

Chemistry Curriculum Map

Physical science encompasses physical and chemical sub-processes that occur within systems. At the high school level, students gain an understanding of these processes at both the micro and macro levels through the intensive study of matter, energy, and forces. Students are expected to apply these concepts to real-world phenomena to gain a deeper understanding of causes, effects, and solutions for physical processes in the real world. The essential standards are those that every high school student is expected to know and understand. Plus standards in chemistry and physics are designed to extend the concepts learned in the essential standards to prepare students for entry level college courses. It is suggested to use the metric system within measurement.

Notes:

- The standards referenced in this document can be found linked [here](#).
- The standard number is designed for recording purposes and does not imply instructional sequence or importance.
- In all disciplines, educators should incorporate scientific measurement skills appropriate to that discipline.
- The essential standards are those that every high school student is expected to know and understand.
- Plus standards in life science are designed to extend the concepts learned in the essential standards to prepare students for entry level college courses.

Unit #	Unit Title	Key Content	Standards
1	Atomic Structure	History of the Atom <ul style="list-style-type: none"> • Atomic Models • Subatomic particles • Isotopes • Introduction to Ions 	Essential HS.P1U1.1 Plus HS+C.P1U1.1
2	Energy and States of Matter	<ul style="list-style-type: none"> • Classification of matter • Physical vs chemical change • Density • Measurement • Claim, evidence, and reasoning 	Plus HS+C.P1U1.3 Essential HS.P4U1.8

Chemistry Curriculum Map

		<ul style="list-style-type: none"> • General Kinetic Molecular Theory of matter • Solids and liquids • Pressure, Volume and Temperature • States of Matter • Phase Diagram • Enthalpy/Heat Curve 	
3	Energy and the Electron	<ul style="list-style-type: none"> • Bohr model of atom • Light/EM Spectrum • Flame test • Periodic Trends • Electronic configuration 	Essential HS.P1U1.1 Plus HS+C.P1U1.2
4	Chemical Bonding & Intermolecular Forces	<ul style="list-style-type: none"> • Nomenclature <ul style="list-style-type: none"> ○ Ionic Compounds • Lewis Dot Structures • Bonding <ul style="list-style-type: none"> ○ Polarity ○ Molecular Geometry • Intermolecular forces 	Essential HS.P1U1.2 Essential HS.P2U1.5 Plus HS+C.P1U1.4 Plus HS+Phy.P3U1.2
5	Chemical Reactions	<ul style="list-style-type: none"> • Balancing equations • Types of reactions • Predict products • Percent Composition • Calculating empirical Formula • Moles conversions 	Essential HS.P1U1.2 Plus HS+C.P1U1.7 Plus HS+C.P1U1.5 Plus HS+C.P1U1.3

Chemistry Curriculum Map

		<ul style="list-style-type: none"> ● Mass to mass ● Limiting Reactant ● Gas laws 	
6	Chemical Reaction Systems	<ul style="list-style-type: none"> ● Solutions ● Net Ionic equations ● Concentration calculations ● Kinetics ● Acids and Bases ● Equilibrium ● Entropy ● Free energy 	Essential HS.P1U1.3 Plus HS+C.P1U1.6
7	Nuclear Chemistry	<ul style="list-style-type: none"> ● Chemistry related technologies in real world 	Essential HS.P1U3.4 Plus HS+C.P1U1.1 Plus HS+C.P1U3.8
8	**** Ethical Concepts This can go with nuclear chemistry or insert into any previous unit	<ul style="list-style-type: none"> ● Project based unit focusing on social and ethical considerations of using chemistry in real world applications. 	Essential HS.P1U3.4