Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period: \_\_\_\_\_

**An Introduction to Balancing Equations**

*Adapted from Chemistry: A Study of Matter*

**Fill in the blanks with the most appropriate term:**

A \_\_\_chemical\_\_\_\_ \_\_\_equation\_\_ tells the story of a chemical reaction. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the starting substances in the reaction while \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ are the new substances that are formed. The large numbers in front of some of the formulas are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. These numbers are used to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the equation because chemical reactions must obey the Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of Matter. The number of atoms of each element on both sides of the equation must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because matter cannot be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. When balancing equations, the only numbers that can be changed are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; remember that \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ must never be changed in order to balance an equation.

**Balance the following equations** *(you must show your work using a RAP Table on a separate piece of paper)*

1.  Al + O2 🡪 Al2O3
2. C3H8 + O2 🡪 CO2 + H2O
3. Al(NO3)3 + NaOH 🡪 Al(OH)3 + NaNO3
4. KNO3 🡪 KNO2 + O2
5. O2 + CS2 🡪 CO2 + SO2
6. KClO3 🡪 KCl + O2
7. BaF2 + K3PO4 🡪 Ba3(PO4)2 + KF
8. H2SO4 + Mg(NO3)2 🡪 MgSO4 + HNO3
9. Al + H2SO4 🡪 Al2(SO4)3 + H2
10. WO3 + H2 🡪 W + H2O