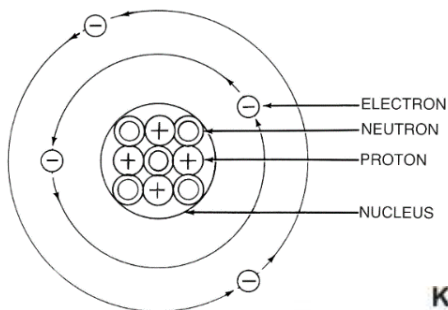


# Chemistry Kerboodle: C2 The Periodic Table

Name: \_\_\_\_\_

## 1. History of the Periodic Table

Invented by	Dmitri Mendeleev, a Russian scientist.
Arranged	In order of atomic mass, and by their chemical properties
What was special about it?	Predicted the existence of other elements not discovered, and left gaps for them in his table
Why was it used?	New elements were discovered that matched these gaps



**Key**

relative atomic mass	1
atomic symbol	H
name	hydrogen
atomic (proton) number	1

## 2. Using the periodic table

Number of..	Is the...	Found by..
Protons	Atomic (proton) number	Smaller number on periodic table
Electrons	Atomic (proton) number	Smaller number on periodic table
Neutrons	Difference between the atomic mass and atomic number	Big number – small number

Period	No. of shells
1	1
2	2
3	3
4	4
5	5
6	6
7	7

### TL/DR:

**Group number**  
Tells you the number of outer electrons

**Period number**  
Tells you how many shells

## 3. Layout of the periodic table

**Groups**

1	2		3	4	5	6	7	0									
H								He									
Li	Be							Ne									
Na	Mg							Ar									
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra	Ac															

**Periods**

Legend:

- Alkali metals (Group 1)
- Transition metals (Groups 3-10)
- Halogens (Group 17)
- Noble gases (Group 18)

Group	1	2	3	4	5	6	7	8
<b>Electrons in outer shell</b>	1	2	3	4	5	6	7	8
<b>Charge of ion</b>	+1	+2	+3	N/A	-3	-2	-1	N/A
<b>Number of covalent bonds</b>	N/A	N/A	N/A	4	3	2	1	N/A

N/A = not applicable (does not do it)

#### 4. Properties – Groups 1 and 7

Group 1 (I)	Melting point	Density	Reactivity	Group 7 (VII)	Melting point	Density	Reactivity	Group 0 (VIII)	Melting point	Density	Reactivity
Lithium (Li)	<b>Decreases</b> down the group	<b>Increases</b> down the group	<b>Increases</b> down the group	Fluorine (F)	<b>Increases</b> down the group	<b>Increases</b> down the group	<b>Decreases</b> down the group	Helium (He)	<b>Increases</b> down the group	<b>Increases</b> down the group	<b>INERT</b>  <b>(DO NOT REACT)</b>
Sodium (Na)				Chlorine (Cl)				Neon (Ne)			
Potassium (K)				Bromine (Br)				Argon (Ar)			
Rubidium (Rb)				Iodine (I)				Xenon (Xe)			

#### 5. Properties – metals and non-metals

Property	Metals	Non-metals
Density	High (they feel heavy for their size)	Low (they feel light for their size)
Strength	Strong	Weak
Malleable or brittle	Malleable (they bend without breaking)	Brittle (they break or shatter when hammered)
Conduction of heat	Good	Poor (they are insulators)
Conduction of electricity	Good	Poor (they are insulators) apart from graphite

#### 6. Transition metals (TRIPLE ONLY)

Properties compared to group 1 elements	Other useful properties
More dense	Ions can have different charges
Harder	Form coloured compounds
Stronger	Good catalysts
Higher melting points	
Less reactive	