

Blackhawk School District

CURRICULUM

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| Course Title: | Science |
| Grade Level(s): | Fifth |
| Length of Period: | 40 minutes per day, per quarter taught |
| Faculty Author(s): | Meredith Oliver |
| Date: | Fall 2008/ revised May '09 / revised October '09/ revised January '14 |

SCIENCE MISSION:

The goal of science education is to develop within students an understanding of the world around us by fostering curiosity, developing inquiry skills, and creating an excitement for learning science.

COURSE DESCRIPTION:

Fifth grade science emphasizes the use of scientific investigation and problem solving to the areas of human body and how it functions, biological science, physical science, Earth science, and the overall nature of science.

5th Grade Science Curriculum Overview

Description: The 5th Grade Science Lab provides a diverse setting in both indoor and outdoor classrooms where children refine their inquiry skills and participate in hands-on activities covering both local and global concepts.

NOTE: The following units will be covered in each quarter. (This can be adjusted based on available resources/ kits/ team needs.) Specific standards and timelines are on the pages immediately following.

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| <p style="text-align: center;">1st Quarter</p> <p>Resources: Body Systems Unit</p> <ul style="list-style-type: none">• Circulatory System• Respiratory System• Skeletal System• Muscular System | <p style="text-align: center;">2nd Quarter:</p> <p>Resources:</p> <ul style="list-style-type: none">• Simple Machines |
| <p style="text-align: center;">3rd Quarter:</p> <p>Resources: Body Systems Unit</p> <ul style="list-style-type: none">• Digestive Systems Unit• Nutrition Unit | <p style="text-align: center;">4th Quarter:</p> <p style="text-align: center;">NOTE: Same as 3rd Quarter</p> <p>Resources:</p> <ul style="list-style-type: none">• Ecology Unit (Camp KOK) |

The following outline provides a general overview of the course content, not a chronological timetable. The days denoted for each area provide an idea for the overall time spent working with a given topic throughout the school year.

| Course Outline 1 st Quarter | PA Core Standards | Approx. Pacing | Assessment Options | Suggested Resources |
|--|--|---|---|--|
| <p>Body Systems Unit</p> <p>Essential Questions:</p> <p>1. How do we benefit from our muscular and skeletal systems working together?</p> <p>2. How are the respiratory and circulatory systems interrelated?</p> | <p>S4.B.1.1.1: Identify life processes of living things (e.g., growth, digestion, respiration).</p> <p>S4.B.1.1.2: Compare similar functions of external characteristics of organisms (e.g., anatomical characteristics: appendages, type of covering, body segments).</p> <ul style="list-style-type: none"> • Describe how specific structures (parts), which underlie larger systems, enable the system to function as a whole • Describe a system (e.g. body systems) as a group of related parts with specific roles that work together to achieve an observed result. • Explain the concept of order in a system [e.g. (simple to complex: cell, tissue, organ, organ system)]. • Distinguish among system inputs, system processes, system outputs, and feedback (e.g. physical) • Apply appropriate measurement systems (e.g. time, mass, distance, volume, temperature) to record and interpret observations under varying conditions. | <p>12-15 days</p> <p>6-8 days</p> <p>12-15 days</p> <p>6-8 days</p> | <p>Circulatory System/ Kit</p> <p>Respiratory System/ Kit</p> <p>Skeletal System/ Kit</p> <p>Muscular System/ Kit</p> | <p><i>Merrill Science</i> Authors- Hackett, Moyer, Adams 1989 Text: Chapters 7, 8, 9 <i>Merrill-Health</i> Focus on Health Authors- Meeks- Mitchell, Heit 1987 Text: Chapter 5</p> <p>Human Body Kit</p> <p>Respiratory System</p> <p>Supplemental Materials</p> |

| Course Outline 2nd Quarter | PA Core Standards | Approx. Pacing | Assessment Options | Suggested Resources |
|--|--|-------------------|-----------------------|---|
| <p>Simple Machines/ Levers and Pulleys</p> <p>Essential Question: How do simple machines make our lives easier?</p> | <p>S4.A.2.2.1: Identify appropriate tools or instruments for specific tasks and describe the information they can provide (e.g., measuring: length - ruler, mass - balance scale, volume - beaker, temperature - thermometer; making observations: hand lens, binoculars, telescope).</p> <ul style="list-style-type: none"> • Describe how engineers use models to develop new and improved technologies to solve problems. • Describe fundamental scientific or technological concepts that could solve practical problems (e.g. Newton's laws of Motion, Mendelian genetics) • Use ratio to describe change (e.g. mechanical advantage). • Explain how components of natural and human-made systems play different roles in a working system. • Use evidence from investigations to clearly communicate and support conclusions. • Describe forces acting on objects (e.g. friction, gravity, balanced versus unbalanced). • Distinguish between kinetic and potential energy. • Explain that mechanical advantage helps to do work (physics) by either changing a force or changing the direction of the applied force (e.g. simple machines, hydraulic systems). | <p>12-15 days</p> | | <p>Merrill Science Authors- Hackett, Moyer, Adams 1989</p> <p>Text: Chapters 3, 12, 13, 16</p> <p>FOSS-Levers and Pulleys Kit</p> <p>Internet resources</p> <p>Teacher Created Resources (found on the G drive)</p> |

| Course Outline 4th Quarter | PA Core Standards | Approx. Pacing | Assessment Options | Suggested Resources |
|--|--|-------------------|--|---|
| <p>Environment and Ecology</p> <p>Essential Question: What is our relationship to the living and non-living parts of our environment?</p> | <p>S4.B.3.1.2: Describe interactions between living and nonliving components (e.g. plants – water, soil, sunlight, carbon dioxide, temperature; animals – food, water, shelter, oxygen, temperature) of a local ecosystem.</p> <ul style="list-style-type: none"> • Compare similarities and differences in internal structures of organisms (e.g. invertebrates/vertebrates, • vascular/nonvascular, single-celled/multi-celled) and external structures (e.g. appendages, body segments, type of covering, size, shape). • Explain relationships among organisms (e.g. producers/consumers, predator/prey) in an ecosystem. • Describe potential impacts of human-made processes (e.g. manufacturing, agriculture, transportation, and mining) on Earth’s resources, both nonliving (air, water, earth materials) and living (plants and animals). • Distinguish among different water systems (e.g. wetland systems, ocean systems, river systems, watersheds) and describe relationships to each other as well as to landforms. • Identify the physical characteristics of a stream and how these characteristics determine the types of organisms found within the stream environment (e.g. biological diversity, water quality, flow rate, tributaries, surrounding watershed). | 10-15 days | <p>-Camp Journal -Pre/Post Tests</p> | <p>- Camp Kon-O-Kwee - <i>The Lorax</i></p> |

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