

Blackhawk School District

CURRICULUM

Course Title:	Science
Grade Level(s):	First
Length of Course:	11 lessons throughout the year
Faculty Author(s):	Heather Pastor
Date:	February 2014

MISSION STATEMENT:

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:

Science in first grade will be taught through read alouds using literature. The district and state standards will be covered through RTS common lessons. The common lessons are focused on the following topics: My Wonderful Body, Sun and Shadow, Sky and Space, Science is Everywhere, How Scientists Observe, Science Detective, Saving Our Planet, Amazing Plants, Amazing Animals, Dinosaurs in Science, and Playground Science. Daily discussion and lessons will provide teachable moments and opportunities to discuss different areas of science.

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

Course Outline	PA Core Standards	Approx. Pacing	Assessment Options	Suggested Resources
<p style="text-align: center;"><i>September</i></p> <p style="text-align: center;">Engineering Design</p> <p>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • What is a fact? • What is an opinion? 	<p>3.1.1.A9:</p> <ul style="list-style-type: none"> • Distinguish between scientific fact & opinion. • Ask questions about objects, organisms, & events. • Understand that all scientific investigations involve asking & answering questions & comparing the answer with what is already known. • Plan & conduct a simple investigation & understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data & understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations & understand that scientists develop explanations based on their evidence & compare them with their current scientific knowledge. • Communicate procedures & explanations giving priority to evidence & understanding that scientists make their results public, describe their investigations so they can be reproduced, & review and ask questions about the work of other scientists. 			

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<p style="text-align: center;"><i>October</i></p> <p>Engineering Design</p> <p>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • Where is science? • What materials can dissolve? • What materials can rust? • What happens to water? 	<p>3.3.2.A4</p> <p>Explore and describe that water exists in solid (ice) and liquid (water) form. Explain and illustrate evaporation and condensation.</p> <hr/>		<p>Create fact and opinion chart about topic</p>	<p><i>Science is Everywhere</i> by Nancy Yu</p> <p><i>Science is Everywhere</i> record packet</p> <p>oil, salt, beans, drink mix, wood, paper clips, plastic bottle, Clothespin, nuts and bolts</p>

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<p style="text-align: center;"><i>November</i></p> <p>Engineering and Design</p> <p>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • Why do we use tools? • Why do we use different tools (purpose)? • What would we observe with each tool? 	<p>3.1.1.A9:</p> <ul style="list-style-type: none"> • Distinguish between scientific fact & opinion. • Ask questions about objects, organisms, & events. • Understand that all scientific investigations involve asking & answering questions & comparing the answer with what is already known. • Plan & conduct a simple investigation & understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data & understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations & understand that scientists develop explanations based on their evidence & compare them with their current scientific knowledge. • Communicate procedures & explanations giving priority to evidence & understanding that scientists make their results public, describe their investigations so they can be reproduced, & review and ask questions about the work of other scientists. 		<p>Create fact and opinion chart for topic</p>	<p><i>How Scientists Observe</i> by Marie Mulchaly</p> <p>Hand lens, microscope, binoculars, telescope, camera</p> <p><i>How Scientists Observe</i> record packet</p>

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<p style="text-align: center;"><i>December</i></p> <p>Waves and their Application in Technologies for Information Transfer</p> <p>Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • What makes sound? • What makes things vibrate? 	<p>3.1.1.B6:</p> <ul style="list-style-type: none"> • Distinguish between scientific fact and opinion. • Ask questions about objects, organisms, and events. • Understand that all scientific investigations involve asking and answering questions and comparing the answer with what is already known. • Plan and conduct a simple investigation and understand that different questions require different kinds of investigations. • Use simple equipment (tools and other technologies) to gather data and understand that this allows scientists to collect more information than relying only on their senses to gather information. • Use data/evidence to construct explanations and understand that scientists develop explanations based on their evidence and compare them with their current scientific knowledge. • Communicate procedures and explanations giving priority to evidence and understanding that scientists make their results public, describe their investigations so they can be reproduced, and review and ask questions about the work of other scientists. 		<p>Create fact and opinion chart about topic</p>	

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<p><i>January</i></p> <p>Waves and their Application in Technologies for Information Transfer</p> <p>Make observations to construct an evidence-based account that objects can be seen only when illuminated.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • When can you see objects? • What causes you to be able to see objects? • When can you not see objects? 	<p>3.2.1.B5</p> <p>Compare and contrast how light travels through different materials. Explore how mirrors and prisms can be used to redirect a light beam.</p>		<p>Create fact and opinion chart about topic</p>	<p>Flashlights</p>

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<p style="text-align: center;"><i>February</i></p> <p>Waves and their Application in Technologies for Information Transfer</p> <p>Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • What materials allow light to pass through them? • What materials block light from passing through them? • What can be used to redirect light? 	<p>3.2.1.B5</p> <p>Compare and contrast how light travels through different materials. Explore how mirrors and prisms can be used to redirect a light beam.</p>		<p>Create fact and opinion chart about topic</p>	<p>Flashlights</p>

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<p style="text-align: center;"><i>March</i></p> <p>Earth's Place in the Universe</p> <p>Use observations of the sun, moon, and stars to describe patterns that can be predicted. Make observations at different times of the year to relate the amount of daylight in the winter to the amount in the spring or fall.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • Why is the sun important to us? • What causes the seasons? • What causes our shadow to be long and short? 	<p>3.3.1.B1</p> <p>Explain why shadows fall in different places at different times of the day.</p> <p>3.3.2.B1:</p> <p>Observe and record location of the Sun and the Moon in the sky over a day, changes in the appearance of the Moon over a month.</p> <p>Observe, describe, and predict seasonal patterns of sunrise and sunset.</p>		<p>Differentiated student assessment projects (What causes you to see your shadow?, What causes the seasons?, What cause day and night?)</p> <p>Create fact and opinion chart about topic</p>	<p><i>Sun and Shadows, Sky and Space</i> By: Maria Sanchez</p> <p>Globe, flashlight</p>

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<p style="text-align: center;"><i>April</i></p> <p>From Molecules to Organisms: Structures and Processes</p> <p>Use materials to design a solution to a human problem by animals use their external parts to help them survive, grow and meet their needs. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • How do animals survive in amazing ways? • What 5 ways do animals use to protect themselves? 	<p>3.1.K.C2</p> <p>Describe changes animals and plants undergo throughout the seasons.</p>		<p>Differentiated student assessment projects (flipbook, pamphlet, pick an animal)</p> <p>Create fact and opinion chart about topic</p>	<p><i>Amazing Animals</i> By: Megan K. Wasp</p> <p>Butterfly kit</p>

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<p style="text-align: center;"><i>May</i></p> <p>From Molecules to Organisms: Structures and Processes</p> <p>Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents. Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive.</p> <p>Essential Questions:</p> <ul style="list-style-type: none"> • How do plants protect themselves? • How do insects and birds spread pollen? • Why do people need plants? • What do plants need to survive? 	<p>3.1.1.B1</p> <p>Grow plants from seed and describe how they grow and change. Compare to adult plants.</p>		<p>Differentiated student assessment projects (flipbook, pamphlet)</p> <p>Create fact and opinion chart about topic</p>	<p><i>Amazing Plants</i> By: Rosario Ortiz Santiago</p>

