

Walton Academy
3rd Grade Science
Goals and Objectives

Science as Inquiry

As students progress through the grade levels, their strategies for finding solutions to questions improve as they gain experience conducting simple investigations and working in small groups. They are capable of asking questions and make predictions that can be tested. Students must be encouraged to make more careful observations and measure things with increasing accuracy. During investigations, students must have opportunity to use more advanced tools such as calculators, computers, graduated cylinders, scales and meter sticks to gather data and extend their senses. They must keep accurate records and run enough trials to be confident of their results to test a prediction. They must have experiences that allow them to recognize patterns in data and use data to create reasonable explanations of results of an experiment or investigation. They should be encouraged to employ more sophisticated language, drawings, models, charts and graphs to communicate results and explanations. Students must always use appropriate safety procedures, including listening skills, when conducting simple investigations.

Forces and Motion

Understand motion and factors that affect motion.

- Infer changes in speed or direction resulting from forces acting on an object.
- Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time.
- Explain the effects of earth's gravity on the motion of any object on or near the earth.

Matter: Properties and Change

Understand the structure and properties of matter before and after they undergo a change.

- Recognize that air is a substance that surrounds us, takes up space and has mass.
- Compare solids, liquids, and gases based on their basic properties.
- Summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, such as melting ice or ice cream, boiling water or an egg, or freezing water.

Energy: Conservation and Transfer

Recognize how energy can be transferred from one object to another.

- Recognize that energy can be transferred from one object to another by rubbing them against each other.
- Recognize that energy can be transferred from a warmer object to a cooler one by contact or at a distance and the cooler object gets warmer.

Earth in the Universe

Recognize the major components and patterns observed in the earth/moon/sun system.

- Recognize that the earth is part of a system called the solar system that includes the sun (a star), planets, and many moons and the earth is the third planet from the sun in our solar system.
- Recognize that changes in the length and direction of an object's shadow indicate the apparent changing position of the Sun during the day although the patterns of the stars in the sky, to include the Sun, stay the same.

Earth Systems, Structures and Processes

Compare the structures of the Earth's surface using models or three-dimensional diagrams.

- Compare Earth's saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams,

and glaciers).

- Compare Earth's land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps.

Structures and Functions of Living Organisms

Understand human body systems and how they are essential for life: protection, movement and support.

- Compare the different functions of the skeletal and muscular system.
- Explain why skin is necessary for protection and for the body to remain healthy.

Ecosystems

Understand how plants survive in their environments.

- Remember the function of the following structures as it relates to the survival of plants in their environments:
 - Roots – absorb nutrients
 - Stems – provide support
 - Leaves – synthesize food
 - Flowers – attract pollinators and produce seeds for reproduction
- Explain how environmental conditions determine how well plants survive and grow.
- Summarize the distinct stages of the life cycle of seed plants.
- Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival of many plants.

Supplementary Books and Materials:

- McGraw-Hill
- Steck-Vaughn
- BrainPop Jr.
- Epic! Books
- Science Manipulatives: Hand2Mind, EAI Education, MindWare
- Teacher Created Materials