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THE HISTORY OF THE PERIODIC TABLE

In 1872 Dmitri Mendeleev discovered patterns in the 63 elements already known. He found certain elements with similar characteristics.

Mendeleev then designed a table where the elements were arranged by their atomic mass and in groups of similar characteristics. As he made the table, he left spaces marked with blank lines representing elements not yet discovered but whose existence he had predicted.

The modern periodic table is based on a new discovery by Henry Moseley, a British scientist. He discovered the atomic number of elements. The atomic number of an element is the number of protons in the nucleus of an atom. The elements are arranged by increasing atomic number.

The periodic table tells you important information about an element. The number on the top tells you its atomic number--how many protons it has. In the center is the symbol for the element. The bottom number is the atomic mass of the element.

Each vertical column in the table is called a group or family. All elements in a column have similar properties. These are identified by a Roman numeral and the letter A. On the left-hand side is the family IA, also called the alkali metals. These metals are the most reactive elements on the chart and are never found free in nature like silver or gold.

In nature, they are always found in combination with other elements. In their pure forms they are stored in oil to keep them from reacting with the oxygen and vapor in the air.

The alkali metals are softer and less dense than other metals. They can be cut with a knife. Next to the alkali metals are the alkaline earth metals in family IIA. Like the alkali metals, these elements are also reactive and not found free in nature.

On the right side of the chart under IIIA is the boron family. IVA is the carbon family. The nitrogen family is VA and the oxygen family is VIA. All of the elements in these families have properties of both metals and nonmetals. Elements in VIIA are the halogens. These elements are the most reactive nonmetals. The last column in the table are the noble gases, under group VIIIA. These elements are inert, or very stable, and considered mostly unreactive.

On the bottom of the chart are the rare-earth elements. These 30 elements are similar to one another and are separated to make the chart easier to read. The first horizontal row is the lanthanoid series. These elements are soft and malleable. The second row is the actinoid series. All of these elements are radioactive.

The main chart is separated into three parts. The metals are separated from the nonmetals by a black line that looks like stair steps. The closer an element is to that line, the more it possesses a little of both characteristics.
