

High School Science Curriculum Guide: 2023-2024

Grade	
9 th	<p>Earth/Physical Science:</p> <ul style="list-style-type: none"> • How can one explain the structure and properties of matter? • How do substances combine or change to make new substances? • How do people reconstruct and date events in Earth's planetary history? • How can one explain and predict interactions between objects and within systems of objects? • How is energy transferred and conserved? • How are waves used to transfer energy and send and store information? <p>Earth/Physical Science (Primary Curriculum):</p> <p><u>Foundational Chemistry:</u></p> <ul style="list-style-type: none"> • Properties of Matter • Basic Building Materials (Blocks) of Chemical Reactions • Atomic Model, Structure and Bonding • Molecular Structure and Properties • Electronegativity and Polarity <p><u>Earth Systems:</u></p> <ul style="list-style-type: none"> • Solar Nebula Theory • Formation of Earth's Layers • Radioactive Decay • Fractures, Faults, & Folds • Earthquakes & Seismic Waves • Volcanic Activity and the Effects on the Earth's Spheres • Volcanic Materials • Evidence of Historic Volcanoes • Development of a Theory (Plate Tectonics) • Dynamics of the Earth (Effects of Plate Tectonics) <p><u>Foundational Physics:</u></p> <p><u>Energy</u></p> <ul style="list-style-type: none"> • Types of energy • Energy Transfers • Conservation of Energy • Elastic Force and Potential Energy • Work • Kinetic Energy of Molecules • Air Resistance <p><u>Waves</u></p> <ul style="list-style-type: none"> • Reflection and Refraction • Amplitude and Frequency • Electromagnetic Spectrum • Wave Energy Transformation

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10 th	<p>Biology:</p> <ul style="list-style-type: none"> • How do organisms live and grow? • How and why do organisms interact with their environment, and what are the effects of these interactions? • How are characteristics of one generation passed to the next? • How can individuals of the same species and even siblings have different characteristics? • What evidence shows that different species are related? <p>Biology (Primary Curriculum): <u>Science and Global Issues (SGI):</u></p> <ul style="list-style-type: none"> • Ecology: Living on Earth • Cell Biology: World Health • Genetics: Feeding the World • Evolution: Maintaining Diversity
11 th	<p>Chemistry:</p> <ul style="list-style-type: none"> • Science of Chemistry • Matter and Atoms • Temperature Energy and Heat • Physical and Chemical Change • Structure of the Atom • Interpretation and Use of the Periodic Table • Bonding • Compounds and Molecules • Water and Solutions • Chemical Reactions • Stoichiometry • Reactions Rates and Equilibrium • Acids and Bases • Properties of Gases • Nuclear Chemistry
12 th	<p>Physics:</p> <ul style="list-style-type: none"> • Physics Toolkit • Representing Motion (velocity) • Accelerated Motion • Forces in 1 dimension • Forces in 2 dimensions (friction) • Motion in 2 dimensions • Gravitation • Rotational Motion • Momentum and its conservation • Energy and Work