

Chemistry Curriculum Map

Created March 2023

Month	Unit/Topic of Study	Standards	Key Vocabulary	Test Taking and Reading Strategies and student engagement	Math Skills (decipher/use charts and graphs)	Kagan Strategies	Writing in the content area	Assessments
Sept	Mathematical Tool Kit	HS-PS2-6	<p>Vocab Unit 1</p> <p>Chemistry Precise OHEAD accurate Qualitative percent error Quantitative absolute value System International literature value Exponentials significant -digits Scientific Notation endothermic</p> <p>Weight exothermic Mass reactants Length products Time activation energy Homogeneous Calorimeter</p> <p>Heterogeneous specific Heat Elements even leave it Compounds Temperature Kelvin Deg. Celsius Derived unit Density Volume Area, Matter solution Solute Solvent Organic Inorganic Physical change Chemical change Reactants Products Solid Liquid Gas</p>	<p>Talk to the text modeling and first tries</p> <p>Read pair share modeling and first tries</p> <p>Read pair share modeling and first tries</p> <p>Stand up Hands up Pair up</p>	<p>Metric conversions Heat change Density % Error</p>	<p>Community building and then content review using</p> <p>Stand up Stanup-Handup- Pair up and then Knee to Knee Vocab used weekly all year</p> <p>Carousel -</p> <p>What didn't you do</p> <p>And then Quiz Quiz Trade</p>	<p>Declare and support a hypothesis with evidence or refute with evidence</p>	<p>3 labs Several quizzes Multiple practices 3 versions of test</p> <p>Round Robin style Lab station Review</p>

Oct	Structure & Properties of Matter	<u>HS-PS1-1</u> <u>a.</u>	Vocabulary: Chemistry Unit 2 atom element uncertainty energy levels nucleus proton__electron clouds neutron electron quantum numbers (Principle -4) quark lepton electron DRAWING isotope atomic number electron configuration atomic mass electron diagram mass numberLewis Dot Diagram radiation alpha valence electrons beta gamma Heisenberg Uncertainty decay peak Pauli Exclusion	Talk to the text practice Annotating with clear overheads begins Read pair share modeling and first tries Annotating with clear overheads Read pair share modeling and first tries Jot it Think , pair, share Circle partner	Rounding Dimensional analysis Average Atomic Mass	Round Robin Rally Robin Quiz-Quiz Trade Carousel	Focus on topic sentence with 4-5 supports and concluding sentence	Two labs Practice Two versions of test Gallery Walk

			<p>light trough momentum</p> <p>electromagnetic spectrum</p> <p>Chapter 4-3</p> <p>frequency amplitude trend bond radius</p> <p>wavelength lambda ionization energy excited electrons electron shielding</p> <p>chemical reaction electronegativity</p> <p>nuclear reaction period</p> <p>physical change family/group</p> <p>structure determines function</p> <p>Rutherford Gold foil exp. super collider atomic theory</p>	<p>Gallery Walk</p> <p>Stand up, pair up, share</p> <p>Talk to text</p> <p>Read Pair Share</p> <p>Model build</p>	<p>Electronegativity calculations</p>			<p>Quest - short test, long quiz</p> <p>Rutherford Group project</p> <p>Periodic table project</p>
Nov	Chemical Bonds & Formulas	<u>HS-PS1-2.</u>	<p>Chemical formula</p> <p>symbols Elementsneutral</p>	<p>Concerted SAT Weekly lesson plans start (see unit __) Focus is on</p>	<p>Molar mass Bonding ratios % Error</p>	<p>Rally Coach</p> <p>Timed Pair</p>	<p>Essay: compare/contrast ionic vs covalent bonds</p>	<p>SAT pre test 4 SAT practices Chromatography lab</p>

		<p>Oxidation # subscript Coefficient octet rule Monoatomic polyatomic Compound ionic bonds metal non-metal Cation anion Crystal structure isoelectric Molecules covalent bonds Diatomic molecule nomenclature Salts binary inorganic Transition elements polyatomic compounds Organic compounds molecular formula</p> <p><u>Covalent Bonds</u></p> <p>Linear single bonds Pyramidal double / triple bonds Lewis structure shared electrons Polarity covalent bonds Electronegativity polar/ non- polar Polyatomic ions VSEPR Theory</p>	<p>complex graphs</p> <p>Gallery Walk</p> <p>Modeling</p> <p>Building molecules</p> <p>Read Pair share</p> <p>Talk to the text</p> <p>Concept Mapping</p> <p>Building Covalent Bond Molecules with Atom Modles</p> <p>Concept Map</p>	<p>Share</p> <p>Continual use of Stand up-Handup-pai r up followed by vocab Knee to Knee</p> <p>Numbered heads together</p>	<p>Drawing using rubric Gallery Walk</p> <p>Three versions of test</p>
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			Resonance structure mono-deca prefix naming Chains rings Saturated unsaturated					
Dec	Chemical Reactions	<u>HS-PS1-7.</u>	See Below in January, but also include the following here or in March/ April: Homogenous suspension Heterogeneous colloid Solution Molarity Solvent volume Solute ppm Colligative property emulsifying agent	SAT Focus: Multiple Choice skills and practice, SDSM Annotating in text with sticky notes Sat focus: READING: Skimming and managing time while catching essential details	% composition Molar Mass Design of 4 graphs Statistics	Carousel Standup-Hand up-Pair up	First Lab report: Technical 3rd person past tense writing	Lab Report Test Quizzes Lab: Ionic Bond building
Jan	Stoichiometry, Balancing, & Chemical Reactions	<u>HS-PS1-3.</u>	Chem unit 5-6 Vocab Ch. 7: The Mole Dimensional Analysis % Composition	Sat focus: READING: Skimming and managing time while catching essential details	Stoichiometry and Ratios	Rally Coach Jot Thought	Writing word sentences from equations	3 Labs And write ups Daily warm ups Multiple quizzes

			<p>Conversion factors</p> <p>Scientific Notation</p> <p>Molecular mass</p> <p>Avogadro's Constant</p> <p>MOLE</p> <p>Compound</p> <p>Molecular mass</p> <p>Molar Mass</p> <p>Formula mass atomic mass</p> <p>MOLARITY</p> <p>moles/Liter</p>	<p>SAT Reading Practice</p> <p>Multiple Choice, Comparing author's viewpoint and how they built evidence or viewed other author</p> <p>Talk to text: A Nurse's Perspective</p>		<p>Rally Coach- What is NOT the answer for SAT</p> <p>Quiz quiz Trade</p>		<p>Three Test versions</p>
Feb	<p>Structure & Properties of matter</p> <p>Structure & Properties of matter:</p> <p>Solid, liquid, gas</p>	<p><u>HS-PS2-6.</u></p> <p>.</p> <p><u>HS-PS3-2</u></p>	<p>Chem unit 5-6 Vocab</p> <p>Ch. 7: The Mole</p> <p>Solid Liquid</p> <p>Gas</p> <p>Plasma</p> <p>"Fixed" Intermolecular forces</p> <p>Dipole-Dipole polar</p> <p>Hydrogen bonds</p> <p>non-polar</p> <p>Crystal London</p> <p>Dispersion Forces</p> <p>Enthalpy</p> <p>phase/state</p> <p>Entropy melt</p> <p>Vaporization freeze</p>	<p>SAT Math practice w/o calculator</p> <p>4 sets</p> <p>Talk to Text: Manuals for Car Companies</p>	<p>Ratios, Writing and balancing equations</p> <p>Molarity: Aqueous solutions</p>	<p>Carousel</p> <p>Quiz-Quiz-Trade</p> <p>What is NOT the Answer for SAT</p> <p>Always/ Weekly: 1 for community building leading right into review or note/ content break/digestion</p>	<p>Hypothesis/ Claims required 3-4 point support and wrap up continue in each lab as is standard</p>	<p>Labs: Reaction Equations</p> <p>Types of chemical reactions</p> <p>Limiting factor ppt</p> <p>Test -4 versions</p>

			Evaporation condensation Deposition sublimation					
March	Chemical Reactions: Equilibrium	<u>HS-PS1-6.</u>	Vocab Unit 8 Ch. 18 Equilibrium Chemical Equilibrium Equilibrium Constant rate Temperature Alternator Concentration % of each State Reversible STRESS Gas Dynamic Outside source Static Le Chatelier's Principle Complex ion Equilibrium: Color Coordinate covalent bond Titration	SAT Math with Calculator practice Graphing Reading: Getting to the point and finding the correct line to support the answer Annotating ACID BASE chapter section 3 in Chemistry book with clear overheads Think Pair Share	Statistics Pie Graph/percent creation ACID BASE pH Calculations	Quiz Quiz Trade Rally Coach Carousel Feedback	Lab Report: New focus on Alteration: redesign a lab of your choice Connection: Connect the lab specifically to your notes Comparison paragraphs on Solid, liquid, gas, and plasma	3- Titration Labs, one egg design your own lab Technical writing for Lab procedure Design of new Lab for Alteration SAT Post test Test: Solid, Liquid, Gas and the Kinetic Molecular Theory Two quizzes

<p>April</p>	<p>Chemical Reactions:</p> <p>Acids, Bases, Salts, & Titrations,</p>	<p><u>HS-PS1-2.</u></p>	<p>Ch. 14/15: Acids, Bases, Salts</p> <p>pH Scale Hydronium Hydroxide ion Solution neutral Acid base Salt indicator Organic dehydrating agent Pickling COOH Corrosive electrolyte Solution Strength Concentration - dilute pH paper Acid Rain fossil fuels End point equivalence point Neutralization equilibrium Logarithmic</p>	<p>Last two SAT practices</p> <p>Wrap up advice on time management, pacing and SDSM</p>	<p>Concentration PPM PPB PRactical Stoichiometry: Air bag ratios I.V. (nursing) ratios Car engine oxygen/ fuel ratios Catalytic convert ratios</p>	<p>JOt Thought especially for Gally walk</p> <p>Standup-Hand up-Pair up</p> <p>Round Robin</p> <p>Rally Coach</p>	<p>Manual writing practice</p> <p>Writing for Auto Company manual practice</p>	<p>Manual writing (2 pieces)</p> <p>Test Molarity 4 versions</p> <p>Quizzes Labs 5</p>
<p>May</p>	<p>Chemical Reactions:</p> <p>Labs, writing & Classifying Reactions, Soil/ water testing</p>	<p><u>HS-PS1-2.</u></p> <p><u>HS-PS1-5</u></p>	<p>School Forest Vocab:</p> <p>Dissolved Oxygen Jack in the Pulpit Biological</p>	<p>Presenting research Data</p> <p>Think Pair Share brainstorm for Essay</p>	<p>Equilibrium Constant Calculations</p> <p>K_{sp} calculations</p>	<p>Rally Coach</p> <p>Stanup-Handup-pair up community building & then For knee to knee vocab game partners</p>	<p>Essay 2-3 pages Funnel Thesis format, 3-4 body paragraphs with T. S. (</p>	<p>Tests - 2 versions</p> <p>Essay Format</p>

	Gases School Forest		Oxygen Demand Cedar Maple Beach Oak Fern Trillium Lady Slipper Water plants acidic Basic/ alkaline turbidity Rich soil depleted soil Succession clear cut Selectively cut	planning	School Forest Water testing, PPM, PPB	Rally Coach for Math practice, keep trading writer and coach Rally Coach for Charle's Law Find someone who... for Forest rides and partners	and 4-5 supports) each Restatement and broaden concluding paragraph	
June	Gases	<u>HS-PS1-5</u>	Unit 11 Vocab: Gases: Gas Fluid Density compressible Kinetic-Molecular Theoryforce Boyle's Law Inverse Charles' Law Direct STP Pressure Greenhouse gases CFC's		School Forest SOIL testing PPM PPB Population statistics	Roundtable Rally coach, Math review 1 paper, all eyes on paper Gallary Walk, Timed - pair share and then	School Forest research write up on N, P, D.O, K (students choose one element)	School Forest final Write up: Data and Essay

			Ozone Depletion Acid Rain Antarctica Aerosols Freon infrared Ozone free radical Newton Pascal			Find someone who... Carousel Feedback Then post its for the Gallery Walk		
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