

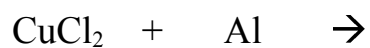
**CHEMISTRY****REACTION TYPES - Single and Double Displacement**Single Displacement

- Involves one element replacing or displacing another element in a compound
- A **metal** element will only displace a **metal** in a compound.

- A **non-metal** will only displace a **non-metal** in a compound

- The general equation for a single displacement reaction is:

- *Examples:*

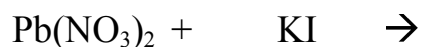
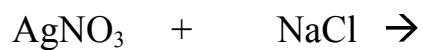


**CHEMISTRY****REACTION TYPES - Single and Double Displacement**Double Displacement

- Involves both elements in different compounds displacing each other or exchanging places.
- The metals switch places and combine with the opposite non-metal.
- *Analogy - two dance couples switch partners*
- The general equation for a displacement reaction is:



- *Examples*





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REACTION TYPES - Single and Double Displacement

Types of Chemical Reactions (Part II): Single and Double Displacement

For each of the chemical reactions listed below, complete the following:

- The type of chemical reaction (single or double displacement)
- Balance the skeletal equation

1. Sulphuric acid reacts with iron (II) sulphide to produce iron (II) sulphate and hydrogen sulphide.

Reaction type: _____

Balance the skeletal equation: _____ H_2SO_4 + _____ FeS \rightarrow _____ FeSO_4 + _____ H_2S

2. An alkali metal such as sodium displaces hydrogen from water to form sodium hydroxide and hydrogen gas.

Reaction type: _____

Balance the skeletal equation: _____ Na + _____ H_2O \rightarrow _____ NaOH + _____ H_2

3. Valuable silver can be recovered from a solution of silver nitrate by adding copper to produce copper (II) nitrate and a silver precipitate.

Reaction type: _____

Balance the skeletal equation: _____ AgNO_3 + _____ Cu \rightarrow _____ $\text{Cu}(\text{NO}_3)_2$ + _____ Ag

4. If we were to add table salt to a solution of silver nitrate we would produce sodium nitrate solution and silver chloride.

Reaction type: _____

Balance the skeletal equation: _____ NaCl + _____ AgNO_3 \rightarrow _____ NaNO_3 + _____ AgCl

5. Potassium iodide reacts with lead (II) sulphate to produce potassium sulphate and lead (II) iodide.

Reaction type: _____

Balance the skeletal equation: _____ KI + _____ PbSO_4 \rightarrow _____ K_2SO_4 + _____ PbI_2

6. The metal zinc reacts with tin (II) chloride under high heat conditions to produce zinc chloride and tin.

Reaction type: _____

Balance the skeletal equation: _____ Zn + _____ SnCl_2 \rightarrow _____ ZnCl_2 + _____ Sn

7. Sodium hydroxide will be neutralized when combined with hydrochloric acid to produce table salt and water.

Reaction type: _____

Balance the skeletal equation: _____ NaOH + _____ HCl \rightarrow _____ NaCl + _____ H_2O

8. Hydrogen bromide reacts with iron (III) hydroxide to produce iron (III) bromide and water.

Reaction type: _____

Write and balance the skeletal equation: _____ + _____ \rightarrow _____ + _____



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REACTION TYPES - Single and Double Displacement

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Name: _____

Classifying Reactions and Balancing Chemical Equations

For each of the chemical reactions are listed below, complete the following:

Balance the skeletal equation

The type of chemical reaction (synthesis, decomposition, single displacement, or double displacement)

1.

Balance the skeletal equation: $\text{___ Cu} + \text{___ O}_2 \rightarrow \text{___ CuO}$

Reaction type: _____

2.

Balance the skeletal equation: $\text{___ H}_2\text{O} \rightarrow \text{___ O}_2 + \text{___ H}_2$

Reaction type: _____

3.

Balance the skeletal equation: $\text{___ Fe} + \text{___ H}_2\text{O} \rightarrow \text{___ Fe}_2\text{O}_3 + \text{___ H}_2$

Reaction type: _____

4.

Balance the skeletal equation: $\text{___ H}_2\text{S} + \text{___ AsCl}_3 \rightarrow \text{___ As}_2\text{S}_3 + \text{___ HCl}$

Reaction type: _____

5.

Balance the skeletal equation: $\text{___ CaCO}_3 \rightarrow \text{___ CO}_2 + \text{___ CaO}$

Reaction type: _____

6.

Balance the skeletal equation: $\text{___ H}_2\text{S} + \text{___ KOH} \rightarrow \text{___ K}_2\text{S} + \text{___ HOH}$

Reaction type: _____

7.

Balance the skeletal equation: $\text{___ S}_8 + \text{___ Fe} \rightarrow \text{___ FeS}$

Reaction type: _____

8.

Balance the skeletal equation: $\text{___ H}_2\text{SO}_4 + \text{___ Al} \rightarrow \text{___ Al}_2(\text{SO}_4)_3 + \text{___ H}_2$

Reaction type: _____

9.

Balance the skeletal equation: $\text{___ H}_3\text{PO}_4 + \text{___ NH}_4\text{OH} \rightarrow \text{___ (NH}_4)_3\text{PO}_4 + \text{___ HOH}$

Reaction type: _____

10.

Balance the skeletal equation: $\text{___ O}_2 + \text{___ Al} \rightarrow \text{___ Al}_2\text{O}_3$

Reaction type: _____



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REACTION TYPES - Single and Double Displacement

11.
 - ✍ Balance the skeletal equation: $\text{___ H}_2\text{SO}_4 + \text{___ Al(OH)}_3 \rightarrow \text{___ Al}_2(\text{SO}_4)_3 + \text{___ HOH}$
 - 📖 Reaction type: _____
12.
 - ✍ Balance the skeletal equation: $\text{___ Cl}_2 + \text{___ KBr} \rightarrow \text{___ KCl} + \text{___ Br}_2$
 - 📖 Reaction type: _____
13.
 - ✍ Balance the skeletal equation: $\text{___ Ca} + \text{___ HOH} \rightarrow \text{___ Ca(OH)}_2 + \text{___ H}_2$
 - 📖 Reaction type: _____
14.
 - ✍ Balance the skeletal equation: $\text{___ H}_2\text{O}_2 \rightarrow \text{___ O}_2 + \text{___ H}_2\text{O}$
 - 📖 Reaction type: _____
15.
 - ✍ Balance the skeletal equation: $\text{___ Na} + \text{___ Cl}_2 \rightarrow \text{___ NaCl}$
 - 📖 Reaction type: _____
16.
 - ✍ Balance the skeletal equation: $\text{___ Zn} + \text{___ Pb(NO}_3)_2 \rightarrow \text{___ Zn(NO}_3)_2 + \text{___ Pb}$
 - 📖 Reaction type: _____
17.
 - ✍ Balance the skeletal equation: $\text{___ NaI} + \text{___ Pb(NO}_3)_2 \rightarrow \text{___ NaNO}_3 + \text{___ PbI}_2$
 - 📖 Reaction type: _____
18.
 - ✍ Balance the skeletal equation: $\text{___ P}_4 + \text{___ O}_2 \rightarrow \text{___ P}_2\text{O}_5$
 - 📖 Reaction type: _____
19.
 - ✍ Balance the skeletal equation: $\text{___ NH}_4\text{NO}_3 \rightarrow \text{___ H}_2\text{O} + \text{___ N}_2\text{O}$
 - 📖 Reaction type: _____
20.
 - ✍ Balance the skeletal equation: $\text{___ CaI}_2 + \text{___ AgNO}_3 \rightarrow \text{___ Ca(NO}_3)_2 + \text{___ AgI}$
 - 📖 Reaction type: _____