

# Kindergarten Science



## Kindergarten Science Year at a Glance

Scope Title	Parent Letters	Scope Summary
<a href="#"><u>Properties of Objects</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will observe, describe, and record physical properties color, texture, and material, and learn how to classify them. Through engaging hands-on mini-lessons, students explore these properties using their senses and engineering activities. The learning culminates with students applying constructing arguments to explain how objects can be sorted by shape.
<a href="#"><u>Magnets</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will explore how magnets interact with different materials be used to push or pull objects. Through interactive stories and hands-on predict, test, and observe magnetic forces while engaging in scientific and The learning concludes with students constructing arguments to explain magnets behave with various materials.
<a href="#"><u>Light</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will learn that objects can only be seen when there is amounts of light affect how objects look, and how light can pass through to create shadows. Through engaging stories and interactive mini-lessons sources, test how light interacts with objects, and create shadow puppets with students constructing arguments to explain which objects allow light which create shadows.
<a href="#"><u>Patterns in the Sky</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will identify, describe, and predict patterns of day and objects in the sky like the Sun, Moon, stars, and clouds. Through interactive mini-lessons, students model day and night, explore how the Moon reflects visual representations of sky patterns. The learning concludes with students arguments to explain and illustrate when different objects in the sky can be
<a href="#"><u>Weather &amp; Air</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students observe and describe how weather changes daily and recognize evidence that air is all around us, and demonstrate that wind is engaging stories and hands-on mini-lessons, students explore weather patterns with tools like windsocks, and create weather-related projects. The learning students constructing arguments to explain how weather changes over time
<a href="#"><u>Rocks, Soil,</u></a>	<a href="#"><u>English</u></a> &	In this unit, students will describe and classify rocks by their size, shape, color also exploring practical uses for rocks, soil, and water. Through engaging



<a href="#"><u>and Water</u></a>	<a href="#"><u>Spanish</u></a>	mini-lessons, students collect and observe rocks, play games to find natural environment, and discuss their uses. The learning concludes with students constructing arguments to explain how to classify objects based on observable properties.
<a href="#"><u>Basic Needs</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will learn to observe and identify the basic needs of plants, including their dependence on air, water, sunlight, nutrients, space, food, and shelter. Through engaging stories and interactive mini-lessons, students explore these needs, sorting needs and wants, and learning about related careers. The learning concludes with students constructing arguments to explain the basic needs of animals.
<a href="#"><u>Plant Life Cycles</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will identify and record the stages of a simple plant life cycle from seed to fruit—and recognize how young plants resemble their parent plants. Through cards and hands-on mini-lessons, students explore real plants, observe seeds and seedlings, and practice sequencing life cycle stages. The learning concludes with students constructing arguments that explain the changes in a plant’s life cycle in the correct order.
<a href="#"><u>Plant and Animal Structures</u></a>	<a href="#"><u>English</u></a> & <a href="#"><u>Spanish</u></a>	In this unit, students will be introduced to plant and animal structures through cards and hands-on mini-lessons that explore their functions and purposes. Students will create animals, create their own zoo creatures, plant lima beans, and investigate various ways. The learning culminates with students applying their understanding to create useful items inspired by animal structures and constructing arguments about their designs.
<a href="#"><u>STEM &amp; RTC</u></a>		



## Standards for Matter and Its Properties

### Texas Essential Knowledge and Skills (TEKS)

- Matter and its properties. The student knows that objects have physical properties that determine how they are described and classified. The student is expected to identify and record observable physical properties of objects, including shape, color, texture, and material, and generate ways to classify objects.

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## Standards for Force, Motion, & Energy

### Texas Essential Knowledge and Skills (TEKS)

- Force, motion, and energy. The student knows that forces cause changes in motion and position in everyday life. The student is expected to describe and predict how a magnet interacts with various materials and how magnets can be used to push or pull.
- Force, motion, and energy. The student knows that energy is everywhere and can be observed in everyday life. The student is expected to:
  - communicate the idea that objects can only be seen when a light source is present and compare the effects of different amounts of light on the appearance of objects; and
  - demonstrate and explain that light travels through some objects and is blocked by other objects, creating shadows.

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## Standards for Earth and Space

### Texas Essential Knowledge and Skills (TEKS)

- 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:
  - identify, describe, and predict the patterns of day and night and their observable characteristics; and
  - observe, describe, and illustrate the Sun, Moon, stars, and objects in the sky such as clouds.
- Earth and space. The student knows that the natural world includes earth materials and systems that can be observed. The student is expected to:
  - describe and classify rocks by the observable properties of size, shape, color, and texture;
  - observe and describe weather changes from day to day and over seasons; and
  - identify evidence that supports the idea that air is all around us and demonstrate that wind is moving air using items such as a windsock, pinwheel, or ribbon.
- Earth and space. The student knows that earth materials are important to everyday life. The student is expected to observe and generate examples of practical uses for rocks, soil, and water.

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## Standards for Organisms and Environments

### Texas Essential Knowledge and Skills (TEKS)

- Organisms and environments. The student knows that plants and animals depend on the environment to meet their basic needs for survival. The student is expected to:
  - observe and identify the dependence of plants on air, sunlight, water, nutrients in the soil, and space to grow; and
  - observe and identify the dependence of animals on air, water, food, space, and shelter.
- Organisms and environments. The student knows that organisms resemble their parents and have structures and undergo processes that help them interact and survive within their environments. The student is expected to:
  - identify the structures of plants, including roots, stems, leaves, flowers, and fruits;
  - identify the different structures that animals have that allow them to interact with their environment such as seeing, hearing, moving, and grasping objects;
  - identify and record the changes from seed, seedling, plant, flower, and fruit in a simple plant life cycle; and
  - identify ways that young plants resemble the parent plant.

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## Standards for Scientific and Engineering Practices and Recurring Themes

### Texas Essential Knowledge and Skills (TEKS)

- **Scientific and Engineering Practices.** The student asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:



- ask questions and define problems based on observations or information from text, phenomena, models, or investigations;
- use scientific practices to plan and conduct simple descriptive investigations and use engineering practices to design solutions to problems;
- identify, describe, and demonstrate safe practices during classroom and field investigations as outlined in Texas Education Agency–approved safety standards;
- identify, describe, and demonstrate safe practices during classroom and field investigations as outlined in Texas Education Agency–approved safety standards;
- use tools, including hand lenses, goggles, trays, cups, bowls, sieves or sifters, notebooks, terrariums, aquariums, samples (rocks, sand, soil, loam, gravel, clay, seeds, and plants), windsock, demonstration thermometer, rain gauge, straws, ribbons, non-standard measuring items, blocks or cubes, tuning fork, various flashlights, small paper cups, items that roll, noise makers, hot plate, opaque objects, transparent objects, foil pie pans, foil muffin cups, wax paper, Sun-Moon-Earth model, and plant life cycle model to observe, measure, test, and compare;
- collect observations and measurements as evidence;
- record and organize data using pictures, numbers, words, symbols, and simple graphs; and
- develop and use models to represent phenomena, objects, and processes or design a prototype for a solution to a problem.
- **Scientific and engineering practices.** The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence based arguments or evaluate designs. The student is expected to:
  - identify basic advantages and limitations of models such as their size, properties, and materials;
  - analyze data by identifying significant features and patterns;
  - use mathematical concepts to compare two objects with common attributes; and
  - evaluate a design or object using criteria to determine if it works as intended.
- **Scientific and engineering practices.** The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:
  - develop explanations and propose solutions supported by data and models;
  - communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and
  - listen actively to others' explanations to identify important evidence and engage respectfully in scientific discussion.





- **Scientific and engineering practices.** The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:
  - explain how science or an innovation can help others; and
  - identify scientists and engineers such as Isaac Newton, Mae Jemison, and Ynes Mexia and explore what different scientists and engineers do.
- **Recurring themes and concepts.** The student uses recurring themes and concepts to make connections across disciplines. The student is expected to:
  - identify and use patterns to describe phenomena or design solutions;
  - investigate and predict cause-and-effect relationships in science;
  - describe the properties of objects in terms of relative size (scale) and relative quantity;
  - examine the parts of a whole to define or model a system;
  - identify forms of energy and properties of matter;
  - describe the relationship between the structure and function of objects, organisms, and systems; and
  - describe how factors or conditions can cause objects, organisms, and systems to either change or stay the same.

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