## 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		+	steam	potassium bromi	de +	silver nitrate
Mg(s)		+	$H_2O(g)$	KBr(aq)	+	AgNO₃(aq)
lead nitrate		+	potassium iodide	carbon	+	oxygen
Pb(NO₃)₂(aq)		+	KI(aq)	C(s)	+	O <sub>2</sub> (g)
copper(II) sulfate		+	sodium hydroxide	calcium carbonate		
CuSO <sub>4</sub> (aq)		+	NaOH(aq)	CaCO <sub>3</sub> (s)		
calcium oxide		+	carbon dioxide	carbon dioxide		
CaO(s)		+	CO <sub>2</sub> (g)	CO <sub>2</sub> (g)		
copper(II) hydroxide		+	sodium sulfate	lead iodide	+	potassium nitrate
Cu(OH) <sub>2</sub> (s)		+	Na <sub>2</sub> SO <sub>4</sub> (aq)	Pbl <sub>2</sub> (s)	+	KNO₃(aq)
potassium nitrate		+	silver bromide	magnesium oxic	le +	hydrogen
KNO₃(aq)		+	AgBr(s)	MgO(s)	+	H <sub>2</sub> (g)
$\rightarrow$		$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$	$\rightarrow$



## Chemical equations card sort – ANSWERS

### Word equations

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

## Balanced symbol equations

$$\begin{split} \mathsf{Mg}(s) + \mathsf{H}_2\mathsf{O}(g) &\to \mathsf{MgO}(s) + \mathsf{H}_2(g) \\ \mathsf{KBr}(\mathsf{aq}) + \mathsf{AgNO}_3(\mathsf{aq}) &\to \mathsf{KNO}_3(\mathsf{aq}) + \mathsf{AgBr}(s) \\ \mathsf{C}(s) + \mathsf{O}_2(g) &\to \mathsf{CO}_2(g) \\ \mathsf{CaCO}_3(s) &\to \mathsf{CaO}(s) + \mathsf{CO}_2(g) \\ \mathsf{Pb}(\mathsf{NO}_3)_2(\mathsf{aq}) + \mathbf{2}\mathsf{KI}(\mathsf{aq}) &\to \mathsf{PbI}_2(s) + \mathbf{2}\mathsf{KNO}_3(\mathsf{aq}) \\ \mathsf{CuSO}_4(\mathsf{aq}) + \mathbf{2}\mathsf{NaOH}(\mathsf{aq}) &\to \mathsf{Cu}(\mathsf{OH})_2(s) + \mathsf{Na}_2\mathsf{SO}_4(\mathsf{aq}) \end{split}$$

# Chemical equations card sort – ANSWERS

#### Word equations

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

#### Balanced symbol equations

$$\begin{split} \mathsf{Mg}(\mathsf{s}) + \mathsf{H}_2\mathsf{O}(\mathsf{g}) &\to \mathsf{MgO}(\mathsf{s}) + \mathsf{H}_2(\mathsf{g}) \\ \mathsf{KBr}(\mathsf{aq}) + \mathsf{AgNO}_3(\mathsf{aq}) &\to \mathsf{KNO}_3(\mathsf{aq}) + \mathsf{AgBr}(\mathsf{s}) \\ \mathsf{C}(\mathsf{s}) + \mathsf{O}_2(\mathsf{g}) &\to \mathsf{CO}_2(\mathsf{g}) \\ \mathsf{CaCO}_3(\mathsf{s}) &\to \mathsf{CaO}(\mathsf{s}) + \mathsf{CO}_2(\mathsf{g}) \\ \mathsf{Pb}(\mathsf{NO}_3)_2(\mathsf{aq}) + \mathbf{2}\mathsf{KI}(\mathsf{aq}) &\to \mathsf{PbI}_2(\mathsf{s}) + \mathbf{2}\mathsf{KNO}_3(\mathsf{aq}) \end{split}$$

 $\mathsf{CuSO}_4(\mathsf{aq}) + \mathbf{2}\mathsf{NaOH}(\mathsf{aq}) \rightarrow \mathsf{Cu}(\mathsf{OH})_2(\mathsf{s}) + \mathsf{Na}_2\mathsf{SO}_4(\mathsf{aq})$ 

