SUFFOLK COUNTY VANDERBILT
Mansion | Museum | Planetarium

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# New York State Science Learning Standards
# Alien Safari

## 5th Grade

- **5-PS3-1.** Use models to describe that energy in animals' food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the Sun.
- **3-5-ETS1-2.** Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.

***Disciplinary Core Ideas:***

- PS1.A: Structure and Properties of Matter
- PS3.D: Energy in Chemical Processes and Everyday Life
- LS1.C: Organization for Matter and Energy Flow in Organisms
- ESS2.A: Earth Materials and Systems
- ESS1.A: The Universe and its Stars
- ESS1.B: Earth and the Solar System

***Crosscutting Concepts:***

- Cause and Effect
- Scale, Proportion, and Quantity
- Systems and System Models
- Energy and Matter
- Scientific Knowledge Assumes an Order and Consistency in Natural Systems
- Science Addresses Questions About the Natural World

***Science and Engineering Practices:***

- Developing and Using Models
- Planning and Carrying Out Investigations
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information
- Analyzing and Interpreting Data
- Engaging in Argument from Evidence

## Middle School

- **MS-PS4-1.** Develop a model and use mathematical representations to describe waves that includes frequency, wavelength, and how the amplitude of a wave is related to the energy in a wave.
- **MS-PS4-2.** Develop and use a model to describe that waves are reflected, absorbed, or transmitted through various materials.
- **MS-LS1-6.** Construct a scientific explanation based on evidence for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms.
- **MS-LS2-2.** Construct an explanation that predicts patterns of interactions among organisms in a variety of ecosystems.
- **MS-LS1-5.** Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms

## Middle School (continued)

- **MS-ESS1-3**. Analyze and interpret data to determine scale properties of objects in the solar system.
- **MS-ESS2-1.** Develop a model to describe the cycling of Earth's materials and the flow of energy that drives this process

***Disciplinary Core Ideas:***

- PS1.A: Structure and Properties of Matter
- PS3.A: Definitions of Energy
- PS3.D: Energy in Chemical Processes and Everyday Life
- PS4.A: Wave Properties
- PS4.B: Electromagnetic Radiation
- LS1.B: Growth and Development of Organisms
- LS1.C: Organization for Matter and Energy Flow in Organisms
- LS2.B: Cycle of Matter and Energy Transfer in Ecosystems
- LS2.C: Ecosystem Dynamics, Functioning, and Resilience
- ESS1.A: The Universe and Its Stars
- ESS1.B: Earth and the Solar System
- ESS2.A: Earth's Materials and Systems
- ETS1.B: Developing Possible Solutions

***Crosscutting Concepts:***

- Patterns
- Cause and Effect
- Energy and Matter
- Scale, Proportion, and Quantity
- Systems and System Models
- Science is a Human Endeavor
- Scientific Knowledge Assumes an Order and Consistency in Natural Systems
- Science Addresses Questions About the Natural and Material World

***Science and Engineering Practices:***

- Analyzing and Interpreting Data
- Asking Questions and Defining Problems
- Developing and Using Models
- Planning and Carrying Out Investigations
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information
- Scientific Knowledge is Based on Empirical Evidence
- Science Models, Laws, Mechanisms, and Theories Explain Natural Phenomena
- Scientific Knowledge is Open to Revision in Light of New Evidence