

Chemistry Year at a Glance

First Six-Weeks	Second Six-Weeks	Third Six-Weeks
<ul style="list-style-type: none"> • Lab Safety • Scientific Method • Collecting, Interpret and Presenting Data • Properties of Matter • Atomic Theory 	<ul style="list-style-type: none"> • The Periodic Table • Bonding • Conservation of Mass • Chemical Reactions • Compound Stoichiometry 	<ul style="list-style-type: none"> • Reaction Stoichiometry • Solution Chemistry • Reactions in solution
Fourth Six-Weeks	Fifth Six-Weeks	Sixth-Six Weeks
<ul style="list-style-type: none"> • Molarity • Acids and Bases • Thermochemistry • Electromagnetic Radiation 	<ul style="list-style-type: none"> • Electron Arrangement • VSEPR Theory • Gas Laws 	<ul style="list-style-type: none"> • Nuclear Chemistry • Chemistry & Your Future • Critical thinking and scientific reasoning.

**Mansfield Independent School District
Chemistry
Course Outline**

1st Six Weeks

Number of Days	Topics	Concepts	TEKS
1 & Ongoing	Lab Safety	<p>Proper use and location of safety equipment in the laboratory.</p> <p>Expectations of student scientists in the laboratory.</p> <p>How to interpret a Material Safety Data Sheet (MSDS) to plan safe and ethical laboratory practices.</p> <p>Properly and responsibly use, conserve, dispose and recycle materials and chemicals.</p>	1A-1C
3 & Ongoing	<p>Scientific Method</p> <p>Collecting, Interpreting and Presenting Data</p>	<p>Properly formulate and test a hypothesis.</p> <p>Distinguish between a hypothesis, theory and law.</p> <p>Know the limitations and scope of science.</p> <p>Plan and implement laboratory investigations.</p> <p>Identify and properly utilize laboratory equipment.</p> <p>Distinguish between and use control groups, independent variables, dependent variables in scientific design.</p> <p>Collect data and make measurements with accuracy</p>	2 A-I

		<p>and precision.</p> <p>Express and manipulate quantities to include dimensional analysis, scientific notation and significant figures.</p> <p>Analyze data and make valid conclusions. Communicate data through an appropriate graph.</p> <p>Communicate findings through lab reports, graphs, journals, oral reports and other means.</p>	
5	Properties of Matter	<p>Physical and Chemical Properties</p> <p>Physical and Chemical Changes</p> <p>Intensive vs. Extensive Properties</p> <p>States of Matter</p> <p>Pure Substances and Mixtures</p>	4A-4D
4	Atomic Theory	<p>Historical Development of Modern Atomic Theory</p> <p>Composition of the atom, subatomic particles, atomic calculations to include atomic number, mass number, atomic mass, neutrons.</p> <p>Isotopes</p>	6A, 6D

2nd Six Weeks

Number of Days	Topics	Concepts	TEKS
2	The Periodic Table	Historical Development Use the Periodic Table to Explain Properties of Elements Use the Periodic Table to Predict Trends of Families and Groups of Elements.	5A-5C
5	Bonding	Valence Electrons and Octet Rule Ionic Bonding Covalent Bonding Nomenclature	7A, 7B, 7C
6	Conservation of Mass Chemical Reactions Compound Stoichiometry	Conservation of Mass and Balancing Equations Reaction Types Mole Concept Percent Composition Empirical and Molecular Formulas	8A-8D

3rd Six Weeks

Number of Days	Topics	Concepts	TEKS
5	Reaction Stoichiometry	Mass relationships, limiting reagents, percent yield.	8E
5	Solution Chemistry	Role of Water Applying Solubility Rules Factors Affecting Solubility Types of Solutions	10A, 10B, 10E, 10F
3	Solution Chemistry	Acid-Base Reactions Precipitation Reactions Redox Reactions	10H

4th Six Weeks

Number of Days	Topics	Concepts	TEKS
4	Molarity	Concentration, Molarity and Dilutions	10C, 10D
3	Acids and Bases	Acid-Base Definitions pH Scale and pH Calculations Strong and Weak Acids-Bases	10G 10I 10J
3	Thermochemistry	Types of Energy Law of Conservation of Energy Calculating Energy Changes and Classifying Exothermic or Endothermic Calorimetry	11A-11E
3	Electromagnetic Radiation	Frequency, Energy, Wavelength and their Mathematical Relationships Photoelectric effect	6B, 6C

5th Six Weeks

Number of Days	Topics	Concepts	TEKS
6	Electron Arrangement	Photoelectric Effect Electron Configuration Lewis Dot Structures Explain Metallic Properties	7C,7D, 6E
1	VSEPR Theory	VSEPR Theory	7E
6	Gas Laws	Relationships and Mathematic of Pressure, Temperature, Volume, Moles of Gases Gas Stoichiometry Kinetic of Molecular Theory of Gases	9A, 9B, 9C

6th Six Weeks

Number of Days	Topics	Concepts	TEKS
7	Nuclear Chemistry	Types of Radiation Balance Nuclear Equations Fission and Fusion Reactions	12A-12C
6& Ongoing	Chemistry & Your Future Critical thinking and scientific reasoning.	Connecting Chemistry Careers to Students Analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing. Evaluate and communicate scientific information from media such as news and television reports, nutrition labels and promotional materials. Investigate and describe potential careers in chemistry. Research and describe the history and contribution of significant scientists to the field of chemistry.	3A-F