

Chapter 1: What Are Elements?: *The History of Elements and the Periodic Table (cont.)*

Rare and Radioactive Elements (1869–1899)

Many rare and radioactive elements were discovered during this modern period. Rare elements are elements that occur in very small amounts on earth. Radioactive elements are elements that give off small particles. A few elements discovered during this period include:



Fluorine (1886)
 Argon (1894)
 Helium (1895)
 Krypton (1898)

Neon (1898)
 Polonium (1898)
 Radium (1898)
 Actinium (1899)

Rare, Radioactive, and Synthetic Elements (1900–present)

During this modern period in chemistry, 30 elements have been created or discovered so far. These 20th-Century elements are very rare on earth. Some of them are very radioactive. Many of them are not found on earth at all, but were created in a laboratory. These are called synthetic elements. Some of these rare, radioactive, and synthetic elements include:

Radon (1900)
 Francium (1939)
 Plutonium (1940)

Americium (1944)
 Dubnium (1970)
 Ununbium (1996)



The Future

More new elements may be created in the future. Some periodic tables today provide space for elements up to #118. Many scientists are wondering why we should create new elements. Synthetic elements are very radioactive, they decay very quickly, and they cannot be studied or used. Other scientists are creating more elements because they believe that a stable, usable element may be discovered. Some scientists have even predicted that element #114 may be stable. Who knows? Perhaps this stable element will be discovered in your lifetime.

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Ancient Times

Some elements were known and used by ancient civilizations. These elements were:

Carbon (pre-history)
Sulfur (pre-history)
Copper (~5000 BCE)
Silver (~3000 BCE)
Gold (~3000 BCE)

Iron (~2500 BCE)
Tin (~2100 BCE)
Antimony (~1600 BCE)
Lead (~1000 BCE)



Alchemy to the First Periodic Table (1000–1869)

During this time, 52 elements were discovered. Many of these elements were discovered by alchemists. Alchemists were people who tried to combine science and magic. They tried to change lead into gold. They discovered and used the scientific method. A few elements that were discovered during this period were:

Arsenic (~1250)
Zinc (~1500)
Phosphorus (1669)
Platinum (~1700)
Nickel (1751)

Nitrogen (1755)
Oxygen (1774)
Chlorine (1774)
Aluminum (1825)



Enter the Periodic Table

The first periodic table was drawn by a Russian scientist named Dimitry Mendeleev in 1869. Mendeleev put all 62 known elements on the first periodic table, and even allowed enough space for over 20 elements that had not yet been discovered. Mendeleev's first periodic table closely resembles the table we use today. He also arranged the elements in the order of their atomic numbers, just as we do today.

Week 8

What was the most interesting fact you learned from reading this article and why? Use detail to support your answer.