

## EXPLAIN

The Explain activity provides students with an opportunity to recognize that chemical formulas represent substances and to determine the number of atoms found in compounds. This activity is designed for whole-group instruction and independent practice.

### Materials

For teacher

- **Explain: Chemical Formula List**

For each student

- small whiteboard or reusable plastic plate
- dry erase marker
- Periodic Table
- **Explain: Counting Atoms**

### Teacher Instruction

1. Distribute a small whiteboard or reusable plastic plate and dry erase marker to each student.
2. Display the first chemical compound, hydrochloric acid, and its chemical formula found on the **Explain: Chemical Formula List**.
3. Prompt students to write the compound name and formula on their whiteboards. Instruct students to underline each element found in the compound and to circle any subscripts found in the compound. Model this method for students.
4. Instruct students to copy the following table onto their whiteboard.

Element	Number of atoms

5. Ask: **How many elements are in the formula HCl?** *Two*
6. Ask: **Which chemical symbols are in this formula?** *H and Cl*
7. Prompt students to use their Periodic Table to determine the two elements found in the compound hydrochloric acid.
8. Ask: **Which element does the chemical symbol H represent?** *Hydrogen* **Does this chemical symbol have a subscript?** *No* **How many atoms of hydrogen are in this compound?** *One*

Compound Name	Chemical Formula	Elements / Number of atoms	Total number of atoms
Hydrochloric acid	HCl	Hydrogen – 1 Chlorine – 1	2
Water	H <sub>2</sub> O	Hydrogen – 2 Oxygen – 1	3
Benzene	C <sub>6</sub> H <sub>6</sub>	Carbon – 6 Hydrogen – 6	12
Methyl chloride	CH <sub>3</sub> Cl	Carbon – 1 Hydrogen – 3 Chlorine – 1	5
Naphthalene	C <sub>10</sub> H <sub>8</sub>	Carbon – 10 Hydrogen – 8	18