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| **Main ideas** | **Essential Questions** |
| * The rearrangement of atoms in a chemical change is described by a chemical equation.
* A balanced chemical equation contains the same numbers and types of atoms in the reactants as well as the products.
* A balanced chemical equation contains the same numbers and types of atoms in the reactants as well as the products.
* Reactions can be classified based on how atoms are arranged.

  | 1. What are the reactants and products in achemical reaction?2. Is mass conserved in a chemical reaction?3. Why are chemical equations important?4. How do you balance a chemical equation?5. What are the five types of chemical reactions?6. What are four ways that one can increase the rate of chemical reactions? |
| **Skills** |
| 1. Identify the reactants and products in a chemical reaction.2. Determine how a chemical reaction satisfies the law of conservation of mass.3. Determine how chemists express chemical reactions using equations4. Identify what is meant by a balanced chemical equation.5. Determine how to write balanced chemical equations.6. Identify the five types of chemical reactions.7. Explain how chemists can use four ways to increase the rate of chemical reactions.  |
| **Key vocabulary** |
| 1. chemical change, physical change2. chemical reaction, chemical equation reactant, product, coefficient, law of conservation of mass3. combustion, synthesis, decomposition, single-displacement, double-displacement, precipitate4. collision theory, catalyst, inhibitor, enzyme, endothermic, exothermic, activation energy |

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| **STANDARDS** | **RESOURCES** |
| **PSc.2.2 Understand chemical bonding and chemical interactions.** PSc.2.2.1 Infer valence electrons, oxidation number, and reactivity of an element based on its location in the Periodic Table. PSc.2.2.3 Predict chemical formulas and names for simple compounds based on knowledge of bond formation and naming conventions. PSc.2.2.4 Exemplify the law of conservation of mass by balancing chemical equations. PSc.2.2.5 Classify types of reactions such as synthesis, decomposition, single replacement, or double replacement.  | 1.Key Words Worksheet2.Unit Review Worksheet3. Ppt – Classification of Matter4. Class Worksheets5. Holt physical science book6. [www.ck12.org](http://www.ck12.org) |