Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Homeroom:\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_ **4.7**

**Balancing Chemical Equations (SPI.9.11)**

|  |  |
| --- | --- |
| ***Key Point*** | ***Notes*** |
| **The Law of Conservation of Mass** | * The law of conservation of \_\_\_\_\_\_ states that matter can neither be created or destroyed * Atoms are neither created or destroyed, only \_\_\_\_\_\_\_\_\_\_\_\_\_ in a chemical reaction * Thus, the number of a particular atom is the \_\_\_\_\_\_\_ on both sides of a chemical equation |
| **Steps to Balancing Chemical Equations** | * When balancing equations, Never, Never, NEVER change \_\_\_\_\_\_\_\_\_\_\_\_, only \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_!   STEP 1: Write the \_\_\_\_\_\_\_\_\_\_\_ involved in the chemical reaction.    STEP 2: Count the number of \_\_\_\_\_\_ for each element on the reactant side and on the product side.  STEP 3:   * + - Use \_\_\_\_\_\_\_\_\_\_\_\_\_ to balance     - The coefficient will be \_\_\_\_\_\_\_\_\_\_\_\_ to all of the subscripts for the compound and element   Check Yourself!:  Check your answer to see if:  –The coefficients are in the lowest possible whole number ratios. (\_\_\_\_\_\_\_\_\_)  *Guided Example:* |
| **Tips to Balancing** | 1. If \_\_\_\_\_\_\_\_ aren’t balanced, balance them first.  2. Balance the single elements \_\_\_\_\_\_\_. |
| **So What?!** |  |

**“I Own This” (Independent Practice):** *Balance the following equations. Use a separate sheet of paper if necessary.*

EXAMPLE:

**2**H2 + O2 ---> **2**H2O

H = 2 **4** H = 2 **4**

O = 2 O = 1 **2**

1.) \_\_\_\_N2 +\_\_\_\_H2 🡪 \_\_\_\_NH3

2.) \_\_\_\_K +\_\_\_\_Br2 🡪\_\_\_\_KBr

3.) \_\_\_\_Al +\_\_\_\_FeO 🡪\_\_\_\_Al2O3 +\_\_\_\_Fe

4.) \_\_\_\_Al + \_\_\_\_O2 🡪 \_\_\_\_Al2O3

5.) \_\_\_\_FeS2 + \_\_\_\_O2 🡪\_\_\_\_Fe2O3 + \_\_\_\_SO2

6.) \_\_\_\_KClO3 🡪\_\_\_\_KCl + \_\_\_\_O2

7.) \_\_\_\_S8 +\_\_\_\_O2 🡪\_\_\_\_SO3

8.) \_\_\_\_P4O10 +\_\_\_\_H2O 🡪\_\_\_\_H3PO4

9.) \_\_\_\_Ca3P2 +\_\_\_\_H2O 🡪\_\_\_\_Ca(OH)2 +\_\_\_\_PH3

**“Own This Even Further” (Early Finisher):**

Ask Mr. C for a differentiated balancing worksheet OR work on your LCM Lab Report!