Chemistry Curriculum Map

**Note: This map is subject to change based on teacher discretion*

Unit Number and Title	Brief Description	Lab	Estimated Length	Estimated Time of Year
1- Safety	- Introduction to Chemistry - Laboratory Safety	- Safety Demo	1 week	August
2 – Matter and Measurement	- Mass, Volume, Density - Significant Figures - Scientific Notation - Dimensional Analysis - Metric Units	- Sig Fig Lab	2 weeks	Aug – Early Sept.
3 – Atomic Theory of Matter	- Early Scientist Contributions (Democritus through Dalton) - Chemical and Physical Changes - States of Matter - Classification of Matter (Elements, Compounds, Mixtures) - Separation Techniques - Particle Diagrams	- Alchemy - Chemical and Physical Changes Lab - Separation of sand, salt, & gravel mixture - Disemboweling a Penny	3 weeks	Early Sept. – Late Sept.
4 – Atomic Structure	- Later Scientist Contributions (Thomson through Rutherford) - Protons, neutrons, and electrons - Atoms, isotopes, and ions - Atomic mass calculations	- Atomic structure stations lab - Candium lab	3 weeks	Late Sept. – Mid Oct.
5 – Periodic Table	- Mendeleev - Development of PT - Organization of PT (Families and Periods) - Periodic Table Trends - Valence Electrons and Stability	- The Day There Was No Periodic Table - Dummies Guide to PT Improvement	2 weeks	Mid Oct. – Late Oct.
6 – Light, Bohr, and Quantum	- Dual Nature of Light - Bohr and His Model - Quantum and the Modern Atom - Arrangement of p^+, $n^{0,}$ and e^- in atoms, ions, and isotopes - Electron Configurations - Relating e^- configuration to the PT	- Spectroscopes and Flame Tests Lab	2 weeks	End of Oct. – Mid Nov.
7 – VSEPR and Lewis Dot	- Lewis Dot Structures - Molecular Geometry - Intermolecular Forces	- Exploring Molecular Geometry Packet	1 week	Mid Nov. –Thanksgiving Break

8 – Bonding and Nomenclature	- Atomic vs. Ionic vs. Molecular Substances - Diatomic Elements - Lewis Structures for Molecules - Naming and Writing Formulas for Molecular Compounds - Naming and Writing Formulas for Ionic Compounds	- Ionic Compound Dice Activity	3 weeks	Late Nov. – Finals
End of first semester				
Unit Number and Title	**Brief Description**	**Labs**	**Estimated Length**	**Estimated Time of Year**
9 – Reactions and Equations	- Solubility and Molarity - Balancing Equations - Types of Reactions - Predicting Products - Energy Changes in Chemical Reactions	- Solubility Rules Lab - Types of Reactions Lab	4 weeks	Christmas Break – Mid Feb.
10 – The Mole and Numbers in Chemistry	- Relative Mass - Molar Mass - Gram to mole to particle conversions - Empirical and Molecular formulas - Percent composition - Hydrates	- Empirical formula of a hydrate	3 weeks	Mid Feb. – Spring Break
11 – Stoichiometry	- Calculating amounts of reactants or products - Limiting Reactants and Excess Reactants - Solution Stoichiometry - Percent Yield	- Pringle Can Demo - Copper Recovery Lab	3 weeks	Spring Break – Early April
12 – Acids and Bases	- Acid vs. Base characteristics - pH, pOH, $[H^+]$, $[OH^-]$ - Neutralization reactions - Titrations	- Titration of The Works Toilet Bowl Cleaner	2 weeks	Mid April – Late April
13 – Gases	- Kinetic Molecular Theory - Kelvin Temperature - Pressure - Individual Gas Laws - Ideal Gas and Combined Gas Laws	- Determining the Molar Volume of a Gas	2 weeks	Late April – Finals

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