



Vocabulary: Energy Conversion in a System



Vocabulary

- Energy – the ability to do work, or cause an object to move.
 - Energy can be measured in joules (J).
 - Types of energy include chemical energy, electrical energy, *heat energy*, light energy, mechanical energy, nuclear energy, and sound energy.
- Gravitational potential energy – *potential energy* that depends on an object's position within a gravitational field such as that exerted by Earth.
 - Gravitational potential energy is represented by several symbols: *GPE*, *PE*, or *U*.
 - On Earth, an object's gravitational potential energy depends on the object's *weight* and height above Earth's surface.
 - The formula for gravitational potential energy is $GPE = wh$ or $GPE = mgh$.
- Heat energy – the total *kinetic energy* of an object's molecules or atoms.
 - Heat energy is also known as thermal energy.
 - When an object's heat energy increases, the object becomes warmer.
- Kinetic energy – the energy of motion.
 - Kinetic energy is represented by the symbol *KE* or simply *K*.
 - The formula for kinetic energy is $KE = mv^2 \div 2$.
- Law of conservation of energy – the principle that the total energy in a closed system remains constant.
- Specific heat capacity – the amount of energy needed to change the temperature of a substance by 1 °C.
 - The specific heat of air is 1.020 J/g °C. This means it takes 1.020 J of energy to increase the temperature of 1 g of air by 1 °C.
 - Sometimes a substance's specific heat capacity is simply referred to as its "specific heat."

