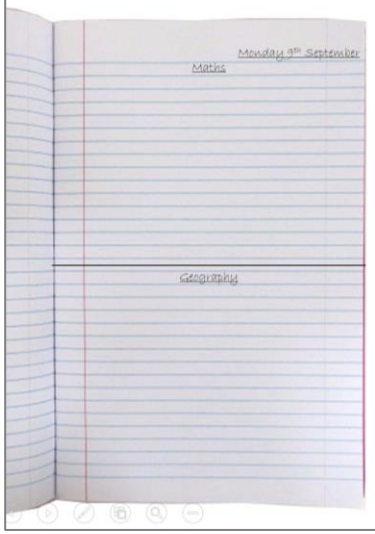
Knowledge Organisers
Year 8 – Term 1

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

- Each night you should spend 20 minute learning the information from the knowledge organisers for 2 subjects as set out in your planner
- You should also read you book each night
- 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
- Your parent/carer must sign your planner each week to confirm that you have been completing your homework
- You may be given option homework to complete but this is not compulsory (but worth lots of achievement points!)
- You can find videos of ways to learn the information at the YouTube Channel 'Woodrush Online'

NAME: _____ FORM: _____

English

History of English Language and Literature

Key Terms

Dialogue	The **speech** of a character. In prose, this is indicated by using speech marks. In a play, this will be shown alongside the name of the character who is speaking.	**Sonnet**	A **form** of poetry which is usually about romantic love, and follows a strict set of rules. They usually contain 14 lines, each line has 10 syllables, and there is a strict rhyme scheme. Shakespeare wrote many sonnets.
Genre	A particular type or style of literature. For example, Shakespeare's plays can be categorised as belonging to the comedy, tragedy or history genre. Other genres in literature may include drama, horror, or thriller.	**Status**	Someone's status relates to the rank or position they hold in society or in a specific situation. People with high status may be seen as more important and have more power and authority.
Imperatives	These are verbs which give an order or a command. For example **Give me that pen.** **Add flour to the cake mixture.**	**Themes**	Themes are the main ideas and issues that are present in a poem, play or story. For example, a story might have the themes of love, friendship, and power.
Intention	A writer's **intention** is the purpose of writing something. For example, they may wish to make the reader or audience feel a certain way.	**Typical**	If something is **typical**, this means that it follows the rules and conventions of its genre and its content is what is expected.
Society	A society is a group of people who follow the same rules and laws and who may share similar beliefs and ways of behaving. **Society changes over time.**	**Atypical**	If something is **atypical**, this means that it does not follow the expected rules and conventions of its genre or that some elements of the story may not be what is expected.

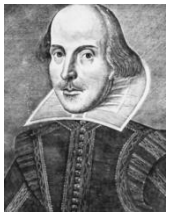
A Timeline of the English Language

Romans invade and conquer Celtic tribes in Briton

Britain is invaded by Germanic tribes - the Angles, the Saxons, and the Jutes. This mix of languages leads to **Anglo-Saxon** or Old English

The Normans invade England led by William the conqueror. Many French influences were introduced to the English language.

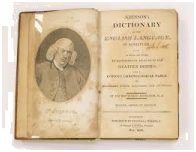
In 1476 William Caxton sets up the first English printing press in Westminster



William Shakespeare is born in 1564

Jane Austen is born in 1775

In 1755, the first popular dictionary is published by Samuel Johnson



Many people became concerned that English should be spoken 'correctly' and many books are published on this topic.

In 1828 the 1st American dictionary is published by Webster's

Pre English | 449 | **Old English** | 1066 | **Middle English** | 1400 | **Early Modern English** | Approx. 1750 | **Modern English**

English

History of English Language and Literature

Shakespeare's Vocabulary

Art – are
Ay - yes
Aught – anything
Dost – do
Doth – does
'ere – before
Hast - have
Hence – from now on
Hie – hurry
Nay – no
Oft – often
Thee – you
Thou – you (informal)
Thy/Thine – your (possessive singular)
'Tis – it is
'Twas – it was
Wast – were
Whence – from where?
Wherefore – why
Would he were – I wish he were
Ye – you (plural)
Yon/yonder – that one over there

Analytical phrases you can use instead of 'this shows':

This illustrates that ...
This presents the idea that...
This therefore demonstrates...
This implies...
This reinforces the idea that...
This therefore emphasises...
As a result, this highlights...
This word connotes...
This is effective because...

Poetry Terms

Figurative language techniques

Simile
A descriptive device where something is described by comparing it to something else using 'like' or 'as.'
Her hair stood out from her head like a crest of serpents.

Metaphor
A **metaphor** describes an object or action in a way that isn't true, but helps explain an idea or make a comparison.
My mind is full of scorpions.

Personification
A kind of metaphor where a non-human object is given human **attributes or qualities**
The wind was a howling wolf.

Form and Structure

Form
This refers to the specific type of poem and its typical features. For example a sonnet is a form of poetry.

Stanza
A verse of a poem. It is useful to see where a poet has started a new stanza and why.

Rhythm
This refers to the 'beat' of the poem. For examples, a poem about a chaotic topic might have a more unsteady rhythm when read.

Sentence Functions

Declarative	This is a statement. A declarative presents an idea as a fact.	Shakespeare is the greatest writer the world has ever known
? Interrogative	A question. Can show uncertainty.	Have you ever read Macbeth?
! Exclamation	A sentence which is marked by an exclamation mark as it indicated an emotion such as anger, excitement, or surprise.	I can't believe we won!
Imperative	An order or command. These may create an aggressive tone, or can be used to give instructions.	Open your books to page 37.

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

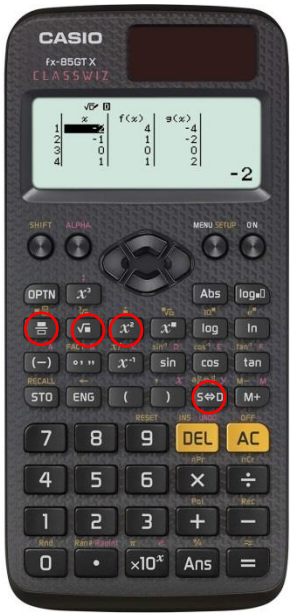
32 cm, measured to the nearest cm:

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 = $32 - 0.5 = 31.5\ cm$



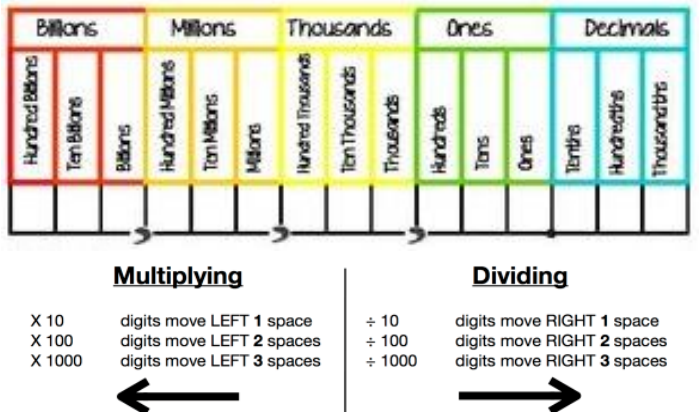
Key buttons on your calculator

—: 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.

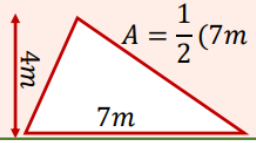
You will need to know how to convert between metric units. It is important to learn how many grams are in a kilo gram or how many centimetres are in a metre to help you scale up or down depending on the appropriate size of an object. You might want to know if you have enough ingredients to make a cake 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 $\triangle = \frac{1}{2}(b \times h)$

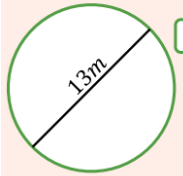


$A = \frac{1}{2}(7m \times 4m) = \frac{1}{2}(28m^2)$

$14m^2$

Area of circle

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



Diameter is double the radius

$A = \pi \times 6.5^2$

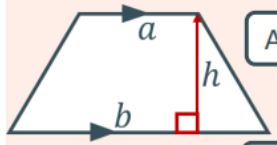
$A = \pi \times 42.25$

$A = 132.73m^2$

Area of a trapezium

A more complex formula to know

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



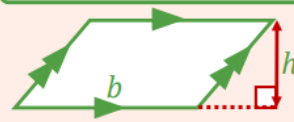
Add the parallel sides

Halve it

Multiply by height

Area of parallelogram

Imagine a tilted rectangle



$\square = b \times h$

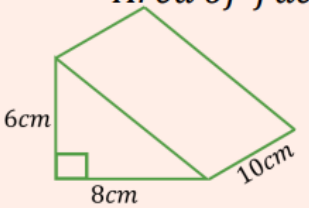
Be sure to use **perpendicular heights**

Volume of prism

The same cross sectional area throughout

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

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



$24cm^2$

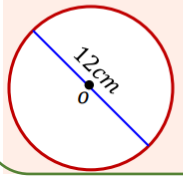
$24cm^2 \times 10cm = 240cm^3$

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

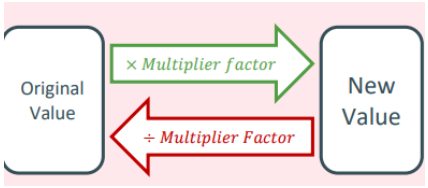
$\frac{1}{7}$ → $7\overline{)1.0^{1}0^{3}0^{2}0^{6}0}$ (0.1428) → 0.143

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.

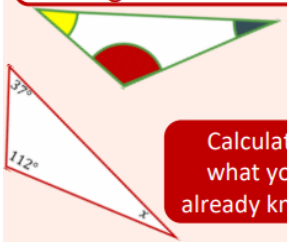
To calculate: work out the interest for the first period, add it to the total, and then calculate the interest for the next period, and so on, like this:

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°



Calculate what you already know.

$$\begin{array}{r} 112° \\ +\ 37° \\ \hline 149° \end{array}$$

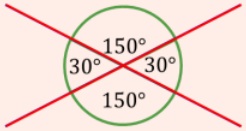
Subtract from 180°

$$180° - 149°$$

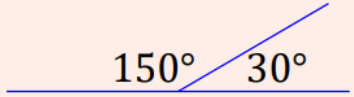
$$x = 31°$$

Angle facts

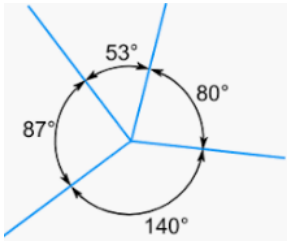
Where two straight lines cross, opposite angles are equal



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

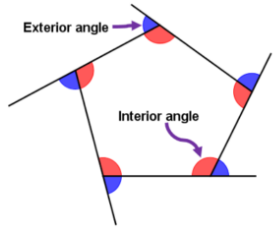


All angles around a point will add up to make 360°



Angles in polygons

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

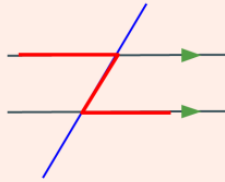


Angle properties

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

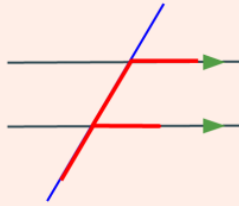
Angles in parallel lines

Alternate



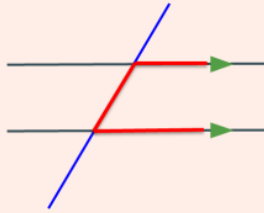
Alternate angles are the same

Corresponding



Corresponding angles are the same

Co-Interior



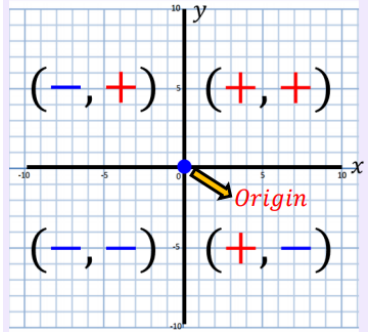
Co-interior angles make 180°

MATHS

Algebra - graphs

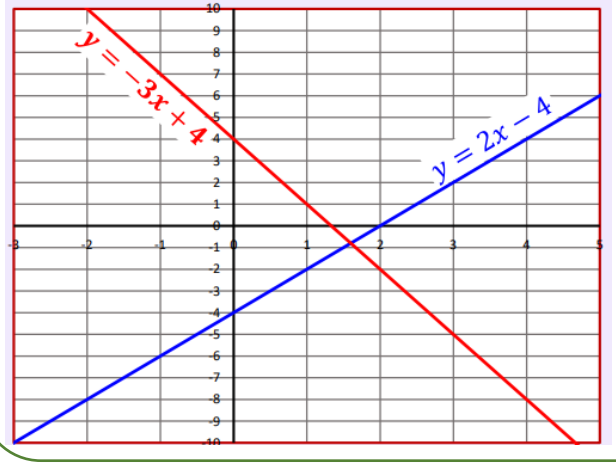
Plotting in four quadrants

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 $\frac{\text{Rise up}}{\text{Run along}}$



$$y = mx + c$$

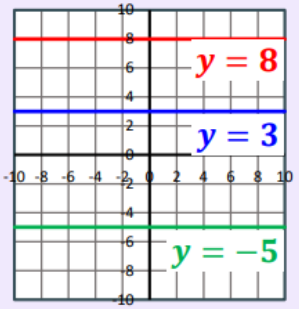
m: Gradient; c: y intercept

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.

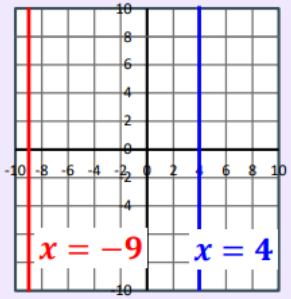
Horizontal and vertical lines

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

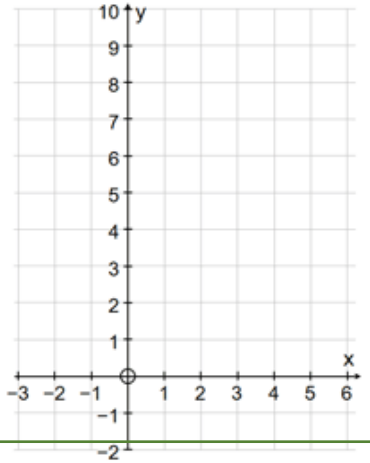
If asked to plot a straight line graph you need to put the value in for x and then find the y co-ordinate before you plot it. E.g. y=2x+ 3 first value of x is -3 so it is 2x-3+3=-3, then repeat with each number in the table.

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

B2 Respiration and Photosynthesis

Photosynthesis

Photosynthesis a chemical reaction that plants use to make food (glucose)

Photosynthesis takes place in the **chloroplasts** of plant cells.

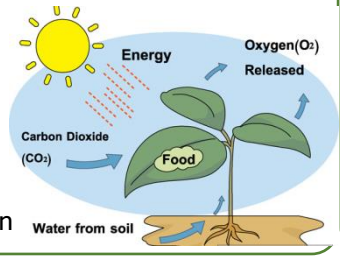
Chlorophyll is a green pigment found in chloroplast that is needed for photosynthesis

$$6CO_2 + 6H_2O \xrightarrow[\text{Chlorophyll}]{\text{Sunlight}} C_6H_{12}O_6 + 6O_2$$

carbon dioxide — water — glucose — oxygen

Factors that affect the rate of photosynthesis are;

- Light intensity
- Temperature
- Carbon dioxide concentration

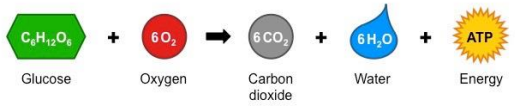


Respiration

Respiration is a chemical reaction that breaks down **glucose** to make **energy**

Respiration takes place in the **mitochondria**

Aerobic respiration (when oxygen is present)



Anaerobic respiration (when oxygen is absent)

glucose → lactic acid (+ energy)

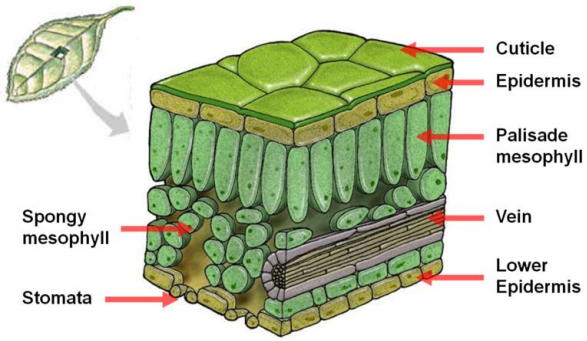
Lactic acid is a toxic chemical that causes muscle fatigue and cramps

Oxygen debt is the amount of oxygen required to break down the lactic acid

Comparing Aerobic and Anaerobic Respiration

Aerobic	Anaerobic
Uses oxygen	Doesn't use oxygen
Uses glucose	Uses glucose
Produces carbon dioxide and water	Produces lactic acid
Used in low intensity exercise	Used in high intensity exercise
Produces a lot of energy	Produces a small amount of energy
Occurs in the mitochondria	Occurs in the mitochondria

Structure of a leaf



Chloroplast	Contains chlorophyll to absorb light in photosynthesis.
Palisade mesophyll	Layer at top of the leaf. Contains lots of chloroplasts to absorb as much light as possible.
Waxy cuticle	Reduces water loss. Allows light through as it is transparent.
Stomata	Holes in the bottom of leaves to allow gas exchange of oxygen and carbon dioxide.
Guard cells	Open and close stomata to control gas exchange.

Investigating Heart Rate and Breathing Rate

Heart rate is the number of times the **heart beats** in one minute.

To measure your heart rate
- find pulse on wrist or neck,
- count how many beats there are in 10 seconds
- x 6 = beats in I minute.

Breathing rate is how many **breaths** you take in one minute

To measure your breathing rate
- count how many breaths you take in 10 seconds
- x 6 = beats in 1 minute

Exercise increases heart rate and breathing rate to pump more oxygen to the muscles.

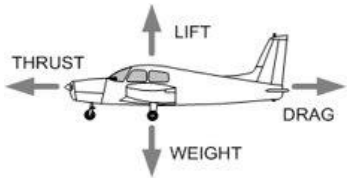
Science

Isaac Newton discovered the rules of forces in 1681

P1 Forces

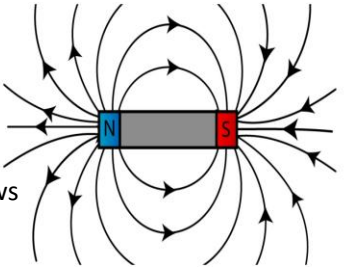
Keywords

Word	Definition
Contact force	Force that can only acts when two objects are in contact
Non- contact force	Force that can act when two objects are not in contact
Newton	Unit of force.
Newton meter	Equipment used to measure the force on an object
Friction	Contact force caused by 2 objects rubbing against each other. Causes loss of energy as heat
Drag	Drag is a frictional force that acts when an object moves through a fluid.
Gravity	Gravity is an attractive force caused by objects with mass.
Mass	Amount of matter – measured in kg
Weight	The force of gravity on a mass – measured in N.
Upthrust	Force on an object when placed in a liquid
Density	Density = mass / volume
Tension	Force that acts when an object is stretched
Hooke's Law	Extension is directly proportional to force applied, provided the elastic limit is not exceeded.
Poles	Ends of a magnet. Magnets have a N and a S pole. Like poles repel, opposite poles attract.
Magnetic field	Created by magnets. Other magnets and magnetic materials feel a force in a magnetic field.
Speed	Speed = distance / time. Unit = m/s
Force diagrams	Show direction and size of forces acting on an object.

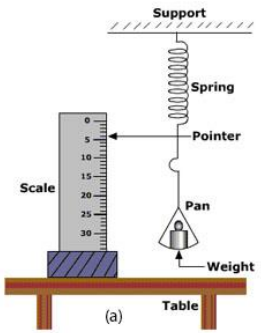


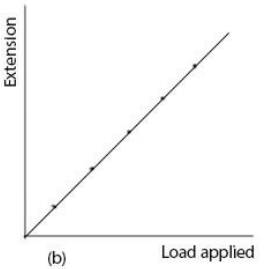
- Force diagrams show all the forces on an object.
- Forces are vectors – the arrow shows the direction and the length shows the size of the force.

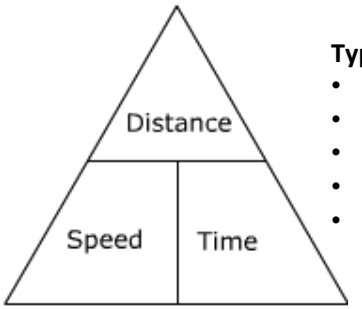
- Magnets create **magnetic fields.**
- Magnetic fields are drawn going from N to S pole.
- Arrows show direction
- Density of lines shows the strength.
- Magnetic fields get weaker with distance.
- Iron, cobalt and nickel are the only 3 magnetic metals.



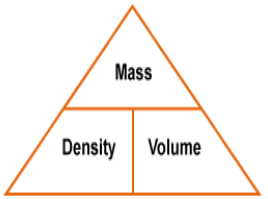
- **Hooke's law** – force is directly proportional to forece applied – providing the elastic limit is not exceeded.
- When stretched beyond the **elastic limit** a material is permanently deformed.







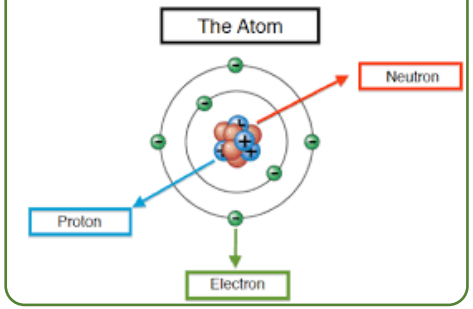
Typical Speeds
- Walking 1-2 m/s
- Running 5-8 m/s
- Cycling 10-12m/s
- Car on road 20m/s
- Train - 40m/s



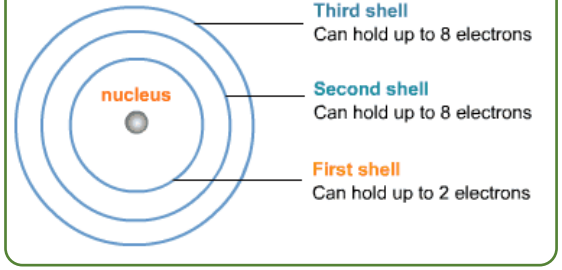
- Objects more dense than liquid sink.
- Objects less dense than water sink.

Science

C2 Atomic structure



Particle	Charge	Relative mass
Proton	+1	1
Neutron	0	1
Electron	-1	0.0005

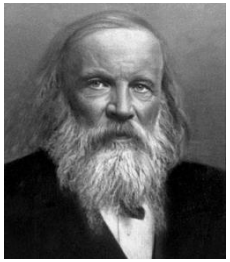


<u>Reactivity</u>

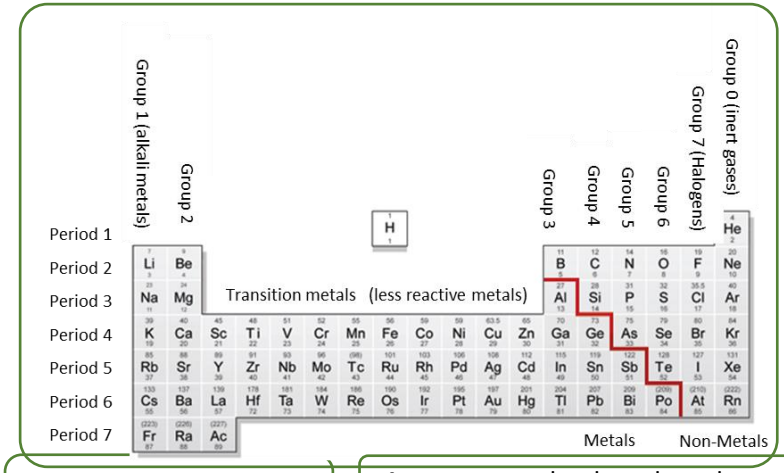
Some metals are more reactive than others. The easier it is for a metal to lose its outer electrons, the more reactive it is.

The most reactive metals are found in group 1 (the alkali metals). They react with cold water to produce Hydrogen and an alkaline solution

Dmitri Mendeleev



Dmitri Mendeleev (1834-1907) was a Russian chemist. In 1869 he made an early version of the Periodic table that was farsighted and more successful than previous versions. He arranged elements in order of atomic mass but put elements with similar properties into vertical groups. This meant that there were gaps in some of the rows but Mendeleev said that the gaps were for elements that had not yet been discovered and he was able to predict their properties

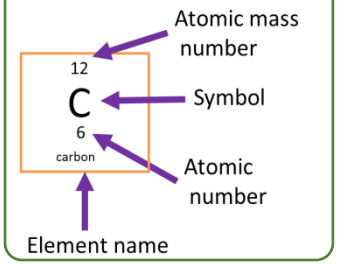


<u>Properties of metals</u>

Lustrous	Shiny when polished or cut
Ductile	Can be drawn into wires
Malleable	Can be hammered into sheets and flexible
Electrical conductor	Allows electricity to pass through it
Dense	High mass for its size
Thermal conductor	Allows heat to pass through it
Sonorous	Makes a ringing sound when struck

Group number = Number of electrons in the outer shell

Period number = Number of occupied shells



Ions – atoms that have lost electrons or gained electrons in order to have a full outer shell of electrons and become more stable.

Ions with a positive charge have lost electrons

Ions with a negative charge have gained electrons

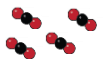
Isotopes – forms of an element that have the same number of protons but different numbers of neutrons (so different mass numbers)

Atomic number = Number of protons

Period number = Number of protons and neutrons

Element – a substance made up of only one type of atom

Compound – a substance made up of 2 or more elements chemically joined together



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:

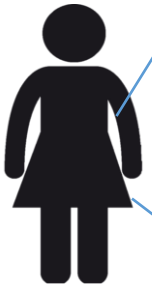
Ally	A country which supports another
Empire	A collection of countries ruled by another country
Colony	A country which is part of another's empire
Assassin	Someone who kills somebody important
Independence	Freedom

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.

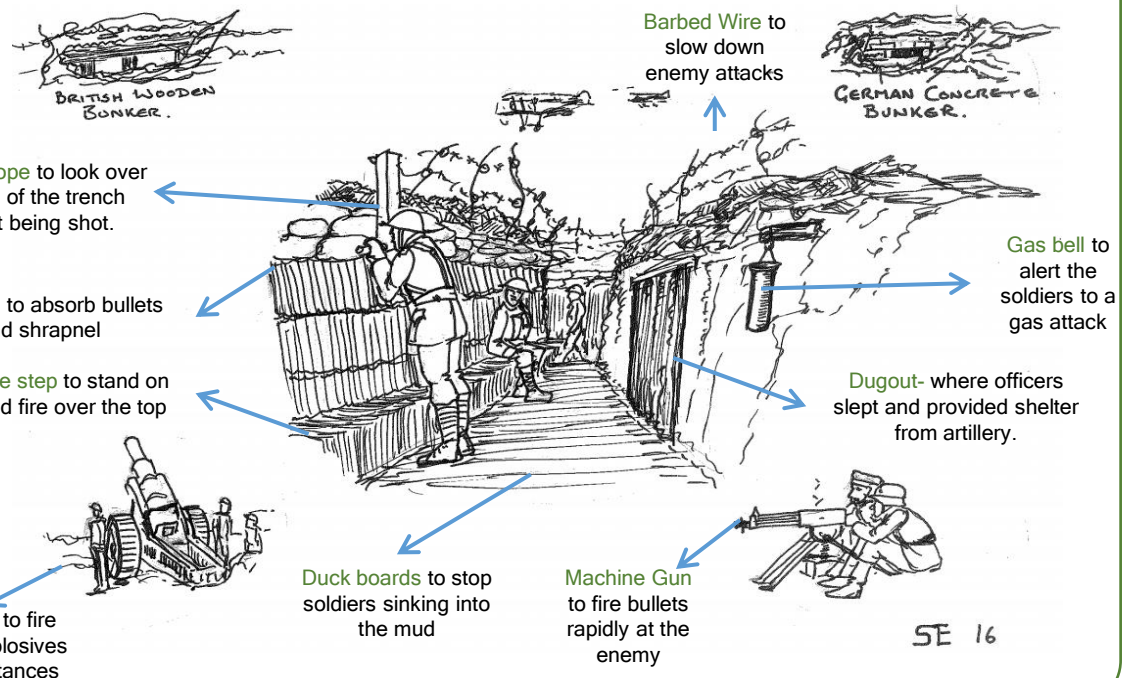
Key Terms:

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

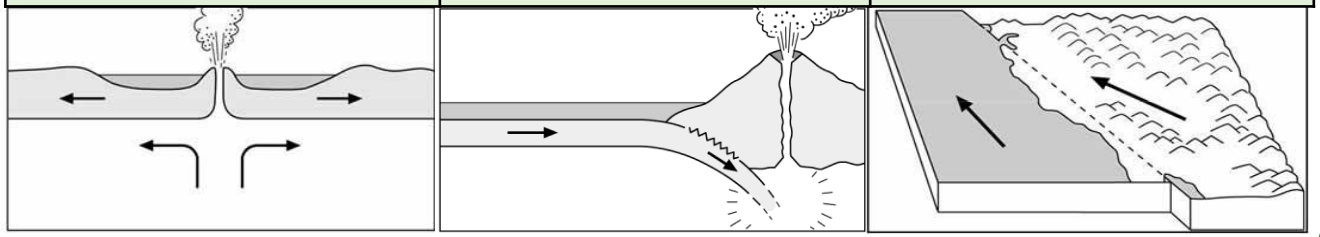
Violent Planet: Earthquakes and Volcanoes

Haiti vs Christchurch earthquakes

Haiti 2010	Christchurch 2011
January 12, 4:53 pm.	Febuary 22, 12:30 pm
7.0 magnitude (strength)	6.3 magnitude (strength)
LIC- very poor country	HIC- very rich country
300,000 injured	20,000 injured
5 million displaced	70,000 displaced
Over 200,000 killed	181 killed

Three important plate boundaries

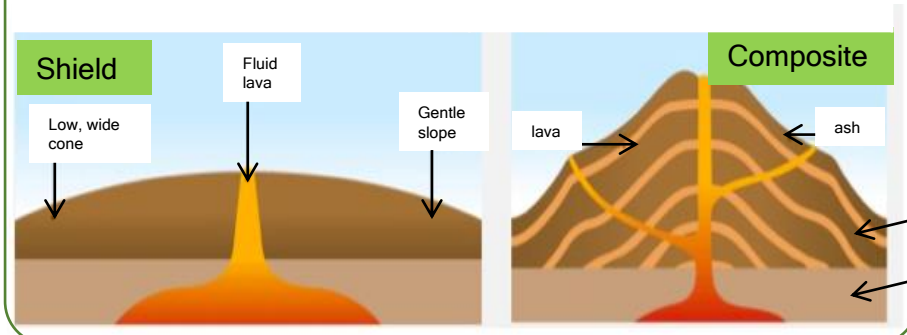
Constructive	Destructive	Conservative
• Convection currents from the mantle • Creating new oceanic plates • Which are then moving away from each other • Gentler earthquakes and volcanoes	• Oceanic plate is subducting beneath continental plate • Which is melting under pressure and friction • Creating violent earthquakes and volcanoes	• Two plates are moving alongside one another • Lots of pressure and friction • Earthquakes but no volcanoes formed



Two types of volcanoes

- Form on constructive plate boundaries
- Lava is runny
- Creates wide volcanoes
- Gentler eruptions

- Form on destructive plate boundaries
- Lava is thick and sticky
- Creates tall volcanoes
- Explosive eruptions



Key Terms

Natural Hazard- A natural event that has the *potential* to cause harm to people and property

Tectonic hazard- A hazard that occurs as a result of movements underground

Meteorological hazard- A hazard that occurs due to a change in atmospheric conditions

Crust- The outermost layer of the earths interior

Mantle- beneath the crust is the Mantle, partially liquid molten rock

Richter scale- The scale between 1-10 used the measure the strength of an earthquake

Magma- The name for liquid rock beneath the earths surface

Lava- The name for magma when it erupts onto the earth's surface

Oceanic plate- the thinner, denser (heavier) plate that is often pulled into the mantle by gravity

Continental plate- The thicker les dense plate usually found on earths continents

Geography

Violent Planet: Tsunamis, Reducing Hazards, Global climate

Reducing the impact of tectonic hazards

Planning

Planning for volcanoes means having evacuation plans involving the army or emergency services,

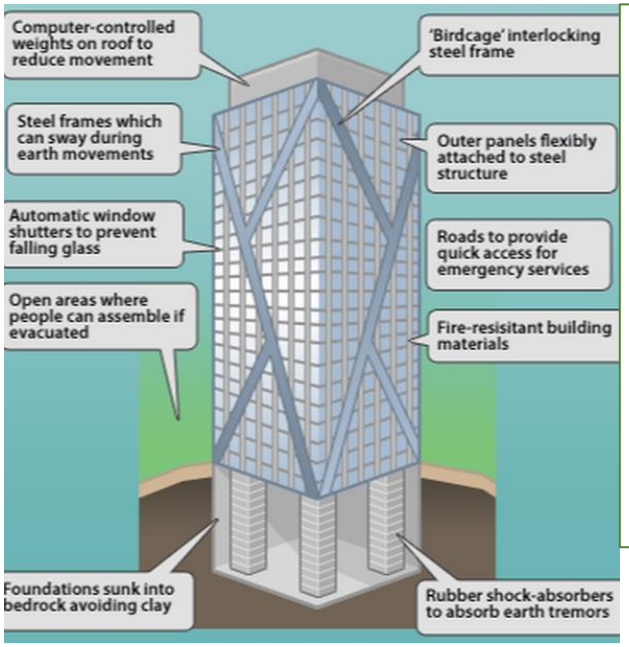
As earthquakes give you less time it's important to have radio, first aid kits, survival packs and drills so people know what top do when they strike. Also turning off water and gas supplies to prevent floods or fires.

Prediction

Though many have tried…. Earthquakes CAN NOT be predicted as we don't know when or where they will strike.

Volcanoes can be predicted using siesmographs to detect ground movements, measuring nearby water temperature or gas being released from the volcano can also help.

Protection



Protection is the most effective way to protect against earthquakes. These buildings (left) show you how!

Volcanoes are very difficult to protect against because the lava is so hot and the has and ash is so hard to contain. On occasion lava flows have been stopped with artificial walls and plenty of water.

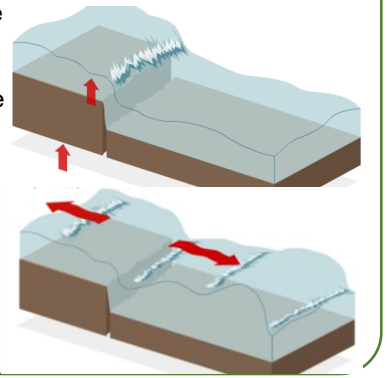
Formation of a Tsunami

Tsunamis are usually caused by earthquakes at sea. The plates are usually destructive and move towards each other.

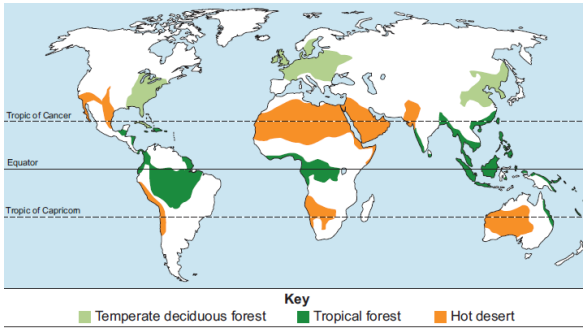
A tsunami forms when energy from an earthquake vertically jolts the sea bed, displacing water.

large waves then begin moving through the ocean away from the earthquake's epicentre.

When it reaches the shore it increases in height and slows down causing widespread devastation



Location of world biomes



Rainforests- Along the Equator 0-10 degrees, Brazil, West Africa, SE Asia

Deserts- Along the tropics 15-30 degrees, West side of continents, North Africa, SW USA, Australia

Temperature forests- 40-60 degrees N, Western Europe, East USA, East Asia.

How to understand climate graphs

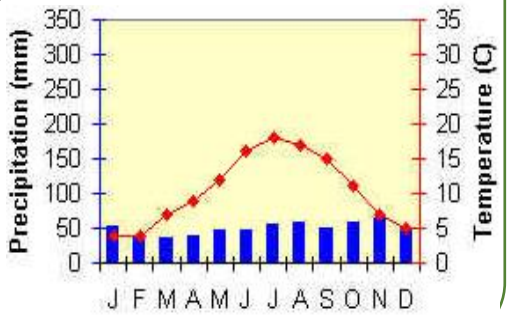
The left axis shows rainfall, the right shows temperature

The red line ALWAYS shows average temperature

The blue bars ALWAYS show rainfall

The ***mean*** annual rainfall is all of the rainfall within the bars divided by the number of bars

The ***range*** is always the highest minus the lowest



Religious Studies

Sikhism

Key Terms

Guru	A highly spiritual teacher who has been sent to Earth by God.
Waheguru	A name for God. It means 'Wonderful Lord'.
5 K's	Items that Sikhs wear or carry to display their commitment to their religion.
Khalsa	The pure ones. Also used as a collective description of the Sikh community.
Mool Mantar	The first lines of the Guru Granth Sahib which summarises Sikh beliefs.
Guru Granth Sahib	The Holy Scripture of Sikhs compiled by Sikh Gurus and devotees of God. The Guru Granth Sahibis thought of as the 11th Guru.
Gurdwara	Sikh place of worship or Sikh Church.
Langar	Free food service provided in every Gurdwara.

Gurdwara

Diwan Hall

This is the main room in the Gurdwara where the Guru Granth Sahib Ji is kept.
The Guru Granth Sahib Ji is kept on a palki (throne). It sits under a channani (canopy) and is seated on gaddis (cushions). It is covered in beautiful coverings called romallas.

Langar

Free food, that is always vegetarian, is cooked dailly and served to anyone. produced by sewa (selfless service) as it is cooked and served by volunteers.

The Golden Temple

Sri Harmandir Sahib is the official name of the Golden Temple. It is the holiest Gurdwara of Sikhism. It is in the city of Amritsar, Punjab, India. Over 100,000 people visit the holy shrine daily for worship. It is mostly made out of marble but it is gold plated with real gold, which covers most of the outside portion. The water that surrounds the Golden Temple is known as the Amrit Sarovar (Pool of Nectar) and the water of the pool is said to have special properties.

Guru's we will study

Guru Nanak Dev Ji

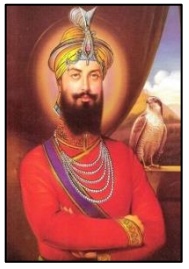
The first Guru of Sikhs. The founder of the Sikh religion, Guru Nanak was born on April 15, 1469 in the Western Punjab village of Talwandi.

Guru Arjan Dev Ji

Fifth Guru of Sikhs. Guru Arjan Dev Ji compiled the first version of Guru Granth Sahib Ji called the Adi Granth by collecting writing of previous Sikh Gurus and devotees of God. He also started the construction of the Golden Temple at Amritsar Sahib.

Guru Tegh Bahadur Ji

Ninth Guru of Sikhs. Guru Tegh Bahadur Ji is known as the shield of India because he gave up his life to protected the Hindus and other religions and their right to free worship.



Guru Gobind Singh Ji

Tenth Guru of Sikhs. Guru Gobind Singh Ji fought against Muslim extremist to protect the people of India. He stated that one need to be spiritual and in order to protect his or her spiritual beliefs, one should be a warrior too. He was the last living Guru of Sikhs

Religious Studies

Sikhism

The 5 K's

Kesh
Unshorn hair usually covered by a turban. Kesh symbolizes spirituality, living in a way God made us.

Kara
A steel bracelet worn by Sikh as a symbol of commitment to truthfulness, strength, and unity.

Kangha
Wooden comb carried as a reminder to practice cleanliness. It is a symbol of hygiene and discipline.

Kachera
Special undergarment, resembling boxer shorts. Kachera is worn by Sikhs as a reminder to practice marital fidelity. It is a symbol of self control.

Kangha
Wooden comb carried as a reminder to practice cleanliness. It is a symbol of hygiene and discipline.

The symbol or emblem of Sikhism is known as the Khanda. It is made up of:

- The Khanda (representing belief in one God),
- The Chakkar (representing God without beginning or end) and
- Two crossed Kirpans (representing spiritual authority and political power)

Mool Mantar

There is One God

Whose Name is True

The Creator

Without fear

Without hate

Immortal

Beyond the cycle of birth and death

Self-revealing

As Grace

Mool Mantra is the first few words uttered by Guru Nanak when he came out of a deep trance, after having disappeared into the river for three days.

This occurs hundreds of times in the Guru Granth Sahib JI.

It summarises Sikh beliefs.

It is taught to young children, and used by all Sikhs for prayer.

Vaisakhi and the Khalsa

During the Vaisakhi in 1699, the 10th Guru of the Sikhs, Guru Gobind Singh Ji, tested the courage and faith of his followers.

In front of crowds of people, he had held up a sword and asked if there were any volunteers who would give their lives for their religion. One after another, five men eventually came forward and joined the Guru in his tent.

The crowds grew confused and uneasy. Then all of a sudden, the five men emerged from the tent alive – and wearing turbans.

They are known as the Panj Piare, which means "the beloved five." After they were baptised by the Guru, they were declared the first members of the Khalsa.

In modern society, the Khalsa are devout members of the Sikh community who wear religious attire, especially the 5 K's.

All Sikhs are expected to be Khalsa or be working towards that objective.

Spanish

Media

Model answer:

1	Todos los días uso mi ordenador	I use my computer every day
2	Normalmente navego por internet y descargo música.	Normally I surf the internet and I download music.
3	Mi hermano juega a los videojuegos pero nunca hace sus deberes	My brother plays videogames and never does his homework.
4	Prefiero la música pop porque pienso que es marchosa	I prefer pop music because I think it has a good beat
5	Ayer fui al cine y vi una película de acción.	Yesterday I went to the cinema and I watched an action film.
6	¡Fue genial!	It was great!
7	Mi programa de televisión favorita es 'Britain's Got Talent'.	My favourite TV programme is Britain's Got Talent.
8	Es un programa de tele-realidad.	It's a reality TV programme.
9	En mi opinión, las comedias son menos aburridas que las noticias.	In my opinion, comedies are less boring than the news.
10	Me gustaría ver un documental el sábado.	I'd like to watch a documentary on Saturday.
11	¡Qué emocionante!	How exciting!

Making comparisons

son – they are
más … que – more…. than
menos … que – less ….. than
mejor(es) – better
peor(es) – worse

Time expressions

Todos los días – everyday
Siempre – always
A menudo – often
A veces – sometimes
De vez en cuando – from time to time
Dos veces a la semana –twice a week
Después de colegio – after school
Normalmente – normally
Raramente – rarely
Nunca - never

Adjectives

Es – it is …
Son – they are…
Fue – it was
Fueron – they were
Emocionante(s) - exciting
Divertido/a(s) - fun
Interesante(s) - interesting
Educativo/a(s) - educational
Informative/a(s) - informative
Aburrido/a(s) - boring
Tonto/a(s) - stupid

Una estrella del cine - A Spanish film star

Penelope Cruz

Penelope Cruz is one of Spain's most well known stars. She is an actress and has starred in over 70 films. Most of her films are Spanish but she has also starred in international blockbusters such as *Pirates of the Carribean: On Stranger Tides, Murder on the Orient Express and Vanilla Sky.*

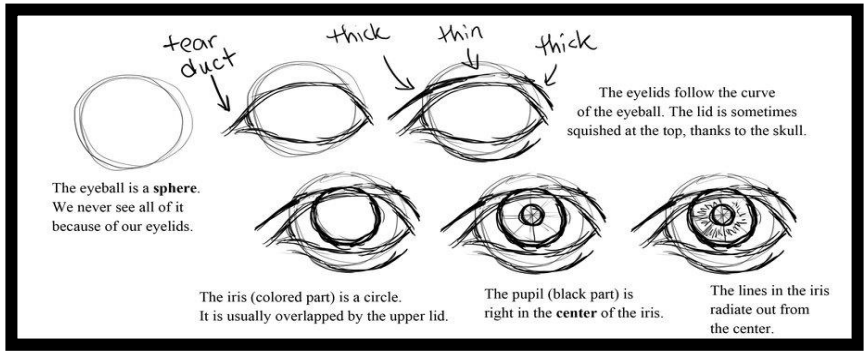
Penelope was born in Madrid and became a TV star at the age of 15. She is now a model, actress, and mum to 2 children.

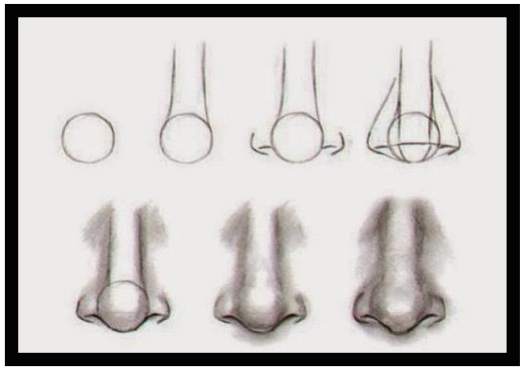
Penelope can speak Spanish and English fluently!

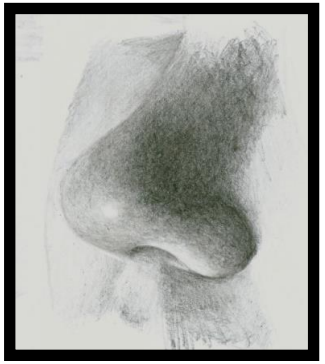
Art

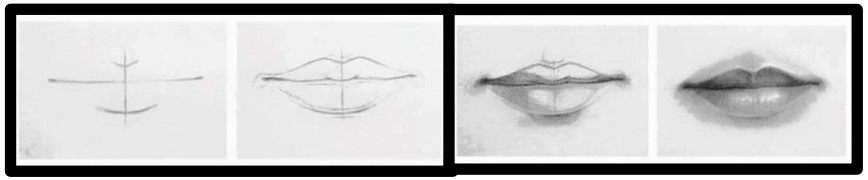
Portraiture

Developing skills





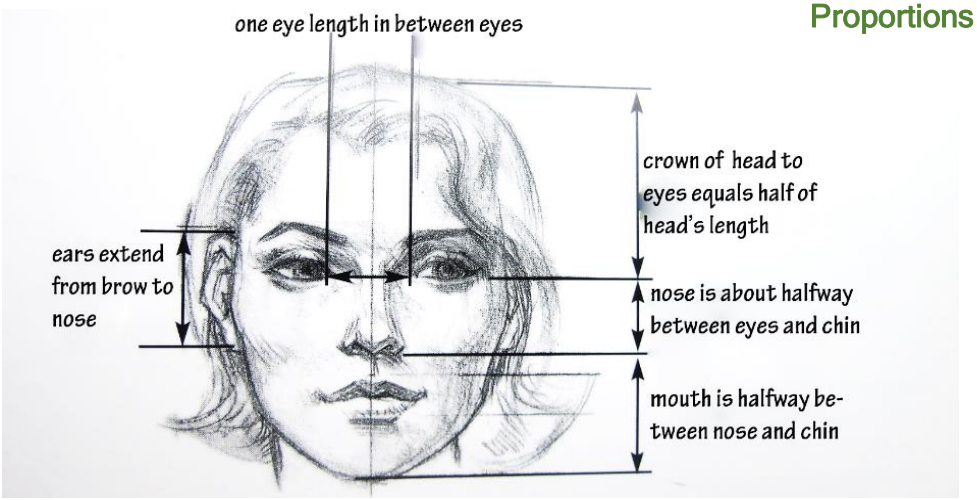




Great You Tube Video to help you understand proportions.

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

Proportions



Keywords

Self Portrait - a portrait of yourself created by yourself

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

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.

Practicing Skills

- Take a photograph of your own face front on.
- Using the You Tube clip 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)

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.

Music

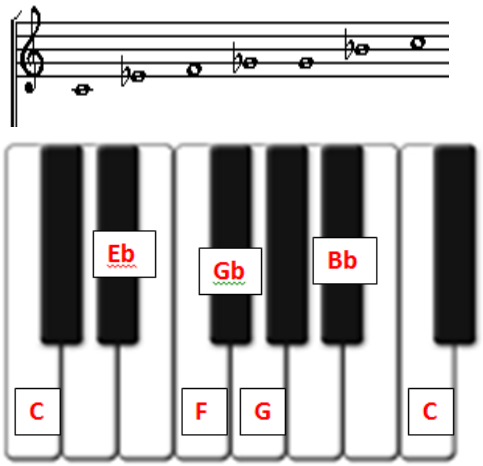
Blues and Jazz

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.

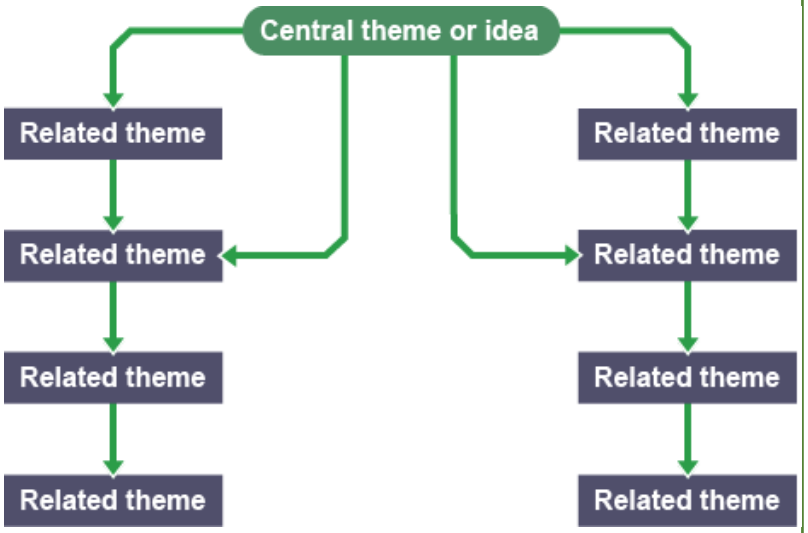
BB King (1925 - 2015) was an American blues singer, electric guitarist, songwriter, and record producer. King introduced a sophisticated style of soloing based on fluid string bending and shimmering vibrato that influenced many later electric blues guitarists

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 Drama from Stimuli

Using a Stimulus



- Once you have chosen a theme to focus on, start to branch out and generate ideas.
- From this, choose your idea for your performance.
- Create one scene. Does it work? Do you need to go back to the drawing board?

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.

Types of Stimuli

- artefacts, eg photographs, paintings, props, costumes, art pieces
- music
- newspaper, magazine or online articles
- poetry
- book extracts
- video clips
- live theatre performances
- scripts

What are the differences between devising and script?

When devising, we have to create the piece ourselves from scratch. That's characters, plots, staging, dialogue, everything!

In scripted work, the characters, plot and dialogue are given to us. We just have to figure out the staging.

Drama

Hamlet

Characters

Plot

The ghost of the King of Denmark tells his son Hamlet to avenge his murder by killing the new king, Hamlet's uncle. Hamlet feigns madness, contemplates life and death, and seeks revenge. His uncle, fearing for his life, also devises plots to kill Hamlet. The play ends with a duel, during which the King, Queen, Hamlet's opponent and Hamlet himself are all killed.

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.

Shakespeare

- Born: 1564 in Stratford-upon-Avon
- Died: 1616
- Shakespeare was an actor before he wrote plays.
- He wrote 154 sonnets and around 40 plays.
- These were a mixture of histories, tragedies and comedies.
- Shakespeare's wife was called Anne Hathaway.
- They had three children.
- Shakespeare's plays were performed for Queen Elizabeth I and King James I.
- A lot of the phrases Shakespeare wrote are still around today.

The Globe Theatre

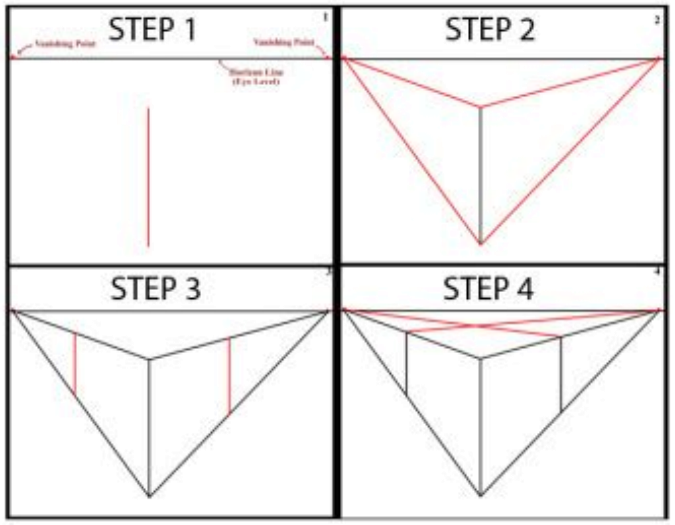
The Globe Theatre is in London. It has eight sides and the audience sat on most of these. If you were wealthy, you could pay for a comfortable seat however the poor people could play a penny and stand in the middle. Women were not allowed to act so men had to play all of the parts.

Graphics

0 1 2 3 4 5 6 7 8 9 10
DARK MIDDLE LIGHT

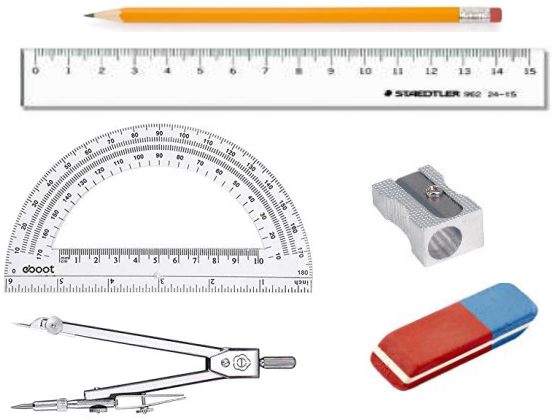
Year 8

Graphics Techniques
2 Point Perspective



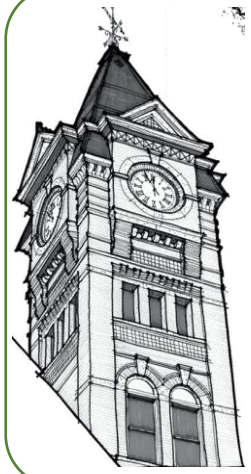
Useful tools for InkScape

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

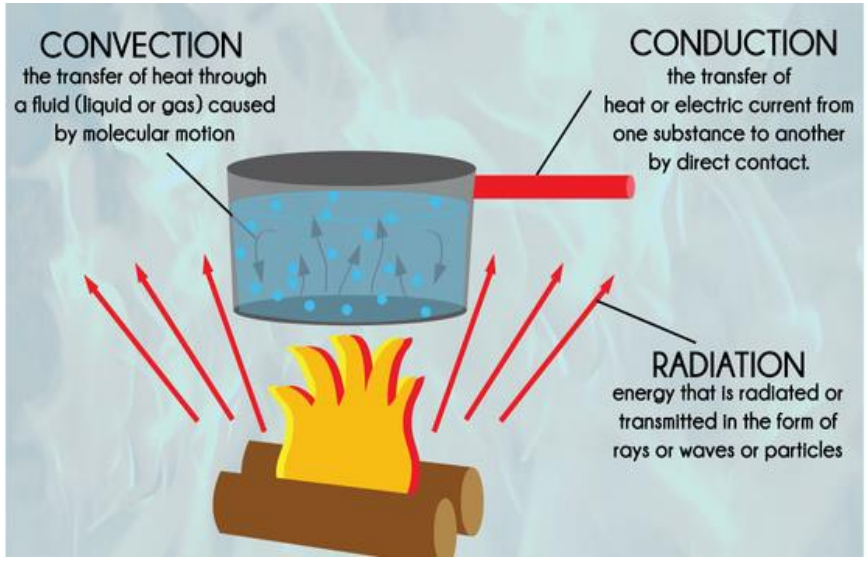
ml = millilitre

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

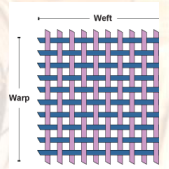
Bobbin	A small cylinder wound with thread that is placed in the bottom of the sewing machine in order to make stitches.
Presser Foot	This keeps the fabric in place when sewing. The presser foot **must always** be put down on the fabric before sewing.
Hand Wheel	This is located at the side of the machine 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

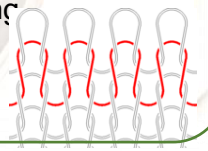
Natural Fibres – sourced from plants and animals

Synthetic fibres – fibres that are man-made

Woven Fabric – warp and weft interlacing threads



Knitted Fabric – warp and weft interlocking loops



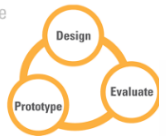
Designers

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

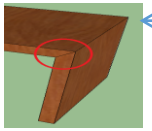
Tenon saw

Mitre saw

Coping saw

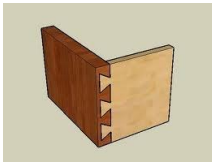
Precision	Being exact and accurate when marking and cutting out.
Tolerance	An allowable amount of variation of a specified quantity, especially in the dimensions of a machine or part e.g. +/- 0.25mm.
Aesthetics	The look and/or feel of a product and how this is incorporated into the design.
Ergonomics	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.

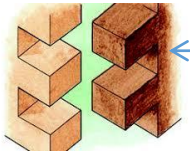
Shaping and joining



Mitre joint

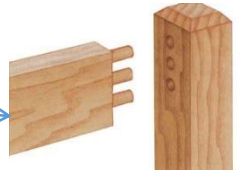
Dovetail joint





Box joint/comb joint

Dowel joint



Famous Designers

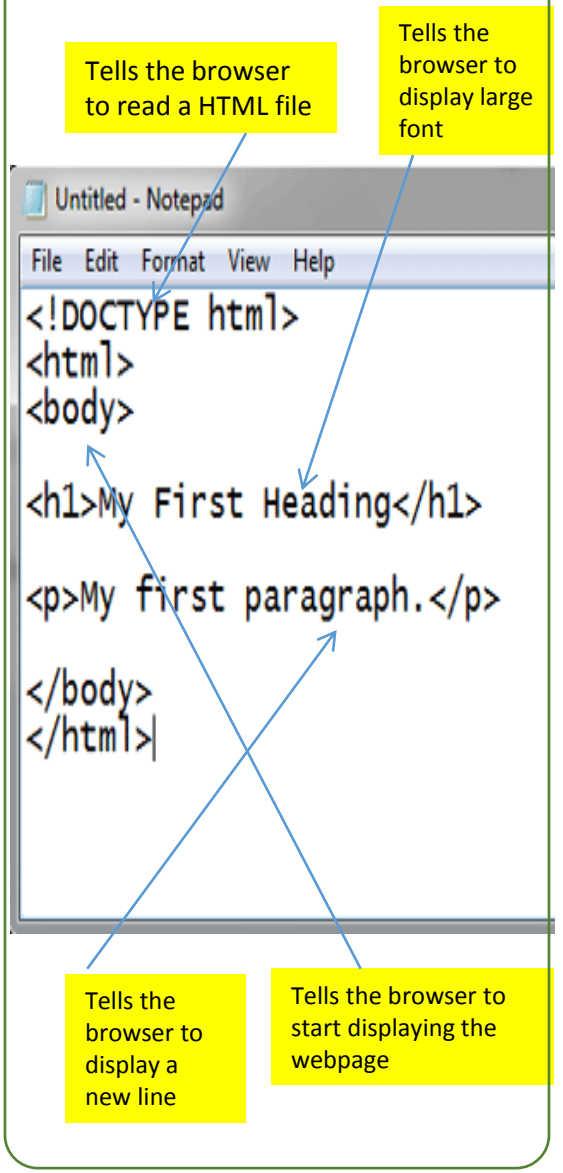
-Marc Andrew Newson CBE is an **industrial designer.**
-His style uses smooth **geometric lines**, **translucency**, strength, transparency, and tends to have an absence of sharp edges.
-Marc Newson has been described as the most **influential** designer of his generation.
- Mark Newson's current stakeholders 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

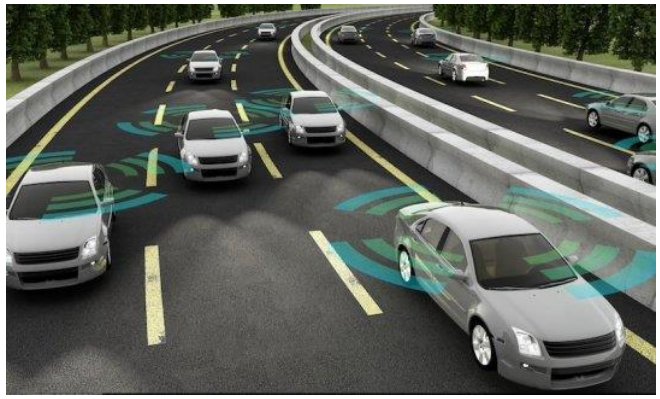
Virtual reality:	the computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a helmet with a screen inside or gloves fitted with sensors.
Artificial intelligence:	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?