

**Lesson Outline****LESSON 2****Energy Transformations****A. Changes Between Forms of Energy**

1. A microwave oven changes electrical energy to \_\_\_\_\_ energy.
2. The changes from electrical energy to radiant energy to thermal energy are called energy \_\_\_\_\_.

**B. Changes Between Kinetic and Potential Energy**

1. When you throw a ball upward, the ball has its greatest speed and the most \_\_\_\_\_ energy when it first leaves your hand.
2. As the ball reaches its highest point, the ball gains its greatest \_\_\_\_\_ energy.
3. As the ball moves downward, \_\_\_\_\_ energy decreases and \_\_\_\_\_ energy increases.

**C. The Law of Conservation of Energy**

1. According to the \_\_\_\_\_, energy can be transformed from one form into another or transferred from one region to another, but energy cannot be created or destroyed.
2. \_\_\_\_\_ is a force that resists the motion of one surface over another.
  - a. There is always some \_\_\_\_\_ between any surfaces that are in contact with each other.
  - b. As you pedal a bicycle, you do \_\_\_\_\_ and transfer \_\_\_\_\_ to the bicycle.
  - c. Because of \_\_\_\_\_ between moving parts of a bicycle, some of the work you do changes to \_\_\_\_\_ energy.
  - d. One way to reduce friction is to apply a(n) \_\_\_\_\_ to surfaces that rub against each other.
  - e. When you apply brakes on a bicycle, the bicycle's \_\_\_\_\_ energy is not destroyed; instead, the bicycle's \_\_\_\_\_ energy is transformed into thermal energy. The \_\_\_\_\_ amount of energy remains the same.

## Lesson Outline continued

### D. Using Energy

1. You use \_\_\_\_\_ energy for cooking and heating.
2. Gas stoves and furnaces change \_\_\_\_\_ energy from natural gas into thermal energy.
3. During photosynthesis, plants transform \_\_\_\_\_ energy from the Sun into chemical energy stored in food.
4. Your body changes the chemical energy stored in food into \_\_\_\_\_ energy as you move and into \_\_\_\_\_ energy, which keeps your body temperature high.
5. A television transforms \_\_\_\_\_ energy into sound energy and \_\_\_\_\_ energy.
6. Many devices you use every day are powered by \_\_\_\_\_ energy from electrical power plants.
7. With battery-powered devices, \_\_\_\_\_ energy is transformed into electrical energy for power.
8. When energy changes form, some \_\_\_\_\_ energy is always released. Scientists often refer to this energy that cannot be used as \_\_\_\_\_.
9. Cars transform most of the chemical energy in gasoline into \_\_\_\_\_ energy.