

# Curriculum – Grade 8

## Grade 8 Science

	<b>The Nature of Science</b>	<b>Physics</b>	<b>Chemistry</b>	<b>Environmental Science</b>
<b>What your child will learn</b>	<ul style="list-style-type: none"> <li>• How to use scientific knowledge and instruments to conduct experiments</li> <li>• How to use experimental design to draw conclusions</li> <li>• Apply process knowledge to make and interpret observations</li> <li>• Problem-solving techniques through scientific inquiry</li> </ul>	<ul style="list-style-type: none"> <li>• How to recognize energy conversions in everyday life</li> <li>• The use and application of simple machines</li> <li>• Concepts of potential and kinetic energy and how it is conserved/transferred</li> </ul>	<ul style="list-style-type: none"> <li>• General properties of matter and how to identify different substances</li> <li>• Scientific theories and laws explaining how particles interact</li> <li>• Describe matter according to its physical and chemical properties</li> <li>• Differences between elements and compounds</li> <li>• Chemical properties that define the elements</li> </ul>	<ul style="list-style-type: none"> <li>• How to analyze choices regarding renewable and non-renewable energy and materials</li> <li>• How to make environmentally- friendly decisions as a consumer</li> <li>• The positive and negative impact of environmental laws</li> </ul>
<b>What your child will do</b>	<ul style="list-style-type: none"> <li>• Use scientific tools and equipment safely</li> <li>• Design and perform scientific investigations</li> <li>• Describe materials and</li> </ul>	<ul style="list-style-type: none"> <li>• Perform experiments to aid in understanding forces that affect the motion of objects</li> </ul>	<ul style="list-style-type: none"> <li>• Design models of elements, atoms, and their sub-atomic particles</li> <li>• Perform individual,</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in activities that encourage wise environmental choices and their related impact</li> <li>• Use scientific knowledge to</li> </ul>

	<p>procedures quantitatively and qualitatively based on scientific observations</p> <ul style="list-style-type: none"> <li>• Draw conclusions and make decisions from experimental observations</li> </ul>	<ul style="list-style-type: none"> <li>• Activities and labs to observe, collect data, and draw conclusions about objects in motion</li> <li>• Apply the principles of physics in an amusement park setting</li> <li>• Construct graphs and charts</li> </ul>	<p>hands-on, and group activities</p> <ul style="list-style-type: none"> <li>• Use lab experiments to solve problems and answer questions using teamwork</li> </ul>	<p>explain energy use, consumption, and alternative energy options</p> <ul style="list-style-type: none"> <li>• Identify areas in the home/community where one could be more environmentally conscious</li> </ul>
<b>What you'll see (products)</b>	<ul style="list-style-type: none"> <li>• Student-designed experiments that lead to critical thinking and scientific writing</li> <li>• Lab activities following the scientific method</li> <li>• Problem-solving activities</li> <li>• Graphs, tables, charts</li> <li>• Independent science fair project (GHP only)</li> </ul>	<ul style="list-style-type: none"> <li>• Student-created projects and lab reports that demonstrate understanding of properties and structure of matter</li> <li>• Student-designed self-propelled vehicles</li> <li>• Lab notebook</li> <li>• Basic formulas to solve problems</li> </ul>	<ul style="list-style-type: none"> <li>• Student-created scientific writing to explain observed concepts and effects</li> <li>• Periodic table and student generated/color-coded periodic table</li> <li>• Various projects/activities associated with the periodic table</li> </ul>	<ul style="list-style-type: none"> <li>• Increased awareness of humans' role in the environmental health of our community</li> <li>• An ability to make decisions based on analysis of scientific fact</li> <li>• Students advocating for the solution of environmental problems</li> <li>• Surveys/questionnaires</li> </ul>
<b>How you can help</b>	<ul style="list-style-type: none"> <li>• Discuss how scientific investigations allow a society to solve problems</li> <li>• Ask students about their</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage your child to research and deepen their understanding of</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate discussions related to recognizing different types of matter in everyday life</li> </ul>	<ul style="list-style-type: none"> <li>• Keep students aware of environmental choices and factors that affect them</li> <li>• Develop dialogue related to</li> </ul>

	<p>investigations in science class</p> <ul style="list-style-type: none"><li>• Monitor homework and your child's grades online</li></ul>	<p>scientific concepts to explain motion, forces, and waves</p> <ul style="list-style-type: none"><li>• Monitor homework and your child's grades online</li></ul>	<ul style="list-style-type: none"><li>• Support students in applying chemical concepts in everyday activities</li><li>• Monitor homework and your child's grades online</li></ul>	<p>local, state, federal, and world environmental problems</p> <ul style="list-style-type: none"><li>• Monitor homework and your child's grades online</li></ul>
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