**April/May 2017 Issue**

**Correlations to the Next Generation Science Standards**

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| **Article** | **NGSS** |
| **Growing Green on the Red Planet** | |  | | --- | | **HS-LS2-4.**  Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.  **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:**   * LS2.C: Ecosystem Dynamics, Functioning, and Resilience * PS1.B: Chemical Reactions * ETS1.C: Optimizing the Design Solution   **Crosscutting Concepts:**   * Systems and system models * Scale, proportion, and quantity * Energy and matter   **Science and Engineering Practices:**   * Developing and using models * Using mathematics and computational thinking * Constructing explanations and designing solutions   **Nature of Science:**   * Scientific knowledge assumes an order and consistency in natural systems |
| **Recycling Plastic Bags** | |  | | --- | | **HS-ESS3-2.**  Evaluate competing design solutions for developing, managing, and utilizing energy and mineral resources based on cost-benefit ratios.  **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 * ESS3.C: Human impacts on earth systems * 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 addresses questions about the natural and material world. | |
| **Espresso, Café Latte, Cappuccino… A Complex Brew** | |  | | --- | | **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. |   **Disciplinary Core Ideas**:   * PS1.A Structure and properties of matter * PS1.B: Chemical reactions * ETS1.C: Optimizing the design solution   **Crosscutting Concepts:**   * Cause and Effect * Structure and Function * Stability and Change   **Science and Engineering Practices:**   * Planning and carrying out investigations * Constructing explanations and designing solutions   **Nature of Science:**   * Science addresses questions about the natural and material world |
| **Don’t Let Cortisol Stress You Out!** | |  | | --- | | **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:**   * Structure and function * Cause and effect: Mechanism and explanation * Stability and change   **Science and Engineering Practices:**   * Constructing explanations and designing solutions * Planning and carrying out investigations   **Nature of Science**:   * Science addresses questions about the natural and material world. | |
| **Genetically Modified Foods: Are They Safe to Eat?** | |  |  | | --- | --- | | |  | | --- | | **HS-LS1-1.**  Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins, which carry out the essential functions of life through systems of specialized cells.  **HS-ETS1-3.**  Evaluate a solution to a complex real-world problem based on prioritized criteria and tradeoffs 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:**   * LS1.A: Structure and function * PS1.A: Structure and properties of matter * ETS1.B: Optimizing the design solution   **Crosscutting Concepts:**   * Systems and system models * Stability and change * Structure and function   **Science and Engineering Practices:**   * Asking questions (for science) and defining problems (for engineering) * Obtaining, evaluating, and communicating information   **Nature of Science:**   * Scientific knowledge assumes an order and consistency in natural systems. * Scientific knowledge is based on empirical evidence | | |  | |