Science 1

Semester A Summary:

Science provides a way for people to actively learn about the world around them. Throughout this course, the student will perform hands-on activities to explore organisms and habitats and examine the composition of Earth. The McGraw-Hill textbook *Science: A Closer Look* and the science kit are the primary resources for this course. The life science units explore how plants and animals grow and change. The Earth science units analyze Earth's land and resources, as well as how to care for Earth. The student will also explore the scientific method and different careers in science.

In this course, the student will investigate how sunlight affects leaves, design an experiment to discover what plants need to survive, create a model of a mountain, and delve into many more exciting experiments. The lessons in this course are designed to accommodate a variety of learning styles and to provide a variety of opportunities for the entire family to participate in the student's education. Some lessons, or groups of lessons, in each unit are activity-centered, which allows the student to engage the new concepts through exploration and discovery; others are more traditional, requiring the student to read, research, and reflect on the underlying theory.

Semester A Outline

1. **Be a Scientist**
    1. Science Skills
        - Identify and apply the skills used for basic scientific inquiry
    2. Scientific Method
        - Apply the method that scientists use to study the natural world
    3. Science Safety
        - Identify important safety procedures
2. **Plants are Living things**
    1. Learning About Living Things
        - Compare and classify living and nonliving things
        - Explain what plants need to live and grow
    2. Inquiry Skill: Observe
        - Observe a plant
    3. Parts of Plants
        - Identify plant parts such as leaves, stems, and roots
        - Describe what different parts do for the plant
    4. Different Plants
        - Classify and compare different plants
        - Identify some edible plant parts
    5. Unit Review
        - Review and compare the parts of plants
    6. Unit Test

3. **Plants Grow and Change**
    1. Flowers, Fruits, and Seeds
        - Explain why flowers and fruits are important to plants
        - Describe and compare different seeds
    2. Inquiry Skill: Classify
        - Categorize different objects by what they have in common
    3. How Plants Grow and Change
        - Describe the life cycle of a plant
        - Explain how plants can grow from seeds and other plant parts
    4. Lab: How Does Sunlight Affect Leaves?
        - Observe how sunlight affects a plant
    5. Plants Live in Many Places
        - Describe how plants survive in different places
        - Identify desert, rain forest, and arctic environments
    6. Unit Review
        - Review and compare flowers, fruits, and seeds
    7. Unit Test
4. **All About Animals**
    1. All Kinds of Animals
        - Observe and describe different kinds of animals
        - Explain how animals are alike and different
    2. Inquiry Skill: Compare
        - Compare two animals
    3. What Animals Need to Live
        - Identify what animals need to survive
        - Explain how different animals meet their needs
    4. How Animals Eat Food
        - Relate the shape of an animal's teeth to what it eats
        - Classify animals according to what they eat
    5. Animals Grow and Change
        - Describe the life cycles of different kinds of animals
        - Explain what animals can do at different ages
    6. Unit Review
        - Review different kinds of animals and what they need
    7. Unit Test
5. **Places to Live**
    1. Land Habitats
        - Describe land habitats
        - Explain how different animals adapt to different environments
    2. Inquiry Skill: Communicate
        - Communicate information about a desert habitat
    3. Water Habitats
        - Describe water habitats
        - Explain how plants and animals meet their needs in water habitats
    4. Plants and Animals Live Together
        - Explain how plants and animals live together in habitats
        - Describe why each part of a food chain is important
    5. Unit Review
        - Review and compare habitats and animals' adaptations for survival
    6. Unit Test
6. **Looking at Earth**

1. What Earth Looks Like
    - Identify different types of land on Earth
    - Describe differences between bodies of water
2. Inquiry Skill: Make a Model
    - Make a model to identify details and learn more about something
3. Rocks and Soil
    - Identify rocks and sort them into groups based on physical properties
    - Classify soil according to color, texture, and composition
4. Changing the Land
    - Describe how and why weathering occurs
    - Explain the process of erosion and how it can be prevented
5. Unit Review
    - Review different forms of land and water
6. Unit Test

7. Caring for Earth

1. Earth's Resources
    - Identify and describe natural resources
    - Explain how people use natural resources
2. Inquiry Skill: Investigate
    - Identify how much water two kinds of soil will hold
3. Using Earth's Resources
    - Explain why water and air are important resources
    - Define pollution and the need for clean land, water, and air
4. Saving Earth's Resources
    - Describe how to conserve resources by reusing, reducing, and recycling
5. Unit Review
    - Reinforce what natural resources are and why it is important to care for them
6. Unit Test

Semester B Summary:

Science provides a way for people to actively learn about the world around them. Throughout this course the student will perform hands-on activities to explore organisms and habitats and examine the composition of Earth. The McGraw-Hill textbook, *Science: A Closer Look*, and the science kit are the primary resources for this course. The Earth science units explore the seasons and the solar system. The physical science units investigate changes in matter and energy. The student will also explore the scientific method and different careers in science.

In this course, the student will investigate which liquids flow faster, how water can change from a liquid to a gas, create a weather chart, and delve into many more exciting experiments. The lessons in this course are designed to accommodate a variety of learning styles and to provide a variety of opportunities for the entire family to participate in the student's education. Some lessons, or groups of lessons, in each unit are activity-centered, which allows the student to engage the new concepts through exploration and discovery; others are more traditional, requiring the student to read, research, and reflect on the underlying theory.

Semester B Outline

1. Weather and Seasons

1. Weather All Around Us
    - Identify different weather conditions

- Investigate ways to measure different weather conditions

2. Inquiry Skill: Predict
    - Predict what will happen using information from a picture
3. The Water Cycle
    - Explain how clouds form and why water falls back to Earth
    - Identify different kinds of clouds
4. Lab: What is the Weather Like this Week?
    - Measure and record weather conditions
5. Spring and Summer
    - Describe how weather changes as seasons change
    - Identify characteristics of spring and summer
6. Fall and Winter
    - Describe weather conditions in fall and winter
    - Explain how fall and winter affect plants and animals
7. Unit Review
    - Review weather and seasons through independent reading
8. Unit Test

2. The Sky

1. The Sky Above
    - Classify objects in the sky during day and night
    - Explain why the sun is important for life on Earth
2. Inquiry Skill: Record Data
    - Record data about the sun's warmth at different times of day
3. Earth Moves
    - Recognize Earth's movement by observing shadows and seasons
    - Explain the effects of Earth's rotation and orbit around the sun
4. Lab: How Many Hours of Sunlight Are There?
    - Observe how the amount of sunlight changes each day
5. Earth's Neighbors
    - Observe what the moon looks like from Earth
    - Explain that eight planets, including Earth, move around the sun
6. Unit Review
    - Review objects in the sky and the rotation of Earth
7. Unit Test

3. Matter Everywhere

1. Describing Matter
    - Comprehend that all things are made of matter
    - Describe the properties of matter
2. Solids
    - Identify the properties of solids
    - Compare the properties of different solids
3. Inquiry Skill: Measure
    - Measure objects using standard and nonstandard units
4. Liquids and Gases
    - Describe the properties of liquids and gases
    - Compare the properties of different kinds of liquids and gases
5. Unit Review
    - Review the three main states of matter and their properties
6. Unit Test

4. Changes in Matter

1. Lab: How Can Water Change to Gas?

- Observe evaporation

2. Matter Can Change
    - Observe and describe how solids can change
3. Making Mixtures
    - Prepare mixtures of different solids and liquids
    - Explain why some mixtures can be separated and others cannot
4. Heat Can Change Matter
    - Describe how heat changes solids, liquids, and gases
    - Explain the process of freezing, melting, and evaporation
5. Unit Review
    - Reinforce the characteristics of different mixtures
6. Unit Test

5. On the Move

1. Position and Motion
    - Describe the position of an object in relation to other objects
    - Observe an object's motion and speed by recording it's change in position
2. Inquiry Skill: Infer
    - Infer how body structure affects an animal's speed
3. Pushes and Pulls
    - Identify pushes, pulls, gravity, and friction as forces
    - Explain how different forces change the motion of objects
4. Lab: Which Liquid Flows the Fastest?
    - Evaluate how quickly different liquids flow
5. Simple Machines
    - Discover how simple machines make it easier to move objects
    - Explain the functions of pulleys, levers, and ramps
6. Magnets
    - Explain why magnets attract some objects and not others
    - Identify the two poles on a magnet
7. Unit Review
    - Review motion and forces that affect motion
8. Unit Test

6. Energy Everywhere

1. Energy and Heat
    - Describe different sources of energy and heat
2. Inquiry Skill: Draw Conclusions
    - Draw conclusions about heat energy
3. Sound
    - Identify vibration as the cause of sound
    - Describe the volume and pitch of sounds
4. Light
    - Explain that light passes through some objects but not others
    - Describe how people use different light sources
5. Electricity
    - Describe how people use electricity
6. Unit Review
    - Review different kinds of energy
7. Unit Test