelines.

Learning Progression for Competency 2: Life Science

The student observes, investigates, and describes the physical characteristics of organisms, the life cycles of organisms, and the relationship between organisms and their environment.

Developing	Progressing	Proficient
• Compares the similarities and attempts to differentiate the physical properties of living organisms and identifies their needs with significant adult prompting and modeling • Observes and attempts to discuss the life cycle of organisms, animals, and humans, and the differences among life stages, with significant adult modeling and prompting • Observes and attempts to discuss living organisms in their environment, such as spiders, insects, worms, snails, birds, etc., with significant adult modeling and	• Compares the similarities and differences of the physical properties of living organisms and identifies their needs; for example, living organisms need food, water, air, light, and shelter, and fish live in water, all birds have feathers, etc., with some adult modeling and prompting • Observes and discusses the life cycle of organisms, animals, and humans, and the differences among life stages, with some adult modeling and prompting • Observes and discusses living organisms in their environment, such as spiders, insects,	• Compares the similarities and differences of the physical properties of living organisms and identifies their needs; for example, living organisms need food, water, air, light, and shelter, and fish live in water, all birds have feathers, etc., with accuracy and independently • Observes, records, and discusses the life cycle of organisms, animals, and humans, and the differences among life stages, independently • Observes, records, and discusses living organisms in their environment, such as

prompting • Observes and attempts to discuss the differences between living and non-living organisms, with significant adult modeling and prompting • Observes and attempts to discuss the changes in the environment; for example, the temperature changes with the seasons, plants change colors or loose leaves at different times of the year, etc., with significant adult modeling and prompting	worms, snails, birds, etc., with some adult modeling and prompting • Observes and discusses the differences between living and non-living organisms and their dependency on other organisms; for example, birds eat seeds, and humans eat plants and meats, with some adult modeling and prompting • Observes and discusses changes in the environment; for example, the temperature changes with the seasons, plants change colors or loose leaves at different times of the year, etc., with some adult modeling and prompting	spiders, insects, worms, snails, birds, etc., independently • Observes, records, and discusses the differences between living and non-living organisms and their dependency on other organisms; for example, birds eat seeds, humans eat plants and meats, independently • Observes, records, and discusses changes in the environment; for example, the temperature changes with the seasons, plants change colors or loose leaves at different times of the year, etc., independently

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Learning Progression for Competency 3: Earth and Space Science

The student observes, investigates, and describes earth materials, objects in the sky, changes in the earth and sky, and how to care for the environment.

Developing	Progressing	Proficient
• Observes and attempts to identify such as rocks, soil, and sand using magnifying glasses, filters, water, and measurement tools, with significant adult modeling and prompting • Observes and attempts to discuss characteristics of clouds, sun, stars, and moon, with significant adult modeling and prompting • Observes and attempts to discuss daily weather events and how it changes over time using weather graphs and other visual	• Observes and discusses earth materials characteristics such as rocks, soil, and sand using magnifying glasses, filters, water, and measurement tools, and identifies/discusses how these earth materials can be used to build houses, road construction, etc., with some adult modeling and prompting • Observes and discusses characteristics of clouds, sun, stars, and moon, with some adult modeling and prompting	• Observes, discusses and compares earth materials such as rocks, soil, and sand using magnifying glasses, filters, water, and measurement tools, and identifies/discusses how these earth materials can be used to build houses, road construction, etc., with accuracy and independently • Observes, identifies, and discusses characteristics of clouds, sun, stars, and moon, with accuracy and independently

representations, with significant adult modeling and prompting • Observes and attempts to discuss the relationship between the shadow, object, and the sun, with significant adult modeling and prompting • Observes and attempts to discuss green practices and conservation projects such as recycling, reusing, reducing, etc., with significant adult modeling and prompting	• Observes and discusses daily weather events and how it changes over time using weather graphs and other visual representations, with some adult modeling and prompting • Observes and discusses the relationship between the shadow, object, and the sun • Observes and discusses green practices and conservation projects such as recycling, reusing, reducing, etc., with some adult modeling and prompting	• Observes, records, and discusses daily weather events and how it changes over time using weather graphs and other visual representations, with accuracy and independently • Observes, records, and discusses the relationship between the shadow, object, and the sun, with accuracy and independently • Observes, discusses and discusses green practices and conservation projects such as recycling, reusing, reducing, etc., with accuracy and independently

For additional examples of child behaviors across the progressions, reference the 2022 Texas Prekindergarten Guidelines.