**October/November 2018 Next Generation Science Standards Correlations**

|  |  |
| --- | --- |
| **Article** | **NGSS** |
| **Mars vs. Titan: A Showdown of Human Habitability** | |  | | --- | | **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.  **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. |   **Disciplinary Core Ideas:**   * ETS1.A: Defining and Delimiting Engineering Problems * LS1.A: Structure and Function   **Crosscutting Concepts:**   * Systems and System Models * Energy and Matter * Structure and Function   **Science and Engineering Practices:**   * Asking questions (for science) and defining problems (for engineering) * Analyzing and interpreting data   **Nature of Science:**   * Scientific knowledge assumes an order and consistency in natural systems | |
| **The Shocking Chemistry of Electric Eels** | **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.  **Disciplinary Core Ideas**:   * PS1.B: Chemical Reactions * ETS1.C: Optimizing the design solution   **Crosscutting Concepts:**   * Structure and Function * Energy and Matter * Scale, Proportion, and Quantity   **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 | |
| **Feeding the World: A Story of Guano, War, and Invention** | **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 * ETS1.C: Optimmizing the Design Solution   **Crosscutting Concepts:**   * Scale, Proportion, and Quantity * Systems and System Models   **Science and Engineering Practices:**   * Planning and carrying out investigations * Constructing explanations (for science) and designing solutions (for engineering)   **Nature of Science:**   * Science addresses questions about the natural and material world. | |
| **How Glass Changed the World** | |  | | --- | | **HS-PS2-6**.  Communicate scientific and technical information about why the molecular-level structure is important in the functioning of designed materials. |   **Disciplinary Core Ideas:**   * PS1.A: Structure and Properties of Matter * ETS1.C: Optimizing the Design Solution   **Crosscutting Concepts:**   * Patterns * Structure and Function   **Science and Engineering Practices:**   * Constructing explanations and designing solutions   **Nature of Science:**   * Scientific knowledge assumes an order and consistency in natural systems. * Science is a human endeavor. | |