

Escape the classroom – materials

Education in Chemistry

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Modelled on escape rooms, these activities challenge students to use the properties of materials to reveal hidden codes to open a locked folder or box containing a reward. On the following page are clues to help students work out how to reveal the hidden codes; the solutions are below.

Solutions

Puzzle 1

Dipping the wiregram in hot water reveals the number and suit of a playing card. Shining the UV torch on that card shows the code.

Puzzle 2

Warming the sheet between the hands reveals the code.

Puzzle 3

Heating the note over hot water or a candle shows the code.

Puzzle 4

Adding water to the beaker of the gel beads makes the code visible.

Puzzle 5

Painting the petri dish with a wet brush reveals the code.

Puzzle 6

Placing the sheet in water and viewing from above shows the code.

Clues

Puzzle 1 – Memory test

The wire has memory in water hot
It will guide you to the card to spot.

Puzzle 2 – Thermocolour ink

This sheet contains thermochromic ink
To see the code you need to think!

Puzzle 3 – Thermochromic disguise

A post it note, an illegible scrawl,
Something exothermic may reveal all.

Puzzle 4 – Polymer puzzle

Hydrogel beads, they absorb and swell,
Add more hydrogen oxide and you'll do well!

Puzzle 5 – A brush with hydrochromic paint

A layer of special paint, the code is set,
To reveal, you need something bristling wet.

Puzzle 6 – Reflective riddle

Water and light make the message clear and bright.