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Chemistry Concepts & Standard Alignments (NGSS, CCSS)

Correlations to Next Generation Science Standards

Article	Chemistry Concepts	NGSS Connections
Milk: It's What's Growing in the Garden	Physical properties Molecular structure Organic chemistry Polymers Solubility	**HS-PS1-3.** Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. **Disciplinary Core Ideas:** • PS.1.A: Structure and properties of matter **Crosscutting Concepts:** • Structure and function • Stability and change **Science and Engineering Practices:** • Obtaining, evaluating, and communicating information **Nature of Science:** • Science is a human endeavor.
Can Plants Fuel Champions?	Organic chemistry Molecular structure Polymers Saturated vs. unsaturated	**HS-LS1-5.** Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy **HS-LS1-6.** Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules. **Disciplinary Core Ideas:** • PS.1.A: Structure and properties of matter • LS1.A: Structure and function • LS1.C: Organization for matter and energy flow in organisms **Crosscutting Concepts:** • Energy and matter • Structure and function • Stability and change **Science and Engineering Practices:** • Engaging in argument from evidence • Obtaining, evaluating, and communicating information **Nature of Science:** • Science is a human endeavor.

Bringing Back the Sense of Smell	Gases Vapor pressure Intermolecular forces	**HS-PS1-3.** Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. **HS-ETS1-2.** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. **Disciplinary Core Ideas:** • PS.1.A: Structure and Properties of Matter • ETS1.A: Defining and delimiting engineering problems **Crosscutting Concepts:** • Structure and function • Systems and system models **Science and Engineering Practices:** • Constructing explanations (for science) and designing solutions (for engineering) **Nature of Science:** • Science addresses questions about the natural and material world.
Beyond Glass: Making Wood Transparent	Molecular structure Polymers Physical properties	**HS-PS1-3.** Plan and conduct an investigation to gather evidence to compare the structure of substances at the bulk scale to infer the strength of electrical forces between particles. **HS-ETS1-2.** Design a solution to a complex real-world problem by breaking it down into smaller, more manageable problems that can be solved through engineering. **Disciplinary Core Ideas:** • PS.1.A: Structure and Properties of Matter • ETS1.C: Optimizing the design solution **Crosscutting Concepts:** • Scale, proportion, and quantity • Structure and function **Science and Engineering Practices:** • Asking questions (for science) and defining problems (for engineering) **Nature of Science:** • Scientific knowledge assumes an order and consistency in natural systems.