

Activity 6: Energy Challenge Game for grades 3-8 (pp. 50 – 52 in Energy & Society Kit)

Subject Area: Language Arts: No applicable benchmarks for this activity.

Subject Area: Social Studies: No applicable benchmarks for this activity as written. Several benchmarks may apply to the Enrichment Activity. Specific benchmarks are dependent upon the direction taken by students and teachers in the Enrichment Activity.

Subject Area: Science

Strand: The Nature of Matter

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

Benchmarks:

- **Grades 3-5:** Knows that materials may be made of parts too small to be seen without magnification. [SC.A.2.2.1]
- **Grades 6-8:** Knows the general properties of the atom (a massive nucleus of neutral neutrons and positive protons surrounded by a cloud of negative electrons) and accepts that single atoms are not visible. [SC.A.2.3.2]
- **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 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 cannot be created or destroyed, but can only be changed from one form to another. [SC.B.1.3.2]
- **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]

Strand: Earth and Space

Standard 1: The student understands the interaction and organization in the Solar System and the Universe and how this affects life on Earth.

Benchmarks:

- **Grades 3-5:** Knows that the Sun is a star and that its energy can be captured or concentrated to generate heat and light for work on Earth. [SC.E.1.2.3]
- **Grades 6-8:** No applicable benchmarks.

Strand: How Living Things Interact With Their Environment

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

Benchmarks:

- **Grades 3-5:** Knows that green plants use carbon dioxide, water, and sunlight energy to turn minerals and nutrients into food for growth, maintenance, and reproduction. [SC.G.1.2.3]
- **Grades 6-8:** Knows that life is maintained by a continuous input of energy from the sun and by the recycling of the atoms that make up molecules of living organisms. [SC.G.1.3.5]

Standard 2: The student understands the consequences of using limited natural resources.

Benchmarks:

- **Grades 3-5:** No applicable benchmarks.
- **Grades 6-8:** Knows that some resources are renewable and others are nonrenewable. [SC.G.2.3.1]

Strand: The Nature of Science

Standard 2: The student understands that most natural events occur in comprehensible, consistent patterns.

Benchmarks:

- **Grades 3-5:** Knows that natural events are often predictable and logical. [SC.H.2.2.1]
- **Grades 6-8:** No applicable benchmarks.

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

Benchmarks:

- **Grades 3-5:** Knows that through the use of science processes and knowledge, people can solve problems, make decisions, and form new ideas. [SC.H.3.2.4]
- **Grades 6-8:** Knows that no matter who does science and mathematics or invents things, or when or where they do it, the knowledge and technology that result can eventually become available to everyone. [SC.H.3.3.6]