

Heat and Energy in Reactions

When you burn fuel or mix chemicals, energy moves from one place to another, sometimes so quickly you can feel it.

Describe a moment when you observed or felt heat energy transfer during a chemical reaction or combustion. What evidence told you energy was moving? Use the equation $Q = mc\Delta T$ (Outcome) to explain why the temperature changed, then define what enthalpy means for that reaction (Outcome, Outcome).

Where to start

- What did you see, hear, or feel that showed energy was being released or absorbed?
- How would you measure the temperature change if you repeated the reaction in a calorimeter (Outcome)?
- Why does the mass of the substance matter when calculating heat energy?
- What is the difference between heat energy (Q) and enthalpy (ΔH , Outcome)?

Stretch

Design a calorimeter experiment to measure the molar enthalpy change of a reaction you choose. What data would you collect, and how would you use $Q = mc\Delta T$ & $\Delta H = \frac{Q}{n}$ to find your results (Outcome)?