

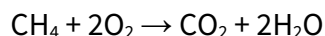
Balancing equations practice

Remember

A chemical equation is **balanced** when it has the same number of each type of atom on the left and right of the arrow. Never change a chemical formula to balance an equation.

Task 1

This is the balanced equation for methane burning in oxygen:



1. Look at the reactants (on the left of the arrow). State the number of atoms of each element.

carbon, C hydrogen, H oxygen, O

2. Look at the products (on the right of the arrow). State the number of atoms of each element.

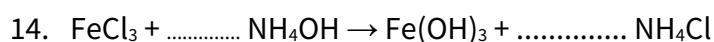
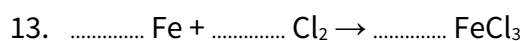
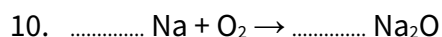
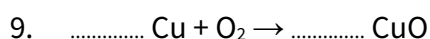
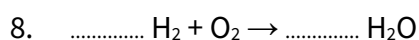
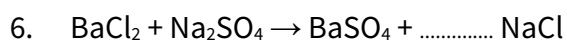
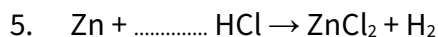
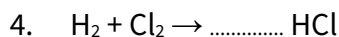
carbon, C hydrogen, H oxygen, O

3. Explain why this equation is **balanced**.

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Task 2

Add a 2, 3 or 4 in each space to correctly balance these equations.



Balancing equations practice – ANSWERS

1. C = 1, H = 4, O = 4
 2. C = 1, H = 4, O = 4
 3. The number of each type of atom on the left and right of the arrow is the same.
 4. $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$
 5. $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$
 6. $\text{BaCl}_2 + \text{Na}_2\text{SO}_4 \rightarrow \text{BaSO}_4 + 2\text{NaCl}$
 7. $\text{CuCO}_3 + 2\text{HCl} \rightarrow \text{CuCl}_2 + \text{CO}_2 + \text{H}_2\text{O}$
 8. $2\text{H}_2 + \text{O}_2 \rightarrow 2\text{H}_2\text{O}$
 9. $2\text{Cu} + \text{O}_2 \rightarrow 2\text{CuO}$
 10. $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
 11. $2\text{NaOH} + \text{H}_2\text{SO}_4 \rightarrow \text{Na}_2\text{SO}_4 + 2\text{H}_2\text{O}$
 12. $3\text{KOH} + \text{H}_3\text{PO}_4 \rightarrow \text{K}_3\text{PO}_4 + 3\text{H}_2\text{O}$
 13. $2\text{Fe} + 3\text{Cl}_2 \rightarrow 2\text{FeCl}_3$
 14. $2\text{NaOH} + \text{CuSO}_4 \rightarrow \text{Na}_2\text{SO}_4 + \text{Cu}(\text{OH})_2$
 14. $\text{FeCl}_3 + 3\text{NH}_4\text{OH} \rightarrow \text{Fe}(\text{OH})_3 + 3\text{NH}_4\text{Cl}$
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10. $4\text{Na} + \text{O}_2 \rightarrow 2\text{Na}_2\text{O}$
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