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| **Topic** | Chemical formula | **Level** | Key Stage 3 (or any other course for students aged 11-16) |
| **Outcomes** | 1. To calculate the number of atoms and elements from a chemical formula, including formulae with brackets 2. To understand how the chemical formula relates to a particle picture | | |
| **Information for teachers** | This activity is to check that students understand what a chemical formula means. So often students get to age 16 and don’t understand the language of chemistry which makes learning more rewarding concepts hard. Obviously, 2 Cl means two moles of chlorine atoms but as this stage, introducing the mole is not helpful and so I am happy if students describe 2 Cl as representing 2 moles of chlorine atoms. | | |

**Working out what a chemical formula means**

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| --- | --- | --- | --- | --- |
| Substance | Particle picture of substance | Number of elements | Number of atoms | Description of substance |
| Cl |  | 1 | 1 | One atom of chlorine |
| Cl2 |  |  |  |  |
| 2 Cl |  |  |  |  |
| H2 |  |  |  |  |
| H2O |  | ­ |  |  |
| H2 + O2 |  |  |  |  |
| 2 H + 2 O |  |  |  |  |
| 2 H + 2 O2 |  |  |  |  |
| C6H12O6 |  |  |  |  |
| N3 |  |  |  |  |
| Mg(NO3)2 |  |  |  |  |
| AlCl3 |  |  |  |  |
| 3 Mg(NO3)2 |  |  |  |  |