

Name \_\_\_\_\_

## What is a Chemical Reaction?

### Open-Ended Response Answer Key

1. When vinegar and baking soda are mixed, you would predict that they will react vigorously, producing water, carbon dioxide gas, and bubbles. This happens because the vinegar (acid) and baking soda (base) undergo a chemical reaction, releasing carbon dioxide gas as a product.
2. When cooking food, one example of a chemical reaction is the browning of meat. The reactants include proteins and sugars in the meat. As they heat up, they undergo a series of transformations, resulting in the formation of new compounds that give the meat its brown color and unique flavor.
3. The combustion reaction is important in everyday life because it provides us with heat, light, and energy. For example, it powers our cars and heats our homes. In the case of fireworks, it creates dazzling displays of light and color. These reactions occur due to the combustion of fuels.
4. Understanding chemical reactions would be helpful in designing a cleaning product by allowing you to choose ingredients that react with dirt and stains effectively. For instance, you might select ingredients that break down grease and grime through chemical reactions, making the cleaning product more efficient.

