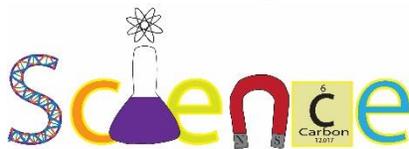




# Firrhill High School



## Summary Sheets: C2 The Periodic Table

### WHAT SHOULD I KNOW?

Before you look over your summary sheets read the success criteria from this topic and see what you can remember. Colour in each column red, orange or green to show how confident you are.

Success Criteria	Before reading	After reading	Before my test
I can explain what an element is.			
I can explain what the periodic table is.			
I can identify the Halogens group of the periodic table and describe their properties.			
I can identify the Alkali Metals groups of the periodic table and describe their properties.			
I can compare reactivity of metals to select which metals can displace other metals.			
I can write and understand word equations to show chemical reactions.			
I can state the mix of gases in the air.			
I can state the gas test for hydrogen, oxygen and carbon dioxide.			
I can give examples of common acids and alkalis.			
I can explain what an indicator is and use it to identify the pH of a substance.			
I can explain what a neutralisation reaction.			
I can explain what the term valency means.			
I can use the valency of elements to determine the chemical names of compounds.			

# ELEMENTS & THE PERIODIC TABLE

The period table shows every element that has ever been discovered.

Elements are substances made up of only **one** type of atom.

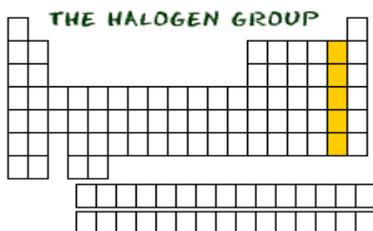
All elements are found on the periodic table.



Metal Elements	Non-Metal Elements
<ul style="list-style-type: none"> <li>• Generally found on the left hand side of the periodic table</li> <li>• Good conductors of heat and electricity</li> <li>• Malleable (easy to shape)</li> </ul>	<ul style="list-style-type: none"> <li>• Generally found on the right hand side of the periodic table</li> <li>• Poor conductors of heat and electricity (insulators)</li> </ul>

## GROUPS OF THE PERIODIC TABLE

### The Halogens



Elements are placed in the periodic table to do with the size of the atom and how it reacts.

The halogen group (highlighted) are all highly reactive.

In class the halogen iodine was extracted from seaweed.

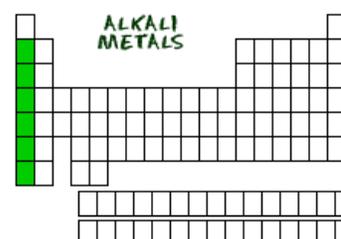
### The Alkali Metals

All Alkali metals have similar properties

- Burn with bright colours
- React aggressively with water

In class alkali metals were burned in the Bunsen burner to observe brightly coloured flames.

Your teacher added alkali metals to water to observe the metals catch fire.



# COMPOUNDS

## ELEMENTS ARE

Compounds are two or more elements **chemically bonded together**.

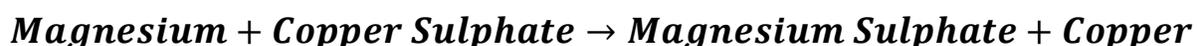
# REACTIVITY OF METALS

## NOT ALL METALS HAVE THE SAME REACTIVITY

Potassium (K)	Most reactive ↑
Sodium (Na)	
Lithium (Li)	
Calcium (Ca)	
Magnesium (Mg)	
Aluminium (Al)	
Carbon (C)	

The reactivity series shows how reactive metals are.

A more reactive metal will **displace** a less reactive metal. This means the more reactive metal will 'take' the element a less reactive metal is bound to.



# WORD EQUATIONS

## WORD EQUATIONS ARE USED TO SHOW REACTIONS

A word equation is used to explain what is happening during a chemical reaction.

The chemicals that are first added together are called the **reactants**, the substance that is created is called the **product**. A + sign is used to show that there is more than one substance either to start or at the end, the → sign is to show a chemical reaction.

In class you made a compound from burning magnesium



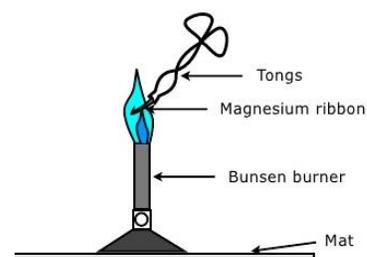
When naming compounds

If there are only two elements in the compound...

...add ide at the end of the compound name

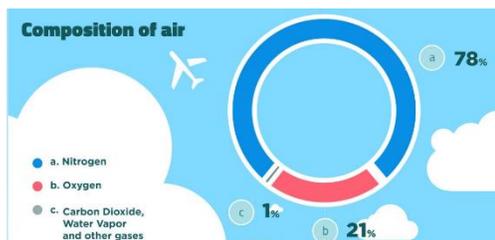
If there are three elements (one of which is oxygen) in the compound...

... add ate at the end of the compound name



# GASES IN THE AIR

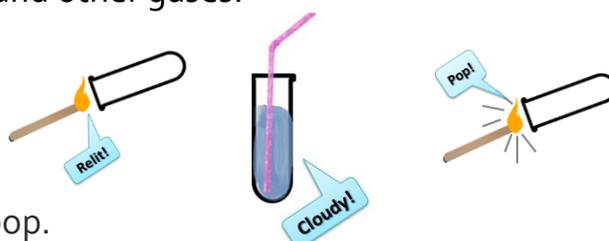
## HOW CAN WE TEST GASES?



The air on earth is made up out of mainly Nitrogen, a little Oxygen and a small amount of carbon dioxide, water vapour and other gases.

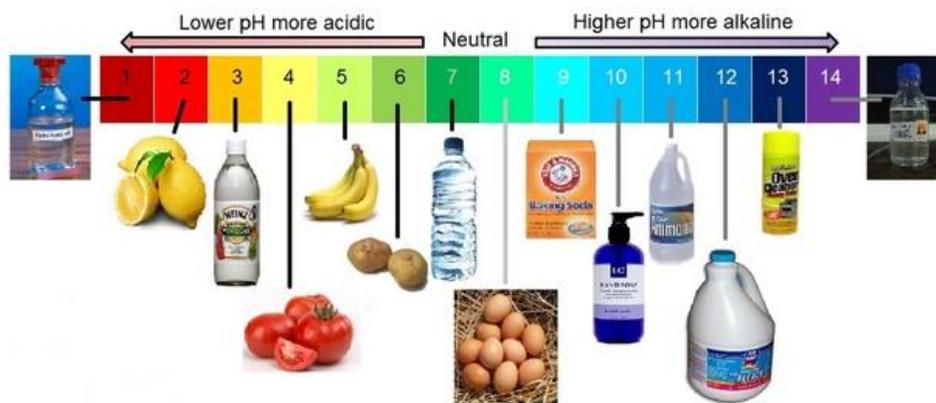
We now know various gas tests:

- Hydrogen will burn with a squeaky pop.
- Oxygen will relight a glowing splint.
- Carbon dioxide turns limewater cloudy.



# ACIDS AND ALKALIS

## COMMON ACIDS AND ALKALIS AND THE PH SCALE



The pH scale is a number scale that shows how acidic or alkaline a substance is.

An alkali is the opposite of an acid. Acids are found in numbers 1-6, 7 is neutral and 8-14 is acid.

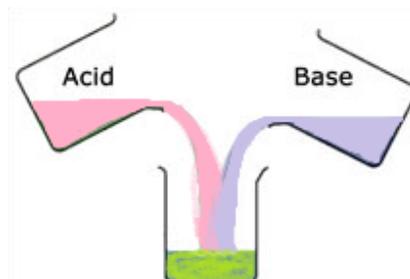
Universal indicator and other indicators can be used to show the pH of a substance.

# NEUTRALISATION

## Changing the pH of a substance

The pH of a substance can be changed by adding acids or alkalis.

When an acid is added to an alkali it will decrease the pH number. As the pH number is decreasing towards pH7 we say this is a neutralization reaction. However, if more acid is added the pH will decrease below 7 turning the substance into an acid.



# VALENCY

## How to tell what substance will be formed

The valency of a substance shows how many bonds different elements can form.

Each 'arm' shows a different bond each element can make.

