

Real World Energy Curriculum Connections

Table of Contents:

- ❖ Energy in Living Systems
 - [Photosynthesis](#)
 - [Cellular Respiration](#)
 - [Food Analysis](#)
 - [Human Metabolism](#)
 - [Energy Transfer in Nature](#)

Activity: Photosynthesis

Alberta

- ❖ Science 24: Understanding Common Energy Conversion Systems
 - STS list and explain the requirements of photosynthesis as carbon dioxide, water, chlorophyll in chloroplasts and sunlight; and list and explain the products as oxygen and glucose

Activity: Cellular Respiration

Alberta

- ❖ Science 24: Understanding Common Energy Conversion Systems
 - STS identify the sources of energy in food as carbohydrates, fats and proteins; and explain, in general terms, why there needs to be a balance between food intake and energy output
 - STS compare combustion of a fossil fuel with cellular respiration
 - STS explain, in general, the process of respiration in which glucose and oxygen are converted to
 - energy, carbon dioxide and water

Activity: Food Analysis

Alberta

- ❖ Science 24: Understanding Common Energy Conversion Systems
 - STS identify the sources of energy in food as carbohydrates, fats and proteins; and explain, in general terms, why there needs to be a balance between food intake and energy output
 - STS describe food as fuel for the human body in meeting its needs for normal metabolic functions, exercise, and growth or repair of cells

Activity: Human Metabolism

Alberta

- ❖ Science 24: Understanding Common Energy Conversion Systems
 - STS describe food as fuel for the human body in meeting its needs for normal metabolic functions, exercise, and growth or repair of cells
 - STS describe the factors that affect metabolism (e.g., age, level of fitness, time of day, exercise/activity), and compare daily energy requirements of individuals at various stages of growth and activity levels (e.g., energy requirements of a newborn, teenager, office worker and labourer; energy requirements while sleeping, running)

Activity: Energy Transfer in Nature

Alberta

- ❖ Science 24: Understanding Common Energy Conversion Systems
 - STS assess the impact of fossil fuel based technologies on the environment