

## **Activity 1: Energy Detectives for grades 3-8 with K-2 variation (pp. 24-31 in Energy & Society Kit)**

**Subject Area: Language Arts**

### **Strand: Writing**

**Standard 2:** The student writes to communicate ideas and information effectively.

#### **Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** Writes notes, comments, and observations that reflect comprehension of content and experiences from a variety of media. [LA.B.2.2.1]
- **Grades 6-8:** Writes text, notes, outlines, comments, and observations that demonstrate comprehension of content and experiences from a variety of media. [LA.B.2.3.1]

### **Strand: Listening, Viewing, Speaking**

**Standard 1:** The student uses listening strategies effectively.

#### **Benchmarks:**

- **Grades K-2:** Listens for a variety of informational purposes, including curiosity, pleasure, getting directions, performing tasks, solving problems, and following rules. [LA.C.1.1.1]
- **Grades 3-5:** Listens and responds to a variety of oral presentations, such as stories, poems, skits, songs, personal accounts, and informational speeches. [LA.C.1.2.1]\*
- **Grades 3-5:** Responds to speakers by asking questions, making contributions, and paraphrasing what is said. [LA.C.1.2.5]
- **Grades 6-8:** Listens and uses information gained for a variety of purposes, such as gaining information from interview, following directions, and pursuing a personal interest. [LA.C.1.3.1]

**Standard 2:** The student uses viewing strategies effectively.

#### **Benchmarks**

- **Grades K-2:** Determines the main idea in a nonprint communication. [LA.C.2.1.1]
- **Grades 3-5:** Determines the main concept and supporting details in nonprint media message. [LA.C.2.2.1]
- **Grades 6-8:** Determines main concept, supporting details, stereotypes, bias, and persuasion techniques in a nonprint message. [LA.C.2.3.1]

**Standard 3:** The student uses speaking strategies effectively.

**Benchmarks**

- **Grades K-2:** Speaks clearly and at a volume audible in large-or small-group settings. [LA.C.3.1.1]
- **Grades 3-5:** Speaks clearly at an understandable rate and uses appropriate volume. [LA.C.3.2.1]
- **Grades 3-5:** Speaks for specific occasions, audiences, and purposes, including conversations, discussions, projects, and informational or imaginative presentations. [LA.C.3.2.3]
- **Grades 3-5:** Participates as a contributor and occasionally acts as a leader in a group discussion. [LA.C.3.2.5]
- **Grades 6-8:** Asks questions and makes comments and observations that reflect understanding and application of content, processes, and experiences. [LA.C.3.3.2]
- **Grades 6-8:** Speaks for various occasions, audiences, and purposes, including conversations, discussions, projects, and informational, persuasive, or technical presentations. [LA.C.3.3.3]

**Strand: Language:**

**Standard 2:** The student understands the power of language.

**Benchmarks:**

- **Grades K-2:** Recognizes that use of more than one medium increases the power to influence how one thinks and feels. [LA.D.2.1.3]
- **Grades 3-5:** No applicable benchmarks.
- **Grades 6-8:** No applicable benchmarks.

**Subject Area: Social Studies**

**Strand: Time, Continuity, and Change (History)**

**Standard 1:** The student understands historical chronology and the historical perspective.

**Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** Understands how individuals, ideas, decisions, and events can influence history. [SS.A.1.2.1]
- **Grades 6-8:** Understands how patterns, chronology, sequencing (including cause and effect), and the identification of historical periods are influenced by frames of reference. [SS.A.1.3.1] \*
- **Grades 6-8:** Knows how to impose temporal structure on historical narratives. [SS.A.1.3.3]\*

**Strand: People, Place, and Environments (Geography)**

**Standard 2:** The student understands the interactions of people and the physical environment.

**Benchmark:**

- **Grades K-2:** Knows the role that resources play in our daily lives. [SS.B.2.1.4]
- **Grades 3-5:** Understands how factors such as population growth, human migration, improved methods of transportation and communication, and economic development affect the use and conservation of natural resources. [SS.B.2.2.4]
- **Grades 6-8:** No applicable benchmarks.

**Subject Area: Science**

**Strand: The Nature of Matter**

**Standard 2:** The student understands the basic principles of atomic theory.

**Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** No applicable benchmarks.
- **Grades 6-8:** Knows that radiation, light, and heat are forms of energy used to cook food, treat diseases, and provide energy. [SC.A.2.3.3]

**Strand: Energy**

**Standard 1:** The student recognizes that energy may be changed in form with varying efficiency.

**Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** Recognizes various forms of energy (e.g., heat, light, and electricity). [SC.B.1.2.2]
- **Grades 3-5:** Knows the many ways in which energy can be transformed from one type to another. [SC.B. 1.2.4]
- **Grades 6-8:** Identifies forms of energy and explains that they can be measured and compared. [SC.B.1.3.1]
- **Grades 6-8:** Knows that energy conversions are never 100% efficient (i.e., some energy is transformed to heat and is unavailable for further useful work). [SC.B.1.3.4]

**Standard 2:** The student understands the interaction of matter and energy.

**Benchmarks:**

- **Grades K-2:** Recognizes systems of matter and energy. [SC.B.2.1.1]
- **Grades 3-5:** No applicable benchmarks.
- **Grades 6-8:** Knows that most events in the universe (e.g., weather changes, moving cars, and the transfer of a nervous impulse in the human body) involve some form of energy transfer and that these changes almost always increase the total disorder of the system and its surroundings, reducing the amount of useful energy. [SC.B.2.3.1]

## **Strand: How Living Things Interact with Their Environment**

**Standard 1:** The student understands the competitive, interdependent, cyclic nature of living things in the environment.

### **Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** No applicable benchmarks.
- **Grades 6-8:** Knows that animals eat plants or other animals to acquire the energy they need for survival. [SC.G.1.2.5]
- **Grades 6-8:** Knows that life is maintained by a continuous input of energy from the sun and by the recycling of atoms that make up molecules of living organisms. [SC.G.1.3.5]

## **Strand: The Nature of Science**

**Standard 1:** The student uses the scientific processes and habits of mind to solve problems.

### **Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** Knows that to work collaboratively, all team members should be free to reach, explain, and justify their own individual conclusions. [SC.H.1.2.3]
- **Grades 3-5:** Knows that to compare and contrast observations and results is an essential skill in science. [SC.H.1.2.4]
- **Grades 6-8:** Recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations. [SC.H.1.3.6]

**Standard 3:** The student understands that science, technology, and society are interwoven and interdependent.

### **Benchmarks:**

- **Grades K-2:** No applicable benchmarks.
- **Grades 3-5:** Understands that people, alone or in groups, invent new tools to solve problems and do work that affects aspects of life outside of science. [SC.H.3.2.1]
- **Grades 6-8:** Understands that contributions to the advancement of science, mathematics, and technology have been made by different kinds of people, in different cultures, at different times and are an intrinsic part of the development of human culture. [SC.H.3.3.5]

**Note** – Benchmarks followed by a star (\*) are only met when Integrating Music and Dance, Enrichment, and/or Assessment activities are conducted.