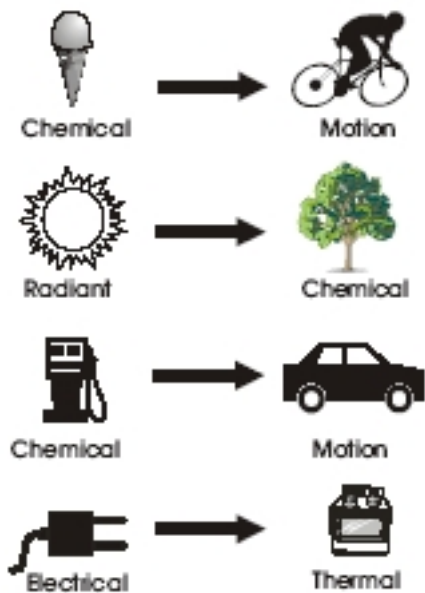


## Energy Is Neither Created Nor Destroyed

### Energy Transformations



To scientists, "conservation of energy" does not mean saving energy. Instead, the law of conservation of energy says that energy is neither created nor destroyed. When we use energy, it doesn't disappear. We change it from one form of energy into another.

A car engine burns gasoline, converting the chemical energy in gasoline into mechanical energy. Solar cells change radiant energy into electrical energy. Energy changes form, but the total amount of energy in the universe stays the same.

## Converting One Form of Energy Into Another

"Energy efficiency" is the amount of useful energy you get from any type of system. A perfectly energy-efficient machine would change all the energy put in it into useful work. In reality, converting one form of energy into another form always involves a loss of useable energy.

In fact, most energy transformations are not very efficient. The human body is a good example. Your body is like a machine, and the fuel for your machine is food. Food gives you the energy to move, breathe, and think. But your body isn't very efficient at converting food into useful work. Your body is less than 5% efficient most of the time. The rest of the energy is lost as heat.

