# Conceptual Chemistry

## Unit 1 Matter and Change

| Estimated Time Frame for unit | Big Ideas | Essential Question | Concept | Competency | Suggested Resources and Materials | Vocabulary | PA Content /Keystone Standard |
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| **2 weeks** | Chemistry is the study of matter and the changes it undergoes. | What are the differences between pure substances and mixtures? | Elements and compounds are identified as pure substances according to the law of definite composition. | Students should be able to compare and contrast elements, compounds and mixtures. | Prentice Hall Chemistry Textbook<br><br>Matter and Change power point<br><br>Worksheets on Matter and Change<br><br>Lab: Mysterious Solutions 5 | Mass<br>Volume<br>Substance<br>Physical property<br>Solid<br>Liquid<br>Gas<br>Vapor<br>Physical change | CHEM.B.1.2.2 |
| | Chemistry is the study of matter and the changes it undergoes. | What are the differences between pure substances and mixtures? | Mixtures can be separated by physical means because the different components have different properties. | Students should be able to separate a mixture using the physical properties of its components. | Prentice Hall Chemistry Textbook<br><br>Matter and Change power point<br><br>Worksheets on Matter and Change<br><br>Lab: Separating a Mixture | Mixture<br>Heterogeneous mixture<br>Homogeneous mixture<br>Solution<br>Phase<br>Filtration<br>distillation | CHEM.A.1.2.2 |
| | Chemistry is the study of matter and the changes it undergoes. | What are the differences between pure substances and mixtures? | A substance can be described with both physical and chemical properties. A substance can undergo both physical and chemical changes. | Students should be able to classify properties and changes as physical or chemical. | Matter and Change power point<br><br>Worksheets on Matter and Change | | CHEM.A.1.1.1<br>CHEM.A.1.1.2 |

| Review Unit 1 Matter and Change | | | | | | | |
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| **Assessment Unit 1 Matter and Change** | | | | | | | |
| **Unit 2 Scientific Measurement** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **3 weeks** | Chemistry is the study of matter and the changes it undergoes. | What kinds of calculations are required in chemical investigations? | Scientific notation is used when dealing with very large and very small numbers. | Students should be able to convert measurements to scientific notation. | Scientific Measurement power point<br><br>Worksheets on Scientific Notation<br><br>Test on Scientific Notation<br><br>Test Lab Safety | Measurement<br>Scientific notation | M08.B-E.1.1.3<br>M08.B-E.1.1.4 |
| | Chemistry is the study of matter and the changes it undergoes. | What kinds of calculations are required in chemical investigations? | The use of significant figures assures that quantitative observations are both accurate and precise. | Students should be able to determine the number of significant figures in a measurement and in a calculated answer. | Scientific Measurement power point<br><br>Worksheets on Significant Figures<br><br>Lab: Measuring Volumes Using Significant Figures<br><br>Test on Significant Figures | Significant figures | CHEM.A.1.1.3 |
| | Chemistry is the study of matter and the changes it undergoes. | What kinds of calculations are required in chemical | The use of significant figures assures that quantitative | Students should be able to apply the technique of dimensional | Scientific Measurement power point | International system of units<br>Meter<br>Liter | CHEM.A.1.1.3<br>M07.A-R.1.1.1 |

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| | | investigations? | observations are both accurate and precise. | analysis to a variety of conversion problems.<br><br>Students should be able to convert complex units using dimensional analysis.<br><br>Students should be able to convert between the Celsius and Kelvin temperature scales. | Worksheets on Metric, English and Volumetric Conversions.<br><br>Lab: Measuring Volume and Mass<br><br>Test on Conversions | Kilogram<br>Gram<br>Weight<br>Temperature<br>Celsius scale<br>Kelvin scale<br>Absolute zero<br>Conversion factor<br>Dimensional analysis | |
| | Chemistry is the study of matter and the changes it undergoes. | What kinds of calculations are required in chemical investigations? | The density of a substance can be determined by dividing its mass by its volume. | Students should be able to calculate the density of a material from experimental data. | Scientific Measurement power point<br><br>Worksheets on Density<br><br>Lab: Density of Metals | Density | CHEM.A.1.1.3 |
| | Chemistry is the study of matter and the changes it undergoes. | What kinds of calculations are required in chemical investigations? | Chemists use percent error in order to evaluate their performance in the laboratory or the performance of their equipment. | Students should be able to evaluate their performance in the laboratory by calculating the percent error involved. | Scientific Measurement power point | Accuracy<br>Precision<br>Accepted value<br>Experimental value<br>Error<br>Percent error | CHEM.A.1.1.3 |
| **Review Unit 2 Scientific Measurement** | | | | | | | |
| **Assessment Unit 2 Scientific Measurement** | | | | | | | |

# Unit 3 Atomic Structure

| Estimated Time Frame for unit | Big Ideas | Essential Question | Concept | Competency | Suggested Resources and Materials | Vocabulary | PA Content/Keystone Standard |
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| **3 weeks** | Atomic theory is the foundation for the study of chemistry. | In what ways has the theory of the atom changed over time due to technological improvements? | The theory of the atom has changed over time because of improvements in technology. | Students should be able to compare and contrast the ideas of Democritus, Dalton, Thomson, Rutherford, and Bohr regarding the structure of the atom. | Atomic Structure power point<br><br>Poster Presentation on the History of Atomic Theory<br><br>Test on Memorizing the Most Common Elements | Atom<br>Dalton's Atomic Theory | CHEM.A.2.1.1 |
| | Atomic theory is the foundation for the study of chemistry. | In what ways has the theory of the atom changed over time due to technological improvements? | Atoms are made up of smaller particles including protons, neutrons, electrons, quarks, etc. | Students should be able to describe the structure of atoms according to the Rutherford atomic model.<br><br>Students should be able to determine the atomic number, mass number, charge, and numbers of protons, neutrons and electrons of any atom, isotope, or ion using the periodic table. | Atomic Structure power point<br><br>Activity Bohr Models<br><br>Worksheets on Atomic Structure<br><br>Test on Atomic Structure | Electrons<br>Cathode ray<br>Protons<br>Neutrons<br>nucleus<br>Atomic number<br>Mass number | CHEM.A.2.1.1 |
| | Atomic theory is the foundation for the study of chemistry. | In what ways has the theory of the atom changed over time due to technological | Average atomic masses of the elements are reported on the periodic table. | Students should be able to calculate the atomic mass of an element given | Atomic Structure power point<br><br>Worksheets on Atomic Mass | Atomic mass unit<br>Atomic mass<br>Isotopes | CHEM.A.2.1.2 |

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| | | improvements? | | its isotopes and their relative abundances. | Lab: Isotopes and Calculating Atomic Mass | | |
| **Review Unit 3 Atomic Structure** | | | | | | | |
| **Assessment Unit 3 Atomic Structure** | | | | | | | |
| **Unit 4 Electrons in Atoms** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **2 weeks** | Atomic theory is the foundation for the study of chemistry. | What factors determine the types of chemical bonds that form between particles? | Electrons are found in quantized energy levels within the atom. | Student should be able to describe the energies and positions of electrons according to the quantum mechanical model.<br><br>Students should be able to describe how the shapes of orbitals related to different sublevels differ. | Electrons in Atoms power point<br><br>Activity: Properties of Light<br><br>Lab: Flame Tests<br><br>Lab: Orbital Shapes<br><br>Worksheets on Atomic Orbitals | Energy levels<br>Quantum<br>Quantum mechanical model<br>Atomic orbital | CHEM.A.2.2.4 |
| | Atomic theory is the foundation for the study of chemistry. | What factors determine the types of chemical bonds that form between particles? | The electronic structure within atoms is predicted by the Aufbau Principle, the Pauli Exclusion Principle, and Hund's Rule, giving the atom its | Students should be able to write the electron configuration and the orbital notation of an element using the Aufbau | Electrons in Atoms power point<br><br>Test Electron Configuration and Orbital Notation | Electron configuration<br>Aufbau principle<br>Pauli exclusion principle<br>Hund's rule | CHEM.A.2.2.1<br><br>CHEM.A.2.2.3 |

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| | | | most stable arrangement. | Principle, the Pauli Exclusion Principle and Hund's Rule. | | | |
| **Review Unit 4 Electrons in Atoms** | | | | | | | |
| **Assessment Unit 4 Electrons in Atoms** | | | | | | | |
| **Unit 5 The Periodic Table** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **2 weeks** | Periodic trends in the properties of atoms allow for the prediction of physical and chemical properties. | How were the periodic trends exhibited by the elements used in the construction of the Periodic Table. | Chemical periodicity is the basis for the arrangement of the periodic table. | Students should be able to explain how elements are organized in the periodic table.<br><br>Students should be able to classify elements as metals, nonmetals or metalloids. | The Periodic Table power point<br><br>Worksheets on metals, nonmetals and metalloids<br><br>Lab: Crayon | Periodic table<br>Period<br>Group<br>Periodic law<br>Metals<br>Nonmetals<br>Metalloids | CHEM.A.2.3.1 |
| | Periodic trends in the properties of atoms allow for the prediction of physical and chemical properties. | How were the periodic trends exhibited by the elements used in the construction of the Periodic Table. | Trends in the periodic table can predict the properties and behaviors of elements. | Students should be able to predict the properties of an element based on its location on the periodic table. | The Periodic Table power point<br><br>Worksheets on trends of the periodic table<br><br>Lab: Chemical Periodicity | Alkali metals<br>Alkaline earth metals<br>Halogens<br>Noble gases<br>Representative elements<br>Transition metal<br>Inner transition metal | CHEM.A.2.2.2<br>CHEM.A.2.3.2 |
| **Review Unit 5 The Periodic Table** | | | | | | | |

| Assessment Unit 5 The Periodic Table | | | | | | | |
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| **Unit 6 Chemical Bonding** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **3 Weeks** | Chemical bonding occurs as a result of attractive forces between particles. | What factors determine the types of chemical bonds that form between particles? | The type of bonding that occurs between atoms is related to the valence electrons of those atoms. | Students should be able to determine the number of valence electrons in an atom of a representative element.<br><br>Students should be able to explain using the octet rule why cations and anions form. | Chemical Bonding power point<br><br>Worksheets on ion formation<br><br>Activity: Bohr Models<br><br>Interactive Online Activity | Valence electrons<br>Electron dot structures<br>Octet rule<br>Halide ions | CHEM.A.1.1.4 |
| | Chemical bonding occurs as a result of attractive forces between particles. | What factors determine the types of chemical bonds that form between particles? | Chemical bonding can be covalent, polar covalent, or ionic. | Students should be able to explain using the octet rule why covalent and ionic compounds form. | Chemical Bonding power point<br><br>Worksheets on bonding<br><br>Lab: Salts<br><br>Lab: Covalent Compounds | Ionic compounds<br>Ionic bonds<br>Chemical formula<br>Formula unit<br>Covalent bond<br>Molecule<br>Diatomic molecule<br>Molecular compound<br>Molecular formula<br>Single covalent bond<br>Unshared pair<br>Double covalent bond<br>Triple covalent bond<br>Nonpolar covalent bond<br>Polar covalent bond<br>Polar bond<br>Polar molecule<br>Hydrogen bonds | CHEM.A.1.1.4<br>CHEM.B.1.3.1<br>CHEM.B.1.3.2<br>CHEM.B.1.4.1 |

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| | Chemical bonding occurs as a result of attractive forces between particles. | What factors determine the types of chemical bonds that form between particles? | Lewis dot diagrams are useful for studying the structure and bonding nature atoms. | Students should be able to create the lewis dot structures of common ionic and covalent compounds and ions. | Chemical Bonding power point<br><br>Worksheets on lewis dot structures | Structural formula | CHEM.B.1.3.3<br>CHEM.B.1.4.1<br>CHEM.B.1.4.2 |
| **Review Unit 6 Chemical Bonding** | | | | | | | |
| **Assessment Unit 6 Chemical Bonding** | | | | | | | |
| **Unit 7 Chemical Names and Formulas** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **3 weeks** | Chemistry is the study of matter and the changes it undergoes. | What are the rules involved in naming chemical compounds? | Formula writing and naming of compounds follows a systematic set of rules. | Students should be able to recall the formula for the most common ions. | Chemical Names and Formulas power point<br><br>Worksheets on naming the ions | Monatomic ion<br>Polyatomic ion | CHEM.A.1.1.5 |
| | Chemistry is the study of matter and the changes it undergoes. | What are the rules involved in naming chemical compounds? | Formula writing and naming of compounds follows a systematic set of rules. | Students should be able to apply the rules for naming and writing formulas for binary and ternary ionic compounds | Chemical Names and Formulas power point<br><br>Worksheets on writing formulas and naming compounds<br><br>Activity: Vitamins | Binary compound<br>Ternary compound | CHEM.A.1.1.5 |
| | Chemistry is the study of matter and the changes it undergoes. | What are the rules involved in naming chemical compounds? | Formula writing and naming of compounds follows a systematic set of | Students should be able to apply the rules for naming and writing formulas | Chemical Names and Formulas power point<br><br>Worksheets on | Acid<br>Base | CHEM.A.1.1.5 |

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| | | | rules. | of covalent compounds and acids. | writing formulas and naming compounds | | |
| **Review Unit 7 Chemical Names and Formulas** | | | | | | | |
| **Assessment Unit 7 Chemical Names and Formulas** | | | | | | | |
| **Unit 8 Chemical Quantities** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **2 weeks** | Chemical reactions are predictable. | How do stoichiometric ratios relate reactants to products in a chemical reaction? | Dimensional analysis is a mathematical technique that can be used to express stoichiometric relationships. | Students should be able to calculate the mass of a mole of a compound.<br><br>Students should be able to convert between the moles, volume, number of particles and mass of a compound. | Chemical Quantities power point<br><br>Worksheets on molar conversions<br><br>Activity: Paperclips<br><br>Activity: % Composition<br><br>Lab: Empirical Formulas | Mole<br>Avogadro's number<br>Representative particle<br>Molar mass<br>Avogadro's hypothesis<br>Standard temperature and pressure<br>Molar volume<br>Percent composition<br>Empirical formula | CHEM.B.1.1.1<br>CHEM.B.1.2.1<br>CHEM.B.1.2.3 |
| **Review Unit 8 Chemical Quantities** | | | | | | | |
| **Assessment Unit 8 Chemical Quantities** | | | | | | | |
| **Unit 9 Chemical Reactions** | | | | | | | |

| Estimated Time Frame for unit | Big Ideas | Essential Question | Concept | Competency | Suggested Resources and Materials | Vocabulary | PA Content/Keystone Standard |
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| **3 weeks** | Chemical reactions are predictable. | What factors identify the types of chemical reactions? | Common chemical reactions can be categorized as synthesis, decomposition, single replacement, double replacement, or combustion. | Students should be able to write word equations for chemical reactions. | Chemical Reactions power point<br><br>Worksheets on writing word equations | Chemical equation<br>Skeleton equation<br>Catalyst<br>Coefficients<br>Balanced equation | CHEM.A.1.1.5 |
| | Chemical reactions are predictable. | What factors identify the types of chemical reactions? | Common chemical reactions can be categorized as synthesis, decomposition, single replacement, double replacement, or combustion. | Students should be able to balance chemical equations in order to satisfy the law of conservation of mass. | Worksheets on balancing equations<br><br>Demo: magnetic models on the board<br><br>Test: word equations and balancing equations | | CHEM.B.2.1.5 |
| | Chemical reactions are predictable. | What factors identify the types of chemical reactions? | Common chemical reactions can be categorized as synthesis, decomposition, single replacement, double replacement, or combustion. | Students should be able to classify chemical reactions as synthesis, decomposition, single replacement, double replacement or combustion. | Worksheets on classifying chemical reactions<br><br>Activity: Poster Project on the 5 Types of Chemical Reactions | Combination reaction<br>Decomposition reaction<br>Single-replacement reaction<br>Activity series<br>Double-replacement reaction<br>Combustion reaction | CHEM.B.2.1.3 |
| | Chemical reactions are predictable. | What factors identify the types of chemical reactions? | Common chemical reactions can be categorized as synthesis, decomposition, single replacement, double replacement, or | Students should be able to predict the products of a chemical reaction. | Worksheets on predicting products<br><br>Lab: Types of Chemical Reactions | | CHEM.B.2.1.4 |

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| | | | combustion. | | | | |
| **Review Unit 10 Chemical Reactions** | | | | | | | |
| **Assessment Unit 10 Chemical Reactions** | | | | | | | |
| **Unit 10 Stoichiometry** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **2 weeks** | Chemical reactions are predictable. | How do stoichiometric ratios relate reactants to products in a chemical reaction? | According to the law of conservation of matter, the mass of the products in a chemical reaction is equal to the mass of the reactants.<br><br>Dimensional analysis is a mathematical technique that can be used to express stoichiometric relationships.<br><br>The amounts of reactants and products involved in a chemical reaction can be predicted using mole relationships. | Students should be able to explain how balanced chemical equations apply to both chemistry and everyday situations.<br><br>Students should be able to interpret balanced chemical equations in terms of moles, representative particles, mass, and gas volume at STP. | Stoichiometry power point<br><br>Worksheets on stoichiometry<br><br>Activity: Stoichiometric Flash Cards<br><br>Lab: Stoichiometry | Stoichiometry<br>Mole ratio | CHEM.B.2.1.2<br>CHEM.B.2.2.2 |
| | Chemical reactions are predictable. | How do stoichiometric ratios relate reactants to | A chemical reaction will proceed until equilibrium is | Students should be able to construct mole ratios from | Stoichiometry power point<br><br>Worksheets on | Limiting reagent<br>Excess reagent<br>Theoretical yield<br>Actual yield | CHEM.B.2.1.1 |

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| | | products in a chemical reaction? | reached or until a limiting reactant is exhausted. | balanced chemical equations and apply these ratios in stoichiometric calculations. | limiting reagents<br><br>Activity: Limiting Reagents<br><br>Lab: Smores | Percent yield | |
| **Review Unit 10 Stoichiometry** | | | | | | | |
| **Assessment Unit 10 Stoichiometry** | | | | | | | |
| **Unit 11 Thermochemistry** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **2 weeks** | Changes in matter are accompanied by changes in energy. | How are changes in matter accompanied by changes in energy? | Observing Heat Flow<br><br>There is a energy change during a chemical or physical reaction. | Students should be able to classify processes as either exothermic or endothermic. | Thermochemistry power point<br><br>Worksheets on thermochemistry<br><br>Activity: Three States of Matter<br><br>Lab: A Cool Glass of Water<br><br>Lab: Specific Heat of a Metal<br><br>Lab: Specific Heat of a Liquid | Thermochemistry<br>Heat<br>System<br>Surroundings<br>Law of conservation of energy<br>Endothermic process<br>Exothermic process<br>Heat capacity<br>Specific heat | 3.2.C.B3 |
| | Changes in matter are accompanied by changes in energy. | How are changes in matter accompanied by changes in energy? | Observing Heat Flow<br><br>There is a energy change during a chemical or physical reaction. | Students should be able to classify the enthalpy change that occurs when a substance melts, freezes, boils, | Thermochemistry power point<br><br>Worksheets on thermochemistry<br><br>Lab: Phase Changes | Molar heat of fusion<br>Molar heat of solidification<br>Molar heat of vaporization<br>Molar heat of condensation | 3.2.C.B3 |

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| | | | | condenses or dissolves. | of Ice | Molar heat of solution | |
| **Review Unit 11 Thermochemistry** | | | | | | | |
| **Assessment Unit 11 Thermochemistry** | | | | | | | |
| **Unit 12 Acids and Bases** | | | | | | | |
| **Estimated Time Frame for unit** | **Big Ideas** | **Essential Question** | **Concept** | **Competency** | **Suggested Resources and Materials** | **Vocabulary** | **PA Content/Keystone Standard** |
| **3 weeks** | Chemical reactions are predictable. | What happens when an acid and base are added together? | An acid-base reaction is a chemical reaction that occurs between an acid and a base. | Students should be able to define properties of acids and bases. | Acids and Bases power point<br><br>Worksheets on acids and bases<br><br>Lab: Chromatography of Skittles<br><br>Lab: Titrations | Hydronium ion<br>Neutral solution<br>Acidic solution<br>Basic solution<br>pH<br>strong acids<br>weak acids<br>neutralization reactions<br>titration | 3.2.C.A.4<br>CHEM.B.2.1.4 |
| | Chemical reactions are predictable. | What happens when an acid and base are added together? | An acid-base reaction is a chemical reaction that occurs between an acid and a base. | Students should be able to compare and contrast acids and bases as defined by the theories of Arrhenius, Bronsted-Lowry, and Lewis. | Acids and Bases power point<br><br>Worksheets on acids and bases | Conjugate acid<br>Conjugate base<br>Conjugate acid-base pair<br>Lewis acid<br>Lewis base | 3.2.C.A.4<br>CHEM.B.2.1.4 |
| **Review Unit 12 Acids and Bases** | | | | | | | |
| **Assessment Unit 12 Acids and Bases** | | | | | | | |

## Unit 13 The Behavior of Gases

| Estimated Time Frame for unit | Big Ideas | Essential Question | Concept | Competency | Suggested Resources and Materials | Vocabulary | PA Content/Keystone Standard |
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| **2 weeks** | Atomic theory is the foundation for the study of chemistry. | How are temperature, volume and pressure related for a gas? | Mathematic relationships can be used to predict changes in temperature and pressure of gaseous systems. | Students should be able to describe the relationships among the temperature, pressure, and volume of a gas. | The Behavior of Gases power point<br><br>Worksheets on the gas laws<br><br>Lab: What Charles' Law Boyles Down To | Compressibility<br>Boyle's law<br>Charles's law<br>Gay-Lussac's law | CHEM.B.2.2.1 |
| | Atomic theory is the foundation for the study of chemistry. | How are temperature, volume and pressure related for a gas? | Mathematic relationships can be used to predict changes in temperature and pressure of gaseous systems. | Students should be able to use the combined gas law to solve problems. | The Behavior of Gases power point<br><br>Worksheets on the gas laws<br><br>Lab: Cartesian Divers<br><br>Lab: Molar Mass of Butane | Combined gas law | CHEM.B.2.2.1 |
| **Review Unit 13 The Behavior of Gases** | | | | | | | |
| **Assessment Unit 13 The Behavior of Gases** | | | | | | | |

## Unit 14 Solutions

| Estimated Time Frame for unit | Big Ideas | Essential Question | Concept | Competency | Suggested Resources and Materials | Vocabulary | PA Content/Keystone Standard |
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| **2 weeks** | Chemistry is the study of matter and the changes it | What is one way to measure the concentration of | Molarity is one way to measure the concentration | Students should be able to identify the | Solutions power point<br><br>Worksheets on | Saturated solution<br>Solubility<br>Unsaturated solution | CHEM.A.1.2.1<br>CHEM.A.1.2.3<br>CHEM.A.1.2.5 |

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| | undergoes. | a solution? | of a solution. | factors that determine the rate at which a solute dissolves. | solutions<br><br>Lab: Supersaturated Solutions | Supersaturated solution | |
| | Chemistry is the study of matter and the changes it undergoes. | What is one way to measure the concentration of a solution? | Molarity is one way to measure the concentration of a solution. | Students should be able to solve problems involving the molarity of a solution. | Solutions power point<br><br>Worksheets on solutions | Molarity | CHEM.A.1.2.4 |
| | Chemistry is the study of matter and the changes it undergoes. | What is one way to measure the concentration of a solution? | Molarity is one way to measure the concentration of a solution. | Students should be able to describe the effect of dilution on the total moles of solute in solution. | Solutions power point<br><br>Worksheets on solutions | Concentration<br>Dilute solution<br>Concentrated solution | CHEM.A.1.2.4 |
| **Review Unit 14 Solutions** | | | | | | | |
| **Assessment Unit 14 Solutions** | | | | | | | |