Science K

Semester A Summary:

In this course, the student will explore the nature of science and how to solve problems, as well as investigate living and nonliving things. The student will learn how to study the surrounding world by observing, collaborating, and sharing with others. Using illustrations and labels, the student will identify the steps used to solve problems and use these steps to plan, design, and test a solution to a problem. Finally, the student will examine, describe, compare, and analyze the characteristics of living and nonliving things in order to complete portfolio assessments.

Semester A Outline

1. **The Nature of Science**
    1. What Is Science?
        - Define science
        - Identify the five senses as different methods of observation
        - Make accurate observations using the five senses
        - Discuss and illustrate observations made during a nature walk
    2. What Questions Can You Ask?
        - Define scientist
        - Explain the advantages of working together
        - Observe an environment
        - Ask and answer questions during observation
    3. How Do You Observe?
        - Construct accurate written or illustrated observations using the five senses
        - Determine how and when each sense will be helpful in observations
        - Describe a pattern observed using one or more of the five senses
    4. How Do You Learn Together?
        - Define cooperation
        - Explain the importance of cooperating with others to perform a fair test
        - Distinguish between a fair test and an unfair test
    5. How Do You Share What You Learn?
        - Discover ways to record, explain, and share information about observations and tests
        - Share information through illustrations, charts, speech, and/or compositions
    6. What Do You Use to Observe?
        - Identify scientific tools
        - Demonstrate how to use tools to make observations and collect information
    7. How Do You Stay Safe?
        - Select the appropriate tools to use for making safe observations during a science experiment
        - Identify and recognize the importance of safety rules children should use when conducting science experiments
    8. Bubble Experiment

- Formulate questions and make accurate observations using the five senses
- Identify the importance of collaborating with others to perform a fair scientific test
- Discover ways to record, explain, and share information about observations and tests
- Demonstrate how to use tools to make observations and collect information
- Select the appropriate tools and safety rules children should use when conducting science experiments

9. The Nature of Science Review
    - Formulate questions and make accurate observations using the five senses
    - Identify the importance of collaborating with others to perform a fair scientific test
    - Discover ways to record, explain, and share information about observations and tests
    - Demonstrate how to use tools to make observations and collect information
    - Select the appropriate tools and safety rules to use when conducting science experiments
10. The Nature of Science Unit Test
    - Identify the importance of collaborating with others to perform a fair scientific test
    - Discover ways to record, explain, and share information about observations and tests
    - Demonstrate how to use tools to make observations and collect information
    - Select the appropriate tools and safety rules to use when conducting science experiments

2. Solve Problems

1. How Can You Solve Problems?
    - Identify a problem and predict possible solutions
    - Record, display, and share information with others using drawings, photos, writings, and oral presentations
2. What Problems Can You Solve?
    - Identify a problem and predict possible solutions
    - Use illustrations to record observations and demonstrate possible solutions
3. How Can You Make a Plan?
    - Use illustrations, labels, and writing to make a plan for solving a problem
4. How Can You Share Your Ideas With Others?
    - Record, display, and share information with others using drawings, photos, writings, and oral presentations
5. Lifting Experiment
    - Identify a problem and predict possible solutions
    - Plan, create, and conduct an investigation
    - Construct accurate observations using the five senses
    - Select and use appropriate tools to accurately conduct an investigation
    - Record, display, and share information with others using drawings, photos, writings, and oral presentations
6. Solve Problems Review
    - Identify a problem and predict possible solutions
    - Plan, create, and conduct an investigation
    - Construct accurate observations using the five senses
    - Select and use appropriate tools to accurately conduct an investigation
    - Record, display, and share information with others using drawings, photos,

writings, and oral presentations

7. Solve Problems Unit Test
    - Identify a problem and predict possible solutions
    - Plan, create, and conduct an investigation
    - Construct accurate observations using the five senses
    - Select and use appropriate tools to accurately conduct an investigation
    - Record, display, and share information with others using drawings, photos, writings, and oral presentations

3. Living and Nonliving Things

1. Can You Talk about Living and Nonliving Things?
    - Describe characteristics of living and nonliving things
    - Differentiate between living and nonliving things
    - Explain how natural and human-made things change over time
2. What Are Nonliving Things?
    - Describe characteristics of living things
    - Differentiate between living and nonliving things
3. What Are Living Things?
    - Describe characteristics of living things
    - Differentiate between living and nonliving things
4. What Do Living Things Need?
    - Identify the essential needs of all living things
5. How Are Animals Alike and Different?
    - Compare characteristics of animals that make them alike and different from other animals
6. How does Waste affect Living and Nonliving Things?
    - Explain how living and nonliving things can be used, reused, and recycled.
    - Describe how choices made by people affect the air, water, land, or living things
7. How Are Plants Alike and Different?
    - Compare characteristics of plants that make them alike and different from other plants
8. Plant and Animal Comparison
    - Describe characteristics of living things
    - Identify the essential needs of all living things
    - Compare characteristics of animals that make them alike and different from other animals
    - Compare characteristics of plants that make them alike and different from other plants
    - Compare characteristics of plants and animals that make them alike and different from each other
9. Living and Nonliving Things Review
    - Describe characteristics of living things
    - Differentiate between living and nonliving things
    - Identify the essential needs of all living things
    - Compare characteristics of animals that make them alike and different from other animals
    - Compare characteristics of plants that make them alike and different from other plants
    - Compare characteristics of plants and animals that make them alike and different from each other
10. Living and Nonliving Things Unit Test

- Describe characteristics of living and nonliving things
- Differentiate between living and nonliving things
- Identify the essential needs of all living things
- Compare characteristics of animals that make them alike and different from other animals
- Compare characteristics of plants that make them alike and different from other plants
- Compare characteristics of plants and animals that make them alike and different from each other

4. Plants and Animals

1. How Do Living Things Change As They Grow?
    - Describe how animals, plants, and people change as they grow
2. How Are Animals Like Their Parents?
    - Classify young animals and their parents
    - Compare and contrast a baby animal with its parent
3. How Do Animals Change?
    - Classify young animals and their parents
    - Describe how animals change as they grow
4. How Do Plants Change?
    - Describe how plants change as they grow using illustrations and writing
5. How Do People Change?
    - Describe how people change as they grow

Semester B Summary:

In this course, the student will explore life, Earth, and physical science. The student will learn how to investigate using critical thinking skills. The student will answer questions about the Earth and the sky. In the final chapter, physical science, the student will utilize inquiry methods to explore objects, matter, and mixtures. Throughout this course, the student will enhance skills in language arts, mathematics, and computer literacy. In portfolio assessments, students may choose to chart weather observations over a period of time; observe and collect data on how plants and animals depend on the land, air and water; or observe and compare solids and liquids at room temperature.

Semester B Outline

1. More Plants and Animals

1. Which Plants and Animals Live on Land?
    - Identify plants and animals that live on land
    - Define what a habitat is
    - Explain how people are changing their environment and tell what people can do to protect it
    - Identify how an animal can change its own environment
2. Which Plants and Animals Live in Water?
    - Identify plants and animals that live in the water
    - Define what a habitat is
    - Explain how people are changing their environment and tell what people can do to protect it
3. My Animal and Habitat Report
    - Describe how animals, plants, and people change as they grow
    - Describe an animal's habitat

- Gather and share information about an animal and its habitat

4. More Plants and Animals Review
    - Classify young animals and their parents
    - Describe how animals, plants, and people change as they grow
    - Distinguish between plants and animals that live on land and water
    - Observe and collect data to show the interdependence between plants, animals, and the Earth
5. More Plants and Animals Unit Quiz
    - Classify young animals and their parents
    - Describe how animals, plants, and people change as they grow
    - Distinguish between plants and animals that live on land and water
    - Observe and collect data to show the interdependence between plants, animals, and the Earth

2. Earth and Sky

1. Introduction: What Are Earth and the Sky Like?
    - Identify objects found in the sky
    - Summarize the main idea of the unit
2. What Makes Up Earth?
    - Investigate Earth's covering
    - Describe ways people interact with Earth's features
    - Explain different ways water is used
    - Describe how water moves
    - Identify where water is found
3. What Can You See in the Day Sky?
    - Describe characteristics of the day sky
4. How Does the Sun Seem to Move?
    - Summarize the relationship between the sun's position and the time of day
    - Describe how light from the sun warms the earth and causes shadows
5. What Can You See in the Night Sky?
    - Describe characteristics of the night sky
    - Compare and contrast the day and night sky
6. What Are Some Kinds of Weather?
    - Compare and contrast weather patterns
    - Collect weather data
7. What Are the Seasons?
    - Identify the four seasons
    - Compare and contrast weather patterns within the four seasons
    - Identify and describe different types of severe weather
    - Explain the importance of a weather forecast
    - Collect weather data
8. Reporting on Today's Weather!
    - Compare and contrast weather patterns
    - Collect and analyze weather data
    - Develop and create a forecast of the weather
9. Earth and Sky Review
    - Investigate the Earth's covering
    - Identify characteristics of the day and night sky and seasons
    - Summarize the relationship between the sun's position and the time of day
    - Compare and contrast weather patterns
    - Collect and analyze weather data
10. Earth and Sky Unit Test

- Investigate the Earth's covering
- Identify characteristics of the day and night sky and seasons
- Summarize the relationship between the sun's position and the time of day
- Compare and contrast weather patterns
- Collect and analyze weather data

3. All About Objects

1. What Are Objects Like?
    - Explore the concept of objects
    - Describe objects
2. What Are Your Five Senses?
    - Observe and tell about objects using the five senses
3. What Are Objects Made Of?
    - Analyze and categorize objects by their composition
4. What Can You Tell About Objects?
    - Analyze and categorize objects by their composition and characteristics
5. How Can You Sort Objects?
    - Sort objects based on a physical characteristic.
6. How Can You Use Objects?
    - Explore how various objects can be used based on their properties or characteristics
7. How Is Sound Made?
    - Compare loud and soft sounds
    - Identify different ways sound is used in everyday life
8. Exploring Objects
    - Observe and tell about objects using the five senses
    - Analyze and categorize objects by their composition and characteristics
    - Identify properties by which objects might be categorized
9. All About Objects Review
    - Observe and tell about objects using the five senses
    - Analyze and categorize objects by their composition and characteristics
    - Explore how various objects can be used based on their characteristics
    - Compare loud and soft sounds
10. All About Objects Unit Test

4. Matter and Mixtures

1. What Are Matter and Mixtures?
    - Define the concepts of matter and mixtures
2. What Are Solids Like?
    - Describe and measure matter as a solid
    - Discover and investigate the properties of a solid
3. What Are Liquids Like?
    - Discover and investigate the properties of liquids
4. What Are Gases Like?
    - Discover and investigate the properties of gases
5. How Can Water Change?
    - Observe changes in water caused by freezing, melting and boiling
6. What Is a Mixture?
    - Create and describe a mixture
7. Matter and Mixtures Review
    - Describe and measure matter as a solid
    - Discover and investigate the properties of solids, liquids, and gases
    - Investigate how gases fill their containers

- Observe changes in water caused by freezing, melting and boiling
- Create and describe a mixture

8. Matter and Mixtures Unit Test
    - Describe and measure matter as a solid
    - Discover and investigate the properties of solids, liquids, and gases
    - Investigate how gases fill their containers
    - Observe changes in water caused by freezing, melting and boiling
    - Create and describe a mixture