SECTION 1

What Is Physics?

SECTION OBJECTIVES

- **Identify activities and fields that involve the major areas within physics.**
- **Describe the processes of the scientific method.**
- **Describe the role of models and diagrams in physics.**

THE TOPICS OF PHYSICS

Many people consider physics to be a difficult science that is far removed from their lives. This may be because many of the world's most famous physicists study topics such as the structure of the universe or the incredibly small particles within an atom, often using complicated tools to observe and measure what they are studying.

But everything around you can be described by using the tools of physics. The goal of physics is to use a small number of basic concepts, equations, and assumptions to describe the physical world. These physics principles can then be used to make predictions about a broad range of phenomena. For example, the same physics principles that are used to describe the interaction between two planets can be used to describe the motion of a satellite orbiting Earth.

Many physicists study the laws of nature simply to satisfy their curiosity about the world we live in. Learning the laws of physics can be rewarding just for its own sake. Also, many of the inventions, appliances, tools, and buildings we live with today are made possible by the application of physics principles. Physics discoveries often turn out to have unexpected practical applications, and advances in technology can in turn lead to new physics discoveries. **Figure 1** indicates how the areas of physics apply to building and operating a car.

Figure 1
Without knowledge of many of the areas of physics, making cars would be impossible.