



ISCA ACADEMY

INSPIRATION FOR LIFE

AUTUMN 2020

KNOWLEDGE BOOKLET

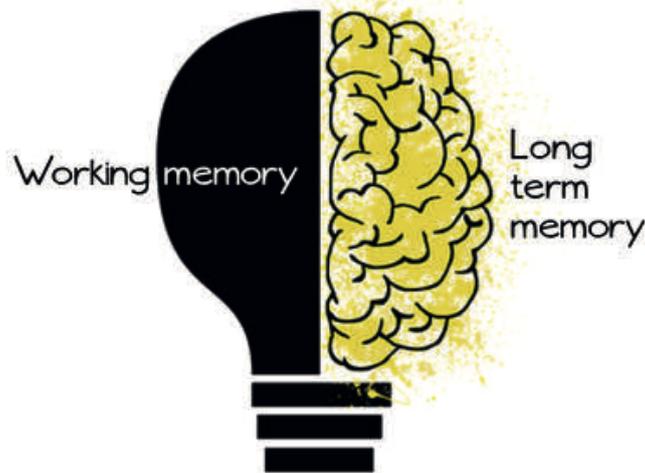
YEAR 8

CONTENTS

What is a knowledge organiser?	1
How to use your knowledge organiser	2
Expectations of you	3
Your schedule	4
English	5
Maths	7
Science	10
Geography	15
History	17
MFL	19
RE	23
Computing	24
Music	26
Drama	27
Technology	28
Art	30
PE	31
PSHE	32

WHAT IS A KNOWLEDGE ORGANISER?

Your mind is split into two parts: the working-memory and the long-term memory. Everybody's working-memory is limited, and can very easily become overwhelmed and this is known as overload. Your long-term memory, on the other hand, is effectively a limitless storehouse for information.



You can support your working memory by storing key facts and processes in your long-term memory. These facts and processes can then be retrieved to stop your working memory becoming overloaded:

Let's look at an example, the basic number fact: $7 \times 8 = 56$

If you can instantly recall that $7 \times 8 = 56$, your working memory has more space to think about a more difficult problem, like 37×8 . The answer of 56 comes effortlessly, and you can focus on 30×8 , then add the product to the 56 in your head.

If you do not know that $7 \times 8 = 56$ straight away, you are more likely to become confused and frustrated. Being able to very quickly recall key facts is a way of hacking your working memory, making thinking about difficult stuff much easier.

This booklet contains knowledge organisers for all of your subjects for the Autumn term. Each knowledge organiser has the key information, which needs to be memorised to top up your long-term memory in order to help you master your subject and be successful in lessons. You will be expected to follow the homework schedule on page 4.

HOW TO USE YOUR KNOWLEDGE ORGANISER

Challenge yourself

Which will you choose?



Look Cover Write Check

Look at your knowledge organiser, Cover a section of it, Write out the content you have just covered from memory and Check you have recalled it correctly



Mindmaps

Place the key word/concept in the middle. Go wild with colourful, flowing shapes that link the key definitions and concepts.



Revision Clock

Draw a clock and add the topic in the middle. Then, break it down into 10 minute sections. Add notes in each segment. Cover the clock and recite all the information out loud.



Mnemonics

Creating mnemonics is a great way for remembering groups or lists of words. For example, to remember the order of planets in the solar system:

My **V**ery **E**xcited **M**other **J**ust **S**erved **U**S
Nachos



Flash Cards

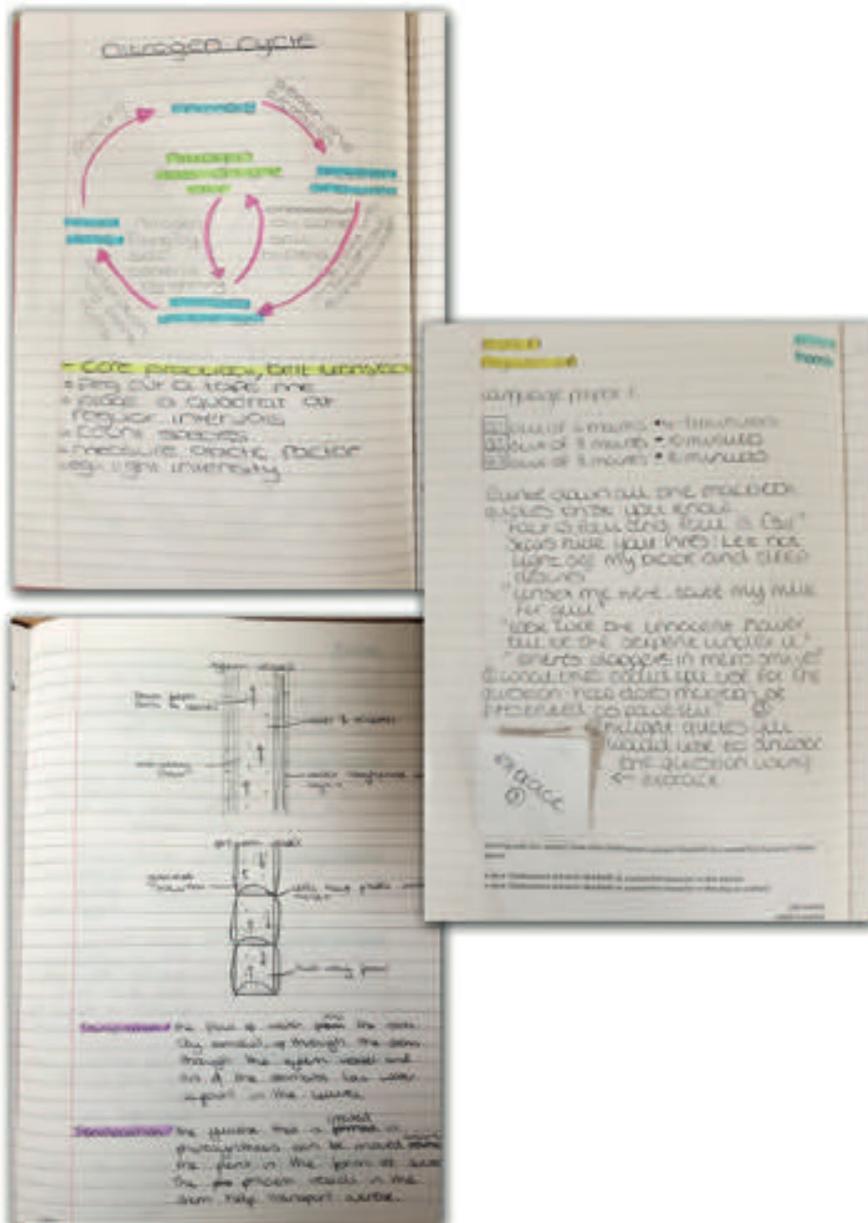
Write down the word/term on one side and a definition/explanation on the other side. Once you have notes written in your own words and summarised – move onto testing yourself quickly.

EXPECTATIONS OF YOU

1. Check the schedule on the next page to see which knowledge organisers you should use each day for your homework
2. Complete **one full page for each subject** on the schedule in your knowledge book **every day**
3. Use your knowledge organiser after you have finished to **mark and correct** your own work
4. **Sign your self-check sheet at the end of each week** after you have finished your full page each day
5. Get your self-check sheet **signed by your tutor** during your knowledge organiser tutor time session

T	on Time
A	Accurate
N	Neat
C	Complete

Homework should be **TANC**. Below is an example of homework that would meet the expected standard. If it does, your tutor will sign your log on the morning you are working in silence on your knowledge organiser.



YOUR SCHEDULE

Below is the homework schedule you will need to follow. You are required to produce a minimum of one page per subject in your pink books.

Week A	
Day	Subject
Monday	Maths
Tuesday	Science
Wednesday	History
Thursday	Art/DT/Music/Drama (rotation)
Friday	PE
Week B	
Day	Subject
Monday	English
Tuesday	MFL
Wednesday	Geography
Thursday	RE
Friday	Computing

You will need to sign to confirm you have completed the knowledge organiser homework. Your tutor will check this each week.

Week commencing	Self Check	Tutor Sign	Week commencing	Self Check	Tutor Sign
7/9/2020			9/11/2020		
14/9/2020			16/11/2020		
21/9/2020			23/11/2020		
28/9/2020			30/11/2020		
5/10/2020			7/12/2020		
12/10/2020			14/12/2020		
19/10/2020					

You will notice on each knowledge organiser that there are green and blue edged boxes with text in. Text in a green edged box is key vocabulary you need to learn and writing in a blue edged box are the key concepts/knowledge you will need to learn.

Key Vocabulary will be written in a green edged box like this.

Key concepts/ideas will be written in a blue edged box like this

Animal Farm by George Orwell

Mr Jones of Manor Farm is so lazy and drunken that one day he forgets to feed his livestock. The ensuing rebellion under the leadership of the pigs Napoleon and Snowball leads to the animals taking over the farm. Vowing to eliminate the terrible inequities of the farmyard, the renamed Animal Farm is organised to benefit all who walk on four legs. But as time passes, the ideals of the rebellion are corrupted, then forgotten. And something new and unexpected emerges. . .

Key quotes

“Four legs good, two legs bad.”
 “All animals are equal, but some animals are more equal than others”
 “Man is the only real enemy.”
 “Perfect unity.”
 “The pigs had set aside the harness room as headquarters for themselves.”
 “It was noticed that they wagged their tails to [Napoleon] in the same way as the other dogs had been used to do to Mr Jones”



Context

- An allegorical tale with direct links to the history of the Soviet Union in the early 20th century.
- The book charts the corruptions of Communist ideals of equality, where workers are promised equality and freedom and are eventually repressed and treated as bad, if not worse, as under the previous rule of the capitalist ‘Tsar’.
- Old Major represents Karl Marx, putting forward the communist ideals which will free them from the tyranny of capitalism (represented by Jones).
- Snowball represents Trotsky, a passionate component of Animalism (Communism) who is expelled by Napoleon (Stalin).
- Napoleon follows a similar rise to power as Stalin, using fear and propaganda to control the masses, including show trials and executions.

The Isca Way: use these sentences, in whichever order, as a *guide* to help organise your thinking in the exam:

- **The writer establishes / uses / creates ____ to ...**
- **This suggests / conveys / portrays...**
- **The word / image / phrase “----” has connotations of...**
- **At a deeper level... Perhaps...Possibly...Metaphorically...**
- **----becomes a symbol for...Symbolically...**
- **Priestley is challenging...Advocating... ..Is trying to change...**
- **The audience thinks...Feels...Is made to understand...Wonders whether...Is left questioning...**

Key Characters	
Mr Jones	Drunken owner of Animal Farm. Embodies the tyranny of man.
Old Major (pig)	Wise, old pig. Inspires the rebellion with his rhetoric.
Napoleon (pig)	Expels Snowball. Executes animals. Establishes himself as dictator. Controls with fear.
Snowball (pig)	Devoted to animalism and the education of lesser animals. Hero at the battle of the cowshed.
Squealer (pig)	Mouthpiece of Napoleon. Uses propaganda to control the animals
Boxer (horse)	Devoted citizen and immensely strong. Innocent and naïve.
Clover (horse)	Maternal, caring and loyal. Senses hypocrisy but cannot articulate it.
Mollie (horse)	Shallow and childish. Craves ribbons and sugar.
Benjamin (donkey)	Stubborn, cynical and apathetic.
Dogs + Sheep	Instruments of fear and control, educated by Napoleon.
Moses (raven)	Tamed raven of Jones. Spreads the idea of Sugarcandy Mountain.

- Themes**
- Leadership
 - Corruption
 - Power
 - Education
 - Oppression
 - Rule and Order
 - Tyranny

- Key vocabulary**
- Oppression
 - Corruption
 - Socialism
 - Ignorance
 - Naivety
 - Deceit
 - Power
 - Tyrant / tyranny
 - Enmity
 - Allegory
 - Rebellion
 - Propaganda



English: Gothic Literature

Conventions of the Literature Genre:

Hints of the Supernatural	Things that can't be explained by the normal 'rules' of the world.
Creates feeling of tension/fear or terror	Scary, nightmarish or unfamiliar situations are created to produce these feelings.
Involves the past	Either set in the past or has something from the past haunting the present
Characters trapped or cut off	Characters are isolated from others and lack freedom.
Spooky, uninhabited settings	E.g. old ruined castles, isolated houses, woods, secret passages, etc.
Gloomy	E.g. set at night or underground or in thick fog or during a storm.
Mystery	The unknown, confusion – the character/reader cannot fully explain what is happening.

The 5 ingredients for amazing writing. Use this as a checklist throughout the writing stages, list them in your plan, tick off each ingredient as you write and check back when you have finished.
ALWAYS PLAN!

1. Use powerful and ambitious vocabulary
2. Use a range of language techniques
3. Use a range of punctuation ; ! ?
4. Vary your sentences: long, short and ly, ing and ed sentence starters
5. Structure: paragraphing, one line paragraphs, cyclical structure, Drop, zoom, flash, end.

Key Gothic Texts:
 Frankenstein by Mary Shelley
 The Castle of Otranto by Horace Walpole
 Dracula by Bram Stoker

Word Class – use these terms to talk about your writing

Noun	A thing, place or person
Verbs	action or state
Adjectives	describing words
Adverbs	describes how the verb is done
Proper Noun	a specific name for a particular person, place, or thing
Adverbial	Word or group of words that usually describe time, place or manner

Key Vocabulary:

Dense	Packed closely together, thick
Brooding	Thinking deeply about something that makes you sad or worried
Menacing	threatening
Fierce	Violent, powerful
Gloomy	Dark or miserable looking
Writhe	Struggle, twist or thrash
Indiscernible	Impossible to see clearly
Banishing	To force someone or something to go away
Tumult	A loud, confusing noise
Anguish	Severe mental or physical suffering
Ethereal	Light, airy
Translucent	Almost see-through
Sombre	Dull in colour or tone
Tenebrous	Dark, shadowy
Dismal	Gloomy, miserable
Lustreless	Not bright or shiny
Luminous	Bright, shining

Punctuation – use this accurately to craft your writing.

Full stop	Use at the end of every sentence.
Exclamation Mark !	Use to show when something is surprising or forceful.
Question Mark ?	Use to indicate the end of a question.
Semicolon ;	Use to link (in a single sentence) two independent clauses that are closely related in thought.
Colon :	use to connect two sentences when the second sentence summarises, sharpens, or explains the first or to introduce a list.

Language Methods

Simile	comparison using like or as
Metaphor	comparison saying one thing is another
Personification	giving inanimate objects human qualities
Juxtaposition	two things with contrasting effects placed close to each other
Imagery	used to create a visual image for the reader
Foreshadowing	a hint or indication of something to come
Focus shift	the focus of the writing changes
Noun phrase	adding adjectives and/or adverbs to a noun to make it more descriptive

Build description by using the 5 senses:







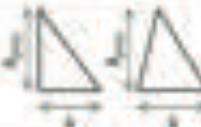
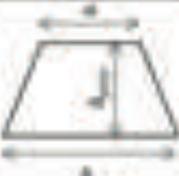
Show, don't tell: think about how you can use description to hint at something rather than explicitly telling your reader e.g. *Unable to hold her hand steady she tentatively reached out.* – this shows a reader that the character is most likely feeling nervous or lacks confidence.

Year 8 Mathematics		Unit 1 Written Calculation											
DEFINITIONS													
1.	Integer	A whole number											
2.	Positive	A number greater than zero											
3.	Negative	A number less than zero											
4.	Decimal	A number with digits after the decimal point											
5.	Operations	Symbols and words used to show how to combine numbers × Multiply + Add ÷ Divide – Subtract											
6.	Order of Operations	The order in which operations should be done	<table border="1"> <tr> <td>B</td> <td>Brackets</td> </tr> <tr> <td>I</td> <td>Indices</td> </tr> <tr> <td>DM</td> <td>Divide and Multiply</td> </tr> <tr> <td>AS</td> <td>Add and Subtract</td> </tr> </table>	B	Brackets	I	Indices	DM	Divide and Multiply	AS	Add and Subtract		
B	Brackets												
I	Indices												
DM	Divide and Multiply												
AS	Add and Subtract												
7.	Negative Numbers	<p>Move Right for addition Move Left for subtraction</p>											
8.	Adding and Subtracting Negative Numbers	<table border="1"> <thead> <tr> <th>Signs</th> <th>Rules</th> </tr> </thead> <tbody> <tr> <td>+ +</td> <td>Two like signs become positive +</td> </tr> <tr> <td>- -</td> <td>Two like signs become positive +</td> </tr> <tr> <td>- +</td> <td>Two unlike signs become negative -</td> </tr> <tr> <td>+ -</td> <td>Two unlike signs become negative -</td> </tr> </tbody> </table>	Signs	Rules	+ +	Two like signs become positive +	- -	Two like signs become positive +	- +	Two unlike signs become negative -	+ -	Two unlike signs become negative -	
Signs	Rules												
+ +	Two like signs become positive +												
- -	Two like signs become positive +												
- +	Two unlike signs become negative -												
+ -	Two unlike signs become negative -												
9.	Rounding	Changing a number to a simpler, easy to use value											
10.	Approximate	Not exact but close to the true answer											
11.	Decimal Place	The number of digits after the decimal point											
12.	Significant figure	The digits of a number that express a size to a particular degree of accuracy											
13.	Estimation	A value that is close to the correct answer using a rough calculation											
ROUNDING TO A SET NUMBER OF DECIMAL PLACES													
14.	Count the number of decimal places you need. Look at the number to the right of that digit. 5 or more it rounds up. 4 or less it rounds down												
15.	eg 36.3486343	36.34 86343		To 2d.p. is 36.35									

Year 8 Mathematics				Unit 2 Area and Volume Higher Only Content	
DEFINITIONS					
1.	Polygon	Any 2D shape formed with straight lines			
2.	Parallel	Two lines that will never intersect (meet)			
3.	Perpendicular	Two lines that meet at a right angle (90°)			
4.	Adjacent	Next to, or adjoining something else			
5.	Perimeter	The distance along the outside of a shape			
6.	Area	The space inside a 2D shape			
7.	Surface Area	The total area of all of the faces of a 3D shape			
8.	Volume	The space inside a 3D shape			
9.	Regular	All the sides and angles of a shape are equal			
10.	Perpendicular height	The height that forms a right angle with the base length			
11.	Composite shape/Compound shape	A shape that can be divided into more than one simple shapes			
12.	Prism	A 3D shape with a constant cross-section			
13.	Radius	The distance from the centre to the circumference of a circle			
14.	Diameter	A line that passes through the centre of a circle			
15.	Circumference	Distance around the outside of a circle. (The perimeter)			

ROUNDING TO SIGNIFICANT FIGURES		
16.	Count the number of digits you need from the left (zeros are not significant until after the first non-zero) Look at the number to the right of that digit to decide if it rounds up or down. 5 or more it rounds up, 4 or less it rounds down. (For large numbers replace remaining digits with zeros)	
17.	eg 324 627 938	32 4627938 To 2 sig. fig. is 320 000 000
18.	eg 0.0034792	0.0034 792 To 2 sig. fig. is 0.0035

ESTIMATING					
19.	Round each number to 1 significant figure before doing any calculation				
20.	eg $\frac{3.14 \times 10^8}{4.2 \times 10^4}$	$\approx \frac{4 \times 9000}{600 \times 0.5}$	$\approx \frac{3600}{300}$	$\approx \frac{360}{3}$	≈ 120

AREA AND PERIMETER (units in $\text{cm}^2/\text{mm}^2/\text{m}^2$)			
16.	Square/ rectangles		base \times height
17.	Triangles		$\frac{\text{base} \times \text{height}}{2}$
19.	Parallelogram		base \times height
20.	Trapezium		$\left(\frac{a+b}{2}\right) \times h$
21.	Compound Shape	A shape made up of two or more simple shapes To find the area, split it into the simple shapes, find their areas and then add them together	
22.	Circumference of a Circle	$C = \pi d$	
23.	Area of a circle	$A = \pi r^2$	
3D SOLIDS			
24.	Surface area	The total area of all the faces of an object You can use the shape's net to help calculate the surface area	
25.	Prism	A 3D shape that has a constant cross-section through its length. Volume = Area Cross Section \times Length	
26.	Cuboid	Volume = area of cross section \times length Volume = length \times width \times height	

27.	Triangular Prism	Volume = area of cross section \times length Volume = $\frac{1}{2} \times \text{base} \times \text{height} \times \text{length}$	
28.	Cylinder	Volume = area of cross section \times length Volume = $\pi r^2 \times h$ Total Surface Area = $2\pi r^2 + 2\pi rh$	

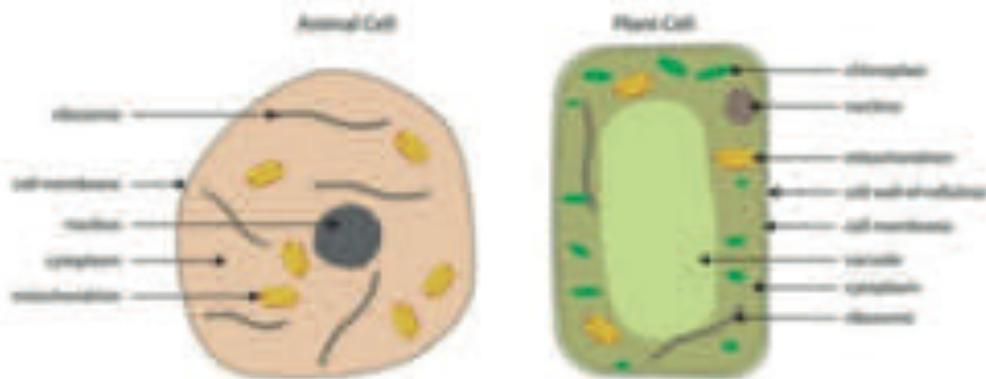
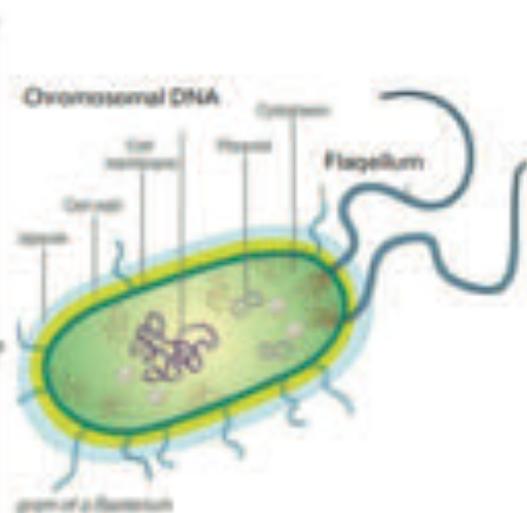
Year 8 Mathematics			
Unit 3 Statistics, Graphs and Charts Higher Only Content			
DEFINITIONS			
1.	Qualitative	Data described by words	
2.	Quantitative	Data that is categorized by numbers, it can be discrete or continuous	
3.	Discrete data	Can be counted, can only have a finite number of possible values	
4.	Continuous data	Can be measured, can have an infinite number of possible values within a selected range	
5.	Inequality Signs	< less than	> greater than
		\leq less than or equal to	\geq greater than or equal to
MEASURE OF CENTRAL TENDENCY AND SPREAD			
6.	Mean	Add up all of the amounts. Divide by how many values there are.	
7.	Median	Put values in order. Locate the middle value	
8.	Mode	The value that occurs most often	
9.	Range	The biggest value minus the smallest value	
10.	Outlier	An extreme data value that doesn't fit the overall pattern	
ADVANTAGE & DISADVANTAGES OF AVERAGES			
	Average	Advantages	Disadvantages
	Mean	Every value makes a difference	Affected by extreme values
11.	Median	Not affected by extreme values	May not change if a data value changes
	Mode	Easy to find; not affected by extreme values; can be used with non-numerical data	There may not be a mode

AVERAGES FROM FREQUENCY TABLES																							
12.	Modal Class	The class with the highest frequency																					
13.	Median	If the total frequency is n , then the median lies in the class with the $\frac{n+1}{2}$ th value in it.																					
14.	Mean from a frequency table	<table border="1"> <thead> <tr> <th>Data value</th> <th>Frequency</th> <th>Frequency x Data Value</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>3</td> <td>6</td> </tr> <tr> <td>3</td> <td>2</td> <td>6</td> </tr> <tr> <td>4</td> <td>5</td> <td>20</td> </tr> <tr> <td></td> <td>10</td> <td>32</td> </tr> </tbody> </table>	Data value	Frequency	Frequency x Data Value	2	3	6	3	2	6	4	5	20		10	32						
		Data value	Frequency	Frequency x Data Value																			
2	3	6																					
3	2	6																					
4	5	20																					
	10	32																					
		Mean = $\frac{32}{10} = 3.2$																					
15.	Estimated mean from a grouped frequency table	<table border="1"> <thead> <tr> <th>Data value</th> <th>Frequency</th> <th>Midpoint</th> <th>Frequency x Data Value</th> </tr> </thead> <tbody> <tr> <td>$20 \leq x < 30$</td> <td>3</td> <td>25</td> <td>75</td> </tr> <tr> <td>$30 \leq x < 40$</td> <td>2</td> <td>35</td> <td>70</td> </tr> <tr> <td>$40 \leq x < 50$</td> <td>5</td> <td>45</td> <td>225</td> </tr> <tr> <td></td> <td>10</td> <td></td> <td>370</td> </tr> </tbody> </table>	Data value	Frequency	Midpoint	Frequency x Data Value	$20 \leq x < 30$	3	25	75	$30 \leq x < 40$	2	35	70	$40 \leq x < 50$	5	45	225		10		370	
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	10		370																				
		Mean = $\frac{370}{10} = 37$ There is a loss of accuracy due to using the midpoint, this is why it is only an estimate.																					

Year 8 Mathematics Unit 4 Equations and expressions		
1.	Variable	A letter representing a varying or unknown quantity
2.	Coefficient	A number which multiplies a variable. eg 3 is the coefficient in $3y$
3.	Term	A part of an algebraic expression, could be a number, a variable or a product of both. e.g. $3x$
4.	Expression	One or a group of terms. May include variables, constants, operators and grouping symbols. No '=' sign. e.g. $5x + 2y$
5.	Equation	A mathematical statement containing an equals sign (=), to show that two expressions are equal. e.g. $3x + 4 = 2$
6.	Formula	A rule describing a relationship between different variables
7.	Identity	An equation that is true no matter what values are chosen, \equiv . e.g. $3(x + 5) \equiv 3x + 15$
8.	Unknown	A letter representing a number
9.	Subject	The subject of a formula is the variable on its own on one side of the equals sign

10.	Inverse Operation	The operation that reverses the effect of another operation.				
11.	Solve	To find the value of the unknown				
EXPANDING SINGLE BRACKETS						
12.		Multiply all of the terms inside the bracket, by the term on the outside				
13.	$3(a + 4) = 3a + 12$	$5(3x + 1) = 15x + 5$				
FACTORISING						
14.	Find the highest common factor of the terms This goes outside the bracket Divide each term by the factor to get the new terms inside the bracket.	eg $2x + 6$ HCF is 2 $= 2(\quad)$ $2x + 2 = x$ $6 + 2 = 3$ $= 2(x + 3)$				
15.	CHECK by expanding your answer:	$2(2x + 6) = 4x + 12$				
Solving Equations						
16.		To solve an equation we use inverse operations				
17.		What ever you do to one side of the equation, you have to do to the other side to keep it "balanced" and equal				
18.	One Step	Solving equations - one step <table border="1"> <tr> <td>$x - 4 = 7$ $+4$ $x = 11$</td> <td>$x + 3 = 11$ -3 $x = 8$</td> <td>$3x = 18$ $\div 3$ $x = 6$</td> <td>$\frac{x}{4} = 4$ $\times 4$ $x = 16$</td> </tr> </table>	$x - 4 = 7$ $+4$ $x = 11$	$x + 3 = 11$ -3 $x = 8$	$3x = 18$ $\div 3$ $x = 6$	$\frac{x}{4} = 4$ $\times 4$ $x = 16$
$x - 4 = 7$ $+4$ $x = 11$	$x + 3 = 11$ -3 $x = 8$	$3x = 18$ $\div 3$ $x = 6$	$\frac{x}{4} = 4$ $\times 4$ $x = 16$			
19.	Two Step	Requires two inverse operations to solve. $2x - 7 = 19$ $2x = 26$ $x = 13$				
20.	Involving Brackets	Expand the brackets first $5(2x + 1) = 35$ $10x + 5 = 35$ $10x = 30$ $x = 3$				
21.	Unknowns both sides	Eliminate the x term from one of the sides $5x + 2 = 3x - 8$ $2x + 2 = -8$ $2x = -10$ $x = -5$				

Year 8 Biology



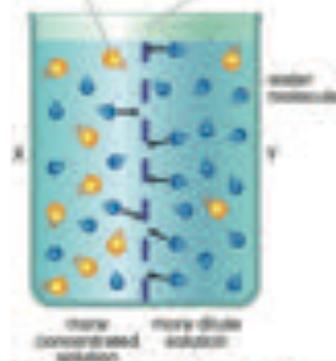
Eukaryote: Cell with a nucleus
e.g. Plant and Animal cells

Prokaryote: Cell without a nucleus
e.g. Bacteria Cells

Organelle	Function
Nucleus	Encloses the genetic material
Cell membrane	Controls what enters and leave the cell
Cytoplasm	Where chemical reactions occur
Mitochondria	Site of aerobic respiration
Ribosome	Site of protein synthesis
Cell wall	Supports and protects the cell
Chloroplast	Site of photosynthesis
Vacuole	Stores cell sap, helps to keep the cell rigid
Plasmid	Small loop of bacterial DNA
Flagellum	Helps bacteria to move

soluble molecules that is too large to pass through the membrane (e.g. sucrose)

partially permeable membrane allows molecules to pass through if they are small enough



In osmosis, a solvent flows from a dilute solution of a solute to a more concentrated one.

	Diffusion	Osmosis	Active Transport
Down / Against concentration gradient?	Substances move down the concentration gradient.	Water moves down the concentration gradient.	Substances move against the concentration gradient.
Requires energy?	NO	NO	YES
Requires a membrane?	No membrane required.	Occurs over a partially permeable membrane.	Occurs over a membrane using transport proteins.

Osmosis Core Practical:

- Testing how changing sugar/salt concentration of solution affects the mass of potato/other vegetable
- Think about where the lowest water concentration is and whether water will be moving in or out of the vegetable
- Then calculate the percentage change in mass:

$$\% \text{ change} = \frac{(\text{final mass} - \text{initial mass})}{\text{initial mass}} \times 100$$

Lifestyle factors that affect non communicable disease;

- Exercise and diet leading to obesity or malnutrition
- BMI
- Waist: hip ratio
- Alcohol
- Smoking

Health: A state of complete physical, mental and social well-being, not merely the absence of disease or infirmity (World Health Organisation)

Non communicable disease: Cannot be spread from person to person. Could be genetic, e.g. cystic fibrosis, or caused by lifestyle choices e.g. cirrhosis of the liver caused by alcoholism.

Communicable disease: Can be spread from an infected person to other people e.g. the flu virus

Pathogen: A disease causing microorganism e.g. bacteria, viruses, fungi and protists

Infection	Pathogen which causes it	Symptoms/effects	How they're spread (transmitted)
Cholera	Bacteria	diarrhoea	Water
Tuberculosis (TB)	Bacteria	Lung damage	Airborne
Chalara ash dieback	Fungi	Leaf loss and bark lesions	Airborne
Malaria	Protists	Blood and liver damage	Animal vectors - mosquitoes
HIV	Virus	Destroys white blood cells, leading to AIDS	Unprotected sex with an infected person (sexually transmitted), sharing needles with an infected person
Stomach ulcers	Helicobacter		Oral
Ebola	Virus	Haemorrhagic fever	Bodily fluids

Physical barriers

Hairs in the nose filter out dust that might carry pathogens. **Mucus** in the nose, throat and breathing passages traps microorganisms.

The tube in the lungs also produces mucus. Tiny hairs called **cilia** sweep out the mucus and microorganisms trapped in it.

The **skin** forms a protective barrier

Chemical barriers

Tear glands make a liquid containing enzymes called **lysozymes** that kill microorganisms.

The stomach makes **hydrochloric acid** to kill harmful microorganisms in food.



1 Pathogens have antigens on their surface that are unique to them.

These lymphocytes are not activated.

2 A lymphocyte with an antibody that perfectly fits the antigen is activated.



4 Some of the lymphocytes secrete large amounts of antibodies. The antibodies stick to the antigens and destroy the pathogen. Other lymphocytes remain in the blood as memory lymphocytes, ready to respond immediately if the same antigen ever forms up again.

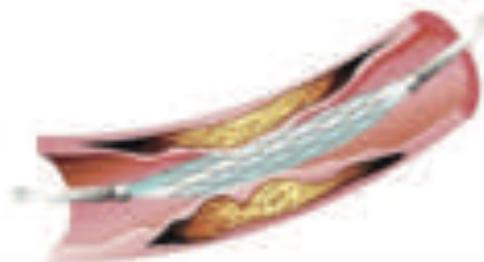
3 This lymphocyte divides over and over again to produce clones of identical lymphocytes.



5 After the infection has been cleared, a lymphocyte

Treating cardiovascular disease

- Life-long medication
- surgical procedures e.g. stents
- lifestyle changes e.g. reducing BMI and quitting smoking

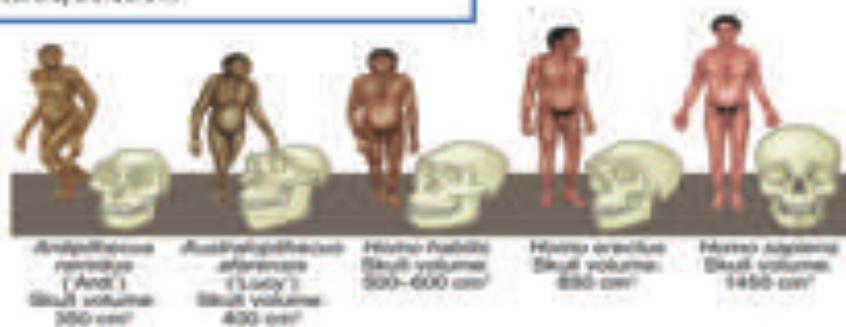


DNA Extraction Practical:

- 1: Mash up fruit/vegetable to start to break open cell walls
- 2: Mix with an extraction buffer (solution of salt, water and washing up liquid) to help to further break down the cell walls
- 3: Leave in water bath for 15 minutes
- 4: Filter mixture to remove insoluble material
- 5: Add a small amount of solution to a boiling tube and gently pour in ice-cold

Fossil evidence can be used to support evolution by placing them in age order. However, due to gaps in fossil records they do not show a smooth change over time.

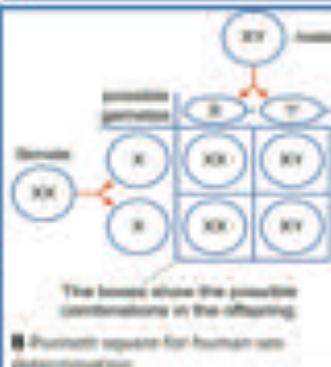
Stone tools had many uses (cutting, skinning animals) but became more sophisticated as humans evolved. This supports an increasing intelligence due to larger brain volumes. Stone tools can be dated from the age of the rock they are found in.



Punnet Squares are used to calculate probabilities of offspring inheriting different combinations of alleles and the phenotypes that arise.

Remember:

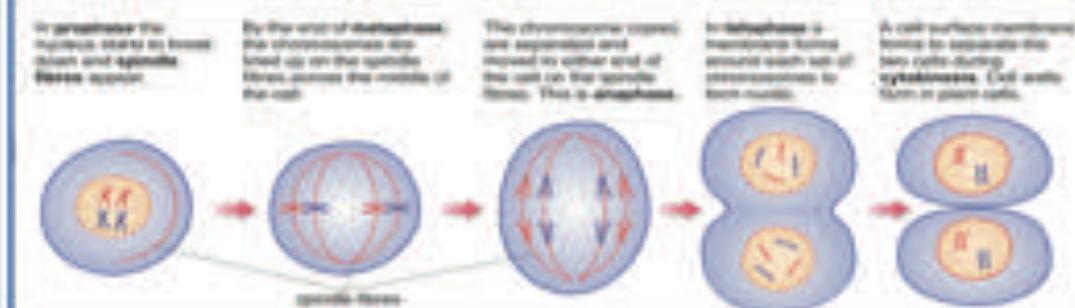
Dominant = Capital



Ardi from 4.4 million years ago

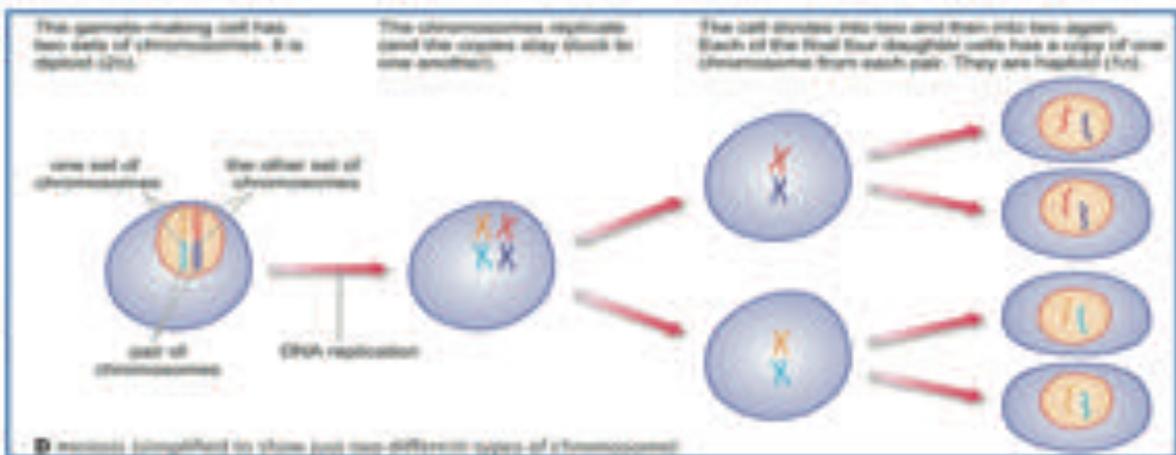
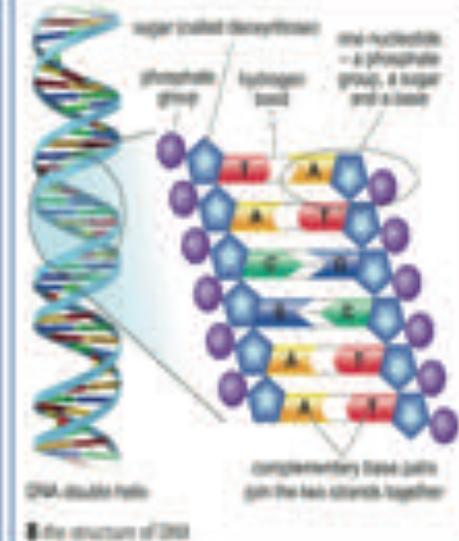
Lucy 3.2 million years ago

Homo sapiens - first fossil discover 1.6 million years



Darwin's theory of evolution by natural selection

- 1 Genetic variation (variety alleles) within a population. E.g. Giraffes various necks lengths.
- 2 Competition for resources due to changes in the environment. E.g. food moves higher.
- 3 Natural selection – the better adapted are more likely to survive. E.g. taller giraffes reach the food.
- 4 Inheritance the better adapted genes are passed onto the offspring of the survivors.
- 5 Evolution – natural selection occurs over and over again, and a new species evolves with the better adapted variations.



Y8 Science: Energy

Key Words

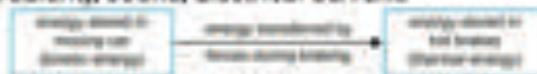
- Dissipate:** spread out.
- Efficiency:** The proportion of energy a system transfers usefully.
- Elastic potential energy:** energy stored in object when it is squashed or stretched.
- Energy:** the ability of a system to do work
- Fuel:** a substance which contains a store of chemical or nuclear energy that can be easily transferred.
- Gravitational potential energy:** energy stored in an object due to its position in a gravitational field. Measured in Joules (J).
- Insulation:** method or material used to reduce energy transfer by heating.
- Kinetic energy:** energy stored in a moving object. Measured in Joules (J).
- Mass:** the amount of material there is in an object, measured in kilograms (kg).
- Non-renewable (fuel):** an energy resource which will run out as the supply cannot be replaced.
- Power:** the rate of energy transfer, measured in Watts (W). Shown by the letter P in equations.
- Radiation:** the transfer of energy by light.
- Renewable (fuel):** An energy resource that can be replaced as quickly as it is used.
- Useful energy** is energy in the form needed, in the place it is needed.
- Wasted energy** is energy in an unwanted form or in an unwanted place.

Energy Equations

$$GPE = mgh \quad KE = \frac{1}{2}mv^2$$

Energy Stores and Transfers

- Energy** can be stored in different forms: Gravitational potential energy, Kinetic energy, Elastic potential energy, Chemical energy, Nuclear energy, Magnetic energy.
- Energy can be transferred between these stores by: Forces, Heating (thermal), Light (radiant), Sound, Electrical Current.



- The **Conservation of Energy** states that energy cannot be created or destroyed, only transferred between stores in a system.

Energy Efficiency

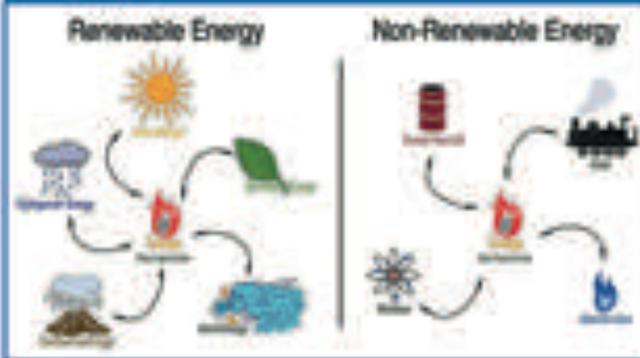
- The **efficiency** of a system can be calculated as:

$$\text{Efficiency} = \frac{\text{useful energy transferred}}{\text{total energy input}}$$

- Useful and wasted energy transfers can be shown using **Sankey Diagrams**.



- Wasted energy often **dissipates** to the surroundings as heat.

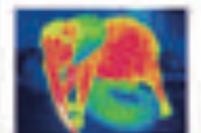


Energy transfer by heating

1.Solids: by **Conduction** – vibrations passed between particles transfer energy.

2.Fluids (liquids and gases): by **Convection** – Hotter, less dense regions of the fluid rise, carrying the energy.

3.No material is needed for energy to be transferred by **Radiation** – energy is transferred as **Infrared radiation (IR)**.



- Electricity is generated using **non-renewable** fuels including **fossil fuels** (coal, oil and natural gas) and nuclear fuels (uranium).
- Burning fossil fuels produces **greenhouse gases** including carbon dioxide that contribute to **climate change**.
- Nuclear power stations do not produce carbon dioxide, but do produce dangerous **radioactive waste**.
- Most **renewable** resources do not emit carbon dioxide as no fuel is burned.
- Renewable resources: Solar; wind, wave, geothermal, tidal, hydroelectric power.
- Renewable resources can be unreliable and have low power output.
- Biomass** is a **carbon neutral** fuel as the carbon dioxide released was taken in as the plants grow.

Year 8 Science: Forces and Motion

Measuring Speed:

- Measure the distance (ruler, tape measure, trundle wheel).
- Measure the time (stopwatch, light gates - more accurate).
- Speed = distance / time

Distance-time graphs

Speed can be calculated using the following equation:

$$\text{(average) speed (m/s)} = \frac{\text{distance (m)}}{\text{time taken (s)}}$$

The shape of distance-time graphs identifies the motion.

Acceleration

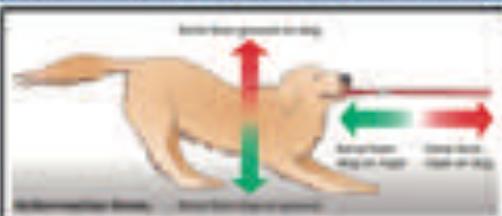
$$\text{acceleration (m/s}^2\text{)} = \frac{\text{change in speed (m/s)}}{\text{time (s)}}$$

Newton's Laws

First Law: An object move in a straight line, at the same speed, unless an external force acts on it.

Second Law: Acceleration depends on the size of the force and the mass. **Force = mass/acceleration**

Third Law: Every force has an equal and opposite reaction force.

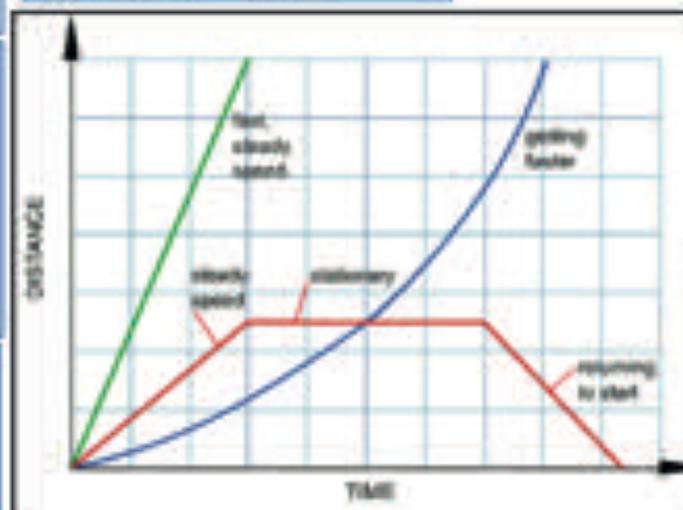


Mass: Is the amount of matter in an object (measured in kg).

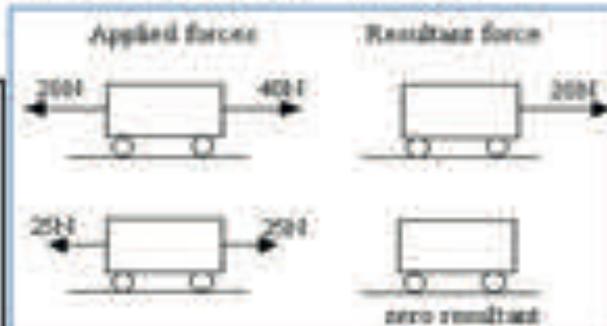
Weight is the force of gravity on an object- this changes with mass or gravitational field strength (g) (measured in N).

Typical speeds:

Walking:	1.4m/s
Cycling:	6m/s
Aeroplane:	250m/s
Strong breeze	10m/s
Sound	340m/s
Car in town	15m/s



Resultant forces show the overall size and the direction the object is moving as a result of all the forces acting on it. You can add or subtract forces to work out the resultant.



Types of Forces

Weight is a force due to gravity.

Friction is a force due to moving surfaces rubbing.

Electric forces exist between two charged objects.

Magnetic forces exist between two magnetic objects.

Tension is a stretching force (squashing is called compression).

Thrust is a force produced by an engine.

Drag is a force due to air resistance.

Upthrust is the force that makes things float.

Reaction is the force produced by the surface than an object rests on.

Acceleration in free fall due to gravity is 10m/s^2 ($g = 10\text{m/s}^2$).

Thinking distance	The <u>distance</u> travelled during the driver's reaction time – before braking
Braking distance	The <u>distance</u> travelled while braking until stopped.
Stopping distance	= thinking distance + braking distance

Factors affecting thinking distance	Factors affecting braking distance
<ul style="list-style-type: none"> • Distractions • Drugs • Alcohol • Tiredness • Speed 	<ul style="list-style-type: none"> • Mass of vehicle • Tyre friction • Road friction (e.g. wet roads) • Brake friction • Speed

Economic Geography

Economic Activity
definition = a job
which earns money
e.g. professional
footballer

OVERALL STATEMENT

4 different types of industry (Primary, Secondary, Tertiary, Quaternary). Industry changes over time, for example as technology advances.

Economic sectors

There are four sectors – primary, secondary, tertiary and quaternary.

Primary sector – extraction of raw materials e.g. farming, mining, fishing and forestry. **Secondary sector** – manufacturing and assembly industries. They take raw materials and manufacture finished products e.g. food processing, car assembly.

Tertiary sector – service industries. This area has the highest growth in HICs e.g. doctors, teachers, lawyers, travel agents, accountants, policemen etc.

Quaternary sector – this is the newest sector which deals with hi-tech industry. They are the research and development industries e.g. computer components, research into GM crops, space research etc.

Changes over time

Employment structures can also change over time within a country.

UK 1700 – most of the people were involved in agriculture (primary sector)

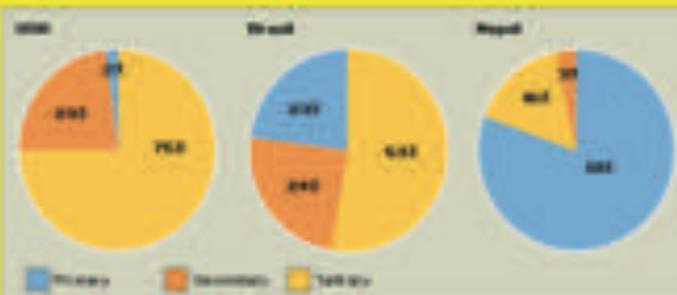
1840 – industrial revolution meant many people moved to the city centres to work in the new manufacturing areas (secondary sector).

1920 – as cities grew the demand for teachers, doctors, nurses, lawyers and other services grew. This brought more people of the rural areas into the cities.

1980s – the growth of the service industries had taken off and more people were being employed in this sector (tertiary sector).

2000 – research and design have started to grow and is becoming an important sector due to the fact that there is a highly educated and skilled workforce in the UK (quaternary sector).

Comparing employment structures Employment structure of a country shows how the labour force is divided between the primary, secondary and tertiary sectors. Therefore, employment structure show a great deal about a country. Lots of jobs in Primary usually means a poorer country with less mechanisation. Lots in Tertiary implies a richer nation with plenty of people who can afford to pay for services.



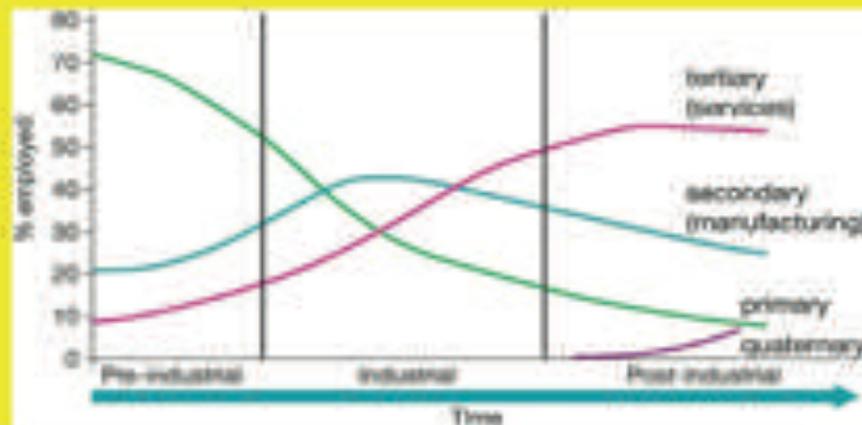
Formal and informal economy

Formal – the sector which includes all jobs with normal hours and regular wages, and are recognized as income sources on which income taxes must be paid e.g. factory worker

Informal – The informal sector, informal economy, or “grey-economy” is the part of an economy that is neither taxed nor monitored by any form of government e.g. casual “cash-in-hand” work.

Changes over time and space

As a country develops the proportion employed in the primary sector decreases and the proportion employed in the secondary and tertiary sectors increases. The Clark-Fisher Model (below) shows how countries move through three phases.



Types of tectonic Hazards

Volcanic Eruptions, Earthquakes, and Tsunamis are all types of tectonic hazards...



Volcanoes are mountains on plate margins which have a main vent from the magma chamber deep in the Earth's mantle below. Pressure builds up gradually in the magma chamber, and eventually the vent allows lava to travel upwards and erupt from the crater at the top of the volcano. The erupting magma is called lava, and as it cools in contact with the air it will solidify and form another layer on the slopes of the volcano.

Examples are Montserrat, Vesuvius (Italy), Mt St Helens (USA), Mt Etna (Italy), Mauna Loa (Hawaii, USA) and Mt Fuji (Japan)

**Tectonic Hazards**

Earthquakes are a shaking of the ground caused when two or more moving plates collide or move past each other. Plates don't move smoothly, but are "locked" together, so over time friction builds until a sudden jerking movement overcomes the friction – an earthquake. They are most common at plate margins. Earthquakes can cause a lot of damage, and their effects – like all hazards – are divided into "primary" and "secondary". **Primary effects** happen immediately, for example people are crushed to death in a collapsing building during a quake. **Secondary effects** happen later and last longer, for example rebuilding a major road or railway that was destroyed during the quake. Examples are Kobe 1995 (Japan), San Francisco 1906 (USA), Tokyo 1923 (Japan) and Christchurch 2011 (New Zealand)

**Plate Tectonics**

First advanced in 1915 by Alfred Wegener, the theory of plates moving around the top layer of the Earth's crust was confirmed in the 1960s. **Most volcanic eruptions and earthquakes happen at plate margins**

Tsunamis are huge waves which strike coastlines with sometimes devastating consequences. They are caused by earthquakes which happen under the sea, often hundreds or even thousands of miles away. The movement of two plates causes the ocean above to be displaced and sets up waves, which can travel across a whole ocean. Out at sea they are slight so easily missed by boats, but as they reach the shore they rear up into a wall of water and keep on coming onto the land much further than a normal wave – as much as several miles inland. Examples are Japan 2011, and even worse the Asian tsunami of 2004 which killed 230,000.



Scales: there are two main scales for measuring earthquakes. The **Richter Scale** measures actual shaking and allocates a number from 1-10. The highest recorded was 9.5 in Chile. The **Mercalli Scale** measure effects on people from 1-12.

Year 8 History Cycle 1: Industrial Britain and the Transatlantic Slave Trade

Chronology

- 1750** – Approximate beginning of the Industrial Revolution
- 1763** – James Watt creates the first working steam engine
- 1765** – The Spinning Jenny is invented and used widely in cotton mills
- 1785** – The power loom is invented and transforms production
- 1833** – The Factory Act limits the amount children can work
- 1888** – Match Girl Strike – women working at the Bryant and May factory go on strike

Key Knowledge

Agriculture to Industry – In 1750, there were roughly 11 million people living in Britain with only 20% living in towns and cities. 80% of the population lived and worked in agriculture. By 1900, the population had exploded to 40 million with 75% of people living and working in towns and cities. The promise of constant work led many families to leave behind the cottage industries and hand crafted, skilled labour of the countryside to move to growing industrial towns to work in the cotton mills and factories. James Watt created the first working steam engine in 1763 and led to rapid growth in the way resources were made. Coal became the 'black gold' of the age as it was used to power the new steam engines. Mill towns began to grow rapidly – Manchester alone had 50 mills by 1800.

Location, Location, Location – Industrialisation did not happen all at once. Northern towns (particularly in Lancashire) led the way. By 1860 there were 2,650 cotton mills in the county of Lancashire (North-West England) employing 440,000 people. These mills produced roughly 50% of the world's cotton. 3 billion yards of cloth were produced by the Lancashire mills alone at the turn of the 20th century (1900). Cities such as Liverpool, Manchester, Stockport, Blackburn and Bolton led the way using mechanised weaving machines to turn raw cotton transported from America (produced as part of the slave trade) into useable material such as calico. London became the first 'megacity' with a population of roughly 9 million across Greater London in 1900.

Factories – Usually worked 24 hours a day, 7 days a week. Use of the power loom after 1785 thanks to Edward Cartwright meant production was far more rapid than anything before. By 1850 there were 260,000 power looms being used across Britain. Dangerous, unhygienic places where men, women and children all worked. Shift patterns developed with men and women often working 16 hours a day 6 days a week.

Children – Children as young as 4 worked in the factories as Scavengers or Piecers. Education was not compulsory so very few children had a formal education. Children also frequently worked in coal mines or 'collieries' as Trappers – it was their job to ensure the doors were opened for the carts carrying coal. Conditions improved after the Factory Act 1833 and the Education Act 1830.

Health – Miasma theory was still believed. The Great Stink of 1858 along with Edwin Chadwick's Sanitary Report of 1842 led to changes in belief surrounding disease. Chadwick claimed that overcrowding, poor waste disposal and dirty water were contributing to disease in poorer areas. Joseph Bazalgette designed the first underground sewer system in 1866. John Snow proved that Cholera was waterborne in 1854. Louis Pasteur developed germ theory in 1861.

Key Word	Definition
Industrialisation	The development of industry on a wide scale
Agricultural	Based in farming
Laissez-faire	Leaving things to take their own course
Miasma	The theory that disease is caused by impure air
Germ theory	The theory that disease is caused by germs
Globalisation	When countries across the world become connected
Imperialism	The desire to control other countries around the world

I say, I say...

"From this foul drain the greatest stream of human industry flows out to fertilise the whole world. From this filthy sewer pure gold flows. Here humanity attains its most complete development and its most brutish; here civilisation works its miracles, and civilised man is turned back almost into a savage"

Alexis de Tocqueville, on Manchester, 1835



Chronological Understanding

1562 – John Hawkins set sail from Plymouth

1660 – Royal African Company granted its first slaving licence

1760 – Tacky's revolt

1807 – Abolition of the slave trade in Britain

1833 – Slavery Abolition Act

1963 – Bristol bus boycott

Key Knowledge

Beginnings of the slave trade – John Hawkins' voyage (born and raised in Plymouth) is often accepted as the first slave expedition in 1562. He captured 300 African men and women near Sierra Leone and transported to sell in Hispaniola (modern Haiti). Drake, born in Tavistock and the cousin of Hawkins, also took part in the trading of slaves with Hawkins. West Africa was rich in other valuable resources such as **ivory and salt** and Europeans traded things like **guns, gun-powder and clothing** in return. We can see this wealth in the names of the countries – Ghana (previously called the **Gold Coast**) and the **Cote d'Ivoire (Ivory Coast)**. The **Portuguese were some of the first Europeans to trade with West Africa from the mid-1400s shipped resources directly to Lisbon.**

Middle passage and plantation conditions – By 1800, Britain was transporting **80,000 slaves a year to the Americas**. On average **300 slaves were packed into each ship**. It is estimated that **10-12 million men, women and children were transported in total**. Most journeys across the Atlantic took **2-3 months**, however, one **French journey took 9 months**. Many slaves tried to throw themselves into the sea upon realising they were leaving Africa. **Overcrowded** – often forced to **sleep on top of one another**. **Toilets were often simple holes straight into the ocean**, but most didn't want to lose their place so went to the toilet where they were. **Oxygen was limited**. It was incredibly hot. Whipped with the **cat-o'-nine-tails** when not doing what they should. Common for **up to 10% of slaves to die before arriving** and in some instances this was as high as 50%. Food was simple (such as rice) and there was rarely enough **clean water**. Sugar was most popular on British plantations, **60% in Jamaica, over 600 on Barbados by 1800**. **90% of plantations on Nevis, Montserrat and Tobago were sugar plantations**. **Cotton was the main crop grown in the Bahamas**, as well as becoming one of the main crops on the American mainland. **Tobacco and coffee were also grown on plantations**. Slaves were split into a **day gang and a night gang** and worked **12 hours during the day, 12 at night**. Often up to **18 hour days at busy times, 7 days a week**. Life expectancy was around **7-9 years**. Slaves lived in small cottages with thatched roofs – earth floors with a simple bed, table and bench. **Flogging, mutilation, thumb screws and public humiliation** were used regularly to ensure slaves kept working hard. **Overseers and Drivers** ensured the work was carried out.

Abolition movement – There are many causes for the initial **abolition of the slave trade in 1807** and then the **abolition of slavery in the British empire in 1833**. Slave rebellions such as the **Haitian revolution, Tacky's uprising and Bussa's rebellion**. Changing attitudes influenced by people such as **William Wilberforce and Thomas Clarkson**. Also the experience of ex-slaves such as **Mary Prince and Olaudah Equiano**. There is also the argument that the trade was simply **not as profitable as it once was**.

Devon's involvement – Sugar is known to have been transported from the Caribbean in 1670 and landed in **Barnstaple**. The Bishop's Palace in Exeter had a **sugar mill** (sugar cones from about 1700 have been found in Exeter near Goldsmith Street). Manillas have been found on **Cowick Street, Exeter**. There was even an Exeter charter to trade with West Africa in 1585. The building that is now the Clarence Hotel was previously a bank created by **William Praed** – Praed owned a slave plantation in Jamaica up until 1819. The Bishop of Exeter was compensated **£1.5m in today's money because of the loss of his 665 slaves after abolition**.

Key Word	Definition
Empire	A group of countries ruled over by a single monarch
Slave factory	A fortress where slaves were taken to be bought and sold
Plantation	An area of land on which crops are grown
Middle Passage	The voyage by boat of slave ships from Africa to the Americas
Abolition	To get rid of something permanently
Civil rights	A person's political and social rights – their freedoms
Boycott	To refuse to do something

I say, I say...

"Black British history is as global as the empire. Like Britain's triangular slave trade it is a triangular history firmly planted in Britain, Africa and America. On all three continents stand its ruins and relics. Its imprint can be read in stately homes, street names, statues and the crumbling stones of the 40 slave fortresses in West Africa. It is intertwined with the cultural and economic histories of the nation."

David Olusoga, Historian



Year 8 Spanish Cycle 1 - ¡Vamos!

19 MFL

	Spanish	English				
1	¡Hola! Me llamo Joaquín. Soy español.	Hello! My name is Joaquín. I am Spanish.	1	uno	21	veintiuno
2	Se escribe J-O-A-Q-U-I-N. ¡No es fácil!	It is written J-O-A-Q-U-I-N. It isn't easy!	2	dos	22	veintidós
3	Vivo con mi familia en Perú y hablo español.	I live in Peru with my family and I speak Spanish.	3	tres	23	veintitrés
4	Actualmente tengo trece años.	Currently I am 13 years old.	4	cuatro	24	veinticuatro
5	Acabo de celebrar mi cumpleaños. Es el veinte de agosto.	I have just celebrated my birthday. It is the 20th of August.	5	cinco	25	veinticinco
6	Estudio muchas asignaturas y hoy tengo la educación física. ¡Qué estupendo!	I study a lot of subjects and today I have PE. How great!	6	seis	26	veintiséis
7	Me gusta la educación física porque me encanta el deporte, pero no me gusta nada la geografía.	I like PE because I love sport, but I do not like Geography at all.	7	siete	27	veintisiete
8	Diría que mi profesor de geografía es demasiado severo y también muy aburrido.	I would say that my geography teacher is too strict and also very boring.	8	ocho	28	veintiocho
9	Mi profesor dice que en clase hablo y no trabajo.	My teacher says that in class I talk and I don't work.	9	nueve	29	veintinueve
10	Siempre estoy listo para mis clases con un boli, un lápiz y ¡mi guitarra para la música!	I am always ready for my classes with a pen, a pencil and my guitar for music!	10	diez	30	treinta
			11	once	31	treinta y uno
			12	doce	32	treinta y dos
			13	trece	40	cuarenta
			14	catorce	50	cincuenta
			15	quince	60	sesenta
			16	dieciséis	70	setenta
			17	diecisiete	80	ochenta
			18	dieciocho	90	noventa
			19	diecinueve	100	cien
			20	veinte	1000	mil

A	B	C	CH	D	E	F	G	H	I	J	K	L	LL	M
ah	bay	thay	chay	day	ey	eh-fay	hay	ah_chay	ee	hoh-tah	kah	eh-lay	eh-yay	eh-may
N	Ñ	O	P	Q	R	RR	S	T	U	V	W	X	Y	Z
eh-nay	eh-nyay	oh	pay	coo	eh-ray	eh-rray	eh-say	tay	ooh	ooh-bay	ooh-bay doh-blay	eh-kees	e-gri-eh- gah	thay-tah

Week 1	
¿Cómo te llamas?	What are you called?
me llamo	I am called
hola	hello
buenos días	good morning
buenas tardes	good afternoon/ evening
buenas noches	good night
adiós	goodbye
¿Qué tal?	How are you?
soy	I am
eres	you are
fenomenal	great
bien	good
regular	ok
fatal	awful
inglés(a)	English
español(a)	Spanish
sí	yes
no	no

Week 2	
escribir	to write
se escribe	it is written
es	it is
no es	It isn't
fácil	easy
difícil	difficult
complicado	complicated
nombre	first name
apellido	surname
+ alphabet	

Week 3	
vivir	to live
vivo	I live
vives	You live (s)
vive	He / she lives
vivimos	we live
vivís	You live (pl)
viven	They live
¿Dónde vives?	Where do you live?
en España	in Spain
en Inglaterra	in England
en América del Sur	in South America

Week 4	
¿Cuántos años tienes?	How old are you?
tener	to have
tengo ___ años	I am _ years old
tienes ___ años	you're _ years old
tiene ___ años	He/she is _ years old
actualmente	currently
+ numbers 1-31	

Week 5	
Mi cumpleaños es el..de...	My birthday is the...of...
enero	January
febrero	February
marzo	March
abril	April
mayo	May
junio	June
julio	July
agosto	August
septiembre	September
octubre	October
noviembre	November
diciembre	December

Week 6	
lunes	Monday
martes	Tuesday
miércoles	Wednesday
jueves	Thursday
viernes	Friday
sábado	Saturday
domingo	Sunday
estudiar	to study
estudio	I study
estudias	You study (s)
estudia	He/she studies
estudiamos	we study
estudiáis	You study (pl)
estudian	They study
el francés	French
el español	Spanish
el inglés	English
el teatro	drama
el dibujo	art
las ciencias	science
las matemáticas	maths
la informática	computing
la música	music
la geografía	geography
la historia	history
la religión	RE
la educación física	PE
el deporte	sport
la tecnología	technology

Week 7	
me gusta (mucho)	I like (a lot)
no me gusta	I don't like
odio	I hate
detesto	I hate
me encanta	I love
porque es...	because it is...
interesante	interesting
relajante	relaxing
aburrido	boring
fácil	easy
difícil	difficult
importante	important
divertido	fun

Week 8	
mi profesor(a) es...	my teacher is
antipático/a	unpleasant
bueno/a	good
simpático/a	nice
severo/a	strict
paciente	patient
justo/a	fair
hablador(a)	chatty
tímido(a)	shy
y	and
también	also
pero	but
un poco	a bit
bastante	quite
muy	very
Adjectives agree! -o endings change to -a for feminine, add -s or -es for plurals.	

Week 9	
comer	to eat
como	I eat
comes	you eat (s)
come	he/she eats
comemos	we eat
coméis	you eat (pl)
comen	they eat
hablo	I speak/talk
no hablo	I don't speak
leo	I read
escucho	I listen
escribo	I write
trabajo	I work
bebo	I drink

Week 10	
(no) hay	there is (not)
necesito	I need
(no) tengo	I (don't) have
un bolígrafo	a pen
un lápiz	a pencil
un cuaderno	exercise book
un libro	a book
un estuche	a pencil case
un móvil	a mobile
una mochila	a rucksack
un monedero	a purse/wallet
un diccionario	a dictionary
un sacapuntas	a pencil sharpener
una agenda	a diary
una calculadora	a calculator
una goma	a rubber
una regla	a ruler

Year 8 French Cycle 4 – Où j’habite

	French	English
1	Actuellement j’habite à Cannes avec ma famille, cependant, quand j’étais plus jeune j’habitais à Paris.	I currently live in Cannes with my family, however, when I was younger I used to live in Paris.
2	J’habite dans une grande maison dans une ville qui est près de la mer. Je dirais que j’ai de la chance parce que j’adore là où j’habite.	I live in a big house in a city that is near the coast. I would say that I am lucky because I love where I live.
3	En ce qui concerne ma maison, il y a un salon énorme, une cuisine moderne, et quatre chambres. Dehors il y a un joli jardin où j’aime jouer.	With regards to my house, it has an enormous lounge, a modern kitchen, and four bedrooms. Outside there is a pretty garden where I like to play.
4	Dans ma chambre il y a un lit , et il y a une table. Ma chambre idéale serait plus grande avec une télé.	In my bedroom there is a bed and a table. My ideal bedroom would be bigger with a television.
5	Sur la table il y a mon ordinateur et à gauche de mon lit j’ai mon armoire.	On the table there is my computer and on the left of my bed I have my wardrobe.
6	Je dirais que ma ville est très moderne et selon ma mère c’est la plus belle ville du monde! C’est plus touristique que le village de mon copain.	I would say that my town is very modern and according to my mum it is the most beautiful town in the world! It is more touristy than my friend’s village.
7	Dans ma ville il y a un centre sportif où on peut jouer au basket et on peut visiter le château. Il ne faut pas manquer la rivière.	In my town there is a sports centre where you can play basketball et you can visit the castle. You must not miss the river.
8	La semaine dernière je suis allé au cinéma où j’ai regardé un film avec mon copain qui s’appelle Luc. Ce que j’aimais le plus c’était le popcorn.	Last weekend I went to the cinema and I watched a film with my friend who is called Luke. What I like the most was the popcorn.
9	Ce week-end, s’il fait beau, je vais aller à la plage pour que je puisse nager dans la mer. Ça sera extra!	This weekend, if the weather is good, I am going to go to the beach so that I can swim in the sea. It will be great.
10	Malheureusement, selon la météo, il va pleuvoir des cordes!	Unfortunately, according to the weather forecast, it is going to chuck it down!

Week 1 Countries	
Où habites-tu?	Where do you live?
habiter	to live
J'habite	I live
Tu habites	You live(sing.)
Il/elle habite	He/she lives
Nous habitons	We live
Vous habitez	You live (pl)
Ils/elles habitent	They live
J'habitais	I used to live
Je vais habiter	I am going to live
en Allemagne	in Germany
en Angleterre	in England
en Ecosse	in Scotland
en Espagne	in Spain
en France	in France
en Grèce	in Greece
en Irlande	in Ireland
en Italie	in Italy
au Pays de Galles	in Wales
au Portugal	in Portugal
C'est	It is
dans le nord	in the north
dans l'est	in the east
dans le sud	in the south
dans l'ouest	in the west
dans le centre	in the centre

Week 2 Places to live	
J'habite dans	I live in...
un appartement	a flat
un pavillon	a bungalow
une maison	a house
une ville	a city / town
un village	a village
en banlieue	in the suburbs
à la montagne	in the mountains
à la campagne	in the countryside
au bord de la mer	by the sea
ancien(ne)	old (fashioned)
confortable	comfortable
grand(e)	big
joli(e)	pretty
moche	ugly
moderne	modern
petit(e)	small

Week 6 Describing towns	
C'est	It is
Ce n'est pas	It isn't
plus...que	more...than
moins...que	less...than
aussi...que	as...as
le/la plus...	the most
animé(e)	lively
beau/belle	beautiful
bruyant(e)	noisy
historique	historic
industriel(le)	industrial
propre	clean
sale	dirty
tranquille	quiet
touristique	touristy

Week 3 Rooms	
Il y a...	There is/are...
une salle à manger	a dining room
une salle de bains	a bathroom
une toilette	a toilet
un couloir	a hallway
un salon	a lounge
une cuisine	a kitchen
une chambre	a bedroom
un garage	a garage
une pièce	a room
un jardin	a garden
une terrasse	a terrace
en haut	upstairs
en bas	downstairs
dehors	outside

Week 7 Places in town	
il y a / il n'y a pas de	there is / there isn't
un musée	a museum
un centre commercial	a shopping centre
un centre sportif	a sports centre
un château	a castle
une stade	a stadium
un cinéma	a cinema
une église	a church
une gare	a station
des magasins	shops
un parc	a park
une patinoire	an ice rink
une piscine	a pool
une place	a square
un supermarché	a supermarket

Week 4 In the bedroom	
dans ma chambre	in my bedroom
J'ai...	I have...
Il y a...	There is...
une armoire	a wardrobe
un ordinateur	a computer
un tapis	rug
un lit	a bed
une étagère	a shelf
une lampe	a lamp
une table	a table
une porte	a door
une chaise	a chair
una télévision	a television
une fenêtre	a window

Week 8 Last weekend	
Le week-end dernier	Last weekend
je suis allé(e)	I went
j'ai visité	I visited
j'ai fait	I did
j'ai mangé	I ate
j'ai bu	I drank
j'ai vu	I saw
je suis sorti(e)	I went out
j'ai regardé	I watched
nous sommes allés	We went
nous avons visité	We visited
c'était	It was
il faisait	It was (weather)
il y avait	There was

Week 5 Prepositions	
sur	on (top of)
à droite	on the right
à gauche	on the left
dessous	under
devant	in front of
à côté de	next to / beside
derrière	behind
entre	between
sur le mur	on the wall

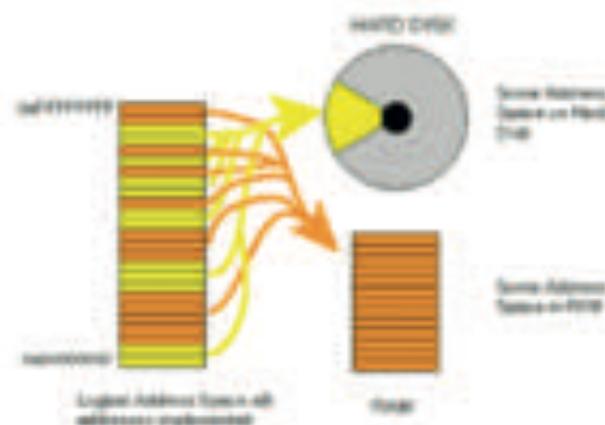
Week 9+10 Future plans	
Ce week-end	This weekend
Aller	To Go
Je vais	I am going
Tu vas	You are going
Il/elle va	He/she is going
Nous allons	We are going
Vous allez	You are going (pl)
Ils/elles vont	They are going
faire	to do
jouer	to play
manger	to eat
nager	to swim
visiter	to visit
voir	to see
Ça sera	It will be
Il fera	It will be (weather)
Il y aura	There will be

<p>Key Words:</p> <p>Worship: To show respect and adoration for a god/goddess or important religious icon.</p> <p>Origin: The point at which something begins</p> <p>Prayer: Communication with a religious or spiritual figure; usually a god</p> <p>Heritage: Something that is passed down from generations</p> <p>Inherent: existing in something as a permanent characteristic</p> <p>Synagogue: Jewish place of worship</p> <p>Zionism: A movement which wants to develop a Jewish Nation in Israel.</p> <p>Persecution: Poor treatment towards a person or group of people based on a characteristic such as race, religion, ethnicity, gender or sexuality.</p> <p>Messiah: The leader or saviour of a particular group</p> <p>Monothelistic: Believing in only one god</p> <p>Exodus: A mass departure of people</p> <p>Atonement: making up for wrong doings</p> <p>Fasting: Not eating any food or drink</p> <p>Congregation: A group of people together for worship</p>	<p>Origins of Judaism</p>  <p>Abraham is the founder of Judaism. Due to his purity, it is believed that God called out to him and commanded him to leave his homeland behind for a new life. God made Abraham several promises and guided him to create what we now know to be Judaism. Moses is thought of as the greatest of prophets and is the only person believed to have seen God face to face. God gave Moses the 10 commandments, which are the key rules in Judaism.</p>	<p>God & The Messiah</p> <p>Jewish people believe there is only one God and that he is all loving (omnibenevolent), all powerful (omnipotent) and all knowing (omniscient). They believe he created the whole world and will judge people based on their actions in life which are judged against the rules he has given his people. Where Christians believe that Jesus was the messiah, Jewish people believe that the messiah is yet to come to Earth.</p> 	<p>The Value of Life</p>  <p>Jews believe that humans were made as part of God's creation and in God's image. Therefore, human life should be valued and considered as sacred and God-given. Due to these attitudes towards the sanctity of life, Jews believe that only God can give life, and only God should take life away.</p>	<p>Groups within Judaism</p> <p>The three largest groups within Judaism are reform, conservative and orthodox. There are many different groups because of the way that scripture may be interpreted but may also have cultural differences based on where they live. Because Judaism is inherited from the mother, some people who are Jewish do not believe in God. These people are called secular Jews.</p> 	<p>Synagogue and Prayer</p> <p>Synagogues look different depending on the type of Jewish people who worship there. The language used in the synagogue might be different. Orthodox Jews use Hebrew as the original language of Jewish people. Services are on a Friday evening, Saturday morning (this is the longest service), and Saturday afternoon. Selected portions of the Torah (holy book) are read and the Rabbi (leader of the congregation) will give a weekly lesson.</p> 
	<p>Zionism</p>  <p>At the end of the 19th Century, Jews were being persecuted. Some decided that the solution was to form a state of only Jewish people where they could practice their religion freely. Since Judaism began in and around Jerusalem, they decided to go back to there to form this "homeland" however it had since had many different rulers and the ownership of this land remains in dispute.</p>	<p>Rosh Hashanah</p> <p>Services for this festival emphasise God's power. Jews believe God balances a person's good deeds over the last year against their bad deeds and decides their fate accordingly. The 10 days beginning with Rosh Hashanah are known as the Days of Awe, during which Jews are expected to find all the people they have hurt during the previous year and apologise to them.</p> 	<p>Yom Kippur</p>  <p>Yom Kippur is a Day of Atonement when synagogue attendance is important. It is a day of fasting. On Yom Kippur Jews believe God makes the final decision on who will live, die, prosper and fail during the next year, and seals his judgement in the Book of Life. Worship includes the confession of sins and asking for forgiveness, which is done aloud by the entire congregation.</p>	<p>Shabbat</p> <p>Shabbat starts on Friday when a special meal is eaten and finishes sunset on Saturday. On Saturday morning, the family will attend the synagogue and no work will be done during the day. For some Orthodox Jews this includes driving or using electricity. The time is spent as a family relaxing and spending time together, for example playing games.</p> 	<p>Food Laws</p>  <p>Judaism's food laws are known as kashrut. Food that is allowed is called kosher. For food to be considered Kosher it must obey these rules: Land animals must have split hooves and must eat grass. Seafood must have fins and scales. Any birds that are eaten must not eat other meats. Meat and dairy cannot be eaten together.</p>

GCSE OCR Computer Science 1.2 Memory

Key Vocabulary

Volatile	Data is lost when there is no power to the storage
RAM	Random Access Memory—it stores currently running programs and a small piece of the operating system. Can store data
ROM	Read only memory—it holds the BIOS which allows the computer to boot up. It cannot be edited. Can store data.
BIOS	Basic input output system—Another name for the boot up sequence program.
Virtual Memory	Memory which is used when RAM is full. This is taken from secondary storage.
Disk Thrashing	Overusing the hard drive with virtual memory—which over time damages the disk.
Flash Memory (non-volatile)	Memory which retains data in the absence of power. USB drive.



Ram VS Rom

RAM	ROM
Volatile memory	Non-volatile memory
Stores data	Stores data
Stores running programs & part of the operating system	Used to store the BIOS and bootstrap
Memory can be written to or read from	Memory can only be read from and not written to

APPLIED

Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks.

Example: How can John increase the performance of his computer? (3)
 Answer: They could increase the number of cores, as this will increase parallel processing. He could also increase the RAM as this will allow more temporary storage for running programs and allow the processor more time to process data, and will reduce disk thrashing.

Secondary Storage

RAM

Cache Memory

CPU

The CPU will first search for data in the Cache memory and then move further away until it finds what it is looking for. The further away from the CPU, the longer data will take to transfer.



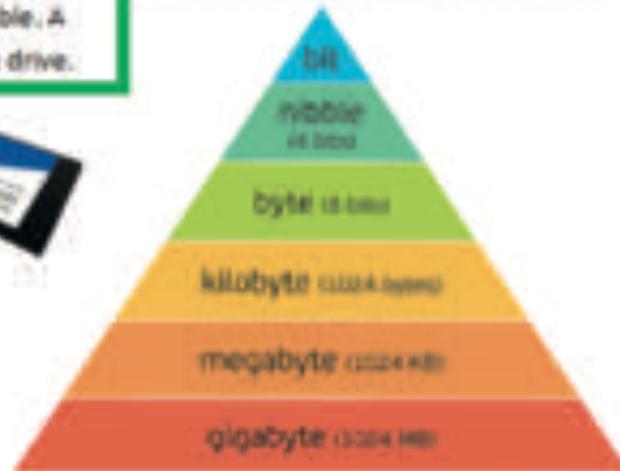
Flash Memory

USB is not accepted—it has to be USB drive; USB pen drive; Flash drive.

OCR Computer Science 1.2 Storage

Key Vocabulary	
Secondary Storage	Storage which is not directly connected to the motherboard. Non-volatile. Needed to store persistent data.
Primary Storage	Storage which is connected to the motherboard.
Magnetic Storage	Storage which is cheap per MB; not very durable as it has moving parts, not very portable. A hard drive.
Optical Storage	Storage which is cheap per MB, not very durable as it can be damaged by scratches, is portable. A CD
Solid State Storage	Storage which is expensive per MB, very durable as they are shock resistant and have no moving parts., very portable. A USB drive, or a solid state drive.

Device	Capacity	Speed	Portability	Durability	Reliability	Cost
Magnetic	High > 1TB	Medium data access	Not very; it is not easy to move a hard drive	Not very durable, it has moving parts and is easy to break	Mid reliability due to moving parts being easy to break.	Cheap per MB
Optical	Low <1GB	Slow data access	Very portable. It's a disk	Not very, it is easy to scratch and snap	Mid reliability as it is fairly robust but can be damaged and prevents reading data	Very cheap per MB
Solid State	Medium <1TB	Fast data access	Very, solid state drives have no moving parts and are fairly small	Very durable, as they are just microchips on a board.	High—although they do have a limited number of read and writes	Very expensive per MB
Cloud Storage	Within reason unlimited	Dependant on network access speed	Very portable, as long as you have internet access	Very durable, can be accessed on any device with internet access	It is not possible to break cloud storage	Mid range expensive. Depends on how much space you have.



Have you applied?
 Definitions **must** be applied to the scenario otherwise you will receive 0 marks. **Here the photos have been mentioned.**

Example: John is transferring camera files from one computer to another. Discuss the advantages and disadvantages of using a flash drive.
 Answer: A flash drive has high transfer speeds, and is very robust however has limited storage when compared to a hard drive, or cloud storage. So to move the photos I would recommend cloud storage.

Film Music Key words

Compose – to write music of your own.

Atmosphere – the tone or mood of something.

Diegetic music – Music that exists within the film and the characters respond to.

Non-diegetic music – music that only the audience can hear. Often known as...

Leitmotif – a short musical idea that represents a character or a place.

Underscore – the music in the background of a film that creates the atmosphere.

Mickey mousing – where the music mimics what happens on screen in a funny way.

Consonant – chords or melody that sound nice together (in the same key or chord)

Dissonant – music or notes that clash and sound crunchy.

Instrumentation – the choice of instruments and sounds used by a composer.

Dynamics – how loud or quiet music is.

Texture – how many layers the music has. Whether it is thick or thin.

Major – when the music sounds happy

Minor – when the music sounds sad

Music Technology Key Words

DAW – Digital Audio Workstation. Software which allows you to sample, sequence and use virtual instrument to create music.

Sampling – The recording of sounds (samples) for use in a piece of music. Examples include James Brown's drumbeats being sampled and reused in hip hop songs.

Sequencing – Using a DAW to arrange audio files into a piece of music.

Virtual Instruments – Computer program which make sounds like a real instrument e.g. violin.

MIDI – A way for electronic instruments to talk to each other (including computers).

Texture – Refers to how many tracks there are in the music. More tracks gives a thicker texture.

Year 7 MUSIC Knowledge Organiser Summer Term

Film Composers (listen and look up)

- John Williams
- Hans Zimmer
- Danny Elfman
- Ennio Morricone
- Howards Shore
- Jerry Goldsmith
- Ludwig Goransson
- James Horner
- Alan Silvestri
- Nainita Desai
- Guy Michaelmore

Musical Associations. :

26. Tempo	Fast	Excitement, action or fast-moving things (e.g. a chase scene)
	Slow	Contemplation, rest or slow-moving things (e.g. a funeral procession)
27. Melody	Ascending	Upward movement, or a feeling of hope (e.g. climbing a mountain)
	Descending	Downward movement, or feeling of despair (e.g. moment down a hill)
	Large Leaps	Distorted or grotesque things (e.g. a monster)
28. Harmony	Major	Happiness, optimism, success
	Minor	Sadness, seriousness (e.g. a character learns of a loved one's death)
	Dissonant	Scareness, pain, mental anguish (e.g. a murderer appears)
29. Rhythm & Metre	Strong sense of pulse	Purposefulness, action (e.g. preparations for a battle)
	Dance-like rhythms	Playfulness, dancing, partying (e.g. a medieval feast)
	Irregular rhythms	Excitement, unpredictability (e.g. a fast-moving fight)
30. Dynamics	Rhythmic ostinatos	Morose, tension (e.g. the countdown to an invasion)
	Loud	Surprise, power, large things (e.g. a vast panorama)
	Soft	Gentleness, weakness, intimacy, small things (e.g. a new-born lamb)
	Crescendos / Diminuendos	Objects or events getting closer / objects getting further away

Week 1/2

Tension- Used to raise a piece of drama to a climax or anti-climax and to engage an audience. Can be created with sound, silence or the way the characters on stage act/react (Think about a scary film where someone goes towards a door, the audience might feel nervous of what is behind the door due to the music/silence and way the actor is acting/reacting)

Genre- the style of the piece of drama (eg: horror, comedy, musical theatre, melodrama)

Conventions- the absolute 'must have' of a genre (eg: horror must try to be scary, a musical must have song and dance)

Characteristics of genre- the things that it 'might have' (eg: a horror could be scary in lots of ways: ghosts, zombies, clowns, a maniac with a mask- but it won't have all of them!)

Group improv/TIR (teacher in role) - Everyone is involved in an improvised scene. Everyone must focus, stay in role, listen and react in character to what is going on. It can be used to explore a new theme/story and to initiate ideas for devising.

Week 3/4

Multi-role- Playing more than one character within a piece of drama. It must be made clear that you have changed role through the use of clear characterisation.

Characterisation- the way we portray the character we are playing e.g.: Body language, posture, gesture, facial expressions, use of voice (pitch, pace, pause, tone, emphasis, volume) We must consider their personality and stay in role.

Non-naturalistic- a piece of drama that does not follow the conventions of normal life. This means it can freeze, use thought track, multi-role, jump time, mime, etc- things that don't happen in normal life. The opposite is naturalistic and would include things like the soaps (eg. Coronation Street)

Split scene/Cross cutting- more than one scene on stage at once. The others must freeze whilst one scene is working so as not to distract the audience.

Conscience alley – other students vocalise what is going on in your character's head. This rehearsal technique will help you think about how they might feel in a situation/dilemma.

Week 5/6

Mime- acting with no words. You need clear gestures, body language and facial expressions. Movement is slow and exaggerated.

Music/sound effects and soundscape- are used to enhance the atmosphere of a piece of drama. Soundscape is a collection of sounds either made by the actors or recorded.

Freeze frame/tableau/still image- the actors stand still in an image depicting a moment in the piece of drama. This can be used in with things like thought track or to help a split scene.

Monologue/Soliloquy- a moment when a character talks at length on their own. Monologues are in front of/heard by other characters, soliloquys are said without others hearing.

Thought tracking- The audience hears what a character is thinking. This might be different to what they are saying on the outside.

Direct address- when a character or actor talks directly to the audience. This is non-naturalistic as they are breaking the 4th wall (the front of the stage)

Week 7/8

Devising- to make up your own piece of drama and not use an existing play/script. It is based on a stimulus and is the opposite of improvisation as it is rehearsed and learnt.

Stimulus- something used to help inspire ideas for your piece of drama. A stimulus could be anything eg. an object, poem, painting or event; our stimulus has been a 'Theme' (a 'haunted' house, rumours and gossip)

Marking the Moment- a moment which you want to stand out. You can do this with sound, lighting, a freeze, slow motion, etc. Often helps to build tension and raise a piece to a climax. **Flash forward/back-** A jump forward or backward in time in a story. The audience must understand this has happened (eg with a freeze. Also, you might become someone else or your character becomes older/younger)

News report- Helps further a plot by giving information and can mark the passing of time. Often done as a direct address or as a report that the characters are watching.

Week 9/10

Rehearsal- practice in order to develop your piece. Early stages of rehearsal include improvising and creating, later stages focus on improving and polishing. Forum theatre- a rehearsal technique where the audience help edit the piece of work. They will stop you as you perform to make suggestions of ways to improve your work.

Props/scenery/costume/lights/sound- Things you add to enhance your piece of drama. Some pieces have none, some have many, you have to judge what is right. Too much can be as bad as too little.

Dress rehearsal- the last time through a piece before you perform it. Should include all extra bits (eg. lighting and sound) Helps to identify any last issues you need to iron out.

Performance skills- what you should use to create an engaging performance. Eg: focus, characterisation, actions/reactions, energy, tension, staying in role, projection, no backs to audience, everyone knows their lines/what they are doing throughout.

Iterative Design, Designers & Companies

What is iterative design?

Think about a product you use regularly. List or sketch ways in which that product could be improved.

Keywords

Iteration
Scenario
Prototype
Research
Evaluate
Unique
Design
Modelling

(Look up the meanings of these words).

Iterative Design

Iterative design is a cycle of designing, prototyping and testing to develop an idea and achieve the best possible outcome.

Each sketch or prototype in the process is called an iteration.

Each cycle is used to inform and improve the next iteration.

Failure is viewed as a positive step towards a better final product.



PG ONLINE

Morph Wheels

Watch the link video which shows different iterations of the Morph wheel – how many can you spot?

How did the use of materials change as the design evolved?

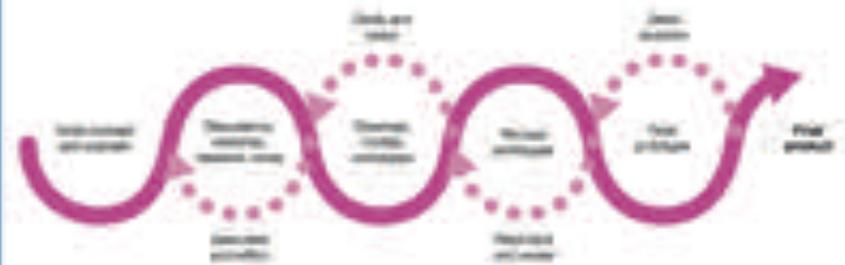
What are the advantages of using models compared to sketches?

<https://vimeo.com/30529915>

<https://www.youtube.com/watch?v=mlwtEo8E-oo&feature=youtu.be>



Each cycle and iteration improves the design and moves the design process forward.



Iterative Design, Designers & Companies

Designers and Companies

Every product you buy or own has been designed or improved by company that has manufactured it.

By studying designers and companies, you can see how products have evolved and developed over time.

Very few products are unique.



Task to complete

Log in to the Focuslearning App and research 2 Designers and 2 Companies

Either on paper or in your Google Classroom Electronic Workbook:

Produce a page of information on each of your chosen Designers and Companies, using images and text to show an understanding of the products and designs they are well known for.

Choose a Designer or Company that you haven't come across before or that you know very little about.



User Name:

Password:

Login 

Model making to help design

Models are simple but effective ways to prove or disprove a concept.

Bad ideas can be abandoned quickly and good ideas can be developed further.

Creating lots of different quick prototypes allows you test lots of ideas and combine the best bits from each one.

Model making can cost much less than building a finished prototype and be made in less time. Each model can give ideas on how to further improve your design.



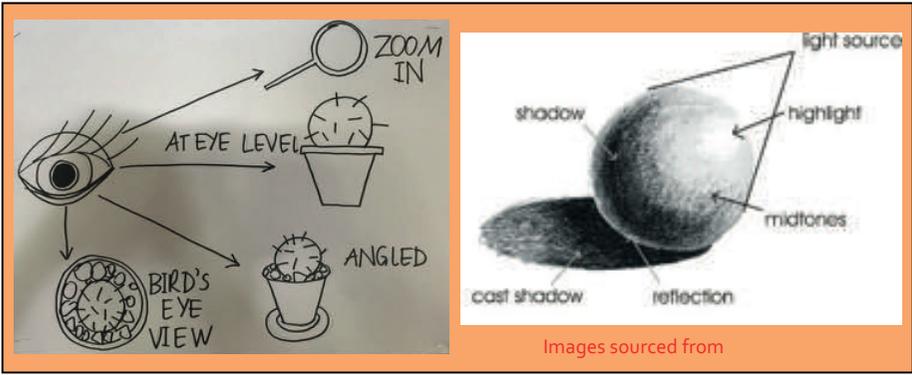
Model making - Materials

Models can be made from a range of materials, though usually from items which are easy to cut and shape, being light weight, low cost and disposable.

When a car body shape is first tested, it is made from clay.




Cardboard, expanded foam, balsa wood, paper, recycling waste, drinking straws and even Lego, are all suitable for making models or prototypes.



Year 8 **Art and Design**.

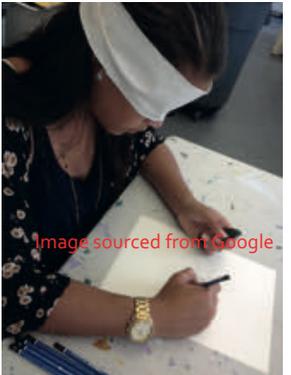
Objects and Viewpoints

I am open minded and curious to learn about and understand new art styles and techniques. I am confident to play with ideas and processes whilst making style choices.

Stretch and Challenge: The more you do something, the better you get at it!

1. Arrange your own still-life and take photos of it using a range of different viewpoints (be experimental). Print out, present on paper and draw from them.
2. Complete the tasks written in green

Still-life: You may think that you won't be able to do it, but you will be amazed at how good you get at drawing a still-life during this project. You will be taught how to draw accurately and how to abstract. You will be taught to notice more than the obvious. *Set up your own still-life and practice drawing accurately what you see. Look closely at shape, size, angle, detail, light source*



Experimental drawing: You will find it exhilarating to experiment with new ways of drawing and looking at something. Embrace the unknown and enjoy the wonderfully weird and imperfectly beautiful results that you create. *Arrange your own still life and find something interesting to look through. This could be anything from close up to looking through a sheet of bubble wrap*

Viewpoints: You will love experimenting with different ways of looking at a still-life. For example, you can change the angle, look through a magnifying glass or even bubble wrap! *Set up your own still-life and experiment with different ways of looking at it by taking photos and drawing what you see each*



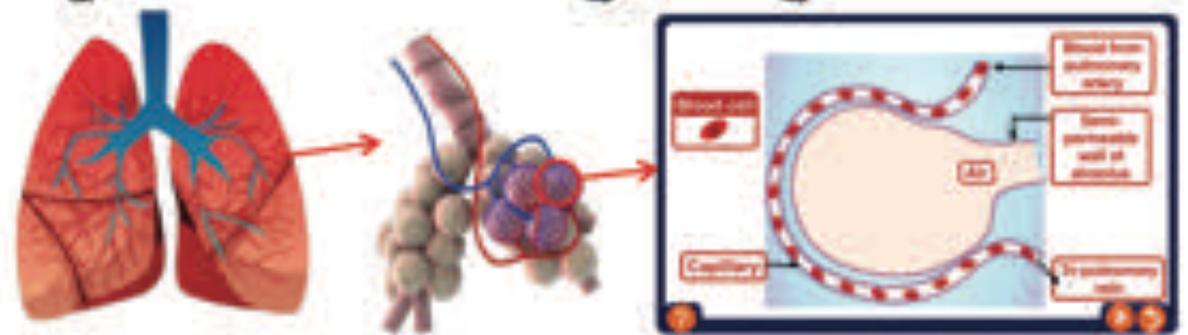
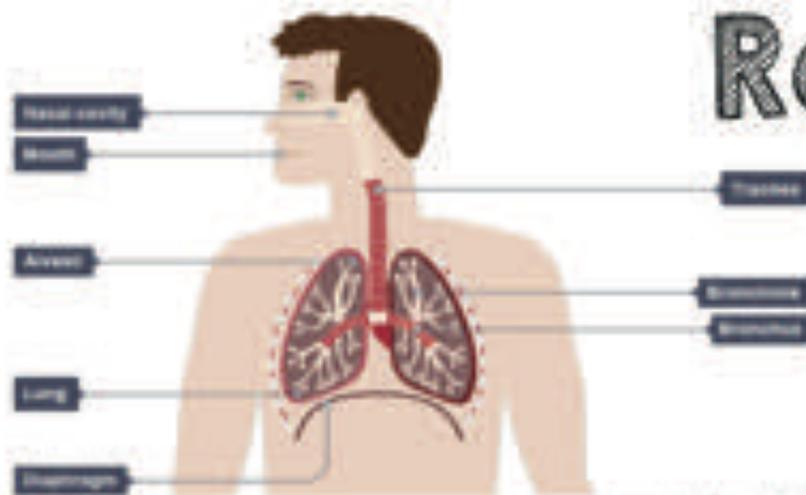
Discovering art styles! It is fascinating to see the work of other artists (yes, you too are an artist!) and learn about their inspirations, styles and techniques. You will be inspired by how your own style, skill and ideas transform whilst you explore the artist and the art style. *Find an artwork that includes a still-life and research about it and the artist. Then have a go at creating your own*

New techniques and processes: Experimental drawing, overlapping drawing, cubist style, watercolours, mixed media collage, hand stitch

Key vocabulary

3D, view, space, place, point of view, perspective, viewpoint, distance, line. Shape. Tone. Texture, detail. Light/Shade. Intensity. Size, Proportion. Division, beauty. Game, experiment, realistic vs abstract, confusing, fragmented, alternative, layered, overlap, angles, geometric, interesting, imperfect, hint, suggestion, transformation, Context, information, sources, still-life, genre, Style, visual features, visual effects, Paris, France, Europe, avant-garde, cafes, WWI, society, fashion, city life, standards, corset, suffragette, photography, auction, collecting, financial value, art market, layout, presentation, interpretation, response, viewfinder, selection, enlargement, accuracy, proportion, division, placing, measuring, scale up, zoom in.

Respiratory System



Pathway of air into the lungs:

1. Air enters the body through the nose or mouth where it is warmed
2. It then enters the trachea
3. The trachea then divides into two bronchi. One bronchus enters each lung
4. Each bronchus branches out into small tubes called bronchioles, which the air travels through
5. At the end of the bronchioles are tiny air sacs called alveoli
6. This is where the gaseous exchange happens

Inspire/inhale breathe in

Expire/exhale breathe out

Deep breathing slow, deep breaths whilst relaxed

Alveoli Air sacs in the lungs

Residual volume Air left in the lungs after maximal expiration

Gaseous exchange The process where oxygen in alveoli moves into the blood whilst removing carbon dioxide

Gas exchange at the alveoli

Oxygen that is breathed in passes through the alveoli and into the red blood cells in the capillaries.

In the capillaries the oxygen combines with haemoglobin to form oxyhaemoglobin.

Haemoglobin carries carbon dioxide from the blood to the capillaries which is then passed through the alveoli and breathed out.

Haemoglobin

The substance in the red blood cells which transports oxygen (as oxyhaemoglobin) and carbon dioxide.

Mechanics of breathing

As we inhale/inspire the chest cavity changes shape and size. The diaphragm flattens and moves down. The intercostal muscles (which are attached to the ribs) contract, raising the ribs up and pushing out the sternum, making the chest cavity larger. This reduces the air pressure inside the chest cavity and causes air to be sucked into the lungs.

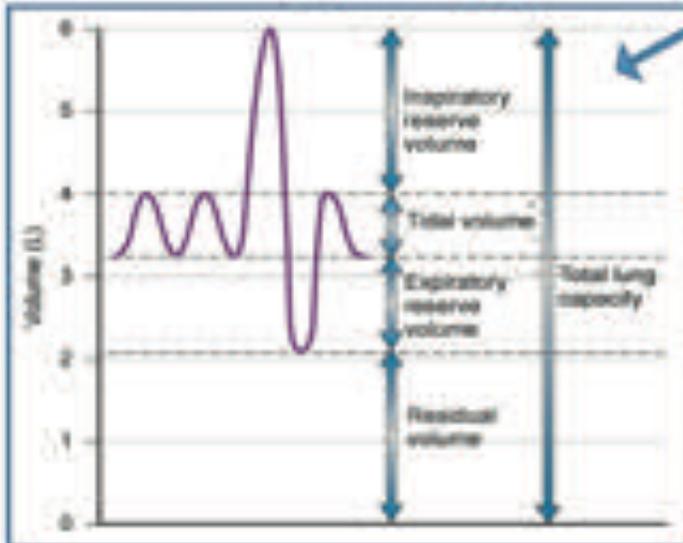
When we exhale/expire the reverse occurs. The diaphragm becomes dome shaped. The intercostal muscles relax, lowering the ribs and dropping the sternum, making the chest cavity smaller. This increases the air pressure inside the air cavity and causes air to be pushed out of the lungs.

Lungs can expand more during exercise (inspiration) due to the use of pectorals and sternocleidomastoid. During exercise (expiration), the rib cage is pulled down quicker to force air out quicker due to use of the abdominal muscles.

Spirometer: equipment that measures air capacity in the lungs

Spirometer trace A measure of lung volume, which includes:

- tidal volume – volume of air inspired or expired/exchanged per breath
- inspiratory reserve volume – the amount of air that could be breathed in after tidal volume
- expiratory reserve volume – the amount of air that could be breathed out after tidal volume
- residual volume – the amount of air left in the lungs after maximal expiration.





General

Childline—www.childline.org

0800 1111

Offers information and advice, 1-2-1 confidential chat (text, email, phone) and support from message boards on a wide range of issues.

This website is one of the most useful you will find and can direct you to help or information about all the other topics mentioned here, and

Safety, bullying and abuse

Child Exploitation and Online Protection (CEOP) - www.ceop.police.uk

Report inappropriate online contact, any unlawful misuse of social media, or a child protection concern to a trained police officer. You can also click this button on your platform:



NSPCC—www.nspcc.org.uk 0800 1111

Information and help about on- and offline abuse

**National Bullying Helpline—
www.nationalbullyinghelpline.co.uk 0845 22
55 787**



Health

School nurse—07520 631722

Text only for confidential advice

National Health Service—www.nhs.uk

Research and useful information on health issues

Walk-In Centre, RD&E Hospital—01392 411611

Non-urgent and sexual health needs

**Walk-In Centre, 31 Sidwell Street—01392
276892**



Healthy relationships

Thinkuknow—www.thinkuknow.co.uk

Age-related help and advice about on- and offline relationships and consent.



Drugs and alcohol

YSmart—ysmart.org.uk 01271 388162

Information about substance misuse, advice, recovery and treatment

Homeless, skills, advice, getting your voice heard

**Young Devon—www.youngdevon.org 01392
331 666**



Mental Health and well-being

Samaritans—www.samaritans.org

Call 116 123 for emergency help

Email jo@samaritans.org (response within 24 hours)

Papyrus—papyrus-uk.org 0800 068 41 41

Urgent help for you or someone you know

YoungMinds—youngminds.org.uk

Text YM to 85258 for urgent help

Happy Maps—www.happymaps.co.uk

Advice on everything from sleep problems to anxiety, bullying, self-harm, coping with divorce, autism, ADHD, gender dysphoria and more

Kooth—www.kooth.com



LGBT

X-PLORE—www.lgbtqyouthdevon.org.uk

Local support and groups for LGBTQ young people

If someone's life is at risk, you should always dial

999