



## Physical Science Scope and Sequence

	Quarter: 1	Quarter2	Quarter 3	Quarter 4
	<b>Study of Matter</b>	<b>Energy and Waves</b>	<b>Forces and Motion</b>	<b>The Universe</b>
<b>Content</b>	<p><b>PS.M.1:</b> Classification of matter</p> <ul style="list-style-type: none"> <li>• Heterogeneous vs. homogeneous</li> <li>• Properties of matter</li> <li>• States of matter and its changes</li> </ul> <p><b>PS.M.2:</b> Atoms</p> <ul style="list-style-type: none"> <li>• Models of the atom (components)</li> <li>• Ions (cations and anions)</li> <li>• Isotopes</li> </ul> <p><b>PS.M.3:</b> Periodic trends of the elements</p> <ul style="list-style-type: none"> <li>• Periodic law</li> <li>• Representative groups</li> </ul> <p><b>PS.M.4:</b> Bonding and compounds</p> <ul style="list-style-type: none"> <li>• Bonding (ionic and covalent)</li> <li>• Nomenclature</li> </ul> <p><b>PS.M.5:</b> Reactions of matter</p> <ul style="list-style-type: none"> <li>• Chemical reactions</li> <li>• Nuclear reactions</li> </ul>	<p><b>PS.EW.1:</b> Conservation of energy</p> <ul style="list-style-type: none"> <li>•Quantifying kinetic energy</li> <li>•Quantifying gravitational potential energy</li> </ul> <p><b>PS.EW.2:</b> Transfer and transformation of energy (including work)</p> <p><b>PS.EW.3:</b> Waves</p> <ul style="list-style-type: none"> <li>•Refraction, reflection, diffraction, absorption, superposition</li> <li>•Radiant energy and the electromagnetic spectrum</li> <li>•Doppler shift</li> </ul> <p><b>PS.EW.4:</b> Thermal energy</p> <p><b>PS.EW.5:</b> Electricity</p> <ul style="list-style-type: none"> <li>•Movement of electrons</li> <li>•Current</li> <li>•Electric potential (voltage)</li> <li>•Resistors and transfer of energy</li> </ul>	<p><b>PS.FM.1:</b> Motion</p> <ul style="list-style-type: none"> <li>•Introduction to one-dimensional vectors</li> <li>•Displacement, velocity (constant, average and instantaneous) and acceleration</li> <li>•Interpreting position vs. time and velocity vs. time graphs</li> </ul> <p><b>PS.FM.2:</b> Forces</p> <ul style="list-style-type: none"> <li>•Force diagrams</li> <li>•Types of forces (gravity, friction, normal, tension)</li> <li>•Field model for forces at a distance</li> </ul> <p><b>PS.FM.3:</b> Dynamics (how forces affect motion)</p> <ul style="list-style-type: none"> <li>•Objects at rest</li> <li>•Objects moving with constant velocity</li> <li>•Accelerating objects</li> </ul>	<p><b>PS.U.1:</b> History of the universe</p> <p><b>PS.U.2:</b> Galaxies</p> <p><b>PS.U.3:</b> Stars</p> <ul style="list-style-type: none"> <li>•Formation: stages of evolution</li> <li>•Fusion in stars</li> </ul>
<b>Resources</b>	<b>McGraw Hill ODE Model Curriculum</b>	<b>McGraw Hill ODE Model Curriculum</b>	<b>McGraw Hill ODE Model Curriculum</b>	<b>McGraw Hill ODE Model Curriculum</b>

Vocabulary				
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**Quarter(s) 1-4**

**During the years of 9-12, all students must become proficient in the use of the following scientific processes, with appropriate laboratory safety techniques, to construct their knowledge and understanding in all science content areas:**

**SIA1** Identify questions and concepts that guide scientific investigations.

**SIA2** Design and conduct scientific investigations.

**SIA3** Use technology and mathematics to improve investigations and communications.

**SIA4** Formulate and revise explanations and models using logic and evidence (critical thinking).

**SIA5** Recognize and analyze explanations and models.

**SIA6** Communicate and support a scientific argument.

**WHCSD Scope and Sequence**

**Physical Science**

**2021-2022**