Vocabulary

- **energy** the ability to do work
- **heat energy** the energy of moving particles
- **matter** the material or “stuff” of which everything is made
- **temperature** a measure of the heat energy in a substance

Inquiry Focus

**Measure** When students measure, they use tools to find distance, mass, or other information about an object.

Learn by Reading

For additional content area reading, see the Houghton Mifflin Science eBook: Grade 3, Unit F, pages F50–F52.

Concepts and Skills

- Students know that temperature is a measure of how much heat energy an object or material has.
- Students know the parts of a thermometer.
- Students know how to use thermometers to measure the temperature of different materials.
- Students record temperature data and use it to draw conclusions about heat energy.

Planning

**Materials**

- *colored pencils
- *ice cubes
- *marker, erasable, red
- *metric rulers
- *overhead projector
- plastic cups
- thermometers
- *water

*Not provided in kit

**Student Resources**

- 1.1 Vocabulary
- 1.2 Parts of a Thermometer
- 1.3 Using a Thermometer
- 1.4 Section 1 Assessment
Temperature is a measure of the average energy of the particles that make up a substance. Temperature is measured using a thermometer. Most thermometers show both a Fahrenheit and a Celsius scale. While the Fahrenheit scale is used commonly in everyday life in the United States, scientists and most other countries use the Celsius scale.

Daniel Gabriel Fahrenheit (1686–1736), a scientist working in Amsterdam, developed a mercury thermometer in 1714. He found the point at which pure water froze and marked this as 32 degrees. The boiling point of water on the Fahrenheit scale is 212 degrees.

Anders Celsius (1701–744), a Swedish scientist, developed a thermometer scale with 0 degrees as the point at which water freezes and 100 degrees as the point at which water boils. This scale became known as the Celsius scale.