**April/May 2016 Issue**

**Correlations to the Next Generation Science Standards**

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| **Article** | **NGSS** |
| **A Close-Up Look at the Quality of Indoor Air** | |  | | --- | | **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-PS2-6.**  Communicate scientific and technical information about why the molecular-level structure is important in the function of designed materials.  **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 of matter * PS2.A Forces and Motion * PS2.B Types of Interactions * ETS1.C Optimizing the Design Solution   **Crosscutting Concepts:**   * Patterns * Cause and effect: Mechanism and explanation * Scale, proportion, and quantity * Structure and Function   **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. |
| **Chemistry Helps Athlete Keep Moving** | |  | | --- | | **HS-PS2-6.**  Communicate scientific and technical information about why the molecular-level structure is important in the function of designed materials.  **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**:   * PS2.A Forces and Motion * PS2.B Types of Interactions * ETS1.C Optimizing the Design Solution   **Crosscutting Concepts:**   * Cause and effect: Mechanism and explanation * Structure and Function   **Science and Engineering Practices**:   * Constructing evidence (for science) and designing solutions (for engineering)   **Nature of Science**:   * Science is a human endeavor. | |
| **Frozen Fish Stick Blues** | |  | | --- | | **HS-LS2-3.**  Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. |   **Disciplinary Core Ideas**:   * LS2.A: Interdependent Relationships in Ecosystems   **Crosscutting Concepts:**   * Cause and Effect * Scale, Proportion, and Quantity * Systems and System Models * Stability and Change   **Science and Engineering Practices:**   * Constructing explanations (for science) and designing solutions (for engineering)   **Nature of Science:**   * Scientific knowledge is based on empirical evidence. |
| **Antioxidants Go the Extra Mile** | |  | | --- | | **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**:   * LS1.A Structure and Function   **Crosscutting Concepts:**   * Systems and System Models * Cause and effect: Mechanism and explanation   **Science and Engineering Practices:**   * Obtaining, evaluating, and communicating information   **Nature of Science**:   * Science addresses questions about the natural and material world. | |
| **Cellulosic Ethanol: A Fuel of the Future?** | |  | | --- | | **HS-LS2-5**  Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere.  **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**:   * LS2.B: Cycles of Matter and Energy Transfer in Ecosystems * ETS1.A: Defining and Delimiting Engineering Problems   **Crosscutting Concepts:**   * Systems and System Models * Energy and Matter * Structure and Function   **Science and Engineering Practices**:   * Constructing explanations and designing solutions.   **Nature of Science**:   * Science addresses questions about the natural and material world. | |