

What are Chemical Reactions?

Chemical Reactions are represented by _____.

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This is completed by _____ and _____.

Signs of a chemical reaction:

Reactants → Products

- _____: A substance that is used in a chemical reaction.
- _____: A substance that forms during a chemical reaction.
- _____: "Yields" or "produces"

Energy Usage in Reactions

- _____: Requires more energy to break bonds (input) than released forming new bonds.
- _____: Releases more energy forming new bonds (output) than absorbed in breaking bonds.

Conservation of Atoms in Reactions:

- In a chemical reaction the arrangement of atoms will _____
- The total number of each type of atom _____,

Steps for Balancing Equations

1. Write the _____ for each reactant & product.
2. Identify the number of _____ for each _____ on each side of the _____.
3. _____ the coefficient in front of a compound to _____ out both sides of the equation.
4. Multiply coefficients to get rid of fractions
5. Reduce coefficients

Hints for Balancing Equations

- Never change your _____
- Balance elements that only appear in _____ on each side first
- After your first "free choice" of a coefficient, you must only use coefficients that balance the elements
- For polyatomic ions, balance them as though they are single "groups"

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Reminders for Balancing Equations

- Write each formula correctly
- Cannot change SUBSCRIPTS within a formula
- Every time a coefficient is changed, make sure it doesn't unbalance another element
- Never write "1" as a coefficient
- Always double check

Steps for Balancing Equations

1. Write a word equation for the reaction.
2. Write the formula for each reactant and product.
3. Count the atoms of each element on both sides of the equation.
4. Add coefficients to balance the number of atoms.

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