Chemistry Sequence of Assessed Standards

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| **Standard** | | **Tri 1** | **Tri 2** | **Tri 3** |
| S1 | Scientific Experimentation | | | |
| S1.1 | Plan a scientific investigation to test a hypothesis. | **x** | **x** | **x** |
| S1.3 | Record data by using appropriate graphic representations (including charts, graphs, and labeled diagrams). | **x** | **x** | **x** |
| S1.4 | Draw conclusions from scientific evidence and indicate whether further information is needed to support a specific conclusion. | **x** | **x** | **x** |
| S22 | Takes Measurements, Performs Calculations and Converts SI units using Dimensional Analysis | | | |
| S22.1 | Identify and use lab equipment and techniques properly. | **x** | **x** | **x** |
| S22.2 | Calculate and describe density. | **x** | **x** | **x** |
| S22.3 | Use dimensional analysis to convert units. |  | **x** | **x** |
| S22.4 | Take and express measurements with the correct precision and accuracy. | **x** | **x** | **x** |
| S23 | Describe the Properties of Matter | | | |
| S23.1 | Classify and describe properties of matter. | **x** | **x** | **x** |
| S23.2 | Classify and describe changes of matter. | **x** | **x** | **x** |
| S24 | Describe the Structure of Matter | | | |
| S24.1 | Summarize the development of atomic theory. | **x** | **x** | **x** |
| S24.2 | Describe the atomic structure of elements. | **x** | **x** | **x** |
| S24.3 | Explain the wave properties of matter. | | | |
| S24.4 | Describe the quantum structure of electron orbitals. | **x** | **x** | **x** |
| S24.5 | Describe the electron configuration of an atom or ion. | **x** | **x** | **x** |
| S25 | Uses the Periodic Table to Describe Trends In Elements, Groups, Categories of Elements and Compounds | | | |
| S25.1 | Describe the development of the Periodic Table of the Elements. | **x** | **x** | **x** |
| S25.2 | Identify trends in the organization of the periodic table. | **x** | **x** | **x** |
| S26 | Predicts and Describes Chemical Composition and Bonding | | | |
| S26.1 | Describe and predict the structure of a molecule formed by ionic bonding. | **x** | **x** | **x** |
| S26.2 | Write the formulas and names of compounds. | **x** | **x** | **x** |
| S26.3 | Describe and predict the structure of a molecule formed by covalent bonding. |  | **x** | **x** |
| S26.4 | Draw Lewis structures for covalent molecules. |  | **x** | **x** |
| S26.5 | Explain the effects of a covalent molecule's structure. |  | **x** | **x** |
| S26.7 | Compare and contrast different types of bonding. | **x** | **x** | **x** |
| S27 | Moles and Formulas | | | |
| S27.1 | Define and make conversions using moles. |  | **x** | **x** |
| S27.2 | Distinguish between and find empirical and molecular formulas. |  | **x** | **x** |
| S28.1 | Identify parts of an equation, classify types of reactions and predict the products of chemical reactions. |  | **x** | **x** |
| S28.2 | Balance chemical reactions. |  | **x** | **x** |
| S28.3 | Describe and predict the formations of ionic solutions. |  | **x** | **x** |
| S28.4 | Solve problems using stoichiometry. |  |  | **x** |
| S28.5 | Solve problems involving limiting and excess reactants. |  |  | **x** |
| S29.1 | Define and solve problems involving the First Law of Thermodynamics. |  | **x** | **x** |
| S30.3 | Define and solve problems involving chemical equilibria. |  | **x** | **x** |
| S33 | Categories of Matter and their Properties | | | |
| S33.1 | Describe the kinetic molecular theory and real versus ideal gases. |  |  | **x** |
| S33.2 | Define pressure and explain how gases move. |  |  | **x** |
| S33.3 | Explain the relationships of the pressure, volume, temperature, and number of moles of a gas and calculate their values using the gas laws. |  |  | **x** |
| S33.4 | Analyze intermolecular forces in different states of matter. |  |  | **x** |
| S33.5 | Characterize solutions. |  |  | **x** |
| S33.6 | Describe and calculate the concentration of a solution. |  |  | **x** |
| S33.7 | Compare acids and bases and define their properties. |  |  | **x** |
| S33.8 | Explain and calculate the pH of a solution. |  |  | **x** |
| S33.9 | Explain the reactions of acids and bases. |  |  | **x** |