

# KNOWLEDGE ORGANISER



**Summer Term 2021**  
**Year 8**



**Name:** \_\_\_\_\_ **Form:** \_\_\_\_\_

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## How to use your Knowledge Organiser for Home Learning

- Knowledge Organisers contain critical knowledge that you must know
- It will help you recap, revisit and revise what you learn in lessons so that you remember it in the long term
- You will use your Knowledge Organiser for most of your homework, but you can also do extra self-study to develop your long term memory
- You **MUST** have your book with you every day and in every lesson as it will be used alongside your learning

### For homework:

- You will need to follow the homework timetable so you do the correct subjects on the correct day.
- You will be asked to look at a specific section of your Knowledge Organiser
- Your homework will be **cover – write – check**

This should take about 15 – 20 mins per subject.

- You must write the subject and date in your homework book
- You need to underline the subject and title as per lessons
- The knowledge learnt will be assessed throughout each cycle in lesson time
- Your form tutors will check that the work has been completed
- There will be rewards for excellent work and sanctions for work not completed



## HOME LEARNING PLAN:

- Your homework will be set **every Monday** on Class Charts
- Your homework book will be checked by your tutor **every Monday** after each week's homework to check you have evidence of your home learning
- Evidence can be highlighted notes, mind-maps, diagrams, flashcards
- The section of homework you need to learn from your Knowledge Organiser will be on Class Charts as normal
- Your tutor will give rewards for excellent home learning evidence, but there will also be a consequence for not completing the work or not having your book
- There will be an after school detention set for the **Tuesday evening** to complete your work if it has not been done
- You will be tested on what you have learnt by your subject teachers in your lessons
- Completing your home learning is **YOUR** responsibility



# Literacy Knowledge Organiser

## Books to read this term –

*Northern Lights* by Philip Pullman  
*The Red Scrolls of Magic* by Casandra Clare  
*The Sleeper and the Spindle* by Neil Gaiman

“The more that you read, the more things you will know. The more that you learn, the more places you’ll go.”

**Dr Seuss**

## SPAG Reminder for the term –

Sentences provide us with the framework for the clear written expression of our ideas. The aim in writing is always to write in complete sentences which are correctly punctuated. Sentences always begin with a capital letter and end in either a full stop, exclamation or question mark.

A complete sentence always contains a verb, expresses a complete idea and makes sense standing alone.

To check that you are writing in complete sentences, try reading your sentences aloud, pausing as indicated by the punctuation. Can each sentence stand alone as a complete thought? If further information is needed to complete the idea, then it is not a complete sentence.

Homophones are words that sound the same but are spelt differently and have different meanings. 'Their', 'they're' and 'there' are homophones that often confuse people.

‘Their’ means it belongs to them, eg "I ate their sweets."

‘They're’ is short for 'they are' eg "They are going to be cross."

‘There’ refers to a place, eg "I'm going to hide over there."

# Punctuation

## Full Stop

Used at the end of a complete sentence.



Example:  
And that is how the story ends.

## Exclamation Mark

Used to end a sentence to show a strong feeling or emotion like surprise, anger or shock.



Example:  
'Look up there!' she yelled.

## Comma

Used to separate parts of a sentence. It can also be used to separate items in a list.



Example:  
We had apples, cheese and water.

## Question Mark

Used to end a sentence that asks a question.



Example:  
What is the date today?

## Parenthesis / Brackets

Use to add additional information.



Example:  
He gave me money (£10).

## Dash

Can be used to add information / clarity instead of a colon or brackets.



Example:  
These people have the same responsibility - to serve to public.

## Ellipsis

Indicates that something has been left out / it is not finished.



Examples:  
I don't know... I'm not sure.

## Ampersand

Used to represent the word "and".



Example:  
At the zoo we saw lions, zebras, bears & monkeys.

## Colon

Use after a complete statement to introduce a list or example.



Example:  
You know what to do: practice.

## Speech Marks

Used to show that someone is speaking.



Example:  
The boy said "I don't know".

## Apostrophe

For contraction - used to show that some letters have been taken out of a word to shorten it.  
For example: Can not = Can't.

For possession - shows the object belongs to someone.  
For example: The dog's tail.



## Semicolon

Used to link two independent clauses that are closely related.



Example:  
My dad has a red car; he likes to wash it.



# NUMERACY

## Order of Operations

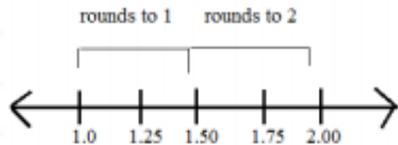
<b>B</b>	<b>Brackets</b>	$10 \times (4 + 2) = 10 \times 6 = 60$
<b>I</b>	<b>Indices</b>	$5 + 2^2 = 5 + 4 = 9$
<b>D</b>	<b>Division</b>	$10 + 6 \div 2 = 10 + 3 = 13$
<b>M</b>	<b>Multiplication</b>	$10 - 4 \times 2 = 10 - 8 = 2$
<b>A</b>	<b>Addition</b>	$10 \times 4 + 7 = 40 + 7 = 47$
<b>S</b>	<b>Subtraction</b>	$10 \div 2 - 3 = 5 - 3 = 2$

### Key Concept: Rounding to units, tens, hundreds and thousands

Round 5468.9  
 to the nearest whole number = 5469  
 to the nearest ten = 5470  
 to the nearest hundred = 5500  
 to the nearest thousand = 5000

### Key Concept: Rounding to nearest whole numbers

Place the number you are rounding on a decimal number line. Which whole number is it closer to?



### Describing numbers

**Numerals** – a number written down not in words (e.g. 3 or 40)

**Digit** – the numerals 0 to 9

**Integer** – whole numbers (e.g. 2 or 64)

**Decimals** – numbers between two whole numbers on a number line (e.g. 4.7 or 3.59)

**Place value** – The position of the digit in the number that tells you how much it is worth (e.g. the 4 in the number 432 is worth four hundred)

### Scale and metric

#### measurements

**Millimetre (mm)** – the thickness of a credit card

**Centimetre (cm)** – the width of a fingernail

**Metre (m)** – the length of a guitar

**Kilometre (km)** – the distance you can go in around 12 minutes walking



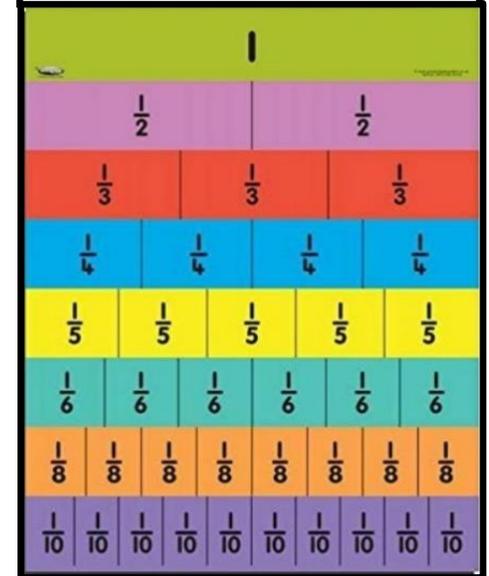
### Fractions

**Fraction** – part of a whole number or item

**Denominator** – how many parts the whole thing is split into (bottom)

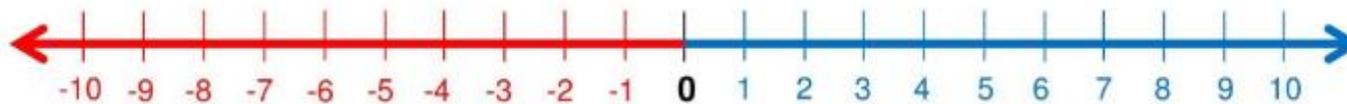
**Numerator** – the number of those parts you have (top)

**Equivalent** – has the same value



Negative

Positive



← Decreasing/descending/getting smaller

Increasing/ascending/getting bigger →

### Command words

**Calculate/evaluate/find/work out/give** mean find the answer

**Simplify** means write in a different, more simple way

**Estimate/approximate** means use appropriate rounded values to find an

# ENGLISH

<h2 style="text-align: center; color: red; margin: 0;">'Animal Farm'</h2> <h3 style="text-align: center; color: red; margin: 0;">Knowledge Organiser</h3>		The seven commandments	Key words
Chapter breakdown			
1	The animals gather to listen to old Major. He gives them a vision of a life without man.	1 Whatever goes upon two legs is an enemy.	<p><b>allegory</b> – a story with two meanings. It has a literal meaning, which is what actually happens in the story. But it also has a deeper meaning. The deeper meaning is often a moral. It teaches you a lesson about life.</p> <p><b>tyrant</b> – someone who has total power and uses it in a cruel and unfair way. A <b>tyranny</b> is a situation in which a leader or government has too much power and uses that power in a cruel and unfair way.</p> <p><b>rebellion</b> – a rebellion is a situation in which people fight against those who are in charge of them.</p> <p><b>harvest</b> – the time when crops are cut and collected from fields.</p> <p><b>corrupt</b> – when people use their power in a dishonest way order to make life better for themselves.</p> <p><b>propaganda</b> – Information that is meant to make people think a certain way. The information may not be true.</p> <p><b>cult of personality</b> – a cult of personality is where a leader convinces people to worship him or her, and treat them like a god.</p> <p><b>treacherous</b> – If you betray someone who trusts you, you could be described as <b>treacherous</b>.</p>
2	The animals rebel and overthrow Jones. The commandments are written.	2 Whatever goes upon four legs, or has wings, is a friend.	
3	The animals' first harvest is a success. The pigs keep the milk and apples to themselves.	3 No animal shall wear clothes.	
4	The Battle of the Cowshed: Jones attempts to reclaim the farm.	4 No animal shall sleep in a bed.	
5	Snowball and Napoleon debate the windmill. Napoleon uses dogs to chase Snowball from the farm. Napoleon makes himself leader.	5 No animal shall drink alcohol.	
6	Work begins on the windmill. The pigs move into the farmhouse. Winds destroy the windmill.	6 No animal shall kill any other animal.	
7	Work on the windmill starts again. Napoleon demands eggs from the hens. Napoleon slaughters animals at the show trials.	7 All animals are equal.	
		<p><b>Characters</b></p> <p><b>Napoleon</b> 'a large, rather fierce-looking Berkshire boar, the only Berkshire on the farm, not much of a talker, but with a reputation for getting his own way.'</p> <p><b>Snowball</b> 'a more vivacious pig than Napoleon, quicker in speech and more inventive, but was not considered to have the same depth of character.'</p> <p><b>Squealer</b> 'with very round cheeks, twinkling eyes, nimble movements, and a shrill voice. He was a brilliant talker, and when he was arguing some difficult point he had a way of skipping from side to side and whisking his tail which was somehow very persuasive. The others said of Squealer that he could turn black into white.'</p> <p><b>Boxer</b> 'an enormous beast, nearly eighteen hands high, and as strong as any two ordinary horses put together... in fact he was not of first-rate intelligence, but he was universally respected for his steadiness of character and tremendous powers of work.'</p>	
8	Napoleon betrays Mr. Pilkington and sells timber to Mr. Frederick. Frederick pays with counterfeit money. Frederick attacks the farm. The animals suffer losses in the Battle of the Windmill. The windmill is destroyed.		
9	Boxer is sold to the knacker's yard.		
10	The pigs are leaders on the farm. They start walking on two legs and carrying whips. There is no difference between the pigs and the humans they sought to overthrow at the start of the novel.		
		6	<p><b>Biographical information</b></p> <p>1 'Animal Farm' was written in 1945.</p> <p>2 It was written by George Orwell.</p> <p>3 Orwell was born in 1903.</p> <p>4 'Animal Farm' was influenced by the events of World War II.</p> <p>5 Orwell wanted to write about the cruel leaders of Europe during World War II.</p> <p>6 'Animal Farm' is an allegory for the events of the Russian Revolution.</p>



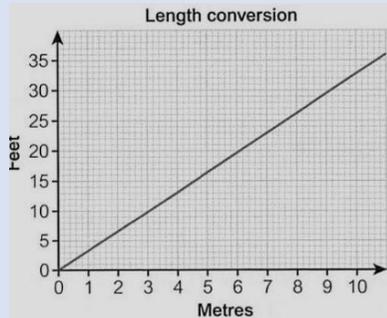
# MATHS

## Year 8 Foundation

### Summer Term

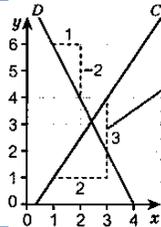
## Straight line graphs

When two quantities are in **direct proportion**: Plotting them as a graph gives a straight line through the origin; when one variable is zero, the other variable is zero;



when one variable doubles, so does the other

The steepness of the graph is called the **gradient**. To find the gradient work out how many units the graph goes up for every one unit across.



A **linear equation** generates a straight line (linear) graph. The equation for a straight-line graph can be written as  $y = mx + c$  where  $m$  is the gradient and  $c$  is the  $y$ -intercept

## Percentages, decimals and fractions

A **terminating decimal** ends after a definite number of digits, for example 0.64 and 1.465

In **recurring decimal**, a dot over the beginning and end of a sequence shows it recurs.

$$0.\dot{1}0\dot{7} = 0.107107107\dots$$

A positive mixed number is greater than 1, so the decimal equivalent is greater than 1 and the percentage equivalent is greater than 100%. For

$$\text{example } 1\frac{3}{4} = 1.75 = 175\%$$

A **proportion** of a whole can be written as a fraction, decimal or percentage

Sometimes you might need to use a denominator of 1000 when you convert between fractions, decimals and percentages

To **increase** an amount by a percentage, you can find the percentage of the amount, then add it to the original amount.

To **decrease** an amount by a percentage, you can find the percentage of the amount, then subtract it from the original amount.

**Simple interest** is the interest calculated only on the original amount of money invested. It is the same amount each year

Sometimes you want to find the original amount after a percentage increase or decrease. You can use the **unitary method**

## Statistics graphs and charts

A **pie chart** is a circle divided into slices called **sectors**. Each sector represents a set of data.



A **two-way table** divides data into groups in rows across the table and columns down the table. You can calculate the totals across and down

	Standard seats	Luxury seats	Total
Adult	39	33	72
Child	15	9	
Total	54		

Calculating the median from a table

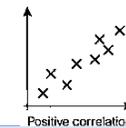
14	6 9
15	1 1 2 3 5 5 5 6
16	2 3 4 5 5 5 7 9 9
17	0 2 4

Key: 14 | 6 means 146 cm

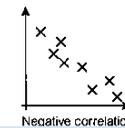
A **stem and leaf diagram** shows numerical data split into a 'stem' and 'leaves'. The key shows you how to read the values

You can compare sets of data using statistics or shape of the graph.

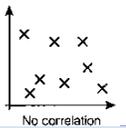
A **scatter graph** plots two sets of data on the same graph to see if there is a relationship or **correlation** between them. This might be a **negative correlation**, a **positive correlation** or there might be **no correlation**



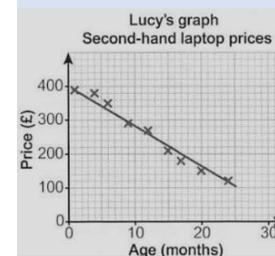
Positive correlation



Negative correlation



No correlation



A **line of best fit** shows up the relationship between two sets of data. There should be the same number of crosses on each side of the line. There may or may not also be crosses on the line

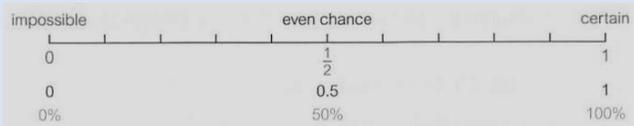
Before you read values from a graph or chart: Read the title, read the axis labels, read the scale. You cannot draw accurate conclusions from an inaccurate graph

# Year 8 Higher

## Summer Term

### Probability

All probabilities have a value between 0 and 1. You can use fractions, decimals and percentages to describe probabilities.



An **outcome** is an end result. For example, one outcome of flipping a coin is Heads

$$\text{probability of an event happening} = \frac{\text{number of successful outcomes}}{\text{total number of outcomes}}$$

This formula only works if the outcomes are equally likely

A game is fair if each player has the same chance of winning

Two events are **mutually exclusive** if they cannot happen at the same time. For example, when you roll an ordinary dice, you cannot get a 3 and an even number at the same time

When events are mutually exclusive you can add their probabilities

For a set of data, the **relative frequency** of a value =  $\frac{\text{frequency of value}}{\text{total frequency}}$

In a **probability experiment** a **trial** is repeated many times and the outcomes recorded. The relative frequency of an outcome is called the **experimental probability**

$$\text{Experimental} = \frac{\text{frequency of outcome}}{\text{total trials}}$$

**Theoretical probability** is calculated without doing an experiment. For example, the theoretical probability of rolling a 4 with an ordinary dice is  $\frac{1}{6}$

A **sample space diagram** shows all the possible outcomes of two events

Two events are **independent** if one happening does not affect the probability of the other.

To find the probability of two independent events, multiply their probabilities:

$$P(A \text{ and } B) = P(A) \times P(B)$$

A **tree diagram** shows two or more events and their probabilities

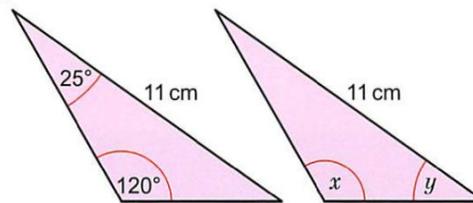
### Scale Drawings and Measures

You can use scales to identify distances on maps

A **bearing** is an angle in degrees, clockwise from north. A bearing is always written using three digits.

The **scale** on a map is given as a ratio 1:n. For example, 1: 25,000 means 1 cm on the map represents 25,000cm in real life

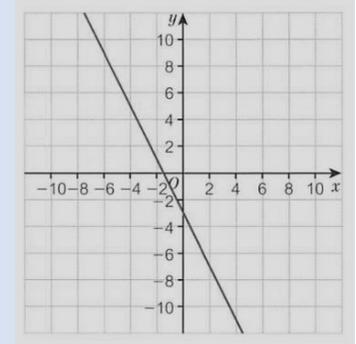
Triangles are congruent if they have equivalent: SSS (all three sides); SAS (two sides and the included angles); ASA (two angles and the included side); AAS (two angles and another side)



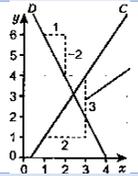
To show that two shapes are similar show that corresponding angles are equal, or find the scale factor for corresponding sides

### Graphs

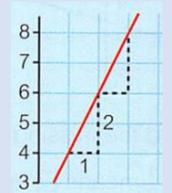
The **y-intercept** is where a line crosses the y-axis. To find the y-intercept of a graph, find the y-coordinate where  $x = 0$ . To find the x-intercept of a graph, find the x-coordinate where  $y = 0$



The steepness of the graph is called the **gradient**



To find the gradient, work out how many units the graph goes up for every 1 unit across. Gradients are positive (/, uphill) or negative (\, downhill). The larger the value the steeper the gradient.



To find the gradient of a line calculate:

$$\text{gradient} = \frac{\text{change in } y}{\text{change in } x}$$

The equation of a straight-line graph can always be written in the form  $y = mx + c$ . **m** is the gradient and **c** is the y-intercept

Lines that are **parallel** have the same gradient. When two lines are **perpendicular** the product of their gradients is -1

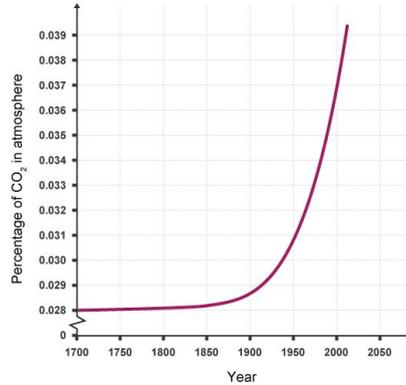
An **inverse function** reverses the effect of the original function.

# Science

## Earth

### Increasing carbon dioxide levels

Humans burn **fossil fuels** to power cars and other machines, to generate electricity, and to keep buildings warm. Waste gases are released during combustion, including carbon dioxide. As the human population increases, more fuel is used, and more carbon dioxide is released.

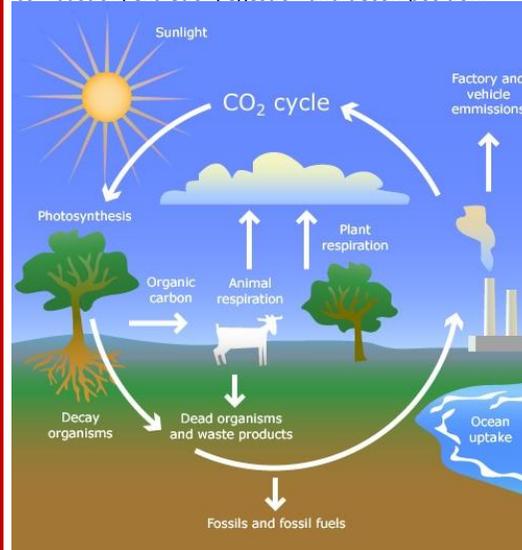


**The carbon cycle** involves the exchange of carbon between living organisms (**biotic**) and their atmosphere (**abiotic**).

In the carbon cycle, carbon is constantly removed from, and returned to, the environment.

Processes involved in the carbon cycle are:

Photosynthesis, feeding, respiration, fossilization, combustion, excretion, egestion and decomposition.



Most metals are mined as **ores**. In order to get the useful metal, it needs to be **extracted** from its ore. The method of extraction depends on the reactivity of the metal.

For **very reactive** metals, such as aluminium, **electrolysis** is commonly used. It requires a lot of electric current (energy) to **reduce** them to extract the metal.

For **less reactive** metals, such as iron, reduction with carbon is often used. It requires less energy to reduce them to extract the metal.

How to remember the Reactivity Series?

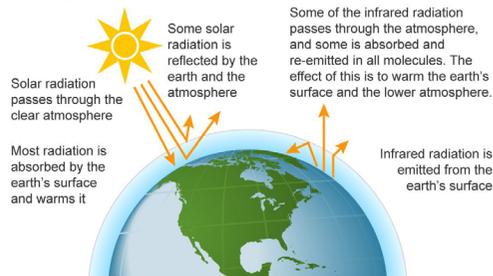
Please	Potassium	Most reactive ↑ Least reactive
Stop	Sodium	
Calling	Calcium	
Me	Magnesium	
A	Aluminium	
Careless	(Carbon)	
Zebra	Zinc	
Instead	Iron	
Try	Tin	
Learning	Lead	
How	(Hydrogen)	
Copper	Copper	
Saves	Silver	
Gold	Gold	

Metals more reactive than carbon, such as aluminium, are extracted by electrolysis, while metals less reactive than carbon, such as iron may be extracted by reduction with carbon.

### Global warming

Extra carbon dioxide in the atmosphere increases the **greenhouse effect**. More thermal energy is trapped by the atmosphere, causing the planet to become warmer than it would be naturally. This increase in the Earth's temperature is called **global warming**.

### The greenhouse effect



Climate change and its effects as a result of global warming includes:

- ice melting faster than it can be replaced in the Arctic and Antarctic
- the oceans warming up – their water is expanding and causing sea levels to rise
- changes in where different species of plants and animals can live

**Sustainable development** involves making sure that the way we behave now does not make life difficult or impossible for future generations. You will remember that the Earth's resources are limited so, to achieve sustainable development, we need to carefully consider how we use resources.

Recycling is an important way to help us achieve sustainable development. We can recycle many resources, including:

glass  
metal  
paper  
Plastic



# Science

## Elements, compounds and mixtures

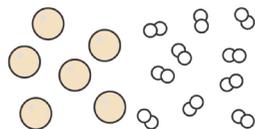
An **element** is a substance that **cannot** be broken down into any other substance. Every element is made up of its **own type of atom**. This is why the chemical elements are all very different from each other.

The **periodic table** lists all the known elements and groups together those with **similar properties**.

**The Periodic Table**

The atoms in a particular element are the same as each other, and they are different from the atoms of all other elements. For example, lead and gold are elements. A piece of pure gold contains only gold atoms. A piece of pure lead contains only lead atoms.

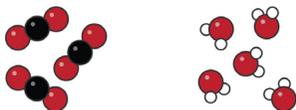
The atoms of some elements do not join together, but instead they stay as separate atoms. Helium is like this. The atoms of other elements, such as hydrogen and oxygen, join together to make **molecules**.



helium

hydrogen

A **compound** is a substance that contains atoms of two or more different elements, chemically joined together. For example, water is a compound of hydrogen and oxygen. Each of its molecules contains two hydrogen atoms and one oxygen atom. There are very many different compounds.



Carbon dioxide  
CO<sub>2</sub>

Water  
H<sub>2</sub>O

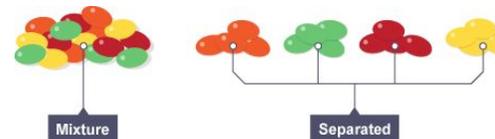
Each element is given its own chemical symbol, like **H** for hydrogen or **O** for oxygen. Chemical symbols are usually one or two letters long.

Every chemical symbol starts with a capital letter, with the second letter written in lower case.

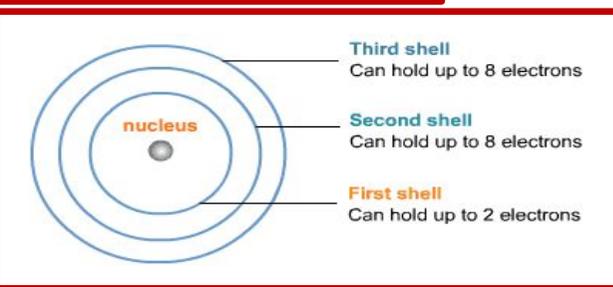
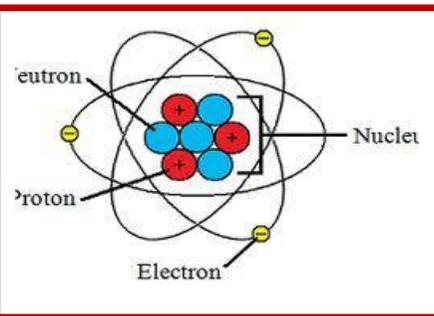
For example, **Mg** is the correct symbol for magnesium, but mg, mG and MG are wrong. Take care to write chemical symbols correctly.

For a molecule, we use the chemical symbols of the atoms it contains to write down its **formula**. For example, the formula for carbon monoxide is **CO**. It tells you that each molecule of carbon monoxide consists of one carbon atom joined to one oxygen atom. CO<sub>2</sub> is the formula for carbon dioxide. It tells you that each molecule has one carbon atom and two oxygen atoms.

A **mixture** contains different substances that are not chemically joined to each other. For example, a packet of sweets may contain a mixture of different coloured sweets. The sweets are not joined to each other, so they can be picked out and put into separate piles.



A mixture of iron filings and sulfur powder can easily be separated using a magnet. The iron filings are attracted to the magnet but the sulfur powder is not.

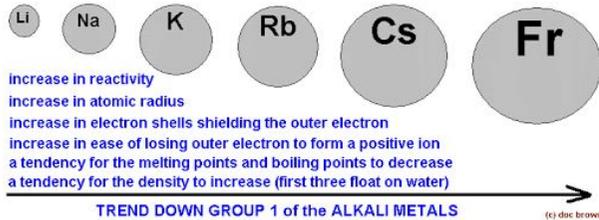


**Keyword**

<b>Elements</b>	Contain the same type of atom
<b>Period</b>	The horizontal rows on a periodic table.
<b>Group</b>	The vertical columns on a periodic table.
<b>Mendeleev</b>	Chemist that proposed the modern periodic table
<b>Alkali metals</b>	Group 1 metals E.g lithium, sodium
<b>Halogens</b>	Group 7 elements. E.g Fluorine, chlorine
<b>Noble gases</b>	Group 0- unreactive elements e.g Helium, Neon
<b>Physical</b>	An observable characteristic e.g boiling point, melting point.
<b>Chemical</b>	Characteristics observed as a result of a chemical reaction e.g flammability
<b>Electron configuration</b>	The arrangement of electrons around the nucleus of an atom.
<b>Electrons</b>	The negatively charged particles in an atom.
<b>Protons</b>	The positively charged particles in an atom.
<b>Neutrons</b>	The neutral particles in an atom.
<b>Atomic nucleus</b>	The centre of an atom where the protons and neutrons are found.

# Science

## The periodic table

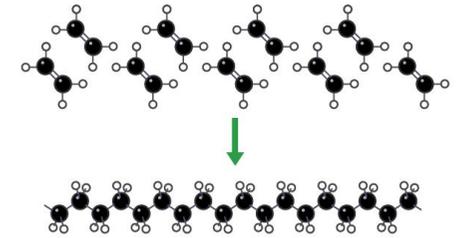


The Group 1 **elements** are called the **alkali metals**. They are placed in the vertical column on the left-hand side of the **periodic table**.

All the Group 1 elements are very **reactive**. They must be stored under oil to keep air and water away from them. Group 1 elements form **alkaline** solutions when they react with water, which is why they are called alkali metals.

**Polymers** are made by chemical reactions that join lots of small molecules together to make long molecules. For example, a molecule of poly(ethene) is made by joining thousands of ethene molecules together. Long molecules like these give polymers their properties.

Polymers often have these properties in common. They are:  
chemically unreactive  
solids at room temperature  
plastic – they can be moulded into shape  
electrical insulators  
strong and hard-wearing



Ethene molecules join together to make long molecules of poly(ethene)

The Group 7 **elements** are called the **halogens**. They are placed in the **vertical column, second from the right**, in the **periodic table**. The Group 7 elements are known as the halogens. They are reactive non-metals and are always found in compounds with other elements. Chlorine, bromine and iodine are all halogens.

Element	Properties	Typical use
Chlorine	Green gas	Sterilising water
Bromine	Orange liquid	Making pesticides and plastics
Iodine	Grey solid	Sterilising wounds

**Group 0** contains **non-metal elements** placed in the vertical column on the far right of the **periodic table**. The elements in group 0 are called the **noble gases**. They exist as single **atoms**. The main **properties** of the noble gases include:

- they have **low densities**
- they are inert, so they are **not flammable**



Most elements are **metals**, which are **shiny and conduct electricity well**. Metals include gold, aluminium and iron which are all solid at room temperature. Mercury is the only metal that is liquid at room temperature.

Some elements are **non-metals**. Most non-metals are **gases** at room temperature and **do not conduct electricity**. Non-metal elements with these properties include oxygen, hydrogen and chlorine. A few non-metals, such as carbon and sulphur, are in a **solid state** at room temperature.

When elements react, their **atoms** complete their outer shells by losing, gaining, or sharing **electrons**. The atoms of noble gases already have complete outer shells, so they have no tendency to lose, gain, or share electrons. This is why the noble gases are inert and do not take part in chemical reactions. The table summarises the **electronic configurations** of elements in groups 1, 7 and 0. You should see that: atoms of group 1 and 7 elements have incomplete outer shells (so they are **reactive**) atoms of group 0 elements have complete outer shells (so they are unreactive)

Group 1 element	Group 7 element	Group 0 element
		Helium, 2
Lithium, 2.1	Fluorine, 2.7	Neon, 2.8
Sodium, 2.8.1	Chlorine, 2.8.7	Argon, 2.8.8
Potassium, 2.8.8.1		

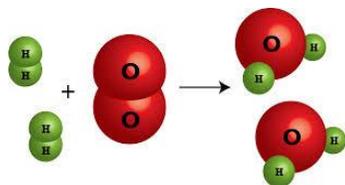


# Science

## Chemical reactions

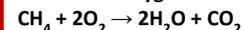
**Chemical reactions** create **new** substances. They can also be used to **transfer energy** by burning fuels.

In a chemical reaction the atoms in the starting substances separate from each other. They rearrange themselves and join together differently to make new substances called **products**. The number of atoms of each type is the **same** before and after a reaction. This means that the total mass of the products is the same as the total mass of the starting substances. In other words, **mass is conserved**.



**Combustion** is the scientific word for **burning**. In a combustion reaction a substance reacts with **oxygen** from the air and transfers energy to the surroundings as light and heat. The products of a combustion reaction are called **oxides**.

Coal, oil and natural gas are **fuels** that are widely used. They contain **hydrocarbons**, which are compounds of hydrogen and carbon only. When the fuel burns, its hydrocarbons react with oxygen. If there is plenty of air, **complete combustion** happens: **methane + oxygen → water + carbon dioxide**



If there is not enough air or oxygen for complete combustion, **incomplete combustion** happens instead. Water vapor and carbon dioxide are still produced, but two other products are also produced:

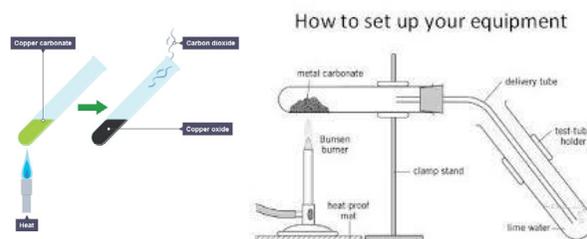
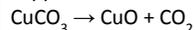
carbon monoxide, CO, a colourless toxic gas

particles of carbon, which appear as soot and smoke, and which cause breathing problems

**Thermal decomposition** Some compounds break down when heated, forming two or more products from one reactant. This type of reaction is called **thermal decomposition**.

Many metal carbonates can take part in thermal decomposition reactions. For example, copper carbonate breaks down easily when it is heated:

copper carbonate → copper oxide + carbon dioxide



## Equations

A **word equation** shows the names of each substance involved in a reaction, and must not include any chemical symbols or formulae. For example:

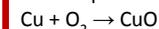
**copper + oxygen → copper oxide**

In this reaction, copper and oxygen are the reactants, and copper oxide is the product.

A **balanced equation** gives more information about a chemical reaction because it includes the symbols and formulae of the substances involved. There are two steps in writing a balanced equation:

1. Replace the name of each substance with its symbol or formula
2. Use numbers to balance the equation, if it is not already balanced

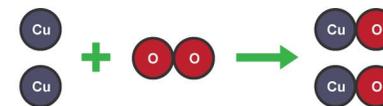
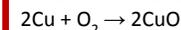
First step:



This is unbalanced because there is one copper atom on each side of the arrow, but two oxygen atoms on the left and only one on the right.

Second step: you need to adjust the number of units of some of the substances until we get equal numbers of each type of atom on both sides. You should never change the formula of a substance to do this.

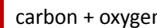
Here is the balanced symbol equation:



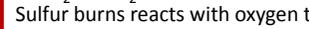
## Oxidation of on-metals

Non-metals react with oxygen in the air to produce non-metal oxides.

Carbon reacts with oxygen to form carbon dioxide:



Sulfur burns reacts with oxygen to form sulfur dioxide:



Non-metal oxides are **acids** – they react with bases and neutralise them. Some non-metal oxides dissolve in water to produce **acidic** solutions.

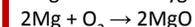


The limewater test for carbon dioxide

## Oxidation of metals

Metals react with oxygen in the air to produce metal oxides. For example, magnesium reacts with oxygen to produce magnesium oxide when it is heated in air:

magnesium + oxygen → magnesium oxide



Metal oxides are **bases** they react with acids and **neutralise** them. Some metal oxides dissolve in water to produce **alkaline** solutions.

# Science

## Chemical reactions

### Endothermic and exothermic reactions

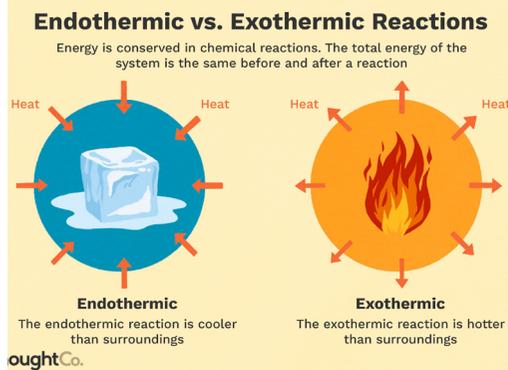
When a chemical reaction happens, energy is transferred to or from the surroundings. When energy is transferred to the surroundings, this is called an **exothermic** reaction, and the temperature of the surroundings increases. Examples of exothermic reactions include:

**combustion** reactions  
many **oxidation** reactions  
most **neutralisation** reactions

When energy is taken in from the surroundings, this is called an **endothermic** reaction and the temperature of the surroundings decreases. Examples of endothermic reactions include:

**thermal decomposition** reactions  
the reaction of citric acid and sodium hydrogen carbonate

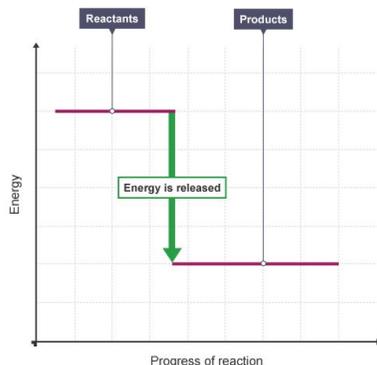
In **endothermic** reactions, energy **enters**. In **exothermic** reactions, energy **exits**.



An **energy level diagram** shows whether a reaction is **exothermic** or **endothermic**. It shows the energy in the **reactants** and **products**, and the difference in energy between them.

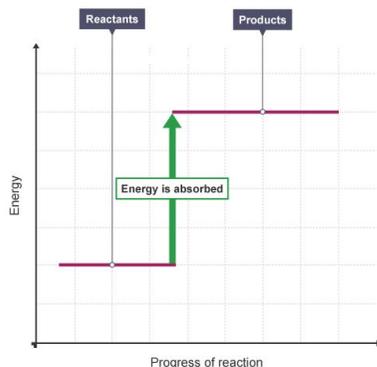
### Exothermic reaction

The energy level decreases in an exothermic reaction. This is because energy is given out to the surroundings.



### Endothermic reaction

The energy level increases in an endothermic reaction. This is because energy is taken in from the surroundings.



### Calculating energy changes

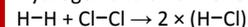
The energy change in a reaction can be calculated using **bond energies**. A bond energy is the amount of **energy** needed to break a particular **bond**. Different bonds have different bond energies. These are given when they are needed for calculations.

To calculate an energy change for a reaction:

1. add together the bond energies for all the bonds in the **reactants** - this is the 'energy in'
2. add together the bond energies for all the bonds in the **products** - this is the 'energy out'
3. energy change = energy in - energy out

### Example

Hydrogen and chlorine react to form hydrogen chloride gas:



Use the bond energies in the table to calculate the energy change for this reaction.

Bond	Bond energy (kJ/mol)
H-H	436
Cl-Cl	243
H-Cl	432

$$\text{Energy in} = 436 + 243 = 679 \text{ kJ/mol}$$

$$\text{Energy out} = (2 \times 432) = 864 \text{ kJ/mol}$$

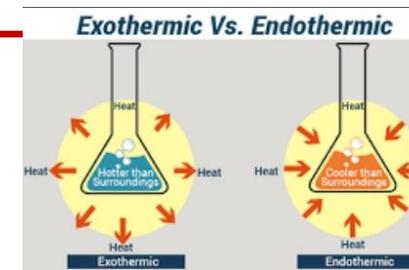
$$\text{Energy change} = \text{in} - \text{out}$$

$$= 679 - 864$$

$$= -185 \text{ kJ/mol}$$

The energy change is negative. This shows that the reaction is exothermic.

If the energy change is positive, the reaction is endothermic.



## Ethical

- Ethics is about what is considered right and wrong by society.
- If a company does not behave in an ethical way it might make their customers lose trust in them.
- Issues such as cyberbullying, trolling and the use of social media are ethical issues.
- **Privacy:** Users trust companies to keep their data private so companies need to take care of it.
- **Censorship:** is when a country or organisation controls what people can access on the internet.
- **Surveillance:** surveillance is when someone is monitored using technology.

## Legal

- **Data Protection Act:** controls how personal data is used. Eg: it has to be accurate and up to date, kept secure, should not be kept longer than needed
- **Freedom of information Act:** gives the public the right to see information about public organisations
- **Computer Misuse Act:** makes it illegal to hack a network or create a virus.
- **Copyright, Designs & Patents Act:** protects things you have created from being used without permission
- **Creative Commons:** lets people release their work to be used and shared legally and sometimes modified.

## Stakeholders:

The people or groups affected by a particular situation

## Environmental

- Computing devices contain raw materials
- Devices use lots of energy when turned on
- **Ewaste** is when we throw away devices because they are broken or because we want to upgrade
- Ewaste can lead to pollution
- The **Waste Electric and Electronic Equipment (WEEE)** directive has rules for how devices should be disposed so that they're recycled/disposed of safely
- Devices can also have a positive impact on the environment - eg video calls rather than travelling a long distance causing pollution.

## Cultural

- One cultural issue in computing is the **Digital Divide**. Some people do have access to technology, others don't
- Not having access to technology can be a disadvantage as it limits access to information, online learning, online banking, communication etc.
- The digital divide can be due to people not having enough money to buy devices or due to living in places without internet access, or not having the skills to use the technologies available.
- Cultural issues also include health issues such as peer pressure, cyber bullying, screen time, use of social media. It can be positive like counting steps and calories.

# Year 8 Ethics Spring Term Knowledge Organiser. Animal Rights

## Tips for learning spellings

Use a chart like this:

Copy it	Copy it	Recall it
------------	------------	--------------

### What What What

After you have copied the word twice, fold the paper over so you cannot see what you have written and have a go at writing the word unaided. You should be able to recall the spelling without looking.

Another classic technique is known as **Look, Cover, Write and Check**. So, you **look** at the word... **Cover** the word... **Write** the word... And finally **check** it.

## Christianity.

Christianity is the world's biggest religion, with about 2.5 billion followers worldwide. It is based on the teachings of Jesus Christ who lived in the Holy Land 2,000 years ago. Through its missionary activity Christianity has spread to most parts of the world.



Spellings 1	Spellings 2
Christian	Jesus
Christianity	Heaven
symbol	faith
Bible	belief
prayer	resurrection
Crucifixion	denomination
Church	Roman Catholic
Easter	Nazareth

## Jesus

Jesus Christ, who was crucified around A.D. 30 in Jerusalem, is the founder of Christianity. He came to earth to teach about love and fellowship. He represents the person that all Christians must strive to be.



Jesus was a Jew who was born about 2000 years ago in Bethlehem. Jesus lived for 33 years before being crucified by the Romans. Christians are people who believe that Jesus Christ is the Son of God, and who follow his teachings and those of the Christian churches that grew up after his death.

Christians believe that Jesus rose from the dead and appeared to his disciples (followers) to show everyone that there is another life with one, eternal, loving God.

## The Pope.

The **Pope** is the Bishop of Rome, and the world leader of the Catholic Church. The word comes from the Latin papa, which means "father." He is also the head of the Vatican, the tiny, sovereign, city-state within Rome. While many Catholics often turn to the Bible for guidance, they are also able to turn to the teachings of the pope. The current Pope is Pope Francis. He is from Argentina, but lives in Rome as part of his job. He is the 266<sup>th</sup> Pope!



PCSA Ethics Yr8 Christianity Spellings

Use Quizlet on the internet – type **PCSA Yr8 Christianity Spellings 1** and **PCSA Yr8 Christianity Spellings 2** It has different games to help you learn the spelling and meaning

## YEAR 8 FRENCH - CYCLE 3

Ou'est-ce qu'on peut faire ?	what can you do ?	J'aime...	I like...
on peut....	you can.....	j'adore...	I love...
aller à un concert	go to a concert	je n'aime pas...	I don't like...
aller au théâtre	go to the theatre	je déteste...	I hate...
faire les magasins	go shopping	aller au cinéma (avec mes amis)	going to the cinema (with my friends)
faire un tour en segway	go on a tour by segway	aller aux concerts (rock)	going to (rock) concerts
faire une balade en bateau-mouche	go on a boat trip	aller voir des matchs (au Parc des Princes)	going to watch matches (at the Parc des Princes)
manger au restaurant	eat in a restaurant	faire du roller (au Trocadéro)	rollerblading (at the Trocadéro)
visiter les monuments	visit the monuments	faire les magasins	going shopping
visiter les musées	visit the museums	prendre des photos	taking photos
		retrouver mes copains	meeting up with my friends

### À Paris

j'ai gagné un concours  
 j'ai passé une semaine à Paris  
 j'ai visité la Tour Eiffel  
 j'ai mangé au restaurant  
 j'ai admiré la Pyramide du Louvre  
 j'ai regardé le feu d'artifice  
 j'ai acheté des souvenirs  
 j'ai rencontré un beau garçon/une jolie fille  
 j'ai envoyé des cartes postales  
 J'ai pris des photos  
 j'ai vu la Joconde  
 j'ai attendu le bus  
 j'ai très bien dormi  
 je n'ai pas visité Notre-Dame  
 on a fait les magasins  
 on a bu du coca  
 on a fait un tour de la ville en segway  
 on a fait une balade en bateau-mouche

### In Paris

I won a competition  
 I spent a week in Paris  
 I visited the Eiffel Tower  
 I ate in a restaurant  
 I admired the Louvre Pyramid  
 I watched the fireworks  
 I bought some souvenirs  
 I met a good-looking boy/a pretty girl  
 I sent postcards  
 I took some photos  
 I saw the Mona Lisa  
 I waited for the bus  
 I slept very well  
 I didn't visit Notre-Dame  
 we went shopping  
 we drank a cola  
 we did a tour of the town by segway  
 we went on a boat trip



### C'était comment ?

c'était...  
 j'ai trouvé ça...  
 bien  
 bizarre  
 cool  
 cher  
 effrayant  
 ennuyeux  
 fabuleux  
 génial  
 horrible  
 intéressant  
 marrant  
 nul  
 ce n'était pas mal

### What was it like ?

it was...  
 I found it...  
 good  
 weird  
 cool  
 expensive  
 scary  
 boring  
 wonderful/fantastic  
 great  
 horrible  
 interesting  
 funny/a laugh  
 rubbish  
 it wasn't bad

# YEAR 8 FRENCH CYCLE 3

Des questions touristiques	Tourist questions
C'est où, le musée ?	Where is the museum ?
C'est ouvert quand ?	When is it open ? (day or date)
C'est ouvert à quelle heure ?	At what time is it open ?
C'est combien, l'entrée ?	How much does it cost to get in ?
Est-ce qu'il y a...	Is there...
une cafétéria/une boutique de souvenirs ?	a cafeteria/a souvenir shop ?



Tu as voyagé comment?	How did you travel?
en avion	by plane
en bus	by bus
en car	by coach
en métro	by underground
en train	by train
en voiture	by car
à vélo	by bicycle
à pied	on foot

Oh la la



Des informations touristiques	Tourist information
les horaires d'ouverture	opening times
ouvert tous les jours	open every day
sauf le lundi	except Mondays
ouvert du (mardi) au (dimanche)	open from (Tuesday) to (Sunday)
fermé	closed
du 10h00 à 17h00	from 10 am to 5 pm
tarifs entrée	admission prices
adultes	adults
jeunes	young people
enfants	children
gratuit	free
il y a (une cafétéria)	there is (a cafeteria)
il n'y a pas de (boutique de souvenirs)	there isn't a (souvenir shop)



Un voyage	A journey
Je suis allé(e) (a Paris)	I went (to Paris)
Je suis parti(e)/ arrivé(e) à (dix heures)	I left/arrived at (ten o'clock)
Le train est parti/arrivé à (huit heures)	the train left/arrived at (eight o'clock)
Je suis sorti(e)	I went out
Je suis resté(e) (chez moi)	I stayed (at home)
Je suis rentré(e) (chez moi)	I went/got home
Je suis monté(e)	I went up/climbed



## Les mots essentiels High-frequency words

à quelle heure ?

at what time ?

quand ?

when ?

combien ?

how much/how many ?

combien de temps ?

how long ?

comment ?

how ?

où ?

where ?

qui ?

who ?

## Les mots essentiels

avec qui ?

## High-frequency words

who with ?

alors

so, therefore

donc

so, therefore

car

because

parce que

because

beaucoup (de)

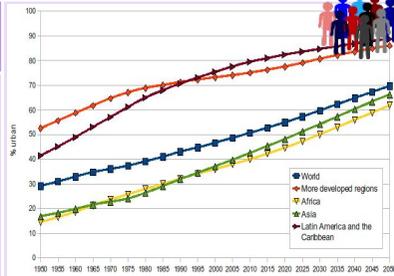
a lot (of)

## What is urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities.

### Where is Urbanisation happening?

Urbanisation is happening all over the world but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing.



## Causes of urbanisation

### Rural - urban migration (1)

The movement of people from rural to urban areas.



#### Push

- Natural disasters
- War and Conflict
- Mechanisation
- Drought
- Lack of employment



#### Pull

- More Jobs
- Better education & healthcare
- Increased quality of life.
- Following family members.

### Natural Increase (2)

When the birth rate exceeds the death rate.

#### Increase in birth rate (BR)

- High percentage of population are child-bearing age which leads to high fertility rate.
- Lack of contraception or education about family planning.

#### Lower death rate (DR)

- Higher life expectancy due to better living conditions and diet.
- Improved medical facilities helps lower infant mortality rate.

## Mexico – USA migration

### The American Dream

People wanted to move from Mexico to USA for a better life.  
Push factors:  
High crime  
Water shortages  
Unemployment

President Trump didn't want lots of Mexicans coming into the USA so he said he was going to build a wall!

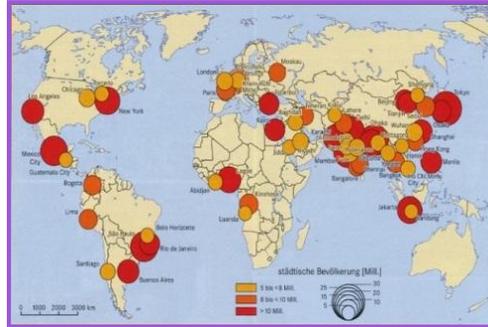


Should a wall be built between Mexico and USA?

## Geography: Urban Change

### Megacity

An urban area with over 10 million people living there.



### LIC Example of Urban Change: Kibera, Kenya



There are approx. 2.5 million slum dwellers in 200 settlements in Nairobi representing 60% of the population, occupying just 6% of the land. Kibera houses 250,000 people. Kibera is the biggest slum in Africa and one of the biggest in the world.

**Housing:** The average size of shack in this area is 12ft x 12ft built with mud walls, a corrugated tin roof with a dirt or concrete floor. The cost is £6 per month. They often house up to 8 or more.



### Kibera Challenges and Solutions

#### Challenges:

- Only 20% have electricity.
- Only 2 main water pipes.
- Very limited toilet facilities. 1 toilet between 50 shacks.
- Drugs is an increasing problem.
- 90% of residents have no land rights.
- Unemployment rate of 50%.

#### Solutions:

- Improving electricity lines and water pipes.
- Provide regular rubbish collections.
- New roads being built for better access.
- Local police stations being put in place.
- Government rehousing and building brick houses.

## UK Urban areas



81.5% of the UK's population live in an urban area!

### UK Facts About Urban Areas

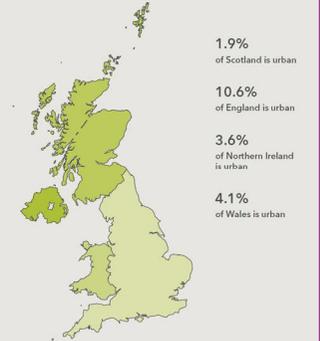
**81.5%** of the UK's population lives in urban areas



**6.8%** of the United Kingdom is classified as urban



In summary a huge 81.5% of the UK's population is crammed into just 6.8% of the land mass. While our cities are green by world standards there is still room for improvement. As space is limited in cities living walls and green roofs are an excellent solution in urban planning.



## Sustainable Urban Living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations also can use them.

### Water Conservation



This is about reducing the amount of water used.

- Collecting rainwater for gardens and flushing toilets.
- Installing water meters and toilets that flush less water.

### Energy Conservation



Using less fossil fuels can reduce the rate of climate change.

- Promoting renewable energy sources.
- Making homes more energy efficient.

### Creating Green Space



Creating green spaces in urban areas can improve places for people who want to live there.

- Provide natural cooler areas for people to relax in.
- Reduces the risk of flooding from surface runoff.

### Waste Recycling



More recycling means fewer resources are used. Less waste produced.

- More local recycling facilities.
- Greater awareness of the benefits in recycling.

## Curitiba – Sustainable city in Brazil

Capital of Parana State in SE of Brazil

- Home to 2 million people.
- 80% of population use the bus.
- Buses are different colours depending on the route they take.
- Poorer people swap their rubbish for fruit and vegetables (green exchange).
- There are over 28 parks and woods.





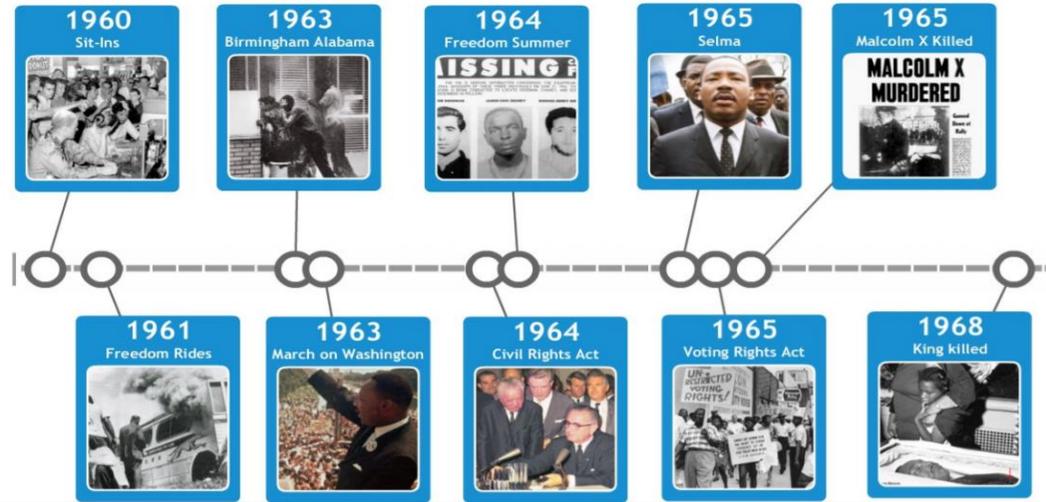
# Y8 History Cycle 3

## The Atlantic Slave Trade



<b>Key Words</b>	<b>The Triangular Trade</b>	1: Goods from Europe taken to African and traded for slaves 2. The slaves were then transported to the Americas. The journey was known as the 'Middle Passage' 3. Sugar, Cotton etc. produced by the slaves was shipped back to Europe.
<b>Atlantic Slave Trade</b>		
<b>Africa</b>	<b>Slave Ship Conditions</b>	After walking for months to the coast, slaves were then forced to endure a <b>3-month journey to the Americas.</b>
<b>Europeans</b>		Men women and children were shackled together and packed in the ships in inhumane conditions.
<b>Americas</b>	<b>Plantations</b>	Upon arrival to the Americas, slaves were sold at a <b>human auction</b> to the highest bidder. They were then forced to work constantly, suffering cruelty and beatings if they refused.
<b>Slave Castles</b>		
<b>Plantations</b>	<b>Underground Railroad</b>	<b>A network of secret routes for slaves to escape slavery.</b>
<b>Culture</b>		Safe 'stations' were set up along the way run by people willing to offer shelter and help the slaves find freedom in the northern states of USA and Canada.
<b>Triangular Trade</b>	<b>Over 6 million slaves were traded and sold during the 450 years of the slave trade. 2.5 million were trades by the British.</b>	

## Civil Rights - USA



<b>Key Words</b>	<b>Significant Events</b>
<b>Segregation</b>	<b>May 17, 1954: <i>Brown Vs Brown</i></b> a consolidation of five cases into one, is decided by the Supreme Court effectively ending racial segregation in public schools.
<b>Oppression</b>	<b>August 28, 1955: <i>Emmett Till</i></b> , a 14-year-old from Chicago is brutally murdered in Mississippi for allegedly flirting with a white woman.
<b>Boycott</b>	<b>December 1, 1955: <i>Rosa Parks</i></b> refuses to give up her seat to a white man on a Montgomery, Alabama bus.
<b>Lynching</b>	<b>September 4, 1957:</b> Nine Black students known as the ' <i>Little Rock Nine</i> ' are blocked from entering a High School in Little Rock Arkansas.
<b>Discrimination</b>	<b>February 1, 1960:</b> Four African American college students in Greensboro, <b>North Carolina</b> , Ezell Blair Jr., David Richmond, Franklin McCain and Joseph McNeil, refuse to leave a Woolworth's "whites only" lunch counter without being served.
<b>Jim Crow Laws</b>	
<b>Key People</b>	
<b>Martin Luther King Jr.</b>	
<b>Malcolm X</b>	
<b>Rosa Parks</b>	
<b>Harriet Tubman</b>	
<b>Emmett Till</b>	

# Art

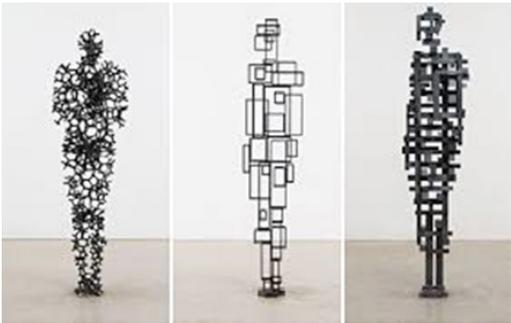
# Come Fly with me

**Key Words**

structure    embellishment    hybrid  
 form        installation    art  
 shape        sculpture        sculptor  
 figurative    contemporary    modelling  
 recycle, reduce, re-use  
 three-dimensional (3D)

**Formal Elements:**

form            shape            pattern  
 line            structure



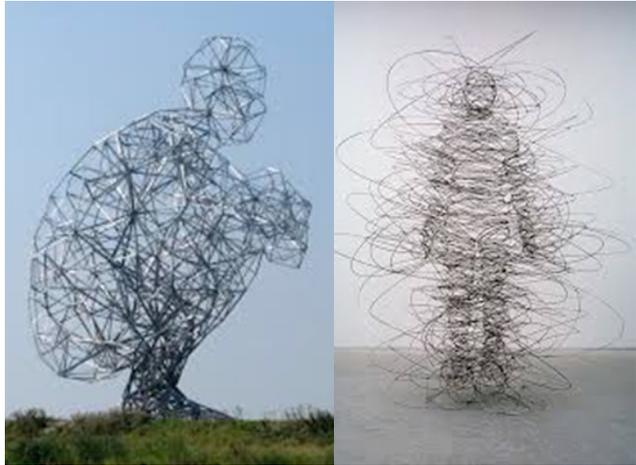
### Brief:

A new gift shop in Brixham will be opening soon. Their work focuses on nature. They are commissioning young designers to develop clay hybrid bugs exploring surface embellishment.

- Home Learning:**
- Construct a sculpture of something that flies, using recycled materials.
1. Collect recycled materials.
  2. Design your sculpture.
  3. Make your sculpture.
  4. Decorate your sculpture.

**Top Tips**

- Be creative and adventurous with your big ideas.
- Consider how you will embellish your 3D bug.
- Think about structure and shape when using 3D materials.



### Artist Information

**Anthony Gormley, OBE - British  
 1950 - present**

Gormley is a sculptor, artist and set designer. He won the Turner Prize in 1994. Gormley looks at the relationship between humans and nature. A maquette of his sculpture, 'Angel of the North', sold at auction for £3,401,250. Gormley is still a practising artist today.



### Quotes

*"Art is not about understanding, it's about experience."*

*"Art is the means by which we communicate what it feels like to be alive."*





## CHARACTER PROFILE

**Who is your character?** Name, age, status, emotional state.

**How does your character interact and react?** Consider holding or breaking eye contact; proximity to other characters and what this signifies; physical contact, pause and stillness.

**How does your character use facial expression?** Consider eyes, eyebrows, mouth.

**How does your character move?** Consider posture, gesture, physical action and reaction.

**Vocal range:** Accent, pitch, tone, emphasis. How do these things affect our understanding of your character?

**Audience:** How do you want the audience to feel? What do you want the audience to think? Why?

## WHAT IS A STIMULUS?

A starting point or idea for a performance, eg:

A picture

A poem

An object

A piece of text

A news headline

A caption

A word

A theme

A song

A piece of music

Social media

Current issue

## THEATRICAL SKILLS

### PHYSICAL SKILLS

**Body Language** - also known as non-verbal communication.

**Posture** - how you stand.

**Gestures** - using your hands or arms to communicate meaning.

**Gait** - a way of walking.

**Movement** - how you move your body.

**Facial Expression** - using your face to communicate feelings and emotion.

**Eye Contact** - looking at another character onstage to create meaning.

**Focus** - staying in role during a performance.

**Spatial Awareness** - using the stage area.

**Levels** - Using different heights or levels onstage to create interest and meaning.

**Proxemics** - using space to show the relationship between characters.

### VOCAL SKILLS

**Pitch** - how high or low the voice is.

**Pace** - the speed at which you speak.

**Tone** - suggests your mood and your intention towards the listener, e.g. happy, sad, angry.

**Volume** - how loud or quietly you speak.

**Accent** - the voice you use for a character based up on social class & the region they live.

**Projection** - speaking loudly & clearly.

**Intonation** - how the voice changes in pitch.

**Pause** - to stop speaking for a short time.





# WHAT MAKES GOOD THEATRE

## TECHNIQUES AND DEVICES

Dramatic Tension	Sound-scape
Marking the Moment	Mime
Slow Motion	Multi-role
Choral Speaking	Still Image
Cross-cutting	Flashback
Choral Movement	Physical Theatre
Pace	

<b>KEY WORDS</b>	• Plot	• Unison
	• Character	• Canon
	• Levels	• Stimulus
	• Atmosphere	• Gestures
	• Physical Skills	• Spatial Design
	• Vocal Skills	• Symbolism
	• Evaluation	• Imagery
	• Devising	• Semiotics
	• Proxemics	• Character



### WRITTEN EVALUATION OF YOUR PRACTICAL WORK?

**WHAT** you did.

**WHEN** you did it.

**HOW** you did it.

**WHY** you did it.

**THE EFFECT** you wanted to create for the **AUDIENCE.**

**HOW** successfully you achieved your aims..

**WHAT** you would do to improve it.

**Give examples of the drama devices and theatrical skills used to explain your points.**

**POINT      EVIDENCE      EXPLAIN**

## WHAT TYPE OF GROUP MEMBER ARE YOU?

**LEADER:** you have ideas and are happy to express them. You enjoy being in charge. You may sometimes be frustrated if others aren't following you or disagree with you.

**HELPER:** you don't usually lead, but you are happy to put forward your ideas and work with others. You may assist Leaders to see their ideas through or encourage others to take part.

**PASSENGER:** you don't want to lead and you aren't confident about putting your ideas forward. However, you will go along with what the group wants to do.

**BLOCKER:** you find group work frustrating and you don't positively help the group. You might tend to argue with others, refuse to co-operate or become distracted.



# Year 8 Engineering Knowledge Organiser

**2D**<sup>V2</sup>  
**DESIGN**

**BEING SAFE IN THE WORKSHOP**



## BEING SAFE

What will you do to ensure your own and others safety in the workshop?  
What are the safety Rules?

## Units of measurement

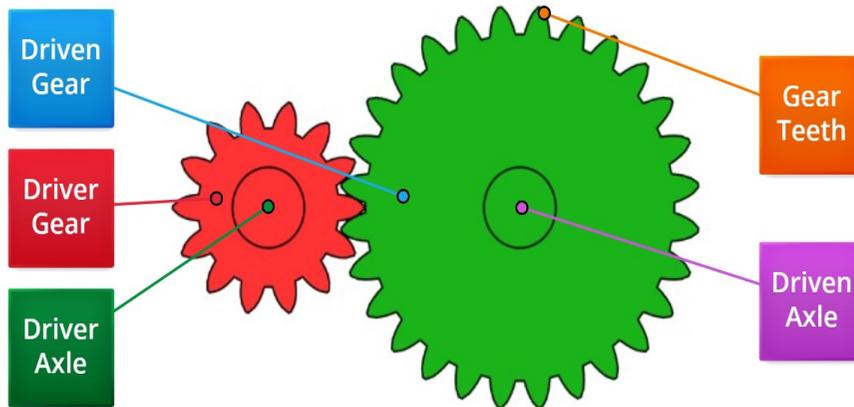
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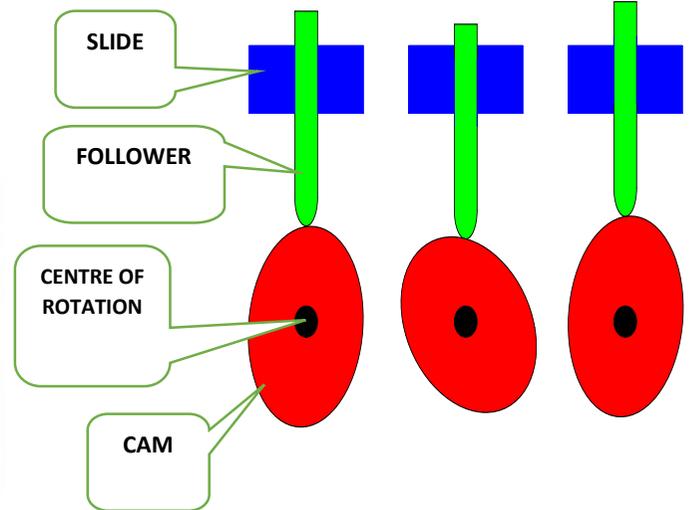
**KEYWORDS & TERMS**

MARKING OUT  
PILLAR DRILL  
DESIGN BRIEF  
SPECIFICATION  
RECYCLABLE MATERIALS  
DATUM EDGES  
RESEARCH  
ASSEMBLED  
RIVET  
RIVET GUN

## Mechanisms and Motion



Gears transfer rotational energy from one gear to another.  
They are used to control the speed of machines.  
The twisting or turning force is known as **TORQUE**



A **CAM** changes rotary motion (a rotating motion), to a reciprocating motion of the follower. They are found in many machines and toys.  
Reciprocating motion is up and down in a straight line

**PLAN**

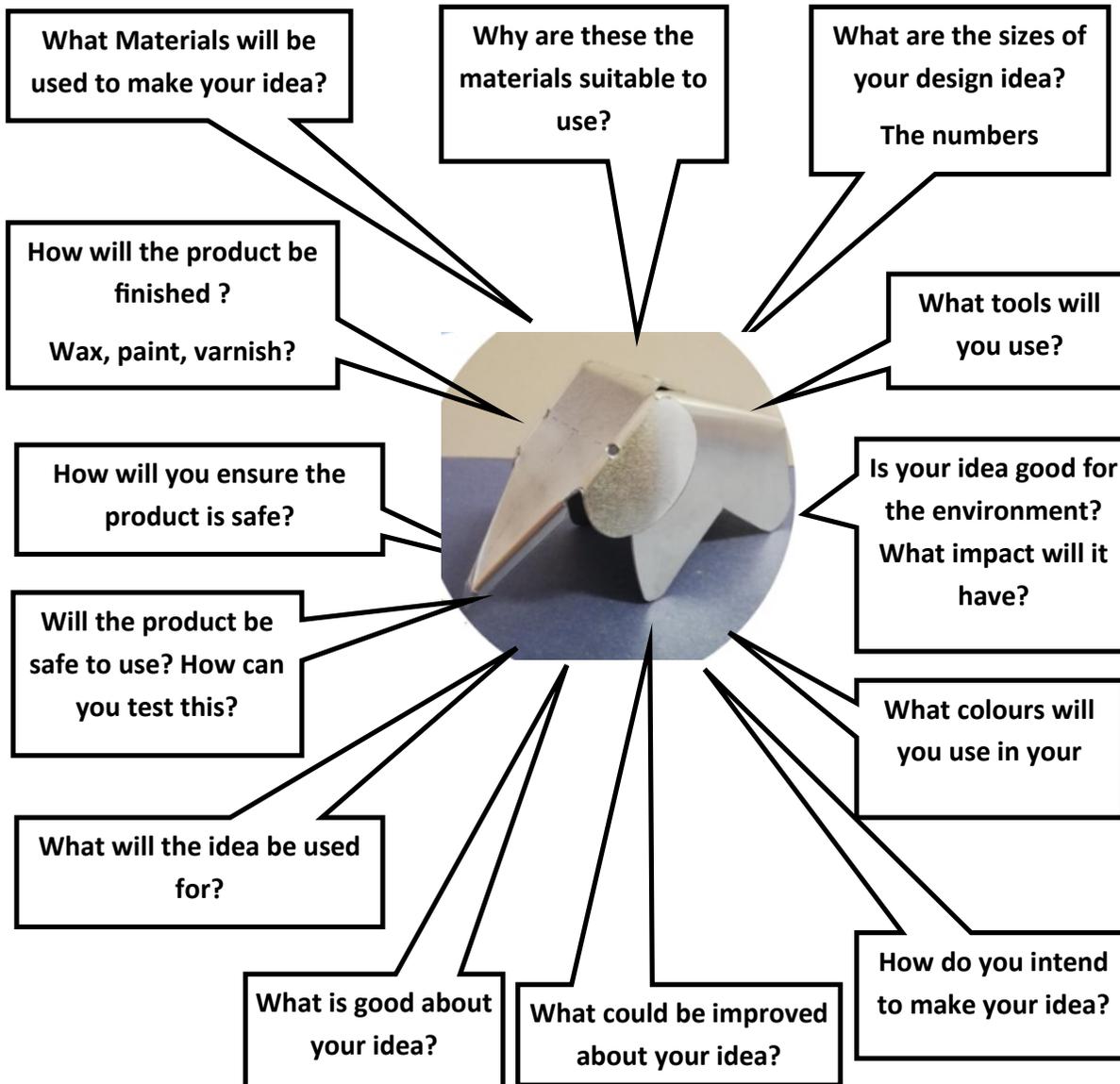
**ENGINEERING**

**MAKE**

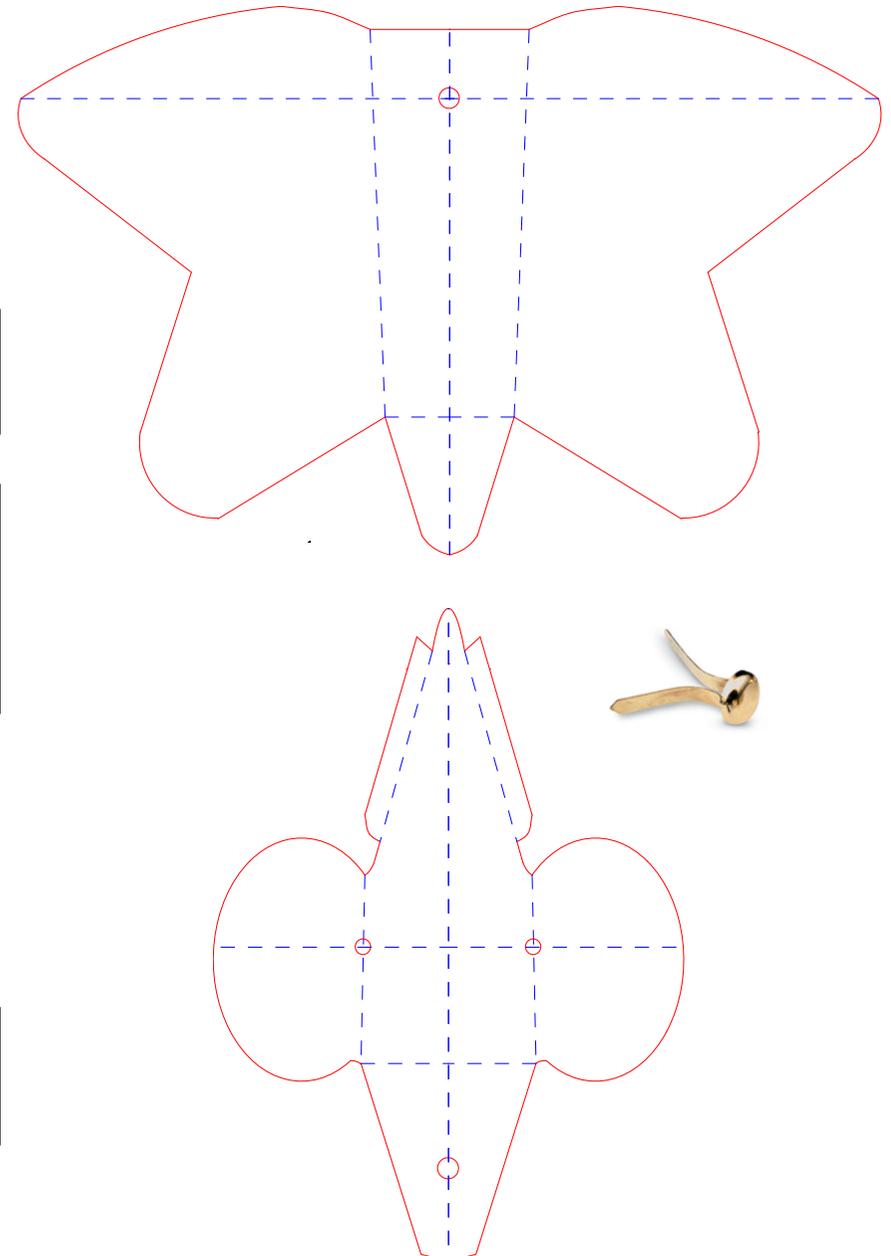
**PROCESS**

**EVALUATE**

## Adding Labels to your Design Ideas; Annotation



## Using Templates



Could you make a card model using templates?

# Planning what to cook



- When planning to cook, it is important to select the most suitable ingredients, equipment and food skills for successful results;
- Around the world people use a range of different ingredients, equipment and cooking techniques to prepare food;
- When planning to cook consideration should be given to current healthy eating advice, the needs of different people and occasion;

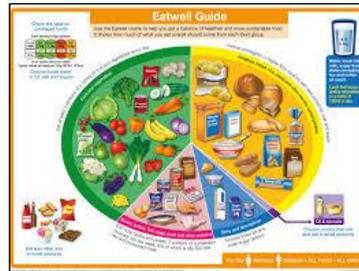
There is a vast range of ingredients used around the world for our food.



Food is prepared in different ways due to a number of factors, including country, culture, custom and religion.



Healthy eating, as shown in the Eatwell Guide, along with people's food needs, should be considered when planning and cooking.



A range of factors determine what people eat.

The type people choose depends on:

- the food available;
- their likes and dislikes;
- time;
- culture and religion;
- whether they can cook.

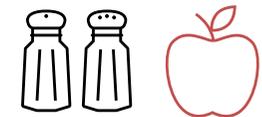


Many recipes can be adapted to produce exciting and original alternatives.

There are a number of simple healthier ways to prepare and cook foods.

Recipes can be made healthier by:

- changing the cooking method;
- not adding salt to food;
- adding fruit or vegetables;
- removing, adding or changing an ingredient;
- changing the portion size.



Diets around the world are based on similar food groups.



To ensure that a recipe works, it is important to weigh and measure ingredients accurately.



A recipe is made up of 3 parts:

- ingredients: a list of all the ingredients needed (metric);
- equipment: a list of all the equipment;
- method: how to make the dish.

Food packaging has nutrition information which can help people make healthier choices.



There are many different festivals and events which are celebrated with special food.



**Task:** Make a list of five different recipes and list the ingredients used and the country the recipes originate from.

# The Eatwell Guide

- When choosing food and drinks, current healthy eating guidelines should be followed.



## The Eatwell Guide

- Comprises 5 main food groups.
- Is suitable for most people over 2 years of age.
- Shows the proportions in which different groups of foods are needed in order to have a well-balanced and healthy diet.
- Shows proportions representative of food eaten over a day or more.

### Fruit and vegetables

- This group should make up just over a third of the food eaten each day.
- Aim to eat at least five portions of a variety each day.
- Choose from fresh, frozen, canned, dried or juiced.
- A portion is around 80g (3 heaped tbs).
- 30g of dried fruit or 150ml glass of fruit juice or smoothie count as a max of 1 portion each day.

### Potatoes, bread, rice, pasta or other starchy carbohydrates

- Base meals around starchy carbohydrate food.
- This group should make up just over a third of the diet.
- Choose higher-fibre, wholegrain varieties.

### Dairy and alternatives

- Good sources of protein and vitamins.
- An important source of calcium, which helps to keep bones strong.
- Should go for lower fat and lower sugar products where possible.

To find out more, go to:  
<https://bit.ly/2QzUMfe>

### Beans, pulses, fish, eggs, meat and other protein

- Sources of protein, vitamins and minerals.
- Recommendations include to aim for at least two portions of fish a week, one oily, and;
- People who eat more than 90g/day of red or processed meat, should cut down to no more than 70g/day.

### Oil and spreads

- Unsaturated fats are healthier fats that are usually from plant sources and in liquid form as oil, e.g. olive oil.
- Generally, people are eating too much saturated fat and need to reduce consumption.

### Foods high fat, salt and sugar

- Includes products such as chocolate, cakes, biscuits, full-sugar soft drinks, butter and ice cream.
- Are high in fat, sugar and energy and are not needed in the diet.
- If included, should be had infrequently and in small amounts.

## 8 tips for healthier eating

These eight practical tips cover the basics of healthy eating, and can help you make healthier choices.

- Base your meals on starchy carbohydrates.
- Eat lots of fruit and veg.
- Eat more fish – including a portion of oily fish.
- Cut down on saturated fat and sugar.
- Eat less salt (max. 6g a day for adults).
- Get active and be a healthy weight.
- Don't get thirsty.
- Don't skip breakfast.

## Hydration

- Aim to drink 6-8 glasses of fluid every day.
- Water, lower fat milk and sugar-free drinks including tea and coffee all count.
- Fruit juice and smoothies also count but should be limited to no more than a combined total of 150ml per day.

## Fibre

- Dietary fibre is a type of carbohydrate found in plant foods.
- Food examples include wholegrain cereals and cereal products; oats; beans; lentils; fruit; vegetables; nuts; and, seeds.
- Dietary fibre helps to: reduce the risk of heart disease, diabetes and some cancers; help weight control; bulk up stools; prevent constipation; improve gut health.
- The recommended average intake for dietary fibre is 30g per day for adults.

## Composite/combination food

Much of the food people eat is in the form of dishes or meals with more than one kind of food component in them. For example, pizzas, casseroles, spaghetti bolognese and sandwiches are all made with ingredients from more than one food group. These are often called 'combination' or 'composite' foods.



Meals and snacks can be sorted into The Eatwell Guide food groups.

## Composite/combination food - Lasagne



Pasta (lasagne sheets): **Potatoes, bread, rice, pasta or other starchy carbohydrates**

Onions, garlic and chopped tomatoes: **Fruit and vegetables**

Lean minced meat (or meat substitute): **Beans, pulses, fish, eggs, meat and other protein** –

Cheese sauce made with milk and cheese: **Dairy and alternatives**

Olive/vegetable oil used to cook onions and mince: **Oil and spreads**



## Task

Plan a menu for a day that applies the principles of The Eatwell Guide and the 8 tips for healthier eating. Make one of the dishes, complete a sensory evaluation and calculate the energy and nutrients provided using nutritional analysis.

# MUSIC

## Folk Music

(Exploring Harmony and Accompaniments)

### A. History of Folk Music

Folk Music is **TRADITIONAL music of the people** performed by the people themselves and played within their own communities. Folk Music was passed on **ORALLY** (through speech or song) from one generation to the next – the **ORAL TRADITION** (passed down by word of mouth), and many Folk Songs were not originally written down. The Industrial Revolution of the 18<sup>th</sup> and 19<sup>th</sup> Centuries destroyed communities so many of the traditional Folk Songs were lost. Attempts were made to collect these songs and Cecil Sharp published a 'written down' collection of English Folk Music in 1907 which had taken a lifetime to collect. During the 1950's a great **FOLK MUSIC REVIVAL** began and bands in the 1970's 'mixed together' Folk and Rock (**FOLK ROCK**) as a type of musical **FUSION** e.g., Lindisfarne, Steeleye Span. Other musicians created more modern and commercial **ARRANGEMENTS** of Folk Songs such as Ralph McTell's "Streets of London" in 1975. Folk Music influenced bands such as The Beatles and artists such as Paul Simon and modern-day groups such as The Corrs use traditional Folk Music in their songs.



### B. Types of Folk Music

People from different countries and cultures have their own **FOLK MUSIC**. However, although it may sound different, **FOLK SONGS** are often include **WORK SONGS**, including **SEA SHANTIES**: songs sung at sea by sailors, the rhythm of these helped the sailors haul the ropes that hoisted the sails, and songs about **EVERYDAY LIFE**, **THE SEASONS, BATTLES AND WARS**, **SHEPHERD'S SONGS** and **LULLABIES** (cradle songs). People also sang Folk Songs to help them forget their aches and pains e.g., shepherds song about their sheep and lambs and the bitter weather to help keep their spirits high. Folk Music can also be **INSTRUMENTAL**, often used for dancing, entertainment, celebration, and religious ceremonies. Dancing to Folk Music still happens such as **MORRIS DANCERS** or **MAYPOLE DANCING**.

### C. Folk Song Accompaniments

**TONIC PEDAL - A (BASS) PEDAL (POINT/NOTE)** is a note of long duration, often held in the bass part (lower down the keyboard) which uses the **TONIC** note, over which the melody line and chords will "fit" e.g.



**DRONE** – A form of musical accompaniment consisting of continuous sounding pitched notes, usually a **FIFTH** apart (5 notes), again, often in the bass part e.g.



**OSTINATO** – A repeated musical pattern as an accompaniment, often using notes of the **CHORD** and rhythm patterns from the song e.g.

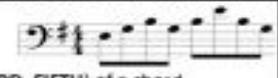


**CHORDS** – Many Folk Songs use **PRIMARY CHORDS** (**CHORD I**, **CHORD IV** and **CHORD V**) and sometimes the **SECONDARY CHORDS** of **CHORD III** and **CHORD VI** as a musical accompaniment. The notes of a **CHORD** can be performed in different ways to create different accompaniments:

As a **TRIAD** (all three notes (**ROOT**, **THIRD**, **FIFTH**) performed together, the **ROOT** sometimes in the **BASS** part acting as **BASS LINE**).



As a **BROKEN CHORD** - a way of playing the notes (**ROOT**, **THIRD**, **FIFTH**) of a chord separately ("broken" up) in a different order, ascending (going up) or descending (going down).

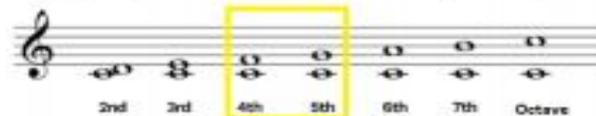


### D. Harmony in Folk Music: Intervals

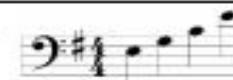
**ACCOMPANIMENT** – Music that accompanies either a lead singer or melody line. This can be instrumental performed by members of a Folk Band but also vocal often known as the "backing" provided by backing singers. (see C for different forms of accompaniments).

**HARMONY** – The effect produced by two or more pitched notes sounding together at the same time e.g., a chord or triad creates harmony or a lead singer and backing singers singing different melodies or parts 'in harmony' (**COUNTER MELODY**)

**INTERVAL** – The distance between two musical notes. The intervals of a **FOURTH** and **FIFTH** are common in Folk Music.



As an **ARPEGGIO** - playing the notes of a chord ascending or descending (**ROOT**, **THIRD**, **FIFTH**) in order, but separately.



As an **ALBERTI BASS** - a way of playing the notes of a chord in the order: lowest (**ROOT**), highest (**FIFTH**), middle (**THIRD**), highest (**FIFTH**), repeated several times as a bass line **ACCOMPANIMENT**



### E. Instruments, Timbres and Sonorities of Folk Music

Many **FOLK SONGS** are often performed **UNACCOMPANIED** (with no instrumental accompaniment) = **A CAPPELLA**. However, the following instruments are often used in Folk Music:

								
Penny/Tin Whistle	Harmonica or Mouth Organ	Acoustic Guitar	Northumbrian Pipes	Accordion	"Fiddle" (Violin)	Mandolin	Banjo	Concertina

## Literacy Bank – Key Words

Fitness-Testing , Equipment,  
Purpose, Standard Procedure,  
Validity, Reliability,  
Measurements, Components of  
Fitness, Data

### Reasons for Fitness Testing

- Find out your **fitness levels**



- Set **targets**

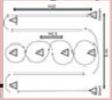


- Support** in creating a programme

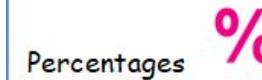


# YEAR 8 CYCLE 3 PE KNOWLEDGE ORGANISER

## Cycle 3 – Fitness Testing

<u>Components of Fitness Testing</u>	<u>Fitness Tests</u>
Aerobic Endurance Muscular Endurance	Multi stage fitness test 1 minute sit up, 1 minute press up 
Speed and Agility	-Illinois Agility run and 35 metre sprint 
Vertical Power	Vertical Jump test 
Flexibility	Sit and reach Test 
Body Composition	BMI/Skinfold Test 

## Numeracy Bank



### Standard procedure ( Method)

How the tests are completed.

### Factors Affecting Test=

**Reliability** ( how accurate are the results)

**Validity** (does the test measure the correct component)

### Equipment required



Careers

Careers

Careers



### ***Careers Department notices:***

#### ***Google Classroom***

Don't forget to access the student wellbeing pages there is lots of information and activities relating to careers and future intentions is uploaded regularly.

#### ***Guidance Interviews***

You may be a little confused about your future intentions please do contact the Careers Department if you would like to request a guidance appointment the best way to do this is email: [careers@paigntonacademy.org](mailto:careers@paigntonacademy.org)

#### ***Virtual Work Experience***

We understand that physically going into a work placement this year has not been possible. We have put together a virtual experience on the Careers Hub log on and take a look.

#### ***Student Feedback***

We have introduced to the Student Council a termly feedback on the Academy's careers provision. If there is something that you feel would benefit your year group please discuss with your House Representative.



### **Get Involved**

*When it comes to your future don't take a back seat you need to participate:*

Taking part in competitions and researching opportunities linked to your future career plans will look great on your application forms and CV. You will also have something more to talk about at interview than just your experiences in the classroom.



### **Questions about University, Apprenticeships, Funding, Work Experience?**

Researching and navigating websites for your future career can be a challenge The Careers Hub, a dedicated website, has loads of information for you to access and covers topics such as, Work Experience, College/6<sup>th</sup> Form Open event dates, Apprenticeships, how to write CVs and personal statements and finding a Job.



**LMI...Where are the future jobs?  
What are the different jobs by subject compare and contrast salaries and roles...**

<https://www.careerpilot.org.uk/job-sectors>

