14. Which energy transfers are taking place?



A. light to heat and electricity
B. electricity to heat and light
C. heat to light and electricity
D. waste heat to light and electricity

15. Kira walked by the stove and said, "Wow! That's hot!" What allowed her to feel how hot the stove was without touching it?
F. conduction
G. fuel
H. radiation
J. refraction

16. Which does a thermometer measure?
A. number of particles of matter
B. total energy of movement of particles of matter
C. fuel energy of particles of matter
D. average energy of movement of particles of matter

Inquiry Skills

17. **Predict** what will happen to the handle of a metal spoon when you put the spoon into a cup of hot cocoa. Explain your answer.

18. Suppose you measure temperature in two cups. Each holds 250 mL of water. Both begin at 80°C. Over time, Cup A cools more quickly than Cup B. What **conclusion** can you draw about what each cup is made of?

Critical Thinking

19. Lenses in eyeglasses change the direction of light rays to help the lens of the eye form an image inside the eye. What process takes place in the eyeglass lenses? Explain your answer.

The Big Idea

20. You are helping with the dishes after supper, and you notice that the pots have wooden handles. What is the reason for wooden handles on a pot? What other materials might be used to make pot handles?

Inquiry Skills (5 pts. each)

17. Thermal energy will move from the hot cocoa to the spoon. The added energy will make the particles move faster, and the spoon will get hot.

18. Cup B is made of a poor conductor of heat.

Critical Thinking (5 pts. each)

19. Refraction; the lenses change the direction of light rays by bending them.

20. Wood does not conduct heat well, so the handles do not get hot when the pot is on the stove. A heat-resistant plastic or other material that does not conduct heat well or melt could be used.

Chapter Test

See ***Assessment Guide*** pages AG 99–104 for a Chapter Test and Performance Task, with Long Option rubric. Assessment options appear on page 562H.

Short Option Performance Assessment

Task

Balancing Temperature

Use a thermometer, full glass of warm water, full glass of cool water, and an empty glass to produce a glass of water that is about half full at nearly room temperature. Do not wait for the water to cool and warm naturally. Explain what you did and why it worked.

Rubric

Preparation Collect the materials in a classroom center. Provide students with warm and cool water when they are ready to do the activity.

Scoring Rubric—Performance Indicators

_____ Uses a thermometer to measure the room temperature and water temperatures.

_____ Combines warm and cool water to reach the desired temperature.

_____ Makes appropriate corrections to reach the goal.

_____ Explains correctly how thermal energy moves to achieve the desired temperature.

Observations and Rubric Scores

3 2 1 0