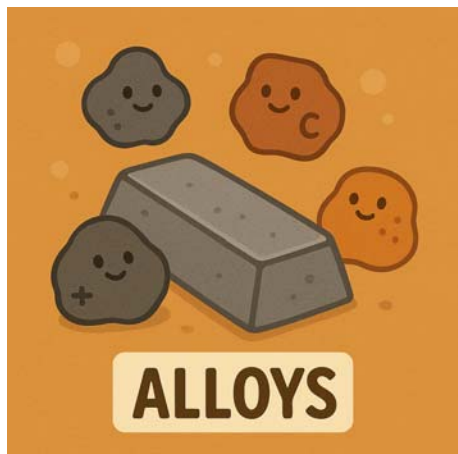


Name _____



The Mighty Mix Called Steel

Have you ever heard of something called an alloy? Alloys are special mixtures made by combining two or more metals, or a metal and another element. One of the most common and useful alloys is steel. Steel is made mostly from iron, but it also has a little bit of carbon and sometimes other elements like nickel or chromium. Even

though it might look like just one solid metal, steel is actually a mixture.

So, why mix metals at all? The reason is strength. Pure iron is soft and can bend easily. But when you mix it with carbon, the carbon makes the iron stronger and harder. That's why steel is much better for building things like bridges, cars, and tools. The tiny bits of carbon spread throughout the iron help keep it from breaking or wearing out too quickly.

Alloys like steel don't form chemical compounds. That means the different elements don't bond together in a fixed way. Instead, the atoms are mixed together like ingredients in a smoothie. You can't separate them easily, but they're still just a mixture. This is different from a compound, like water, where the hydrogen and oxygen atoms are chemically joined and always combine in the same amounts.

Scientists and engineers create different types of steel for different jobs. Some steel is super strong and used in skyscrapers. Other types might be flexible or resist rust. By changing what elements are added and how much, people can make steel with just the right qualities.

Alloys are everywhere. Bronze (used in statues) is a mix of copper and tin. Brass (found in musical instruments) is copper and zinc. But steel is one of the most important alloys in the world, and it's all because of the power of mixtures.