

Sixth Grade Science  
**Science Course Outline**

<i>Unit &amp; Content Objectives</i>	<i>Time</i>	<i>Activities &amp; Methods</i>	<i>Books &amp; Materials</i>	<i>Evaluation Techniques</i>
<p><b>Earth (Atmosphere/Weather, Rocks and Minerals, Plate Tectonics, Properties of Matter)</b></p> <ul style="list-style-type: none"> <li>● SW learn that the Earth has four main systems that interact: atmosphere, hydrosphere, biosphere and geosphere</li> <li>● SW be able to explain how clouds form and will know how different kinds of precipitation form.</li> <li>● SW know how air masses and fronts interact to cause weather.</li> <li>● SW be able to identify what tools scientists use to make weather predictions.</li> <li>● SW know the factors that determine climate.</li> <li>● SW demonstrate an understanding of weather maps by making a map and giving an oral presentation.</li> <li>● SW know and demonstrate that minerals are identified by their characteristic properties, including hardness, cleavage patterns, colors, and luster.</li> <li>● SW understand the processes involved in the rock cycle.</li> <li>● SW know how rock breaks down to form soil.</li> <li>● SW understand that the amount of organic matter in soil determines its fertility, texture, and type.</li> <li>● SW know the composition of Earth's layers and will understand that Earth's crust is made of moving plates.</li> <li>● SW learn the theory of continental drift, seafloor spreading and plate tectonics</li> <li>● SW be able to explain the causes and effects of earthquakes and volcanoes.</li> </ul>	<p>45  min/day  5 days/wk  2  semesters</p>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Scott Foresman</li> <li>● Various Resource Materials</li> <li>● Bible</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher observation</li> <li>● Student participation</li> <li>● Lab/Data sheets</li> <li>● Homework</li> <li>● Tests</li> <li>● Projects</li> </ul>

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<p><b>Physical: (States of Matter, Physical and Chemical Changes of Matter, Force and Motion, Electric Circuits)</b></p> <ul style="list-style-type: none"> <li>●SW observe and identify the three states of matter.</li> <li>●SW observe and identify the differences in physical change of matter and chemical change of matter.</li> <li>●SW learn and observe the building blocks of matter by studying the basic structures of an atom.</li> <li>●SW learn how elements are grouped on the Periodic Table.</li> <li>●SW learn twenty common elements and their symbols.</li> <li>●SW learn how elements combine in exact ratios to form compounds.</li> <li>●SW learn the relationship between speed, velocity, and acceleration by building a mousetrap car that will travel the greatest linear distance. SW learn the steps in the engineering design process.</li> <li>●SW learn how the angle of launch between a catapult arm and the fulcrum (base) affects the distance a projectile is launched. SW design and build a launcher which can catapult ping-pong balls at targets located twelve feet from a target.</li> <li>●SW learn how bridges are engineered to withstand weight, while being durable and in some cases aesthetically pleasing.</li> <li>●SW understand that a bridge is a structure that spans horizontally between supports, whose function is to carry vertical loads.</li> <li>● SW build a popsicle bridge that will carry a minimum load of 25 pounds.</li> <li>●SW understand how electricity travels through a circuit.</li> <li>●SW know that a circuit connected to a battery allows electrons to flow from the positive side of the battery to ground.</li> <li>●SW learn that the flow of electrons as</li> </ul>	<p>45 min/day 5 days/wk 2 semesters</p>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher observation</li> <li>● Student participation</li> <li>● Lab/Data sheets</li> <li>● Homework</li> <li>● Tests</li> <li>● Projects</li> </ul>

kinetic energy can be used to do useful work. ●SW build Snap Circuits.				
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<p><b>Life:</b> (Classification of Living Things, Cells, Reproduction, Human Body Systems)</p> <ul style="list-style-type: none"> <li>● SW know that organisms have different adaptations that enable them to live in their environment.</li> <li>● SW learn that organisms are classified according to structure and function.</li> <li>● SW know examples of organisms that cannot be classified as either plant/animal such as fungi/bacteria.</li> <li>● SW use a dichotomous key to identify organisms.</li> <li>● SW know that the cell is the basic unit of structure and function in all living things.</li> <li>● SW know the functions of various organelles in plant and animal cells.</li> <li>● SW understand the processes of diffusion/osmosis.</li> <li>● SW understand how and why cells reproduce.</li> <li>● SW learn the difference between prokaryotic and eukaryotic cells.</li> <li>● SW know that autotrophic organisms produce their own food.</li> <li>● SW know that heterotrophic organisms rely on other organisms for food.</li> <li>● SW know that an organism's traits are a result of heredity, the environment, and learning.</li> <li>● SW know that in all types of asexual reproduction, all inherited traits come from a single parent.</li> <li>● SW learn the parts of a flower that are responsible for reproduction.</li> <li>● SW understand the role of DNA, chromosomes, and genes in heredity.</li> <li>● SW learn that in sexual reproduction, traits come from both parents.</li> <li>● SW understand that fertilization takes place in different ways in plants and animals.</li> <li>● SW learn that an offspring's characteristics depend on the dominant and recessive genes it inherits from the parents.</li> </ul>	<p>45 min/day 5 days/wk 2 semesters</p>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher observation</li> <li>● Student participation</li> <li>● Lab/Data sheets</li> <li>● Homework</li> <li>● Tests</li> <li>● Projects</li> </ul>

<ul style="list-style-type: none"><li>● SW know how to predict offspring by using punnett squares.</li><li>● SW know the basic patterns of inheritance (ie. dominance, recessive, shared dominance)</li><li>● SW learn that multicellular organisms have a variety of specialized cells, tissues, organs, and organ systems that perform specialized functions.</li><li>● SW know the parts and functions of the skeletal, excretory, digestive, respiratory, and circulatory systems.</li><li>● SW learn the parts and functions of the human eye. (cow eye dissection)</li><li>● SW locate and observe the digestive system of the dogfish shark through dissection.</li></ul>				
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<b>Scientific Method:</b> <ul style="list-style-type: none"> <li>● SW learn and apply the steps in Scientific Method.</li> <li>● Students will demonstrate their knowledge of these steps by completing various experiments.</li> </ul>	45 min/day 5 days/wk 2 semesters	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Student Discussions</li> <li>● Hands-on learning activities</li> <li>● Experiments</li> <li>● Interactive Labs</li> </ul>	<ul style="list-style-type: none"> <li>● Teacher observation</li> <li>● Student participation</li> <li>● Lab/Data sheets,</li> <li>● Homework</li> <li>● Tests</li> <li>● Projects</li> </ul>