Lesson

9 Movement of Heat

SC-04-4.6.5

Getting the Idea

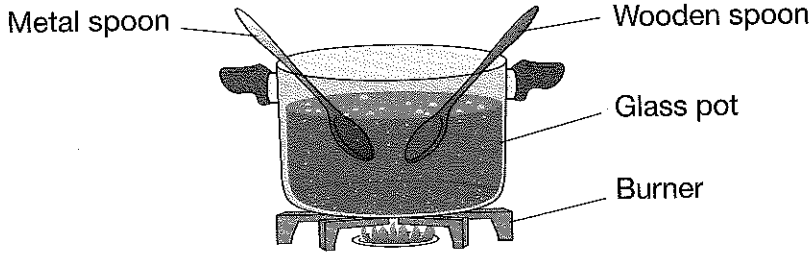
Key Words
heat
conductor
insulator

You pick up a metal spoon that has been sitting in a glass of ice water. The spoon feels very cold. Another metal spoon is in a hot cup of tea. It feels hot to the touch. If you put a wooden spoon in the hot tea, however, the spoon would not feel hot. Why do some things get hot or cold so easily?

Heat Conductors

Heat is the flow of energy between two things. When particles of a substance move more, the substance has more heat. Heat moves through some objects better than it does through others.

Suppose you put a pot of water on the stove and turn up the burner. Soon the water begins to boil. You put a metal spoon in the water. You also put a wooden spoon in the water. Heat from the water moves to the two spoons. But one spoon is too hot for you to touch. Which one? Why is one spoon so much hotter?



This is because metal is a good conductor of heat and wood is not. **Conductors** are materials through which heat moves easily.

Metals are very good conductors. Copper, iron, silver, and aluminum conduct heat very well. Most cooking pans are made of metal. The heat moves quickly through the metal and warms the food. A metal will always get hot quickly when heat is moving through it.

Heat Insulators

If you touch the wooden spoon in the boiling water, it will not feel hot. This is because wood is an insulator of heat. **Insulators** are materials through which heat cannot move easily. Wood and plastic are good insulators of heat. Foam is a good insulator of heat, too. Think about foam cups. The foam keeps the liquid inside the cup warm. It also keeps you from burning your fingers.

Cloth is also a good insulator of heat. Think about when you go outside on a cold day. You wear thick layers of clothes to keep warm. The clothing insulates you from the cold. It keeps heat inside the clothing, near your body. As another example, you use a potholder to touch a pan that is hot. The potholder keeps the heat from burning your fingers.

Fur is another good insulator of heat. Fur keeps animals warm. Fur traps heat and keeps it from leaving the skin of the animal. The animal stays warm in very cold weather.

Rubber is a good insulator of heat as well. Many metal wires are covered with rubber. This keeps the metal wires from getting too hot. It makes the wires safe to touch.