

Science 1.8 AS 90947 Investigate selected chemical reactions

Displacement Reactions – Writing Word and Symbol Equations **Answers**

Success Criteria: complete each level before moving onto the next

- Basic: write **word equations** for the following displacement reactions
- Proficient: write **symbol equations** for the following displacement reactions
- Advanced: **balance the symbol equations** for the following displacement reactions

1. calcium metal and copper nitrate solution are mixed together.

Word equation **calcium + copper nitrate → copper + calcium nitrate**

Symbol equation **$\text{Ca}_{(s)} + \text{Cu}(\text{NO}_3)_{2(aq)} \rightarrow \text{Cu}_{(s)} + \text{Ca}(\text{NO}_3)_{2(aq)}$**

2. magnesium metal and lead nitrate solution are mixed together.

Word equation **magnesium + lead nitrate → lead + magnesium nitrate**

Symbol equation **$\text{Mg}_{(s)} + \text{Pb}(\text{NO}_3)_{2(aq)} \rightarrow \text{Pb}_{(s)} + \text{Mg}(\text{NO}_3)_{2(aq)}$**

3. zinc metal and iron (II) nitrate solution are mixed together.

Word equation **zinc + iron (II) nitrate → iron + zinc nitrate**

Symbol equation **$\text{Zn}_{(s)} + \text{Fe}(\text{NO}_3)_{2(aq)} \rightarrow \text{Fe}_{(s)} + \text{Zn}(\text{NO}_3)_{2(aq)}$**

4. magnesium metal and silver nitrate solution are mixed together.

Word equation **magnesium + silver nitrate → silver + magnesium nitrate**

Symbol equation **$\text{Mg}_{(s)} + 2\text{AgNO}_3(aq) \rightarrow 2\text{Ag}_{(s)} + \text{Mg}(\text{NO}_3)_{2(aq)}$**

5. calcium metal and zinc chloride solution are mixed together.

Word equation **calcium + zinc chloride → zinc + calcium chloride**

Symbol equation **$\text{Ca}_{(s)} + \text{ZnCl}_{2(aq)} \rightarrow \text{Zn}_{(s)} + \text{CaCl}_{2(aq)}$**

6. iron metal and copper sulfate solution are mixed together.

Word equation **iron + copper sulfate → copper + iron sulfate**

Symbol equation **$\text{Fe}_{(s)} + \text{CuSO}_{4(aq)} \rightarrow \text{Cu}_{(s)} + \text{FeSO}_{4(aq)}$**