

## Atoms, molecules and ions: 4-in-a-line

### *Education in Chemistry*

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[rsc.li/2wxTV4v](https://rsc.li/2wxTV4v)












In pairs students need a copy of the 4-in-a-line grid and a set of shuffled game cards which should be arranged in a pile, face down between the two students.






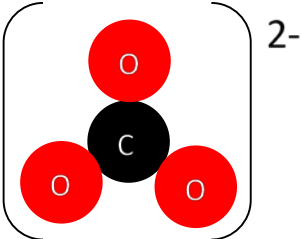
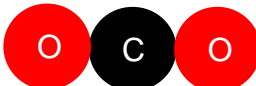
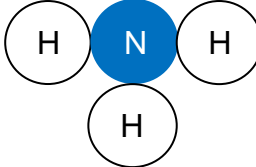


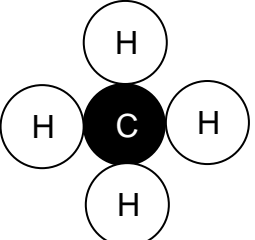
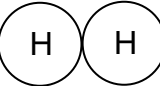
Students take it in turns to turn over a card and decide if it represents an **atom**, a **molecule** or an **ion**. If both students are unsure, you can confirm the particle type. If correct the student finds the answer anywhere on the grid and either colours in the circle in their colour or places a personalised counter over it. If incorrect, or the student doesn't know the answer, they must place the card at the bottom of the pile.

The first person to obtain four circles in a line (horizontal, vertical or diagonal) anywhere on the grid wins.

## Atoms, molecules or ions: 4-in-a-line game cards

|   |   |   |   |
|---|---|---|---|
| He  | Ar  | Ne  | Kr  |
|    |    |    |    |
|  |  |  |  |
|  | $\text{Fe}^{2+}$  | $\text{Cu}^{2+}$  | $\text{K}^{+}$  |
| $\text{Cl}^{-}$   | $\text{NO}_3^{-}$   | $\text{SO}_4^{2-}$  | $\text{F}^{-}$  |

Atoms, molecules or ions: 4-in-a-line prompt cards

|   |   |  |   |
|---|---|--|---|
|    |    |     |    |
|    |    | CO <sub>2</sub>  | H <sub>2</sub> O  |
| PH <sub>3</sub>   | O <sub>2</sub>  | F <sub>2</sub>   | C <sub>2</sub> H <sub>5</sub> OH  |
| H <sub>2</sub> SO <sub>4</sub>  | C <sub>2</sub> H <sub>6</sub>   |  |  |
|  |  |  |  |

## Atoms, molecules or ions: 4-in-a-line grid

Match the symbol or the particle diagram to the type of particle it represents.

Get 4-in-a-line to win!

