

Warm Up

Determine the amount of energy required to heat 15.00 g of ice from -25.00°C to -8.000°C.

$$q = ?$$

$$m = 15.00 \text{ g}$$

$$C = 2.01 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}}$$

$$\Delta T = 17.00^\circ\text{C}$$

$$q = mC\Delta T$$

$$q = (15.00 \text{ g})(2.01 \frac{\text{J}}{\text{g} \cdot ^\circ\text{C}})(17.00^\circ\text{C})$$

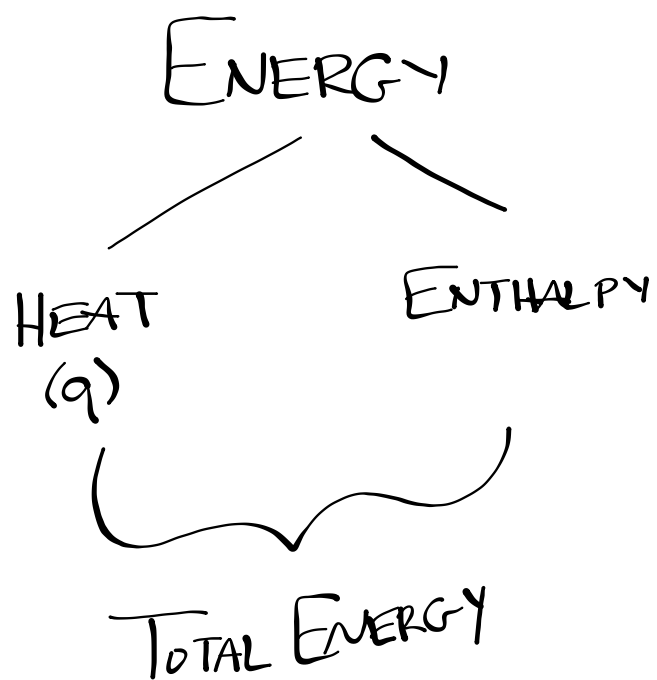
$$q = 512.6 \text{ J}$$

$$T_f = ?$$

$$q = mC\Delta T$$
$$q = mC(T_f - T_i)$$

Annotations for the second equation:

- Arrows pointing up from q to J
- Arrows pointing up from C to $\frac{J}{g \cdot ^\circ C}$
- Arrows pointing up from T_f and T_i to the T in ΔT



$$q = mC\Delta T$$

↑ ↑
"g" "J"
 g·°C

$$q = vC\Delta T$$

↑ ↑
"L" "kJ"
 L·°C

$$\frac{\text{MJ}}{\text{m}^3 \cdot ^\circ\text{C}} = \frac{\text{kJ}}{\text{L} \cdot ^\circ\text{C}}$$

Heat Worksheet

