

## RCSD Chemistry \* Quick Reference Pacing Guide \* 2024-2025

**\*Note: This document is meant to be a quick reference of the standards covered each nine weeks.**

**For a complete description of the course, standards and detailed performance objectives,**

**see the [MS College and Career Readiness Standards for Science](#)**

<p style="text-align: center;"><b>1st Term: Aug. 1 - Oct. 4</b>  <i>July 25-26;29-31 - Staff Development</i>  <i>Aug. 1 - First Day of School</i>  <i>Sept 2 -Labor Day/Holiday</i>  <i>Oct. 7-11 - School Holiday/Fall Break</i>  <i>Oct. 14 - Staff Development</i></p>	<p style="text-align: center;"><b>2nd Term: Oct. 15 - Dec. 20</b>  <i>Nov. 25-29 - Thanksgiving Break</i>  <i>Dec. 16 - 20 - Exams</i>  <i>Dec. 20 - Reduced Day</i>  <i>Dec. 23 - Jan. 3 - Christmas Break</i></p>	<p style="text-align: center;"><b>3rd Term: Jan. 7 - Mar 7</b>  <i>Jan. 6 - Staff Development</i>  <i>Jan. 7 - Students Return</i>  <i>Jan. 20 - MLK Day/Holiday</i>  <i>Feb. 17 - Presidents' Day/Holiday</i>  <i>March 10 - 14 - Spring Break</i></p>	<p style="text-align: center;"><b>4th Term: March 17 - May 23</b>  <i>April 18, 21 - Easter/Holiday</i>  <b>*STATE TESTING Window opens</b>  <i>mid-April*</i>  <i>May 19-23 - Exams</i>  <i>May 23 - Reduced Day</i>  <i>May 23 - Last Teacher Day</i></p>
<p><i>Classroom Expectations</i>  <i>Lab Safety</i>  <i>Tools of Science</i>  <i>Introduction to Chemistry</i></p> <p><b>CHE.1 - Mathematical and Computational Analysis</b>  <i>CHE.1.1 - dimensional analysis; significant figures</i>  <i>CHE.1.2 - conduct experiments using appropriate measurements, significant figures, graphical analysis to analyze data</i>  <i>CHE.1.3 (enrichment) - research information to assess credibility, accuracy, possible bias</i></p> <p><b>CHE.2 - Atomic Theory</b>  <i>CHE.2.1 - history of atomic theory/timeline</i>  <i>CHE.2.2 - construct models of the atom</i>  <i>CHE.2.3 - electrons, energy levels, investigate absorption and emission spectra</i>  <i>CHE.2.4 - research how</i></p>	<p><b>CHE.5 - Naming Compounds</b>  <i>CHE.5.1 - polyatomic ions as models for nomenclature and formulas</i>  <i>CHE.5.2 - formulas of ionic and covalent compounds from names; lists of compounds in everyday life</i>  <i>CHE.5.3 - nomenclature of ionic and covalent compounds from formulas</i></p> <p><b>CHE.4 - Bonding</b>  <i>CHE.4.1 - develop and use models to predict types of bonds and shape of compounds</i>  <i>CHE.4.2 - use models to depict valence electrons and their role in forming ionic and covalent bonds</i>  <i>CHE.4.3 - ionic and covalent nature of different atoms based on trends and position in the periodic table</i>  <i>CHE.4.4 - use models and oxidation numbers to predict bond, shape and polarity</i>  <i>CHE.4.5 - use models of simple</i></p>	<p><b>CHE.6 Chemical Reactions continued</b> (stoichiometry, limiting reactants)  <i>CHE.6.5 - plan and conduct an investigation to produce mathematical evidence that mass is conserved; use percent error to analyze results</i>  <i>CHE.6.6 - use mathematics and computational analysis to support the concept of percent yield and limiting reagent.</i>  <i>CHE.6.7 - plan and conduct an investigation to produce evidence to predict and confirm the limiting reagent and percent yield in a reaction; compare data for validity</i></p> <p><b>CHE.7 - Gas Laws</b>  <i>CHE.7.1 - analyze the behavior of ideal and real gasses in terms of pressure, volume, temperature</i>  <i>CHE.7.2 (enrichment) - use an Engineering Design Process to develop models that explain and predict the behavior of each state</i></p>	<p><b>CHE.10 - Thermochemistry</b> (enrichment)  <i>CHE.10.1 - explain how temperature and heat flow in terms of the motion of molecules</i>  <i>CHE.10.2 - exothermic/endothermic reactions</i>  <i>CHE.10.3 - analyze and interpret data from energy diagrams and investigations to support that the amount of energy released or absorbed is related to total bond energy</i>  <i>CHE.10.4 - solve problems involving heat flow and temperature changes using known values of specific heat and latent heat</i></p> <p><b>CHE.8 - Solutions</b>  <i>CHE.8.1 - quantitatively express the concentration of solutions using concepts such as molarity, percent by mass and dilution</i>  <i>CHE.8.2 - use models to explain dissolving process in solvents at</i></p>

<p><i>absorption and emission spectra are used to study astronomy</i></p> <p><b>CHE.3 - Periodic Table</b>  <i>CHE.3.1 - history of; organization of the periodic table</i>  <i>CHE.3.2 - properties of atoms and ions; periodic trends</i>  <i>CHE.3.3 - quantum numbers (valence shell electrons, energy level, orbitals, sublevels, oxidation numbers)</i></p>	<p><i>hydrocarbons; isomerism</i>  <i>CHE.4.6 - empirical formula; percent composition of compounds</i>  <i>CHE.4.7 - conduct a scientific investigation to determine the percent composition for a substance</i>  <i>CHE.4.8 - plan and conduct a scientific investigation to produce mathematical evidence of the empirical composition of a compound</i></p> <p><b>CHE.6 - Chemical Reactions</b>  <i>CHE.6.1 - use models to predict the products of chemical reactions; types of reactions</i>  <i>CHE.6.2 - investigate different types of reactions</i>  <i>CHE.6.3 - use mathematics and computational analysis to represent the ratio of reactants and products</i>  <i>CHE.6.4 - Law of Conservation of Mass; use real-world examples as evidence</i></p>	<p><i>of matter</i>  <i>CHE.7.3 - analyze/interpret graphs to explain the relationship between the states of matter</i>  <i>CHE.7.4 - gas laws</i>  <i>CHE.7.5 (enrichment) - use models/produce evidence that confirms the gas-law relationships</i>  <i>CHE.7.6 - gas stoichiometry</i>  <i>CHE.7.7 - plan and conduct investigations to provide evidence that gasses conform to the law of conservation of mass</i>  <i>CHE.7.8 (enrichment) - calculate the volume of carbon dioxide needed to inflate a balloon to occupy a specific volume; use this to design, test and improve a simulated air bag</i></p>	<p><i>the molecular level</i>  <i>CHE.8.3 - predict the effect of temperature and pressure on solids and gasses dissolved in water</i>  <i>CHE.8.4 - test the conductivity of common ionic and covalent compounds in solution</i>  <i>CHE.8.5 - analyze molarity, molality, dilution and percentage dilution problems</i>  <i>CHE.8.6 - conduct experiments to produce a specified volume of a solution of a specific molarity, and dilute a solution of a known molarity</i>  <i>CHE.8.7 - solution stoichiometry</i>  <i>CHE.8.8 (enrichment) - investigate parts per million and/or parts per billion as it applies to environmental concerns</i></p> <p><b>CHE.9 - Acids and Bases</b> (enrichment)</p> <p><b>CHE.12 - Organic Nomenclature</b> (enrichment)</p> <p><b>CHE.11 - Equilibrium</b> (enrichment)</p>
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