Sheffield Park Academy
The best in everyone™
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Knowledge Organiser

Term 1

Name: .....

Tutor Group: .....

Tutor & Room: .....

AMBITION, DETERMINATION, KNOWLEDGE AND LEADERSHIP

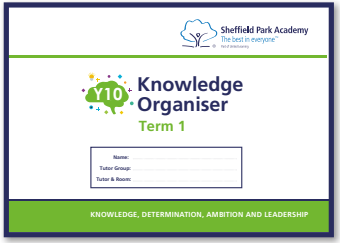
CONTENTS

How do I complete Knowledge Organiser homeworks?

You will be set a MINIMUM of 2 Knowledge Organiser homeworks in every subject each half term

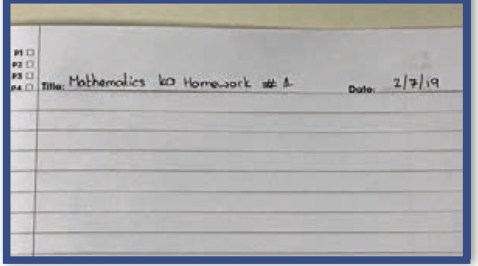
STEP 1

Identify what words/ definitions/facts you have been asked to learn.



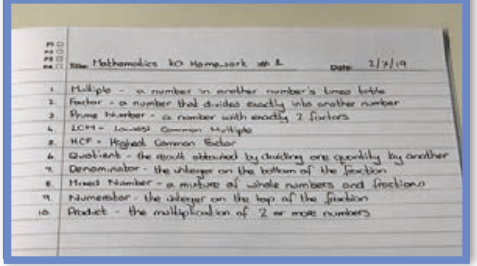
STEP 2

Write today's date and the title from your Knowledge Organiser.



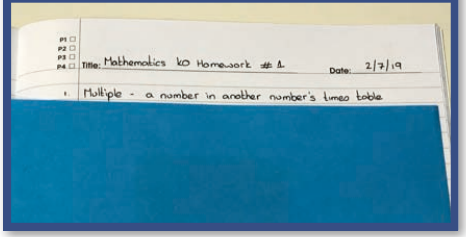
STEP 3

Write out the keywords/definitions/facts you have been set in FULL.



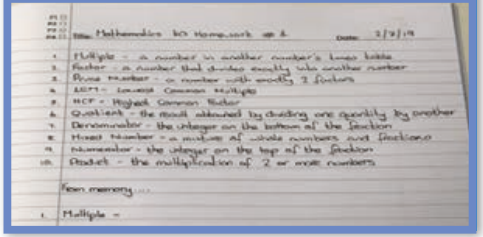
STEP 4

Cover the definitions in your SELF-QUIZZING BOOK, apart from the first. **Read it, Cover it, Say it** in your head, check it… REPEAT until confident.



STEP 5

Cover up ALL the definitions/facts and write them out from memory in your SELF-QUIZZING BOOK.



STEP 6

Check your answers and correct where required. Repeat Steps 4 to 6 until you are confident.

You will be **tested** on the words/definitions/ facts as a starter activity in your lesson on the day that the homework is due.

This will be completed in your normal exercise book and you will mark it in class.

Your Knowledge Organiser and Self-Quizzing Book

Knowledge Organisers

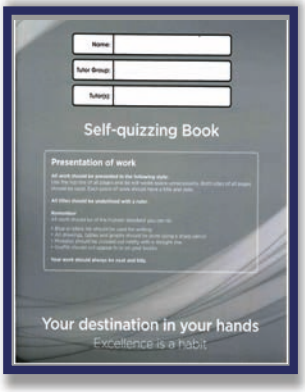
Knowledge Organisers contain critical, fundamental knowledge that you MUST know in order to be successful in Year 10 and subsequent years.

They will help you recap, revisit and revise what you have learnt in lessons in order to move the knowledge within from your shor-term memory to long-term memory.

Self-Quizzing Book

This is the book that all Knowledge Organiser homework is to be completed in.

You must follow the simple rules as to how they are to be used.



You **must** bring your Knowledge Organiser and Self-Quizzing Book to **every** lesson and place it on your desk at the beginning of each lesson.

You **must** keep all of your Knowledge Organisers and Self Quizzing Books because the fundamental knowledge required in Year 10 will also be required in Year 11.

Knowledge Organisers are **NOT** a replacement for revision guides but they include the fundamental knowledge that ALL students in Year 10 require.

YEAR 10 ART KNOWLEDGE ORGANISER – UNIT 1 THE SEASIDE.

Keywords.

Formal Elements	Line, Tone, Colour, Pattern, Shape, Texture and Form
Line	Line is the path left by a moving point.
Shape	Shape is an area enclosed by a line.
Tone	This refers to the lightness or darkness of something.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Observational Drawing	When you observe something and respond to it with a visual representation.
Collage	A piece of art that is created by sticking various different materials such as paper or fabric on to a backing.
Typography	is the art of arranging letters or text in a way that makes them visually appealing to the reader.
Two Dimensional	having its elements organised in terms of a flat surface.
Three Dimensional	Produced by carving or shaping stone, wood, clay, or other materials.
Media	The material used to create artwork.
Technique	The way tools and media are used to create artwork.
Composition	This is the way an object is placed or positioned on a page.
Lino Printing	Is a form of block printing that involves carving a pattern. or design into a vinyl surface.

Sketchbook

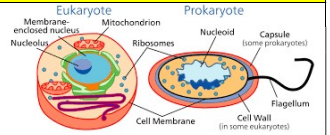
- Artist research
- Experiment with a range of materials.
- Experiment with colour, line, shape, space.
- Annotations to show reflections on their work and that of others.

Command Words.

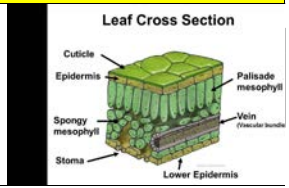
Research	Is the process of solving problems and finding facts in an organised way. Research is done by what is known and building on it.
Analyse	Identify several relevant factors, show how they are linked, and explain The importance of each.
Method	A procedure, technique, or way of doing something.
Evaluation	Bring together all of your information and make a judgement on the Importance or success of something.
Generate Ideas	The process of creating, developing and communicating abstract, concrete or visual ideas.
Develop	To grow or change into a more advanced or stronger form or idea.

	B1	Microscopy	
	Key word	**Definition**	
1	Organelle/ Sub-cellular structures	An organelle is a subcellular structure that has one or more specific jobs to perform in the cell.	
2	Light Microscope	A light microscope is a type of microscope that is commonly used in school. This generates magnified images of small objects.	
3	Electron microscopes	They produce higher-resolution images and magnification than standard light microscopes.	

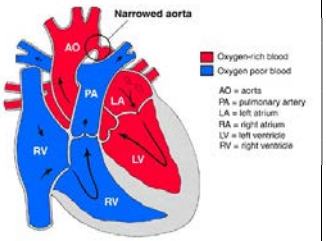
	B1	Cells	
	Key word	**Definition**	
1	Cells	Cells are the basic building blocks of all living things.	
2	Eukaryotic Cells	Cell with a nucleus.	
3	Prokaryotic Cells	Cell without a nucleus.	
4	Mitochondria	Where respiration takes place to release energy.	
5	Ribosomes	Where proteins are made.	



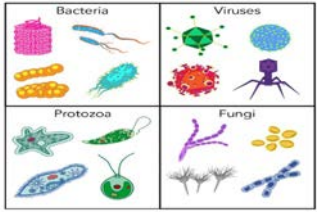
	B2	Organisation	
	Key word	**Definition**	
1	Enzyme	Protein with an active site of a specific shape which speeds up reactions.	
2	Xylem	Plant tissue that transports **water** and dissolved mineral ions **up** the plant.	
3	Phloem	Plant tissue that transports **sugars up** and **down** a plant.	
4	Stomata	Small holes underneath the leaf to allow gases to move in and out of the leaf.	
5	Guard cells	Cells that open and close the stomata to reduce water loss.	



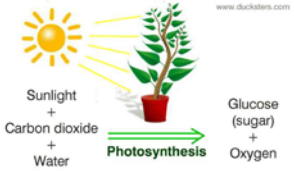
	B2	Organisation	
	Key word	**Definition**	
1	Aorta	Major artery that carries **oxygenated** blood from the heart to the body cells.	
2	Vena cava	Major vein that carries **deoxygenated** blood from the body cells to the heart.	
3	Artery	Blood vessel that carries blood **away** from the heart.	
4	Vein	Blood vessel that carries blood **into** the heart.	
5	Benign tumour	Growths of abnormal cells which are contained in one area.	
6	Malignant tumour	Cancers that invade neighbouring tissues and spread to different parts of the body.	

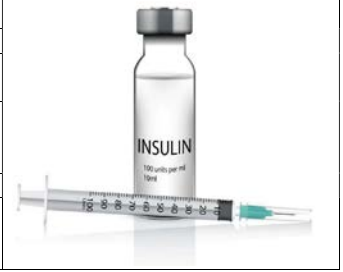


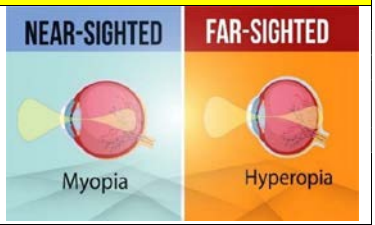
	B3	Infection and Response	
	Key word	**Definition**	
1	Communicable disease	Infection or a disease that you can ''catch'' from someone.	
2	Pathogen	Microorganism that causes disease, e.g., bacteria, fungi, virus, protist.	
3	Antibodies	Produced by white blood cells to help kill pathogens.	
4	Placebo	Fake drug.	
5	Vaccination	Inserting small amounts of dead or inactive forms of a pathogen to stimulate antibody production.	



	B3	Infection and Response (Triple^)	
	Key word	**Definition**	
1	Monoclonal antibodies	Antibodies specific to one binding site on one protein antigen.	
2	Hybridoma	A combination of a lymphocyte with a tumour cell.	
3	Physical defence	Plant defence responses to resist invasion of microorganisms, e.g., tough waxy cuticle.	
4	Chemical defence	Plant defence responses to resist invasion of microorganisms, e.g., poisons.	

	B4	Bioenergetics	
	Key word	**Definition**	
1	Photosynthesis	The process by which plants make glucose using carbon dioxide, water and sunlight.	
2	Respiration	The process by which **energy** is **released.**	
3	Metabolism	All the chemical reactions in a cell or the body.	
4	Aerobic respiration	Respiration where oxygen is used to release lots of energy.	
5	Anaerobic respiration	Respiration where oxygen is **not** used and releases only small amount of energy.	

	B5	Homeostasis	
	Key word	**Definition**	
1	Homeostasis	The regulation of internal conditions to maintain optimum conditions in response to changes.	
2	Stimulus	A change in the environment.	
3	Insulin	Released from the pancreas in response to high blood glucose levels. It causes glucose to be converted into glycogen for storage in the liver.	
4	Glucagon	Released from the pancreas in response to low blood glucose levels and causes glycogen to be broken down into glucose and released back into the blood.	
5	Type 1 diabetes	When the pancreas does not produce enough insulin.	
6	Type 2 diabetes	When the body cells no longer respond to insulin.	

	B5	Homeostasis (Triple^)	
	Key word	**Definition**	
1	Myopia	Short-sightedness.	
2	Hyperopia	Long-sightedness.	
3	Cerebral cortex	The outer part of the brain responsible for intelligence, language, memory and consciousness.	
4	Medulla	Controls unconscious activities such as heart rate and breathing rate.	
5	Cerebellum	Controls balance, co-ordination of movement and muscular activity.	

1.1 Enterprise and Entrepreneurship

Entrepreneur	A person who sets up a business or businesses, taking on financial risks in the hope of profit.		
Good	A physical / tangible item you can purchase.	***Service***	The act of helping or doing work for someone. Non tangible.
Customer	Someone who purchases your good or service.	***Consumer***	The end user of our good or service.
Competitive Advantage	Any factor which will help your business succeed when competing against rivals. It gives you a benefit which your rivals don't have.		
Customer Needs	The products or services people need to make life comfortable.		
Customer Wants	What people choose to spend their money on once all their bills have been paid.		
Adding Value	Doing something to a product/service to make it more valuable. E.g., turning potatoes into crisps adds value to the potato.		
USP	Unique Selling Point. An original feature to your product or service which makes it original.		
Branding	Giving your product or service a 'personality'- usually with a name and logo which makes it stand out from your competitors.		
Resources	Things or people that are needed to make your business run smoothly. E.g., Human resources are the people you need.		

1.2 Spotting a Business opportunity

Market research	An activity to either find out what customers want or need, to find a gap in the market or to help make decisions which should reduce risk.					
Primary Research	Research conducted first-hand; tailored to a company's specific needs	***Primary research methods***	Online survey	Questionnaire	Focus Group	Observation
Secondary Research	Research carried out which uses existing data	***Methods of Secondary Research***	Internet research (e.g. competitor research)	Market / purchased reports such as MINTEL	Government statistics or reports	
Market segmentation	The process of dividing the market into different groups of customers based on different characteristics such as age, income, location, lifestyle, other demographic data such as gender, race, religion.					
Quantitative Data	Factual research. Based around figures.	***Qualitative Data***	Research which considers people's opinions. Not data driven.			
Demographics	The study of statistical differences which exist in a population.					
Gap in the Market	An area of the market where few or no existing brands operate currently.					
Market Map	Measuring where brands sit based on 2 criteria e.g., quality vs price.					
Competitive Environment	The strength of competition between companies in the same market.					

1.2 Spotting a Business opportunity cont……

Innovation	A new original product or process.
Ethical	A decision considered correct from a moral standpoint.

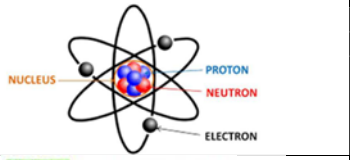
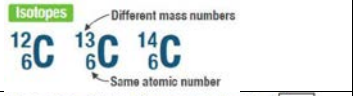
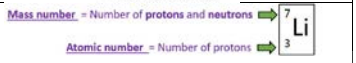
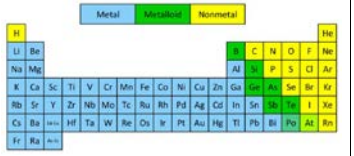
1.3 Putting a Business idea into practice

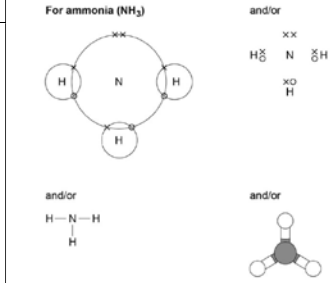
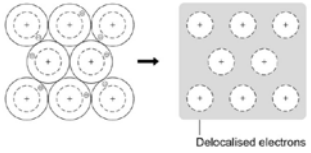
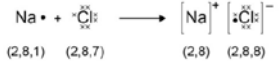
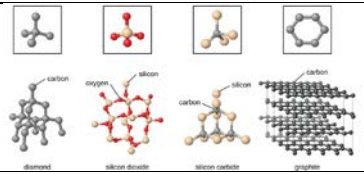
Aims	A long-term statement of where you're heading.	**Objectives**	A clear measurable goal, usually set to achieve an aim.		
SMART Targets	Targets which are **S**pecific, **M**easurable, **A**chievable, **R**ealistic, and **T**ime bound.				
Market Share	The percentage of a market held by one company or brand. Usually based on sales volume.				
Survival	Keeping the business going. Many new businesses aim to survive their first year.				
Fixed Cost	Costs that do not change with the amount of output a business makes.				
Variable cost	Cost that varies with business output.			**Formula**	Total Variable cost = variable cost per unit x output
Total Cost	All costs for a set period of time added together.			**Formula**	Total cost = total variable cost + fixed cost
Interest	The charges made by a bank for the money they lend a business				
Revenue	The value of sales made in a set period of time.			**Formula**	Sales revenue = selling price x quantity sold
Profit	The money a business has left from sales after all its costs are paid.			**Formula**	Profit = sales revenue – total costs
Break even	The level of sales at which total cost and total revenue are the same.			**Formula**	Break even = fixed costs / (selling price – variable cost)
Margin of safety	The number of sales you can lose before the business makes a loss			**Formula**	MOS = sales – break even output
Cash	The physical money a business holds				
Cash flow	The movement of money in and out of a business. A forecast forecasts the money coming in and out of the business over a set period.				
Opening Balance	The money you have at the start of the month .		***Closing balance***	The money you have left at the end of the month.	
Net cash flow	The difference between cash inflow and cash outflow at the start of the month.				
Overdraft	When you can spend more money than you currently have in your bank account, subject to limits set by the bank				
Capital	The money invested in a business.				
Dividend	Payment made to shareholders from the business's profits.				
Retained Profit	Profit that is kept within the business to fund future investments.				
Share Capital	Raising capital by selling part ownership of the business (Shares).				
Trade Credit	When a supplier will wait for a set period of time to be paid for their goods.				
Venture capital	Capital provided by an investor. Can be share capital or loan capital.				
Business Angel	Businessperson willing to invest in your business. Usually for a share of the company.				

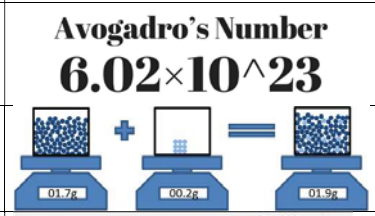
Food and Nutrition

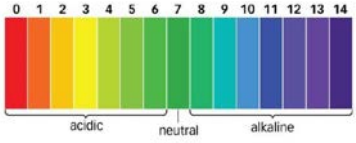
Key word	Definition
Enzymic Browning	Enzymic browning is an oxidation reaction that takes place in some foods, mostly fruit and vegetables, causing the food to turn brown. Oxygen in the air reacts with the fruit causing the cells to break down. The result is change in colour, taste and nutritional value.
Oxidation	This is a process where chemicals in food are exposed to oxygen in the air, their chemical composition changes and they begin to break down, this cause food to spoil.
Vegetarian	All vegetarians don't eat meat, poultry, game, and fish or slaughter-by products such as gelatine or animal fats. There are many reasons why people choose to become a vegetarian, some for ethical reasons as they believe it is wrong to slaughter animals for food or because they are opposed to cruelty and suffering that is inflicted on animals reared for food.
Vegan	Vegans will not eat any foods from animal origin, even honey. A vegetarian has to ensure that their bodies receive a plentiful supply of iron and all the essential amino acids that they do not get from traditional sources.
Food intolerance	A food intolerance is when a person has an unpleasant reaction to a food or an ingredient.
Food allergy	A food allergy, involves the person's immune system. Some people are either born with or develop an allergy and will have to avoid eating certain foods e.g. nuts or eggs. Symptoms of allergies include severe skin rashes, eczema, diarrhoea and even anaphylactic shock.
Nutritional value	The nutritional value of food is the amount of nutrients or a specific nutrient the body gains from eating that food.
Dietary consideration	Some people have specific foods that they do eat or that they avoid eatng based on factors such as, allergies or intolerances and religious beliefs. Allowing for this in the diet is dietary consideration.
Religious beliefs	Many religions have dietary rules that can affect their choice of food. They may have to choose or avoid foods depending on their religious beliefs and principles.

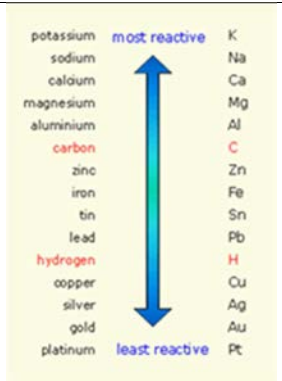
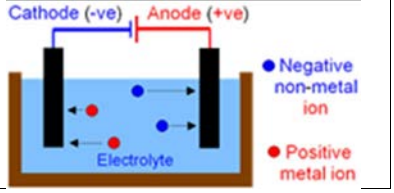
Key word	Definition
Commodity	Basic foods which are produced in plentiful supply and sold for consumption.
Provenance	The place of oorigin of a food, essentially where the food comes from, or where the original commodity came from before processing.
Classification	Deciding which category something belongs in. Commodities such as fruits and vegetables may be classified.
Food spoilage	Food spoilage is a natural process caused by bacteria, mould, fungi and yeasts. Once a food is picked, slaughtered, cooked or stored, microorganisms will start to cause decay and eventually make food unsafe to eat.
Cross contamination	Cross-contamination occurs when juices from raw meats or bacteria from unclean equipment touch cooked or ready-to-eat foods.
Primary Processing	When raw food is changed or converted into foods that can be eaten immediately or into ingredients that can be used to make other food products. Examples include washing vegetables, squeezing fruit to make fruit juice, heat treatments for pasteurisation so that milk is pasteurised, and wheat milled into flour.
Secondary Processing	This is converting primary processed foods into other food products e.g., flour into biscuits/pastry/cakes or milk made into cheese/cream.

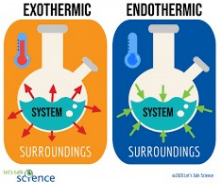
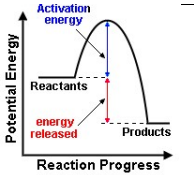
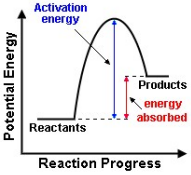
	C1	Atomic Structure and the Periodic Table	
	Key word	Definition	
1	Proton	Protons have a charge of +1 and mass of 1.	
2	Electron	Electrons have a charge of -1 and mass of almost 0.	
3	Neutron	Neutrons have a charge of 0 and a mass of 1.	
4	Nucleus	Protons and neutrons are in the centre of the atom, making up the nucleus. Electrons orbit the nucleus.	
5	Isotopes	An atom with the same number of protons but different number of neutrons.	
6	Atomic number	The number of protons in an atom's nucleus.	
7	Atomic mass	The mass of protons and neutrons in an atom.	
8	Neutral atom	An atom with equal number of protons and electrons.	
9	Shells	An electron shell is the outside part of an atom around the atomic nucleus.	
10	Mendeleev	Mendeleev made an early periodic table (groups/periods).	
11	Alkali Metals	Group 1 metals - very reactive (due to single electron in outer shell).	
12	Halogens	Group 7 non-metals - very reactive (due to having 7 electrons in outer shell)	

	C2	Bonding and Structure	
	Key word	**Definition**	
1	Covalent bond	A shared pair of electrons between two non-metals.	
2	Metallic bond	The bonds present in metals between the positive metal ions and negatively charged electrons.	
3	Ionic bond	A metal atom loses electron(s) to form a positively charged ion and a non-metal gains these electron(s) to form a negatively charged ion. An ionic bond is formed between the oppositely charged ions.	
4	Giant covalent structure	A three-dimensional structure of atoms that are joined by covalent bonds. Some examples are diamond, silicon dioxides and graphite.	

	C3	Quantitative Chemistry	
	Key word	**Definition**	
1	Mole	Chemical amounts are measured in moles. The mole is the unit for amount of substance.	
2	Conservation of mass	The law of conservation of mass states that no atoms are lost or made during a chemical reaction so the mass of the products equals the mass of the reactants.	
3	Concentration	The amount of substance (e.g. the mass) in a certain volume of a solution.	$concentration\ in\ g/dm^3 = \frac{mass\ of\ solute\ in\ g}{volume\ in\ dm^3}$
4	Actual yield (^)	The amount of product actually produced by a reaction.	
5	Atom economy (^)	The measure of the amount of starting materials that end up as useful products.	Calculation of Atom Economy $atom\ economy = \frac{mass\ of\ atoms\ in\ desired\ product}{mass\ of\ atoms\ in\ reactants} \times 100\%$

	C4	Chemical Reactions	
	Key word	**Definition**	
1	Acid	Acids produce hydrogen ions (H^+) in aqueous solutions. They have a pH range of 0-6.	
2	Alkali	Alkalis produce hydroxide ions (OH^-) in solutions. The have a pH range of 8-14.	

3	Displacement	A chemical reaction in which a more reactive element displaces a less reactive element from its compound.	
4	Oxidation	A reaction involving the gain of oxygen. Oxidation is the loss of electrons.	HT: OILRIG e.g. $2HCl + Mg \rightarrow MgCl_2 + H_2$ Magnesium is oxidised $Mg \rightarrow Mg^{2+} + 2e^-$
5	Reduction	A reaction involving the loss of oxygen. Reduction is the gain of electrons. Reduction with carbon: Metals less reactive than carbon can be extracted from their oxides by reduction with carbon.	
6	Electrolysis	The splitting up of an ionic compound using electricity. The electric current is passed through a substance causing chemical reactions at the electrodes and the decomposition of the materials.	

	C5	Energy Changes	
	Key word	Definition	
1	Exothermic	In some reactions more energy comes **out** than goes in. e.g., combustion	
2	Endothermic	In some reactions more energy goes **in** than comes out. e.g., thermal decomposition	
3	Activation Energy	The energy needed to start a reaction.	
4	Reaction profiles	They can be used to show the relative energies of reactants and products, the activation energy and the overall energy change of a reaction.	 Exothermic reaction  Endothermic reaction

Computing GCSE – 1.1

Comp 01 - Memory

KEY VOCABULARY	
Volatile	Memory which requires constant electrical charge. If the power is turned off, then the data is lost
Non-volatile	Memory which can retain its data when the power is turned off
RAM	*Random Access Memory*
ROM	*Read-Only Memory*
Cache	Very fast memory, on, or very close to the CPU
Virtual Memory	A section of the HDD which can be used as RAM for very memory intensive processes
Flash Memory	A type of dynamic (changeable) ROM
Boot Process	The instructions needed to start the computer and to initialize the operating system.
POST	*Power On Startup Test* A series of checks done on the hardware of the computer to ensure the machine can run.

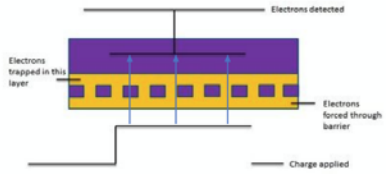
PRIMARY MEMORY			
TYPE	*VOLATILE?*	*DYNAMIC?*	*RELATIVE SPEED*
Cache	YES	YES	Very Fast
RAM	YES	YES	Fast
ROM	NO	NO	Slow
Flash	NO	YES	Slow
Virtual	YES	YES	Very Slow

PRIMARY STORAGE - MEMORY

RAM is *volatile* memory, which stores data in a single transistor and capacitor. This means it needs a constantly recycled charge to hold its data. If the power is turned off, it cannot refresh the data and it is lost. This is known as *DYNAMIC* memory. The computer uses RAM to store the current program or data being used.

ROM is non-volatile. The data is hardcoded onto the chip by the manufacturer, and cannot be overwritten by the user. Because it holds its information even when the power is turned off, this makes ROM ideal for storing the instructions needed to get the computer started up – the *BOOT PROCESS, and POST.*

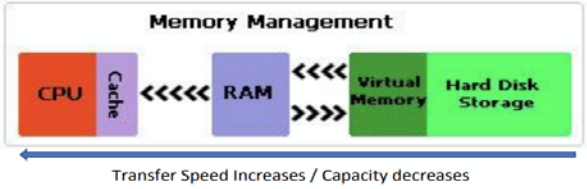
Flash Memory is a new(ish) type of ROM chip which holds its data when there is no power making it *non-volatile* but that can be rewritten easily by the user. By using a relatively large electric current, electrons can be *forced* through a barrier and into the *storage layer.* The pattern of electrons can be read as data without affecting the data.



VIRTUAL MEMORY

To increase the speed and efficiency of RAM, most machines allocate a small portion of the Hard Disk to *VIRTUAL MEMORY.* The contents of the RAM are moved between the slower Virtual Memory and RAM as and when they are needed.

Using / Increasing Virtual Memory does not improve the speed of the computer, but rather using Virtual Memory increases the threshold at which a computer locks, by increasing the usable memory, and preventing deadlock due to filling the available primary memory.



Computing GCSE – 2.6a

Comp/02 – Data Representation 1

KEY VOCABULARY	
Denary	Base 10 number system. Uses digits 0,1,2,3,4,5,6,7,8,9
Binary	Base 2 number system. Uses digits 0 and 1 only.
Hexadecimal (Hex)	Base 16 number system. Uses characters 0-9 and A,B,C,D,E and F
BIT	Contraction of BINARY DIGIT – a single value of 0 or 1
Binary Code	Representation of values using multiple bits
Character Set	A list of unique values, stored in binary, which represent the letters, numbers and symbols a computer can show/use.
ASCII	American Standard Code for Information Interchange. A character set which uses 7 bits to store 128 (2^7) characters
Extended ASCII	A character set which uses 8 bits to store 256 (2^8) characters
UNICODE	A characters set which uses 16 bits to store 65,535 characters (2^{16})
INTEGER	A whole number (value written to 0 decimal places)
FLOAT	A decimal value
Conversion	Moving a value from one data type/representation to another, for example Binary to Hex
Exponent	Mathematical term which tells you how many time to multiply a BASE by itself.

REMEMBER MAXIMUM VALUES!

Max value which can be represented with 8 bits (1 byte) = **255**

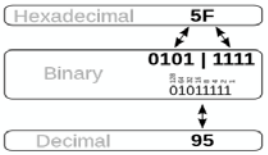
Total number of available values = **256 (255 + 0)**

UNITS OF DATA IN COMPUTER SYSTEMS		
UNIT	VALUE	SIZE
bit (b)	0 or 1	1/8 of a byte
nibble	4 bits	½ a byte (a nibble… get it?!)
byte (B)	8 bits	1 byte
kilobyte (kB)	1000^1 bytes	1,000 bytes
megabyte (mB)	1000^2 bytes	1,000,000 bytes
gigabyte (gB)	1000^3 bytes	1,000,000,000 bytes
terabyte (tB)	1000^4 bytes	1,000,000,000,000 bytes
petabyte (pB)	1000^5 bytes	1,000,000,000,000,000 bytes

BINARY PLACE VALUES								
BASE Exponent	2^7	2^6	2^5	2^4	2^3	2^2	2^1	2^0
PLACE VALUE	128	64	32	16	8	4	2	1

CONVERTING DENARY TO BINARY TO HEX

HEXADECIMAL	
DENARY	HEX
0-9	0-9
10	A
11	*B*
12	*C*
13	D
14	E
15	F



There are two methods for converting a HEX value to Denary

OR:

5F = (**5**x16) + **F**

5F = 80 + 15

5F = 95

Computing GCSE – 2.6b

Comp/02 – Data Representation 2

KEY VOCABULARY	
Overflow Error	Where the denary value cannot be represented with the given number of bits.
Binary Shift	The method for multiplying and dividing numbers in binary. Is not necessarily mathematically correct
Most Significant Bit	The left-most bit in a binary number – it has the highest value
Least Significant Bit	The right-most bit in a binary number – it has the lowest possible value = 0 or 1
Check Digits	Bits used to ensure that the value sent digitally is not corrupted on transfer
Lossy Compression	Data is removed from the file to make it smaller. This data is lost and cannot be regained. Suitable where the loss of data is likely not to be noticed. Eg images
Lossless Compression	No data is lost, but rather rearranged to ensure a perfect version of the data can be returned. Used where exact reproduction is vital. Eg text documents
JPEG / JPG	Joint Photographic Experts Group Compression for images – lossy
GIF	Graphics Interchange Format Lossless bitmapped image format for limited colours.
PDF	Printable Document Format Open standard for reproducing text and graphic documents without editing permissions – lossless
MPEG	Moving Pictures Expert Group Audio-Visual encoding for video Lossy
MP3	Moving Pictures Expert Group Audio Layer 3 Digital music files. Lossy compression, but very good and generally only removes sounds that are beyond human hearing range

BINARY ADDITION

```
 0   1   0   1
+0  +0  +1  +1
--  --  --  --
00  01  01  10
                ↗
          carried bit
```

When adding 2 large binary numbers, if there is not enough bits to take the *carried bit* then this results in an **OVERFLOW ERROR**

```
  1 1 0 0 1 1 0 1
+ 0 1 0 1 1 1 1 0
-----------------
1 0 0 1 0 1 0 1 1
```

This value is not counted, it is *overflow*.

In 8 bits, this sum reads : 203 + 94 = 43!

BINARY SHIFT

Multiplication	Binary shift to the LEFT
Division	Binary shift to the RIGHT

By ***moving the bits*** to either the left of the right, we can double (x2) or halve (%2) the value with each movement.

```
8 4 2 1
1 0 1 1   =11
```

A 1 place RIGHT SHIFT (divide by 2)

```
8 4 2 1
0 1 0 1 1   =5
```

The bits which are moved outside of the available value places are **LOST.** They cannot be returned by reversing the shift. The same is true at the highest place value

```
8 4 2 1
1 0 1 1   =11
```

A single LEFT SHIFT (multiply by 2) would result in an overflow error (when represented with 4 bits.)

```
  8 4 2 1
1 0 1 1 0   =10
```

Year 10
BTEC Digital IT
Term 1 – User Interfaces

Key Concepts		
1	User Interface	This is what the user sees/ hears in order to communicate with a computer system
2	Specialised User Interface	This is a user interface which has been created specifically for a device (Xbox/PS4) or an organisation (McDonalds tills/ Bank PCs)
3	Characteristics of a good user interface	Safe / Effective / Efficient / User friendly / Enjoyable to use
4	Types of user interface	Command line interface – DOS/ SQL Menu Driven – Camera menu Forms and dialogue boxes – Windows applications Graphical User Interface (GUI) aka WIMP (Windows, Icon, Menu, pointer)
5	Speech Recognition	Using sound/ voice commands to communicate with the user interface
6	Command and control	Small vocabulary systems can be used for controlling devices/ systems.
7	Dictation systems	Large vocabulary systems are used to enter large amount of text onto the system. They convert voice/ sound into text.

5 Principles of Apples User Interface Design	
Clarity & Simplicity	Ensure that everything is obvious to everyone
Flexibility	UI is created to ensure it works on all devices
Familiarity	Keep it simple. Limit the amount of time users interact with the devices.
Efficiency	Ensure users can complete the task in an efficient way
Consistency	Ensure the layout is consistent and the users feel confident of how to use the interface

Advantages / Disadvantages of Menu-driven interface	
Advantages	**Disadvantages**
All options are visible making it a very simple and easy to access interface for all	Fustrating for experienced users as simple commands may be only accessible after 10 or more different menu options
Can be used with other input devices not just keyboard	Limited interface design due to what can be on the sceen at any one time

Advantages / Disadvantages of Command line interface	
Advantages	**Disadvantages**
Very flexible	Requires users to learn commands to control the computer
Good for advanced user who want to use advanced commands	Things may seem invisible to novice user who don't know commands
Less computer resources are required to run a CLI	Not good for beginners, chlidren or people who have limited IT understanding.

Power and Conflict Anthology – Knowledge Organiser

Ozymandias Shelley explores the idea that power is fragile. The speaker conveys the sense that the power of nature is greater than any human power. In addition, Shelley explores the idea that power can be corruptive as the speaker presents an arrogant leader who leads through fear.

Methods

•Use of irony to contrast Ozymandias' 'power' with the decayed statue that remains
•Structure disrupts the traditional sonnet form
•Extended metaphor of the statue

The Emigree Rumens explores the idea that the effects of conflict can be emotional as well as physical. The speaker feels that the reality of the situation is often outside of their control, but they can manipulate or control the emotional aspect of it. The speaker demonstrates an individual's power can resist oppression. In addition, Rumens explores the idea that power can be corruptive. The speaker feels that people can use their power to oppress others.

Methods

- Personification of the city
- Contrast between memory and reality
- Metaphor of sunlight/light/seasons

London Blake explores the idea that power can be corruptive. The speaker feels that London, blighted by the Industrial Revolution, has become a city of inequality and oppression. In addition, Blake also conveys the sense that the actions of those in power have lead to the universal suffering of the city's people.

Methods

- Repetition a) of 'every' to suggest universal suffering and b) of vocabulary related to suffering and anguish.
- Shocking imagery- manacles, blood, youthful harlot, new born infant, marriage hearse
- Use of contrasts to suggest corruption – blackening church; blood/palace walls; harlot/infant; marriage hearse.

Kamikaze Garland explores the idea that the effects of conflict can be emotional as well as physical. The speaker conveys a sense that conflict has a lasting negative impact on a person's emotional state. In addition Garland explores the idea that power is fragile as the speaker feels human resolve is fragile in the face of the power of nature. Finally, Garland explores the idea that power can be corrupt as the speaker feels that society's power corrupts an individual's ability to assert their free will.

Methods

- Contrast between the freedom of the sea and the oppression from the empire
- Use of direct and reported speech to show the distance between the pilot and his family
- Use of similes 'like a huge flag' 'strung out like bunting'

Exposure Owen explores the idea that the effects of conflict can be emotional as well as physical. The speaker feels that conflict has a lasting negative impact on a person's emotional state and that the trauma soldiers are exposed to on the battlefield are just as significant as any wounds or injuries they could sustain. In addition, Owen explores the idea that power is fragile. The speaker conveys the sense that the power of man is surpassed by the unrelenting threat of nature.

Methods

- Personification – weather is the enemy
- Repetition- 'nothing happens'
- Pathetic fallacy- atmosphere of violence, misery and suffering created by the description of the weather.

Checking Out Me History Agard explores the idea that the effects of conflict can be emotional as well as physical. The speaker conveys his disappointment and anger that he has had to discover his own identity, having been provided with only a biased view of history throughout his time at school. In addition, Agard explores the idea that power can be corruptive. The speaker feels that his own identity has been suppressed by society.

Methods

- Contrast between his own Caribbean history and the history he was taught at school
- Dialect
- Repetition

Tissue Dharker explores the idea that even though something may be fragile, it can also be powerful. The speaker shows how paper has the power to dominate our lives despite its fragility.

Methods

- Contrasts between power/fragility
- Extended metaphor
- Similes

My Last Duchess Browning explores idea that power can be corruptive.. The speaker misuses his power in an attempt to control his wife. In addition, , Browning explores the idea that power is fragile. The speaker's attempts to exert his power expose his lack of power.

Methods

- Repetition
- Dramatic monologue

'Storm on the Island'

In 'Storm on the Island, Heaney explores the primal fear of nature which is shown to have a lasting negative impact upon a person's emotional state. He also portrays the fragility of human power in the face of nature as the house is besieged by the storm. Finally, Heaney portrays the way in which power can corrupt due to the allusion to the Troubles in Ireland and the divisive influence that power has in separating and segregating people.

Methods

-Form/structure (block of verse)
-Imagery of violence
-Extended metaphor

Bayonet Charge

In 'Bayonet Charge, Hughes explores the lasting negative impact caused by human conflict and war on a person's emotional state. He also explores the fragility of human power through the visceral description of suffering, linked to the human body. Finally, Hughes presents the idea that power corrupts the ability of the individual to assert their free will as the individual is trapped within a conflict not of their own making.

Methods

- Form/structure (irregular verse)
- Imagery of violence
- Aggressive tone
- -Enjambement

Remains

Armitage explores the idea that the effect of conflict can be mental as well as physical. The speaker conveys the trauma he has experienced as his mental health deteriorates .In addition, humanity's power is presented as fragile. The speaker presents this through the ease in which life is taken and/or destroyed.

Methods

- Repetition
- Violent imagery
- Colloquial language

The Charge Of The Light Brigade

Tennyson explores the idea that the effects of conflict can be emotional as well as physical. The speaker feels the attack forces the soldiers to endure a traumatic experience.
In addition, Tennyson explores the idea that power can be corruptive. The speaker feels that the soldiers trauma has been caused through the mistakes of those in power.

Methods

- Repetition
- Violent/Biblical imagery
- The rhythm of the horses charging

Poppies

Weir explores the idea that the effects of conflict can be emotional as well as physical. The speaker reflects on memories and the feeling of loss In addition, Weir explores the idea that power is fragile. The speaker expresses a lack of power to control her son's decision to go to war and be able to protect him.

Methods:

- Memories
- Metaphors
- Imagery
- Ambiguity

The Prelude

Wordsworth explores the idea that the effects of conflict can be emotional as well as physical. The speaker feels conflict has a lasting negative impact on a person's emotional state.
In addition, Wordsworth explores the idea that power is fragile. The speaker feels that human resolve is fragile in the face of nature. Finally, Wordsworth explores the idea that power can be corruptive. The speaker feels that nature has caused the fear that dominates their thoughts.

Methods

- Repetition
- Personification
- Contrast between beauty/darkness

War Photographer

Duffy explores the idea that the effects of conflict can be emotional as well as physical by presenting the photographer as deeply affected by his experiences.

Methods

- Contrast between violent imagery of the war-zones with the photographer's home country
- Religious imagery
- The behaviour of the photographer

The Big Ideas

- **The poets explore the idea that the effects of conflict can be emotional as well as physical.**
- **The poets explore the idea that power is fragile.**
- **The poets explore the idea that power can be corruptive.**

Language	Structure	Form
Alliteration- repetition of the same letter at the start of two or more words **Allusion**- reference to another literary work **Assonance**- repetition or pattern of the same vowel sounds **Connotation**- associated meaning of word **Consonance**- the partial or total identity of consonants in words whose main vowels differ **Diction**- usually used to describe the level of formality that a speaker uses **Extended metaphor- a** central metaphor that acts like an "umbrella" to connect other metaphors within it **Hyperbole**- exaggerated statement **Imagery**- visually descriptive language **Metaphor**- saying one thing is another **Onomatopoeia**- a figure of speech where words are used to imitate sounds **Oxymoron**- two terms appear next to each other that contradict each other **Pathetic fallacy**- weather to create mood **Personification**- make object human **Pun**- a a play on words **Satire**- the use of humour or irony to mock, ridicule or criticise **Semantic field-** words related in meaning **Simile**- comparing using 'like' or 'as' **Sibilance**- the repetition of an's' sound in two or more words **Tone**- the implied attitude of a writer toward the subject and characters of a work **Theme**- the central idea of a literary work	**Anaphora-** the repetition of the same word or phrase at the beginning of a line **Caesura**- a piece of punctuation in the middle of a line creating a pause in rhythm **Elision**- the omission of an unstressed vowel or syllable to preserve the meter of a line of poetry **End-stopped line**- a line ending in a full pause **Enjambment**- a sentence which continues, with no punctuation, into the line below **Extended metaphor** - **Half rhyme**- an imperfect rhyme where the ending consonant sound of a word is the same as another **Juxtaposition**- two or more contrasted ideas placed side by side **Meter**- the measured pattern of rhythmic accents in poems **Parallelism**- the similarity of structure in a pair or series of related words, phrases, or clauses Personification - **Quatrain**- a four-line stanza in a poem **Refrain**- a phrase, line or group of lines which is repeated throughout a poem **Repetition**- a repeated word or phrase usually used to emphasise importance. **Rhyming Couplet**- two lines of poetry that rhyme and have the same meter **Rhyme**- words that sound the same at the end **Sestet**- a six-line unit of verse constituting a stanza or section of a poem **Stanza**- two or more lines of poetry that form the divisions of the poem (paragraphs)	**Allegory-** a symbolic narrative which often takes the form of a story where the characters represent moral qualities **Ballad**- a narrative poem written in four-line stanzas, characterized by swift action and narrated in a direct style **Blank verse –** non rhyming lines written in iambic pentameter **Dramatic monologue**- a type of poem in which a speaker addresses an internal listener or the reader **Elegy:** An elegy is a poem about a dead person or thing **Epic-** a long narrative poem that records the adventures of a hero **Free verse**- poetry without a regular pattern of meter or rhyme **Lyric**- a poem that expresses personal and emotional feelings. **Ode-** a poem written in praise or celebration of a person, thing, or event **Pastoral-** a poem about nature or simple, country life **Shakespearean sonnet**- usually 14 lines which are formed by three quatrains with a rhyming couplet for the last two lines **Sonnet-** a fourteen-line poem in iambic pentameter and regular rhyme scheme **Speaker**: the voice behind the poem – the person we imagine to be speaking. The speaker is <u>not</u> the poet. Even if the poem is autobiographical, you should treat the speaker as a fictional creation, because the writer is choosing what to say about himself.

UNSEEN POETRY

Example question and how to get top marks
(20% of final English Literature GCSE)

Both unseen poems will be printed on the question paper.

Q1 - In 'To a Daughter Leaving Home', how does the poet present the speaker's feelings about her daughter? (24 marks)

Q2 - In both 'Poem for My Sister' and 'To a Daughter Leaving Home' the speakers describe feelings about watching someone they love grow up. What are the similarities and/or differences between the ways the poets present those feelings? (8 marks)

AO1 *(Question one only)*	❑ Critical, exploratory conceptualised response to task and text ❑ Judicious use of precise references to support interpretation(s)
AO2 *(Question one and two)*	❑ Analysis of writer's methods with subject terminology used judiciously ❑ Exploration of effects of writer's methods on reader

The Exam

QUESTION 1 – 24 MARKS

1. Highlight the focus in the question.
2. Read through the poem at least **TWICE**.
3. Write down your 'big idea' as an introduction.
4. Circle four moments which support your 'big idea'.
5. For each moment, label a method (if there is one) and/or underline an important word.
6. For each moment: how does it link to the big idea and how the impact of the method/ word reveals this.

QUESTION 2 – 8 MARKS

1. Highlight the focus in the question.
2. Read through the second poem at least **TWICE**.
3. **Identify three key methods in Poem 2 and write in planning table**.
4. Return to Poem 1 and identify three key methods and write in planning table.
5. Review for similarities/differences.
6. Begin each point with the method used and explain effect and compare to poem 2.

Verbs for analysis

Alludes to
Amplifies
Connotes
Conveys
Creates
Depicts
Demonstrates
Elicits
Emphasises
Evokes
Establishes
Foreshadows
Highlights
Illustrates
Juxtaposes
Portrays
Reinforces
Reiterates
Represents
Reveals
Symbolises
Typifies

KS4 AN INSPECTOR CALLS KNOWLEDGE ORGANISER

1. Context

Playwright: John Boynton Priestley (1894-1984)
Dates: Written in 1945
First performed: In Moscow, Russia, in 1945
Era: Edwardian
Genre: Drama
Set: Fictional town Brumley 'an industrial city in the north Midlands' in 1912
Structure: Three Act Play

Biography of Priestley
- Born in Yorkshire in 1894.
- Fought in the first world war and became politicised by the suffering of it
- Became concerned with the effects of social inequality in Britain in 1930s
- Set up a new political party in 1942, The Commonwealth Party. It merged with the labour Party and was integral in developing the welfare state

Pre and Post War – Before the first world war there was deemed to be a general air of complacency regarding the prospect of any war taking pace. There were strong distinctions between upper and lower classes, society was deeply patriarchal. After the second word war ended in 1945, class distinctions had been greatly reduced by the two wars and women had earned a more valued place in society After 1945 there was a desire for more sweeping social change.

Socialism – Socialism is an approach to economic and social systems that is characterised by social ownership, democratic control and high levels of equality. Socialism is generally concerned with ensuring that disparities between wealth and social status are erased from society. After the two World Wars British society was far more open to socialist ideas. In *An Inspector Calls*, the Inspector harbors socialist attitudes.

Social and Moral Responsibility – Attitudes towards social and moral responsibility changed rapidly in the tine between when the play was set (1912) and the time the play was written (1945). In 1912 the general attitude of those with social status and wealth was towards looking after one's own. By the mid-1940s however, the Labour party under Attlee won a landslide election reflecting a wave of enthusiasm towards communal responsibility for everyone in society.

The Titanic – RMS Titanic was a British passenger liner that sank in the North Atlantic ocean in the morning hours of 15th April 1912, killing around 1500. The Titanic was designed to be the pinnacle of both safety and comfort, and due to its enormous size and quality was frequently labeled 'unsinkable'. In *An Inspector Calls* Birling claims this, thus immediately losing the respect of the audience. It can serve as a symbol of the hubris and arrogance of man.

FORM – The play fits into three possible forms:

Well-Made Play
- A popular type of drama from the 19th century
- The events build to a climax
- Primarily concerned with events that happened before the play
- Plot is intricate and complex

Morality Play
- Most popular during 15th and 16th centuries
- They taught the audience lessons that focused on the seven deadly sins
- Characters who committed those sins were punished

Crime Thriller
- Involves a gripping tale based around a crime
- The audience receives clues and must guess what has happened before the end
- All is revealed by the climax

2. Key Characters

Inspector Goole: An enigmatic (mysterious) figure who serves as Priestley's mouthpiece and advocates social justice. He serves as the Birling's conscience and exposes their sins.

Mr Arthur Birling: A capitalist and business owner who opposes social change and greater equality. He is a self-made man and lacks the refined manners of the upper classes. Made a fool by Priestley to highlight the arrogance and absurdity of his views.

Mrs Sybil Birling: Her husband's social superior, Mrs Birling is involved in charity work but contradictorily believes in personal responsibility and looking after one's-self. Fails to understand her own children.

Shelia Birling: Young and initially enthusiastic, Sheila grows and changes throughout the play, embracing the views of the Inspector and challenging the social indifference of her parents. She becomes wiser and more cautious in her relationship with Gerald.

Eric Birling: In his early twenties, he drinks too much and forces himself upon Eva Smith. Whilst she is pregnant with his child, he steals from his father to attempt to support her. Grows and changes, realises his own wrongs along with everyone else's. Critical of parents.

Gerald Croft: A businessman engaged to Sheila, Gerald a relationship with Daisy Renton (Eva Smith). Even though he sits between he two generations he is politically closest to Birling and fails to embrace the Inspector's message, instead seeking to prove he wasn't real.

Eva Smith: Doesn't appear in the play, but her suffering and abuse represents that of all the working classes. She also calls herself both Daisy Renton and Mrs Birling. The older characters begin to question whether she really is one person.

3. Central Themes

Social Responsibility	Priestley advocates a socialist message of collective responsibility for one another. The Inspector serves as his voice in conveying this ideology, but the younger generation also come to embrace it. The suffering of Eva Smith highlights the powerlessness of the working classes and the need for a society that protects is most vulnerable.
Age and the Generational Divide	Priestley presents a view that there is hope for change and that it lies with the younger generation. Both Sheila and Eric change for the better, maturing and becoming more empathetic as they come to embrace the Inspector's message. They also become vocal critics of their parents' indifference to Eva's suffering.
Class and Power	Priestley highlights the immense power that business owners wielded over their workers and presents them as arrogant and lacking in empathy. He demonstrates Edwardian society's preoccupation with wealth and status at the cost of the individual as a way of promoting change in post-WW2 Britain.
Gender	At the time the play was first performed, women had just played a pivotal role in World War 2 and were empowered by the freedom work provided them. In the 1912 setting, we see Sheila's growing independence vs her mother. However, the play still highlights the awful vulnerability of women and the outdated stereotyping of them.

4. Key Vocabulary

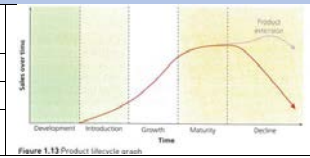
Capitalist	Believing in private wealth and business aimed at making profit for business owners. Independent and self-reliant.
Socialist	Believing in shared ownership, collective responsibility for one another and social equality for all.
Ideology	A political viewpoint or set of beliefs, for example socialism.
Responsibility	Being accountable or to blame for something, or having a duty to deal with something.
Hierarchy	A ranking of status or power e.g. the strict class hierarchy of Edwardian England.
Patriarchy	A society in which power lies with men.
Prejudice	An opposition to or opinion about something/someone based upon what they are e.g. working class, female etc.
Morality	The belief that some behaviour is right and some is wrong.
Proletariat	The working class.
Bourgeoisie	The capitalist class in possession of the means of acquiring wealth.
Aristocracy	The highest class in society and often holding titles passed from father to son, for example Lord and Lady Croft.
Façade	A false front or surface-level illusion, for example the façade of family happiness in the opening scene of the play.
Catalyst	Someone or something that speeds up or triggers an event.
Antithesis	When something is the opposite of something else.

5. Key Terminology, Symbols and Devices

Dramatic Irony	When the audience is aware of something that a character is not aware of, for example Birling believing war won't happen.
Plot Twist	When a story suddenly departs from its expected path and something very unexpected happens. The final phone call.
Cliffhanger	Each act ends on a particularly dramatic, revealing moment that creates a sense of tension and anticipation.
Stage Directions	When the playwright instructs actors/director to perform in a particular way. Priestley's are unusually detailed.
Entrances/Exits	Characters frequently leave or enter the stage at dramatic moments. Some characters miss important events.
Lighting	Priestley uses stage directions to indicate how the stage should be lit. Changes to 'brighter and harder' for Inspector.
Props	Physical objects used in the play. The photograph plays a key role in identifying Eva. The doorbell interrupts Birling.
Contrast and Juxtaposition	Deliberately placing two very different things along side one another to draw comparisons e.g. Birling and the Inspector.

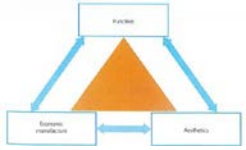
The Big Ideas	Notes	The Methods	Notes
Priestley promotes a socialist ideology in which he **argues for collective social responsibility.**		1. Priestley uses **contrasts** in character, setting and language to emphasise the different conflicts at work in society.	
Priestley suggests that change is possible, and that **hope lies with the younger generation.**		2. Priestley uses the **characterisation** of the Inspector and the family as a means of highlighting his view of different groups in society.	
Priestley **challenges existing social hierarchies** of class and gender.		3. Priestley uses **entrances, exits, beginnings and endings** as a means of building and maintaining dramatic tension.	

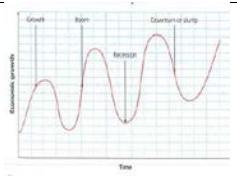
R064. Learning Outcome 1. Understand how to target a market					
Market	A place where buyers and sellers come together to trade goods and services.				
Target market	A group of customers whom you are aiming your product or service at.				
Market Segmentation	The process of dividing the market into different groups of customers based on different characteristics.				
Benefits of Segmentation include:	Ensuring customer needs are matched and met	Increase in market share	Customer retention	Targeted marketing	
Why does a business segment the market?	Benefits required	Quality of goods required	Amount of money available of customers	Quantity of goods required	Time and location for purchasing goods
Ways to segment markets	Age	Gender	Income	Occupation	Lifestyle
Market Research	Finding out your customers' needs / wants / views – allows you to understand the market and reduce risk.				
Customer Retention	The ability of a business to keep its customers so they return time after time to purchase their good or service.				
Market Share	The section of a market controlled by a particular business – how many items they sell compared to others.				
Primary (Field) research	Gathering data and information which hasn't been collected before.				
Secondary (Desk) research	Gathering previously collected data / information and analysing it.				
Qualitative data	Data or information based on the opinions of those that are being asked.				
Quantitative data	Data collected that is based on facts or numbers; usually easier to analyse than qualitative data as it is based around statistics.				

R064. Learning Outcome 3. Understand Product development part 1		
Product lifecycle	The journey a product takes from development, through launch, to its eventual removal from sales	
Extension strategy	Actions a business can take to extend the life of a product and increase its sales.	
Product differentiation	What makes your product/service different from the competition	
USP	Unique Selling Point. What makes your product unique from the competition.	
External factors	Things outside a business's control which has an effect on its performance.	
Legal issues	Legislation (laws) that businesses must comply with.	
Product safety standards	Laws which ensure products are fit and safe for use.	
Copyright	Provides legal ownership of original pieces of creative work.	
Patent	Provides legal ownership of new inventions and prevents these being used or produced by others.	

R064. Learning Outcome 3. Understand Product development cont……

Technological developments	How advances in technology have positively and negatively affected a business.			
Design Mix	A way of considering the three variables that contribute to successful product design – Function, Economic manufacture, Aesthetics.			
Function	Does the product do the job that it is designed to do?			
Economic Manufacture	Making sure the costs involved in production are appropriate and no money is wasted during the manufacturing process.			
Aesthetics	How a product looks or feels.			
Technological developments	How technology has changed and the impact it has – can be positive or negative – on business performance.			
The economy	How money is made and spent. It is made up of lots of buyers and sellers.			
The economic cycle	The fluctuation of the economy between periods of economic expansion (growth) and economic contraction (shrinking).			
	Growth	Boom	Recession	Slump
Recession	When the economy has successive months where it does not grow.			
Boom	When the economy is growing rapidly.			





R064. Learning Outcome 4. Understand how to attract and retain customers

Pricing Strategy	How you decide what price to charge customers for your product or service					
Competitor based pricing	Charging the same – or very similar – price to your competitors					
Price Skimming	Charging a high initial price for a product before lowering it gradually over time					
Penetration Pricing	Charging a low initial price to get a foothold in the market before gradually increasing it					
Psychological pricing	Setting a price that appears to be attractive					
Advertising methods	Ways of making your customer aware of the product / service you are selling					
	Leaflets	Social media	Websites	Newspapers	Magazines	Radio
Promotional methods	Used by an organisation to boost their sales in the short term					
	Discounts (BOGOF)	Competitions	Loyalty schemes	Product trials	Free gifts	Point of sale
Point of sale advertising	Point of sale advertising is any advert displayed at the point when a customer will purchase. Can be a picture or a product					
Customer Service	The way in which a business looks after its customers.					
	Product knowledge		Customer engagement		After sales service	

A.	General opinions	
1	Je crois que	I believe that
2	Je vois que	I see that
3	Je dirais que	I would say that
4	Je pense que	I think that
5	Selon moi	From my point of view
6	Quant à moi	In my opinion
B.	**Expressing feelings**	
1	Ça m'inquiète	It worries me
2	J'ai besoin de	I need
3	Ça m'énerve	It gets on my nerves
4	J'en ai marre de	I'm fed up of
5	Je suis d'accord	I agree
C.	**Opinions for the future**	
1	Je veux	I want
2	J'espère	I hope
3	J'ai envie de	I feel like
4	J'aimerais	I would like
5	Ça me dit de	I fancy
D.	**Basic opinions**	
1	Je suis pour	I am for
2	Je suis contre	I am against
3	Il vaudrait mieux	It would be better
4	Je n'aime pas de tout	I really don't like

E.	Connectives	
1	aussi / en plus	also
2	pourtant	however
3	toutefois	however
4	malgré	despite
5	de l'autre coté	on the other hand
6	par la suite	therefore
7	donc	so
8	à cause de	due to
9	cependant	however
10	malheureusement	unfortunately
11	heureusement	fortunately
12	également	equally
13	par example	for example
14	en fait	in fact
15	même	even
16	car	because
17	parce que	because
18	puisque	because
F.	**Opinions using comparisons**	
1	Ce que j'aime le plus	What I like most
2	Ce qui est bien / mauvais	The good / bad thing is that
3	Le meilleur / Le pire est que	The best / worst thing is that
4	La chose la plus importante	The most important thing

G.	Positive adjectives	
1	merveilleux (euse)	marvellous
2	formidable	wonderful
3	incroyable	unbelievable
4	chouette	great
5	divertissant(e)	entertaining
6	unique	unique
7	extraordinaire	extraordinary
8	fascinant(e)	fascinating
9	passionnant(e)	exciting
10	fabuleux (euse)	fabulous
11	agréable	pleasant
12	utile	useful
13	sympa	nice
14	gentil(le)	kind
H.	**Positive reasons**	
1	Ça me fait rire	It makes me laugh
2	Ça me détend	It relaxes me
3	Ça me plait	It pleases me
4	Ça m'a plu	It's my passion
5	Je me suis éclaté	I have a wicked time
6	Je me sens bien	I feel good

I.	Negative adjectives	
1	pénible	annoying
2	barbant	boring
3	désagréable	unpleasant
4	énervant	annoying
5	agaçant	stressful
6	ridicule	ridiculous
7	dangereux	dangerous
8	déprimant	depressing
9	impossible	impossible
10	bête	silly
11	inquiétant	worrying
12	nul	rubbish
13	inutile	useless
14	casse-pieds	a pain
J.	**Negative reasons**	
1	Ça me fait pleurer	It makes me cry
2	Ça ne vaut pas la peine	It's not worth it
3	Ça m'inquiéte	It worries me
4	Je m'ennuie	I get bored
5	Ça me fatigue	It tires me out
6	Ça m'embête	It irritates me

1..	The layers of the Earth
Crust	The thin outer layer of the earth
Mantle	Middle layer of the earth, between the crust and the core, approx. 2900km thick.
Core	The centre and hottest layer of the earth, broken into the inner (solid) and outer core.
Radioactive decay	Elements (e.g. Uranium) in the mantle and core decay and generate heat.
Asthenosphere	Upper layer of the mantle. It's semi molten and it can flow.

2.	Theory
Plate boundaries	The place where plates meet (slabs of the Earth's crust).
Hotspots	Where a plume of hot magma from the mantle moves towards the surface, sometimes causing a volcanic eruption. Hotspots are found away from plate boundaries, in the middle of tectonic plates.
Oceanic crust	The part of the Earth's crust under the oceans, usually 6-8km thick
Continental crust	The part of the Earth's crust which contains land and is 30-50km thick.
Earthquakes	Caused by the tension that builds up at all three types of boundary. The plates eventually jerk past each other, sending out shock waves. These are the vibrations of an earthquake. At convergent and conservative margins, tension builds up when plates get stuck. At divergent boundaries, tension builds along cracks within plates.

3.	Plate Boundaries
Divergent	Where tectonic plates move apart and new land is created.
Convergent	Where two plates come together, and the oceanic plate is subducted, leading to violent volcanic eruptions.
Conservative	Where tectonic plates move alongside, or past each other.
Collision	Where continental plates move towards each other, forming mountains.
Convection currents	Currents in the Earth's mantle which rise from the Earth's core and are strong enough to move tectonic plates, they create a drag on the base of the solid plates.

4.	Types of Volcanoes
Shield volcano	A gently sloping volcano formed by runny lava, usually at a constructive boundary.
Composite volcano	A steep volcano formed by alternating layers of lava and ash, on destructive boundaries.
Pyroclastic flow	Torrent of hot ash, rock, gas and steam from a volcano.

5.	3Ps for Volcanoes	3Ps for Earthquakes
Predict / Monitoring	1. The shape may change. 2. Increase in gases given off e.g. sulphur dioxide.	1. Irregular tremors measured. 2. Radon gas levels increase as rocks crack.
Protect	Lava diversion channels.	Earthquake proof buildings.
Planning	1. Evacuation. 2. Emergency services trained.	1. Earthquake drills. 2. Emergency services on-call.

6.	Earthquakes
Epicentre	The point on the Earth's surface directly above the focus of an earthquake.
Focus	The source of an earthquake beneath the Earth's surface. The shallower the focus, the more powerful an earthquake tends to be.
Seismic waves	Fast waves of energy generated from the focus of an earthquake.
Richter scale	A scale used to measure the strength of an earthquake.

7.	Living in the tectonic danger zone
Volcanoes	1. Jobs in tourism. 2. Geothermal energy created. 3. Ash makes the ground fertile, which is good for farming. 4. Diamonds and gold from previous eruptions can be mined.
Earthquakes	1. Friends and family live in the area. 2. It has not happened in such a long time, so people take the risk. 3. Employment in the area.

8.	Effects of tectonic hazards
Primary effects	Direct impacts of an event e.g. people killed, injured, or buildings collapse.
Secondary effects	The indirect impacts of an event, usually occurring in the weeks, hours, months after the event e.g. the outbreak of disease from contaminated water.

9.	*Case studies*
Developing Haiti Port Au Prince	1. 318,000 dead. 2. 1.5 million homeless. 3. Cholera outbreak killed 8,000.
Developed New Zealand Christchurch	1. 181 dead. 2. 80% of the city without electricity. 3. The Rugby World Cup was cancelled. 4. Schools closed for 2 weeks.

Year 10: Hazardous Earth Tectonic theory and hazards

1. Global Atmospheric Circulation	
Circulation cells	Loops of warm rising air and cool falling air. This transfers heat from the equator towards the poles.
Hadley cell	Movement of air between the equator (0 degrees) and 30 degrees N and S
Ferrell cell	Movement of air between 30 degrees N/ S and 60 degrees N and S.

2. Ocean currents and climatic zones	
High pressure	Loops of warm rising air and cool falling air. This transfers heat from the equator towards the poles.
Low pressure	Around the equator and 60 degrees N and S. Equator – sun warms the air, causing it to rise, cools, condenses, forming clouds and **Convectional rain.** At 60 degrees N and S – Frontal rain is formed.
Ocean currents	The cycle of cooling and sinking moves water in a big loop round the Earth, transferring heat energy from warmer to cooler areas.

3. Natural Climate Change	
Orbital changes	Reduced solar output can lead to cooler temperatures in some parts of the world and increased solar output (sunspots) can lead to warmer temperatures.
Sunspot theory	Current geological period, spanning from about 2.6million years ago, to today.
Quaternary period	Variations in the way the Earth moves around the Sun, e.g. changes to the tilt of the Earth's axis. Orbital changes may have causes glacial/ interglacial cycles.
Orbital changes	Variations in the way the Earth moves around the Sun, e.g. changes to the tilt of the Earth's axis. Orbital changes may have causes glacial/ interglacial cycles.
Tree rings	Counting of the number of rings of a tree to find its age- there is one ring per year and the thickness of each ring shows what climate was like.
Volcanic eruption theory	Large quantities of material can be released into the atmosphere, and some particles can reflect the Sun's rays back to space, **cooling** the Earth's surface.

4. Climate Change (Human Activity)	
Greenhouse gases	Include carbon dioxide and methane.
Greenhouse effect	A processes where gases in the atmosphere trap heat from the Sun, keeping Earth warm. Human activities are causing global warming by making the greenhouse effect stronger. This is called the **Enhanced Greenhouse Effect.**
Industrial processes	Some industrial processes release greenhouses gases, e.g. cement production releases C02 into the atmosphere from limestone, which contains carbon.
Climate projection	A range of scenarios provided by scientists to predict future climate events/ patterns. Projections can range according to various actions.

Year 10: Hazardous Earth Climatic Features and Climatic Events

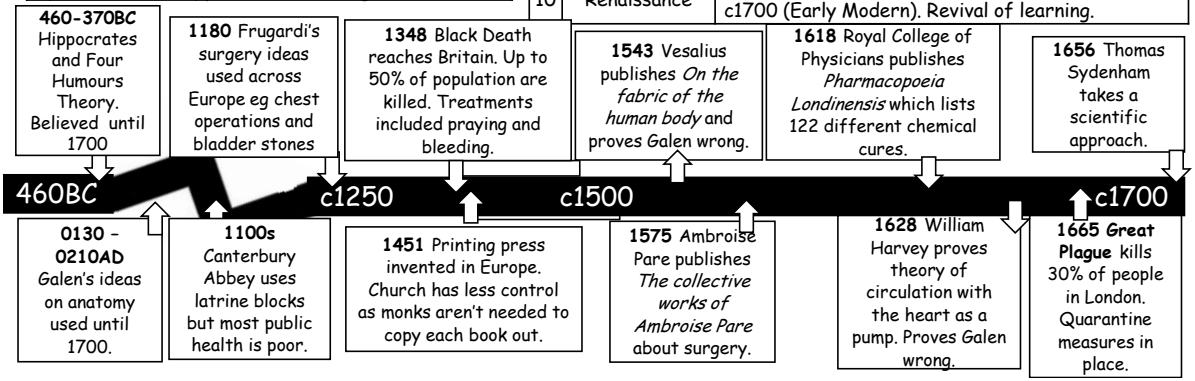
5. Climatic Change – Tropical Cyclones	
Tropical Cyclone	An intense low pressure weather system with heavy rain and strong, spiralling winds, occurring between 5 degrees and 30 degrees N and S of the equator.
Eyewall	spiralling rising air, strong winds (160kmph), storm clouds, heavy rain and a low temperature.
Eye	Low pressure, light winds, no clouds, no rain and a high temperature.
Storm Surge	Large rise in waves height and energy, as waves reach the shore, due to strong winds or low pressure.
Forecasting	Predicting when and where tropical cyclones will hit land.
Saffir-Simpson Scale	A scale from 1-5, to categorise the magnitude/ strength of a storm, based on windspeeds (km/ per hour). 1 is the lowest and 5 is the highest.

History – Knowledge Organiser

Y10 – Medicine and Health c1250-c1700

	Key Individuals	
1	Hippocrates	Came up with 'Theory of The Four Humours (liquids): Blood, Phlegm (snot and spit), Yellow Bile (vomit) and Black Bile (poo).
2	Galen	Dissected (cut up) animals to find out about their anatomy (their body parts and where everything is eg organs and bones).
3	Andreas Vesalius	Challenged Galen's ideas and wrote 'On the fabric of the human body'. Proved Galen wrong as Vesalius dissected humans not animals.
4	William Harvey	Proved that blood circulated round the body rather than being 'used up'. Dissected animals and also proved Galen wrong.

	Key terms	Definition
1	Dissection	Cutting up dead bodies to find out about the human body (anatomy).
2	Anatomy	The study of where things are in the human body eg organs (heart, lungs, stomach) and bones etc.
3	Surgery	Treating diseases or injuries manually eg amputation or cutting things up/off.
4	Ideas about the cause of illness/disease	What people believed caused disease or illness. For example supernatural causes such as God or humours being out of balance.
5	Prevention	Trying to stop people getting ill. Eg praying, eating healthily, living hygienically, avoiding bad smells.
6	Treatment	Trying to help people who are already ill eg theory of opposites, bleeding or purging.
7	Public Health	How healthy the general population are eg sewage systems, clean water, paved streets etc.
8	Hospitals	In Medieval times these were run by The Church
9	Medieval Era	Historical time period stretching from c1250-c1500. Also called The Middle Ages.
10	Renaissance	Historical time period stretching from c1500-c1700 (Early Modern). Revival of learning.



History – Knowledge Organiser

Y10 – Medicine and Health c1700-c1700

Key Individuals		
1	Edward Jenner	Discovered the first vaccination. He discovered that if you deliberately infected people with cowpox they didn't get smallpox.
2	Louis Pasteur	Louis Pasteur's Germ Theory discovered that germs were making milk go sour. Pasteurisation keeps germs out of milk.
3	Fleming, Florey and Chain	Fleming discovered antibiotics and Florey and Chain found a way to manufacture them. Crucial for the way we fight bacteria infections.
4	Aneuran Bevan	Established a National Health Service (NHS) in 1948 which provides free healthcare at the point of use.

	Key terms	Definition
1	Vaccination	Using a dead, inactive or milder disease to improve people's immunity to more serious diseases
2	Germs	Louis Pasteur used microscopes to prove they made milk sour. Koch proved they caused disease.
3	Antiseptic	Using chemicals to fight infection and stop germs (especially bacteria) getting into the body.
4	Anaesthetic	Chemicals to put people to sleep or make them feel less pain during surgery eg Chloroform.
5	DNA	Your genes which make you like you are eg there is a gene for eye colour and hair colour etc
6	Antibiotics	Flemings discovery that mould produces chemicals which kill bacteria and fight infection.
7	Cancer	Where your cells multiply too quickly without doing their job. Can be caused by smoking, drinking etc
8	Diagnosis	Finding out what is wrong with someone or the reason why they are feeling sick or ill.
9	Industrial Era	Historical time period stretching from c1700-c1900 when people moved more into cities.
10	Modern Era	Historical time period stretching from c1900-present. Rapid progress in treatment etc.

1798 Jenner submits his vaccination findings to The Royal Society.

1861 Louis Pasteur publishes his germ theory. Links germs to animal disease

1867 Joseph Lister discovers Carbolic Spray to fight infection in surgery by spraying it whilst operating on patients to kill bacteria.

1910 Paul Ehrlich discovers Salvarsan 606 which targets and kills syphilis.

1942 Compulsory vaccinations prevent thousands of people dying every year from Diptheria, Polio, German Measles and HPV.

2007 Smoking ban in indoor public places. Legal age raised to 18

c1900 ——— Present

1853-6 Florence Nightingale's nursing methods reduce death.

1857 'Great Stink'. Joseph Bazalgette's first sewage system in London.

1882 Robert Koch discovers germs that cause Tuberculosis and Cholera. *Institute of Infectious Diseases 1891.*

1928-45 Discovery and manufacture of antibiotics to fight bacteria and infection

1953 Watson and Crick discover DNA and prove that some people are born with illness

1948 Aneuran Becan launches NHS. UK spends 6.7% on health but Europe spends 10%

Health and Social Care Knowledge Organiser: Component 1 Human Lifespan Development

Learning Outcome 1 – Understand the stages of development from young people to adulthood How do people grow and develop throughout their lives? How can factors such as lifestyle choices, relationships affect this? Understanding these processes is essential knowledge and understanding for health and social care practitioners.

Key words – Puberty, Peer group, Gross motor skills, fine motor skills, abstract thinking, cognitive development,

Factors affecting growth and development Key words – Cerebral palsy, autism, Attention Deficit Hyperactivity Disorder (ADHD), Bereavement

Lifestages

1. Childhood (5- 10years)

2. Adolescence (10–18 years)

3. Adulthood (19-65 years)

Holistic Development

1. Physical development – Physical growth and physiological change Girls/boys - puberty

2. Intellectual development – Developing thinking and language skill and common activities that promote learning and development

3. Emotional development – Developing feelings about self and other

4. Social development – Forming relationships

1. Physical factors

a) Genetic inheritance
b) Diet and lifestyle choices
c) Experience of illness and disease
d) Appearance
e) Pregnancy
f) Birth of children
g) Menopause

2. Economic factors

a) Income/ wealth
b) Material possessions
c) Redundancy
d) Relationships (marriage/divorce etc)

3. Social, Cultural and emotional factors

a) Educational experiences
b) Culture, e.g. community involvement, religion, gender
c) Influence of role models
d) Influence of social isolation
e) Personal relationship with friends and family

Learning outcome 2: Understand the ageing process.
Key words – Neural growth, dementia

Physical development changes as ageing:

Skin
Hair
Sensory loss
Teeth
Lungs and respiratory system
Cardiovascular system
Urinary system
Skeletal and muscle system

Physical changes Memory loss

Forgetfulness is common as individual's age – dementia is not a natural occurrence of ageing it is a result damage or the dying of of neurons in the brain.

Age related memory loss causes:
1. The hippocampus deteriorates or weakens

2. Hormones and proteins that stimulate neural growth decline

3. As we age, blood flow to the brain decreases leading to changes in cognitive ability

Relationship changes
a) Entering a relationship
b) Marriage
c) Divorce
d) Parenthood
e) Bereavement
f) Change in role from parent to grandparent

How individuals adapt to these changes Sources of support
a) Family, friends partners
b) Professional carers and services
c) Community groups, voluntary and faith based organisations

Types of support
a) Emotional
b) Information advice
c) Practical help,

Learning outcome 3 – Know which medical conditions may affect progress through the life stages – Key words: Birth defects, genetics, spina bifida, non-birth defects

Sensory problems – sensory birth defects affect development and function of sensory organs. Some problems are inherited some caused by syndromes,

Examples of birth defects (sensory):
· Cataracts
· Hearing loss
· Blindness Deafness:

Downs syndrome Effects of sensory problems and down syndrome: Physical, intellectual Language, Emotional and Social across the life stages

Physical effects of birth defect (childhood)
· Poor muscle tone
· Hearing loss
· Vision problems
· Delayed milestones

Intellectual effects of birth defect (childhood)
· Cognitive impairment
· Short attention span

Language effects of birth defect (Childhood)
· Delayed communication skills
· May reply in body gestures rather than words

Emotional effects of birth defect (child)
· Immature/impulsive behaviour
· Poor judgement

Social effects of birth defects
· Social difficulties causing social isolation

Non birth conditions:

· Mental ill health
· Anorexia
· Coronary heart disease
· paralysis caused by stroke, head injury MS
· Epilepsy
· Loss of senses Effects on health and well being
· Financial – special diets cost, transport, holiday insurance increase
· Social – Lack of social life e.g. flashing lights and epilepsy
· Emotional – Fear of what the future will bring
· Physical – Activities are more difficult, complicated

Can I write in paragraphs?

The **TIPTOP** rule

You move onto a new paragraph when you change **t**ime, **p**lace, **t**opic or **p**erson.

1. I always start an essay with an introduction which addresses the question.
2. I finish an essay with a conclusion to summarise the main points of my argument and to address the question again.
3. I use connectives in each paragraph to link my ideas and to put them in a logical order.

Furthermore	But	Meanwhile
Whereas	Since	Nonetheless
Nevertheless	Yet	However
Alternatively	Therefore	Although
Consequently	Besides	Moreover

Have I used the correct grammar?

I am aware that I must use language that is appropriate to my reader.

◆ **No slang** that lesson was ~~bangin'~~

◆ **No informal language** I'm ~~gonna~~ do my homework now

◆**Other things to consider:**

✓ **I am clear about the purpose of this piece of writing**

✓ **I know who my audience is**

✓ **I will use a suitable layout and text type**

I am proud of my work because...

- I have written clearly so that my reader can understand my writing easily.
- I have checked my **spelling** and corrected any errors.
- I have used full sentences with a subject and a verb.
- I have used correct **punctuation** and **grammar.**
- I have paragraphed my work using **TIPTOP.**
- My writing is suitable for the person I am writing for

Can I spell familiar words accurately?

Common contractions

We must use an apostrophe to replace any letter(s) we have left out.

11 o'clock	I'd	We'd
Aren't	I'll	We'll
Can't	I'm	We're
Couldn't	Isn't	Weren't
Didn't	It'd	What's
Doesn't	It'll	When's
Don't	It's	Where'd
Hadn't	Mightn't	Where's
Hasn't	Mustn't	Who'd
Haven't	She'd	Who'll
He'd	She'll	Who's
He'll	She's	Why'd
He's	Shouldn't	Why'll
How'd	They'd	Why's
How's	They'll	

Can I use different sentence types?

Simple sentences: contains a subject and a verb and can contain an object
- Sarah likes to read in the library.
- Tom enjoys reading at home.

Compound sentences: joins two simple sentences using the connectives: for, and, nor, but, or, yet, so.
- Sarah likes to read in the library but Tom prefers to read at home.

Complex sentences: A complex sentence contains a conjunction such as because, since, after, although, or when .
- Because Robert felt tired, he only studied for an hour.
- Although the rain had stopped, the pitch was still water-logged.
- Paul enjoys Music, however, he is more proficient in Art.

Homophones

I have checked that I have not mixed up my homophones.

affect/effect	one/won
bare/bear	passed/past
brake/break	peace/piece
buy/by	practice (n)/practise (v)
grate/great	read/red
hair/hare	sea/see
hole/whole	sight/site
hour/our	to/too/two
knight/night	wait/weight
know/no	weak/week
meat/meet	wear/where
	witch/which

Basics:

❑ Every sentence must start with a capital letter.
❑ Every sentence must finish with some form of punctuation: .?!
❑ Proper nouns need capital letters. These are **unique** people, places or things e.g. there are many cities so 'city' doesn't take a capital letter. However there is only one London, therefore it takes a capital letter.
❑ When writing titles of works such as books, films or plays:
- Capitalise the first word
- Capitalise any main/important words
- Don't capitalise minor words such as 'and', 'of' or 'the' e.g. The Sound of Music, The Wizard of Oz, Harry Potter and the Goblet of Fire

❑ When writing speech:
✓Go to a new line when a different person speaks e.g. "Good morning" said the Headteacher. "It's the afternoon!" replied the student.
✓Each person's speech is marked with speech marks e.g. "Walk on the left" said Mr Mathews.

Can I spell accurately?

1. Sound out the word
2. Think about how it looks
3. Think about a similar word
4. Is there a memory sentence for this word? (e.g. big elephants cannot always use small exits)
5. Find the word in a list –
   - Key words list
   - Frequently used words list
   - Your own word bank
7. Ask a friend or teacher
8. To learn it: look, cover, write , check
9. Once you've solved it, add the correct spelling to your own word bank.

Can I use punctuation?

The Apostrophe
I always aim to use apostrophes correctly.

There are two main reasons why we use apostrophes: for possession and to replace a letter or letters

Note: Apostrophes are NEVER used to denote plurals

Full stop	.	indicates that a sentence has finished
Comma	,	indicates a slight pause in a sentence, separates clauses in a complex sentence and items in a list
Question mark	?	goes at the end of a question
Exclamation mark	!	goes at the end of a dramatic sentence to show surprise or shock
Apostrophe	'	shows that letter(s) have been left out or indicates possession
Speech marks	""	indicate direct speech, the exact words spoken or being quoted
Colon	:	introduces a list, a statement or a quote in a sentence
Semicolon	;	separates two sentences that are related and of equal importance
Dash / hyphen	-	separates extra information from the main clause by holding words apart
Brackets	( )	can be used like dashes, they separate off extra information from the main clause
Ellipsis	...	to show a passage of time, to hook the reader in and create suspense

Apostrophe for Possession
(To show that something belongs to another)

If a single thing/person owns anything, add an apostrophe + 's'.
- The dog's bone
- The boy's homework
- Jones's bakery
- Yesterday's lesson

However, if it is plural (more than one), an apostrophe comes after the 's'.
- The dogs' bones
- The boys' homework
- Joneses' bakeries (lots of Jones families)
- Many websites' content is educational

There/ their/ they're

Note: special care must be taken over the use of **there**, **their** and **they're** as they sound the same but are used quite differently:
- **There** shows position *Your seat is over there*
- **Their shows that 'they' own something** Their blazers are navy blue
- **They're** is short for **they are** as in *They're revising every day*

Its

Note: its, which shows that something owns something (like our, his etc), does not take an apostrophe: *the dog ate its bone and we ate our dinner*

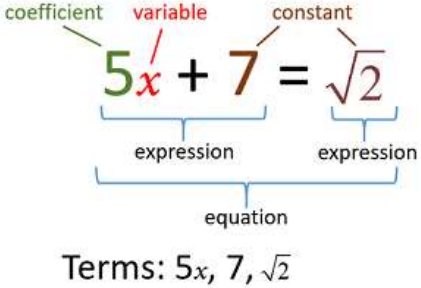
Your/ you're

Note: special care must be taken over the use of **your** and **you're** as they sound the same but are used quite differently:
- **Your** is possessive as in *this is your pen*
- **You're** is short for you are as in *you're coming over to my house*

Algebra Rules:

Rule	Further Example
$a + a = 2a$	$10a + b - 3a + 4b = 7a + 5b$
$a \times b \times c = abc$	$5a \times 10d^2 = 50ad^2$
$a \times a = a^2$	$2a \times a \times 5a = 10a^3$
$a \div b = \frac{a}{b}$	We use the fraction line to represent division

Algebra Key Words:



Terms: $5x$, 7, $\sqrt{2}$

A **formula** is a mathematical relationship or rule expressed in symbols.
For Example: A = πr² (area of a circle)

An **identity** is an equation that is always true, no matter what values are chosen.
For Example: 3a + 2a = 5a

Rearranging Formula:

Operation	Inverse
+	−
×	÷
^{2}	$\sqrt{}$
^{3}	$\sqrt[3]{}$

'Make h the subject' instructs us to write our equation in the form **h =**
We use **inverse operations** to do this.

E.g. Make h the subject of the equation:

$$A = \frac{bh}{2}$$
$$(\times 2) \quad (\times 2)$$
$$2A = bh$$
$$(\div b) \quad (\div b)$$
$$\frac{2A}{b} = h$$

Compound Measure:

30 min = 0.5 hours | *15 min = 0.25 hours*

x 1000 / $1km = 1000m$ / ÷ 1000	x 1000 / $1kg = 1000g$ / ÷ 1000	x 60 / $1\ hour = 60\ minutes$ / ÷ 60
x 100 / $1m = 100cm$ / ÷ 100	x 1000 / $1g = 1000mg$ / ÷ 1000	x 60 / $1\ minute = 60\ seconds$ / ÷ 60
x 10 / $1cm = 10mm$ / ÷ 10		

$$Pressure = \frac{Force}{Area} \qquad Speed = \frac{Distance}{Time}$$

$$Density = \frac{Mass}{Volume}$$

Linear Graphs (straight line graphs) :

1. Write the equation in the form

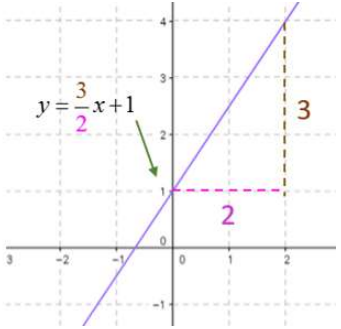
$$y = mx + c$$

gradient (how steep the line is)

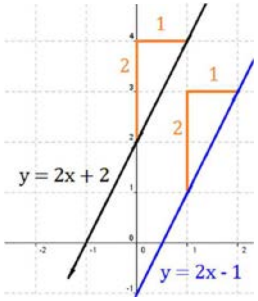
where the line crosses the y-axis at (0,c)

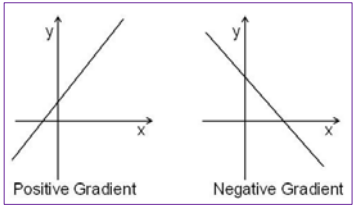
The gradient between two points (x_1, y_1) and (x_2, y_2):

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$



Parallel lines have the **same gradient**





Probability

The **probabilities** of a given event **sum to 1.**

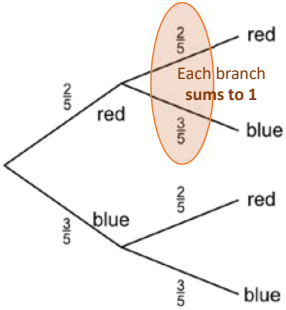
Independent events: one event doesn't impact the other.

Dependent events: one event does impact the other.

Expected outcome = *probability x number of trials*

Relative frequency = $frequency \div total\ trials$

Tree Diagram's



***Multiply** along the branches to find each probability.*

E.g. The probability that a red counter is picked both times

$P(RR) = \frac{2}{5} \times \frac{2}{5} = \frac{4}{25}$

***Add** multiple probabilities if there is more than once outcome:*

E.g. The probability that the counters are different colours :

$P(RB) + P(BR) = \left(\frac{2}{5} \times \frac{3}{5}\right) + \left(\frac{3}{5} \times \frac{2}{5}\right) = \frac{12}{25}$

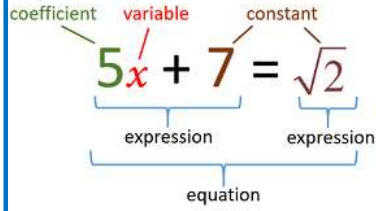
Standard form $a \times 10^n$

a is a number bigger than or equal to 1 and less than 10.

n can be any positive or negative whole number.

$4.023 \times 10^7 = 40\,230\,000$ and $6.4 \times 10^{-3} = 0.0064$

Algebra Key Words:



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Compound Measures:

These can be rearranged to find what is required:

$$Speed = \frac{Distance}{Time}$$

$$Density = \frac{Mass}{Volume}$$

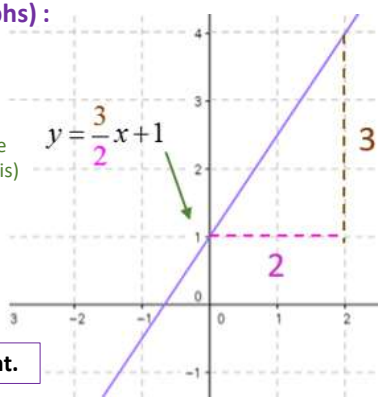
$$Pressure = \frac{Force}{Area}$$

Linear Graphs (straight line graphs) :

$$y = mx + c$$

Gradient (how steep the line is)

y-intercept (where the line crosses the y-axis)



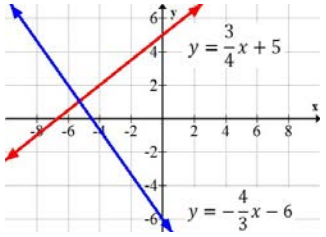
The gradient between two points (x_1, y_1) and (x_2, y_2):

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Parallel lines have the **same gradient.**

Perpendicular lines meet at a right angle. Their gradients **multiply** to give **-1.**

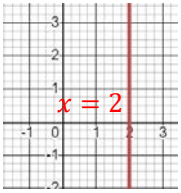
E.g. $\frac{3}{4} \times -\frac{4}{3} = -1$

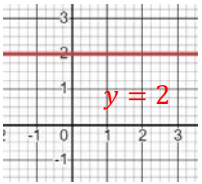


The equation of a line with gradient m that goes through the point (x_1, y_1):

$$y - y_1 = m(x - x_1)$$

Horizontal and Vertical Graphs:

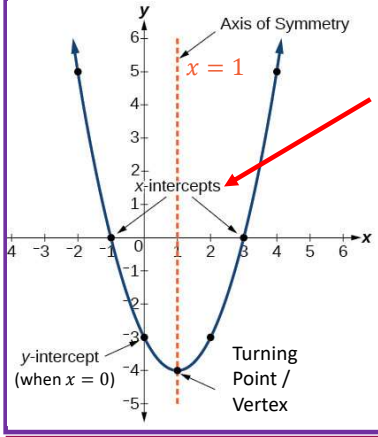




Quadratic Graphs :

This general shape is a called a **parabola**

General Form : $y = ax^2 + bx + c$



The **x-intercepts** are more frequently called the **roots** of the equations. We can find them by setting $y = 0$

Negative Quadratic	Positive Quadratic
$a < 0$	$a > 0$

E.g., Find the **roots** & **turning point** of $y = x^2 - x - 12$

Solve by factorising

$0 = x^2 - 1x - 12$

$0 = (x - 4)(x + 3)$

Roots: $x = 4$ *and* $x = -3$

Turning point is halfway between

$x = 3$ *and* $x = 4$: $\frac{3 + 4}{2} = 0.5$

$x = 0.5$

Substitute back into original equation

$y = x^2 - x - 12$

$y = (0.5)^2 - (0.5) - 12$

$= -12.25$

Turning point : $(0.5, -12.25)$

Completing the Square

E.g. Find the co-ordinates for the **turning point** of $y = x^2 - 8x + 17$ by completing the square:

Half the x coefficient

Subtract the square of this

$y = (x - 4)^2 - 16 + 17$

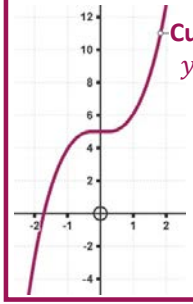
$y = (x - 4)^2 + 1$

Turning point: $(4, 1)$

Examples of Important Graphs

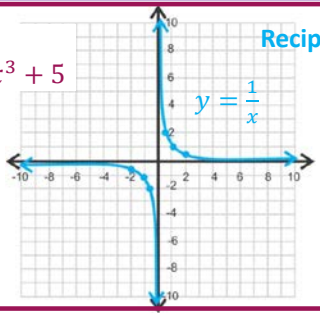
Cubic

$y = x^3 + 5$

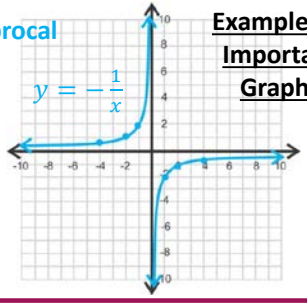


Reciprocal

$y = \frac{1}{x}$

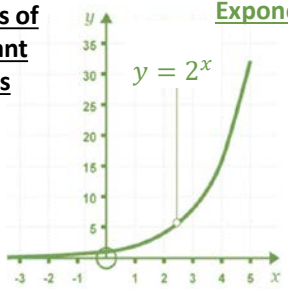


$y = -\frac{1}{x}$

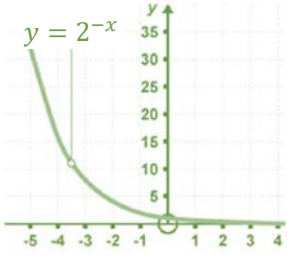


Exponential

$y = 2^x$



$y = 2^{-x}$



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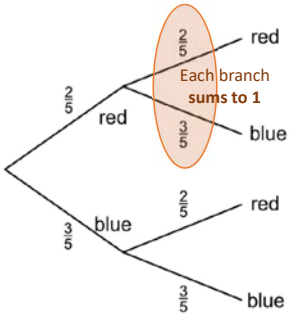

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Percentages

Percentage Change: $\frac{Actual\ amount}{Original\ amount} \times 100$

Multiplier Increase/Decrease by n% : $(100\% \pm n\%) \div 100$

Compound Growth & Decay: $Starting\ amount \times multiplier^{n}$

Set Notation & Venn Diagrams:

ξ = Universal Set

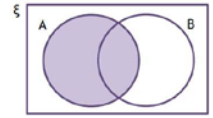
$\cup$ = The union (OR)

$\cap$ = The interest (AND)

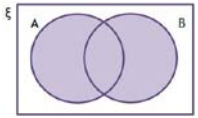
A' = The complement of A (NOT A)

$P(A')\ = 1 - P(A)$

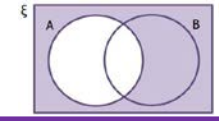
$P(A)$



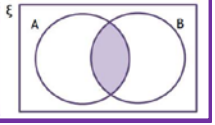
$P(A \cup B)$



$P(A')$



$P(A \cap B)$



Standard form $a \times 10^{n}$

a is a number bigger than or equal to 1 and less than 10.

n can be any positive or negative whole number.

$4.023 \times 10^{7} = 40\ 230\ 000$ and $6.4 \times 10^{-3} = 0.0064$

Multiply & Divide in Standard form:

E.g. $\frac{2.16 \times 10^{8}}{4 \times 10^{5}} = (2.16 \div 4) \times 10^{8-5}$

$= 0.54 \times 10^{3}$ (x 10, ÷ 10)

$= 5.4 \times 10^{2}$

Convert to give your answer in standard form.

Adding & Subtracting in Standard form:

E.g. $4.023 \times 10^{7} + 6.4 \times 10^{5}$

$= 4.023 \times 10^{7} + 0.064 \times 10^{7}$

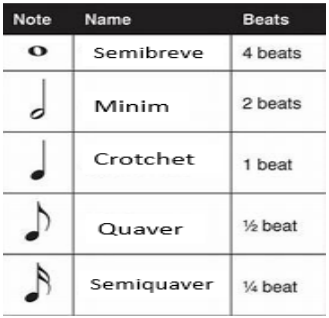
$= (4.023 + 0.064) \times 10^{7}$

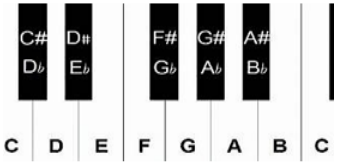
$= 4.083 \times 10^{7}$

Covert to the highest power of 10.

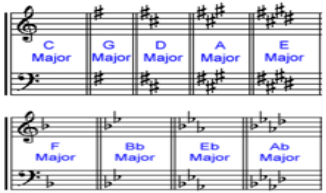
Factorise out the power of 10.

Musical term	Definition
Chord	3 or more notes that are sounded at the same time.
Major	In music theory, a major chord is a chord that has a root, major third, and perfect fifth. When a chord has these three notes alone, it is called a major triad. A major third is two tones from the root.
Minor	In music theory, a minor chord is a chord that has a root, minor third, and perfect fifth. When a chord has these three notes alone, it is called a minor triad. A minor third is one tome and one semitone from the root.
Key	The main group of pitches, or notes, that form the harmonic foundation of a piece of music. Keys are in Major or Minor versions.
Four to the floor	a rhythm in 4/4 time in which the bass drum is played on every beat, characteristic of some styles of dance music.
Multi-Tracking	A device (or piece of software) able to record into several channels of audio simultaneously. Most DAWs are capable of this.
MIDI	an acronym that stands for Musical Instrument Digital Interface. It's a way to connect devices that make and control sound.
Polyrhythm	Many different rhythms being played at once in a piece of music.
Syncopation	Accents which are note on the beat, or rhythms that emphasise unusual parts of the beat.
Off Beat	The second and fourth beats often highlighted in Jazz music and Reggae music. 1 2 3 4
Sequence	In music, a sequence is the restatement of a motif or longer melodic (or harmonic) passage at a higher or lower pitch in the same voice
Riff	Repeated short melodic or rhythmic figure usually very catchy, guitars commonly have a riff.
Structure	The way music is organised, ABA or Intro/Verse/Chorus.
Transposing	Moving a key to fit a person's vocal range or an instruments range.
Synthesiser	A keyboard that can create many different sounds and effects.
Texture	The way music is layered together, thick or thin, busy or simple.
Pulse	The heartbeat of the music, the pulse represents the how many beats of the music occur in each bar.





Key Signatures



	Command Word
Identify (Level 1)	Give all the basic facts which relate to a topic.
Demonstrate (Level 1)	Show that you can do a particular activity or skill
Describe (Pass)	Give a clear, straightforward description which includes all the main points.
Explain (Merit)	Give logical reasons to support your view.
Evaluate (Distinction)	Bring together all your information and make a judgement on the importance or success of something.
Demonstrate (Level 2)	Prove you can carry out a more complex activity.

Generic:

- ❑ I think...
- ❑ In my opinion...
- ❑ I agree/disagree with ... because...
- ❑ The answer is ... because...
- ❑ Another way of looking at this is...

Art:

- ❑ To further develop my idea, I could...
- ❑ In my opinion...
- ❑ I have taken inspiration from...

PE:

- ❑ This is a strength because...
- ❑ This is a weakness because...
- ❑ I conclude...

IT:

- ❑ I agree/disagree with... because...
- ❑ The answer is ... because...
- ❑ I could have improved my work by...

Health & Social Care:

- ❑ This is a strength because...
- ❑ This is a weakness because...
- ❑ I conclude...

Performing Arts:

- ❑ Within my performance I...
- ❑ I would suggest they... to improve their performance
- ❑ They use these techniques in their work to show...

Maths:

- ❑ ... is incorrect because...
- ❑ Another way to work this out is...
- ❑ The mistake is that...

EAL:

- ❑ I like... because...
- ❑ I don't like... because...
- ❑ I think...

History:

- ❑ This links to my next point because...
- ❑ The source is a...
- ❑ The source was made in...

English:

- ❑ The writer first establishes the idea that ... when he/she chooses to focus on ...
- ❑ It is clear that...
- ❑ This is established/reinforced/developed through the writer's use of...

Science:

- ❑ I can conclude from the data that ... as ... increases/decreases, ... increases/decreases.
- ❑ The pattern the data shows is...
- ❑ One key fact from the topic was...

Technology:

- ❑ The design could do with...
- ❑ Aspects I found difficult were...
- ❑ If I were to do this again I would...

Music:

- ❑ As I listened to the music, I felt...
- ❑ This sounds like...
- ❑ I would suggest they... to improve their performance

Geography:

- ❑ An example of this is...
- ❑ This means that... One positive/negative reason is...
- ❑ Overall, I believe that... The evidence in the figure/source is...

BTEC Tech Award Performing Arts /Component 1

Structure of the Component
You will develop your understanding of the Performing Arts by studying 3 performance pieces in 3 different practitioner styles.
You will also study the process used to create the performance.

What I will need to do

- You will watch 3 performances.
- You will investigate how the pieces were created and what influenced them stylistically and contextually.
- You will participate in workshops (lessons) where you will try out these different styles and explore how the different roles within a company are linked together.
- You will create a portfolio of evidence to demonstrate your knowledge and understanding.

Key Term	Explanation
What is a practitioner?	A practitioner is a company or individual with a distinct performance style. E.g Brecht (Epic Theatre), Stanislavski (Naturalism), Frantic Assembly or DV8 (Physical Theatre), Bruce (Contemporary Dance), Fosse (Jazz Dance), Andrew Lloyd Webber (musical Theatre)
Creative Intentions	What was the director/writer/creator thinking about? Themes/issues/response to stimulus/style/genre/contextual influences/collaboration with other practitioners/influences by other practitioners.
Purpose	Why was it made? To educate / Inform / entertain / challenge viewpoints / raise awareness / celebrate / provoke / motivate / create.
Practitioner roles	Performance roles - actor/dancer/singer/puppeteer. Non-Performance roles - Director/choreographer/set designer/ writer/ compose / lighting designer / costume designer / sound designer.
Practitioner responsibilities	This could include devising / designing / choreographing / directing / writing /refining performance material / managing self and others. Skills: physical / vocal / music /dance, managing / directing / performing communication skills used to liaise Creative skills: set / costume / lighting / sound design, writing scripts / composing songs, organisational skills to pull everything together in order to put on the performance.

Command word	Definition
Describe (pass)	Give a clear, straightforward description which includes all of the main points.
Discuss (merit)	To present an argument for and against.
Explain (merit)	Give logical reasons to support your view.
Assess (distinction)	Evaluate in terms of advantages and disadvantages.

P3 – particle model key words	**Taught in Y9**
Mass (m)	The amount of matter in a substance, measured in kg
Volume (V)	The amount of space a substance takes up, measured in m^3
Density (ρ)	How tightly packed matter is within a substance, measured in kg/m^3 or g/cm^3 Calculated using the equation density = mass/volume
System	An object or group of objects that can be considered closed off from the external world
Temperature	A measure of the average kinetic energy of all particles within a system, measured in °C
Internal energy	The total energy stored within a system, made up of the kinetic and potential energies of all particles within the system
Kinetic energy of particles	The speed at which the particles in a system are moving
Potential energy of particles	The amount that particles within a system can move. Solids have very low potential energy, gases have very high potential energy
Heating	The transfer of energy from a hotter object to a cooler one
Specific heat capacity	The energy required to change the temperature of 1kg of substance by 1°C, measured in J/kg°C.
Latent	Hidden or unseen
Specific latent heat of fusion	The energy required to change 1kg of substance from solid to liquid
Specific latent heat of vaporization	The energy required to change 1kg of substance from liquid to gas
Pressure	The force per unit area, measured in Pascals (Pa)
Gas pressure	The force on the walls of a container from the gas particles colliding. This force is at right angles to the walls of the container

P1 Energy key words	
Energy store	Where energy can be stored, and measured. Measured in Joules (J)
Kinetic energy store	The energy an object possesses by being in motion. Linked to both the speed and mass of the object
Gravitational potential energy store	The energy an object possesses from being lifted against gravity
Elastic potential energy store	The energy stored in a stretched, compressed or twisted material
Chemical energy store	The energy stored in chemical bonds
Internal (Thermal) energy store	The energy stored in an object due to its temperature, hotter objects have greater internal energy
Nuclear energy store	The energy stored between protons and neutrons in a nucleus
Magnetic energy store	The energy stored between magnets held apart
Electrostatic energy store	The energy stored between charged particles
Energy pathway	A way of transferring energy between stores
Mechanical pathway	When a force acts and work is done to transfer energy
Electrical pathway	When a current flows
Heating pathway	Energy transfer due to a difference in temperature
Radiation pathway	Energy transfer by waves (e.g. light, microwaves, sound)
Work done	The distance an object moves in the direction of a force
Power	The amount of energy transferred each second, measured in Watts (W)

Efficiency	A measure of how well energy is transferred to a useful store
Energy conservation	How much of the original energy ends up in the store it is intended for. Trying to waste as little energy as possible
Dissipation	The spreading out of wasted energy to the surroundings
Lubricant	A substance that reduces friction between surfaces
Energy resource	A way of making energy for human use such as in homes, offices etc.
Renewable energy resource	A resource that never runs out e.g. wind, solar, tidal
Non-renewable resource	A resource with a finite amount available e.g. coal, oil, gas, nuclear

P2 Electricity key words	
Electric component	A working part of a circuit e.g. a light
Potential difference	Energy transferred per unit of charge, the driving force of a circuit
Electric charge	The charges within a circuit that can move and transfer energy
Electric current	The rate of flow of charge in a closed circuit
Resistance	The slowing down of electric current by a component in a circuit
Series circuit	A circuit with only one pathway/loop
Parallel circuit	A circuit with two or more pathways/loops
Direct current	Current that flows in only 1 direction due a fixed potential difference
Alternating current	Current that is constantly changing direction due to a constantly changing potential difference
National grid	The system of wires and transformers that links power stations to consumers
Live wire	The **brown** wire connected to the national grid in domestic appliances
Neutral wire	The **blue** wire that completes a circuit within an appliance
Earth wire	The **striped** wire that connects to the earth as a safety precaution in metal domestic appliances
Transformer ^	A device to increase or decrease the potential difference in the national grid.
Static charge ^	The build up of electrons on an insulator caused by friction between insulators. Creates an electric field around the charged object
Electric field ^	The area around a charged object in which a force would be exerted by another charged object.

P4 atomic structure and radiation key words	
Proton	Sub-atomic particle found in the nucleus of the atom. Relative mass of 1 and charge of +1
Neutron	Sub-atomic particle found in the nucleus of the atom. Relative mass of 1 and charge of 0
Electron	Sub-atomic particle found orbiting the nucleus of the atom. Relative mass of almost 0 and charge of -1
Atomic number	The number of protons in an atom. This is the smaller of the two numbers for each element in the periodic table
Mass number	The number of protons and neutrons in an atom. The larger of the two numbers for an element in the periodic table
Isotope	Atoms of an element with the same number of protons but different numbers of neutrons
Radiation	The emission of electromagnetic waves or sub-atomic particles from an object
Radioactive source	A source which emits ionizing radiation in the form of alpha, beta of gamma
Activity	The rate at which a radioactive source decays
Count rate	The number of radioactive decays per second measured by a detector

Alpha particle α	Two protons and two neutrons – the same as a helium nucleus
Beta particle β	A high energy electron emitted from the nucleus when a neutron turns into a proton
Gamma ray ϒ	A high energy electromagnetic wave emitted from the nucleus
Half life	The time taken for half of the atoms in a radioactive source to decay **or** the time taken for the count rate from a radioactive source to reduce by half
Irradiation	The process of exposing an object to radiation. This does not make the irradiated object radioactive
Contamination	When radioactive atoms become present in a material where they should not be.
Background radiation ^	Natural sources of radiation that is around us all the time
Nuclear fission ^	The splitting of a large unstable nucleus to release energy
Nuclear fusion ^	The joining of two lighter nuclei to make a larger nucleus.

Physics units

Unit	Symbol	Measured in
Mass	m	Kilograms (kg)
Volume	V	Meters cubed (m^3)
Density	ρ	Kilograms per meter cubed (kg/m^3)
Distance	s	Meters (m)
Time	t	Seconds (s)
Temperature	T	Degrees Celsius (°C)
Frequency	f	Hertz (Hz)
Electric charge	Q	Coulombs (C)
Electric current	I	Amperes (A)
Potential difference	V	Volts (V)
Resistance	R	Ohms (Ω)
Speed	v	Meters per second (m/s)
Acceleration	a	Meters per second squared (m/s^2)
Momentum	p	Kilogram meters per second (kgm/s)
Force	F	Newtons (N)
Pressure	P	Pascals (Pa)
Energy	E	Joules (J)
Power	P	Watts (W)

AQA GCSE Physics – Equations & Formulae (specification 8463 & 8464)

Unit 1: Energy

Equations to Learn	
kinetic energy = $\frac{1}{2}$ × mass × speed^2	$E_K = \frac{1}{2}mv^2$
GPE = mass × gravitational field strength × height	$E_p = mgh$
power = $\frac{\text{work done}}{\text{time taken}} = \frac{\text{energy transferred}}{\text{time taken}}$	$P = \frac{W}{t} = \frac{E}{t}$
efficiency = $\frac{\text{useful energy output}}{\text{total energy input}}$ efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	
Equations given in the exam	
elastic potential energy = 0.5 × spring constant x (extension)^2	$E_e = \frac{1}{2}ke^2$
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = mc\Delta\theta$

Unit 2: Electricity

Equations to Learn	
charge flow = current × time	$Q = I\,t$
potential difference = current × resistance	$V = I\,R$
total resistance = resistance of component 1 + resistance of component 2	$R_T = R_1 + R_2$
power = current × potential difference	$P = I\,V$
power = (current)^2 × resistance	$P = I^2R$
energy transferred = power × time	$E = Pt$
energy transferred = charge flow × potential difference	$E = QV$

* Higher tier only

^ Separate Physics only

Unit 3: Particle Model of Matter

Equations to Learn	
density = $\frac{\text{mass}}{\text{volume}}$	$\rho = \frac{m}{V}$
Equations given in the exam	
change in thermal energy = mass × specific heat capacity × temperature change	$\Delta E = mc\Delta\theta$
thermal energy for a change in state = mass × specific latent heat	$E = mL$
^ for a gas: pressure × volume = constant	$pV = constant$

Unit 6: Waves

Equations to Learn	
wave speed = frequency × wavelength	$v = f\,\lambda$
Equations given in the exam	
time period = $\frac{1}{\text{frequency}}$	$T = \frac{1}{f}$
^ magnification = $\frac{\text{image height}}{\text{object height}}$	$M = \frac{h_{image}}{h_{object}}$

Unit 7: Magnetism and Electromagnetism

Equations given in the exam	
* Force = magnetic flux density × current × length of conductor in magnetic field	$F = BIl$
* $\frac{\text{potential difference across primary coil}}{\text{potential difference across secondary coil}} = \frac{\text{number of turns in primary coil}}{\text{number of turns in secondary coil}}$	$\frac{V_P}{V_S} = \frac{N_P}{N_S}$
* ^ p.d across primary × current in primary = p.d. across secondary x current in secondary	$V_P I_P = V_S I_S$

Unit 5: Forces

Equations to Learn	
weight = mass × gravitational field strength	$W = m\,g$
work done = force × distance (moved along the line of action of the force)	$W = Fs$
force = spring constant × extension	$F = ke$
moment of a force = force × distance (perpendicular to the direction of the force)	$M = Fd$
pressure = $\frac{\text{force normal to a surface}}{\text{area of that surface}}$	$p = \frac{F}{A}$
distance travelled = speed × time	$s = vt$
acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$ $= \frac{\text{final velocity-initial velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$ $= \frac{v-u}{t}$
resultant force = mass × acceleration	$F = ma$
* momentum = mass × velocity	$p = mv$
Equations given in the exam	
* ^ Pressure = height of column × density of liquid × gravitational field strength	$p = h\,\rho\,g$
^ (final velocity)^2 – (initial velocity)^2 = 2 × acceleration × distance	$v^2 - u^2 = 2as$
* ^ Force = $\frac{\text{change in momentum}}{\text{time taken}}$	$F = \frac{m\,\Delta v}{t}$

Unit 4: Atomic Structure & Unit 8: Space

There are no equations in these sections of the course

Year 1
GCSE Sociology
Term 1 – The Sociological Approach

Key Concepts		
1	Social Issues	Issues that effect communities, groups and people's lives.
2	The Education System	An institution through which children and adults are taught formal academic knowledge and norms
3	The criminal justice system	The criminal justice system is a series of government agencies and institutions.
4	Social stratification	Society's categorization of people into groups based on socioeconomics, such as wealth, income, race.
5	Primary Socialisation	Basic behaviour patterns, language and skills we learn as babies and infants.
6	Secondary Socialisation	Begins in later childhood. We learn norms and values.
7	Capitalism	An economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state
8	Marxism	Method of socioeconomic analysis that uses a materialist interpretation of historical development, better known as historical materialism, to understand class relations and social conflict as well as a dialectical perspective to view social transformation.
9	Functionalism	theory based on the premise that all aspects of a society—institutions, roles, norms, etc.—serve a purpose and that all are indispensable for the long-term survival of the society.
10	Feminism	The advocacy of women's rights on the ground of the equality of the sexes

Key Words & Terminology		
1	Socialisation	The skills and behaviours we learn as a response to others.
2	Social Control	Behaviour defined by law
3	Labelling	Behaviour adopted as a result of a given label.
4	Discrimination	An action that excludes, disadvantages or merely differentiates between groups
5	Globalisation	The process by which the world is becoming increasingly interconnected as a result of massively increased trade and cultural exchange
6	Controversial	Giving rise or likely to give rise to controversy or public disagreement
7	Norms	Rules or expectations that are socially enforced
8	Values	Your **values** are the things that you believe are important in the way you live and work
9	Positive Sanctions	Can include celebration, congratulation, praise, social recognition, social promotion, and approval, as well as **formal sanctions** such as awards, bonuses, prizes, and titles
10	Negative Sanctions	can include embarrassment, shame, ridicule, sarcasm, criticism, disapproval, social discrimination, and exclusion as well as more formal **sanctions** such as penalties and fines.

BTEC Sport Unit 1: Fitness for Sport and Exercise – Components of Fitness and Principles of Training

Physical-Related Fitness Components

Aerobic Endurance: The ability of the heart and lungs, to work for a long period of time. Sports: Long distance running, Football, Road Cycling.

Muscular Endurance: the ability of a muscle, to work continuously without tiring. Sports: Hockey, Rugby, Endurance Sports

Flexibility: The range of movement at a joint. Sports: Gymnastics, Dance, Diving.

Muscular Strength: The maximum amount of force a muscle can produce in a short period of time. Sports: Rugby, Powerlifting, Boxing.

Speed: The ability to cover distances quickly. 3 types of speed; Accelerative Speed, Pure Speed & Speed Endurance. Sports; Athletics, Football, Rugby.

Body Composition: The ratio of Fat to fat-free mass In the body. Different sports will need a different body fat percentage

Skill Related Fitness Components

Agility: Ability to change direction quickly and efficiently. Sports: Tennis, Rugby.

Balance: Ability to maintain centre of mass over a base of support. Two types; Static and Dynamic Balance. Sports; Gymnastics, games sports.

Co-Ordination: Smooth flow of movement to be able to perform a motor skill fluently. Sports; Tennis, Rugby, Gymnastics.

Power: Combination of Speed and Strength. Sports; Long Jump, Rugby, American Football.

Reaction Time: The ability to react quickly to a stimulus. Sports; Sprinting, Tennis, Table tennis.

Principles of Training

For any training to be successful, it must stick to the following principles;

Specificity: Tailoring training to your goals and sport.

Progressive Overload: Gradually increasing exercise intensity to cause adaptation.

Variation: Changing the type of training, to increase motivation.

Adaptation: Changes in the body caused by exercising at a high intensity.

Reversibility: When you stop training, you lose any fitness adaptations you will have gained.

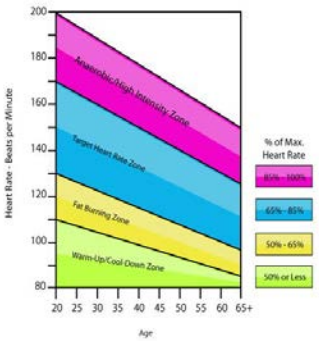
Rest & Recovery: The time required to allow your body to repair any damage sustained during training/competition. The body will repair itself and become stronger than before.

Frequency: How often you train
Intensity: How hard you train
Time: How long you train for
Type: what type of training do you do

Exercise Intensity

Measure how hard you are training by using your heart rate (BPM).
Maximum heart rate = 220 – age
Target heart rate zone for Aerobic training 60-85% of your maximum heart rate.
Therefore, you should be training had enough, that your heart rate is between 60-85% of your maximum heart rate. This will cause your body to adapt.

Borg's RPE scale can also predict intensity and heart rate.
RPE X 10 = HR



YEAR 10 TEXTILES KNOWLEDGE ORGANISER – UNIT 1 THE SEASIDE.

Keywords.

Formal Elements	Line, Tone, Colour, Pattern, Shape, Texture and Form
Line	Line is the path left by a moving point.
Shape	Shape is an area enclosed by a line.
Tone	This refers to the lightness or darkness of something.
Pattern	A design that is created by repeating lines, shapes, tones or colours.
Media	The material used to create artwork.
Technique	The way tools and media are used to create artwork.
Composition	This is the way an object is placed or positioned on a page.
Stitch	One complete movement of a threaded needle through fabric.
Lino Printing	Is a form of block printing that involves carving a pattern or design into a vinyl surface.
Applique	This technique is accomplished by either hand stitching or Machine. Pieces of fabric are sewn onto a larger piece of fabric to form a picture.
Mola	This is reverse applique.
Fabric Paint	Is a combination of dye and a binding agent that makes it cling

Command Words.

Research	Is the process of solving problems and finding facts in an organised way. Research is done by what is known and building on it.
Analyse	Identify several relevant factors, show how they are linked, and explain The importance of each.
Method	A procedure, technique, or way of doing something.
Evaluation	Bring together all of your information and make a judgement on the Importance or success of something.
Generate Ideas	The process of creating, developing and communicating abstract, concrete or visual ideas.
Develop	To grow or change into a more advanced or stronger form or idea.

Sketchbook

- Artist research
- Experiment with a range of materials.
- Experiment with colour, line, shape, space.
- Annotations to show reflections on their work and that of others.

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