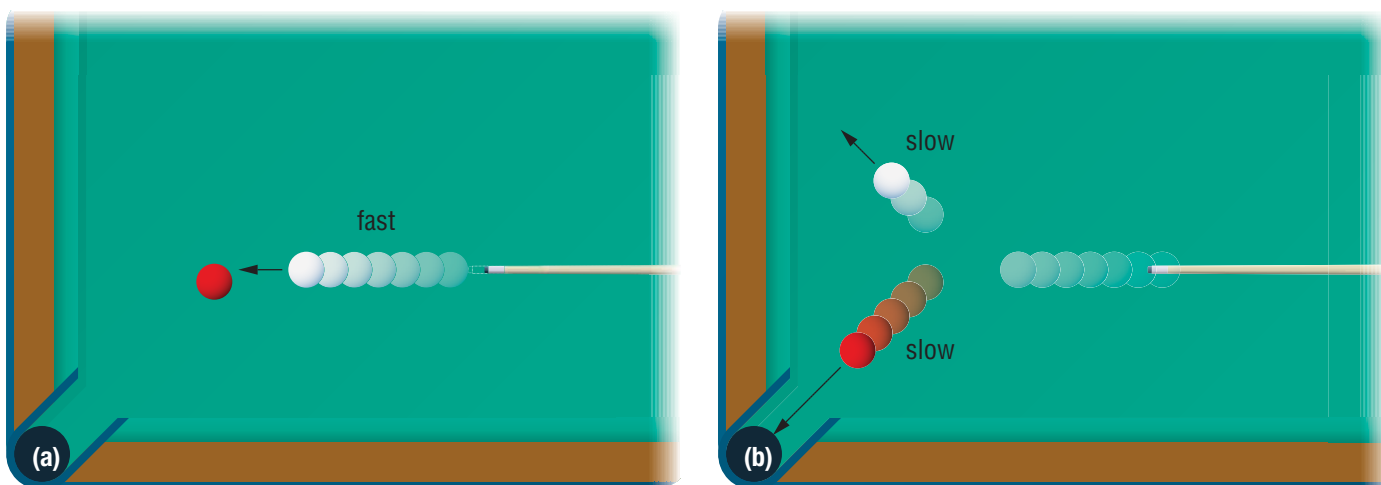


**LINKING TO LITERACY****Reading a Diagram**

Diagrams help you understand what is written in the text. Figures 2(a) and (b) are described in the paragraph. As you read, move back and forth between the text and diagram to help you understand each idea.

When a warm object comes into contact with a cold object, the faster-moving particles of the warm object bump into the slower-moving particles of the cold object. As a result, energy is transferred. This causes particles of the cold object to speed up and the particles of the warm object to slow down. If you watch a game of billiards being played, you will see a similar transfer of energy. When a fast-moving billiard ball (the white cue ball in Figure 2(a)) collides with a stationary ball, some energy is transferred. The stationary ball starts to move and the white ball slows down (Figure 2(b)).



**Figure 2** (a) The white cue ball causes the red ball to move by transferring energy to it. (b) When the cue ball hits the red ball, the cue ball slows down and the red ball speeds up.

**heat:** the transfer of energy from the particles of a warmer object to the particles of a cooler object

To heat an object means to transfer energy to the particles of that object. Heat is not a thing or substance that an object can contain. Instead, **heat** is the transfer of energy from warmer things to cooler things.

You should be careful about how you use the word “heat.” In an investigation, you may be instructed to “Heat the water in the beaker by placing it on a hot plate.” You should not, however, say, “Water absorbs heat when it is placed on a hot plate.” A substance cannot absorb heat. When water is heated, it absorbs energy, not heat.

 **CHECK YOUR LEARNING**

- (a) Describe a key idea about heat that you understood from this section.

(b) How does the scientific definition of heat compare to the use of the word “heat” in conversational English?

(c) Discuss this idea of heat with a classmate or with your teacher. Write an explanation of heat in your own words. If you like, you may use diagrams or pictures.
- Summarize the key ideas of the particle theory in your own words or with labelled diagrams.
- How does the particle theory help to explain the difference between a drop of cold water and a drop of hot water?
- Explain what is wrong with the statement: “A mug of hot chocolate contains more heat than a glass of cold water.”