

## The Periodic Table

<b>H</b> Hydrogen																	<b>He</b> Helium
<b>Li</b> Litium	<b>Be</b> beryllium											<b>B</b> boron	<b>C</b> carbon	<b>N</b> nitrogen	<b>O</b> oksigen	<b>F</b> fluorine	<b>Ne</b> neon
<b>Na</b> natrium	<b>Mg</b> magnesium											<b>Al</b> aluminium	<b>Si</b> silikon	<b>P</b> phosphorus	<b>S</b> sulfur	<b>Cl</b> klorin	<b>Ar</b> argon
<b>K</b> potasium	<b>Ca</b> kalsium	<b>Sc</b> skandium	<b>Ti</b> titanium	<b>V</b> vanadium	<b>Cr</b> kromium	<b>Mn</b> manganese	<b>Fe</b> besi	<b>Co</b> kobalt	<b>Ni</b> nikel	<b>Cu</b> tembaga	<b>Zn</b> zink	<b>Ga</b> gallium	<b>Ge</b> germanium	<b>As</b> arsenik	<b>Se</b> selenium	<b>Br</b> bromin	<b>Kr</b> krypton
<b>Rb</b> rubidium	<b>Sr</b> strontium	<b>Y</b> ytrium	<b>Zr</b> zirkonium	<b>Nb</b> niobium	<b>Mo</b> molibdenum	<b>Tc</b> teknium	<b>Ru</b> ruthenium	<b>Rh</b> rhodium	<b>Pd</b> palladium	<b>Ag</b> perak	<b>Cd</b> kadmium	<b>In</b> indium	<b>Sn</b> timah	<b>Sb</b> antimon	<b>Te</b> telurium	<b>I</b> iodin	<b>Xe</b> xenon
<b>Cs</b> cesium	<b>Ba</b> barium	<b>La</b> lantanum	<b>Hf</b> hafnium	<b>Ta</b> tantalum	<b>W</b> wolfram	<b>Re</b> rhenium	<b>Os</b> osmium	<b>Ir</b> iridium	<b>Pt</b> platina	<b>Au</b> emas	<b>Hg</b> merkuri	<b>Tl</b> timah putih	<b>Pb</b> timah hitam	<b>Bi</b> bismut	<b>Po</b> polonium	<b>At</b> astatin	<b>Rn</b> radon
<b>Fr</b> fransium	<b>Ra</b> radium	<b>Ac</b> aktinida	<b>Rf</b> rutherfordium	<b>Db</b> dubnium	<b>Sg</b> seaborgium	<b>Bh</b> bohrium	<b>Hs</b> hassium	<b>Mt</b> meitnerium	<b>Ds</b> darmstadtium	<b>Rg</b> roentgenium							

<span style="display:inline-block; width:10px; height:10px; background-color:orange;"></span> metal
<span style="display:inline-block; width:10px; height:10px; background-color:yellow;"></span> metalloid
<span style="display:inline-block; width:10px; height:10px; background-color:green;"></span> nonmetal



# The periodic table

All the known elements are shown in the periodic table.

<b>H</b> hydrogen																	<b>He</b> helium
<b>Li</b> lithium	<b>Be</b> beryllium											<b>B</b> boron	<b>C</b> carbon	<b>N</b> nitrogen	<b>O</b> oxygen	<b>F</b> fluorine	<b>Ne</b> neon
<b>Na</b> sodium	<b>Mg</b> magnesium											<b>Al</b> aluminum	<b>Si</b> silicon	<b>P</b> phosphorous	<b>S</b> sulfur	<b>Cl</b> chlorine	<b>Ar</b> argon
<b>K</b> potassium	<b>Ca</b> calcium	<b>Sc</b> scandium	<b>Ti</b> titanium	<b>V</b> vanadium	<b>Cr</b> chromium	<b>Mn</b> manganese	<b>Fe</b> iron	<b>Co</b> cobalt	<b>Ni</b> nickel	<b>Cu</b> copper	<b>Zn</b> zinc	<b>Ga</b> gallium	<b>Ge</b> germanium	<b>As</b> arsenic	<b>Se</b> selenium	<b>Br</b> bromine	<b>Kr</b> krypton
<b>Rb</b> rubidium	<b>Sr</b> strontium	<b>Y</b> yttrium	<b>Zr</b> zirconium	<b>Nb</b> niobium	<b>Mo</b> molybdenum	<b>Tc</b> technetium	<b>Ru</b> ruthenium	<b>Rh</b> rhodium	<b>Pd</b> palladium	<b>Ag</b> silver	<b>Cd</b> cadmium	<b>In</b> indium	<b>Sn</b> tin	<b>Sb</b> antimony	<b>Te</b> tellurium	<b>I</b> iodine	<b>Xe</b> xenon
<b>Cs</b> caesium	<b>Ba</b> barium	<b>La</b> lanthanum	<b>Hf</b> hafnium	<b>Ta</b> tantalum	<b>W</b> tungsten	<b>Re</b> rhenium	<b>Os</b> osmium	<b>Ir</b> iridium	<b>Pt</b> platinum	<b>Au</b> gold	<b>Hg</b> mercury	<b>Tl</b> thallium	<b>Pb</b> lead	<b>Bi</b> bismuth	<b>Po</b> polonium	<b>At</b> astatine	<b>Rn</b> radon
<b>Fr</b> francium	<b>Ra</b> radium	<b>Ac</b> actinium	<b>Rf</b> rutherfordium	<b>Db</b> dubnium	<b>Sg</b> seaborgium	<b>Bh</b> bohrium	<b>Hs</b> hassium	<b>Mt</b> meitnerium	<b>Ds</b> darmstadtium	<b>Rg</b> roentgenium							

metal

metalloid

nonmetal

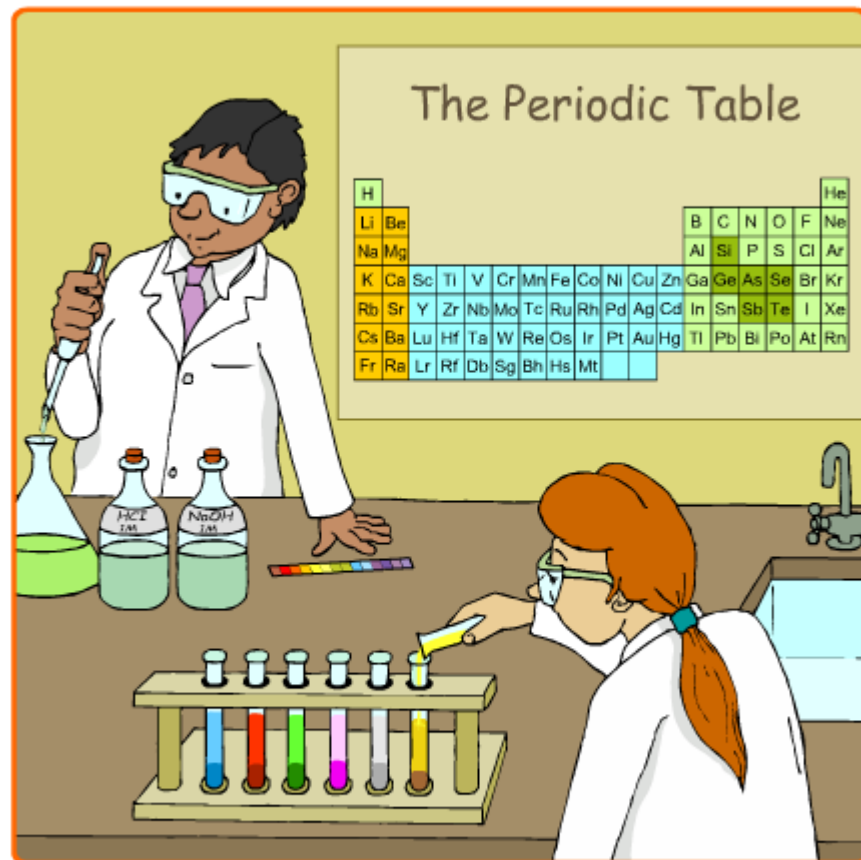
Can you see any patterns in how the elements are arranged in the periodic table?



## The Development of the Periodic Table

The development of the modern periodic table is the result of many scientists all over the world trying to find order among the elements.

Click "**start**" to find out more about how the elements were arranged into the periodic table.



start



# How are the elements arranged?

The elements in the periodic table are arranged in families called **groups** and **periods**. A group is a vertical column in the periodic table; a period is a horizontal row.

The elements in groups tend to have similar properties.

groups 0 to 7 →

↓ periods 1 to 6

H hydrogen																							He helium
Li lithium	Be beryllium											B boron	C carbon	N nitrogen	O oxygen	F fluorine	Ne neon						
Na sodium	Mg magnesium											Al aluminum	Si silicon	P phosphorus	S sulfur	Cl chlorine	Ar argon						
K potassium	Ca calcium	Sc scandium	Ti titanium	V vanadium	Cr chromium	Mn manganese	Fe iron	Co cobalt	Ni nickel	Cu copper	Zn zinc	Ga gallium	Ge germanium	As arsenic	Se selenium	Br bromine	Kr krypton						
Rb rubidium	Sr strontium	Y yttrium	Zr zirconium	Nb niobium	Mo molybdenum	Tc technetium	Ru ruthenium	Rh rhodium	Pd palladium	Ag silver	Cd cadmium	In indium	Sn tin	Sb antimony	Te tellurium	I iodine	Xe xenon						
Cs caesium	Ba barium	La lanthanum	Hf hafnium	Ta tantalum	W tungsten	Re rhenium	Os osmium	Ir iridium	Pt platinum	Au gold	Hg mercury	Tl thallium	Pb lead	Bi bismuth	Po polonium	At astatine	Rn radon						
Fr francium	Ra radium	Ac actinium	Rf rutherfordium	Db dubnium	Sg seaborgium	Bh bohrium	Hs hassium	Mt meitnerium	Ds darmstadtium	Rg roentgenium													

For example, all the elements in group 0 are very unreactive gases at room temperature, while all the elements in group 1 are very reactive metals.

# Solids, liquids and gases

Why are some symbol names in the periodic table below shown in different colors? (clue: think about group properties)

<b>H</b> hydrogen												<b>He</b> helium					
<b>Li</b> lithium	<b>Be</b> beryllium											<b>B</b> boron	<b>C</b> carbon	<b>N</b> nitrogen	<b>O</b> oxygen	<b>F</b> fluorine	<b>Ne</b> neon
<b>Na</b> sodium	<b>Mg</b> magnesium											<b>Al</b> aluminum	<b>Si</b> silicon	<b>P</b> phosphorus	<b>S</b> sulfur	<b>Cl</b> chlorine	<b>Ar</b> argon
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<b>Rb</b> rubidium	<b>Sr</b> strontium	<b>Y</b> yttrium	<b>Zr</b> zirconium	<b>Nb</b> niobium	<b>Mo</b> molybdenum	<b>Tc</b> technetium	<b>Ru</b> ruthenium	<b>Rh</b> rhodium	<b>Pd</b> palladium	<b>Ag</b> silver	<b>Cd</b> cadmium	<b>In</b> indium	<b>Sn</b> tin	<b>Sb</b> antimony	<b>Te</b> tellurium	<b>I</b> iodine	<b>Xe</b> xenon
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	metal
	metalloid
	nonmetal

	solid
	liquid
	gas

Bromine and mercury are liquids at room temperature; all the other elements are solids or gases.



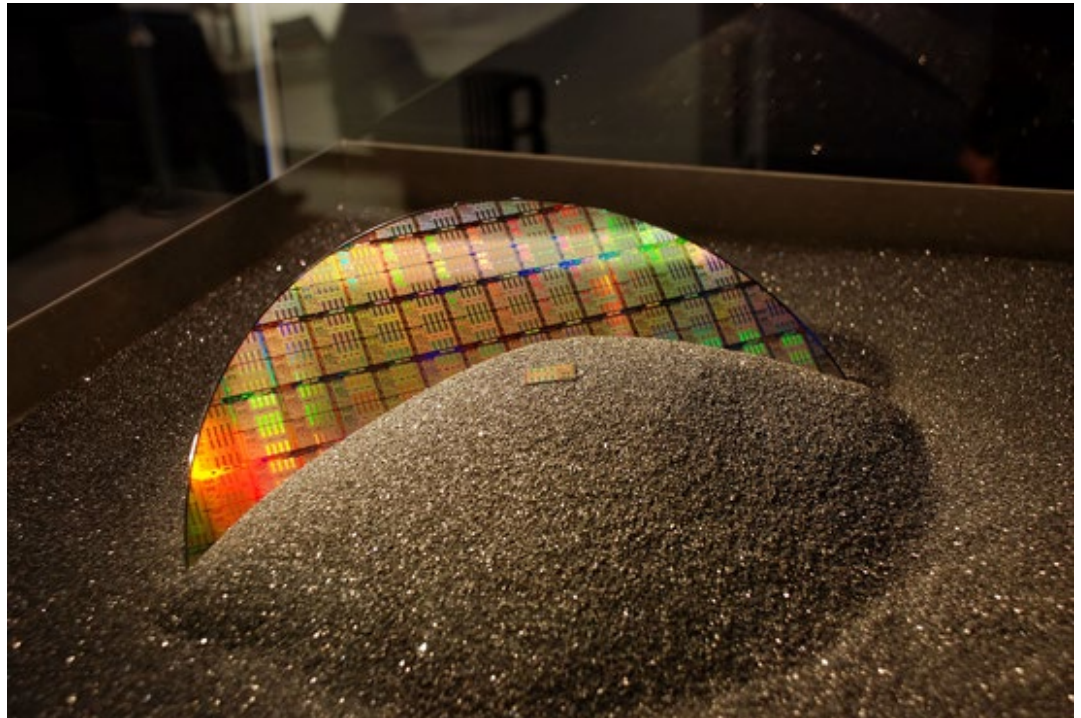
Metals are on the left and in the center of the periodic table.

Nonmetals are located mostly on the right.

**Metalloids** sometimes behave like metals and sometimes like nonmetals.

Metalloids are located between metals and nonmetals in the periodic table.

Silicon and germanium are examples of metalloids.



## Which elements are metals, nonmetals or metalloids?

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metals

nonmetals

metalloids

show all

