**February/March 2017 Issue**

**Correlations to the Next Generation Science Standards**

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| **Article** | **NGSS** |
| **The Drive for Cleaner Emissions** |

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| **HS-PS1-7.** Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.**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. |

**Disciplinary Core Ideas:*** PS1.B: Chemical Reactions
* ETS1.C: Optimizing the Design Solution

**Crosscutting Concepts:** * Energy and Matter
* Cause and effect: Mechanism and explanation
* Structure and Function

**Science and Engineering Practices:** * Analyzing and interpreting data
* Using mathematics and computational thinking
* Constructing explanations and designing solutions

**Nature of Science:** * Scientific knowledge is based on empirical evidence
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| **No-Hit Wonder! D3O** |

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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-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.**Disciplinary Core Ideas**:* PS1.A: Structure and properties of matter
* PS2.A: Forces and motion
* ETS1.B: Developing possible solutions

**Crosscutting Concepts:** * Systems and system models
* Structure and function
* Cause and effect

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

**Nature of Science**: * Science is a human endeavor
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| **Iron in the Diet: Power on Your Plate?** |

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| **HS-LS1-2.**Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. |

**Disciplinary Core Ideas**:* PS1.A Structure of matter
* LS1.A: Structure and function

**Crosscutting Concepts:** * Cause and Effect
* Structure and Function
* Stability and Change

**Science and Engineering Practices:** * Developing and using models
* Obtaining, evaluating, and communicating information
* Constructing explanations and designing solutions

**Nature of Science:** * Science models, laws, mechanisms, and theories explain natural phenomena
* Science addresses questions about the natural and material world
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| **Brush Up on Toothpaste!** |

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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.**Disciplinary Core Ideas**:* PS1.A: Structure and properties of matter
* PS1.B: Chemical reactions

**Crosscutting Concepts:** * Cause and effect: Mechanism and explanation
* Stability and change

**Science and Engineering Practices:** * Constructing explanations and designing solutions
* Obtaining, evaluating, and communicating information

**Nature of Science**: * Science is a human endeavor
* Science addresses questions about the natural and material world.
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| **62 Endangered Elements** |

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| **HS-PS1-1.** Use the periodic table as a model to predict the relative properties of elements based on the patterns of electrons in the outermost energy level of atoms.**HS-ETS1-1.**Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.**Disciplinary Core Ideas:*** PS1.A: Structure and properties of matter
* ETS1.B: Developing possible solutions

**Crosscutting Concepts:** * Patterns
* Scale, proportion, and quantity
* Structure and function

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

**Nature of Science:** * Scientific knowledge is open to revision in light of new evidence
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