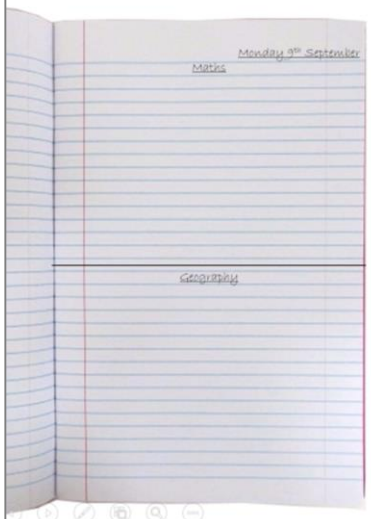
Knowledge Organisers
Year 8 – Term 1

How to complete your Knowledge Organiser Homework

- Learning is an **active process**, just reading the information will not be enough



Each day, in your Knowledge Organiser book, you must write the date at the top and then draw a line to divide the page in half using a ruler.

Use the top half of the page for one subject and the bottom half of the page for the other

You can use some of the techniques you have been taught;

- Look, cover, write, correct, repeat
- Mind maps
- Word Up
- Flashcards

(YouTube channel – Woodrush Online)

Key Points

- Follow the schedule to see which subjects your need to do each night and spend 20 minutes on each
- You should also read your book each night for 20 minutes
- You must have evidence of your work in your knowledge organiser exercise book (reading the knowledge organisers is not enough!)
- Your learning of the information will be checked in your lessons and once a week by your form tutor. If you have completed the work well you will gain achievement points.
- If you need ideas of what to do each night your can use the ideas pages and tick these off (but you do not have to do this)
- On the back page is a list of optional extra challenges that will help you earn hours for your Children's University Passport

NAME: _____ FORM: _____

Need some ideas?

If you have watched the Woodrush Online YouTube videos and you are still not sure what to do you can use these ideas on these pages for activities to complete and tick them off. You can use as many or as few of these ideas as you want! Keep repeating the tasks until you get them right first time.

Science

From memory draw a table for the parts of the male and female reproductive system. Add in what each parts does. Check and correct	
Draw a mind may of the different nutrients in food, add in what the body uses them for	
Go through your kitchen cupboards and make list of foods from the different nutrient groups	
Read the C3 Changes page and, close your knowledge organiser and see how many scientific keywords you can remember from the page and what they mean. Check and correct	
Draw out the pH scale from memory showing which numbers link to different strength acids and alkalis (add in the universal indicator colours if you can remember this from class)	
Make flashcards with the electrical symbol on one side and their name of the other. Test yourself until you know them all	
Draw an example of 2 different series and parallel circuits. Check and correct	
Draw from memory the magnetic field around a magnet and explain in your own words what the lines mean. Check and correct	

Art

Write the rules for the proportion of the face	
Complete independent study task one and draw a portrait from art history	
Complete independent task two and draw a self portrait	

History

Create from memory a timeline for the road to war in 1914, add in facts about the key dates. Check and correct	
Create a mind map about the role of women and children in the first world war	
Draw a rough sketch of a first world war trench, label from memory all the key parts. Check and correct	
Name as many key battles as you can from the first world war. Check and correct (including your spelling)	

Geography

Create from memory a fact file on Malawi. Check, correct and add in details you have missed from your knowledge organiser	
Show your understadning of clustered bar charts by explain what is show in the one on the knowledge organiser. Compare the 4 countries	
Create a mind map from memory about China including information about their power and pollution	
Describe in your own word, from memory, how we can help Malawi develop	

Faith and Ethics

Streamline the information about whether humans have a soul. Pick out the key facts and views of different religions	
List al the ways that humans are similar and different from animals	
Write the subheadings about the Hunger Games from your knowledge organiser in your book. Close your knowledge organiser and see if you can give examples form the film to prove each point	

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Spanish

Write 4 different sentences about your taste in music in Spanish from memory, Check and correct	
Draw mind map of different types of film, write these both in Spanish and English. Check and correct	
Make flashcards for as many different adjectives as you can, keep testing yourself until you know them off by heart	
Make lists of food and drink that you like, love or dislike in Spanish, check and correct	
Write a script for a short sketch in Spanish where you order a meal from a restaurant, check and correct	
From memory write as many words as you can related to parties in English and Spanish. Check and Correct	

Music

Draw out the 12 Bar Blues Chords in C from memory. Check and correct	
Create a table to compare Blues and Jazz. Check, correct and add detail from your knowledge organiser	
Draw out a section of the keyboard in your book. Practice playing the Blues scale in C on it	

Drama

Make a mind map of the physical and vocal skills you can use in a performance	
From memory list the dramatic devices you can use in a scene and describe what they mean. Check and correct	
Think of a character from a film, use the keywords from the dram pages to describe how this character has been successful created.	

DT

Draw 3 different size boxes using 2 point perspective. Describe in words how you have done it.	
From memory list the 8 healthy eating guidelines Check and correct	
Write as many keywords from the textiles pages as you can remember and, from memory, describe what they mean. Check and correct	
Make a spelling list from the keywords on the Product Design page. Look, cover, write, check and correct until you get them right.	
Write the names of the key designers mentioned on the DT pages. From memory try and list their achievements. Check and correct	

Computing

Make flashcards of the keywords and definitions about computing. Keep testing yourself until you know them.	
Crate a spelling list from the keywords. Look, cover, write, check and correct until your know them.	
Explain in your own words what virtual reality, artificial intelligence and robotic process automation are. Check, correct and add detail.	

PE

Draw a mind map for Tennis, Football and Athletics, add in the core skills and tactics.	
Choose one of the 4 sports, write a checklist of what you need to do to succeed.	
Name from memory as many key words from the PE page. The link each one with the sport it belongs to.	

English

The Supernatural

Gothic Fiction

Gothic fiction is a genre that became really popular in the 1700s and 1800s.
Gothic fiction will contain horror which is often related to **science or the supernatural** which many readers were fascinated by in this era. There is often romance in gothic novels.

Some of the most famous gothic novels are *Frankenstein* by Mary Shelley, and *Dracula* by Bram Stoker. A modern example would be *The Woman in Black* by Susan Hill

Language and methods in the gothic genre

- Pathetic Fallacy – dark stormy weather is used to create an eerie atmosphere
- Foreboding – language is used to make the reader feel tense and nervous about what may happen next
- Foreshadowing – the writer will often give hints about eerie events that will happen later on
- Similes and Metaphors – often used to describe characters, setting, and emotions in vivid and eerie detail
- Settings – eerie settings such as old castles, stormy seas, or haunted buildings will be described n vivid detail to create horror

Characters in the gothic genre

- Gothic novels often have a mysterious and frightening monster or supernatural being. For example, the vampire Count Dracula, or Frankenstein's monster which was constructed from body parts and brought to life

- The protagonist (main character) will usually have to save others from the monster of being which makes them heroic
- A victim will usually need to be saved by the hero. In traditional novels, the victim is usually female – a 'damsel in distress'

- The clothing of a character will be used to reflect their role in the novel. The 'monster' may wear dark clothing whilst the victim might wear light coloured and flowing costumes

Film Techniques

The **setting** or **set design** of a film refers to the locations used and their look.

When analysing a film we tend to look at **denotations** and **connotations**:

The **denotations** of a scene are the things that we simply see or hear, such as a piece of music or a particular costume.

Connotations are the ideas that we associate with things that we see or hear. For example, we may think that red **connotes** anger, and a slow song has **connotations** of a peaceful mood.

Imagery and Atmosphere

Atmosphere

This is when we talk about the mood or feelings in a piece of writing or scene of a film. For example, stormy weather might create a tense and frightening atmosphere. Descriptions of a beautiful landscape can create a more relaxing atmosphere.

Imagery

This is when a writer uses language to create a vivid description for the reader. Methods used to create imagery include similes, metaphors, personification, and pathetic fallacy.

English

The Supernatural

How to punctuate dialogue

The part that describes what a character says is the **dialogue**. This should be in **speech marks**:

“ ”

The sentence ending (. ! ?) should be before the closing speech mark:

“Should we go now?”
“I’m so shocked!”
“I’ll meet you both later.”

The part that explains *how* the character says their dialogue is called a **reporting clause.**

If the reporting clause is *before* the dialogue, then a comma goes before the opening speech mark:

“I’ll meet you later,” she said.

If the reporting clause is *after* the dialogue, then a comma is placed before the closing speech mark

She said, “I’ll meet you later.”

If the dialogue is between 2 reporting clauses, then both rules apply:

She said, “I’ll see you later,” as she slowly turned and left.

Text Type	Purpose	Features and Conventions
Article	Articles can be found in newspapers or magazines. They often provide **information**, or can be used for someone to **argue or persuade** others of their personal opinion	• Should be written in standard English and organised into paragraphs • Depending on the audience and topic the **register** can be very formal, or slightly informal and humorous • Should be engaging to read • It is helpful if each new paragraph begins with a topic sentence
Letter	Formal letters usually have the purpose of giving **personal opinions**. They are often used to write complaints or give feedback. Many people write formal letters to newspapers to **argue** their viewpoint.	• Begins with a **salutation** e.g. ‘Dear Mr. Johnson,’ or ‘Dear Sir/Madam’ • Should be organised into paragraphs including an introduction and conclusion. Each new paragraph should begin with a connective or discourse marker e.g. ‘Secondly’ ‘Furthermore’ • The **tone** should be polite and the **register** should be formal. Standard English should be used. • Should be **signed off** with ‘Yours sincerely (if you know the name of the recipient) or ‘Your faithfully’ (if you do not know the recipient’s name) followed by a comma, and your full name on a new line
Review	Reviews give a writer’s opinion in order to **advise** the reader	• Should give relevant information about the item/film/book being reviewed without giving ‘spoilers’ • Uses standard English. The **register** is usually formal • Uses paragraphs and standard English • Includes personal opinions and advice that will be helpful to the reader

Colons – there are 2 ways that a colon can be used

A colon is used to separate two main clauses when one clause explains the other

For example:

She put ice cubes in the lemonade: it was roasting hot that day.

Mila drank the water: she was thirsty.

A colon is used to introduce an idea. It can also be used to introduce items in a list

For example:

He visited three cities in England: Manchester, York and London.

I used a variety of materials: plastic, wood and glass.

MATHS

Whole numbers and Decimals

Order of Operations

The **lower bound** is the smallest value that would round up to the estimated value.
The **upper bound** is the smallest value that would round up to
the **next** estimated value.
For example, a mass of 70 kg, rounded to the nearest 10 kg, has a lower bound of 65 kg, because 65 kg is the smallest mass that rounds to 70 kg. The upper bound is 75 kg, because 75 kg is the smallest mass that would round up to 80kg.

Discrete values (Whole values)

The number of people on a train is 400 to the nearest 100

350 ← 400 → 449

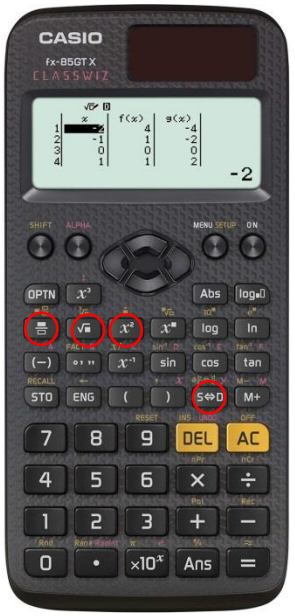
32 cm, measured to the nearest cm:

The degree of accuracy is to the nearest 1 cm.

$1\ cm \div 2 = 0.5\ cm$

Upper bound = $32 + 0.5 = 32.5\ cm$

Lower bound = $32 - 0.5 = 31.5\ cm$



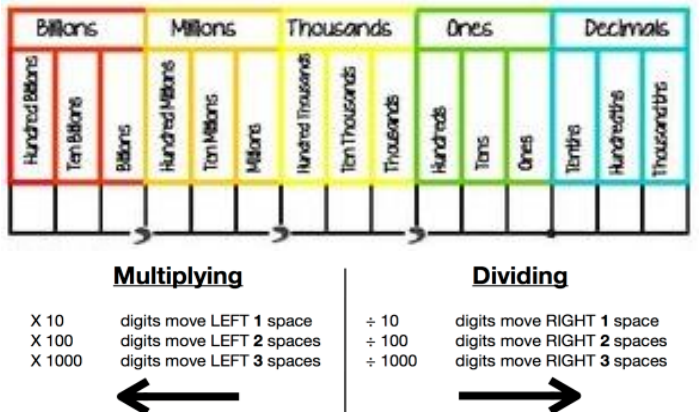
Key buttons on your calculator

—: Fraction button

x^2 : to square a number

$\sqrt{\ }$: Square root

$s \leftrightarrow D$: Changes an answer to a decimal



ROUND DOWN 0,1,2,3,4, **Rules of rounding** 5,6,7,8,9, ROUND UP

Rounding whole numbers

Place Value

Thousands, Hundreds, Tens, Units

14672

To the nearest ten

14670

To the nearest hundred

14700

To the nearest thousand

15000

Rounding decimal points

Decimal Places

Count Right from the Decimal Point

1 2 3 4

12.5298

To 1 decimal place

12.5

To 2 decimal places

12.53

To 3 decimal places

12.530

Rounding significant figures

Significant Figures

Count Right from first non-zero Digit

1 2 3 4 5 6

325484

To 1 significant figure

300000

To 2 significant figures

330000

To 3 significant figures

325000

MATHS

Perimeter, area and volume

Units of measure

There are two systems used for measuring quantities - **metric** and **imperial**.
The **metric system** uses three main units for measuring:
length in metres (m)
mass in kilograms (kg)
volume in cubic metres (m^3)
The **imperial system** uses the following units:
length in inches, feet and yards
mass in pounds (lb), ounces (oz) and stones
volume in gallons

Converting between metric units.

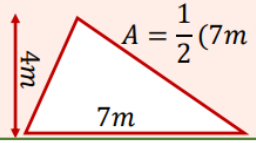
You will need to know how to convert between metric units. It is important to learn how many grams are in a kilo gram or how many centimetres are in a metre to help you scale up or down depending on the appropriate size of an object. You might want to know if you have enough ingredients to make a cake and the recipe is in kg and you only know the g.

Length	*Weight*	*Volume*
1 km = 1,000 m	1 kg = 1,000 g	1 kL = 1,000 L
1 m = .001 km	1 g = .001 kg	1 L = .001 kL
1 m = 100 cm	1 g = 100 cg	1 L = 100 cL
1 cm = .01 m	1 cg = .01 g	1 cL = .01 L
1 m = 1,000 mm	1 g = 1,000 mg	1 L = 1,000 mL
1 mm = .001 m	1 mg = .001 g	1 mL = .001 L

Area of triangle

The area of a triangle takes up **half** the space of the rectangle that is formed around it

Area of triangle $\triangle = \frac{1}{2}(b \times h)$

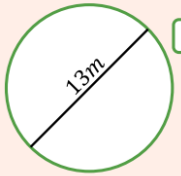


$A = \frac{1}{2}(7m \times 4m) = \frac{1}{2}(28m^2)$

$14m^2$

Area of circle

$A = \pi r^2$ ➡ Pi times the radius squared



Diameter is double the radius

$A = \pi \times 6.5^2$

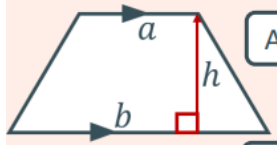
$A = \pi \times 42.25$

$A = 132.73m^2$

Area of a trapezium

A more complex formula to know

$\triangle = \frac{1}{2}(a + b) \times h$



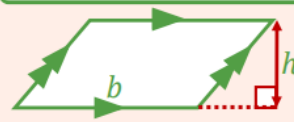
Add the parallel sides

Halve it

Multiply by height

Area of parallelogram

Imagine a tilted rectangle



$\square = b \times h$

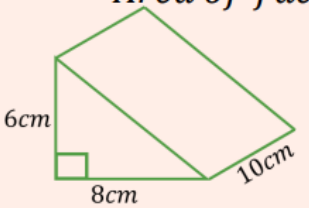
Be sure to use **perpendicular heights**

Volume of prism

The same cross sectional area throughout

$Volume = Area\ of\ face \times depth$

$Area\ of\ face = \frac{1}{2}(8 \times 6)$



$24cm^2$

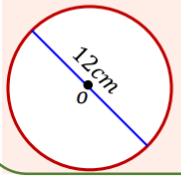
$24cm^2 \times 10cm = 240cm^3$

Circumference of a circle

$C = \pi d$

$C = 2\pi r$

The circumference is always about three time the length of the diameter



$C = \pi \times 12cm$

$C = 37.7cm$

MATHS

Expressions and Formulae

Expanding brackets

To expand brackets you need to multiply everything inside the bracket by the number or letter outside.

Multiply terms outside by all terms inside

$$10\,(x + y + 4) = 10x + 10y + 40$$

$$3x\,(6x - 2) = 18x^2 - 6x$$

Expanding brackets often the first step in simplifying algebra

$$2\,(x + 3y) - 7(2x - y) = 2x + 6y - 14x + 7y$$

Include sign in multiplication

$$= -12x + 13y$$

Collecting like terms

Collecting like terms enables us to simplify expressions making them easier to use. Terms that contain the exact same variable can be classed as 'like' terms and be simplified. Be careful of the signs in front of the variable!

$$5x + 6y - 2x - 5y = 3x + y$$

$$5xy + 3x - 2xy + 4y = 3xy + 3x + 4y$$

$$2x^2 + 3x + 5x^2 - 5x = 7x^2 - 2x$$

Factorising

Factorising is the opposite of expanding. You are putting the brackets back in!

Look at whole expression, identify HCF and divide out

$12x - 6y + 3z$ — HCF = 3

$3(4x - 2y + z)$

$ax + aby + 4az$ — HCF = a

$a(x + by + 4z)$

Laws of indices

There are rules that you need to learn when working with indices.

Special indices to consider

$x^1 = x$	Anything to the power 1 = itself
$x^0 = 1$	Anything to the power 0 = 1
$1^x = 1$	1 to the power of anything = 1

These laws can be applied if the bases are the same

$x^a \times x^b = x^{a+b}$ $z^3 \times z^7 = z^{10}$	When multiplying powers with the same base – Add the powers
$x^a \div x^b = x^{a-b}$ $s^2 \div s^5 = s^{-3}$	When dividing powers with the same base – Subtract the powers
$(x^a)^b = x^{a \times b}$ $(e^4)^3 = e^{12}$	When raising the power (brackets) – Multiply the powers

Re-arranging formulae

You may need to re-arrange a formula in order to be able to calculate what you need. This is often the case in physics and chemistry.

Often it is useful to re-arrange a formula to make a different variable the subject

Make l the subject of the formula

$$P = 4l \quad (\div 4 \quad \div 4) \quad \Rightarrow \quad \frac{P}{4} = l$$

Use inverse operations

$$y = \frac{18t - 3}{p}$$

Make t the subject

$\times p \quad +3 \quad \div 18$

$$t = \frac{py + 3}{18}$$

MATHS

Fractions and decimals

Remember what you do to the top you must do to the bottom!

Converting between mixed numbers and improper fractions

Improper fraction to mixed number:

$\frac{13}{5}$ Divide numerator by denominator to get whole number

2^{r3} Remainder forms **new** numerator

$2\frac{3}{5}$ Denominator remains the same

Mixed number to improper fraction:

$7\frac{3}{8}$ Multiply whole number by denominator

$56 + 3$ Add on the numerator

$\frac{59}{8}$ Denominator remains the same

Adding and subtracting mixed numbers

In order to add and subtract mixed numbers you need to convert them into improper fractions. Then you make the denominator the same and complete the operation. Don't forget to turn the answer back into a mixed number.

$$6\frac{1}{5} - 4\frac{3}{4} \Rightarrow \frac{31}{5} - \frac{19}{4} \Rightarrow \frac{124}{20} - \frac{95}{20} \Rightarrow \frac{29}{20} = 1\frac{9}{20}$$

$$3\frac{1}{5} + 5\frac{9}{10} \Rightarrow \frac{16}{5} + \frac{59}{10} \Rightarrow \frac{32}{10} + \frac{59}{10} \Rightarrow \frac{91}{10} = 9\frac{1}{10}$$

Converting recurring decimals to fractions

A recurring decimal is a decimal that repeats and never ends. It is written with a dot above the first and last number that recurs.

$0.\dot{6} \rightarrow 0.6666666666666\ldots$

$0.21\dot{3} \rightarrow 0.2133333333333\ldots$

$0.\dot{8}4\dot{1} \rightarrow 0.841841841841\ldots$

You need to learn what simple decimals that recur as written as a fraction. If all the numbers recur you put the number over a multiple of 9.

$0.\dot{x}$ → A single recurring digit will be a fraction over 9 → $\frac{x}{9}$

$0.\dot{x}\dot{y}$ → A double recurring digit will be a fraction over 99 → $\frac{xy}{99}$

$0.\dot{x}y\dot{z}$ → A triple recurring digit will be a fraction over 999 → $\frac{xyz}{999}$

Fraction to decimal

Divide the numerator by the denominator.
Using Bus shelter division

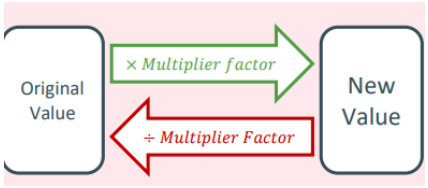
$\frac{1}{7}$ → $7\overline{)1.0000}$ = 0.1428 → 0.143

MATHS

Decimals and percentages

Percentage increase and decrease

To calculate percentage increase or decrease you can covert the percentage to a decimal to find a multiplier and then use that to calculate the new amount.



To find the multiplier you use 100%.
If it is an increase you add to 100.
If it is a decrease you take away from 100.
You then divide your number by 100.

Increase of 23%

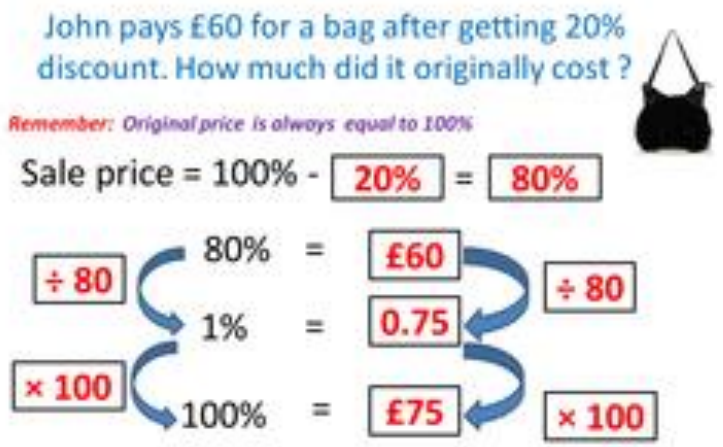
100 + 23 = 123
123 ÷ 100 = 1.23
Multiply your amount by 1.23

Decrease of 42%

100 - 42 = 58
58 ÷ 100 = 0.58
Multiply your amount by 0.58

Reverse percentages

If you are going to find the original amount you need to get to a multiple of 100 and then times up to 100%.



Percentage of amounts

Find 35% of 40

Method 1- Unitary method

Find 1%, 10%, 5% etc.

$10\% = 4 \quad (\div 10)$
$30\% = 12$
$+\ 5\% = 2$
14

2017

Simple interest

Interest calculated as a percent of the original loan.

Example: a 3-year loan of $1,000 at 10% costs 3 lots of 10%
So the interest is 3 × $1,000 × 10% = $300

Simple interest is almost never used in the real world, with compound interest being preferred.

Compound interest

Where interest is calculated on both the amount borrowed plus previous interest. Usually calculated one or more times per year.

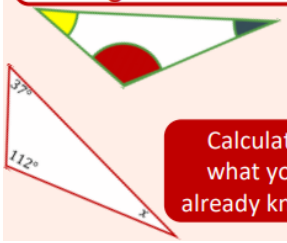
To calculate: work out the interest for the first period, add it to the total, and then calculate the interest for the next period, and so on, like this:

MATHS

Angles

Angles in a triangle

All three angles can be orientated to fit on a straight line → All angles in a triangle make 180°



$Straight\ line = 180°$

Calculate what you already know.

$112° + 37° = 149°$

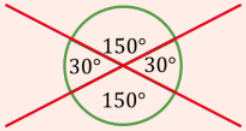
Subtract from 180°

$180° - 149°$

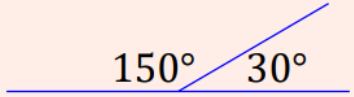
$x = 31°$

Angle facts

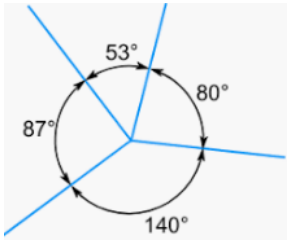
Where two straight lines cross, opposite angles are equal



All angles on a straight line will add up to make 180°

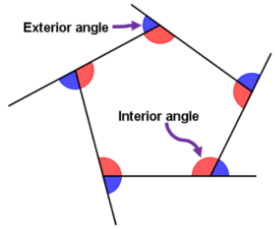


All angles around a point will add up to make 360°



Angles in polygons

Sum interior angles:
(n-2) x 180
n – number of sides



Angle properties

Acute — Greater than 0° less than 90°

Looks like a book closing or crocodile jaws

Right — Exactly 90°

Has a square in the angle to indicate that it is 90°

Obtuse — Greater than 90° less than 180°

Looks like a book falling open

Straight — Exactly 180°

A half turn to create a straight line

Reflex — Greater than 180° less than 360°

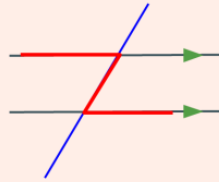
The larger angle outside the acute or obtuse angle

Full turn — Exactly 360°

A movement around a point to create a circle

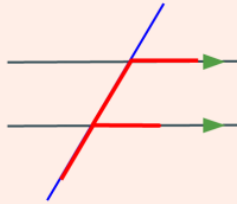
Angles in parallel lines

Alternate



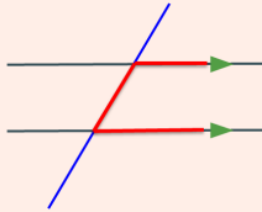
Alternate angles are the same

Corresponding



Corresponding angles are the same

Co-Interior



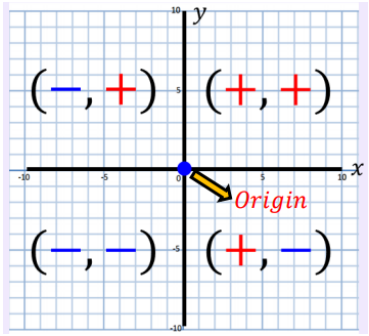
Co-interior angles make 180°

MATHS

Algebra - graphs

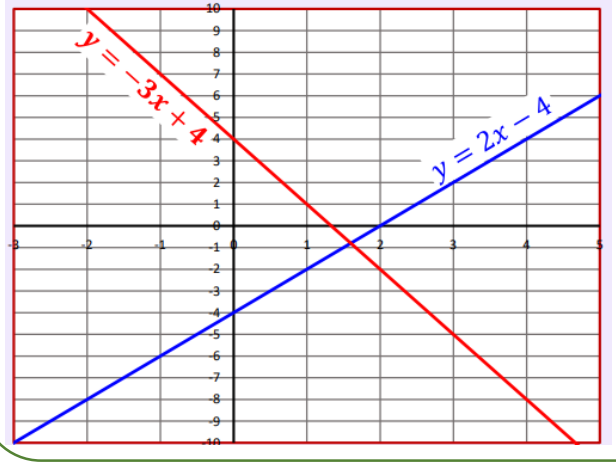
Plotting in four quadrants

There are 4 quadrants that you can plot co-ordinates in. Remember with co-ordinates the first one is for the x axis and the second is for the y axis.



Equations of a straight line graph

Calculated by $\frac{\text{Change in } y}{\text{Change in } x}$ or $\frac{\text{Rise up}}{\text{Run along}}$



$$y = mx + c$$

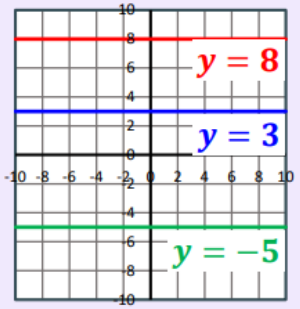
m: Gradient; c: y intercept

All straight lines have the equation y=mx + c.
The m tells you the gradient, how steep the line is.
The y tells you where the line cuts trough the y axis.
To find the gradient you have to work out the change in the y co-ordinates and divide it by the change in the x co-ordinates.

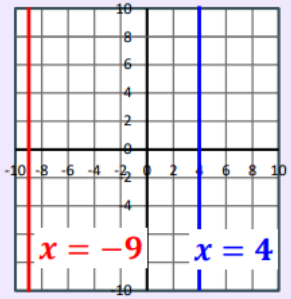
Horizontal and vertical lines

A line that cuts through the x axis is a vertical line as it cuts through the axis.
A line that cuts through the y axis is horizontal line as it cuts through the axis.

Horizontal lines → y =?



Vertical lines → x =?



Plotting straight line graphs

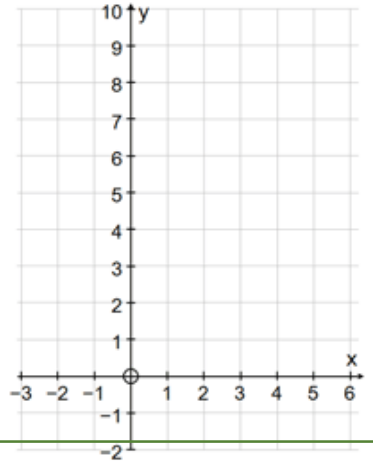
If asked to plot a straight line graph you need to put the value in for x and then find the y co-ordinate before you plot it. E.g. y=2x+ 3 first value of x is -3 so it is 2x-3+3=-3, then repeat with each number in the table.

ANS Plot the graph y = x + 5 using the table of results.

x	-3	-2	-1	0	1	2	3
y = x + 5	2	3	4	5	6	7	8

ANS Plot the graph y = 2x + 3 using the table of results.

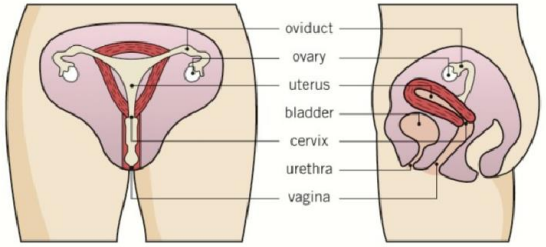
x	-3	-2	-1	0	1	2	3
y = 2x + 3	-3	-1	1	3	5	7	9

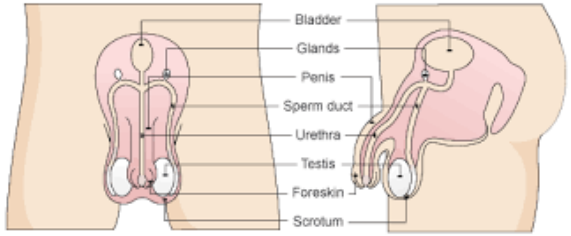


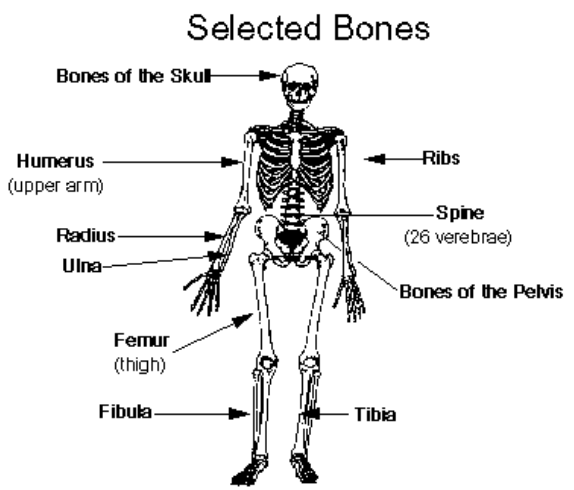
Science

B3 Health

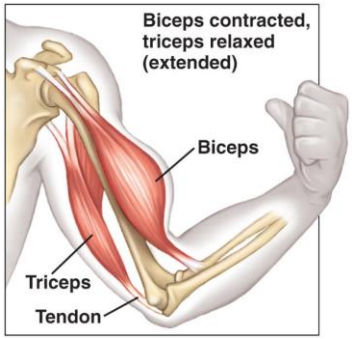
Gamete: The male gamete (sex cell) in animals is a sperm, the female an egg.
Fertilisation The process where the nucleus of a sperm cell joins with the nucleus of an egg cell.
Ovary: Organ which contains eggs.
Testes: Organs where sperm are produced.
Menstruation: Loss of the lining of the uterus during the menstrual cycle
Foetus: The developing baby during pregnancy.
Ovulation: The release of an egg from an ovary

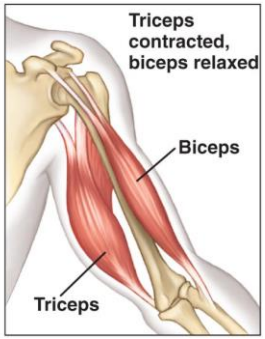






Type of drug	Effect on the body
Stimulant	Increase alertness and speed up nervous system
Depressant	Slow down nervous system
Hallucinogen	Alter how you see and feel
Painkiller	Reduce pain





Cell = the basic building block that makes up living organisms

Tissue = a group of similar cells working together

Organ = a group of different tissues working together

Organ system = a group of organs working together

Nutrient	Use in the body	Good sources
Carbohydrate	To provide energy	Cereals, bread, pasta, rice and potatoes
Protein	For growth and repair	Fish, meat, eggs, beans, pulses and dairy products
Lipids (fats and oils)	To provide energy. Also to store energy in the body and insulate it against the cold.	Butter, oil and nuts
Minerals	Needed in small amounts to maintain health	Salt, milk (for calcium) and liver (for iron)
Vitamins	Needed in small amounts to maintain health	Fruit, vegetables, dairy foods
Dietary fibre	To provide roughage to help to keep the food moving through the gut	Vegetables, bran
Water	Needed for cells and body fluids	Water, fruit juice, milk

Science

C3 Changes

Types of Changes

Physical changes do not create new substances.
They are **reversible**.
e.g. Ice melting to liquid water

Chemical changes involve the atoms rearranging to form new substances.
They are usually **irreversible**.
e.g. An egg being cooked

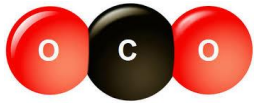
Energy of Reactions

Endothermic reactions take energy in from the surroundings. This causes a **decrease** in temperature. e.g. thermal decomposition

Exothermic reactions give out energy to the surroundings. This causes an **increase** in temperature. e.g. Combustion

Reactions

Formulae use element symbols to show what types of atoms are in a compound and how many of each.
e.g. CO_2 contains 1 carbon atom and 2 oxygen atoms



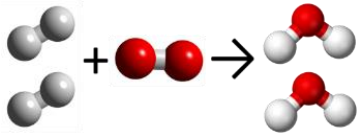
Word equations show chemical reactions:
Reactant + Reactant → Product + Product

Reactants are what you start with. **Products** are what is made
e.g. Hydrogen + oxygen → water

Conservation of Mass

Total mass of reactants = **Total** mass of products

e.g. hydrogen + oxygen → water
4 g + 32 g → 36 g



In chemical reactions, the atoms are not created or destroyed, they are just **rearranged**.

Oxidation

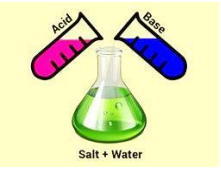
Rusting is the reaction of iron with oxygen.
iron + oxygen → iron oxide
Rusting requires oxygen from the air and water.
Salt speeds up the reaction.

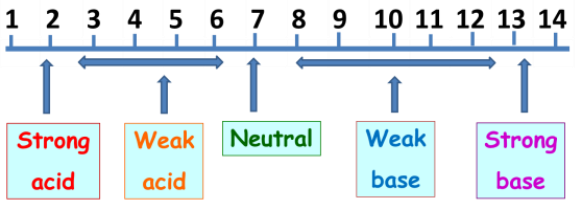
Combustion is a reaction with oxygen and heat
fuel + oxygen → carbon dioxide + water
Combustion gives off thermal **energy**
If there is not enough oxygen to react with, toxic carbon monoxide gas is made.

The pH scale

Indicators change colour in different pHs.

Alkali is a soluble base.
Strong acids and alkalis are both **corrosive**.





When an acid and an alkali react they form a **neutral solution.**
acid + alkali → salt + water
The name of the salt comes from the names of the reactants;
e.g. hydro**chloric** acid + **sodium** hydroxide → **sodium chloride** + water

Science

Benjamin Franklin
Discovered electricity in **1752!**

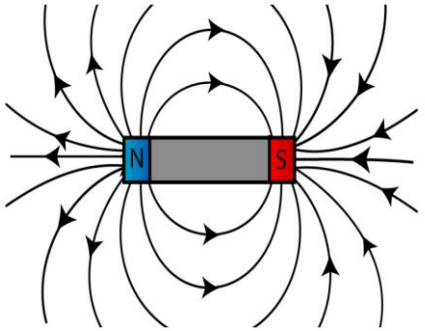
P3 Circuits

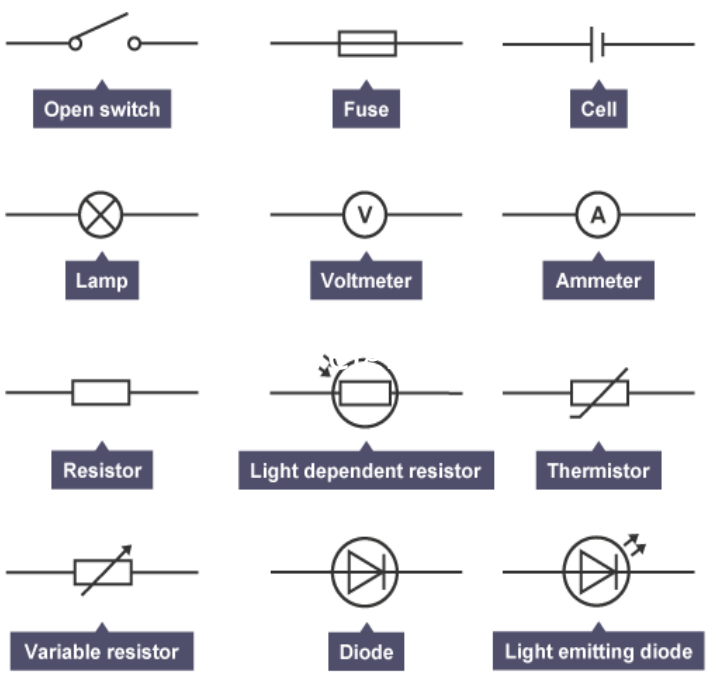
Keywords

Word	Definition
Current	The rate of flow of electrons
Amp (**A**)	The unit for Current
Voltage	Gives the energy needed to create Current
Volt (**V**)	The unit for Voltage
Resistance	Acts to reduce/slow current
Ohm (Ω)	The unit for Resistance
Electromagnet	A magnet made from a current-carrying wire

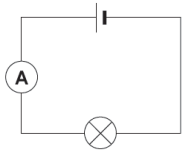
Magnetism

- Magnets create **magnetic fields.**
- Magnetic fields are drawn going from N to S pole.
- Arrows show direction
- Density of lines shows the strength.
- Magnetic fields get weaker with distance.
- Iron, cobalt and nickel are the only 3 magnetic metals.

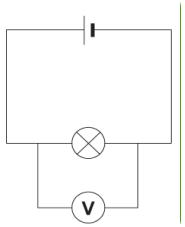




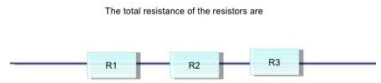
Ammeters connect in series



Voltmeters connect in parallel

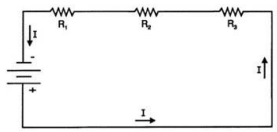


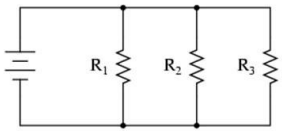
Resistors in series



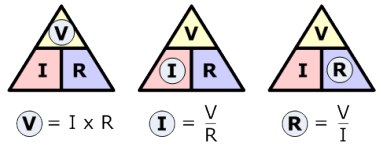
Rt =R1 + R2 +R3

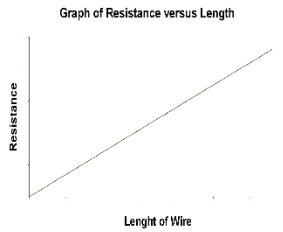
Series vs. Parallel





	Series	Parallel
CURRENT	Same current through all series elements	Current "splits up" through parallel branches
VOLTAGE	Voltages add to total circuit voltage	Same voltage across all parallel branches
RESISTANCE	Adding resistance increases total R	Adding resistance reduces total R





History

Causes of the First World War

Long-term causes:

The 4 MAIN long-term causes of the First World War

Imperialism:
Each of the major powers in Europe were **developing their own empires** and **wanted to take over as many countries as they could** to have the biggest empire possible. This **led to some clashes between powers that wanted to take over the same place**, or **from the people living in the colony who wanted their independence**.

Militarism:

Many countries in Europe were **developing their armed forces and weaponry** at the turn of the 20th century. **Germany and Britain particularly competed over the size of their navies**. Though governments often said they were doing this for defensive reasons, **they often went on the attack.**

Nationalism:
Is **the belief that your country is always right** and is **better than other countries**. This **led to hatred and aggression** towards other countries, while **countries that were part of an empire wanted their independence**.

Alliances:

An **alliance is an agreement between countries to support each other**. Most of the major powers in Europe were in one of two alliances. **When one of them was attacked, they promised to fight on the other countries behalf**.

The road to war in 1914:

June 28th 1914- The **Austrian Arch-Duke Franz Ferdinand was shot in Serbia**, a part of the Austro-Hungarian empire.
July 5th- **Austro-Hungary receive support from Germany** saying that they'll enter the war if Russia gets involved (Russia was an ally of Serbia).
July 23rd- Austro-Hungary demand that the Serbs hand over the assassins.
July 25th- Serbia refuses and France agrees with Russia that they'll enter the war if Russia does.
July 28th- **Austria declares war on Serbia.**
July 30th- Russia prepares it's armed forces for war.
August 1st- **Germany declares war on Russia**, while France gears its armed forces up for war.
August 3rd- **Germany declares war on France**.
August 4th- **Britain joins the war in defense of France**.

The Alliances:

The Triple Alliance
Germany
Austro-Hungary
Italy*

*Italy changed sides in 1915 and joined the Entente.

The Triple Entente
Great Britain (and it's empire)
France
Russia

Key Terms:

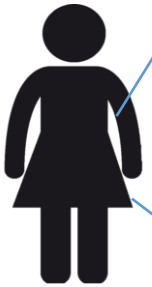
Ally	A country which supports another
Empire	A collection of countries ruled by another country
Colony	A country which is part of another's empire
Assassin	Someone who kills somebody important
Independence	Freedom

History

First World War: Home Front

Women:

250,000 women went to work digging millions of extra acres of land for farming. These women were a part of what became known as **'The Land Army'.**



Many women who worked in factories had young children to care for. In response the munitions **factories provided nurseries** to care for the children while their mothers worked.

Some women turned ye due to the toxic chemicals they used and were nicknamed **"Canary Girls.**

When conscription was introduced in 1916, forcing men to join the army, **women replaced men in the workplace doing many jobs which before were seen as "male" jobs.**

Women who **worked in factories making weapons** were known as "munitionettes"- including at the BSA in Birmingham.

Other groups:

Youth:	Prisoners of War:
Boys: Scouts **guarded railways stations as well as telephone and telegraph lines**. They also assisted with **air raid duties**, including sounding the all-clear signal after an attack. **Girls:** Sent packages to the soldiers on the front line; prepared **hostels and first-aid dressing stations** for use by those injured in air raids or accidents; **grew food**; helped at **hospitals, government offices and factories**.	Captured **enemy soldiers were used in farming and maintaining forests.** As many as 40,000 were put to work in 1917. **Without them, the vital grain and potato harvest which kept the country fed would not have been possible.** Most POWs didn't return to Germany until a year after the end of the war!

Food:

A lot of Britain's food before the war was grown abroad; however, the Germans were aware of this and **began sinking our ships using submarines**. To fix this, any **spare land in Britain was given over to growing food**- even the garden at Buckingham Palace was given over to growing turnips!

As well as this, the **government introduced rationing** to ensure that all people in Britain had enough food to go around and no one would starve.

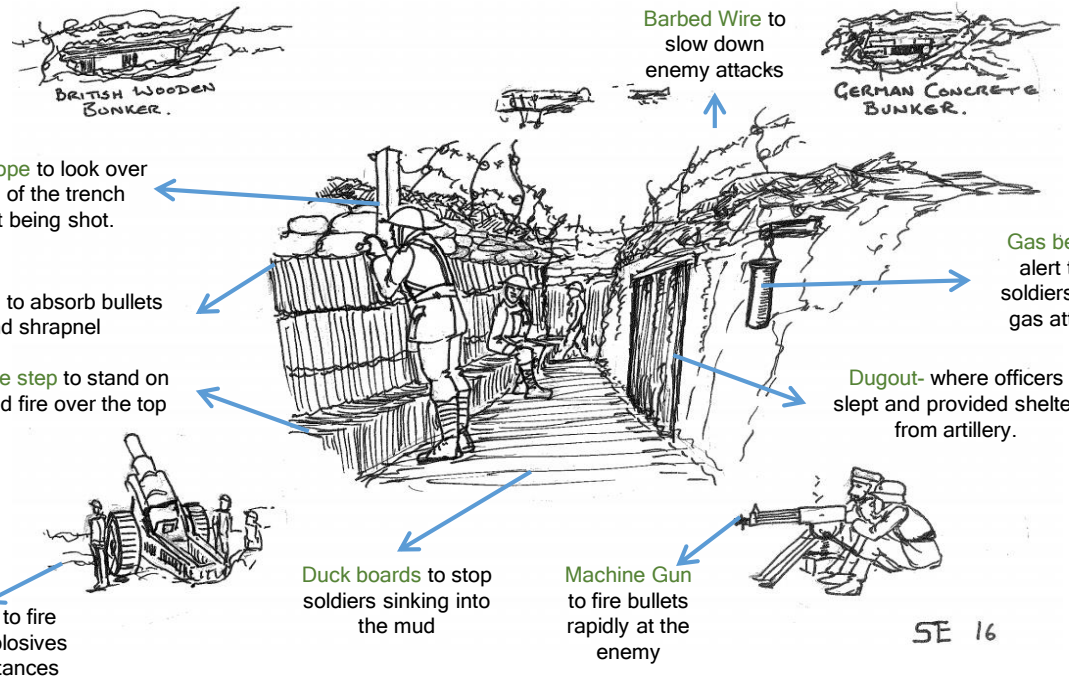
Key Terms:

Harvest	The time of year when the food grown on farms is collected.
Prisoner of War (POW)	Soldiers captured by their enemy during a war.
Conscription	Forcing people to join the armed services.
Munitions	Weapons, ammunition and vehicles.
Rationing	Limiting the amount of food anyone can buy to make sure everyone gets an equal share and no one starves.
Submarines (U-Boats)	Boats under the sea which are used to sneak into position without being seen and sink enemy ships.

History

First World War: The Front Line

Trench Life:



The role of the British Empire in the war effort:

Where did the soldiers in the "British Army" come from?

Britain: 5,000,000
India: 1,440,437
Canada: 628,964
Australia: 412,953
South Africa: 136,070
New Zealand: 128,825
Other colonies: 134,837

Soldiers from all over the empire fought for Britain during the First World War. They **fought in the trenches** of France and Belgium, and **guarded British colonies from enemy attack** too. Perhaps the most well known battle in which empire soldiers took part was **Gallipoli in 1915**. This was a failed invasion of Turkey (on the side of the Germans) **in which 27,000 ANZACs (Australians and New Zealanders) were either killed or wounded.**

The key battles:

Battle of the Marne (September 1914)	British and French forces stopped the German army from taking over France. As a result, the war turned to trench warfare.
Gallipoli (April 1915- January 1916)	A failed invasion of Turkey (an ally of Germany) using Anzac troops who took heavy losses in terrible conditions.
Jutland (31st May- 1st June 1916)	A naval battle in which both sides took heavy losses. However, the Germans never actually let their ships leave port again afterwards which allowed us to blockade Germany until the end of the war.
Battle of Verdun (February-December 1916)	A battle for a heavily fortified French town in which over 400,000 Germans and 500,000 Frenchmen were killed. The heavy French losses meant that the British army had to lead the following attacks.
Battle of the Somme (July- November 1916)	Planned to be a war-winning battle for the British and French. However, only 14 miles were taken in a battle which cost over a million men. Valuable lessons were learnt on the Somme which were used later in the war.
Brusilov Offensive (June-September 1916)	Russia's last attack of the war against Austro-Hungary. It was such a success that the Germans had to move soldiers from France and Belgium to help the Austrians.
Passchendaele (July-November 1917)	British soldiers fought in Belgium to ruin the German's position in the country. However, heavy rain meant that the battle was fought in thick mud. Britain took heavy losses for little gain.
German Spring Offensive (March-July 1918)	Germany's final attack. While they take miles of ground, they suffer heavy losses from which their army never fully recovers.
Battle of Amiens (August 1918)	Britain combined the use of new machines such as aeroplanes and tanks to win the first battle of the 100 "day campaign" which led to the end of the war.

History

America 1919-1933

The 1920s in America are sometimes known as the "Roaring 20s", but it wasn't a positive for everyone.

The Roaring Twenties

Radio and Jazz: Radio became really popular- in 1922 **508 new radio stations were set up.** Even poorer families could afford to rent one, if not buy it outright.
A new type of music was played on the radio called **Jazz which became really popular among young people**. However, the dance moves and the fact that many musicians were African Americans meant that many older people disliked it.

Entertainment

Cinema: this period is known as the Golden Age of Hollywood with stars including **Charlie Chaplin and the Marx Brothers**. **Each week 100 million tickets were sold-** that's roughly the amount sold in a year in Britain today. People were influenced by the behaviour of the film stars and characters, leading to groups such as the **Flappers**.

Sport: there was **greater interest in sport than ever before as people had more money and more time**. The most popular sports were **Baseball (starring Babe Ruth), Basketball, Boxing (starriing Jack Dempsey) and Football.** Even people outside of the towns could take an interest due to **live broadcasts on the radio!**

Flappers were a group of generally middle classed women from the cities who did things that their parents generation would never such as **smoke, drink alcohol, dance to Jazz music, have short hair, ride on the back of motor cycles and wear short dresses!**

The "Roaring 20s" came to an end in 1929 when the stock market collapsed leading to people becoming bankrupt and unemployed. This not only affected America but across the world including Britain and Germany.

The land of opportunity?

Women 	While the Flapper movement did improve the life of some women, the m**ajority of poorer women and those from the countryside were not affected**. They were still in **poorly paid jobs and expected to marry and have children.** While women were given the vote, **hardly any were able to become politicians themselves.**
African Americans 	Even though Slavery had been banned for nearly 60 years, African Americans in the south were **still heavily discriminated against and faced violence from groups such as the Ku Klux Klan.** While African Americans in the North faced less open violence, they still were **badly paid and lived in poor conditions**. Nevertheless, a great artistic movement grew up called the Harlem Renaissance which was partly based around Jazz!
Migrants 	Groups came from all over the world to America during this time in search of a better life. However, most of the time they **lived in terrible conditions and were poorly paid. They also faced violence against them from groups such as the KKK too.** Many migrants were accused of trying to spread communism in America which had just been at the centre of a bloody revolution in Russia. **This became known as the "Red Scare**".

Key Terms:

Communism	A political system where all property is owned by the state and wealth is meant to be divided equally amongst everyone.
Discrimination	Treating people differently due to their race, religion, sexuality, political views etc.
Stock Market	Where shares in businesses were traded- if the value of shares fall this can have wide spread consequences.

Geography

Our developing world: Part 1

Key terms

Life Expectancy- The average age a countries population is expected to live for

GDP- Gross domestic product- The value of goods made by a country each year.

GDP per capita - Gross domestic product- The value of goods made by a country each year divided by the population of that country

Infant Mortality- The number of babies who die before their first birthday/ per 1000

HDI index- A way of measuring development that includes literacy rate, life expectancy and wealth.

Literacy rate- The % of people in a country who can read and write.

Fair Trade-Trade between richer and poorer countries where a fair price is given for goods.

Debt Relief- When a rich country reduces the debt owed by a poorer country

Primary economy- Goods sold by a country that involve taking raw materials out of the ground eg Farming, mining or fishing.

Secondary economy- Goods that are manufactured (produced in a factory) and then sold.

The Geography of Malawi

- Malawi is located in South East Africa, between the Equator and the Tropic of Capricorn.
- It is a landlocked country that has no access to the sea.
- Malawi is approximately half the size of the UK
- Malawi's capital city is Lilongwe.
- Lake Malawi is a large lake the runs to the East of the country

Why is Malawi under-developed?

COLONIALISM: Malawi was controlled by the British until 1965 so was exploited by the British government.

LANDLOCKED COUNTRY: With no access to the sea, Malawi struggles to trade with countries outside of Africa.

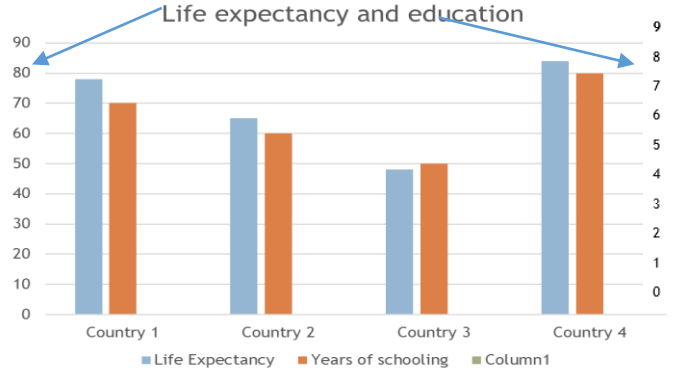
DISEASE: Malawi has over 1 million orphaned children due to AID's which means few get opportunities to make money. There is only one doctor for every 50000 people.

EDUCATION: 30% of children in Malawi do not start primary school which means they gain few qualifications.

NATURAL DISASTERS: Times of little rainfall lead to drought and times of too much rainfall lead to flooding. This affects farming which affects peoples food supply.

Creating a clustered bar chart

1) Choose the correct numbers for each axis by checking the highest life expectancy and highest years of education
2) Blue bars take the left axis, orange bars take the right axis
3) Include a key and leave a space between each set of data



Geography

Our developing world: Part 2

How can we help Malawi develop?

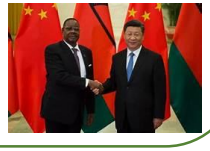
TOURISM-Lake Malawi has opportunities for beach holidays and the national parks could be used for safaris. This will provide jobs in construction and as tour guides, lifting people out of poverty.

AID- Charities and governments can provide tools for work, medicine for disease and loans to start small businesses. This would enable more people to work more effectively.

IMPROVED TECHNOLOGY- Ploughs for farmers and small dams for irrigation would enable higher yields when farming for crops. This means more profit .

FAIR TRADE- If the UK offers a fair price for Malawi's sugar. The extra money could be used to help farmers grow their business and pay workers a fair wage.

INVESTMENT FROM CHINA- China has been allowed to move some of its business into Malawi. In exchange, Chinese companies can provide employment for young Malawians**.**



Does China have a pollution problem?

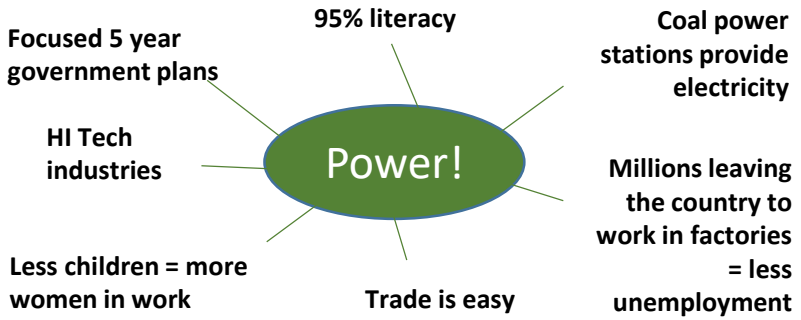
Yes	No
• In 2017 it was estimated China was building a non renewable power station every week • 1.4 Billion people need electricity and energy • China emits more overall CO2 that any other country. • More Chinese own cars than ever before • Rivers are highly polluted by waste and fossil fuels	• Huge turbines on dams produce clean energy for 11% of China. • China now produces more wind power than both the USA and UK combined. • Per person China produces less CO2 than the USA. • In 2015 China invested $100 billion into clean energy, in 2005 it was just $3 billion

Why people migrating within China?

The **West** is **cold** and **mountainous**
The **North** is **dry desert**
People are **moving** to the **South and East because:**

- The climate is warm
- There are plenty of jobs
- There is a coastline
- Better schools and hospitals

Why is China's economy growing so quickly?



Is China really developed?

This is for you to decide but remember, **development isn't just about wealth!**

It also includes
Education
Health
Overall quality of life
Treating members of society equally!

Faith & Ethics

Being Human

Do humans have a soul?

Traditionally, science has dismissed the soul as an object of human belief, we're told we're just the activity of carbon and some proteins; we live for awhile and then we die. Beyond this there is no meaning.

Of course, most spiritual people view the soul with considerably more emphasis.

Christians believe that the soul is God-given and that it is immortal. Christians believe that only humans have souls and this is what makes people unique and special and different to all other life forms.

After death, most Muslims believe that the soul will enter Barzakh, a state of waiting, until the Day of Judgement. God sends to angels to question the waiting soul. Muslims believe the answers to these questions determine how the soul experiences Barzakh.

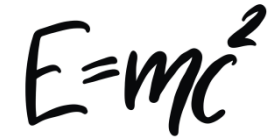
Buddhists believe that there is no permanent self or soul. Instead, they believe that a persons Karma determines how they will be reborn.

How are humans unique?

The philosopher Rene Descartes is famous for the *quotes " I think, therefore I am!"* and *"animals are mere machines but man stands alone".* These quotes give some insight into how humans are different to animals, such as the following criteria:

Complex language

Humans have a lowered larynx (which allows for a wider variety of sounds than all other animals) and more intricate brain structures that allow for an enormous variety of words to be used and understood.



Famous Enstein's formula.
Formula expressing the equivalence of mass and energy.

Higher consciousness

Humans can contemplate things far beyond their own existence. Humans frequently consider the meaning of non-tangible ideas and try to create theories to explain these concepts that we cannot see or touch.

How are humans similar to animals?

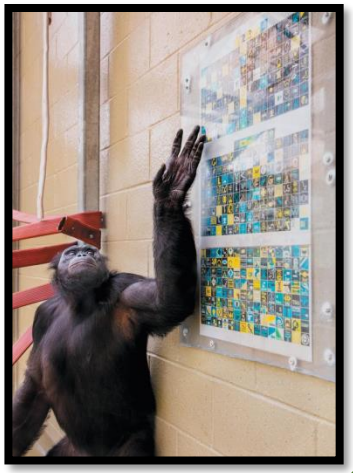
Kanzi has good taste. He likes oranges, cherries and grapes.

He points to what he wants on a lexigram, a computerised touchscreen device on which each symbol represents a word.

Kanzi can use 500 words and when he is talked to, he can understand a few thousand.

He also likes marshmallows. He will strike matches to light a fire, then warm some on a stick.

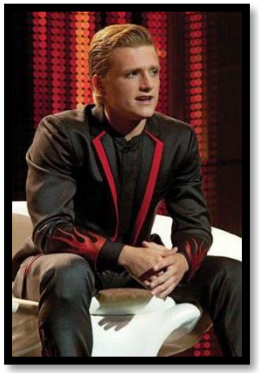
Kanzi is not human. He is a kind of ape called a bonobo, which along with chimpanzees, are our closest living relatives.



Humanity in the Hunger Games

Killing is against human nature.

Katniss, a skilled hunter and the hero of The Hunger Games, is indeed horrified by the prospect of dying–but her worst fears revolve around needing to kill other people. *"You know how to kill,"* says her friend Gale. *"Not people,"* she replies.



People are motivated to help others by empathy, not reason or numbers.

"If you really want to stay alive, you get people to like you," says their mentor, Haymitch. Katniss and Peeta must win people's sympathy, which results in "sponsorships" that help them in their most desperate moments.

Power comes from emotional intelligence, not strength.

Peeta proves particularly able at manipulating others emotions. He rarely lies to anyone, but he does artfully reveal and conceal his emotions to win support.

Friendships are more powerful than independence.

Katniss would very much like to be totally self-reliant. But she simply isn't, and from a certain perspective, The Hunger Games is the story of how she comes to realize the importance of social connection and her interdependence with other people.

Spanish

Unit 1: Media

Model Text		
1.	Normalmente navego por internet y descargo música.	Normally I surf the internet and I download music.
2.	Prefiero la música pop porque pienso que es marchosa	I prefer pop music because I think it has a good beat.
3.	Ayer fui al cine y vi una película de acción. ¡Fue genial!	Yesterday I went to the cinema and I watched an action film. It was great!
4.	Mi programa de televisión favorito se llama Coronation Street. Es una telenovela.	My favourite TV programme is called Coronation street. It is a soap opera.
5.	En mi opinión, Blue Planet es más interesante que X Factor.	In my opinion, Blue Planet is more interesting than X Factor.

Line 1: What do you use your computer for?

Time phrase	Activity
Siempre (always)	**veo videos en Youtube** (I watch videos on Youtube)
A menudo (often)	**hago mis deberes** (I do my homework)
A veces (sometimes)	**juego a los videojuegos** (I play video games)
De vez en cuando (from time to time)	**descargo música** (I download music)
Después de colegio (after school)	**escribo correos electrónicos** (I write emails)
Raramente (rarely)	**leo un blog** (I read a blog)
Nunca (never)	**mando mensajes** (I send messages)
	navego por internet (I surf the inernet)
	chateo con mis amigos (I chat with my friends)

Line 2: What type of music do you prefer?

Opinion	Type of music	Because	What you think of it	Adjective
Me gusta (I like)	**la música clásica** (classical music)	**porque** (because)	**pienso que es** (I think that it is)	**fenomenal** (great)
No me gusta (I dislike)	**la música latina** (latin music)		**creo que es** (I believe that it is)	**fantástica** (fantastic)
Me encanta (I love)	**la música pop** (pop music)			**alegre** (happy)
Odio (I hate)	**la música de los años ochenta** (80s music)			**marchosa** (has a good beat)
Prefiero (I prefer)	**la música bailable** (dance music)			**aburrida** (boring)
	la música rap (rap music)			**lenta** (slow)
	la música rock (rock music)			**rápida** (fast)
	la música jazz (jazz music)			**fatal** (awful)
				relajante (relaxing)

Spanish

Unit 1: Media

Line 3: What film have you seen recently? What was it like?

Time phrase	What you did	Type of film	It was	Adjective
Ayer (yesterday) **El fin de semana** (at the weekend) **Anoche** (last night) **En el verano** (in the summer)	**fui al cine y vi** (I went to the cinema and I saw)	**una película de acción** (an action film) **una película de amor** (a love film) **una película de terror** (a horror film) **una película del Oeste** (a Western film) **una película de ciencia ficción** (a sci-fi film) **una película de artes marciales** (a martial art film) **una película de guerra** (a war film) **una película de comedia** (a comedy film)	**Fue** (it was)	**Emocionante** (exciting) **Divertida** (fun) **Interesante** (interesting) **Genial** (great) **Aterradora** (scary) **Aburrida** (boring) **Mala** (bad) **Tonta** (stupid)

Line 4: What is your favourite TV show?

Mi programa de televisión favorito se llama (My favourite TV show is called)	***add the name of your favourite show*** **e.g.** **Grand Designs** **The X Factor** **Britain's Got Talent** **The Simpsons** **Eastenders** **Futurama** **Friends**	**es** (it is)	**un programa de tele realidad** (a reality tv show) **un programa de deporte** (a sport programme) **un programa de música** (a music programme) **un documental** (a docucmentary) **una telenovela** (a soap opera) **un concurso** (a game show) **una serie de policiaca** (a crime series) **una comedia** (a comedy)

Line 5: Comparing TV programmes

Creo que (I believe that) **Pienso que** (I think that) **Diría que** (I'd say that)	**Grand Designs** **The X Factor** **Britain's Got Talent** **The Simpsons** **Eastenders** **Futurama** **Friends** **I'm a Celebrity**	**es menos** (is less) **es mejor que** (is better than) **es peor que** (is worse than)	**divertida** (fun) **interesante** (interesting) **genial** (great) **aterradora** (scary) **aburrida** (boring) **tonta** (silly)		**e.g.** **Grand Designs** **The X Factor** **Britain's Got Talent** **The Simpsons** **Eastenders** **Futurama** **Friends** **I'm A Celebrity**

Last year, the top 3 most watched TV shows in Spain were:

1. Copa del Rey – Barcelona vs. Valencia (Like the FA Cup)
2. Eurovision
3. Supervivientes (*Survivors* – A Reality TV show about people marooned on an island!)

Spanish

Unit 2: Lets Eat!

Model Text		
1.	Me gusta mucho la carne con arroz, pero odio los huevos.	I really like to eat meat with rice, but I hate eggs.
2.	Desayuno cereales y tostadas. A veces tomo un café.	For breakfast I have cereal and toast. Sometimes I have a coffee.
3.	Ceno pollo con ensalada y bebo agua.	For dinner I eat chicken with salad and I drink water.
4.	De primer plato voy a tomar tortilla española y de segundo plato voy a tomar chuletas de cerdo.	I am hungry. To start, I am going to have Spanish omelette and for my second course I am going to have pork chops.
5.	Voy a hacer una fiesta mexicana. Voy a comprar fajitas y caramelos. ¡Va a ser superguay!	I am going to throw a Mexican party. I am going to buy fajitas and sweets, it is going to be really cool!
6.	El fin de semana pasado fui a una fiesta mexicana. Comí quesadillas y bebí limonada.	Last weekend I went to a Mexican festival. I ate quesadillas and I drank lemonade.

Line 1: What do you like to eat?

Opinion phrase	Food / drink
Me gusta (I like)	**el agua** (water)
Me gusta mucho (I really like)	**la leche** (milk)
Me encanta (I love)	**el arroz** (rice)
Prefiero (I prefer)	**el marisco** (seafood / shellfish)
No me gusta (I dislike)	**el pescado** (fish)
No me gusta nada (I really don't like)	**el chocolate** (chocolate)
Odio (I hate)	**el helado** (ice cream)
	el queso (cheese)
	la carne (meat)
	la fruta (fruit)
	la ensalada (salad)
Me gustan (I like)	**los caramelos** (sweets)
Me gustan mucho (I really like)	**los huevos** (eggs)
Me encantan (I love)	**las verduras** (vegetables)
Prefiero (I prefer)	**las hamburguesas** (burgers)
No me gustan (I dislike)	

Lines 2 and 3: What do you eat at different meal times?

Time phrase	Verb	Food
Normalmente (normally)	**desayuno** (for breakfast I have)	**cereales** (cereal)
A veces (sometimes)	**como** (for lunch I have)	**churros** (churros – like donuts)
De vez en cuando (from time to time)	**ceno** (for dinner I have)	**tostadas** (toast)
Una vez a la semana (once a week)		**yogur** (yoghurt)
Todos los días (everyday)		**huevos** (eggs)
Los fines de semana (at the weekend)		**un bocadillo** (a sandwich)
		espagueti (pasta)
		pollo (chicken)
		patatas fritas (chips)
	bebo (I drink)	**café** (coffee)
		té (tea)
		agua (water)
		chocolate caliente (hot chocolate)
		zumo de naranja (Orange juice)
		cola (coke)

Spanish

Unit 2: Lets Eat!

Line 4: Ordering food in a restaurant

¿Qué va a tomar? (What are you going to have? – one person) **¿Qué van a tomar?** (What are you going to have? – more than one person) **¿Para beber?** (And to drink?) **¿Algo más?** (Anything else?)		
De primer plato (as a starter) **De Segundo plato** (for main course) **De postre** (for dessert)	**voy a tomar** (I am going to have)	**ensalada mixta** (mixed salad) **sopa** (soup) **pan** (bread) **chuletas de cerdo** (pork chops) **albondigas** (meatballs) **gambas** (prawns) **calamares** (squid rings) **tortilla española** (Spanish omelette) **filete** (steak) **pollo con pimientos** (chicken with peppers) **helado de fresa** (strawberry ice cream) **tarta de queso** (cheese cake) **flan** (crème caramel)
Para beber (to drink)	**voy a tomar** (I am going to have)	**cola** (coke) **agua** (water) **limonada** (lemonade) **zumo de piña** (pineapple juice)

Line 5: Planning a party

Voy a hacer una fiesta mexicana (I am going to throw a party)	
Voy a comprar (I am going to buy)	**caramelos** (sweets) **chocolate** (chocolate) **una botella de limonada** (a bottle of lemonade) **una botella de Coca** (a bottle of coke) **una piñata** (a paper container filled with sweets) **globos** (balloons) **adornos** (decorations)
Voy a hacer (I am going to make)	**quesadillas** (toasted cheese tortillas) **nachos** (tortilla crisps) **fajitas** (tortillas filled with chicken and peppers) **tacos** (small tortillas) **pastelitos** (cupcakes)
Va a ser	**superguay** (really cool) **superdivertida** (really fun) **emocionante** (exciting)

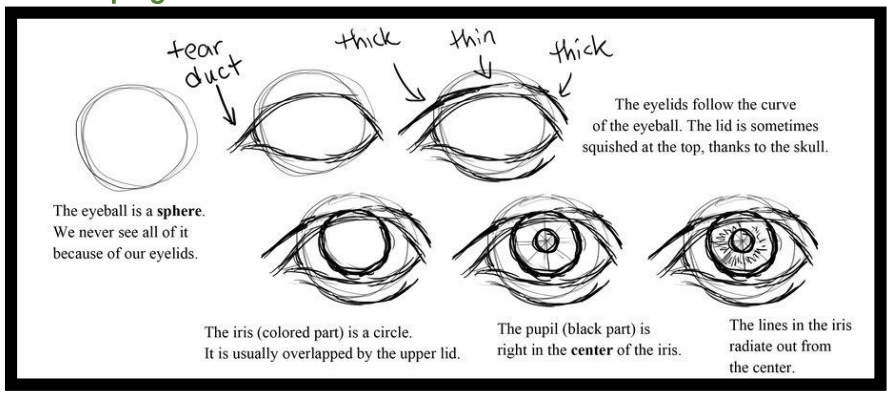
Line 5: Describing the party

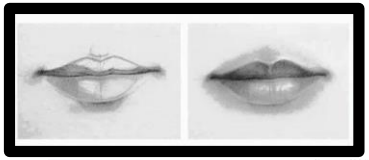
Time phrase		What you did	Opinion
El fin de semana pasado (last weekend) **La semana pasada** (last week) **El mes pasado** (last month)	**Fui a una fiesta** (I went to a party)	**comí palomitas** (I ate popcorn) **bebí limonada** (I drank lemonade) **vi a mis amigos** (I saw my friends) **bailé** (I danced) **canté karaoke** (I sang karaoke) **jugué tenis de mesa** (I played table tenis) **escuché música** (I listened to music) **hablé con mucha gente** (I talked to lots of people)	**Me gustó la fiesta** (I liked the party) **Me encantó la fiesta** (I loved the party) **Lo pasé bomba** (I had a great time) **Lo pasé mal** (I had a bad time)

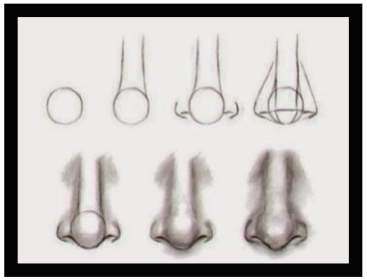
Art

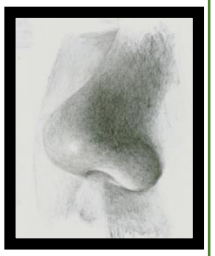
Portraiture

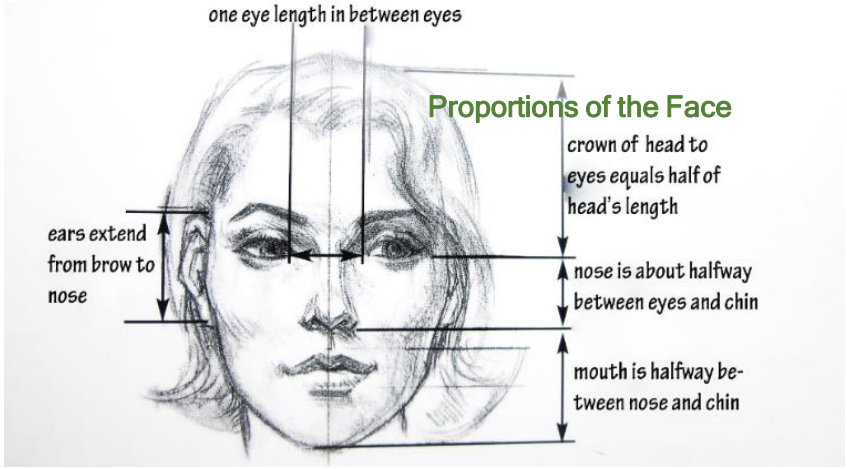
Developing Skills











https://www.youtube.com/watch?v=WROSZ6803cE

Keywords

Self Portrait - a portrait of yourself created by yourself

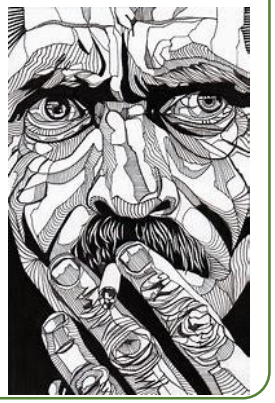
Contour drawing- a **drawing** that is essentially an outline; the French word **contour** meaning, "outline."

Tonal Value - is the light or dark of a subject independent of its colour.

Proportion - refers to the relationship in size and placement between one object and another.

Artist in Focus

Luke Dixon is a graphic **artist**, illustrator and print maker from the north of England. he is the founder of The Bear Hug Company.



Independent Study Task One: Time Line Portrait

Using the Art History Time Line below, choose a portrait from any period of Art you wish.

On A4 paper, copy the portrait in any media you wish.

Independent Study Task Two: Practicing Skills – Self Portrait

Take a photograph of your own face front on.

Using the You Tube clip to guide you, draw our the proportions of your face

Sketch out lightly and then spend at least 20 minutes on each feature

Add a wide range of tones so that your portrait becomes less flat (2D) and looks more realistic (3D)

Music

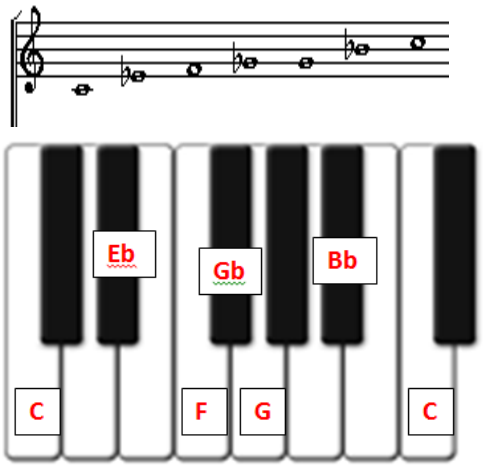
Blues and Jazz

12 Bar Blues Chords in C

C	C	C	C
F	F	C	C
G	F	C	C

C = CEG
F = FAC
G = GBD

Blues Scale in C



Key Features

Blues:

- Slow tempo
- Sad Lyrics
- Repetitive melodies and words.
- Instruments such as brass , piano and vocals were popular in traditional blues music.

Jazz:

- Swing rhythm patterns used.
- Improvised melody line.
- Melody played by instruments such as vocals, trumpet, clarinet, flute.
- Drum kit, piano and double bass keep the ensemble in time and are part of the rhythm section.

Keywords

Improvisation	Spontaneous performance without specific or scripted preparation.
Swing rhythm	Alternately lengthening and shortening the pulse-divisions in a rhythm.
Chords	A group of (typically three or more) notes sounded together, as a basis of harmony.
Walking Bass Line	A **walking bass line** simply walks through the appropriate scale of each chord, one note per beat.

History and Background

- In the 18th and 19th Centuries Africans were taken from Africa and brought to North America to work as slaves for white landlords.
- Blues Music usually has sad words about the way people have been treated.
- Blues music started in America by African slaves working under harsh conditions.
- Blues music originated from the slaves working in the cotton fields.

Key Musicians

Bessie Smith (1894 - 1937) was an American blues singer. Nicknamed the **Empress of the Blues**, she was the most popular female blues singer of the 1920s and 1930s.

BB King (1925 - 2015) was an American blues singer, electric guitarist, songwriter, and record producer. King introduced a sophisticated style of soloing based on fluid string bending and shimmering vibrato that influenced many later electric blues guitarists

Muddy Waters (1913 - 1983) was an American blues singer-songwriter and musician who is often cited as the "father of modern Chicago blues", and an important figure on the post-war blues scene.

Drama

Creating a Character

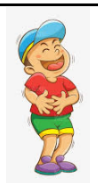
Vocal Skills

Accent	How you pronounce words to sound like you are from a particular country.
Pace	How fast or slow you talk.
Pause	A beat in between a word for dramatic effect.
Pitch	How high or low you talk.
Stress	Putting emphasis on certain words.
Tone	How you say a word to show a particular emotion.
Volume	How loud or quiet you talk.

Physical Skills

Body Language	How you use your body to show a particular emotion.
Eye Contact	Where you look to involve your audience or other characters.
Facial Expressions	How you use your face to show a particular emotion.
Gait	How you walk as a specific character.
Hand Gestures	How you use your hands to show a particular emotion.
Posture	How you position your back and shoulders to show a specific character/emotion.
Stance	How you stand as a specific character.

Performance Tips

	Face the audience all the time. No one wants to see the back of your head!
	Stay in role! Try not to laugh or come out of character.
	Project!
	Know what you're doing! Practice means confidence.

Characterisation Skills

Frowning and mouth upturned.

Loud volume.

High pitch.

Angry tone.

Intense eye contact.

Straight posture.

Arms crossed.

Wide stance.

Lots of stress.

How might we know this character is angry?

Why is Important to Create Successful Characters?

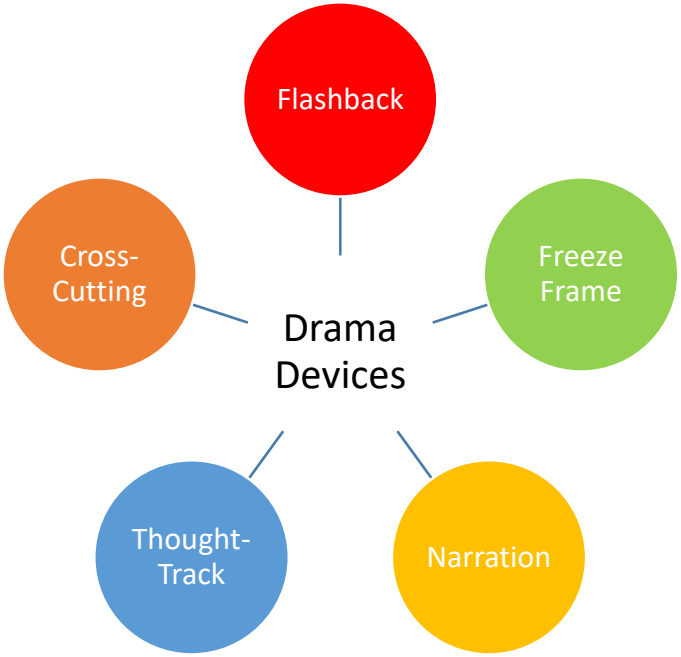
In Drama, we have to make our audiences believe us. Therefore, we must work hard at creating a character completely different from ourselves.

For example, Alan Rickman who played Severus Snape in Harry Potter was a lovely person. However, he used his skills to show us how horrible his character was.

Drama

Creating a Scene

How can we make a scene look interesting?



Performance Tips

	Face the audience all the time. No one wants to see the back of your head!
	Stay in role! Try not to laugh or come out of character.
	Project!
	Know what you're doing! Practice means confidence.

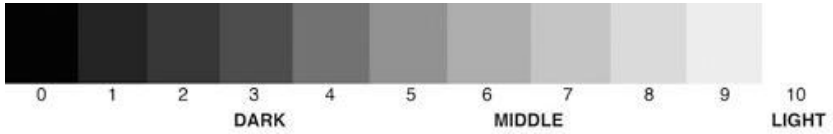
Dramatic Devices

Cross-Cutting	Where you have two scenes happening at the same time that link.
Flashback	Creating a scene that goes back in time to get a better understanding of what is happening.
Freeze Frame	A frozen image showing a key moment.
Narration	Telling the audience a story.
Thought-Track	Telling the audience exactly what your character is thinking and feeling.

Why should we add devices to our scenes?

Adding devices to our scenes makes them more interesting. They can also give our audiences more information on what is happening.

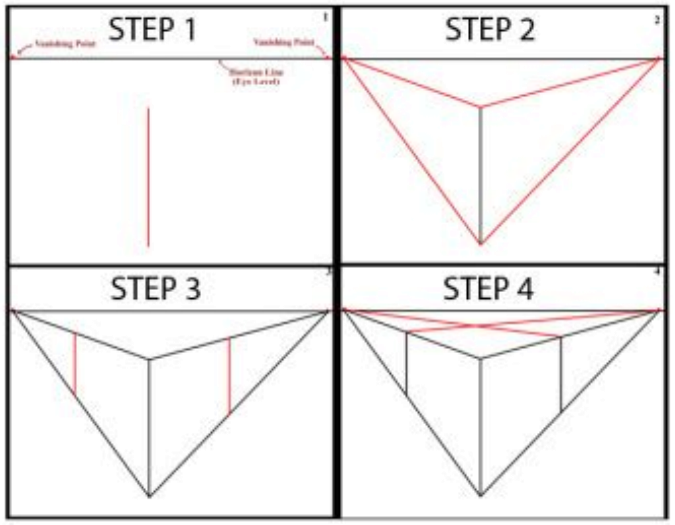
Graphics



Year 8

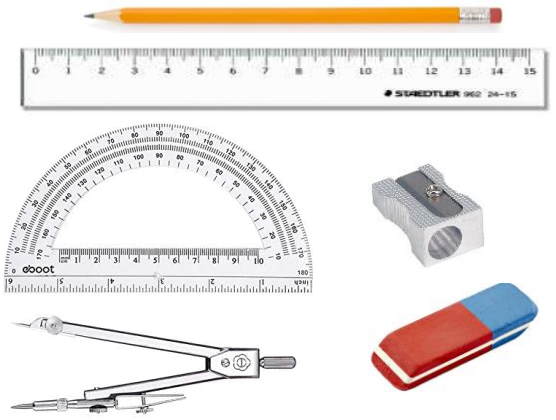
Graphics Techniques

2 Point Perspective



Useful tools for InkScape

Key Equipment



Keywords

Perspective	**Perspective** is what gives a three-dimensional feeling to a flat image such as a **drawing** or a painting
Illustration	An **illustration** is a decoration, interpretation or visual explanation of a text, concept or process.
Tone	Tone refers to how light or dark a colour or shade is.
Construction Lines	Lines which are lightly added to a drawing to help guide you to create the correct angles.
Typography	The style and appearance of writing.

Careers: Architecture

Architects create designs for new construction projects, alterations and redevelopments. They use their specialist construction knowledge and high-level drawing skills to design buildings that are functional, safe, sustainable and aesthetically pleasing.

The average **salary** for **Architect** jobs is £77,500.

Frank Miller

As a Graphic Designer, Miller began his career creating illustrations for comics. Marvel has worked for Marvel and DC. He has a distinct style creating powerful images using silhouettes. His art stands out against other graphic designers.
Miller's distinct style, world-building, and elevation of the anti-hero have awarded him every major comic book industry award and a global following.

Food & Nutrition

The nutrients & healthy eating

The eight healthy eating guidelines

1. Base your meals on starch carbohydrates
2. Eat lots of fruit and vegetables
3. Eat more fish
4. Cut down on saturated fats
5. East less salt
6. Drink plenty of water
7. Do not skip breakfast
8. Get active and try to maintain a healthy weight

Food in the news

Poor diet quality was directly responsible for 11 million deaths world wide in 2017

In April 2019 a report was published that stated 'more people world wide are dying due to poor diet, than smoking and high blood pressure.' I t went on the say that ' we spend too much time looking at what we shouldn't eat, when we should be focused on what we should eat.'

Measurements

G = grams

kg = kilograms - 1kg = 1000g

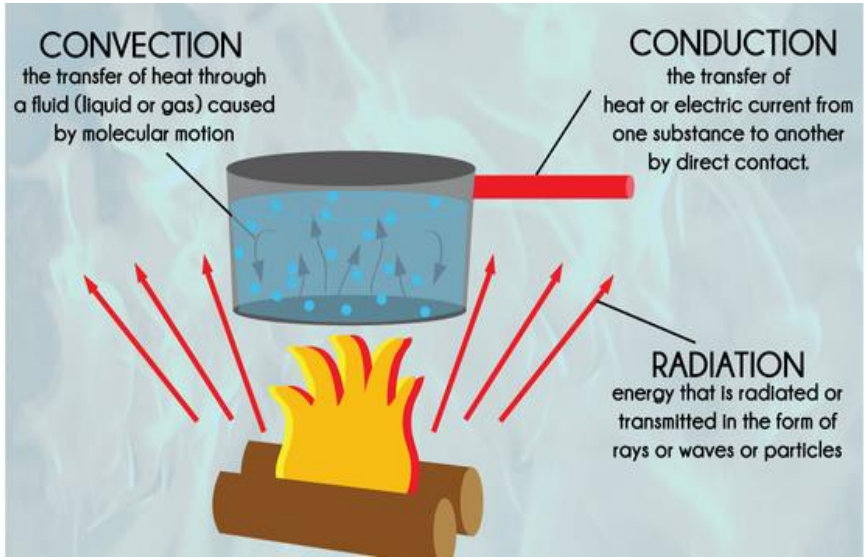
ml = millilitre

L= litre - 1 litre = 1000ml

Tsp = teaspoon = 1 tsp = 5g

Tbsp = tablespoon = 1 tbsp = 15g

Methods of Heat Transfer



Key Words

Macronutrient	Nutrients required by the body in larger amounts. Carbohydrates, protein & fats
Micronutrient	Nutrients required by the body in smaller amounts. Vitamins & minerals
Viscosity	The thickness of a liquid
Gelatinisation	The thickening of a liquid due to the swelling of starch grains when heat is applied
Maillard reaction	A chemical reaction between a protein and a carbohydrate in the presence of dry heat

Textiles

Pencil Case Project

Textile Techniques

Applique

Pieces of fabric sewn on to a larger piece to form a picture or pattern.

Seams

A line where two pieces of fabric are sewn together on a product.

Tie-dye

Produce patterns in on fabric by tying parts of it to shield it from the dye.

Stiches

Running Stitch

Back stitch

Blanket stitch

Key Equipment

Fabric Scissors are sharper than paper scissors in order to cut fabrics. You must not use them for paper as it makes them blunt.

The sewing machine is used to sew materials together to make garments and interior products.

You can also use it to add decoration to fabric.

Sewing Machine Keywords

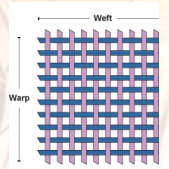
Bobbin	A small cylinder wound with thread that is placed in the bottom of the sewing machine in order to make stitches.
Presser Foot	This keeps the fabric in place when sewing. The presser foot **must always** be put down on the fabric before sewing.
Hand Wheel	This is located at the side of the machine and moves the needle up and down.
Stitch length	The dial that controls the stitch length will make your stitches longer or shorter depending on what you are sewing.
Stitch width	The dial that controls the stitch width will make your stitches go from straight to wide meaning that you can product zig-zag stitches.

Fibres and Fabrics

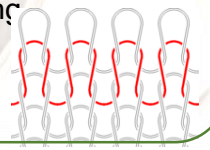
Natural Fibres – sourced from plants and animals

Synthetic fibres – fibres that are man-made

Woven Fabric – warp and weft interlacing threads



Knitted Fabric – warp and weft interlocking loops



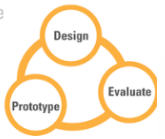
Designers

Prinkie Roberts is a stitch textile artist who is inspired by the world around her. She uses complementary colours and creates abstract scenes.

Gareth Pugh is a fashion designer his known for fashion-as-performance-art work. He uses mostly black and white geometric shapes.

Jenny Rolfe is a quilt artist who uses nature as her source of inspiration. She makes her own fabrics for her work.

Product Design



Innovative
Sustainable
Functional

Year 8

What is Product Design and why is it important?

The role of **design** is to create a marketable **product** from an innovation. Design is often the deciding factor in the success of a product. Many customers make purchasing decisions based primarily on product design, because good product design ensures **quality**, **appearance**, **performance**, **ease of use**, and **reliability**.

Inclusive and exclusive designs

Inclusive design is about Ensuring that products and Systems can be used by Everyone, or as many People as possible.

Exclusive design is when Products are designed for a particular group of people.

Identifying the equipment


Sliding bevel


Digital Vernier callipers

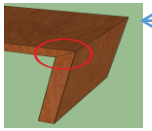

Tenon saw


Mitre saw

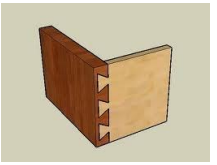

Coping saw

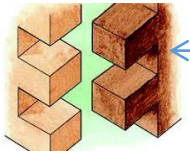
Precision	Being exact and accurate when marking and cutting out.
Tolerance	An allowable amount of variation of a specified quantity, especially in the dimensions of a machine or part e.g. +/- 0.25mm.
Aesthetics	The look and/or feel of a product and how this is incorporated into the design.
Ergonomics	Human factors and ergonomics is the application of psychological and physiological principles to the design of products, processes, and systems
Stakeholders	A person with an interest or concern in something, especially a business.

Shaping and joining

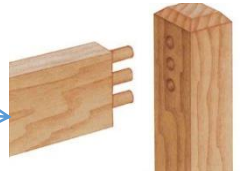

Mitre joint

Dovetail joint




Box joint/comb joint

Dowel joint



Famous Designers

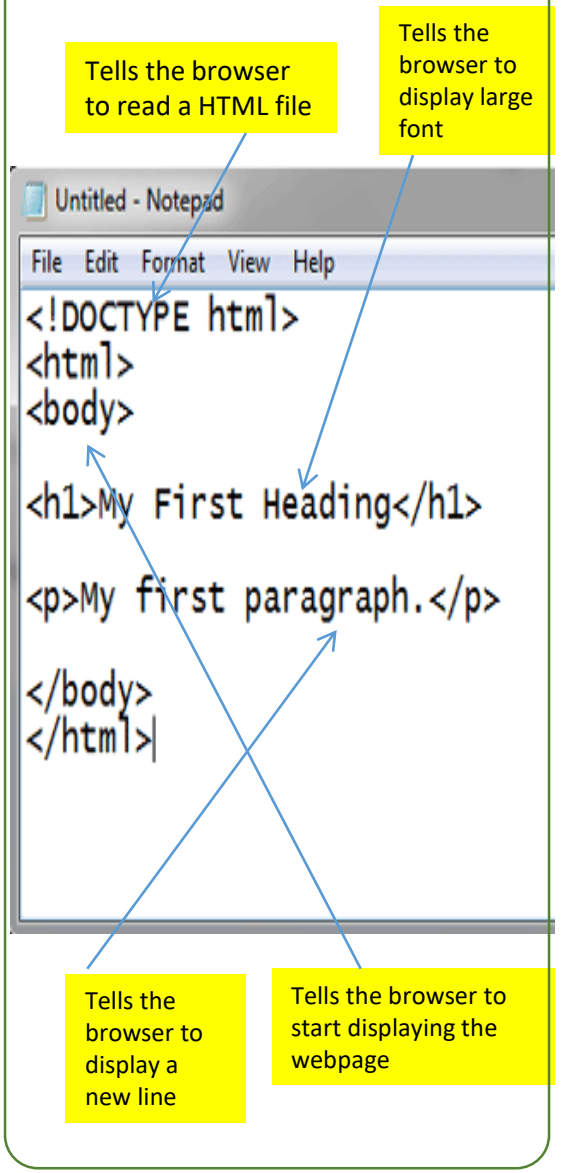
-Marc Andrew Newson CBE is an **industrial designer.**
-His style uses smooth **geometric lines**, **translucency**, strength, transparency, and tends to have an absence of sharp edges.
-Marc Newson has been described as the most **influential** designer of his generation.
- Mark Newson's current stakeholders include Nike (trainers), Jaegar (clocks), Mont Blanc (pens), Louis Vuitton (kitchen ware) and Ferrari (automotive), Pentax (camera).

Computing

HTML

Key Words

HTML 	Hypertext Markup Language, a standardized system for tagging text files to achieve font, colour, graphic, and hyperlink effects on Web pages.
WWW 	World Wide Web.
tags 	An instruction appended to a piece of text in a markup language in order to specify how it is displayed or interpreted.
Hyperlinks 	A link from a hypertext document to another location, activated by clicking on a highlighted word or image.
Internet 	The global system of interconnected computer networks
Source code 	A text listing of commands to be compiled or assembled into an executable computer program
URL 	*Universal resource locator* . The address of a World Wide Web page.
http 	Hypertext Transport (or Transfer) Protocol, the data transfer protocol used on the World Wide Web



Computing

New Technologies

Key Words

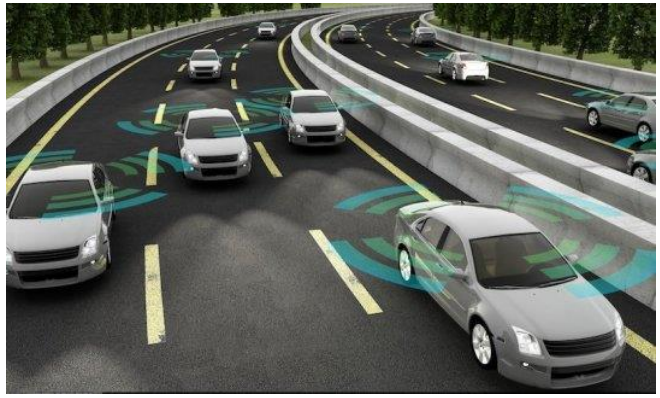
Virtual reality:	the computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.
Artificial intelligence:	the theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.
3D:	three-dimensional
Micro service	Is an approach to application development in which a large application is built as a suite of modular components or services.

Key Words

Quantum computer	A computer which makes use of the quantum states of subatomic particles to store information.
Zettabyte:	a unit of information equal to one thousand million million (10^{15}) or, strictly, 2^{50} bytes.
Robotic Process Automation:	The use of software to automate business processes. It automates repetitive tasks that people used to do

Hondas Asimo, the most advanced robot in the western world

Driverless cars will all communicate via 5G



What laws will be required when flying cars are a reality?

P.E.

Badminton and Football

Badminton

Core Skills
Service – high, low & flick (forehand or backhand).
Overhead – clear & drop (forehand and backhand).
Underarm – clear, drive & drop (forehand and backhand).
Net play
Smash

Tactics (Tactics, Strategies & Compositional Ideas):
- A: AWAY keep the shuttle away from your opponent.
- B: Play on their weakness usually their BACKHAND.
- C: Keep the shuttle in the COURT but play to the COURT boundaries.
- D: Hit DOWN so your opponent has to hit up

Select shots that are appropriate for defending and attacking.
Select simple shot combinations which move your opponent out of position.

Rules:
- There are three basic things to remember for scoring singles badminton:
- After each rally a point is scored.
- You keep serving until you lose a rally, the serve will then go over to your opponent.
- You serve from the Left if your score is Odd. You serve from the Right if your score is Even. This is the 'LORE of the SCORE'.

Football

Core Skills
Passing/receiving – either foot.
Dribbling/moving with the ball – either foot.
Shooting
Heading.
Tackling, jockeying, closing down and marking.

Tactics (Tactics, Strategies & Compositional Ideas):
Attacking and Defending principles:

Attacking:
- Pace
- Depth
- Width.
- Make the pitch as big as possible
- Support: Angle and Distance.

Defending:
- Deny the opposition time and space.
- Make the pitch as small as possible.
- Use of the offside .
- Support: Angle and Distance

P.E.

Athletics and Dance

Athletics

Core skills

Track:

- Starts/finishes.
- Arm action – effectiveness and consistency.
- Leg action to create appropriate pace – consistency and/or change of pace.

Tactics and strategies:

Use pace judgement to run at a sustained pace for specified periods of time

Analysis of performance:

Compare performances to previous ones, personal bests and Athletics Awards (ESAA Secondary Awards Scheme).

Dance

Core Skills

Action:

Creating a motif

1. Travel, locomotion, stepping and pathways.
2. Balance (static and/or dynamic).
3. Rotation, turning and weight transference.
4. Jumps and elevations.
5. Gestures

Dynamics:

Performing an action and/or motif

fast or slow

smooth or sharp

heavy or light

Space & relationships:

Direction

Levels

Formation

Canon

Unison

Performance

Perform a full routine in a competition/performance.

This can be in a solo performance, a duet performance or a group performance and should last approximately two minutes.

Perform within the recognised dance style.

Yr8 Term 1 Challenges

These are **optional** additional homework tasks you can complete to earn credits for your Children's University Passport

children's UNIVERSITY

English

Create a front cover and back cover for your own Gothic Novel.

The front cover must have the title and imagine that gives the reader good idea about the book is about. The back cover must have a short introduction to your novel to get the potential reader hooked!

Show your book cover to your English teacher

1hr of CU Credits

History

Choose one of the key battles from World War 1. Research this battle and produce an A4 report on what happened and it's impact on the First World War

Show your report to your history teacher

1hr of CU Credits

Drama

Create an A4 page character study of a chapter from your favourite film of TV show.

You must include; what their role is in the film/show, what their personality is like and how the actor manages to get this across to the audience

Show it to you drama teacher

1hr of CU Credits

Music

Go onto YouTube and watch a performance by Bessie Smith, BB King and Muddy Waters.

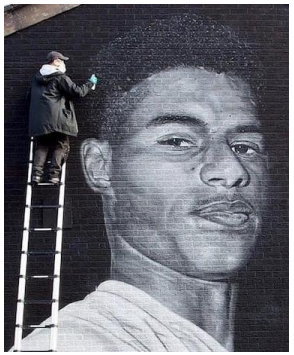
Write a review of each song explaining what it was about, what instruments were used and what you thought of it. Say which of the three song you liked the most and why

Show your work to your music teacher

1hr of CU Credits

Art

Choose your favourite film, tv or sports star. Use the rules you have learnt about portraiture to draw a portrait of this person.



Show it to your art teacher

1hr of CU Credits

Spanish

With a partner write a short sketch set in a restaurant where one person plays the waiter and the other plays a customer ordering food, all in Spanish.

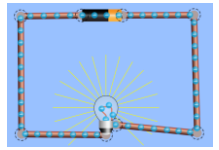
Film your sketch with props and costumes and show it to your Spanish teacher along with the script written in Spanish.

1hr of CU Credits each

Science

Use the following website to create your own circuits.
https://phet.colorado.edu/sims/html/circuit-construction-kit-ac/latest/circuit-construction-kit-ac_en.html

(click on AC construction)



Once you have practiced creating one series and one parallel circuit design a circuit which has two lights, each of which can be switched on and off independently of each other.

Take a picture of your circuit and explain how it works. Show your work to your science teacher

1hr of CU Credits

Food and Nutrition

Go onto the McDonalds website https://www.mcdonalds.com/gb/en-gb/menu.html

Draw out this table and find the nutritional information to compete it

Item	Energy (Kcal)	Fat (g)	Sugar (g)	Salt (g)
Big Mac				
Large fries				
Cheesy Garlic bites				
Coca Cola classic				
Mars McFlurry				
Total				

When you have finished use the website to suggest healthier alternatives and explain why these are better for you

Show your technology teacher your work

1hr of CU Credits