

Atomic Elements

An **element** is the most basic form of an atom based on the number of protons (p^+)

The number of p^+ is also known as the **atomic number** of an atom

The **atomic number** is the number of protons (p^+) and electrons (e^-) in atom

The **element** is identified by **element symbol** (H), and **element name** (Hydrogen) as shown in the element

| | |
|----------|-------------------------|
| 1 | ← group # (modern) |
| 1A | ← group # (traditional) |
| 1 | ← Element # (Atomic #) |
| H | ← Element Symbol |
| Hydrogen | ← Element Name |
| 1.01 | ← Average Atomic Mass |
| 1 | ← period # (modern) |

A **periodic square** from a table of elements (*Periodic Table*) showing all the element info

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Element Arrangement on Periodic Table

Groups are the up and down rows with elements based on the **number of valence electrons** (val. e^-), and are numbered 1 – 18, or 1A – 8A and 1B – 10B

Periods are the left to right rows based on the number of **energy levels**, or the size of the atom, and are numbered 1 – 7.

| | |
|----|---------------------------------|
| 1 | 1A |
| 1 | H Hydrogen 1.01 |
| 2 | 2A |
| 3 | Li Lithium 6.94 |
| 4 | Be Beryllium 9.01 |
| 11 | Na Sodium 22.99 |
| 12 | Mg Magnesium 24.31 |
| 19 | K Potassium 39.10 |
| 20 | Ca Calcium 40.08 |
| 37 | Rb Rubidium 85.47 |
| 38 | Sr Strontium 87.62 |
| 55 | Cs Cesium 132.91 |
| 56 | Ba Barium 137.33 |
| 87 | Fr Francium (223) |
| 88 | Ra Radium (226) |

group

| | | | | | |
|----------------------------|-----------------------------|-------------------------------|-----------------------------|-------------------------------|----------------------------|
| 13 | 14 | 15 | 16 | 17 | 18 |
| 3A | 4A | 5A | 6A | 7A | 8A |
| 5 | 6 | 7 | 8 | 9 | 10 |
| B Boron 10.81 | C Carbon 12.01 | N Nitrogen 14.01 | O Oxygen 16.00 | F Fluorine 19.00 | Ne Neon 20.18 |

period

Groups: up and down
(18 groups*, 1-18)

* Traditional: 1A-8A, 1B-10B

Periods: left to right
(7 periods, 1-7)

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