

**CURRICULUM MAP**  
**CHEMISTRY 12<sup>TH</sup> GRADE**

WEEK	STANDARDS/ BENCHMARKS/ OBJECTIVES	TOPICS (Lesson Make-up)	MATERIALS/ RESOURCES/ TECHNOLOGY	PROJECTS/ ACTIVITIES/ SUPPLEMENTS	ASSESSMENT
1	Practice Safety in the Chemistry Lab	Personal safety, types of clothing to wear in the laboratory, shoes and jewelry in the laboratory, laboratory rules	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
2	Show familiarity with Glassware and Equipment used in chemistry experiments	Names and uses of various glassware and laboratory equipment, beakers, flasks, cylinders, and measuring devices	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
3	Demonstrate mastery of Basic Lab Techniques	Techniques Handling reagents, removing solids, heating and pouring liquids from test tubes, testing for odors, reading	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
4	Learn basic Measurement	liquid volumes, heating solids with and without air Rules for determining significant digits,	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied	AGS workbook; lectures and demonstrations; AGS Teacher	Required 80% minimum on A+ mastery test



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4		fractions at unity, solving problems involving fractions at unity, determining specific heat, joules	learning style delivery of assignments	Resource Library (CD ROM)	
5	Learn additional Measurements and Measurement techniques	Conversion factors and steps in converting, specific heat, dimensional analysis	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
6	Understand the Definition and classification of Matter	of matter, homogeneous and heterogeneous substances, mixtures, compounds, and solutions, intensive and extensive physical properties, physical changes and chemical reactions	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
7	Review 1	Review of measurement and matter	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Not Graded
				AGS workbook;	

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8	OGT Prep	OGT Prep	Study Island and sample test materials from ODE website	lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Not graded
9	Introduction to the basics of Atomic Structure	Defining atoms, ions, and isotopes, determining atomic mass and atomic number, calculating average atomic mass numbers	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
10	Understand Intermediate Atomic Structure	Fundamental atomic theory, shells, subshells, orbitals, and electrons, electron configurations, the diagonal rule, atomic diagram	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
11	Demonstrate mastery of Atomic Structure	Discussion and description of the quantum mechanical model of atom, predict electron placement through the	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library	Required 80% minimum on A+ mastery test



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12		use of orbitals, predict properties of atoms based on orbital diagrams, the theory of quantum mechanics, principal, secondary, magnetic, and spin quantum numbers, Paulis' Exclusion Principle, Hund's Rule	delivery of assignments	(CD ROM)	
13	Introduction to The Periodic Table	Henry Mosely, modern periodic law, the elements, representative elements, families, periods, transition and Inner-transition metals, positive and negative charges, ionization energy, electron affinity, chemical activity	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
14	Show understanding of the different types of Chemical Bonding	Evaluating atomic structures to determine if they will bond, ionic, covalent, and polar bonds, Lewis	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
	Understand naming	Nomenclature 1	A+ lesson AGS	AGS workbook;	Required 80%

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15	conventions of Inorganic binary compounds, ternary compounds, naming multivalent metals and nonmetal		book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	minimum on A+ mastery test
16	Further investigation of diagrams, polyatomic ions, Valence Shell Electron Pair Repulsion Theory, stabilizing atoms, electronegativity, bonding predictions Nonmetal compounds	Nomenclature 2	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	A+ practice test
17	Demonstrate mastery naming polyatomic ions, binary acids and oxyacids, and compound acids	Nomenclature 2 ( continued)	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	A+ Mastery test
18	Review 2	Review of periodic table, chemical bonding, and nomenclature	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test



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			assignments		
19	. Review of periodic table,	chemical bonding, and nomenclature Identifying parts and symbols of chemical equations, balancing chemical equations by inspection, reactants products, aqueous solutions	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
20	Understand the Formation of Compounds	Forming binary and ternary compounds, using the periodic chart to determine ionic charges, determining subscripts, forming compounds with polyatomic ions	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
21	Balance Synthesis Equations	18 Identifying synthesis equations and predicting products, completing and balancing single synthesis equations, diatomic elements, combining small compounds	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
				AGS workbook; lectures and	



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22	OGT prep	OGT prep	Study Island and practice test from ODE website	demonstrations; AGS Teacher Resource Library (CD ROM)	Not graded
23	Show an understanding of Single Replacement chemical reactions	Predicting production, completing and balancing the single replacement equation, predicting situations that will not produce reactions	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	A+ practice test
24	Show mastery of Single Replacement chemical reactions	Predicting production, completing and balancing the single replacement equation, predicting situations that will not produce reactions (continued)	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	A+ Mastery test
25	Show an understanding of Double Replacement chemical reactions	Recognizing double synthetic replacement equations and predicting products, diatomic elements, combining small compounds	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	A+ practice test
26	Demonstrate mastery of Double Replacement chemical reactions	Recognizing double synthetic replacement equations and predicting products, diatomic elements, combining	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library	A+ mastery test

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		small compounds (continued)	delivery of assignments	(CD ROM)	
27	Review 3	Review of synthesis equations and compounds	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
28	Introduction to the concept of the Mole	Developing a basic understanding of Avagadro's number and molar masses, using molar masses as a conversion factor	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
29	Demonstrate mastery of the Mole concept	Continuation of molar masses, conversion factors	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
30	Understand the use of Empirical Formulas	Using laboratory equipment to calculate empirical and molecular formulas, calculating theoretical yield of a reaction, calculating percent yield of a	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test

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		reaction			
31	Introduction to Equation Stoichiometry	Predicting amount of product that can be produced and comparing this amount to the amount of product actually formed. Developing a mathematical foundation for chemistry.	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
32	Understand the Properties of Gases	Description of the properties of gases, distinguishing gas from other matter, using instruments to measure and describe gas	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
33	Show understanding of The Gas Laws	Identification of gas laws, predicting change in gas behavior, describing ideal gases, Boyle's Law, Charles' Law	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Required 80% minimum on A+ mastery test
34	Demonstrate mastery of The Gas Laws	Combined gas laws, identification of variables and equations, pressure in the atmosphere,	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied	AGS workbook; lectures and demonstrations; AGS Teacher	Required 80% minimum on A+ mastery test



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		volume, temperature, universal symbols	learning style delivery of assignments	Resource Library (CD ROM)	
35	Review 4 Review for final exam	Review of gases and laws Review all material from the course	A+ lesson AGS book; A+ auditory option DVD/audio options; Varied learning style delivery of assignments	AGS workbook; lectures and demonstrations; AGS Teacher Resource Library (CD ROM)	Not Graded
36	Final Exam	Covers all material from this year	A+ on line test		60% minimum required