

Course / Strand	Topic	Core Standard	Description	Key Vocabulary	Instructional Strategies and Resources
Chemistry	Structure and Properties of Matter	HS.SC.C.PM.1	Atomic structure	Law of constant composition, Dalton's atomic theory, Atoms, Compound, Chemical formula, Electron, Nuclear atom, Nucleus, Proton, Neutron, Isotope, Atomic number, Mass number, Ion, Cation, Anion, E-M radiation, Wavelength, Frequency, Photons, Quantized, Wave mechanical model, Valence electrons, Orbital, Principal energy levels, Sublevels, Pauli exclusion principle, Electron configuration, Orbital diagrams, Valence electrons, Core electrons	
Chemistry Chemistry Chemistry	Structure and Properties of Matter Structure and Properties of Matter Structure and Properties of Matter	HS.SC.C.PM.2 HS.SC.C.PM.3 HS.SC.C.PM.4	Periodic Table Chemical bonding Representing compounds	Periodic table, Groups, Periods, Alkali metals, Alkaline earth metals, Halogens, Noble gases, Transition metals, Metals, Nonmetals, Metalloids, Diatomic molecules, Lanthanide series, Actinide series, Main-group elements, Periodic Law, Atomic size, Ionization energy, Electronegativity, Electron affinity Ionic compound, Molecular Compound, Binary compounds, Polyatomic ions, Oxyanions, Bond, Crystal lattice, Conductivity, Malleability, Ductility, Melting point, Boiling point, Bond, Bond energy, Bond length, Ionic bonding, Covalent bonding, Polar covalent bonding, Dipole moment, Polar Molecule Ionic Compound, Molecular Compound, Binary compounds, Polyatomic ions, Oxyanions, Anion, Cation, Metal, Nonmetal, Roman Numerals, Greek Prefixes, Acids. Lewis Structures, Duet Rule, Octet Rule, Bonding Pair, Lone Pair Single Covalent Bond, Double Covalent Bond, Triple Covalent Bonds, Resonance, Molecular Model, 3D Shapes, (Linear, Bent, Trigonal Planar, Tetrahedron, Trigonal Pyramidal, Trigonal Bipyramidal, Octahedral), Expanded Octet, Valence Shell Electron Pair Repulsion (VSEPR), Organic Chemistry, Biomolecule, Hydrocarbon, Alane, Alkene, Alkyne, Isomers, Functional Groups, Aromatics	

Chemistry	Structure and Properties of Matter	HS.SC.C.PM.5	Quantifying matter	Measurement, Scientific notation, Units, English system, Metric system, International system, Volume, Liter, Milliliter, Mass, Gram, Significant figures, Rounding, Conversion factor, Equivalent statement, Dimensional analysis, Avogadro's number, Moles, Density, Accuracy, Precision, Microscopic, Macroscopic, Cosmic, Fahrenheit scale, Celsius scale, Kelvin scale	
Chemistry	Structure and Properties of Matter	HS.SC.C.PM.6	Intermolecular forces of attraction	Intermolecular forces, Dipole-dipole attractions. Hydrogen bonding, London dispersion forces, Dipole moment, Electronegativity, Dispersion, van Der Waals, Solubility, Normal boiling point, Heating/cooling curve, Normal freezing point, Molar heat of fusion, Molar heat of vaporization, Dissolution, Evaporation, Vapor pressure, Melting point, Normal boiling point, Boiling point, Intermolecular forces, Polar substances, Nonpolar substances, Solubility, Colligative properties	
Chemistry	Interactions of Matter	HS.SC.C.IM.1	Chemical reactions	Chemical reaction, Chemical equation, Reactants, Products, Balance equation, Coefficients, Precipitation, Precipitate, Precipitation reaction, Electrolyte, Strong electrolyte, Weak electrolyte, Nonelectrolyte, Soluble solid, Insoluble solid, Molecular equation, Complete ionic equation, Spectator ions, Net ionic equation, Acid, Base, Salt, Double-displacement, Acid-base, Single- replacement, Combustion, Synthesis, Decomposition, Combustion reaction, Collision, Activation energy, Catalyst, Reaction Rates, Potential energy, Kinetic energy, Calorimetry, Thermal energy Specific heat, Joules, Calorie, Exothermic, Endothermic, Bond energy, Activation energy, Entropy, Spontaneity, Bond length, Thermodynamics, System, Surroundings, Chemical equilibrium, Equilibrium expression, Equilibrium constant, Le Chatlier's principle, Solubility product constant, Acids, Bases, Arrhenius acid, Arrhenius base, Bronsted-Lowry, Conjugate acid, Conjugate base, Hydronium ion, Strong acid, Weak acid, Diprotic acid, Oxyacid, Organic acid, Ionization of water, pH scale, Indicators, pH meter, Neutralization, Titration, Standard solution, Titration curve	

Chemistry	Interactions of Matter	HS.SC.C.IM.2	Gas laws	Barometer, Torr (mmHg), Atmosphere, Pascal, Absolute zero, Kinetic-molecular theory, Pressure, Volume, Temperature, Boyle's law, Charles's law, Gay_Lussac's Law, Avogadro's law, Universal gas constant, Ideal gas law, Real gas, Combined gas law, Graham's Law, Partial pressure, Dalton's law of partial pressures, Molar volume, Standard temp/ pressure (STP), Kinetic-molecular theory	
Chemistry	Interactions of Matter	HS.SC.C.IM.3	Stoichiometry	Mole ratio, Stoichiometry, Molarity, Solution, Solvent, Solute, Aqueous solution, Saturated, Unsaturated, Supersaturated, Concentrated, Dilute, Standard solution, Dilution, Molality, Normality, Limiting reactant, Theoretical yield, Actual yield, Percent yield	