

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)

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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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)

Key: 1. Grade 1.1 Standard 1.1.1 Benchmark 1.1.1.1 Indicator

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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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