

Vocabulary

Use the vocabulary words and definitions below as a reference for this unit.

- atom** the smallest unit of an element that is still that element; the basic building block of matter
- chain reaction**..... a self-sustaining nuclear reaction; it continues without the addition of outside energies
- chemical energy** the energy that is stored in chemicals
- control rod** a barrier that slows a nuclear reaction by absorbing excess radiation
- electromagnetic energy** the energy that results from the interaction of the electric and magnetic fields
- electromagnetic force** the forces of attraction and repulsion between charged particles, resulting in electricity and magnetism
- electron** the negatively charged particle of an atom; the electron moves around the center of the atom (nucleus)
- energy** the ability to do work or cause change
- fission** splitting the nucleus of an atom into two lighter parts

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- fission reactor** a type of nuclear reactor that splits the nuclei of atoms
- fusion** a nuclear reaction in which two or more nuclei are pushed together to form one large nucleus
- fusion reactor** a type of nuclear reactor that would combine atoms
- gravity** the attraction of matter toward another body of matter
Example: Earth's gravity holds us on its surface.
- half-life** the time it takes one-half of the atoms of a radioactive sample to decay
- isotope** an atom or group of atoms with the same atomic number but different atomic mass than other atoms of a specific element; this difference in mass is based on a difference in the number of neutrons within the nucleus of the atom
- law of conservation of energy** the law that energy cannot be created or destroyed, only changed from one form to another during a physical or chemical change
- law of conservation of mass** the law that matter cannot be created or destroyed, only changed from one form to another during a physical or chemical change

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- mass** the amount of matter in a substance
- matter** anything that has both mass and volume
- mechanical energy** the energy of moving things
- neutron** the neutral particle found in the nucleus of an atom; a neutron has no charge
- nuclear energy** the energy that holds the nuclei of atoms together; it is released in nuclear reactions and may be used to produce heat, electricity, or other forms of energy
- nuclear reaction** a reaction that occurs when an atom is split; large amounts of energy are released
- nuclear reactor** a machine used to control or create a nuclear chain reaction
- nucleus** the center region of the atom around which the electron(s) move; plural: nuclei
- proton** the positively charged particle in the nucleus of an atom
- radiation** the movement of energy as a wave
- radioactive** describing those elements or isotopes that spontaneously decompose and give off radiation

Vocabulary

radioactive waste the waste produced by a nuclear reactor;
though unusable it still releases
radiation

radioactivity forms of energy given off by nuclear
material

theory of relativity the theory that there is a fundamental
relationship between matter and energy;
 $E=mc^2$ (E stands for energy, m stands for
mass, and c stands for the speed of
light.)