

## Knowledge organiser

Big idea: Matter



**Y8 topic:** Periodic Table

### **I have already learned:**

**In KS2:** Solids, liquids and gases

**In Y7:** Elements

### **This topic links to:**

Elements (Y8)

Unit C1 – Atomic structure and the periodic table (Y9)

Unit C2 – bonding, structure and the properties of matter (Y9)

### **It is important to study about the periodic table because...**

The periodic table is a very important source of information for scientists. It tells us a lot about what elements are similar to each other and how they react. We can use the periodic table to tell us what the atoms of each element are like.

### **Possible careers involving Periodic Table are...**

Analytical chemist (finding out what substances are made of or how much there is of something)

Forensic scientist

Research scientist

Materials scientist

Metallurgist (developing the right metal for the right job)

## KNOWLEDGE ORGANISER

### BIG IDEA: MATTER

#### TOPIC: PERIODIC TABLE

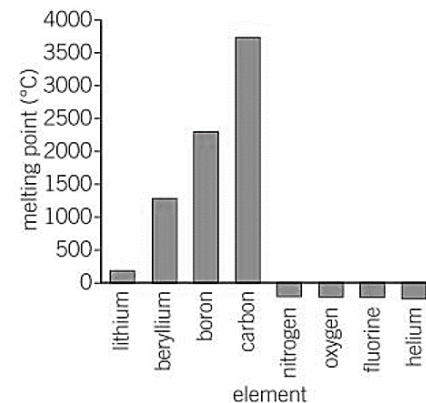
Key Word	Definition
<b>periodic table</b>	Shows all the elements arranged in rows and columns.
<b>physical properties</b>	Features of a substance that can be observed without changing the substance itself e.g. boiling point
<b>chemical properties</b>	Features of the way a substance reacts with other substances.
<b>groups</b>	Columns of the Periodic table.
<b>periods</b>	Rows of the Periodic table.
<b>trend</b>	A pattern in data.
<b>alkali metals</b>	The elements in group 1.
<b>halogens</b>	The elements in group 7.
<b>noble gases</b>	The elements in group 0.
<b>unreactive</b>	Substances that take part in very few chemical reactions.
<b>displacement</b>	A reaction where a more reactive element takes the place of a less reactive element in a compound.

		group number										0					
1	2											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																

H

- The **periodic table** contains all of the known elements.
- The elements in a **group** all react in a similar way and sometimes show a **trend** in reactivity.
- As you go down a **group** and across a **period** the elements show **trends** in **physical properties**.
- Metals are generally found on the left side of the table, non-metals on the right.

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**Trends** can be seen when looking at data presented in tables and graphs.

To describe **trends** you often use the following words:

**increase**- get bigger  
**decrease**- get smaller

Li	Group 1- Alkali Metals
Na	<ul style="list-style-type: none"> <li>They are good conductors of electricity and heat.</li> <li>They are shiny when freshly cut.</li> <li>They have fairly low melting points compared to other metals.</li> <li>The melting point decreases from top to bottom of group 1.</li> <li>The metals react vigorously with water to produce hydrogen gas.</li> <li>The reactions get more vigorous going down the group.</li> </ul>
K	
Rb	
Cs	

F	Group 7- Halogens
Cl	<ul style="list-style-type: none"> <li>They have low melting points, like most non-metals</li> <li>They do not conduct electricity.</li> <li>The melting point increases from top to bottom of group 7.</li> <li>The colour of the elements gets darker from top to bottom.</li> <li>The reactions of the halogens get less vigorous going down the group.</li> <li>More reactive halogens can displace less reactive halogens in displacement reactions.</li> </ul>
Br	
I	
At	

He	Group 0- The noble gases
Ne	<ul style="list-style-type: none"> <li>They have low melting and boiling points, like most non-metals</li> <li>They are colourless gases at room temperature.</li> <li>The boiling points increase going down the group.</li> <li>They take part in very few reactions as they are <b>unreactive</b>.</li> </ul>
Ar	
Kr	
Xe	