

Name \_\_\_\_\_ Date \_\_\_\_\_ Period \_\_\_\_\_

### Energy Ws #3: Specific Heat Problems

1. How much energy is released by a burning peanut if the heat from the burning will raise the temperature of a 70.0 mL sample of water from 15.0°C to 45.0°C?

2. How much heat energy, in kcal, is released to your body when a cup of hot tea containing 200 g of water is cooled from 65°C to body temperature at 37°C?

3. 66,938 joules of heat energy is needed to raise the temperature of a 425 g aluminum baking sheet to a baking temperature of 200.0°C? What is the initial temperature of the baking sheet? The specific heat of aluminum is 0.90 J/g °C

4. A nutritional chemist burns one pulverized peanut in a calorimeter. The calorimeter contains 2.50 Kg of water and its temperature increases from 25.0°C to 27.0°C as the peanut burn. What is the energy content of the peanut in kilojoules?

5. Predict the final temperature of 1800 g of water within a calorimeter if the water is at 25.0°C before a 1.8g piece of dried peach with an energy content of 18.5 kJ is burned.

6. The temperature of an iron bar with a mass of 87.0 g is raised from 31°C to 543°C. In the process, 4900 calories of heat energy were absorbed. What is the specific heat of iron?

7. The temperature of a piece of glass with a mass of 65 g increases by 26°C when it absorbs 840 joules. Calculate the specific heat.

8. A substance with a mass of 124 g, an initial temperature of 25.0°C, and a specific heat of .931 J/g°C is given 640.0 joules of energy. What is the final temperature of the substance?