Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Balancing Chemical Equations

**Part 1 – Beginning Observations**

1) What can you change about the simulation?

**Part 2 – Introduction Tab**

2) Describe *in your own words* the purpose of the balance scales and bar charts in the simulation.

3) How do you know if you have a balanced equation?

4) Do the following actions and fill in the table below

|  |  |  |  |
| --- | --- | --- | --- |
| Action | Balanced Equation | Particle View (center of screen) | Steps you took to make the equation balanced |
| Make Ammonia | \_\_\_\_ N2 + \_\_\_\_ H2 🡪 \_\_\_\_ NH3 |  |  |
| Separate Water | \_\_\_ H2O 🡪 \_\_\_ H2 + \_\_\_ O2 |  |  |
| Combust Methane | \_\_\_ CH4 + \_\_\_ O2  🡪 \_\_\_ CO2 + \_\_\_ H2O |  |  |

5. In each of the following items above a different verb was used. Based on the reaction how would you define the following verbs?

|  |  |
| --- | --- |
| Word | My definition |
| Make |  |
| Separate |  |
| Combust |  |

6. The number placed in front of a formula is called a coefficient. The small number within a chemical formula is called a subscript. Why do we adjust coefficients when balancing chemical equations and not subscripts?

**Part 3 – Game**

7. Before beginning the game, if you had to explain to a friend how to balance a chemical equation, what would you say to them?

Record your score for each of the levels in the balancing game:

Score

Level 1 / 10

Level 2 /10

Level 3 / 10