

Chapter 3: Energy

Energy Transfers

Energy can change from one form to another. We commonly change energy from one form to another as we use it. Match each term in the word box to its description. Some terms are used more than once.

radiant
mechanicalchemical
soundelectrical
nuclear

thermal

1

When you shout at a friend, you are changing mechanical energy into this form.

2

When you set food under a heat lamp to warm it, you are changing radiant energy into this form.

3

When you turn on a CD player, you are using this form of energy to produce sound energy.

4

At a power plant nearby, matter is changed into energy to produce this form of energy.

5

Eating a healthy breakfast provides this form of energy, which is turned into mechanical and thermal energy as you play, study, and move.

6

Plug in a fan to a source of electrical energy. The electrical energy is transformed into this form to move the fan blades.

7

Plug a lamp into an electrical socket and you turn electrical energy into this form of energy.

8

Radiant energy from the sun is turned into this form when plants undergo photosynthesis.

9

As plants decompose, their chemical energy may become stored as coal or natural gas. These chemical energy sources can be turned into this form of energy as they are burned at a power plant.

10

As fuel is burned at a power plant, the energy released turns a turbine, whose movement is an example of this kind of energy.

11

Energy leaves a power plant in the form of this kind of energy.

From One Form to Another

Energy can change form, but it cannot be created or destroyed. Under some conditions, such as those that produce nuclear energy, matter and energy can change into each other. However, the total amount of matter and energy does not change. Use the phrases in the word box to label the change in energy forms.

electrical to sound
chemical to thermal
radiant to thermalradiant to chemical
mechanical to electrical
electrical to mechanicalthermal to mechanical
electrical to radiant

1

Plants use energy from the sun in the process of photosynthesis to manufacture glucose.

2

Solar panels placed on the top of a roof use the sun's energy to heat water for a swimming pool.

3

A lamp is plugged into a wall socket. Once the lamp is turned on, both light and heat come from the lamp.

4

The spinning turbine inside a hydroelectric plant generates electricity.

5

Some furnaces burn coal to heat buildings.

6

An alarm clock begins to beep and the radio turns on. The display shows it is 7:00 a.m.

7

Water is heated until it becomes steam. The pressure of the steam turns a turbine or generator.

8

Plug a fan into a wall socket. Turn on the fan and the blades begin to spin.