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

**Balancing Chemical Equations Simulation**

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

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

\_\_\_\_ 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.

Separation of water

\_\_\_ H2O 🡪 \_\_\_ H2 + \_\_\_ O2

Combustion 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**

Record your score for each of the levels in the Balancing Game:

Score

Level 1 / 10 Level 2 /10 Level 3 / 10