

Name _____

Mix It or Make It New? Understanding Chemical Changes



Have you ever mixed chocolate syrup into milk? That's called a physical change. The milk looks and tastes different, but nothing new is created. You can still separate the two if you try hard enough.

Now think about baking a cake. You mix flour, eggs, and sugar. But after baking it in the oven, something new has formed—a cake! This is a chemical change. The

ingredients have combined and reacted to create something totally different that can't go back to how it started.

So, what makes a chemical change special?

A chemical change happens when substances react and create a new substance. It usually can't be undone. One clue is that the change is permanent. If you burn a piece of wood, it turns into ash and smoke. You can't get the wood back. That's a chemical change.

Other clues include a change in color, a new smell, bubbles forming, or heat and light being released. If you mix baking soda and vinegar, bubbles start to fizz. That fizzing is carbon dioxide gas being made—a sign of a chemical change!

Physical changes, on the other hand, don't make anything new. You can freeze water into ice or melt it again. It's still water. You can tear paper into pieces, but it's still paper. These are all physical changes.

Let's try one more example: rust. When metal is left outside in the rain, it can rust. That orange-brown crust is a new substance formed from a reaction with water and air. Rust is a chemical change because the metal has changed forever.

So next time you cook, mix, or experiment, take a closer look. Are you just mixing things together—or making something entirely new?