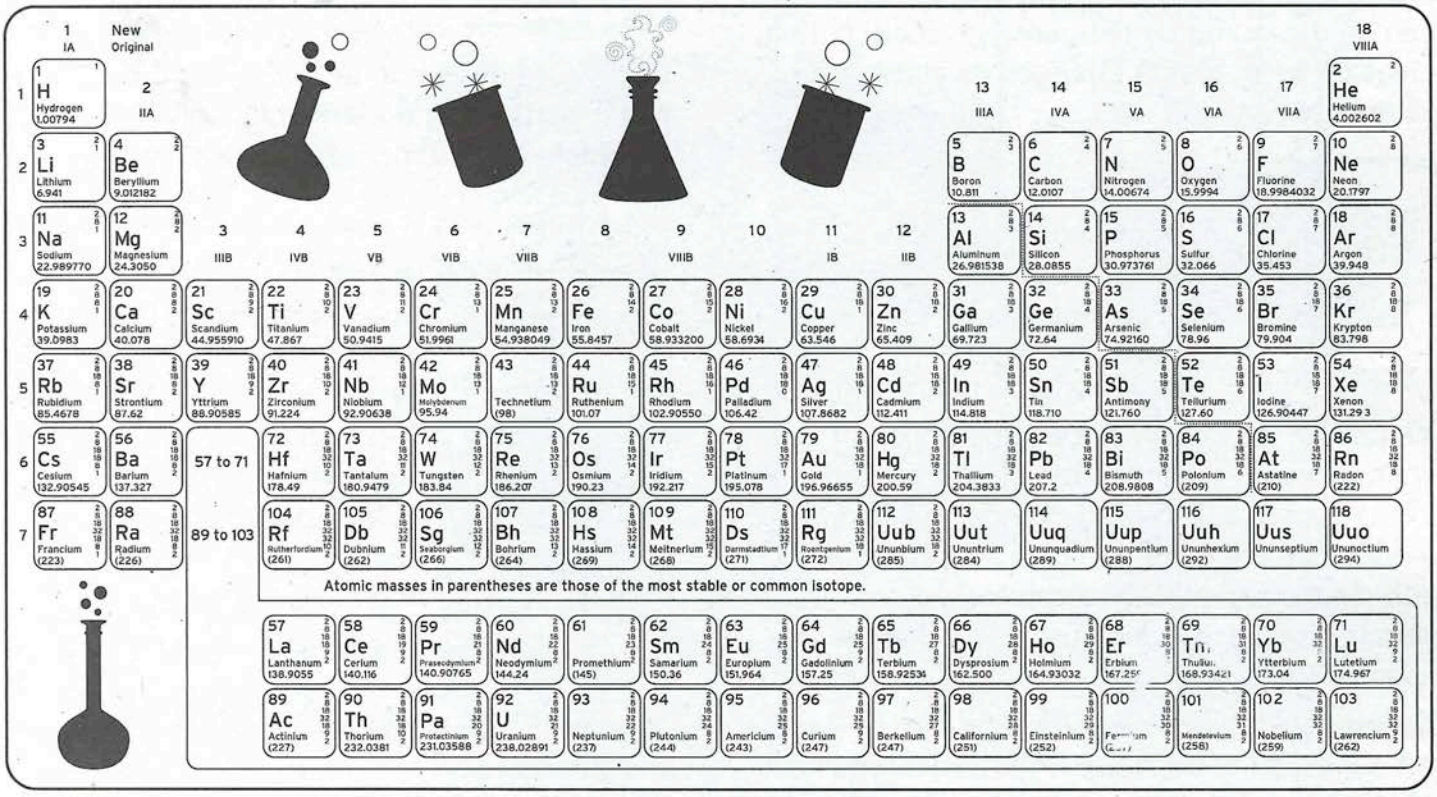
Matter and Changes in State

What is matter? Matter is everything, and everything is matter. **Matter** is anything that takes up space and has mass. All the matter in the world can fit into one of three categories: element, compound, or mixture.

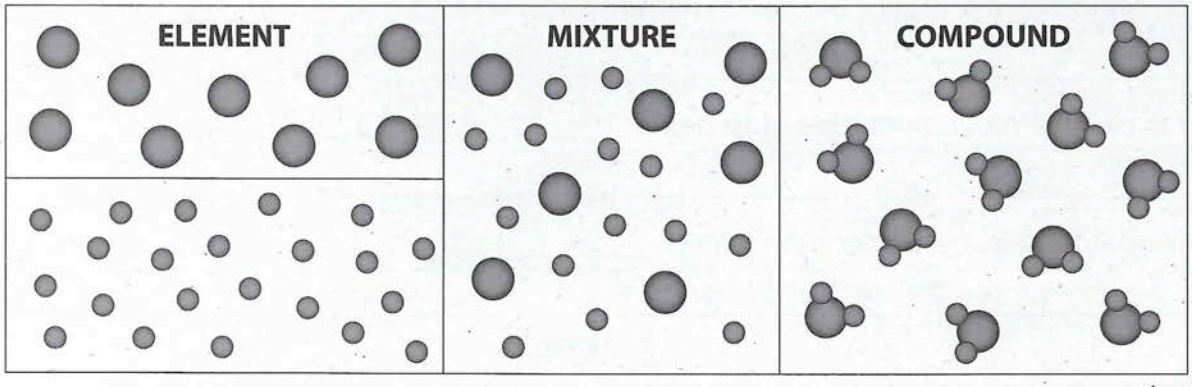
An **element** has only one ingredient. Elements can exist in nature, or humans can make them. An element is a building block for compounds and mixtures.

The Periodic Table of Elements



A **compound** is made of two or more elements that can be separated only chemically. For example, water is made of hydrogen and oxygen. It cannot be separated mechanically (with a hammer or by boiling), but it can be separated chemically.

A **mixture** is two or more substances mixed together. The substances combine to form one mixture, but each substance stays the same and does not change. Examples of mixtures are a salt-and-pepper mixture and trail mix (granola, nuts, berries, and so forth).



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