

Name: \_\_\_\_\_ Date: \_\_\_\_\_

## Think You're a Heat Hero? A 4th Grade Energy Challenge

Evaluate comprehension of thermal energy movement through everyday scenarios like baking cookies and ocean breezes during your next science rotation.

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**1. Imagine you are making hot cocoa. If you leave a plastic spoon in the cup, it stays cool, but a metal spoon gets very hot. Why does the metal spoon change?**

- A. Metal is a natural source of light
- B. Thermal energy travels easily through metal
- C. The metal spoon is heavier than the plastic spoon
- D. Liquid cocoa only touches metal objects

**2. True or False: Heat always moves from an object that is colder to an object that is warmer.**

- A. True
- B. False

**3. When you stand near a campfire and feel the warmth on your face without touching the flames, the heat is reaching you through \_\_\_\_\_.**

- A. radiation
- B. insulation
- C. freezing
- D. friction

**4. Why do hot air balloons rise into the sky when the burner is turned on?**

- A. The balloon becomes heavier
- B. Warm air is pushed down by the fabric
- C. Warm air is less dense and rises above cool air
- D. The sun pulls the balloon upward

**5. True or False: Energy cannot be created or destroyed, it can only change from one form to another.**

- A. True
- B. False

**6. A puffy winter coat keeps you warm because it acts as an \_\_\_\_\_, which slows down the movement of heat away from your body.**

- A. engine
- B. insulator
- C. incubator
- D. indicator

**7. What happens to the tiny particles (molecules) in a cup of water as the water gets hotter?**

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- A. They slow down and stop moving
- B. They disappear into the air
- C. They move faster and spread apart
- D. They turn into solid ice

**8. If you place a warm chocolate bar on a cold sidewalk, the chocolate will lose heat and become \_\_\_\_\_.**

- A. solid
- B. liquid
- C. gas
- D. boiling

**9. True or False: Friction, like rubbing your hands together quickly, can produce heat energy.**

- A. True
- B. False

**10. Which of these is the best example of convection happening in nature?**

- A. A lizard warming its belly on a hot rock
- B. A cool breeze blowing near the ocean
- C. The sun warming the sand on a beach
- D. Touching a hot car door in the summer