Learning Target 1: I can determine if a chemical equations is balanced by counting the number of atoms there are in the reactants and products of the equation.

Learning Tart 2: I can add coefficients to balance out chemical equations

Balancing Chemical Equations Video Notes

1. What does the Law of Conservation of Matter mean? _____

_____

2. How does the chemical reaction at 56 seconds in the video, demonstrate the law of conservation of matter? _____

3. _____ are always on the left and _____ are always on the right of a chemical reaction. The yield sign let's you know that a _____ reaction taking place.

4. The numbers below the elements are called _____. Can you change subscripts to balance chemical equations? ___ The larger numbers in front of the elements are called _____. Can you change coefficients to balance chemical equations? _____

Check for Understanding

List the number of reactant and product atoms for the following chemical equation.

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$$HgO \rightarrow Hg + O_2$$
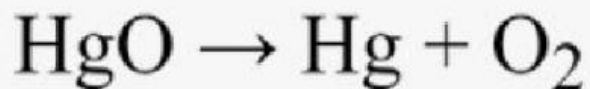
Hg = _____　　　　　　**Hg = _____**

O = _____　　　　　　**O = _____**

5. Why is the equation above not balanced? _____
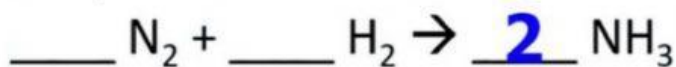
Chemical Equation Checklist

1. Write the chemical equation for the reaction.

2. List the atoms in the _____, which are on the _____ side.

3. List the atoms in the _____, which are on the _____ side.

4. Add _____ to balance the equation. Remember, always start off with the number _____ as a coefficient and work your way up. It is also important to know that when you add coefficients in front of a chemical equation they _____ by the _____.

What happens when you put a 5 in front of O_2 ($5O_2$)? _____

5. Check to make sure the equation is _____.

Check for Understanding:

How many atoms would we have of the following elements that contain a coefficient and subscripts?

$$\underline{} N_2 + \underline{} H_2 \rightarrow \underline{\textbf{2}} NH_3$$

N = _____　　　　　　　N = _____

H = _____　　　　　　　H = _____

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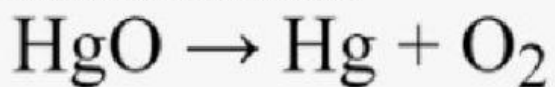
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6. Balance the chemical equation:

$$HgO \rightarrow Hg + O_2$$

Hg = _____   Hg = _____

O = _____   O = _____

7. _____ N_2 + _____ H_2 → _____ NH_3

- Is the chemical equation balanced? ___ Why or why not? _____

- How many nitrogen are on the reactants side? _____ Products side? _____

- How many hydrogen are on the reactants side? _____ Products side? _____

- What number should you put in front of NH3 to first try to balance the equation? _____

- How many nitrogen do you have on the products side? _____ How many hydrogen on products side? _____

- Are your nitrogen balanced on each side? _____ How about your hydrogen? ___ What number would you put in front of H2 on the reactants side to get the same number of hydrogen on each side? _____

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