

-Science-
(1st Grade)

Physical Science

Forces and Motion

What makes objects move the way they do?

- **The sun appears to move across the sky in the same way every day, but its path changes gradually over the season**

Initial Understanding

- Observe that the motion of objects can be changed by pushing and pulling
- Observe the movement of the sun across the sky
- Observe the movement of the moon across the sky
- Recognize that the calendar is based on the interactions of the Moon, Earth and Sun

Developing an Interpretation

- Describe the apparent movement of the sun across the sky and the changes in the length and direction of shadows during the day
- Explain how the ground temperature and seasons are affected by the angle at which the Sun's rays strike Earth
- Explain how the Earth's axis tilt and its movement around the Sun causes seasons

Making Connections

- Demonstrate that an object's motion can be described by tracing and measuring its position over time

Critical Stance

- Explain that an object's position can be described by locating it relative to another object or the background

Life Science

Structure and Function

How are organisms structured to ensure efficiency and survival?

- **Living things have different structures and behaviors that allow them to meet their basic needs**

Initial Understanding

- Describe the needs of animals to survive
- Describe the needs of plants to survive

Developing an Interpretation

- Interpret the need for air, water and food for animals to survive in a given environment
- Interpret the need for air, water and sunlight for plants to survive in a given environment

Making Connections

- Compare and contrast the various ways that animals including humans, obtain water and food
- Identify the various structures that enable animals including humans to move around
- Compare and contrast the various structures that are found in plants which enable them to obtain water and sunlight

Critical Stance

- Recognize that there is an integral relationship between plants and animals including humans to each other and their environment

How are organisms structured to ensure efficiency and survival?

- **Organisms change in form and behavior as part of their life cycles**

Initial Understanding

- Recognize the stages of complete metamorphosis; identify animal species that have adapted this type of development to their survival
- Recognizes the stages of incomplete metamorphosis; identify animal species that have adapted this type of development to their survival

Developing an Interpretation

- Describe the changes in organisms, such as frogs and butterflies, as they undergo metamorphosis
- Describe the life cycles of organisms that grow but do not metamorphose

Making Connections

- Recognize that survival of the animal species is directly correlated to parental or environmental relationships
- Recognize that animals whether they metamorphose or not are an integral part of the environment

Critical Stance

Describe how some organisms undergo metamorphosis during their life cycles; other organisms grow and change, but their basic form stays essentially the same

Illustrate the relationship between parental responsibility of offspring and the offspring survival number in the environment

Science and Technology in Society

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

- **The properties of materials and organisms can be described more accurately through the use of standard measuring units**

Initial Understanding

Identify various tools used for measurement i.e. ruler, meter stick, scale

Developing an Interpretation

Understand that various tools can be used to measure, describe and compare different objects and organisms

Making Connections

Estimate, measure and compare the sizes and weights of different objects and organisms using standard and nonstandard measuring tools

Critical Stance

Recognize that there is an international measuring system that is used in the scientific communities SI system based on tens