

**Science and Environment**  
**Balancing chemical equations**

Balance the following equations using whole numbers as coefficients.

1.  $\text{Mg} + 2\text{HCl} \rightarrow \text{MgCl}_2 + \text{H}_2$
2.  $(\text{H}_2\text{O} + \text{Cl}_2 \rightarrow 2\text{HCl} + \text{O}_2) \times 2 = 2\text{H}_2\text{O} + 2\text{Cl}_2 \rightarrow 4\text{HCl} + \text{O}_2$
3.  $2\text{Fe}_2\text{O}_3 + 8\text{CO} \rightarrow 6\text{CO}_2 + 4\text{Fe}$
4.  $\text{H}_2\text{O}_2 \rightarrow \text{H}_2\text{O} + \text{O}_2 = 2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$
5.  $\text{H}_2\text{SO}_4 + 2\text{NaOH} \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
6.  $3\text{CaO} + 2\text{Al} \rightarrow \text{Al}_2\text{O}_3 + 3\text{Ca}$
7.  $2\text{KI} + \text{Pb}(\text{NO}_3)_2 \rightarrow 2\text{KNO}_3 + \text{PbI}_2$
8.  $\text{Ba}(\text{OH})_2 + 2\text{HBr} \rightarrow \text{BaBr}_2 + 2\text{H}_2\text{O}$
9.  $\text{CaCO}_3 + 2\text{HCl} \rightarrow \text{CO}_2 + \text{CaCl}_2 + \text{H}_2\text{O}$
10.  $4\text{HCl} + \text{O}_2 \rightarrow 2\text{Cl}_2 + 2\text{H}_2\text{O}$
11.  $\text{CaCl}_2 + \text{Na}_2\text{CO}_3 \rightarrow \text{CaCO}_3 + 2\text{NaCl}$
12.  $\text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2 \rightarrow 6\text{CO}_2 + 6\text{H}_2\text{O}$
13.  $4\text{NH}_3 + 7\text{O}_2 \rightarrow 4\text{NO}_2 + 6\text{H}_2\text{O}$

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