

SECTION
1

Reinforcement

Temperature and Heat

Directions: Determine whether the italicized term makes each statement true or false. If the statement is true, write **true** in the blank. If the statement is false, write in the blank the term that makes the statement true.

- _____ 1. Particles that make up matter are in *constant* motion.
- _____ 2. The faster particles move the *less* kinetic energy they have.
- _____ 3. *Temperature* is the measure of the average kinetic energy of the particles in an object.
- _____ 4. When temperature *increases*, the kinetic energy of the particles decreases.
- _____ 5. The thermal energy of an object is the *total* energy of the particles in a material.
- _____ 6. A 5-kg chunk of aluminum and a 5-kg block of silver that are at the same temperature have *the same* thermal energy.
- _____ 7. Heat flows from a *higher* temperature to a lower temperature.
- _____ 8. Heat is measured in *newtons*.
- _____ 9. Different materials need *the same* amounts of heat to have similar changes in temperatures.
- _____ 10. The amount of energy it takes to raise the temperature of 1 kg of a material 1 kelvin is the *specific heat* of the material.
- _____ 11. Water has a relatively *low* specific heat.
- _____ 12. Materials with a high specific heat can absorb a lot of energy and show *little* change in temperature.

Directions: Answer the following questions about specific and thermal energy.

13. Change in thermal energy can be calculated using the equation $Q = m \times \Delta T \times C$.

- a. In this equation, what does Q represent? _____
- b. What does m represent? _____
- c. What does ΔT represent? _____
- d. What does C represent? _____
- e. What does the symbol Δ mean? _____
- f. Why is the symbol Δ used with T but not Q ? _____

14. What formula is used to calculate ΔT ? _____