

# Science

PRE-KINDERGARTEN (AGE 4)

Life Science	Physical Science	Earth and Space Science
Five Senses Classification of Animals	Physical Properties of Objects (Shapes, colors, textures)	Night and Day Weather Conservation

## STANDARD 1

*The student understands and uses scientific concepts and principles.*

To meet this standard, the student will:

**Benchmark PK4.1.1: Use properties to identify, describe, and categorize substances, materials, and objects**

**Indicators:**

**Physical**

- PK4.1.1.1 Identify materials that make up familiar objects (e.g. cotton, clay, paper)
- PK4.1.1.2 Describe objects using simple sensory terms (e.g., hard, soft, rough, smooth, squishy, wet, bumpy, prickly, slimy, sharp, dull, scratchy, heavy, and light)
- PK4.1.1.3 Sort objects by simple properties such as size, shape and color

**Earth**

- PK4.1.1.4 Describe weather conditions using simple terms such as sunny, cloudy, rainy, cold and hot

**Benchmark PK4.1.2: Identify, describe, and categorize living things based on their characteristics**

**Indicator:**

**Life**

- PK4.1.2.1 Describe characteristics in the appearance and behavior of animals (e.g., ocean animals, zoo animals, insects)

**Benchmark PK4.1.3: Measure properties and characteristics**

**Indicator:**

**Physical**

- PK4.1.3.1 Identify basic time scales (days, weeks, months)

**Benchmark PK4.1.4: Recognize the components, structure, and organization of systems and the interconnections within and among them**

**Indicators:**

**Earth**

- PK4.1.4.1 Describe basic weather conditions

**Life**

- PK4.1.4.2 Understand that living things can reproduce themselves (e.g., butterfly life cycle)
- PK4.1.4.3 Understand that reproduction produces an offspring with traits similar to the parents
- PK4.1.4.4 Understand that living things have basic needs

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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**Benchmark PK4.1.5: Understand that interactions within and among systems cause changes in matter and energy**

**Indicators:**

**Earth**

PK4.1.5.1 Observe cyclic events

PK4.1.5.2 List the characteristics of the night (e.g., moon, stars, animals)

**Life**

PK4.1.5.3 Describe how living things change through a life cycle

**Benchmark PK4.1.6: Construct and use models to predict, test, and understand scientific phenomena**

**Indicator:**

**Life**

PK4.1.6.1 Construct a simple model of a familiar living thing (e.g., butterfly)

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## STANDARD 2

*The student conducts scientific investigations to expand understanding of the natural world.*

To meet this standard, the student will:

**Benchmark PK4.2.1: Plan and implement scientific investigations**

**Indicators:**

- PK4.2.1.1 Use sense organs (eyes, ears, nose, tongue, and skin) as observational tools
- PK4.2.1.2 Ask questions in response to observations

**Benchmark PK4.2.2: Think logically, analytically, and creatively**

**Indicator:**

- PK4.2.2.1 Observe real objects from different perspectives

**Benchmark PK4.2.3: Practice the principles of scientific inquiry**

**Indicator:**

- PK4.2.3.1 Draw simple observations

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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## STANDARD 3

The student *applies science knowledge and skills to solve problems and meet challenges.*

To meet this standard, the student will:

**Benchmark PK4.3.1:** Identify problems and challenges in which science knowledge and skills can be applied

**Indicators:**

N/A

**Benchmark PK4.3.2:** Research, design, and test a variety of ways to address problems and/or challenges

**Indicators:**

N/A

**Benchmark PK4.3.3:** Evaluate solutions and consequences

**Indicators:**

N/A

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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## STANDARD 4

*The student uses effective communication skills and tools to build and demonstrate understanding of science.*

To meet this standard, the student will:

**Benchmark PK4.4.1:** Use listening, observing, and reading skills to obtain scientific information

**Indicators:**

- PK4.4.1.1 Observe and listen to simple scientific information
- PK4.4.1.2 Share opinions about the information shared

**Benchmark PK4.4.2:** Use writing and speaking skills to organize and express science ideas

**Indicators:**

- PK4.4.2.1 Recognize and use common, everyday science terms

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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## STANDARD 5

*The student understands how science knowledge and skills are connected to other subject areas and real-life situations.*

To meet this standard, the student will:

**Benchmark PK4.5.1:** Use mathematics to enhance scientific understanding

**Indicator:**

PK4.5.1.1 Classify and sort according to color, shape and size

**Benchmark PK4.5.2:** Understand the relationship between science and technology

**Indicator:**

PK4.5.2.1 Use the computer to view information that has been accessed

**Benchmark PK4.5.3:** Examine the relationship among science, society, and the workplace

**Indicator:**

PK4.5.3.1 Name examples of how science influences everyday life (e.g. weather, environment, healthy food)

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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## STANDARD 6

The student *understands how science knowledge carries with it responsibility for its application.*

To meet this standard, the student will:

**Benchmark PK4.6.1:** Understand how science contributes to the treatment of diseases in the maintenance of a healthy lifestyle (Personal and Community Health)

**Indicators:**

PK4.6.1.1 Understand good nutrition promotes good health

PK4.6.1.2 Identify components of good nutrition

**Benchmark K4.6.2:** Understand how the use of resources affects population growth and the global environment (Population)

**Indicators:**

N/A

**Benchmark PK4.6.3:** Understand the importance of maintaining resources and environmental quality (Environmental Quality/Resources)

**Indicators:**

PK4.6.3.1 Identify resources (e.g., electricity, water)

PK4.6.3.2 Understand why it is important to conserve resources

PK4.6.3.3 Understand how to save resources (e.g., turn off lights, recycle paper)

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## STANDARD 7

*The student applies a Christian perspective to scientific concepts and principles*

To meet this standard, the student will:

**Benchmark PK4.7.1: Understand that the Bible and the findings of science do not conflict**

**Indicators:**

**Earth**

PK4.7.1.1 Identify that the Bible tells us that God is the creator of weather, day, and night

**Life**

PK4.7.1.2 Use words and drawings to explain that God created animals

**Benchmark PK4.7.2: Understand that the Bible teaches us that God is the creator of everything**

**Indicators:**

**Life**

PK4.7.2.1 State that God created our five senses so that we can enjoy and care for his world

PK4.7.2.2 Identify God as the creator of different kinds of animals

**Benchmark PK4.7.3: The student will understand that God preserves and controls His creation, the world we study in science, so that it continues to function as He planned**

**Indicators:**

**Life**

PK4.7.3.1 Explain that the consistent pattern of day and night show God's control and plan

**Benchmark PK4.7.4: Understand that God created for His own purpose, and creation is meant to praise and glorify God**

**Indicators:**

**Physical**

PK4.7.4.1 Identify that God created objects with different characteristics for us to use to honor Him

**Life**

PK4.7.4.2 Identify ways in which we can use our five senses to praise God

**Benchmark PK.7.5: Understand that God uses His creation to teach people eternal truth through the study of science**

**Indicators:**

PK4.7.5.1 Credit God with the wonder of life and the world around us

PK4.7.5.2 Identify examples of patterns and order in science that point to God as the creator

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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