**December2016/January 2017 Issue**

**Correlations to the Next Generation Science Standards**

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| **Article** | **NGSS** |
| **The Flint Water Crisis: What’s Really Going On?** |

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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-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
* PS2.B Types of Interactions
* ETS1.B Developing Possible Solutions

**Crosscutting Concepts:** * Cause and effect: Mechanism and explanation
* Scale, Proportion, and Quantity
* Structure and Function

**Science and Engineering Practices:** * Analyzing and interpreting data
* Constructing explanations and designing solutions

**Nature of Science:** * Scientific knowledge is based on empirical evidence.
* Science is a human endeavor
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| **Preserving Organs: Saving Lives, Giving Hope** |

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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.**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**:* PS.1.A Structure and Properties of Matter
* ETS1.C Optimizing the Design Solution

**Crosscutting Concepts:** * Scale, proportion, and quantity
* Systems and system models

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

**Nature of Science**: * Scientific knowledge is based on empirical evidence.
* Science addresses questions about the natural and material world.
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| **Clearing the Way to Acne-Free Days** |

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| **HS-LS1-3.** Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis. |

**Disciplinary Core Ideas**:* LS1.A Structure and Function
* PS1.A Structure and Properties of Matter

**Crosscutting Concepts:** * Cause and Effect: Mechanism and explanation
* Structure and Function

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

**Nature of Science:** * Scientific knowledge is based on empirical evidence.
* Science addresses about the natural and material world
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| **No Smartphones, No TV, No Computers: Life without Rare-Earth Metals** |

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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.**Disciplinary Core Ideas**:* PS1.A Structure and Properties of Matter
* PS.2.B Types of Interactions
* ETS1.C Optimizing the Design Solution

**Crosscutting Concepts:** * Patterns
* Cause and effect: Mechanism and explanation
* Structure and function

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

**Nature of Science**: * Scientific knowledge assumes an order and consistency in natural systems.
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| **Piping Hot, Ice-Cold… Thanks to Chemistry** |

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| **HS-PS2-6.**Develop a model to illustrate that the release or absorption of energy from a chemical reaction system depends on the changes in total bond energy.**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:*** PS1.A Structure and Properties of Matter
* PS1.B Chemical Reactions
* ETS1.C Optimizing the Design Solution

**Crosscutting Concepts:** * Systems and system models
* Energy and matter: Flows, cycles, and conservation

**Science and Engineering Practices:** * Analyzing and interpreting data
* Constructing explanations (for science) and designing solutions (for engineering)

**Nature of Science**: * Scientific knowledge is based on empirical evidence.
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