DATE: NAME: CLASS:

CHAPTERS 4–6

Quiz-Quiz-Trade: Heat

Activity 4

Goal • Use this quiz-quiz-trade activity to build your understanding of the concepts in Unit 2.

What to Do

1. **Quiz** Each card has a question at the top and an answer at the bottom. Take a card and choose a partner. Ask the question on your card. If your partner answers correctly, move to step 2. If your partner answers incorrectly, or doesn't know, share the answer, then move to step 2.

2. **Quiz** Repeat step 1 with the other partner using his or her card.

3. **Trade** Trade cards with your partner. Find a new partner and start the quiz-quiz-trade again.

Question: In Canada, in what unit do we measure temperature? **Answer:** Degrees Celsius Chapter 4	**Question:** What type of thermometer would you use to detect heat leaks in your home around vents, windows, and doors? **Answer:** Infrared thermometer Chapter 4
Question: The freezing and boiling points of water are the two fixed points used to calibrate a Celsius thermometer. What are these two temperatures in degrees Celsius? **Answer:** Freezing: 0°C; boiling: 100°C Chapter 4	**Question:** A local jeweller softens silver to work it into different shapes for necklaces. She needs the kiln at 648°C. What type of thermometer will she need to test the temperature in her kiln? **Answer:** Thermocouple Chapter 4
Question: What type of thermometer uses two different metal strips welded together to measure temperature in appliances such as irons, ovens, toasters, and furnace thermostats? **Answer:** Bimetallic strip Chapter 4	**Question:** What state of matter is a substance when its temperature is above its boiling point? **Answer:** Gas Chapter 5

Question: What is the energy that particles have due to motion? **Answer:** Kinetic energy Chapter 5	**Question:** Would a 1L pot of water at 50°C have more or less average kinetic energy than a 1L pot of water at 25°C? **Answer:** More kinetic energy Chapter 5
Question: Which state of matter changes its shape with the shape of the container it is in and does not change its volume at room temperature? **Answer:** Liquid Chapter 5	**Question:** In which state of matter do particles vibrate in position, not moving away from each other? **Answer:** Solid Chapter 5
Question: Bridges on highways have gaps in them so they do not buckle in the heat during the summer. What term describes the increase in the volume of a substance when the temperature increases? **Answer:** Thermal expansion Chapter 5	**Question:** From summer to late fall in Newfoundland and Labrador, why do you need to add more air to the tires on your vehicle? **Answer:** As the temperature outside cools, thermal contraction of the air inside the tire occurs. Chapter 5

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Activity 4 continued

Question: Which change of state allows clothes to dry outside on a clothesline in winter? **Answer:** Sublimation Chapter 5	**Question:** You forget to turn on the fan in the bathroom when you take your shower. What change of state causes the mirrors and windows to become steamy? **Answer:** Condensation Chapter 5
Question: Why do cooking pots have wooden or plastic handles? **Answer:** Wood and plastic don't conduct heat as well as metal does, so they keep handles from getting too hot and burning your hands. Chapter 6	**Question:** Which process of heat transfer causes the handle of a metal marshmallow-roasting stick to get hot when one end is placed in a campfire? **Answer:** Conduction Chapter 6
Question: In a pot of boiling soup, which process of heat transfer causes the vegetables to float to the surface and then to sink again? **Answer:** Convection Chapter 6	**Question:** Which type of heat transfer occurs through empty space? **Answer:** Radiation Chapter 6

Question: Which type of heat transfer causes you to feel warm in a car on a winter day when the sun shines through the window? **Answer:** Radiation Chapter 6	**Question:** A dry, down-filled coat is very warm, but the same coat is not a very good insulator when it gets wet. Why? **Answer:** Air that does not move is a good insulator. Dry down has a lot of air space between the feathers which keeps the air from moving. Wet feathers are packed together so the air moves more easily. Chapter 6
Question: Aluminum has a higher specific heat capacity than steel. If you add the same amount of heat to the same amount of each substance, which one will reach the highest temperature? **Answer:** Steel Chapter 6	**Question:** In which direction will heat travel when your hand comes in contact with a cold set of keys? **Answer:** From your hand to the keys, leaving your hand feeling cold Chapter 6
Question: At room temperature, substances that feel cold have lower specific heat capacities than substances that feel warm. In your bathroom, which would have a lower specific heat capacity: the shower curtain or the faucet? **Answer:** Faucet Chapter 6	**Question:** In what unit do we measure heat? **Answer:** Joules Chapter 6

Question: In a refrigerator, liquid coolant travels through the coils. As the coils come into contact with heat in the air of the refrigerator, heat is transferred to the coolant, leaving your fridge cold. Is the coolant acting as an insulator or conductor? **Answer:** Conductor Chapter 6	**Question:** Does 100mL of water at 10°C have more, less, or the same amount of heat as 50mL of water at 10°C? **Answer:** More Chapter 6
Question: Does 100mL of water at 10°C have more, less, or the same temperature as 50mL of water at 10°C? **Answer:** Same Chapter 6	**Question:** Why is double-paned glass a better insulator than single-paned glass? **Answer:** The air space between the two panes acts as an insulator. Chapter 6
Question: Where in a fish tank should you place a heater: at the top or bottom? Why? **Answer:** At the bottom; to create a convection current Chapter 6	**Question:** Which heat technology involves using pipes buried deep in the ground to transfer the heat from the earth to warm a house in the winter and from a house to the earth to cool the house in the summer? **Answer:** Geothermal Chapter 6