

Marietta City Schools Pacing Guide

Subject: Accelerated Physical Science

Grade Level: 8th Grade

Time Frame: Year Long

Month / Week	CCS Benchmarks	Skills/Activities	Resources	Assessment
Chapter 1 Aug- Sept	ID questions to be answered through scientific investigation. (SIA.1) Design/conduct a scientific investigation. (SIA.2) Use appropriate tools to gather data/info. (SIA.3) Analyze/ interpret data. (SIA.4) Develop descr's, models, expl's, & pred's. (SIA.5) Connect evidence & explanations. (SIA.6) Recognize alt. exp./pred. (SIA.7) Communicate scientific proc. & expl. (SIA.8)	This short chapter focuses on reviewing the goals of science, the scientific method, and lab safety skills. Students will carry out example experiments where they will go through and explain the different steps of the scientific method.	Teacher created notes Teacher developed labs and activities. Supplemental Web Videos Online scientific simulation activities	Summative and Formative Assessment used appropriately
Chapter 2 Introduction to Matter Sept-Oct	- Elements vs. Compounds -Heterogeneous vs. homogeneous mixtures - Properties of matter including density calculations and the law of conservation of mass. - States of matter and its changes -Solutions and Solubility -Physical properties vs chemical properties -Physical changes vs chemical changes -Latent heat, exothermic vs endothermic	Students will carry out experiments to help explain and understand properties of matter. Other activities will be completed to help understand differences and hetero vs homo mixtures, physical properties vs. chemical properties, etc.	Teacher created notes Teacher developed labs and activities. Supplemental Web Videos Online scientific simulation activities	Summative and Formative Assessment used appropriately
Chapter 3 Atoms and	-History of the atom - Discuss different Models of	Students will carry out experiments to help explain and understand	Teacher created notes Teacher developed labs and	Summative and Formative

the Periodic Table Oct-Nov	the atom. Rutherford model, Bohr model -Components of the atom - Isotopes -Periodic Table and periodic trends -Properties of Metals, nonmetals, metalloids -Properties of significant groups on the table	properties of the atom. Other activities will be completed to assist students understanding of Rutherford's atom experiment, ions, and the periodic table	activities. Supplemental Web Videos Online scientific simulation activities	Assessment used appropriately
Chapter 4 Chemical Bonding and Equations Nov -Dec	- Bonding (ionic and covalent) -Ions and ionization (cations and anions) - Naming of ionic and covalent bonds - 5 major chemical reactions - Balancing chemical equations (polyatomic anions are not used at this level)	Students will carry out experiments to help explain and understand chemical reactions. Other activities will be completed to assist students understanding of naming molecules and balancing equations	Teacher created notes Teacher developed labs and activities. Supplemental Web Videos Online scientific simulation activities	Summative and Formative Assessment used appropriately
Chapter 5 Chemical Bonding Continued and Nuclear Chemistry Jan	-Rates of reaction for Chemical Reactions - Catalysts - Acids, bases, and pH -Radioactivity and forms of nuclear radiation -Writing nuclear decay equations -Strong nuclear force and Half-life -Fission vs Fusion	Students will carry out experiments to help explain and understand acids, bases, and half life. Other activities will be completed to assist students understanding of rates of reaction, strong nuclear force, and fission vs. fusion.	Teacher created notes Teacher developed labs and activities. Supplemental Web Videos Online scientific simulation activities	Summative and Formative Assessment used appropriately
Chapter 6 Forces and Motion	- Introduction to one-dimensional vectors - Displacement, velocity (constant, average and instantaneous) and acceleration	Students will carry out experiments to help explain and understand motion including forces, velocity, and acceleration. Other activities will be completed to	Teacher created notes Teacher developed labs and activities. Supplemental Web Videos Online scientific simulation activities	Summative and Formative Assessment used appropriately

	<ul style="list-style-type: none"> - Interpreting position vs. time and velocity vs. time graphs - Force diagrams - Types of forces (gravity, friction, normal, tension) - Field model for forces at a distance - Objects at rest - Objects moving with constant velocity - Accelerating objects 	assist students understanding of field models of forces as well as Newton's Laws of Motion		
Chapter 7 Energy and Electricity	<ul style="list-style-type: none"> - Conservation of energy - Quantifying kinetic energy - Quantifying gravitational/potential energy - Energy is relative - Transfer and transformation of energy (including work) <ul style="list-style-type: none"> - Movement of electrons in electricity - Current - Electric potential (voltage) - Resistors and transfer of energy 	<p>Students will carry out experiments to help explain and understand energy including differences between kinetic and potential energy.</p> <p>Other activities will be completed to assist students understanding of electricity and transfer of energy.</p>	<p>Teacher created notes</p> <p>Teacher developed labs and activities.</p> <p>Supplemental Web Videos</p> <p>Online scientific simulation activities</p>	Summative and Formative Assessment used appropriately
Chapter 8 Waves and Thermal Energy	<ul style="list-style-type: none"> - Refraction, reflection, diffraction, absorption, superposition - Radiant energy -The electromagnetic spectrum - Doppler shift -Thermal energy 	<p>Students will carry out experiments to help explain and understand the movement of energy through waves.</p> <p>Other activities will be completed to assist students understanding of electromagnetic waves, heat, and properties of waves.</p>	<p>Teacher created notes</p> <p>Teacher developed labs and activities.</p> <p>Supplemental Web Videos</p> <p>Online scientific simulation activities</p>	Summative and Formative Assessment used appropriately
Chapter 9 History of the Universe	<ul style="list-style-type: none"> - History of the universe - Galaxy formation - Stars 	Students will carry out experiments to help explain and understand the life cycle of stars.	<p>Teacher created notes</p> <p>Teacher developed labs and activities.</p> <p>Supplemental Web Videos</p>	Summative and Formative Assessment used appropriately

	<ul style="list-style-type: none">- Formation; stages of evolution- Fusion in stars	Other activities will be completed to assist students understanding of the history of the universe and fusion in stars..	Online scientific simulation activities	
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