LESSON 96

ACTIVITY

Point of View
First and Second Laws

Name _____

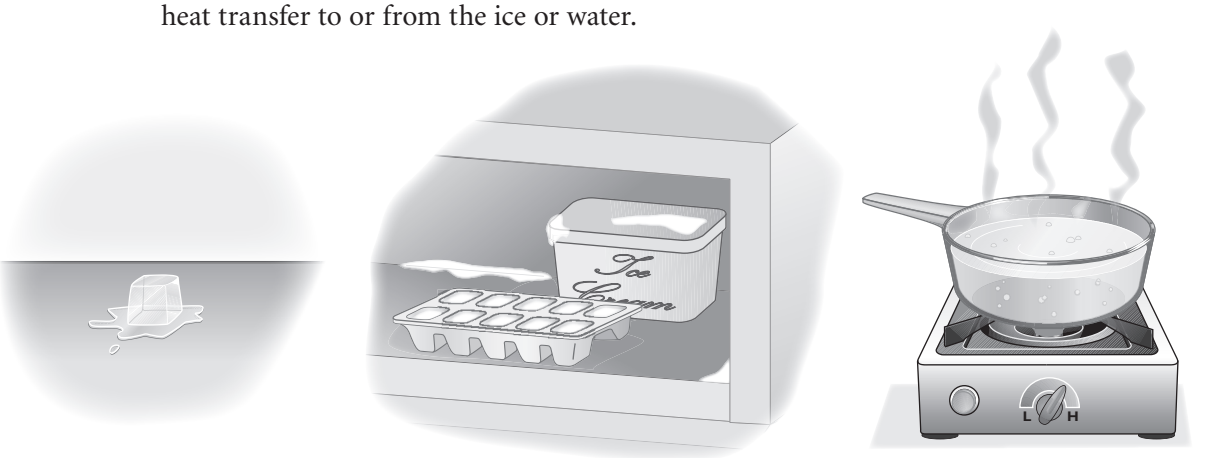
Date _____ Period _____

Purpose

To consider energy transfer from different points of view.

Part 1: Heat Transfer Scenarios

1. An ice cube is placed on the counter, a filled ice cube tray is placed in a freezer and water is boiling on the stove. For each situation, draw arrows to show the direction of heat transfer to or from the ice or water.



2. How does an ice cube feel in your hand at first? Explain why in terms of heat transfer.

3. If you hold an ice cube long enough, it will melt. Eventually your hand and the water are at thermal equilibrium. What do you think this means?

4. Why does the chemical reaction involving burning the gas cause the water to boil?

5. How would the water vapor directly above the pot feel on your hand? Explain why in terms of heat transfer.

6. Water vapor from the boiling water condenses on your kitchen windows. Explain why.

Part 2: Heat Transfer Stations

Alcohol Stations

Go to one of the alcohol stations around the room. Place a few drops of alcohol on the back of your hand.

1. Use heat transfer to explain what you feel when alcohol evaporates from your skin.

2. Place a few drops of alcohol on the cheesecloth that is attached to the tip of a thermometer. Gently wave it around. What happens to the temperature? Explain.

Water Stations

Go to one of the water stations in the room. Place one hand in the hottest water and your other hand in the coldest water. Wait at least 30 seconds. Take both hands out. Place them both in the lukewarm water.

3. What did you experience at the water station?

4. How can you explain your observations?

5. A cup of cocoa is at 80 °F (26.7 °C). Explain how this cup of cocoa can feel hot in one person's hands but cold in another person's hands.

6. **Making Sense** Why can't the temperature of an object alone indicate whether a person will experience it as hot or cold? What other information do you need?

7. **If You Finish Early** Provide evidence that energy tends to disperse (spread out).