## Chemical equations card sort

## Your task

1. Cut out the cards below.
2. Sort them into:

- reactants (cards with a white background)
- products (shaded background)
- arrows

3. Arrange the cards to match the correct reactants with the correct products.
4. Copy the words into your book.

Draw an arrow between reactants and products.
5. Copy the formulae into your book. To complete each equation:

- draw an arrow between reactants and products
- add numbers to balance any unbalanced equations.
(Four equations will already be balanced)

| magnesium $\mathrm{Mg}(\mathrm{~s})$ | $+$ | steam $\mathrm{H}_{2} \mathrm{O}(\mathrm{~g})$ | potassium bromide $\mathrm{KBr}(\mathrm{aq})$ | $+$ $+$ | silver nitrate <br> $\mathrm{AgNO}_{3}(\mathrm{aq})$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\begin{gathered} \text { lead nitrate } \\ \mathrm{Pb}\left(\mathrm{NO}_{3}\right)_{2}(\mathrm{aq}) \end{gathered}$ | $+$ $+$ | potassium iodide $\mathrm{KI}(\mathrm{aq})$ | carbon $C(s)$ | $+$ <br> $+$ | $\begin{aligned} & \text { oxygen } \\ & \mathrm{O}_{2}(\mathrm{~g}) \end{aligned}$ |
| copper(II) sulfate $\mathrm{CuSO}_{4}(\mathrm{aq})$ | $+$ $+$ | sodium hydroxide $\mathrm{NaOH}(\mathrm{aq})$ | calcium carbonate$\mathrm{CaCO}_{3}(\mathrm{~s})$ |  |  |
| calcium oxide $\mathrm{CaO}(\mathrm{~s})$ | $+$ $+$ | carbon dioxide $\mathrm{CO}_{2}(\mathrm{~g})$ | carbon dioxide$\mathrm{CO}_{2}(\mathrm{~g})$ |  |  |
| copper(II) hydroxide $\mathrm{Cu}(\mathrm{OH})_{2}(\mathrm{~s})$ | $+$ <br> $+$ | sodium sulfate <br> $\mathrm{Na}_{2} \mathrm{SO}_{4}(\mathrm{aq})$ | lead iodide $\mathrm{Pbl}_{2}(\mathrm{~s})$ | $+$ $+$ | potassium nitrate $\mathrm{KNO}_{3}(\mathrm{aq})$ |
| potassium nitrate $\mathrm{KNO}_{3}(\mathrm{aq})$ |  | silver bromide $\operatorname{AgBr}(\mathrm{s})$ | magnesium oxide $\mathrm{MgO}(\mathrm{~s})$ | $+$ $+$ | hydrogen $\mathrm{H}_{2}(\mathrm{~g})$ |
| $\longrightarrow$ | $\longrightarrow$ | $\longrightarrow$ | $\longrightarrow$ | $\longrightarrow$ | $\longrightarrow$ |

## Chemical equations card sort - ANSWERS

## Word equations

magnesium + steam $\rightarrow$ magnesium oxide + hydrogen
potassium bromide + silver nitrate $\rightarrow$ potassium nitrate + silver bromide
carbon + oxygen $\rightarrow$ carbon dioxide
calcium carbonate $\rightarrow$ calcium oxide + carbon dioxide
lead nitrate + potassium iodide $\rightarrow$ lead iodide + potassium nitrate copper(II) sulfate + sodium hydroxide $\rightarrow$ copper(II) hydroxide + sodium sulfate

## Balanced symbol equations

$\mathrm{Mg}(\mathrm{s})+\mathrm{H}_{2} \mathrm{O}(\mathrm{g}) \rightarrow \mathrm{MgO}(\mathrm{s})+\mathrm{H}_{2}(\mathrm{~g})$
$\mathrm{KBr}(\mathrm{aq})+\mathrm{AgNO}_{3}(\mathrm{aq}) \rightarrow \mathrm{KNO}_{3}(\mathrm{aq})+\mathrm{AgBr}(\mathrm{s})$
$\mathrm{C}(\mathrm{s})+\mathrm{O}_{2}(\mathrm{~g}) \rightarrow \mathrm{CO}_{2}(\mathrm{~g})$
$\mathrm{CaCO}_{3}(\mathrm{~s}) \rightarrow \mathrm{CaO}(\mathrm{s})+\mathrm{CO}_{2}(\mathrm{~g})$
$\mathrm{Pb}\left(\mathrm{NO}_{3}\right)_{2}(\mathrm{aq})+2 \mathrm{KI}(\mathrm{aq}) \rightarrow \mathrm{Pbl}_{2}(\mathrm{~s})+2 \mathrm{KNO}_{3}(\mathrm{aq})$
$\mathrm{CuSO}_{4}(\mathrm{aq})+2 \mathrm{NaOH}(\mathrm{aq}) \rightarrow \mathrm{Cu}(\mathrm{OH})_{2}(\mathrm{~s})+\mathrm{Na}_{2} \mathrm{SO}_{4}(\mathrm{aq})$

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