

7.2 Identifying Energy Transformations

READ

Systems change when energy flows and changes from one part of a system to another. Parts of a system may speed up or slow down, get warmer or colder, or change in other measurable ways. Each change transfers energy or transforms energy from one form to another. In this skill sheet, you will practice identifying energy transformations in various systems.

EXAMPLE

- At 5:30 a.m., Miranda's electric alarm clock starts beeping (1). It's still dark outside so she switches on the light (2). She stumbles sleepily down the hall to the kitchen (3), where she lights a gas burner on the stove (4) to warm some oatmeal for breakfast.

Miranda has been awake for less than ten minutes, and she's already participated in at least four energy transformations. Describe an energy transformation that took place in each of the numbered events above.

Solution:

1. Electrical energy to sound energy; 2. Electrical energy to radiant energy (light and heat); 3. Chemical energy from food to kinetic energy; 4. Chemical energy from natural gas to radiant energy (heat and light).

PRACTICE

- There is a spring attached to the screen door on Elijah's front porch. Elijah opens the door, stretching the spring (1). After walking through the doorway (2), Elijah lets go of the door, and the spring contracts, pulling the door shut (3). Describe an energy transformation that took place in each of the numbered events above.
- Name two energy transformations that occur as Gabriella heats a bowl of soup in the microwave.
- Dmitri uses a hand-operated air pump to inflate a small swimming pool for his younger siblings. Name two energy transformations that occurred.
- Simon puts new batteries in his radio-controlled car and its controller. He activates the controller, which sends a radio signal to the car. The car moves forward. Name at least three energy transformations that occurred.
- Name two energy transformations that occur as Adeline pedals her bicycle up a steep hill and then coasts down the other side.