

## Experiments that show Chemical Changes

On the fourth of July, brilliant fireworks are exploding in the night sky. When you look at the fireworks, you see dazzling sparkles of red, white and blue trickle down in all directions. The EXPLOSION of fireworks is an example of a chemical change. During a chemical change, substances are changed into different substances. In other words, the composition of the substance changes.



*fireworks show a chemical change  
leaves is a chemical change*



*changing color of autumn*

If you think you are not familiar with chemical changes, think again! This fall, you have witnessed a spectacular chemical change as you watched the leaves change color!

### Signs of Chemical Changes

How can you tell whether a change is a chemical change? One way is that you will see a color change. One example is the changing of autumn leaves. Another example is the half-eaten apple that turns brown as it lies on the kitchen counter. A chemical change occurs when food spoils.

Another sign of chemical change is the release or gain of energy by an object. Many substances absorb energy to undergo a chemical change. Energy is absorbed during chemical changes involved in cooking, like baking a cake. When you bake a cake, energy is absorbed as it changes from a runny mix into a cake. Another example of a release of energy is when fireworks are set off. They release energy in the form of light.



*Baking a cake is a  
chemical change*

Another sign of chemical change is an odor. It only takes one experience with a rotten egg to learn that they smell different than fresh eggs. When eggs and food spoil, they undergo a chemical change. The change in odor is a clue to a chemical change.

Another sign of a chemical change is the formation of a gas. The bubbles of gas that you observe when an antacid is dropped into water are an example of a chemical change. Sometimes when the gas is produced, a precipitate will form. A precipitate is a solid that separates out of solution during a chemical change.



*odor is a clue to chemical change*



*formation of a gas is a sign of chemical change*

The last sign of a chemical change is that it is not easily reversed. As wood burns, it turns into a pile of ashes and gases that rise into air. After the wood is burned, it cannot be restored to its original form as a log.



*Burning wood is an example of a chemical change.  
It cannot easily be reversed—*

Next week we will learn about Physical changes and how they differ from chemical changes.

