

**-Science-**  
**(Kindergarten)**

**Physical Science**

**Properties of Matter**

**How does the structure of matter affect the properties and uses of materials?**

- **Objects have properties that can be observed and used to describe similarities and differences**

Initial Understanding

Identify and distinguish the five senses: sight, sound, taste, smell and touch

Use the senses and simple measuring tools

Sort objects according to specific characteristics

Developing an Interpretation

Compare and contrast objects made of materials such as wood, paper and metal

Understand that the senses along with simple measuring tools, such as rulers and equal-arm balances, can be used to observe common objects and sort them into groups based on size, weight, shape, and color

Describe devices that people have made that enhance the senses: magnifiers, hand lenses, hearing air, voice activated computer, etc.

Making Connections

Observe that objects can be sorted based on properties such as flexibility, attraction to magnets, and whether they float or sink in water

Critical Stance

Demonstrate counting objects in groups and use mathematical terms to describe quantitative relationships such as: same as, more than, less than, equal, etc.

Understand that man is the only animal who is able to enhance his senses using artificial mechanisms

**Life Science**

**Heredity and Evolution**

**What processes are responsible for life's unity and diversity?**

- **Many different kinds of living things inhabit the Earth**

Initial Understanding

List characteristics of living (biotic) things

List characteristics of nonliving (abiotic) things

Developing an Interpretation

Describe characteristics that distinguish living (biotic) from nonliving (abiotic) things

Compare and contrast living (biotic) and nonliving (abiotic)

Describe the similarities and differences in the appearance and behaviors of adults and their offspring

Making Connections

Compare and contrast the similarities and differences in the appearance and behavior of plants, birds, fish, insects and mammals (including humans)

Observe that offspring develop into adults of their own kind even though the juvenile form might be different from the adult form i.e. tadpole from frog, caterpillar from butterfly

Critical Stance

Recognize that living things have certain characteristics that distinguish them from nonliving things, including growth, movement, reproduction, nutrition, and response to stimuli

**Earth Science**

**Energy in the Earth's System**

**How do external and internal sources of energy affect the Earth's systems?**

- **Weather conditions vary daily and seasonally**

Initial Understanding

Observe the weather and record observations daily

Developing an Interpretation

Compare and contrast how the Earth is warmed unevenly

Recognize that weather changes with time and atmospheric conditions

### Making Connections

- Explain the interactions that occur when cold and warm air meet
- Relate seasonal weather patterns to appropriate choices of clothing and activities
- Make and use models of a barometer, a wind vane, a rain gauge, and an anemometer

### Critical Stance

- Explain how daily and seasonal weather conditions affect what we do, what we wear and how we feel
- Describe ways that the amount of water vapor in the air affects the weather around the world
- Demonstrate with words and/or pictures the destructive force of weather as seen in hurricanes, typhoons, and draughts

### **Science and Technology in Society**

#### **How do science and technology affect the quality of our lives?**

- **Some objects are natural, while others have been designed and made by people to improve the quality of life**

### Initial Understanding

- Observe the types of materials that are used by people to build shelters

### Developing an Interpretation

- Describe the types of materials used by people to build homes, and the properties that make the materials useful

### Making Connections

- Humans select both natural and man-made materials to build shelters based on local climate conditions

### Critical Stance

- Demonstrate that humans select both natural and man-made materials to build shelters based on local environmental weather conditions, the specific characteristics of the materials used and their availability