

## Specific Heat Worksheet

**$C_p = q/m\Delta T$ , where  $q$  = heat energy,  $m$  = mass, and  $T$  = temperature**

1. A 15.75-g piece of iron absorbs 1086.75 joules of heat energy, and its temperature changes from 25°C to 175°C. Calculate the heat capacity of iron.
2. How many joules of heat are needed to raise the temperature of 10.0 g of aluminum from 22°C to 55°C, if the specific heat of aluminum is 0.90 J/g°C?
3. To what temperature will a 50.0 g piece of glass raise if it absorbs 5275 joules of heat and its heat capacity is 0.50 J/g°C? The initial temperature of the glass is 20.0°C.
4. Calculate the heat capacity of a piece of wood if 1500.0 g of the wood absorbs  $6.75 \times 10^4$  joules of heat, and its temperature changes from 32°C to 57°C.
5. 100.0 mL of 4°C water is heated until its temperature is 37°C. If the specific heat of water is 4.18 J/g°C, calculate the amount of heat energy needed to cause this rise in temperature.
6. 25.0 g of mercury is heated from 25°C to 155°C, and absorbs 455 joules of heat in the process. Calculate the heat capacity of mercury.
7. What is the Specific heat capacity of silver metal if 55.00 g of the metal absorbs 198 joules of heat and the temperature rises 15.0°C?
8. What is the change in temperature of 150.0 g of chloroform if it absorbs 1000.0 joules of heat, and the specific heat of chloroform is 0.96 J/g°C?

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