



Chemistry Curriculum Pacing Guide Properties and Bonding

Crosscutting Concepts: Patterns, Cause and Effect, Scale, proportion, and quantity, System and System Models, Energy and Matter

Topics: Chemical and physical properties, Intermolecular forces, Intramolecular forces, Law of conservation of matter, Indicators of a chemical reaction, Effect of a catalyst, Material science and material engineering, Covalent (polar and nonpolar) and ionic bonding, Metallic bonding, Electronegativity, Bonding configurations

4 Week Instructional Segments

Anchoring Phenomenon	Standard	Instructional Segments	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
Elephant Toothpaste	SC1.c, f SC2.a, b, c, d, e SC2.b, c, d, e SC3.b SC4.c SC5.b, c	Properties of Matter Bonding Basics	Frameworks of K-12 Science Education: <i>By the end of grade 12</i> PS1.A: Structure and Properties of Matter PS2.B: Types of Interactions <ul style="list-style-type: none"> Explain the structure & properties of matter using attraction & repulsion between electric charges Abundance of stable isotopes PS3.B: Conservation of Energy and Energy Transfer <ul style="list-style-type: none"> Conservation of energy 	<ul style="list-style-type: none"> Planning and carrying out investigations Obtaining, evaluating, and communicating information 	By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE. <ul style="list-style-type: none"> Chemical change Physical change Dissolving Intermolecular forces Intramolecular forces Law of Conservation of Matter Indicators Catalyst Covalent bonds Ionic bonds Polar Non-polar Dipole Electronegativity

This instructional segment will connect to SC3a. and b. where students will investigate chemical reactions and consider a range of factors in order to predict reaction products; develop particle drawings that represent the rearrangement of atoms during a reaction type; and develop a strategy for balancing and classifying chemical equations.