

# Blackhawk School District

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## CURRICULUM

Course Title:	Science Lab
Grade Level(s):	Fifth
Length of Period:	40 min per day per quarter taught
Faculty Author(s):	Brady Okon
Date:	January 2014

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### 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:** The 5<sup>th</sup> 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.

## 5th Grade Science Lab Curriculum Overview

**Description:** The third grade students will deepen their understanding of scientific concepts through inquiry based instruction. They will explore structures of life, earth materials, measurement, sound, and weather.

<p style="text-align: center;"><b>1<sup>st</sup> Quarter</b></p> <ul style="list-style-type: none"><li>• <b>Ecosystems Unit Part 1</b><ul style="list-style-type: none"><li>○ Local ecosystems</li><li>○ Trees and Keys</li><li>○ Interdependence – Pick 2 project</li><li>○ Global Ecosystems</li></ul></li></ul>	<p style="text-align: center;"><b>2<sup>nd</sup> Quarter:</b></p> <ul style="list-style-type: none"><li>• <b>Ecosystems Unit Part 2</b><ul style="list-style-type: none"><li>○ Human Interactions</li><li>○ Changes in Ecosystems</li></ul></li><li>• <b>Identifying Organisms</b><ul style="list-style-type: none"><li>○ General Identification</li><li>○ Cold Blooded Animals</li><li>○ Warm Blooded Animals</li></ul></li></ul>
<p style="text-align: center;"><b>3<sup>rd</sup> Quarter:</b></p> <ul style="list-style-type: none"><li>• <b>Animal Research Project</b><ul style="list-style-type: none"><li>○ Notes and Diagramming</li><li>○ Report Construction</li><li>○ Media components</li></ul></li><li>• <b>Earth's Place in the Universe</b><ul style="list-style-type: none"><li>○ Space Unit Expansion Pack</li><li>○ Student Research Component</li></ul></li></ul>	<p style="text-align: center;"><b>4<sup>th</sup> Quarter:</b></p> <ul style="list-style-type: none"><li>• <b>Principles of Motion and Force Unit</b><ul style="list-style-type: none"><li>○ Forces</li><li>○ Energy Around Us</li><li>○ Energy Conservation</li></ul></li><li>• <b>Local Environmental Conservation</b><ul style="list-style-type: none"><li>○ Outdoor Education Unit</li></ul></li></ul>

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 <sup>st</sup> Quarter	PA Core Standards	Approx. Pacing	Assessment Options	Suggested Resources
<p><b>Ecosystems Unit Part 1</b></p> <p>Explain, interpret, and apply scientific, environmental, or technological knowledge presented in a variety of formats</p> <p>Apply knowledge of systems and patterns to make predictions.</p> <p>Explain how certain inherited traits and/or behaviors allow some organisms to survive and reproduce more successfully than others.</p> <p>Describe the relationships between organisms in different ecosystems.</p> <p>Differentiate between weather and climate.</p>	<p><b>S5.D.2.1.1:</b> Explain how the cycling of water into and out of the atmosphere impacts climatic patterns.</p> <p><b>S5.D.2.1.2:</b> Explain the effects of oceans and lakes on climate.</p> <p><b>S5.B.2.1.2:</b> Explain how inherited traits help organisms survive and reproduce in different environments.</p> <p><b>S5.B.2.1.3:</b> Explain how certain behaviors help organisms survive and reproduce in different environments.</p> <p><b>S5.B.2.1.4:</b> Identify changes in environmental conditions that can affect the survival of populations and entire species.</p>	<p>7 class periods</p>		<p>PDE SAS</p>

Course Outline 2 <sup>nd</sup> Quarter	PA Core Standards	Approx. Pacing	Assessment Options	Suggested Resources
<p><b>Ecosystems Unit Part 2</b></p> <p>Describe the relationships between organisms in different ecosystems.</p> <p>Explain how renewable and nonrenewable resources provide for human needs.</p> <p><b>Identifying Organisms</b></p> <p>Describe how the cell is the basic unit of structure and function for all living things.</p> <p>Explain how certain inherited traits and/or behaviors allow some organisms to survive and reproduce more successfully than others.</p>	<p><b>S5.B.1.1.1:</b> Recognize that all organisms are composed of cells.</p> <p><b>S5.B.1.1.2:</b> Explain the concept of the cell as the basic structural unit of all living things.</p> <p><b>S5.B.1.1.3:</b> Compare the structure and function of basic cell parts in organisms (i.e., plants and animals).</p>	<p>4 class periods</p> <p>4 class periods</p>		

Course Outline 3 <sup>rd</sup> Quarter	PA Core Standards	Approx. Pacing	Assessment Options	Suggested Resources
<p><b>Animal Research Project</b></p> <p>Explain, interpret, and apply scientific, environmental, or technological knowledge presented in a variety of formats</p> <p>Apply knowledge of systems and patterns to make predictions.</p> <p>Explain how certain inherited traits and/or behaviors allow some organisms to survive and reproduce more successfully than others.</p> <p>Describe the relationships between organisms in different ecosystems.</p>	<hr/> <p><b>S5.B.3.1.1:</b> Describe the roles of producers, consumers, and decomposers within a local ecosystem.</p> <p><b>S5.B.3.1.2:</b> Describe the relationships between organisms in different food webs.</p> <hr/>	<p>4 class periods</p>		

<p><b>Earth's Place in the Universe</b></p> <p>Describe constructive and destructive natural processes that form different geologic structures and resources.</p> <p>Explain the relationships between objects in our solar system.</p> <p>Describe the patterns of Earth's rotation and revolution in relation to the Sun and Moon (i.e., solar eclipse, phases of the Moon, and time).</p> <p>Compare the general characteristics of the inner planets of our solar system (i.e., size, orbital path, surface characteristics, and moons).</p>	<p><b>S5.A.3.1.1:</b> Make predictions based on patterns in natural systems (e.g., phases of the Moon, time [day, month, and year], weather, seasons).</p> <p><b>S5.A.3.2.1:</b> Describe how models are used to better understand the relationships in natural systems (e.g., water cycle, Sun-Earth-Moon system, ecosystems, observe and draw a diagram to show the effects of flowing water in a watershed).</p>	<p>3 class periods</p>		
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Course Outline 4 <sup>th</sup> Quarter	PA Core Standards	Approx. Pacing	Assessment Options	Suggested Resources
<p><b>Principles of Motion and Force</b> Explain the relationships between mass, force, and movement.</p> <p>Observe and recognize how magnets and electricity produce related forces</p>	<p><b>S5.C.3.2.1:</b> Recognize that moving electric charges produce magnetic forces and moving magnets produce electric forces (electromagnetism).</p> <p><b>S5.C.3.2.2:</b> Identify the variables within an electric current (i.e., voltage, current, and resistance).</p> <p><b>S5.B.3.2.1:</b> Identify fossil fuels and alternative fuels used by humans.</p>	4 class periods		
<p><b>Local Environmental Conservation</b> <b>Outdoor Education Unit</b> Explain how renewable and nonrenewable resources provide for human needs.</p> <p>Describe constructive and destructive natural processes that form different geologic structures and resources.</p> <p>Describe characteristic features of Earth's water systems and their impact on resources.</p>	<p><b>S5.B.3.2.2:</b> Describe the usefulness of Earth's physical resources as raw materials for the human-made world.</p> <p><b>S5.B.3.2.3:</b> Explain how different items are recycled and reused.</p>	4 class periods		