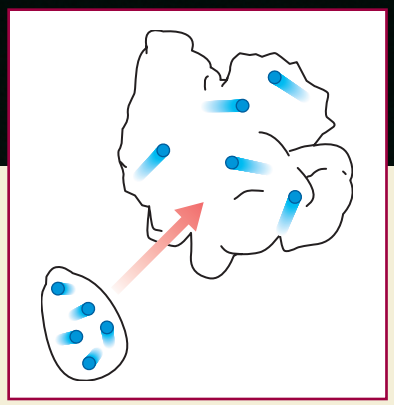
CHAPTER 9

Heat



Whether you make popcorn in a pan of hot oil or in a microwave oven, water molecules inside the hard kernels will absorb energy, as shown in the diagram. When the kernels reach a high enough temperature, they rupture. At this point, superheated water suddenly turns into steam and rushes outward, and the kernels burst open to form the fluffy, edible puffs of starch.

WHAT TO EXPECT

In this chapter, you will learn the difference between temperature and heat. You will also learn how different substances change temperature or phase when energy is added to or removed from the substances.

Why it Matters

This type of energy transfer affects many things in the world around you, including making popcorn, turning water into ice cubes, swimming in a sun-warmed pool, and keeping warm in a sleeping bag while camping.

CHAPTER PREVIEW