Chapter 1

ENRICHMENT

Use with Section 2

• Doing Science

Computer Models

Scientists often use models to simulate situations and test hypotheses. Computers are powerful model-building tools. Here are some examples of the use of computer models.

- Scientists who are trying to discover why dinosaurs became extinct have used computers to simulate climates. They use the computer simulations to test hypotheses about the effects of climate change on dinosaurs.
- Astronomers use computers to develop theories about how galaxies were formed.
- A nuclear blast can be simulated by a computer model that lets scientists study variables such as heat, velocity, and radioactive emissions.
- The behavior of atoms or molecules in a cluster can be simulated by a computer if the nature of the forces between the individual atoms or molecules is known.
- Computer models of global air circulation and of motion systems such as hurricanes have helped scientists better understand the structure and behavior of the atmosphere.

Why do you think computers are useful as a way to test hypotheses in the examples given above, compared to making direct observations?