



Name: _____ Period: _____

Assigned on Tuesday, March 31, 2026

12.1 Balancing Chemical Equations and Identifying Types of Reactions**Due Friday, April 03, 2026****Part 1: Answer each of the following questions.**

1. What do each of the following mean in a chemical equation?

(s): _____ (l): _____ (g): _____ (aq): _____

2. What does "aqueous" mean?

3. What are the correct formulas for each of the following compounds?

a. magnesium chloride _____

d. potassium oxide _____

b. copper(II) phosphide _____

e. titanium(IV) nitrate _____

c. beryllium iodide _____

f. ammonium oxalate _____

4. What are the 7 diatomic elements? _____

Part 2:

Day 1: Balance each of the equations on this sheet.

Day 2: For each set of reaction equations, one is not like the others. Place a check mark to the left of the equation that does not go with the others. Identify the type of reaction **for these 3 equations that are alike** in the space at the bottom of each box.Then, on the back of this page, color the section or sections of the design that correspond to the question number using the color indicated **next to the equation that does not belong**.

1. $\text{C}_2\text{H}_2 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ (pink) $\text{HI} + \text{H}_2\text{SO}_4 \rightarrow \text{H}_2\text{S} + \text{H}_2\text{O} + \text{I}_2$ (red) $\text{C}_8\text{H}_{18} + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ (orange) $\text{C}_6\text{H}_6 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ (lilac/light purple) Reaction Type for the 3 alike reactions: _____	6. $\text{KBrO}_3 \rightarrow \text{KBr} + \text{O}_2$ (yellow) $\text{KClO}_3 \rightarrow \text{KCl} + \text{O}_2$ (orange) $\text{Zn} + \text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$ (lilac/light purple) $\text{H}_2\text{O} \rightarrow \text{H}_2 + \text{O}_2$ (red) Reaction Type for the 3 alike reactions: _____
2. $\text{Fe} + \text{O}_2 \rightarrow \text{Fe}_2\text{O}_3$ (light green) $\text{K} + \text{Cl}_2 \rightarrow \text{KCl}$ (dark green) $\text{Ca} + \text{O}_2 \rightarrow \text{CaO}$ (lilac/light purple) $\text{Cr} + \text{SnCl}_4 \rightarrow \text{Sn} + \text{CrCl}_2$ (dark blue) Reaction Type for the 3 alike reactions: _____	7. $\text{K}_3\text{PO}_4 + \text{MgCl}_2 \rightarrow \text{KCl} + \text{Mg}_3(\text{PO}_4)_2$ (red) $\text{K}_2\text{SO}_4 + \text{Ba}(\text{NO}_3)_2 \rightarrow \text{KNO}_3 + \text{BaSO}_4$ (blue) $\text{AgNO}_3 + \text{AlCl}_3 \rightarrow \text{AgCl} + \text{Al}(\text{NO}_3)_3$ (pink) $\text{Fe} + \text{CuNO}_3 \rightarrow \text{Fe}(\text{NO}_3)_2 + \text{Cu}$ (orange) Reaction Type for the 3 alike reactions: _____
3. $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$ (light green) $\text{Ag}_2\text{SO}_4 + \text{NH}_4\text{Cl} \rightarrow (\text{NH}_4)_2\text{SO}_4 + \text{AgCl}$ (red) $\text{Ba}(\text{OH})_2 + \text{HNO}_3 \rightarrow \text{Ba}(\text{NO}_3)_2 + \text{H}_2\text{O}$ (brown) $\text{KCl} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + \text{HCl}$ (orange) Reaction Type for the 3 alike reactions: _____	8. $\text{KI} + \text{Pb}(\text{NO}_3)_2 \rightarrow \text{KNO}_3 + \text{PbI}_2$ (dark green) $\text{Fe} + \text{H}_2\text{O} \rightarrow \text{Fe}_2\text{O}_3 + \text{H}_2$ (light green) $\text{F}_2 + \text{KBr} \rightarrow \text{KF} + \text{Br}_2$ (dark blue) $\text{Al} + \text{HCl} \rightarrow \text{AlCl}_3 + \text{H}_2$ (purple) Reaction Type for the 3 alike reactions: _____
4. $\text{Fe} + \text{CuCl}_2 \rightarrow \text{FeCl}_3 + \text{Cu}$ (dark blue) $\text{Zn} + \text{FeCl}_3 \rightarrow \text{ZnCl}_2 + \text{Fe}$ (orange) $\text{CH}_4 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$ (light blue) $\text{Ca} + \text{HCl} \rightarrow \text{CaCl}_2 + \text{H}_2$ (dark green) Reaction Type for the 3 alike reactions: _____	9. $\text{NaNO}_3 \rightarrow \text{NaNO}_2 + \text{O}_2$ (brown) $\text{NaClO} \rightarrow \text{NaCl} + \text{NaClO}_3$ (light blue) $\text{H}_2 + \text{O}_2 \rightarrow \text{H}_2\text{O}$ (pink) $\text{AlCl}_3 \rightarrow \text{Al} + \text{Cl}_2$ (yellow) Reaction Type for the 3 alike reactions: _____
5. $\text{Ca}_3\text{P}_2 + \text{H}_2\text{O} \rightarrow \text{PH}_3 + \text{Ca}(\text{OH})_2$ (pink) $\text{Ba}(\text{OH})_2 + \text{HNO}_3 \rightarrow \text{Ba}(\text{NO}_3)_2 + \text{H}_2\text{O}$ (red) $\text{FeCl}_3 + \text{KSCN} \rightarrow \text{Fe}(\text{SCN})_3 + \text{KCl}$ (orange) $\text{AuCl}_3 \rightarrow \text{Au} + \text{Cl}_2$ (purple) Reaction Type for the 3 alike reactions: _____	10. $\text{Li} + \text{Br}_2 \rightarrow \text{LiBr}$ (orange) $\text{Na} + \text{H}_2\text{O} \rightarrow \text{NaOH} + \text{H}_2$ (yellow) $\text{Li}_2\text{O} + \text{H}_2\text{O} \rightarrow \text{LiOH}$ (dark green) $\text{As} + \text{O}_2 \rightarrow \text{As}_2\text{O}_3$ (purple) Reaction Type for the 3 alike reactions: _____

