**February/March 2015 Correlations to the Next Generation Science Standards**

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| **Article** | **NGSS** |
| **ChemDemos Demystified**  |

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| **HS-PS1-5.**Apply scientific principles and evidence to provide an explanation about the effects of changing the temperature or concentration of the reacting particles on the rate at which a reaction occurs. |

**Crosscutting Concepts:** * Cause and effect: Mechanism and explanation
* Scale, proportion, and quantity
* Systems and system models

**Science and Engineering Practices:** * Developing and using models
* Constructing explanations (for science) and designing solutions (for engineering)

**Nature of Science:** * Science models, laws, mechanisms, and theories explain natural phenomena
* Scientific knowledge assumes an order and consistency in natural systems.
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| **From Liquid to Foam: How Egg Whites Change Texture** |

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| **HS-PS1-6**Refine the design of a chemical system by specifying a change in conditions that would produce increased amounts of products at equilibrium.**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.**Crosscutting Concepts:** * Cause and effect: Mechanism and explanation
* Structure and Function
* Stability and Change

**Science and Engineering Practices**: * Asking questions (for science) and defining problems (for engineering)
* Planning and carrying out investigations
* Constructing evidence (for science) and designing solutions (for engineering)

**Nature of Science**: * Scientific investigations use a variety of methods.
* Science models, laws, mechanisms and theories explain natural phenomena.
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| **Fermentable Foods: Trouble in Your Diet** |

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| **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**.****HS-ETS1-3.**Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics as well as possible social, cultural, and environmental impacts. |

**Crosscutting Concepts:** * Cause and Effect: Mechanism and explanation
* Systems and system models

**Science and Engineering Practices:** * Planning and carrying out investigations
* Obtaining, evaluating, and communicating information

**Nature of Science:** * Scientific knowledge is based on empirical evidence.
* Science models, laws, mechanisms and theories explain natural phenomena.
* Science addresses questions about the natural world.
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| **3D Printers: The Next Print Revolution** |

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| **HS-ETS1-4.** Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.**HS-PS2-6.** Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. **Crosscutting Concepts:** * Patterns
* Structure and Function

**Science and Engineering Practices:** * Developing and using models
* Constructing evidence (for science) and designing solutions (for engineering)

**Nature of Science**: * Science addresses questions about the natural and material world.
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| **Air Travel: Separating Fact from Fiction**  |

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| **HS-PS2.3.** Apply science and engineering ideas to design, evaluate, and refine a device that minimizes the force on a macroscopic object during a collision.**HS-PS2-6.** Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials.  |
| **Crosscutting Concepts:** * Cause and effect: mechanism and explanation
* Scale, proportion, and quantity
* Systems and System Models
* Structure & Function

**Science and Engineering Practices**: * Asking questions (for science) and defining problems (for engineering)
* Developing and using models
* Analyzing and interpreting data
* Using mathematics and computational thinking
* Obtaining, evaluating, and communicating information

**Nature of Science**: * Science models, laws, mechanisms, and theories explain natural phenomena.
* Scientific knowledge assumes an order and consistency in natural systems.
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