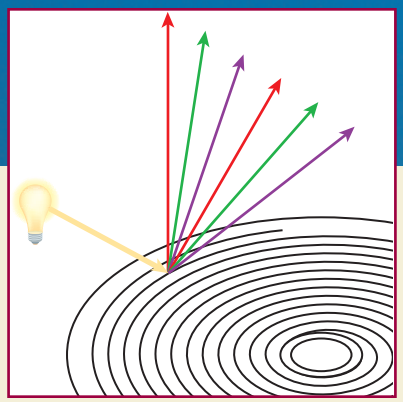
CHAPTER 15

Interference and Diffraction



The streaks of colored light you see coming from a compact disc resemble the colors that appear when white light passes through a prism. However, the compact disc does not separate light by means of refraction. Instead, the light waves undergo interference.

WHAT TO EXPECT

In this chapter, you will learn about interference of light. In interference, light waves combine to produce resultant waves that are either brighter or less bright than the component waves.

Why it Matters

Devices called *diffraction gratings* use the principle of interference to separate light into its component wavelengths. Diffraction gratings are used in instruments called *spectrometers,* which are used to study the chemical composition and temperature of stars.

CHAPTER PREVIEW