

Unit 8: Chemical Equations

Notes: Balancing

A chemical change involves the breaking of chemical bonds and the formation of new bonds...

Represented by a **balanced chemical equation** that obeys the

Law of Conservation of Mass

mass of reactants = mass of products

(*same* number of each type of atom are on *both sides* of the arrow)

Hints for balancing

1. Write out the formulas for the reactants and products.

*remember diatomic elements if named not in a compound

H₂, N₂, O₂, F₂, Cl₂, Br₂, I₂

hydrogen

and

chlorine

combine
to make

hydrochloric acid

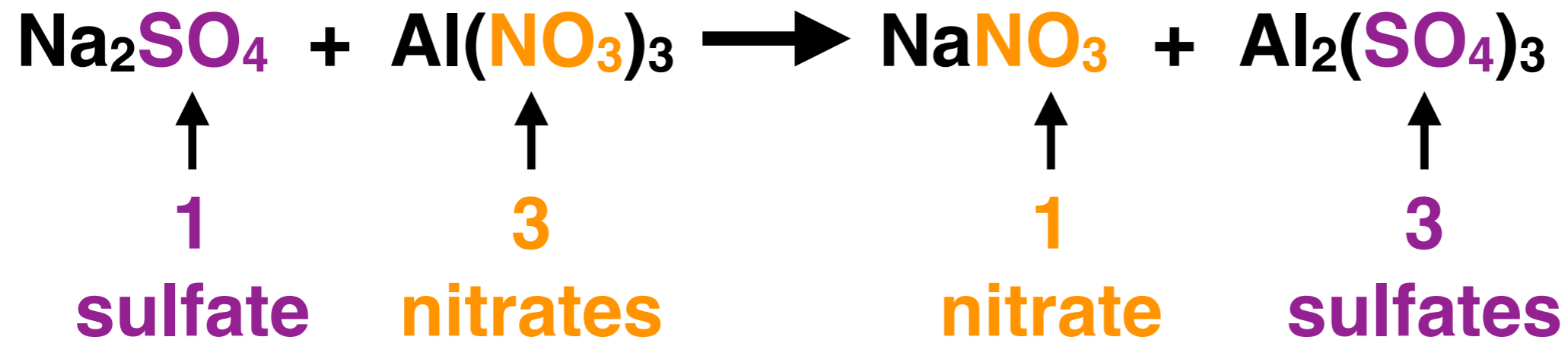
to be completed in class
leave 4-5 lines

2. Balance elements (or polyatomic ions) one at a time by adding coefficients.

DO NOT CHANGE CHEMICAL FORMULAS!

You may add big numbers in front (coefficients) but do not change subscript numbers that you used to write the formulas.

3. Treat polyatomic ions as “chunks”.



to be balanced in class,
leave space for coefficients in front of each formula

4. Start with substances that are present in least number of substances.

Three compounds have H. Three compounds have O. Do those last.



To be balanced in class.

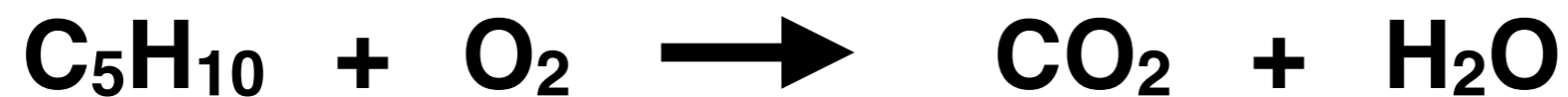
Start with N or C. They are in only one reactant and one product.

5. Check that all elements are completely balanced and in the lowest whole-number ratios possible.



To be completed in class.
Leave a line below equation.

6. If all elements balance except a diatomic element, double the coefficients used.



To be completed in class.