

Enthalpy Changes and Calorimetry Maze

This maze reinforces the vocabulary and quantitative relationships used to analyze thermochemical changes, including the definition of enthalpy and molar enthalpy ([Outcome](#), [Outcome](#)), the application of $Q = mc\Delta T$ to transfer problems ([Outcome](#), [Outcome](#)), the use of calorimetry data to determine enthalpy changes in chemical reactions ([Outcome](#)), and the correct use of ΔH for a reaction ([Outcome](#)). These concepts fall under the general outcome of determining and interpreting energy changes in chemical reactions ([Topic](#)) and connect to calorimetry investigations such as those described in [Resource](#) and [Resource](#).

How to play

Trace a single path from the entrance to the exit of the maze, moving only up, down, left, or right through open cells. Diagonal moves are not permitted, and the path may not cross itself.

As you move through the maze, keep the following eight terms in mind. Each one names a concept or quantity central to enthalpy and calorimetry, and you will need all eight to complete the checkpoint questions below once you finish the maze:

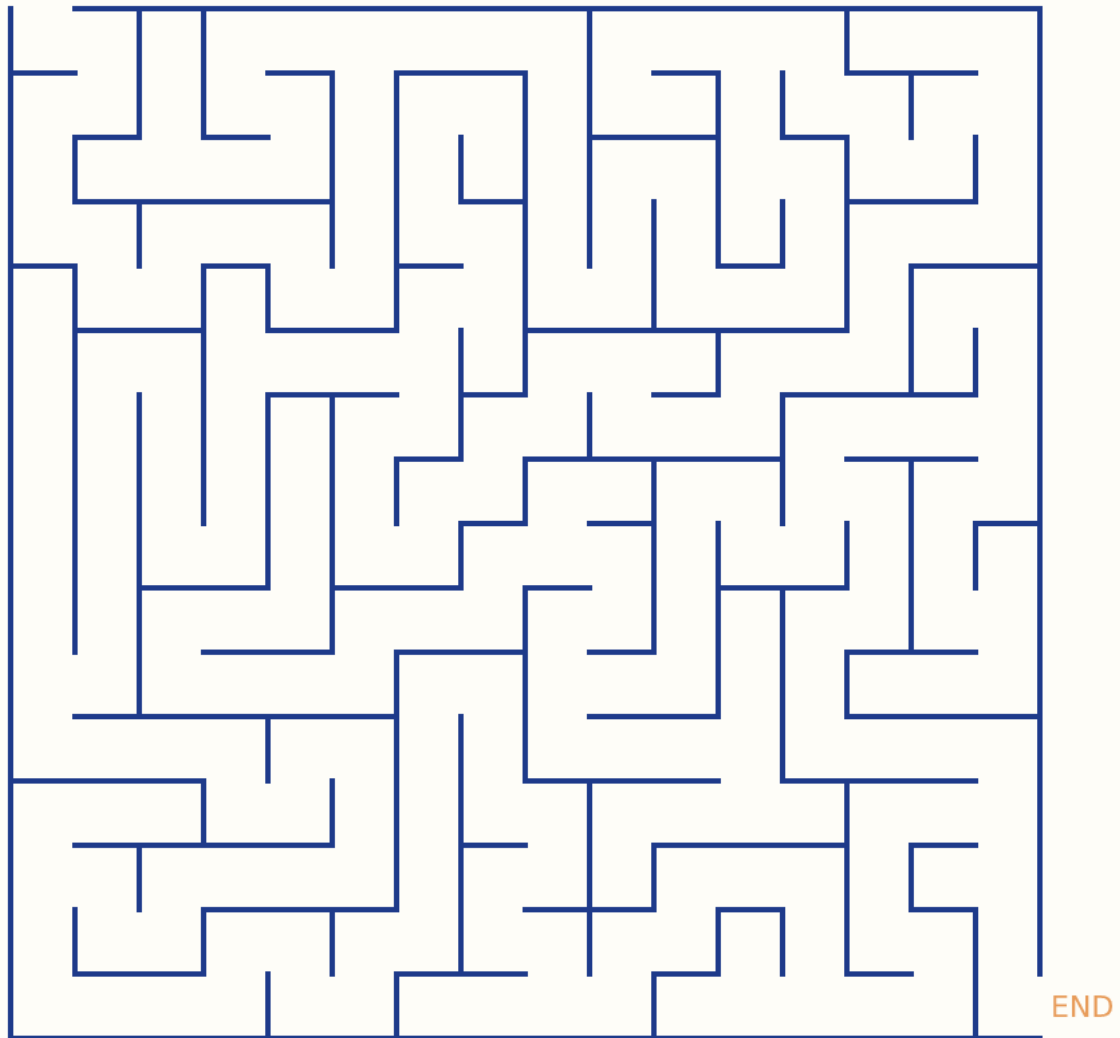
1. Enthalpy
2. Calorimeter
3. Specific heat capacity
4. Exothermic
5. Endothermic
6. Molar enthalpy
7. Heat capacity
8. Temperature change

After you solve the maze, answer these checkpoint questions using the terms above. Do not write your answers on the maze itself.

1. Which term names the total heat content of a system, given the symbol H ([Outcome](#))?
2. Which term describes a reaction that releases heat to its surroundings?
3. Which term describes a reaction that absorbs heat from its surroundings?
4. In the equation $Q = mc\Delta T$, m corresponds to the variable [Outcome](#)?
5. Which term names the device used to measure heat transfer during a physical or chemical process ([Outcome](#), [Resource](#))?
6. Which term describes the enthalpy change per mole of a substance reacting ([Outcome](#))?
7. In the equation $Q = mc\Delta T$, c corresponds to the variable [Outcome](#)?
8. Which term describes the amount of heat required to raise the temperature of an entire object by 1°C , as distinct from specific heat capacity?

The maze

START



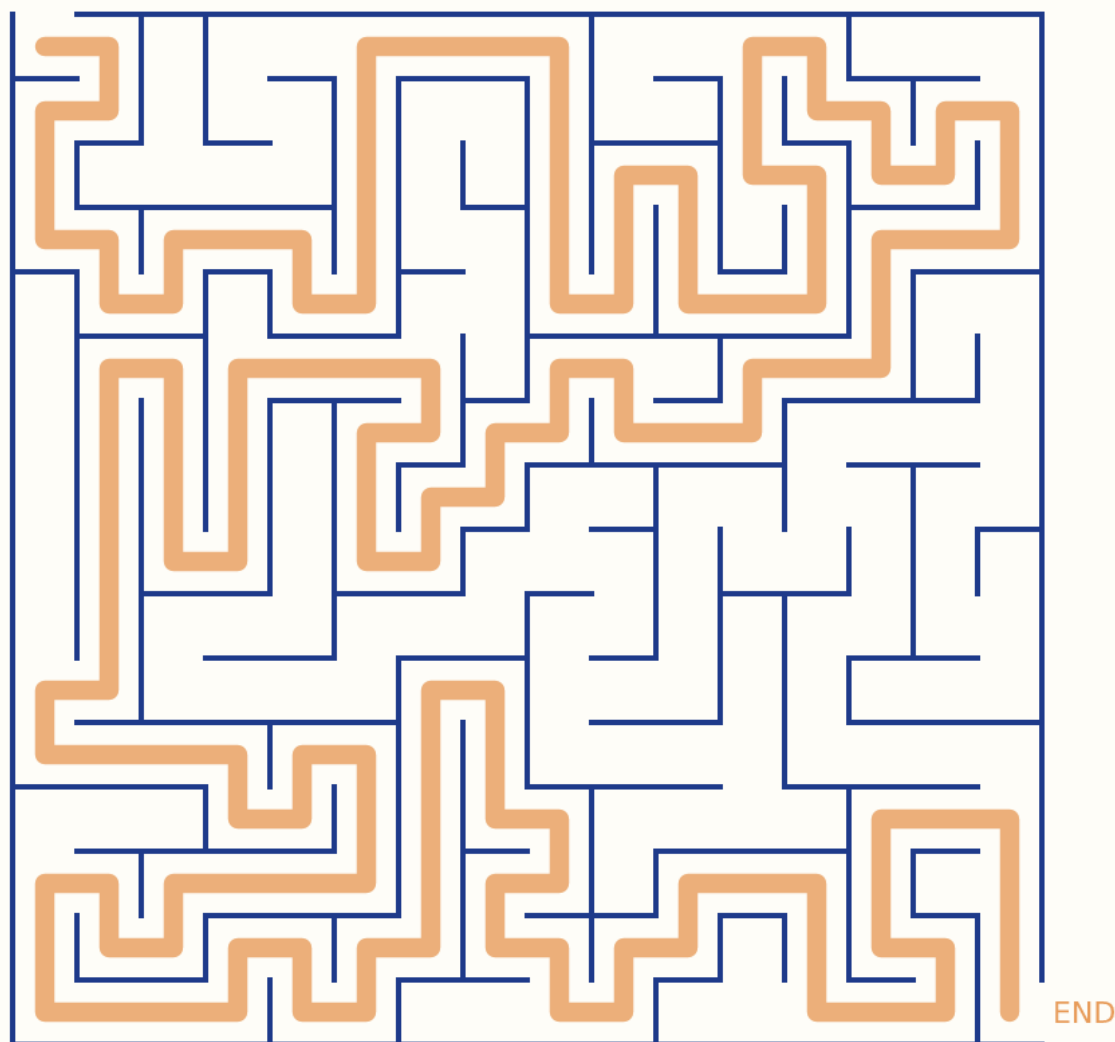
END

Checkpoint answers: 1. Enthalpy, 2. Exothermic, 3. Endothermic, 4. Specific heat capacity, 5. Calorimeter, 6. Molar enthalpy, 7. Temperature change, 8. Heat capacity.

Maze solution path:

Enthalpy Changes and Calorimetry Maze (solution)

START



END

Maze solution

Path: right 1, down 1, left 1, down 2, right 1, down 1, right 1, up 1, right 2, down 1, right 1, up 4, right 3, down 4, right 1, up 2, right 1, down 2, right 2, up 2, left 1, up 2, right 1, down 1, right 1, down 1, right 1, up 1, right 1, down 2, left 2, down 2, left 2, down 1, left 2, up 1, left 1, down 1, left 1, down 1, left 1, down 1, left 1, up 2, right 1, up 1, left 3, down 3, left 1, up 3, left 1, down 5, left 1, down 1, right 3, down 1, right 1, up 1, right 1, down 2, left 3, down 1, left 1, up 1, left 1, down 2, right 3, up 1, right 1, down 1, right 1, up 1, right 1, up 4, right 1, down 2, right 1, down 1, left 1, down 1, right 1, down 1, right 1, up 1, right 1, up 1, right 2, down 2, right 2, up 1, left 1, up 2, right 2, down 3