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

**Balancing Chemical Equations**

Go to: phet.colorado.edu/en/simulation/balancing-chemical-equations

Press play

Do the introduction first, and then the game

1. Use the simulation to adjust the coefficients and balance the following equation. Select the balance scales and bar charts in the Tools drop down to help. Fill in the proper coefficients when you are successful (yellow ☺).

\_\_\_\_ N2 + \_\_\_\_ H2 🡪 \_\_\_\_ NH3

2. Draw the particle view of the balanced equation as shown in the simulation.

3. Describe the purpose of the balance scales and bar charts in the simulation.

4. In order for a chemical equation to be properly balanced, what must be true?

5. Balance the other two examples. Click on the title of each at the bottom of the screen to access them.

Separate of water

\_\_\_ H2O 🡪 \_\_\_ H2 + \_\_\_ O2

Combust of methane

\_\_\_ CH4 + \_\_\_ O2 🡪 \_\_\_ CO2 + \_\_\_ H2O

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?

**GAME: click on the game in the bottom black tool bar.**

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

Score:

Level 1: / 10

Level 2: /10

Level 3: / 10