Science

KINDERGARTEN

Life Science	Physical Science	Earth and Space Science

Living Things:
Living vs. Non living things
Animal Groups
• Types of Animals: mammals, reptiles, amphibians, birds, fish
• Dinosaurs
  ▪ Different types
  ▪ Fossils provide evidence of dinosaurs
• Insects
Animal Growth and Change
• Life Cycles
All About Me:
• Five Senses
• Being Healthy
  ▪ Germs
  ▪ Exercise
	Learn About Your World
	Properties of objects, comparing and grouping objects
	Light, Sound, Heat and Cold
	(Included in Five Senses unit, e.g., we see with our eyes, and we need light to see)
		The Earth and You:
		A Home Called Earth
		• Using land and water
		• Caring for our Earth
		Earth and Sky
		Weather and Seasons
		• Describing weather
		• Making measurements
		• Temperature
		• Seasons

STANDARD 1
The student *understands and uses scientific concepts and principles.*

To meet this standard, the student will:

<u>Benchmark PK.1.1</u>: Use properties to identify, describe, and categorize substances, materials, and objects

Indicators:
Physical

PK.1.1.1 Describe objects using simple sensory terms (e.g., hard, soft, rough, smooth, squishy, wet, bumpy, prickly, slimy, sharp, dull, scratchy, heavy, and light)
PK.1.1.2 Classify objects by simple properties such as size, shape, weight and color & property- solid, liquid, gas

Earth

PK.1.1.3 Describe weather conditions using terms such as sunshine, clouds, rain, and snow, cold, cool, warm, and hot

<u>Benchmark K.1.2</u>: Identify, describe, and categorize living things based on their characteristics

Indicator:
Life

K.1.2.1 Distinguish between living and non-living things
K.1.2.2 Create a Venn Diagram to compare the objects that can be seen in the day and night sky
K.1.2.3 Identify, describe, and categorize using age-appropriate vocabulary

Key: <u>1</u>. Grade 1.<u>1</u> Standard 1.1.<u>1</u> Benchmark 1.1.1.<u>1</u> Indicator

Benchmark K.1.3: Measure properties and characteristics

Indicator:
Physical

K.1.3.1 Identify and explain basic time scales (days, weeks, months, years)

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

Indicators:
Physical

K.1.4.1 Observe objects under magnification

Earth

K.1.4.2 Describe the basic local weather conditions which accompany the cycle of the seasons

Life

K.1.4.3 Explain how living things can reproduce themselves and that the offspring are similar but not identical to their parents or to one another

K.1.4.4 Explain how living things have basic needs (e.g. food, water, and air)

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

Indicators:
Earth

K.1.5.1 Observe cyclic events

K.1.5.2 Observe the patterns of day and night and the seasons

Life

K.1.5.3 Explain how all things go through a life cycle that ends in death

K.1.5.4 Explain how all living things change during their lives

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

Indicator:
Life

K.1.6.1 Construct a model of a familiar living or nonliving thing

Earth

K.1.6.2 Observe, discuss, and draw objects found in the day and night sky

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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 K.2.1: Plan and implement scientific investigations

Indicators:
- K.2.1.1 Use sense organs (eyes, ears, nose, tongue, and skin) as observational tools
- K.2.1.2 Develop questions in response to observations
- K.2.1.3 Predict properties of a hidden object in a sequenced group

Benchmark K.2.2: Think logically, analytically, and creatively

Indicator:
- K.2.2.1 Observe objects from different positions to achieve different perspectives

Benchmark K.2.3: Practice the principles of scientific inquiry

Indicators:
- K.2.3.1 Make accurate observations
- K.2.3.2 Ask questions in response to observations

Benchmark K.2.4: Understand the relationship between evidence and scientific explanation

Indicator:
- K.2.4.1 Compare and share information based on evidence

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 K.3.1: Identify problems and challenges in which science knowledge and skills can be applied

Indicators:
- K.3.1.1 Generate and list ideas to investigate
- K.3.1.2 Develop ideas for investigation using available resources
- K.3.1.3 Make predictions based on prior knowledge
- K.3.1.4 Develop a hypothesis

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

Indicators:
- K.3.2.1 Develop a plan to test a hypothesis
- K.3.2.2 Identify and gather necessary equipment and materials
- K.3.2.3 Work collaboratively to test the hypothesis
- K.3.2.4 Organize and transfer data into a pictorial and/or graphic format

Benchmark K.3.3: Evaluate solutions and consequences

Indicators:
- K.3.3.1 Discuss solutions
- K.3.3.2 Transfer data into pictorial or graphic form

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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 K.4.1: Use listening, observing, and reading skills to obtain scientific information

Indicators:
- K.4.1.1 Practice listening to someone describe his/her own observations
- K.4.1.2 State opinions about the information shared

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

Indicators:
- K.4.2.1 Record data in pictorial and graphic formats
- K.4.2.2 Access information using various technologies
- K.4.2.3 Recognize and use common, everyday science terms

Benchmark K.4.3: Use effective communication strategies and tools to prepare and present science information

Indicators:
- K.4.3.1 Summarize and share data in a narrative, pictorial, or graphic format
- K.4.3.2 State conclusions based on observation

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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 K.5.1: Use mathematics to enhance scientific understanding

Indicators:
- K.5.1.1 Recognize the usefulness of patterns in science
- K.5.1.2 Analyze and apply data from graphs and charts to make predictions, solve problems and draw conclusions

Benchmark K.5.2: Understand the relationship between science and technology

Indicator:
- K.5.2.1 Access information, process, develop and communicate scientific concepts using technology: video, software, Internet

Benchmark K.5.3: Examine the relationship between science and history

Indicators:
- K.5.3.1 Listen to stories about significant contributions in science made by individuals from the past
- K.5.3.2 Describe relationships between science discoveries and their significance

Benchmark K.5.4: Examine the relationship among science, society, and the workplace

Indicators:
- K.5.4.1 Recognize examples of how science and technology influence everyday life
- K.5.4.2 Draw and explain real-world events using scientific knowledge
- K.5.4.3 Explain how science affects the quality of living things (i.e. electricity, etc.)

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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 K.6.1: Understand how science contributes to the treatment of diseases in the maintenance of a healthy lifestyle (Personal and Community Health)
Indicator:
K.6.1.1 Explain importance of good health habits (e.g. sleep, healthy eating, exercise)

Benchmark K.6.2: Understand how the use of resources affects population growth and the global environment (Population)
Indicators:
N/A

Benchmark K.6.3: Understand the importance of maintaining resources and environmental quality (Environmental Quality/Resources)
Indicators:
K.6.3.1 Explain why it is important to conserve resources
K.6.3.2 Explore ways to conserve resources

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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 K.7.1: Understand that the Bible and the findings of science do not conflict

Indicators:
Earth
K.7.1.1 Identify that the Bible tells us that God is the creator of our earth, the sky, and the weather
Life
K.7.1.2 Use words and drawings to explain that God created animals

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

Indicators:
Life
K.7.2.1 State that God created our five senses so that we can enjoy and care for his world
K.7.2.2 Identify God as the creator of different kinds of animals

Benchmark K.7.3: Understand that God preserves and controls His creation, the world we study in science, so that it continues to function as He planned
Indicators:
Earth
K.7.3.1 Explain that the consistent pattern of seasons show God's control and plan
Life
K.7.3.2 Use words and drawings to explain that God created animals in an orderly fashion (mammals, reptiles, amphibians, birds, fish, and insects)
K.7.3.3 Identify ways that God wants us to take care of our bodies so we can stay healthy

Benchmark K.7.4: Understand that God created for His own purpose, and creation is meant to praise and glorify God
Indicators:
Physical
K.7.4.1 Identify that God created objects with different characteristics for us to use to honor Him
Earth
K.7.4.2 Develop and implement a list of ways in which we can care for our Earth
Life
K.7.4.3 Identify ways in which we can use our five senses to praise God

Benchmark K.7.5: The student will understand that God uses His creation to teach people eternal truth through the study of science
Indicators:
K.7.5.1 Credit God with the wonder of life and the world around us
K.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