

What Does Heat Tell Us About Chemical Change?

When a reaction releases or absorbs energy, the numbers reveal the story of what bonds are breaking and forming.

Describe a chemical reaction you observed recently (combustion, neutralization, or dissolution). What evidence of heat transfer did you notice? Now use $Q = mc\Delta T$ to explain what the temperature change tells you about the energy involved in that reaction. What would molar enthalpy (ΔH) add to your explanation? ([Outcome](#), [Outcome](#), [Outcome](#))

Where to start

- What was the initial temperature and final temperature you observed or measured?
- How would you calculate the heat energy transferred using mass, specific heat capacity, and temperature change?
- Why does knowing the amount of substance (in moles) matter when comparing reactions?
- What does a negative ΔH value tell you about whether energy was released or absorbed?

Stretch

Design a calorimetry experiment to compare the enthalpy change of two different reactions. What data would you collect, and how would you ensure your calorimeter minimizes heat loss to the surroundings?