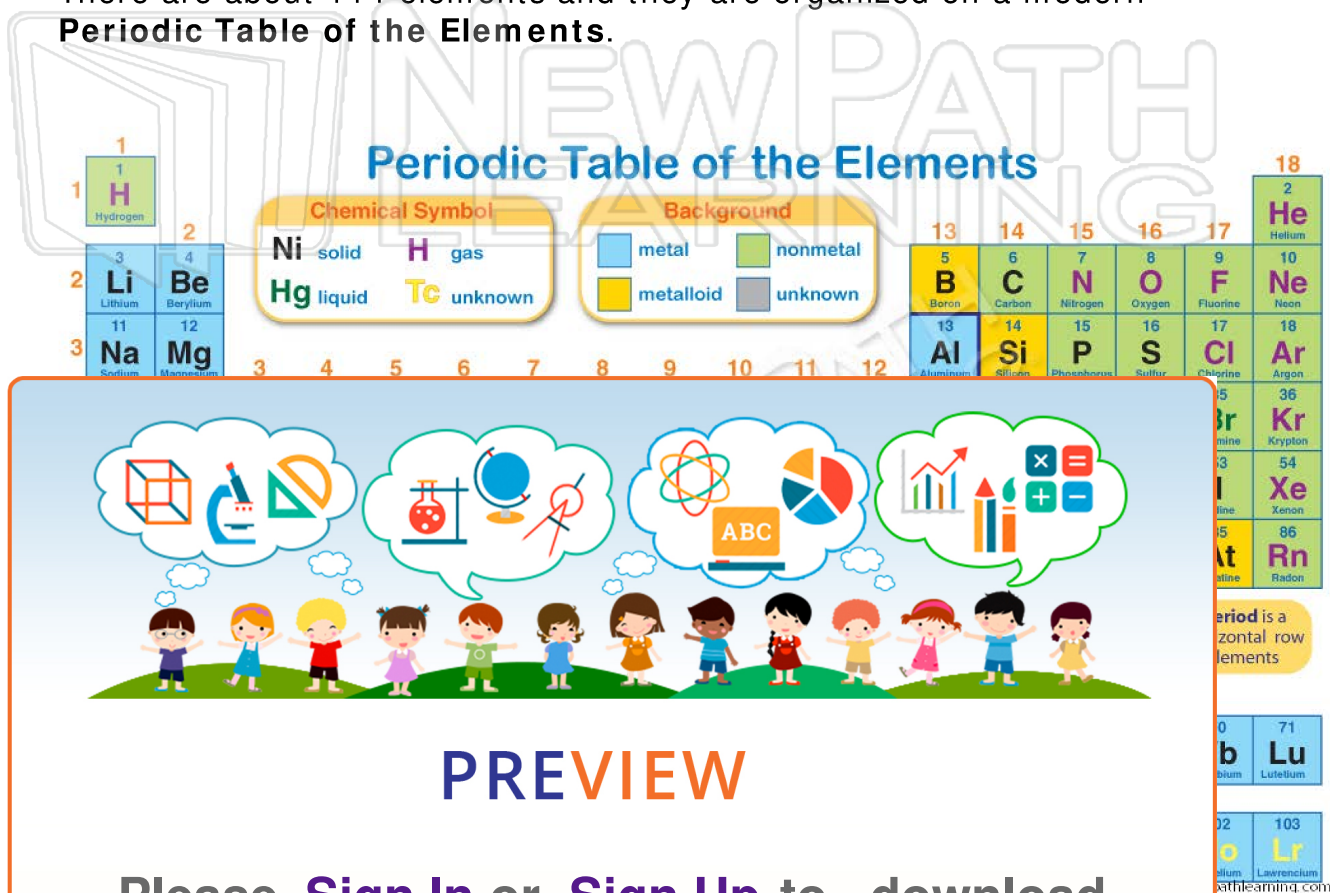


# PERIODIC TABLE

## Pure Matter

**Elements** are the purest form of matter and can not be broken down into any other substance by either a physical or chemical change.

There are about 114 elements and they are organized on a modern **Periodic Table of the Elements**.



**Periodic Table of the Elements**

**Chemical Symbol**

Ni solid	H gas
Hg liquid	Tc unknown

**Background**

metal	nonmetal
metalloid	unknown

**Preview**

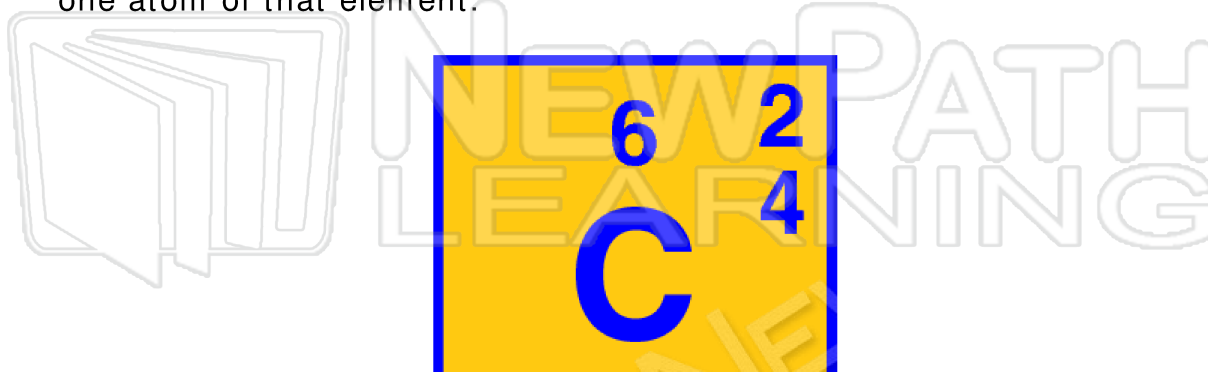
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organized by their atomic numbers from top to bottom and left to right. On the table shown above, the first element is H for hydrogen and one atom of H has an atomic number of 1. The element with the highest atomic number is the last one on the bottom right of chart, Uuq.

**Lesson Checkpoint:**  
*What is used to organize the elements on the Periodic Table?*

## Chart Represents an Atom of Each Element

Up toward the top left hand side of the table, the element C or carbon has been taken out and shown separately. To the right of the symbol, labels are given to the various pieces of information that are available for each element. Remember that in each case the information is for one atom of that element.



## PREVIEW

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If you count the number of electrons listed on the right hand side of the small box, it will give you the total number of electrons in that atom. Whenever an atom is not bonded to another, the number of protons in the nucleus always equals the number of electrons outside the nucleus.

### *Lesson Checkpoint:*

*What can the atomic mass of an atom tell us about particles of the atom?*

## Positions in the Periodic Table

The **horizontal rows** of the table are called **periods**. The elements in a period are not chemically similar. Normally the elements toward the left are **metals**, the ones along the dark line on the right side are **metalloids**, and the ones on the right are **non metals**. Metalloids, such as Silicon (Si), have both metallic and non metallic properties.

5 <b>B</b> 10.81	6 <b>C</b> 12.011	7 <b>N</b> 14.007	8 <b>O</b> 15.999	9 <b>F</b> 18.998	10 <b>Ne</b> 20.179
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Periods towards the bottom of the table contain **radioactive** elements. These atoms disintegrate and, when they do, large amounts of atomic or nuclear energy are released.



## PREVIEW

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active non metals.

Group 18 contains **noble gases**. These atoms all have eight electrons in their outer electron orbit and are almost totally unable to bond to other atoms. These elements are sometimes referred to as **inert** elements.

<b>Rb</b> 85.468
<b>Cs</b> 132.91
<b>Fr</b> 223

### Lesson Checkpoint:

**What are the names of the vertical columns and horizontal rows of the Periodic Table?**