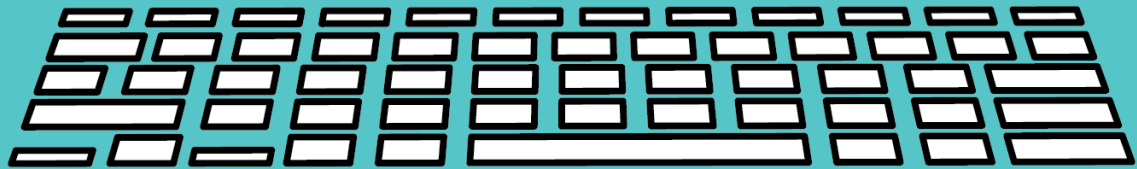
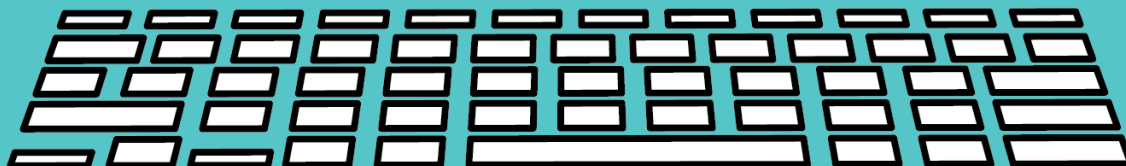


TECHNITUM  
WAS THE FIRST  
ELEMENT TO BE  
MADE  
ARTIFICIALLY

Short Answer	Type Answer Here
1. What is the abbreviation for hydrogen?	
2. What year did the periodic table begin?	
3. What are semimetals also called?	
4. How many rows are on the periodic table?	
5. What is the abbreviation for lead?	
6. Elements in the second row have how many orbitals?	
7. What is the smallest unit of matter?	
8. How many columns are on the periodic table?	



Short Answer	Type Answer Here	Fill in the Blank	Type Answer Here
1. What is the abbreviation for hydrogen?		9. Within each atom is a nucleus with ___ and electrons.	
2. What year did the periodic table begin?		10. The periodic table is divided into ___ blocks.	
3. What are semimetals also called?		11. Metals are found on the ___ side of the grid.	
4. How many rows are on the periodic table?		12. ___ elements have occurred in a lab or nuclear event.	
5. What is the abbreviation for lead?		13. Metals are typically ___ room temperature.	
6. Elements in the second row have how many orbitals?		14. ___ is sorted by increasing ___ number.	
7. What is the smallest unit of matter?		15. Non-metals typically are ___ conductors of electricity.	
8. How many columns are on the periodic table?		16. Mendeleev's first name was ___.	



## PERIODIC TABLE

The periodic table is a chart or table that shows the elements known to man. Dmitri Mendeleev was a Russian chemist who began organizing the table in 1869. When Mendeleev created his periodic table, he left space for yet-to-be-discovered elements. Calcium, scandium, and scandium were added to the grid.

An atom is the smallest unit of matter. At the center of each atom is a nucleus with protons and electrons. Elements have different properties and characteristics by their properties. Elements have different properties and characteristics. Some familiar elements in the periodic table are gold, silver, and nickel. Other materials you may have heard of are gold, silver, lead, and copper. Each of these elements is placed and classified on the periodic table. 24 of the known elements have occurred naturally on Earth or nuclear reactions. Other 94 elements are found in nature.

Mendeleev began categorizing elements into groups, similar to a deck of cards. Each element was written on its own card and then sorted like suits (spades, clubs, diamonds, hearts) in solitary suits. Everything was sorted by increasing atomic weight. Today, the periodic table is sorted by increasing atomic number.

To read the periodic table, follow the grid from left to right and from top to bottom. It's called periodic because the elements are sorted into groups, periods, blocks and categories. By grouping things this way, all elements with similar properties remain in the same area. Elements are arranged by:

- atomic number
- electron configuration (distribution of electrons in orbitals)
- ionization energy (energy required to move atoms to a positive ion)
- electronegativity (strength of atoms to attract a pair of electrons)
- electron affinity (strength in gaining an electron)
- metallic character

There are eight periods (rows) on the periodic table. They are labeled and numbered 1 through 8. There are also 18 groups (columns) on the chart: lithium, beryllium, scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, boron, carbon, nitrogen, oxygen, fluorine, and helium group. Groups are categorized by alkali metals, alkali non-metals, transition metals, non-metals, gases, and more. There are four blocks called s-block, f-block, d-block and

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p-block. Finally, the periodic table has four major categories: metals, metalloids, non-metals and unknown.

Many of the elements in the periodic table are metals. Found on the left of the grid, these metals include: alkali metals, alkaline earth metals, transition metals, basic metals, lanthanides (rare earths), and actinides. Metals typically are:

- solid at room temperature (except mercury)
- hard
- shiny
- good conductors of heat and electricity
- metallic-looking

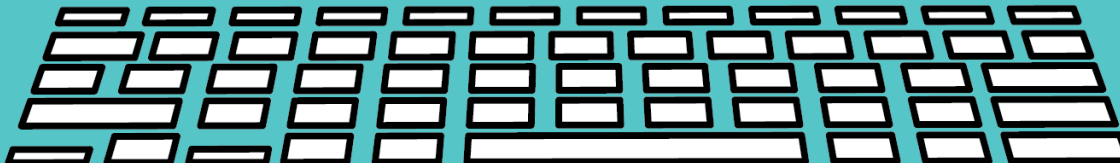
The right side of the periodic table has the non-metals. These three categories include non-metals, halogens, and noble gases. Non-metals typically are:

- brittle solids
- without metallic luster
- poor conductors of heat and electricity
- found in the middle of elements between metals and non-metals are called metalloids or semimetals. Metalloids typically:
- have some properties of both groups, metals and non-metals
- behave like either group depending on what they are reacting with
- typically make good semiconductors

The first element in the same period (row) has the same number of orbitals. The first row has one orbital, the second row has two orbitals, the third has three orbitals, etc. The maximum number of orbitals is 7. Similarly, each element in the same period has the same number of valence electrons, electrons on the outer shell. Some elements don't quite fit into this category. These elements are in the second-to-last column.

Each element on the periodic table has the element's name, symbol, its atomic number, and standard atomic mass. The symbol is usually an abbreviation of the element's name. Sometimes the symbol is two letters. Many symbols use the first letter of the element, but not always. Hydrogen has the letter H, the symbol for Helium is He, but Lithium elements are named after a descriptive word in Greek. Below the symbol is the atomic number, indicating how many protons are in the element. Below the symbol is the name of the element. Underneath the name is the atomic mass. Did you know that the same elements on Earth are on Mars?

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SEE HOW THIS  
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