

Science Curriculum - Grade 5

GRADE FIVE ESSENTIAL SKILLS

- Content Skills- Students will develop an understanding of the differences between scientific law and theory through the study of ecology, astronomy and motion and energy
- Process Skills/Scientific Method –Children will use the scientific method in our inquiry-based activities in all grade levels and content areas in the science curriculum. Students will use appropriate measurement units, observe, describe, experiment, isolate a variable, pose a question, make a prediction, read and create graphs and tables, create explanations, compare and estimate very large and small numbers, work in small teams and form own conclusion, make hypothesis, and design experiments to test and seek information for comparing past and present science ideas and theories
- Scientific Technology & Tools – Students will use appropriate tools, technology, and techniques to gather, analyze, interpret, and share data. (computers, rulers, magnifying glasses, microscopes, thermometers (F & C), stop watches, compasses, telescopes, microscopes, graduated cylinders, pH paper, and safety goggles)
- Science Safety- - Students will follow safety instructions, directions, and use appropriate safety equipment.

LIFE SCIENCE CONTENT

Ecosystems and Photosynthesis - STC

- Using visuals, such as models, diagramming, posters, and/or charts, students will demonstrate that an ecosystem is a community of organisms and its interaction with its environment
- Students will describe and give examples of the various types of interactions that occur among organisms to demonstrate how organisms compete or cooperate with each other to gain food, resources or space (i.e. predator/prey, symbiotic, producer-consumer-decomposer, host/parasite)
- Students will explore through models, experiments and observations how matter and energy interact in any ecosystem
- Students will define pollutant and describe how it can affect the stability of an ecosystem; students will describe solutions that will minimize or alleviate the effects of pollutants
- Students will create a visual and use it to explain the process of photosynthesis and its importance for all life forms
- Students will label a diagram of the basic structures of a plant cell

EARTH/SPACE SCIENCE CONTENT

Astronomy

- Students will compare and contrast important features of the Earth, Sun and Moon
- Students will observe and describe the motion of the Sun, Moon, and stars from the perspective of Earth and explain how Earth's relationship to the Sun causes day and night
- Students will explain how the brightness of a star as seen from Earth is related to its size, color and distance from Earth
- Students will explain in their own words using visuals, that Earth is a planet that is part of a system of planets
- Students will use a telescope to magnify the appearance of some distant objects in the sky

- Students will explain in their own words, with or without visuals, that the sun is a star that gives earth heat and light
- Explain phases of the Moon in terms of relative positions of the Earth, Moon, and Sun

PHYSICAL SCIENCE CONTENT

Motion & Design - STC

- Students will observe and describe how one form of energy may be transformed into another
- Students will build and design a device to demonstrate energy transfer
- Students will design a simple experiment or demonstration to show the difference between potential and kinetic energy
- Students will design simple investigations which demonstrate Newton's Three Laws of Motion
- Students will explain the effects of gravity, friction, and acceleration upon moving objects
- Students will explain the effects of gravity and friction upon objects
- Students will construct simple machines (wheel and axle, levers, inclined planes, rope and pulley, wedge and screw) to demonstrate how they make work easier. (not part of kit)