

# Energy & Specific Heat Worksheet

Name: \_\_\_\_\_ Period: \_\_\_\_\_

1. Explain what is meant by energy?
2. List two units used to measure energy.
3. What is the relationship between a calorie and a joule?
4. A fruit and oatmeal bar contains 142 nutritional Calories. Convert this energy to calories.
5. An exothermic reaction releases 86.5 kJ. How many kilocalories of energy are released?
6. If an endothermic process absorbs 256J, how many kilocalories are absorbed?
7. If the temperature of 34.4g of ethanol increases from 25.0°C to 78.8°C, how much heat has been absorbed by the ethanol?
8. A 4.50g nugget of pure gold absorbed 276 J of heat. What was the final temperature of the gold if the initial temperature was 25.0°C? The specific heat of gold is 0.129 J/(g\*°C).
9. A 155g sample of an unknown substance was heated from 25.0°C to 40°C. In the process, the substance absorbed 5696 J of energy. What is the specific heat of the substance?
10. Explain why you need to know the specific heat of a substance in order to calculate how much heat is gained or lost by the substance as a result of a temperature change.
11. How is the quantity of heat lost by the system related to the quantity of heat gained by the surroundings during an exothermic process?