

Name _____

Matter Conservation: Melting, Freezing, And Boiling



Have you ever watched an ice cube melt in your hand or water boil in a pot? These changes might look like magic, but they are all examples of physical changes. When something melts, freezes, or boils, it is still made of the same stuff—it just changes its form. And here's the cool part: even though it looks different, no matter is lost. This idea is part of the law of conservation of matter.

The law of conservation of matter says that matter cannot be created or destroyed, only changed. That means when water freezes into ice, it's still water. When it melts back into liquid, the amount of water stays the same. Even if it boils and turns into steam, the matter is still there—it just becomes a gas. If you collect all the steam and cool it down, it will turn back into liquid water again.

Let's say you have 100 grams of ice. You leave it in the sun, and it melts into water. You weigh the water, and guess what? It still weighs 100 grams! That's because the ice didn't disappear—it only changed shape.

The same is true for boiling. When you boil water in an open pot, it seems like the water vanishes. But it's actually turning into water vapor and going into the air. If you cover the pot with a lid, you'll see drops of water form underneath. That's the vapor turning back into liquid. If you could catch all the gas, the mass would still be the same as the water you started with.

Even freezing doesn't change how much matter you have. The molecules move slower and get closer together, but nothing is added or taken away.

So, the next time you see something melt, freeze, or boil, remember—it's just matter changing its form. The total amount stays the same. That's the science of conservation at work!