# Escape the classroom again

***Education in Chemistry***November 2019
[rsc.li/34maTCe](https://rsc.li/34maTCe)

Modelled on Escape rooms, these Escape the classroom activities challenge students to solve chemistry-based puzzles to open a locked folder containing a reward. On the following pages are the puzzles and the solutions.

## Puzzle 1 – Hydrophobic revelation

The code to find
Is set in stone
Dihydrogen oxide
Will make it known …

## Puzzle 2 – Word grid



1. Family of saturated hydrocarbons, general formula CnH2n.
2. Unsaturated hydrocarbon with formula C2H4.
3. An example of this type of formula is CnH2n.
4. This solution will rapidly decolourise in the presence of unsaturated hydrocarbons.
5. Alkenes will react with bromine in this type of reaction.
6. Compounds with same molecular formula but different structural formula.
7. Hydrocarbon with formula C5H12.
8. Hydrocarbon with formula C3H8.
9. This element is required for combustion.
10. Gas produced during combustion of hydrocarbons.
11. Name given to –OH functional group in ethanol.
12. Series with similar chemical properties and same general formula.
13. Family of saturated hydrocarbons, general formula CnH2n+2.
14. Alcohol with three carbon atoms.
15. Number of hydrogens in hexane.
16. Number of carbons in methanol.
17. Number of hydrogens in ethane.

## Puzzle 3 – Interweaved enigma

## Puzzle 4 – A question of balance



This equation needs balance
This is conservation of mass
Get the right numbers
The next stage you will pass …

## Puzzle 5 – Particle poser



The first number is atomic
the second is mass
The third is number of neutrons
Next is ion charge and you will pass …

## Puzzle 6 – Riddle

I’m a molecular solid element

When burning I look grand

I was isolated from urine

By the German Henning Brand

I’m in DNA, fertilisers

Matches and much more

My molecules aren’t diatomic

I group my atoms in four

The temperature I boil at

Will give you the clue

To open lock 1
How will you do?

## Solutions

### Puzzle 1

346

### Puzzle 2



### Puzzle 3

Sodium sulfate

Na2SO4

(2 x 23) + 32 + (4 x 16) = 142

142 x 8 = 1136

Code = 1136

### Puzzle 4



### Puzzle 5

Atomic number is 4
Mass number is 9
Neutrons = 5
Charge is 2+
So code is 4952

### Puzzle 6

Boiling point = 280