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| Pacing Guide 2016  Chemistry  Portland High School (Delene Huggins and Ashley Hager) | | | |
| **Time**  **(Days)** | **Topics and Concepts** | **Standards Covered** | **Labs/Extra Assignments** |
| 4 | **Math in Chemistry**  Conversions, SI base units, Accuracy/Precision, Scientific Notation, Significant Figures, Density, Graphs, Temperature | SPI 3221.MATH.1  SPI 3221.MATH.2 | Measurement Lab  Density Lab |
| 4 | **The Scientific Model**  Physical and chemical properties & changes, Steps of the scientific method, Homogeneous/Heterogeneous mixtures, Particle arrangement | SPI 3221.2.1  SPI 3221.2.4  SPI 3221.2.6 | Physical and Chemical Properties and Changes DEMO (Phenol red, Calcium chloride, and Baking soda)  Popcorn and Butter Lab |
| 5 | **The Atom**  Atomic theory, Law of Conservation of Mass, Law of Definite Proportions, Discovery of the Atom, Protons/Neutrons/Electrons, Isotopes, Atomic number, Mass number, Bohr Model, Quantum Model | SPI 3221. 1.1  SPI 3221.1.2 | Flame Test Lab |
| 6  \*\*Benchmark Test #1 | **The Periodic Table**  Development, Periodic Law, Trends, Valence Electrons, Lewis Dot Structures, Octet Rule, Electron Configuration, Electron Cloud Shaping | SPI 3221.1.2  SPI 3221.1.3  SPI 3221.1.4  SPI 3221.1.5 |  |
| 4 | **Chemical Bonding**  Covalent/Ionic Bonds and Structures, Electrolytes/Nonelectrolytes, Metallic Bonding, Cations/Anions | SPI 3221.3.1 | Urea Cold-Packs (V) |
| 5 | **Acids and Bases**  Types of Acids and Bases, Characteristics, pH, Concentration, Titration | SPI 3221.3.7 | Acid-Base Properties of Household Properties |
| 7 | **Chemical Formulas**  Naming Ionic and Covalent Bonds, Naming Acids and Bases, Formula Mass, Molar Mass, Percentage Composition, Molecular and Empirical Formulas | SPI 3221.3.1 |  |
| 5 | **Chemical Equations and Reactions**  Writing and Balancing Equations, Types of Reactions | SPI 3221.3.2  SPI 3221.3.3  SPI 3221.3.4 | Types of Reactions DEMO |
| 7  \*\*Benchmark #2 | **Stoichiometry**  Converting from mass/moles/molecules, Converting quantities, Limiting Reagents, Percentage Yield, Percentage Composition, Molar Ratio | SPI 3221.3.4  SPI 3221.3.5 | Soil Contamination Lab |
| 3 | **Liquids and Solids**  Viscosity, Phase Changes, Phase Diagrams, Kinetic Molecular Theory, Le Chateliers Principle, Vapor Pressure, Boiling and Melting Point | SPI 3221.2.6 | Phase Change Lab |
| 6 | **Solutions**  Solute/Solvent, Dilution, Molarity/Molality, Solubility, Colligative Properties, Suspensions/Colloids/Solutions, Saturated/Unsaturated/Supersaturated | SPI 3221.2.2  SPI 3221.2.3 | Colligative Properties of Solutions (V) |
| 5 | **Gases**  Pressure, Gas Laws, Ideal Gas Law/STP, Diffusion and Effusion, Dalton’s Law of Partial Pressure | SPI 3221.2.7  SPI 3221.3.6 |  |
| 4 | **Thermochemistry**  Endothermic/Exothermic, Heat of Fusion, Heat of Vaporization, Specific Heat, Enthalpy | SPI 3221.2.5 | Calorimetry Lab  Baking Soda & Vinegar Investigations Lab (V) |
| 2 | **Nuclear Reactions**  Types, Equations, Half-life | SPI 3221.3.8 |  |
| \*\* EOC Review | | | |