Department: Science
Course Title: Physical Science
Creator: S. Brown
Date: Feb 2024

Unit Title	Unit Length (weeks)	Dates of Unit (Month - Month)	Essential Questions	Topics to be Covered Texts Used	Skills to be Assessed	Standard Alignment	Formative Assessments	Summative Assessments
Lab Safety and Lab Equipment	2 weeks		What is the proper way to behave in a lab situation? Where are the locations of all safety equipment? How do you use each piece of safety equipment? What is each piece of lab equipment, it's use and unit of measurement? What are the basic safety symbols and what do they tell us?	Safety contract. Lab safety. Lab safety symbols. Lab safety equipment. Lab equipment.	- reading lab equipment. identification of lab safety symbols. -behavior in lab.	HS-ETS1-3 HS-ETS1-4	Open response questions for lab situations. Creation of safety poster. Practice reading equipment worksheet. Practice labs with equipment.	-lab safety test -signed lab contract -equipment test
Rounding Review	1 week with continued application throughout the year		Review.. what are the ones, tenths and hundredths places? What is the proper way to round to a whole number. What is the proper way to round to 1 place past the decimal. What is the proper way to round to 2 places past the decimal. What is the appropriate number of places to round to in science?			HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-4 HS-PS1-8 PS1.A PS1.B		
Periodic Table	2 weeks		How is the periodic table arranged? What are the parts of the table and what do they tell about the element? What are the trends on the table? What are the special groups on the table? What are the 3 general categories of the table? What are the properties of metals, nonmetals and metalloids?	The periodic table Atomic mass and atomic number: how they relate to protons, electrons and neutrons. How to determine number of neutrons. Metals, nonmetals and metalloids and their properties. Groups and periods: why are they arranged this way. Special groups on the table.	Use of the periodic table: including determining protons, electrons and neutrons for an element. location of an element: its group and period number.	HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-4 HS-PS1-8 PS1.A PS1.B	quizzes using table to provide info for a specific element	Use of table test
The Atom	2 weeks		What is an atom and its parts? What are the subatomic particles, their charges and their location in an atom. What are valence electrons and how can they be determined and what do they tell us about an atom? What is an isotope? What is lewis dot structure?	What is an atom. What are the parts of an atom. What are the subatomic particles, their charges and their locations. Structure of the electron cloud. Valence electrons: what are they, what do they tell about an element and how to determine how many there are. Drawing atoms with all locations and correct number of electrons in each level. How to determine an element from a structure drawing. What is an isotope and how to determine the number of neutrons it has. What is lewis dot structure and how to draw it.	Naming the parts of an atom, their location and charge. Use the periodic table and draw a model of an atom. Determine the neutrons for a given isotope. Draw the lewis dot structure of an element. Name an element from a drawing.	HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-7 HS-PS1-8 PS1.A	quizzes worksheets vocab card sorts whiteboard atom drawing practice google classroom assignments	Test Build a model of an element
Chemical Equations	1 week		What is the structure a chemical equation? What are subscripts? What are coefficients?	What is a chemical equation? What are the parts of a chemical equation? What are subscripts and coefficients and what do they mean in a formula?	Ability to determine the number of atoms or elements in a chemical formula.	HS-PS1-2 HS-PS1-5 HS-PS1-6 HS-PS1-7 HS-PS1-8	google assignments application worksheet quiz	tested with bonding unit

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Covalent and Ionic Bonds	4 weeks		What is a covalent bond? What is an Ionic bond? How do we name covalent and Ionic bonds? What are Ions?	Covalent Bonds:What are they? Octet rule. Want, have, share method for drawing covalent bonds. SIngle, double and triple bonds. Naming covalent bond rules. Polar and nonpolar covalent bonds and electronegativity. Ions: what makes something an ion. Ionic bonds. naming Ionic bonds. Difference between covalent and ionic bonds.	Ability to: draw a covalent/ionic bond, name a covalent/ionic bond,	HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-7 HS-PS1-8	google assignments application worksheet quiz ion simulator	Test over covalent and ionic bonds with supporting equation questions
Conservation of Mass and Balancing Equations	1.5 weeks		What does conservation of mass mean? How to balance an equation	Review of parts of an equation, subscripts and coefficients.What is conservation of mass. How to determine if an equation is balanced or unbalanced. How to balance an equation.	determine if an equation is balanced or unbalanced. balance an equation. relate to law of conservation of mass.	HS-PS1-2 HS-PS1-5 HS-PS1-7 HS-PS1-8	hand on starburst equation activity. practice worksheets. quiz	
Physical/Chemical Properties/ Changes and Reactions	8 weeks		What are physical/chemical properties? What are physical/chemical changes? What are the 5 signs of a chemical change? What is density, the formula and application?	Physical and chemical properties. Density: what it is and formula. Manipulation of density formula. Physical and chemical changes. 5 signs of a chemical change. Solutions, mixtures, elements, compounds. Endothermic and exothermic reactions.	determine if a change is physical or chemical with written description and labs. determine if an reaction is endothermic or exothermic. Use the density formula to determine density of an object. Distinguish between solutions. Distinguish between mixture types. Distinguish between solute and solvent. Distinguish between saturated and unsaturated. Know when energy is released/absorbed in an reaction.	HS-PS1-2 HS-PS1-5 HS-PS1-6 HS-PS1-7 HS-PS1-8	google assignments, labs, quiz, worksheet.	test
Collision Theory and Rates of Reaction	2 weeks		What are the 3 principles of collision theory? What are the 3 factors that affect the rate of a reaction? What are catalyst/inhibitors and how do they work in a reaction? What are the 5 types of reactions.	Collision theory notes. rate of reaction notes. Catalyst and inhibitor notes. Types of reactions	state the 3 principles of collision theory. state the 3 factors that affect rate of a reaction. Be able to apply change to factors of rate of reaction: increase or decrease rate of reaction. relate how factors of rate of reaction to collision theory. Identify the type of reaction. Predict the outcomes for different types of reactions.	HS-PS1-6 HS-PS1-5 HS-PS1-7	labs, worksheet, quiz, hands on manipulative	
States of Matter and Gas Laws	3 weeks		What are the states of matter? What is kinetic theory? How to changes between states occur? What are the gas laws: boyles and charles. What factors affect gas laws?	What are the states of matter? What is kinetic theory? How to changes between states occur? What are the gas laws: boyles and charles. What factors affect gas laws?	application of gas laws. knowledge of the states and energy required to change between them. How molecules are arranged in each state. State what is kinetic theory and show how it relates to states of matter/changes of matter.	HS-PS1-1 HS-PS1-2 HS-PS1-3 HS-PS1-5 HS-PS1-6 HS-PS1-7 HS-PS1-8		

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Force and Motion	2 weeks		What is force? What are Newton's 3 laws? What is Conservation of Energy?	Newton's 3 laws. Application of the 3 laws. Forces and net force. Types of energy. Speed.	Knowledge of the 3 laws and application of each including formulas. Determining net force on an object. Calculating speed. Understand conservation of energy and energy transformation.	HS-PS2-1 HS-PS2-2 HS-PS2-3 HS-PS2-4	labs worksheet, quiz	
Waves	3 weeks		Nature and properties of waves. Behaviors of waves. electromagnetic spectrum.	Parts of a wave Wave speed Wave interactions Speed of sound Loudness and intensity of sound Pitch and frequency Doppler effect Electromagnetic waves and properties Electromagnetic spectrum	Use of speed formula and manipulation of it. Label parts of a wave How waves interact and types of interactions. be able to determine from an illustration wave loudness, intensity, frequency and pitch.	HS-PS4-1 HS-PS4-2 HS-PS4-3 HS-PS4-4 PS4.A PS4.B	labs worksheet, quiz	
Magnetism and Electricity	2 weeks		Charge Current Currents Magnets	not sure, Didn't make it this far last year.		HS-PS2-1, HS-PS2-2, HS-PS2-3, HS-PS2-5.		