

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

## Answer Key: Beat the Heat: Second Grade Thermal Energy Challenge

Temperature patterns, friction-based warmth, and material insulation—the fundamental cognitive building blocks for recognizing how heat energy moves through our daily world.

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**1. If you rub your hands together very fast on a cold day, what will happen?**

**Answer:** B) Your hands will feel warmer

Rubbing surfaces together creates friction, which is a way to make heat energy.

**2. True or False: A metal slide on a sunny playground usually feels hotter than a wooden bench.**

**Answer:** A) True

Metal is a good conductor, meaning it soaks up and holds heat from the sun very well.

**3. Which of these is a tool we use to see exactly how hot or cold something is?**

**Answer:** C) A thermometer

Thermometers are specifically designed to measure temperature in degrees.

**4. Heat always likes to travel from a \_\_\_\_ place to a colder place.**

**Answer:** B) warm

Thermal energy naturally moves from things with more heat to things with less heat.

**5. True or False: Putting on a thick sweater creates its own heat like a tiny heater.**

**Answer:** B) False

Sweaters are insulators; they don't make heat, they just trap your own body heat inside.

**6. What happens to a solid piece of chocolate if it gets too much heat energy from your pocket?**

**Answer:** B) It turns into a liquid (melts)

Adding heat energy to certain solids causes them to change state and become liquid.

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**7. To keep your hot cocoa warm for a long time, you should put it in a cup made of \_\_\_\_.**

**Answer:** C) thick plastic or foam

Thick plastic and foam are good insulators that slow down the movement of heat.

**8. Which of these is the Earth's biggest source of heat energy?**

**Answer:** D) The Sun

The sun provides the thermal energy that warms our planet's air, land, and water.

**9. When water gets very cold and loses its heat energy, it turns into \_\_\_\_.**

**Answer:** B) solid ice

Losing heat causes liquid water to freeze into a solid.

**10. True or False: If you touch a piece of ice, heat moves from your warm finger into the cold ice.**

**Answer:** A) True

Heat moves from the warmer object (your finger) to the cooler object (the ice).