

September - October

Year 10

**KNOWLEDGEABLE
AND EXPERT
LEARNERS**



Self
Quizzing

Flash
Cards

Mind
Maps

Brain
Dumps

enjoylearn**succeed**

INDEPENDENT LEARNING BOOKLET

NAME:

TUTOR GROUP:

CONTENTS

- Using Class Charts Instructions
- Accessing SENECA
- Independent Learning log
- Self Quizzing instructions
- Subject Knowledge Organisers

You will need an A4 application booklet.

HOMEWORK:

- Your teacher will set specific tasks, with a deadline, on Class Charts
- Instructions for your homework and how to access it are in this booklet
- You must complete and hand in the work by the deadline

INDEPENDENT LEARNING EXPECTATIONS AND REWARDS:

- You should complete 3 tasks over the week (20 mins each - 1 hour in total)
- The tasks will be set on Class Charts to help you keep track of what you need to do.
- You must bring your ILB and application book to school every day.
- You can choose the subject/topic you want to work on.
- Your tutor will check your ILB regularly to see how you are getting on.
- You will be rewarded for going above and beyond expectations.

SUBJECT KNOWLEDGE ORGANISERS CONTENTS

	Page No.
English	8
Maths	9-11
Computer Science	12
Science	13-17
French	18-22
German	23-26
Business	27
Economics	28
Geography	29-31
Health and social	32-33
History	34-39
RE	40-41
Drama	42-44
Engineering	45-47
Fine Art	48
Graphics	49
Hospitality and Catering	50-51
Music	52-53
Photography	54-55
Textiles	56-57
GCSE PE	58-61

INDEPENDENT LEARNING LOG

SELF QUIZZING

Expectation this ½ term: Self Quizzing

Create and quiz yourself on 6 questions 3 times a week. (18 a week in total)

- This should be done three times a week , for approximately 20 minutes.
- All your selfg quizzing should be evidenced in your application booklet.
- Use this log to track how what subjects you have done (see example)

Week Beginning	Monday	Tuesday	Wednesday	Thursday	Friday
EXAMPLE:	English: KG1 & 2		History: KG4 & 5		Drama: KG 1 & 3
07/09/26					
ILB CHECK 14/09/2026					
21/09/2026					
28/09/2026					
ILB CHECK 05/10/2026					
12/10/2026					
19/10/2026					

USING CLASS CHARTS



All of your homework will be set by your teachers using the Class Charts System.

You should check Class Charts every day to make sure you are up to date, and that you meet all your deadlines.

Below, shows you how to log on and track your homework.

Logging in to Class Charts

1. Enter your email address and password into the fields provided

Access code *
Your access code

Please enter the access code supplied by your teacher.

☒ Remember me

2. Click on the Log in button

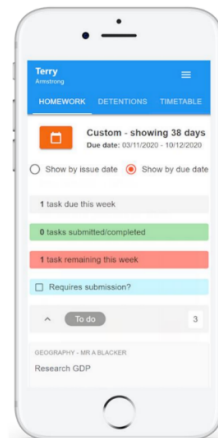
LOG IN

3. Enter your date of birth if prompted and click on the OK button

Date of birth
Please enter your date of birth below.
Date of Birth
12/06/2009
OK CANCEL

Homework

- Select the homework tab on our account.
- This will display a list of the homework tasks which you have been given.
- To change the date range for displayed homework tasks, click on the orange Date button.
- To display tasks in the order they are expected to be handed in, click on the Due date button.
- To mark a homework task as completed, view the homework task of your choice in more detail and tick the Completed checkbox.



To view a homework task in more detail, click on the expand icon in the bottom right hand corner of the homework tile. A popup will appear that contains the a description of the homework task, the estimated completion time and any links or attachments that may have been included.



To do
Research GDP
GEOGRAPHY - BFGG - MR A BLACKER
Type: Blended Learning
Issue date: Monday 09/11/2020
Due date: Wednesday 11/11/2020
Estimated completion time: 1 hours
Please write a short paragraph on what GDP is and how it is used.

Keeping track of homework

To track your homework use the three banners above the homework status. This shows the the number of homework tasks that are due that week, how many of those tasks you have completed and how many tasks you still need to complete.

1 task due this week

0 tasks submitted/completed

1 task remaining this week

To only see homework tasks that require an attachment submission, tick the checkbox labelled Requires submission.

☐ Requires submission?

If you are viewing the Homework tab via a desktop or laptop, expanding a homework status category will display a table overview of each homework task for the selected date range.

To do							
Homework	Teacher	Lesson	Issued	Due	Estimated time	Type	Feedback
☒ Research GDP	Mr A Blacker	8F/Gg	Monday 09/11/2020	Wednesday 11/11/2020	1 hours	Blended Learning	
☒ Write a soliloquy	Mr J Kato	8y/En2	Tuesday 10/11/2020	Tuesday 17/11/2020	30 minutes	Homework	
☒ Create a poster on French food	Mrs A Abell	7YEL/Fr	Friday 06/11/2020	Thursday 19/11/2020	45 minutes	Homework	Feedback

Homework attachment submissions

For certain homework tasks, you may be asked by your teacher to upload your work as an attachment. When viewing a homework task in more detail, you will see the Upload attachment button if your teacher is expecting your work to be uploaded. To submit a homework attachment, click on the Upload attachment button and select the files of your choice. Successfully uploaded files will then appear above the button

If your teacher leaves feedback on one of your homework attachments, you will see a Feedback icon appear on the associated homework task.

To view the feedback, click on the expand icon in the bottom right hand corner of the homework tile. Your teacher's feedback will appear directly below your homework attachment

To do

Write a book review
RECREATION - C6R/C5 - MRS A ABELL

Type: Homework
Issue date: Friday 20/03/2020
Due date: Friday 27/03/2020
Estimated completion time: 10

☐ Completed?

Write a 500 word review on the book of your choice.

My attachments

☒ My book review.doc

+ UPLOAD ATTACHMENT

You can upload a maximum of 5 attachments, each up to 250mb in size.

Supported file formats: doc, docx, pdf, xls, xlsx, ppt, pptx, pub, txt, png, jpeg, jpg, gif, rtf, mp3, odt, odp, csv, mp4, mov, m4a, sb3

RECREATION - MRS A ABELL

Write a book review

Issued: Friday 20/03/2020
Due: Friday 27/03/2020

Feedback

To do

Completed

Submitted late

Not submitted

Submitted

To-Do: These are homework tasks that you need to complete. Once you have completed them, tick the checkbox

Completed: These are homework tasks that you have ticked as completed but have not been marked by your teacher

Late: These are homework tasks that have been handed in past the deadline.

Not submitted: These are homework tasks that were not handed in on time.

Submitted: These are homework tasks that have been handed in on time.

HOW TO ACCESS SENECA



Seneca learning is a free online platform that will help you revise for all your subjects.

1.

Go to
<https://senecalearning.com/en-GB/>

2.

Click 'Log In' at the top right hand corner.



Login

Sign up

3.

Select 'Continue with Microsoft'.



Continue with Microsoft

4.

Enter your school email and password.

5.

Select the course(s) you want to work on

If you need any help accessing SENECA please speak to your class teacher, or Miss Holmes.

You can also scan this QR code for a video walkthrough of how to log in as a student

SCAN HERE



SELF QUIZZING – INSTRUCTIONS

1.



Identify knowledge

Identify the subject and knowledge groups you are going to cover.
Look at one knowledge group at a time.

2.



Review

Spend around 5 minutes reviewing the knowledge group you have chosen.
Use this time to create questions if you need too.
Read it to yourself
Highlight keywords

3.



Cover and answer

Cover up your knowledge and answer the questions from memory.
Take your time and where possible answer in full sentences.

4.



Revisit

Go back to the content and self-mark your answers in **green** pen.

5.



Review

Review the areas where there were gaps in knowledge, and self-quiz this area again.

SELF-QUIZZING QUESTIONS

These are taken straight from a knowledge organiser. These are examples of questions in your KO that can help you with self quizzing.

- What is happiness?
- What is gratitude?
- What is vulnerability?
- What is courage?

OR

A. Structure of the Earth and Plate Tectonics	
1	 Structure of the earth Crust – The outer layer of the Earth. It is a very thin layer (think of an apple skin on an apple) and ranges between a thickness of 6 and 70 km. Broken in pieces called tectonic plates. Mantle – Due to the high temperatures of this thick layer, the mantle has the consistency of jam! Temperatures within the mantle range from 5000°C near the core to 1300°C just below the crust. Outer Core – This layer is liquid and made up largely of iron. Inner Core - This layer is solid and is also made of iron. Temperatures within this dense core can be 5500°C.

Using your KO, you can create your own questions, such as:

- Structure of the Earth
1. What is the Crust?
 - 2.What is the Mantle?
 - 3.What is the Outer Core?
 - 4.What is the Inner Core?

You can directly answer these questions in your application book.

Plot Summary

1	Stave 1	- Scrooge is introduced - He refuses to warm the office up for Bob Cratchit; he refuses to make a charity donation; refuses to eat Christmas dinner with Fred; and is irritated by Christmas as it interrupts his business. - After returning home, Marley's ghost appears and warns him he will be visited by three spirits.
2	Stave 2	- The Ghost of Christmas Past takes Scrooge back in time to show him: his village; him alone at school; his sister collecting him from school; a party at Fezziwig's; Belle breaking off their engagement and Belle with her husband. - Scrooge begs the spirit to take him back home.
3	Stave 3	- The Ghost of Christmas Present shows Scrooge how the Cratchit family celebrate Christmas; Scrooge becomes worried about Tiny Tim not surviving in the future. - The spirit then takes Scrooge to see how others celebrate Christmas including Fred's Christmas party. - The spirit begins to age and under its robe Scrooge sees two children: Ignorance and Want.
4	Stave 4	- The Ghost of Christmas Yet to Come arrives. It shows Scrooge a group of businessmen discussing someone's death. He is taken to a pawn shop where the possessions of the dead man are being sold. - He is next taken to the Cratchit household where the family are grieving for Tiny Tim. - Scrooge is then taken to a graveyard and sees his name on a gravestone. He begs the spirit and says he will change his ways.
5	Stave 5	- Scrooge wakes up in his own bed and is now transformed! - He sends a prize Turkey to the Cratchit family and even promises to give a huge charity donation to the poor. Scrooge then goes to Fred's to attend the party and is welcomed in. - He also gives Bob Cratchit a raise and becomes a second father to Tiny Tim who does not die.

Characters

1	Scrooge	Role: Protagonist. Represents: Greed, ignorance and selfishness.	6	Bob Cratchit	Role: Scrooge's hardworking and unpaid clerk. Represents: The hard working, deserving poor.
2	Marley	Role: Scrooge's deceased business partner who appears as a ghost. Represents: Purgatory and acts as a warning to Scrooge.	7	Tiny Tim	Role: Bob Cratchit's ill and vulnerable son. Represents: All poor Victorian children.
3	Ghost of Christmas Past	Role: A shape changing spirit. Represents: Memory and has light/a flame at the top of its head.	8	Fred	Role: Scrooge's patient, jovial nephew. The son of his beloved sister, Fan. Represents: Christmas, happiness, family.
4	Ghost of Christmas Present	Role: A jolly spirit (resembles Father Christmas). Represents: Generosity and Christmas spirit.	9	Fezziwig	Role: Scrooge's former employer. Represents: Generosity.
5	Ghost of Christmas Yet to Come	Role: A silent, sinister spirit in a black, hooded cloak. Represents: Death.	10	Belle	Role: Scrooge's former fiancée who breaks off their engagement. Represents: Love.

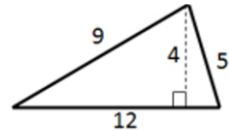
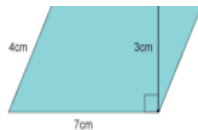
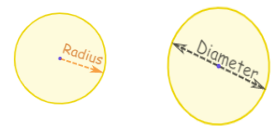
Algebra – Working with Symbols

1	Simplifying expressions Collect 'like terms.'	Be careful with negatives. x^2 and x are not like terms. $2x + 3y + 4x - 5y + 3 = 6x - 2y + 3$ $3x + 4 - x^2 + 2x - 1 = 5x - x^2 + 3$
2	Bracket Expansion	To expand a bracket, multiply each term in the bracket by the expression outside the bracket. $3(3x + 21)$
3	Factorise	The reverse of expanding . Factorising is writing an expression as a product of terms by ' taking out ' a common factor . $6x - 15 = 3(2x - 5)$, where 3 is the common factor.

Number - Percentages

1	Percentage multipliers	The multiplier for increasing by 12% is 1.12 The multiplier for decreasing by 12% is 0.88 (100% - 12%)
2	Percentage change	$\frac{(\text{new value} - \text{original value})}{\text{original value}} \times 100\%$
3	Reverse Percentage	A jumper was priced at £48.60 after a 10% reduction. Find its original price. $100\% - 10\% = 90\%$ $90\% = £48.60$ $1\% = £0.54$ $100\% = £54$
4	Simplifying Ratios	Divide all parts of the ratio by a common factor . $5 : 10 = 1 : 2$ (divide both by 5) $14 : 21 = 2 : 3$ (divide both by 7)

Geometry & Measure – Area & Perimeter

1	Area of a rectangle/square Length x Width	 $A = 36\text{cm}^2$
2	Area of a Triangle Base x Height ÷ 2	 $A = 24\text{cm}^2$
3	Area of a parallelogram Base x Perpendicular Height	 $A = 21\text{cm}^2$
4	Circle (Area) $A = \pi r^2$	
5	Circumference $C = \pi \times \text{diameter}$	

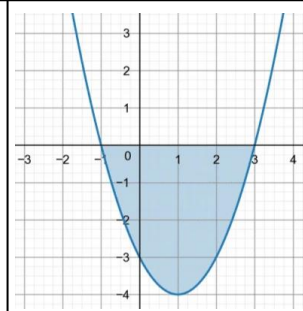
Ratio, Proportion, rates of change

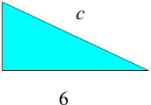
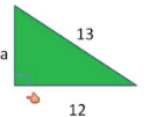
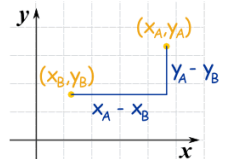
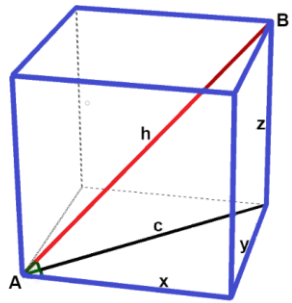
1	Unitary Method	Find the value of a single unit first, and then the value of the required number of units by multiplying
2	Simplify unitary ratio. • Make one side of the ratio 1.	Put 2 : 4 in the form $n : 1$ $2 : 4$ $\div 4$ $0.5 : 1$

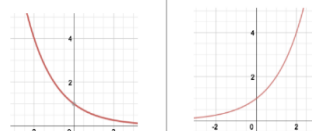
Key Vocabulary

1	Equation	A statement showing that two expressions are equal i.e $2y - 17 = 15$
2	Percentage multipliers	The number you multiply a quantity by to increase or decrease it by a percentage .
3	Reverse percentage	Find the correct percentage given in the question , then work backwards to find 100% . Look out for words like ' before ' or ' original '
4	Perimeter	The total distance around the outside of a shape.
5	Area	The amount of space inside a shape.

Algebra – Inequalities

1	Understanding inequalities	$<$ $>$ $\leq$ $\geq$ Less than Greater than Less than or equal to Greater than or equal to
2	Represent on number line	$n > -1$ 
3	Quadratic Inequalities Factorise the quadratic. Sketch the Quadratic and shade the area needed. $x^2 + bx + c < 0$	

Geometry & Measure - Pythagoras		
1	Finding the hypotenuse	Find c. $a^2 + b^2 = c^2$ $4^2 + 6^2 = c^2$ $c^2 = 52$ $c = \sqrt{52}$ $c = 7.21$ 
2	Finding the shorter side	Find the Value of a: $c^2 = a^2 + b^2$ $a^2 = c^2 - b^2$ $a = \sqrt{c^2 - b^2}$ $a = \sqrt{13^2 - 12^2}$ $a = \sqrt{169 - 144}$ $a = \sqrt{25}$ $a = 5$ 
3	Find the distance between two points	 $\sqrt{(x_A - x_B)^2 + (y_A - y_B)^2}$
4	3D Pythagoras	 $h = \sqrt{x^2 + y^2 + z^2}$

Number - Percentages		
1	Percentage multipliers	The multiplier for increasing by 12% is 1.12 The multiplier for decreasing by 12% is 0.88 (100% - 12%)
2	Percentage change	$\frac{(\text{new value} - \text{original value})}{\text{original value}} \times 100\%$
3	Reverse Percentage	A jumper was priced at £48.60 after a 10% reduction. Find its original price. 100% - 10% = 90% 90% = £48.60 1% = £0.54 100% = £54
4	Compound Interest	A bank pays 5% compound interest a year. Bob invests £3000. How much will he have after 7 years? $3000 \times 1.05^7 = £4221.30$
5	Exponential Graph	The equation is of the form $y = a^x$, where a is a number called the base. If $a > 1$ the graph increases. If $0 < a < 1$, the graph decreases. The graph has an asymptote which is the x-axis. 

Key Vocabulary		
1	Hypotenuse	The longest side on a right-angled triangle
2	Unit Ratio	Used to compare ratios, one of the parts is 1. The only time it is permissible to have a decimal in a ratio.
3	Unitary method	Find the value of 1 item, before multiplying to find the value of more. Used to work out which products give the better value for money
4	Simple Interest	Interest calculated as a percentage of the original amount.
5	Compound Interest	Interest paid on the original amount and the accumulated interest .
6	Exponential growth	When we multiply a number repeatedly by the same number ($\neq 1$), resulting in the number increasing by the same proportion each time. e.g. 1, 2, 4, 8, 16, 32, 64, 128 ...
7	Exponential decay	When we multiply a number repeatedly by the same number ($0 < x < 1$), resulting in the number decreasing by the same proportion each time. eg. 1000, 200, 40, 8 ...

Geometry & Measure – Volume	
1	Area units $1\text{ cm}^2 = 100\text{ mm}^2$ $1\text{ m}^2 = 10000\text{ cm}^2$
2	Volume units $1\text{ cm}^3 = 1000\text{ mm}^3$ $1\text{ m}^3 = 1000000\text{ cm}^3$
3	Volume of a Prism = Area of cross section x length
4	Volume of a Cylinder $V = \pi r^2 h$ $V = \pi(4)(5)$ $= 62.8\text{cm}^3$
5	Surface Area of Cylinder $2\pi r^2 + 2\pi rh$

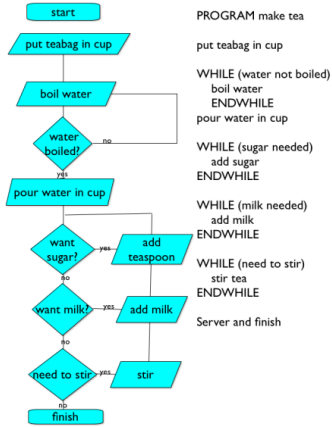
6	Volume of a Cone $\frac{1}{3}\pi r^2 h$ $V = \pi r^2 h$ $V = \frac{1}{3}\pi r^2 h$
7	Volume of a Pyramid $\frac{1}{3} \times \text{base area} \times h$ $\frac{1}{3} \times 250 \times 250 \times 80$
8	Volume of a Sphere $V = \frac{4}{3}\pi r^3$ $\frac{4}{3} \times \pi \times 5^3$ $= 523.60\text{ cm}^3$
9	Surface area of a cone $SA = \pi r^2 + \pi rl$
10	Surface area of a pyramid base area + triangles $25 + 20 + 20 + 20 + 20$ 105cm^2
11	Surface area of a sphere $SA = 4\pi r^2$ $S = 4\pi r^2$ $S = 4(3.14)(4)^2$ $S = 4(3.14)(16)$ $S = (3.14)(64)$ $S = 200.96\text{ cm}^2$

Ratio, Proportion and rates of change – Ratio		
1	Divide in a given ratio	Divide £350 in the ratio 3:4 between Amy and Bob. $3+4 = 7$ (There are 7 parts.) $350 \div 7 = 50$ (Each part is worth 50) $3 \times 50 = \text{£}150$ for Amy $4 \times 50 = \text{£}200$ for Bob
Key Vocabulary		
1	Prism	A 3D shape that has a constant cross-section through its length, eg cylinder, triangular prism
2	Volume	The amount of space that a substance or object occupies, or that is enclosed within a container
3	Surface area	The total outside area of a 3D shape.
4	Cross section	The shape you get when you slice through a 3D object

Algorithms

An algorithm is a sequence of step-by-step instructions used to solve a problem or complete a task. There are two ways to write algorithms:

• Flowchart



PROGRAM make tea
put teabag in cup
WHILE (water not boiled)
boil water
ENDWHILE
pour water in cup
WHILE (sugar needed)
add sugar
ENDWHILE
WHILE (milk needed)
add milk
ENDWHILE
WHILE (need to stir)
stir tea
ENDWHILE
Server and finish

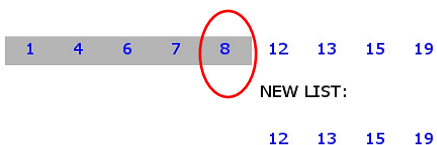
• Pseudocode

Searching Algorithms

- Binary Search

A binary search finds an item in a sorted list by repeatedly checking the middle value and halving the list.
The list must be sorted.
Faster than linear search.
Removes half the data after each comparison.

- Find the center of the list
- $N + 1 / 2$
- Compare the middle item

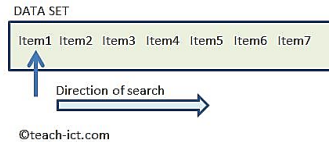


- Discard half of the list
- Repeat until found

Searching Algorithms

- Linear Search

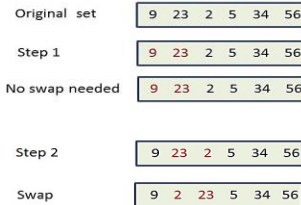
The search starts at the beginning of the list. Each value is compared in order. The search stops when the item is found or the end of the list is reached.



Sorting Algorithms

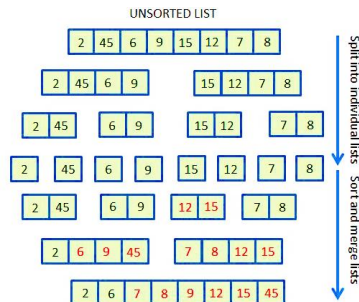
- Bubble Sort

Bubble sort is a sorting algorithm that repeatedly compares and swaps adjacent items until the list is in order.



- Merge Sort

Merge sort is a sorting algorithm that repeatedly splits a list into smaller parts, sorts them, and merges them back together in order.



Key Vocabulary

Algorithm

An algorithm is a sequence of ordered instructions that are followed step-by-step to solve a problem. This does not need to be on a computer.

Decomposition

Decomposition is the breaking down of a complex problem into smaller more manageable problems that are easier to solve.

Abstraction

Abstraction allows us to remove unnecessary detail from a problem leaving us with only the relevant parts of a problem thereby making it easier to solve.

Pseudocode

Pseudocode is a set of step by step instructions in the style of a programming language but using plain English.

Flowchart

A diagram showing the steps in an algorithm – there are five flowchart symbols.

Sequence

Sequence means instructions are carried out in the correct order, one after another.

Selection

Selection is the use of decisions in an algorithm. A condition is tested and different actions are carried out depending on whether the condition is true or false.

Iteration

Iteration is the repetition of instructions in a loop. Instructions are repeated either a set number of times or until a condition is met.

General reactions

1	Metal + oxygen	Metal oxide
2	Metal + water	Metal hydroxide + hydrogen
3	Metal + acid	Salt + hydrogen
4	Acid + base/alkali(metal Hydroxide)	Salt + water
5	Acid + metal carbonate	Salt + water + carbon dioxide

Oxidation and reduction (HT only)

1	OILRIG	O xidation Is L oss, R eduction Is G ain (of electrons)
2	Oxidation	Happens when an atom loses electrons e.g. $\text{Mg} \rightarrow \text{Mg}^{2+} + 2\text{e}^-$
3	Reduction	Happens when an atom gains electrons e.g. $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$

Required Practical
Making a soluble salt

1	Measure out a volume of dilute sulphuric acid using a measuring cylinder
2	Warm dilute acid in a beaker with a Bunsen burner
3	Add metal oxide one spatula at a time until it is in excess (when you can see unreacted metal oxide)
4	Filter the mixture using a funnel and filter paper
5	Pour the filtrate into an evaporating basin
6	Warm on a water bath until crystals form

Reactivity series

Metal	Extraction method
Potassium	Electrolysis – electricity used to split the metal from its compound E.g. $2\text{MgO} \rightarrow 2\text{Mg} + \text{O}_2$
Sodium	
Lithium	
Calcium	
Magnesium	
Carbon	Non-metal
Zinc	Reduction with carbon: carbon removes the metal from the metal oxide E.g. $2\text{CuO} + \text{C} \rightarrow 2\text{Cu} + \text{CO}_2$
Iron	
Copper	
Gold 13	Does not form compounds, found in native state

Acids and their salts

Acid	Formula	Salt	Formula
Hydrochloric acid	HCl	Chloride	Cl^-
Nitric acid	HNO_3	Nitrate	NO_3^-
Sulfuric acid	H_2SO_4	Sulfate	SO_4^{2-}

Other useful ions

Hydroxide	OH^-
Hydrogen ion	H^+
Ammonium	NH_4^+
Carbonate	CO_3^{2-}

Key Vocabulary

1	Oxidation	Gain of oxygen or loss of electrons
2	Reduction	Loss of oxygen or gain of electrons
3	Displacement reaction	A reaction where a more reactive metal displaces a less reactive metal from a compound
4	Base	A metal oxide or hydroxide
5	Alkali	A soluble base

pH

1	Acids	Contain aqueous H^+ ions; $\text{pH} < 7$
2	Alkalis	Contain aqueous OH^- ions; $\text{pH} > 7$
3	Neutral	A solution with a pH of 7, has equal concentration of H^+ and OH^- ions
4	Neutralisation	$\text{H}^+ (\text{aq}) + \text{OH}^- (\text{aq}) \rightarrow \text{H}_2\text{O} (\text{l})$
5	How to measure pH	Universal Indicator with colour chart or pH probe

Strong and weak acids (HT only)

1	Concentration	Measure of the amount of substance per litre (dm^3) of solution
2	Concentrated	Solution with a high amount of substance per dm^3
3	Dilute	Solution with a low amount of substance per dm^3
4	Strong acid	An acid that completely ionises in aqueous solution
5	Weak acid	An acid that only partially ionises in aqueous solution
6	pH scale	As the pH decreases by one unit, the H^+ concentration increases by a factor of 10.

Required practical – Titration (Chemistry only)

1	Fill burette with solution of known concentration
2	Measure out 25.0cm^3 of solution with unknown concentration with a pipette
3	Add unknown solution into a conical flask and place on a white tile
4	Add an indicator (usually phenolphthalein which is pink in alkali and colourless in acid/neutral)
5	Add known solution slowly to the unknown solution
6	Swirl regularly and add dropwise close to the endpoint

Electrolysis

	Formed at positive electrode	Formed at negative electrode
Molten compound	Non-metal	Metal
Aqueous compound	Halogen (if electrolyte contains halide) or oxygen (if electrolyte contains sulfate)	Hydrogen

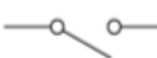
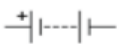
Half-equations (HT only)

Formation of metal	e.g. $\text{Cu}^{2+} + 2\text{e}^- \rightarrow \text{Cu}$
Formation of halogen	e.g. $2\text{Cl}^- \rightarrow \text{Cl}_2 + 2\text{e}^-$
Formation of hydrogen	$2\text{H}^+ + 2\text{e}^- \rightarrow \text{H}_2$
Formation of oxygen	$4\text{OH}^- \rightarrow \text{O}_2 + 2\text{H}_2\text{O} + 4\text{e}^-$

Key Vocabulary

1	Electrolysis	Process where electric current is passed through an electrolyte to separate ions
2	Anode	Positive electrode
3	Cathode	Negative electrode
4	Anion	Negative ion (e.g. non-metal ions)
5	Cation	Positive ion (e.g. metal ions)
6	Electrolyte	Molten or aqueous ionic compound.
7	Cryolite	Substance added to aluminium oxide to lower melting point

Circuit symbols

1	 cell	8	 switch (open)
2	 battery	9	 switch (closed)
3	 lamp	10	 resistor
4	 fuse	11	 variable resistor
5	 diode	12	 thermistor
6	 LED	13	 voltmeter
7	 LDR	14	 ammeter

Series and parallel circuits

1	Series and parallel	Series circuits have one loop. Parallel circuits have two or more loops.
2	Current	Series: is the same everywhere. Parallel: is split between loops
3	Potential difference	Series: pd of power supply is shared between components. Parallel: is same across each loop
4	Resistance	Series: total R = sum of resistances of all components Parallel: total R is reduced as current can follow more paths

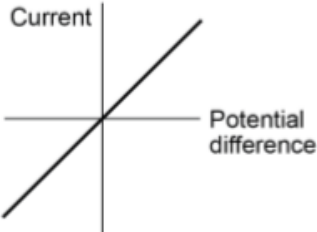
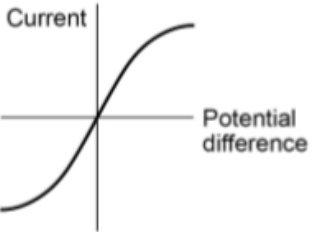
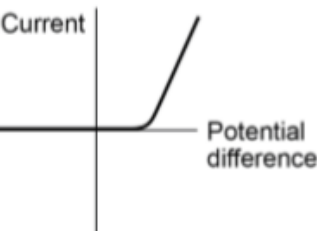
Key equations

1	Charge (Q) = current (A) x time (s)	$Q = I \times t$
2	Potential difference (V) = current (A) x resistance (Ω)	$V = I \times R$
3	Power (W) = current (A) x voltage (V)	$P = I \times V$
4	Power (W) = current (A) ² x resistance (Ω)	$P = I^2 \times R$
5	Energy transferred (J) = power (W) x time (s)	$E = P \times t$
6	Energy transferred (J) = charge x potential difference (V)	$E = Q \times V$

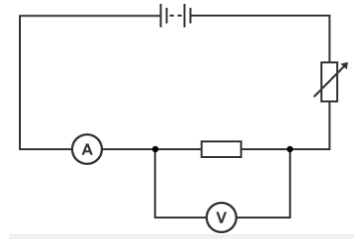
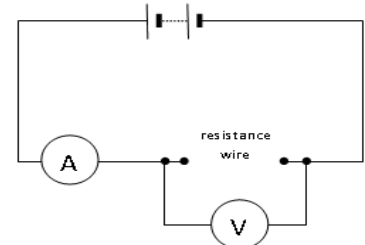
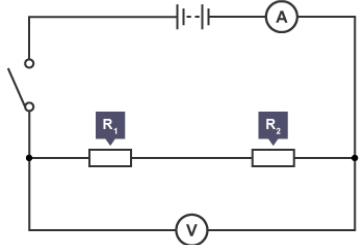
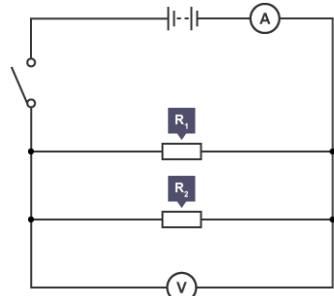
Key Vocabulary

1	Current	The rate of flow of electrical charge.
2	Potential difference (voltage)	A measure of how much energy is transferred between two points in a circuit.
3	Resistance	A measure of how difficult it is for current to flow through a component.
4	Thermistor	A component whose resistance decreases as temperature increases.
5	LDR	A component whose resistance decreases as light intensity increases.

Current-Voltage graphs

1		Resistor I-V graph Current and voltage are directly proportional. Resistance is constant.
2		Filament lamp I-V graph The resistance increases as the temperature of the filament increases.
3		Diode I-V graph Current only flows in one direction. The diode has a very high resistance in the reverse

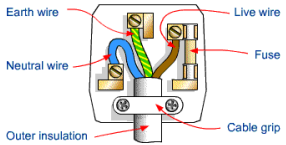
Required practicals

1	Independent: length of wire Dependent: resistance (determined by measuring I and V and then $R=V/I$) Control: temperature, wire thickness	How does the length of a wire affect its resistance?
		
2	This set-up is used to collect data to plot an I-V graph for a resistor. Ammeters are always connected in series and voltmeters in parallel. The variable resistor alters the pd.	
3		What happens to resistance in series and parallel? Use $R=V/I$ to determine total R.

Mains electricity

- 1 In the UK domestic mains electricity is an ac supply.
- 2 It has a frequency of 50 Hz and is 230 V.

- 3



Live – carries alternating pd from the supply.

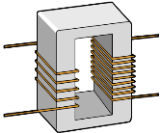
Neutral – completes the circuit.

Earth – stops appliance becoming live.

National grid

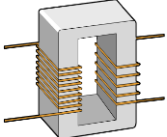
- 1 Electrical power is transferred from power stations to consumers using the national grid.

- 2



Step-up transformers increase the potential difference from the power station to the transmission cables, reducing the current in the cables. This means less energy is wasted as heat in the wires.

- 3



Step-down transformers are used to decrease the potential difference to a safer level for domestic use.

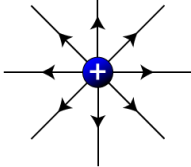
Energy transfers

- 1 All electrical appliances transfer energy from on store to another. E.g. motors transfer energy from the mains to the kinetic energy of the motor.
- 2 The amount of energy transferred depends on the power of the appliance and how long it is on for ($E = P \times t$).

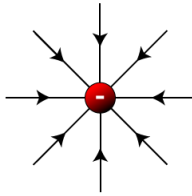
Electric fields (Physics only)

- 1 All charged objects have an electric field around them. This is a region where charges experience a force.
- 2

Electric field around positively charged sphere.



Electric field around a negatively charged sphere


- 3 Field lines point away from positive charges and towards negative charges as they show the direction a positive charge would move.
- 4 The closer together the arrows are, the stronger the field, meaning that the field is stronger closer to the charge.
- 5 If another charged object is placed in the electric field it experiences a force. The force gets stronger as the distance between the objects decreases.

Key Vocabulary

- | | | |
|---|----------------------------|--|
| 1 | Alternating current | A current that regularly changes direction. |
| 2 | Direct current | A current that flows in one direction only. |
| 3 | Conductor | Materials through which electrical charge flow easily. Materials with low resistances. |
| 4 | Insulator | Materials through which electrical charges do not flow easily. Have high resistances. |
| 5 | Power | Energy transferred each second. |

Static electricity (Physics only)

- | | |
|---|---|
| 1 | When insulators are rubbed against each other electrons are rubbed off one material and on to the other. |
| 2 | The material that gains electrons becomes negatively charged. The material that loses electrons is left with a positive charge. |
| 3 | Objects with the same charge repel. Objects with opposite charges attract. |
| 4 | Attraction and repulsion between two charged objects are examples of non-contact force. |

Present Tense		
1	Je suis	I am
2	J'ai	I have
3	Je fais	I do/make
4	Je vais	I go
5	J'aime	I like
6	Je déteste	I hate
7	Je joue	I play
8	Je mange	I eat
9	Je bois	I drink
10	Je lis	I read
11	J'achète	I buy
12	Je trouve	I find
13	Je travaille	I work
14	Je pense	I think
15	c'est	it's

Perfect Tense		
1	Je suis allé(e)	I went
2	Je suis parti(e)	I left
3	J'ai fait	I did/made
4	J'ai aimé	I liked
5	J'ai détesté	I hated
6	J'ai joué	I played
7	J'ai mangé	I ate
8	J'ai acheté	I bought
9	J'ai trouvé	I found
10	J'ai travaillé	I worked
11	J'ai regardé	I watched
12	J'ai vu	I saw
13	J'ai bu	I drank
14	J'ai lu	I read

Near Future Tense – I am going to...		
1	Je vais être	be
2	Je vais avoir	have
3	Je vais aller	go
4	Je vais faire	do
5	Je vais jouer	play
6	Je vais regarder	watch
7	Je vais manger	eat
8	Je vais acheter	buy
9	Je vais travailler	work
10	Je vais voir	see
11	Je vais boire	drink
12	Je vais devenir	become
13	Je vais voyager	travel
14	ce sera	it will be

Conditional Tense – I would like to...		
1	Je voudrais être	be
2	Je voudrais avoir	have
3	Je voudrais aller	go
4	Je voudrais faire	do
5	Je voudrais jouer	play
6	Je voudrais regarder	watch
7	Je voudrais manger	eat
8	Je voudrais acheter	buy
9	Je voudrais travailler	work
10	Je voudrais voir	see
11	Je voudrais boire	drink
12	Je voudrais devenir	become
13	Je voudrais voyager	travel
14	ce serait	it would be

Il y a		
1	Il y a	There is/are
2	Il y avait	There was/were
3	Il y aura	There will be
4	Il y aurait	There would be

Structures with infinitives		
1	J'aime aller/faire	I like going/doing
2	Je n'aime pas aller/faire	I don't like going/doing
3	il faut aller/jouer	you have to go/play
4	on peut/doit aller	you can/must go

Imperfect Tense		
1	J'étais	I was/I used to be
2	J'avais	I had/I used to have
3	C'était	It was
4	il y avait	there was/were

Sentence Starters

1	je pense que	I think that
2	je crois que	I believe that
3	à mon avis	in my opinion
4	selon moi	in my opinion
5	je dirais que	I would say that

Connectives

1	et	and
2	ou	or
3	où	where
4	parce que	because
5	car	as
6	mais	but
7	pourtant	however
8	aussi	also

Intensifiers

1	un peu	a bit
2	assez	quite
3	très	very
4	vraiment	really
5	beaucoup	much/ a lot
6	trop	too

Adjectives

1	amusant	fun
2	intéressant	interesting
3	passionnant	exciting
4	utile	useful
5	beau	beautiful
6	fantastique	fantastic
7	incroyable	incredible
8	ennuyeux/ barbant	boring
9	fatigant	tiring
10	difficile	difficult
11	cher	expensive

Signposting Time Frames

1	l'année dernière	last year
2	la semaine dernière	last week
3	hier	yesterday
4	normalement	normally
5	d'habitude	usually
6	ce soir	this evening
7	la semaine prochaine	next week
8	l'année prochaine	next year
9	dans l'avenir	in the future

Frequency

1	tous les jours	every day
2	de temps en temps	from time to time
3	une fois par semaine	once a week
4	deux fois par mois	twice a month
5	ne...jamais	never
6	toujours	always
7	souvent	often
8	quelquefois	sometimes

Exclamations!!!

1	Quel dommage!	What a shame!
2	Quel plaisir!	What a pleasure!

Perfect Phrases For Any Essay

1	Hier je suis allé au cinema/au stade/au restaurant/au parc/au café/à la piscine et c'était...	Yesterday I went to the cinema/stadium/restaurant/park/café/swimming pool and it was...
2	J'ai mangé une pizza/des frites/un hamburger/du jambon/du poisson/une glace et c'était...	I ate a pizza/fries/a hamburger/some ham/fish/an ice-cream and it was...
3	J'ai joué au foot/au tennis/au rugby/au golf et c'était...	I played football/tennis/rugby/golf and it was...
4	J'ai bu un coca/un jus d'orange et c'était...	I drank a coke/an orange juice and it was...

Fancy Phrases

1	je l'ai trouvé génial	I found it great
2	je me suis bien amusé(e)	I really enjoyed myself
3	j'ai tellement hâte	I'm really looking forward to it

Present Tense - I			Perfect Tense (past)- I			Imperfect Tense - I used to			Future Tense – I will			Conditional – I would		
1	Je suis	I am	1	Je suis allé(e)	I went	1	J'étais	... be	1	Je serai	...be	1	Je serais	...be
2	J'ai	I have	2	Je suis parti(e)	I left	2	J'allais	... go	2	J'aurai	...have	2	J'aurais	...have
3	Je fais	I do/make	3	J'ai fait	I did/made	3	J'avais	... have	3	J'irai	...go	3	J'irais	...go
4	Je vais	I go	4	J'ai aimé	I liked	4	Je faisais	... do	4	Je ferai	...do	4	Je ferais	...do
5	Je bois	I drink	5	J'ai détesté	I hated	5	Je jouais	... play	5	Je jouerai	...play	5	Je jouerais	...play
6	Je lis	I read	6	J'ai joué	I played	6	Je regardais	... watch	6	Je regarderai	...watch	6	Je regarderais	...watch
7	Je vois	I see	7	J'ai mangé	I ate	7	J'écoutais	... listen	7	Je mangerai	...eat	7	Je mangerais	...eat
8	J'achète	I buy	8	J'ai acheté	I bought	8	Je mangeais	... eat	8	J'achèterai	...buy	8	J'achèterais	...buy
9	Je trouve	I find	9	J'ai trouvé	I found	9	Je buvais	... drink	9	Je travaillerai	 work	9	Je travaillerais	...work
10	Je travaille	I work	10	J'ai travaillé	I worked	10	J'achetais	... buy	10	Je verrai	see	10	Je verrais	...see
11	Je pense	I think	11	J'ai regardé	I watched	11	J'aimais	... like	11	Je boirai	drink	11	Je boirais	...drink
12	Je crois	I believe	12	J'ai vu	I saw	12	Je lisais	... read	12	Je lirai	...read	12	Je lirais	...read
13	Je dois	I have to	13	J'ai bu	I drank	13	Je travaillais	... work	13	Je partagerai	... share	13	Je partagerais	...share
14	Je peux	I can	14	J'ai lu	I read	14	Je détestais	... hate	14	J'écouterai	... listen	14	J'écouterais	...listen
15	Je veux	I want to												
Present Tense – We/they			Past Tense – We/they			Imperfect – We /they			Future – We /they			Conditional – We/they		
1	On va	We go	1	On a vu	We saw	1	On était	We used to be	1	On sera	We will be	1	On serait	We would be
2	On joue	We play	2	On a fait	We did	2	On avait	We used to have	2	On aura	We will have	2	On aurait	We would have
3	On peut	We/you can	3	On a joué	We played	3	On allait	We used to go	3	On ira	We will go	3	On irait	We would go
4	On fait	We do	4	On est allés	We went	4	Ils étaient	They were	4	Ils seront	They will be	4	Ils seraient	They would be
5	Ils sont	They are	5	On est partis	We left	5	Ils avaient	They had	5	Ils auront	They will have			

Sentence Starters

1	je pense que	I think that
2	je crois que	I believe that
3	à mon avis/selon moi	in my opinion
5	je dirais que	I would say that
6	il me semble que	it seems to me that
7	d'un point de vue personnel	from a personal point of view
8	bien que je sache que	although I know that
9	à cause du fait que	due to the fact that
10	Je considérerais que	I would consider that
11	il faut que je dise que	I have to say that

Connectives

1	mais	but
2	pourtant	however
3	en revanche	however
4	néanmoins	nevertheless
5	certes	admittedly
6	aussi	also
7	donc	therefore
8	d'ailleurs	besides

Intensifiers

1	un peu	a bit
2	assez	quite
3	très	very
4	vraiment	really
5	beaucoup de	Lots of
6	trop	too
7	tellement	so
8	extrêmement	extremely

Avoir/Etre/Faire

1	C'est	It is
2	Ce sera	It will be
3	C'était	It was
4	Ce serait	It would be
5	Il y a	There is
6	Il y aura	There will be
7	Il y avait	There was
8	Il y aurait	There would be
9	Il fait beau	It's nice
10	Il fera froid	It will be cold
11	Il faisait chaud	It was hot
12	Il ferait orageux	It would be stormy

Exclamations!!

1	Quel dommage!	What a shame!
2	Quel plaisir!	What a pleasure!

Pronouns

1	Mon/ma/mes	My
2	Son/sa/ses	His/her
3	Notre/nos	Our
4	Leur/leurs	Their
5	Lui/Elle/eux	Him/her/them

Frequency

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Fancy Phrases

1	après avoir mangé	after having eaten
2	je l'ai trouvé génial	I found it great
3	je me suis bien amusé(e)	I really enjoyed myself
4	ça m'a vraiment plu	I really enjoyed it
5	ça en valait la peine	It was worth it
6	je n'aurais jamais pensé	I would never have thought
7	j'ai tellement hâte	I'm really looking forward to it
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8	le jeu en vaudra la chandelle	it will be worth it

Present Tense		
1	Ich bin	I am
2	Ich habe	I have
3	Ich mache	I do/make
4	Ich gehe	I go
5	Ich fahre	I travel
6	Ich mag	I like
7	Ich hasse	I hate
8	Ich spiele	I play
9	Ich esse	I eat
10	Ich trinke	I drink
11	Ich lese	I read
12	Ich sehe	I see
13	Ich kaufe	I buy
14	Ich finde	I find
15	Ich arbeite	I work
16	Ich denke	I think
17	Ich muss	I have to
18	Ich kann	I can
19	Ich will	I want to
20	Es ist	it's

Perfect Tense		
1	Ich bin gegangen	I went
2	Ich bin gefahren	I travelled
3	Ich bin geflogen	I flew
4	Ich bin geblieben	I stayed
5	Ich habe gemacht	I did/made
6	Ich habe gespielt	I played
7	Ich habe gegessen	I ate
8	Ich habe getrunken	I drank
9	Ich habe gekauft	I bought
10	Ich habe gearbeitet	I worked
11	Ich habe gesehen	I watched
12	Ich habe gelesen	I read
13	Ich habe gefunden	I found
14	Ich habe besucht	I visited

Using Geben		
1	Es gibt	There is/are
2	Es gab	There was/were
3	Es wird...geben	There will be
4	Es würde...geben	There would be

Simple Past		
1	Ich war	I was
2	Es war	It was
3	Sie waren	They were
4	Ich hatte	I had
5	Es gab	There was/were

Conditional Fancy		
1	Ich wäre	I would be
2	Es wäre	It would be
3	Sie wären	They would be
4	Ich hätte	I would have
5	Es gäbe	There would be

Structures With Infinitives		
1	Ich muss...machen	I have to do
2	Ich darf...machen	I am allowed to do
3	Ich kann...machen	I can do
4	Ich soll...machen	I should do
5	Ich will...machen	I want to do
6	Man muss/kann/soll...machen	You must/can/should do

Future/Conditional Tense		
Ich werde/möchte... = I will/would like to		
1	...sein	be
2	...werden	become
3	...gehen	go
4	...fahren	travel
5	...spielen	play
6	...essen	eat
7	...trinken	drink
8	...sehen	see
9	...arbeiten	work
10	...lesen	read
11	...machen	make/do
12	...besuchen	visit

Sentence Starters

1	Meiner Meinung nach	In my opinion
2	Meines Erachtens	In my opinion
3	Im Großen und Ganzen	All in all
4	Ich denke, dass...	I think that
5	Ich würde sagen, dass	I would say that
6	Ich muss sagen, dass	I have to say that

Connectives

1	und	and
2	aber	but
3	denn	because
4	oder	or
5	jedoch	however
6	außerdem	furthermore
7	weil/da	because
8	dass	that

Intensifiers

1	ein bisschen	a bit
2	ziemlich	quite
3	sehr	very
4	wirklich	really
5	echt	genuinely
6	zu	too
7	so	so
8	ganz	totally

Adjectives

1	lustig	funny
2	interessant	interesting
3	spannend	exciting
4	nützlich	useful
5	schön	beautiful
6	toll	great
7	unglaublich	incredible
8	langweilig	boring
9	anstrengend	tiring
10	schwierig	difficult
11	teuer	expensive
12	billig	cheap

Signposting Time Frames

1	letztes Jahr	last year
2	letzte Woche	last week
3	gestern	yesterday
4	normalerweise	normally
5	gewöhnlich	usually
6	heute Abend	this evening
7	nächste Woche	next week
8	nächstes Jahr	next year
9	in der Zukunft	in the future
10	am Wochenende	at the weekend

Frequency

1	jeden Tag	every day
2	ab und zu	from time to time
3	einmal pro Woche	once a week
4	zweimal pro Monat	twice a month
5	nie	never
6	immer	always
7	oft	often
8	manchmal	sometimes

Exclamations!!!

1	Wie Schade!	What a shame!
2	Wahnsinn!	Wow!

Fancy Phrases

1	Es hat eine Menge Spaß gemacht	It was loads of fun
2	Es hat sich wirklich gelohnt	It was really worth it
3	Das hat mir gefallen	I liked it
4	Ich freue mich schon darauf	I am already looking forward to it
5	Ich werde mich amüsieren	I will enjoy myself

Perfect Past Examples

1	Letztes Wochenende bin ich ins Kino/Café/Restaurant/Stadion/Museum gegangen und es hat eine Menge Spaß gemacht.	Last weekend I went to the cinema/café/restaurant/stadium/museum and it was loads of fun.
2	Ich habe Hähnchen, Pommes und Salat gegessen und ich habe Cola getrunken. Das Essen war sehr lecker und es hat sich wirklich gelohnt. Wahnsinn!	I ate chicken, chips and salad and I drank cola. The food was very tasty and it was really worth it. Wow!

Fantastic Future Examples

1	Nächstes Jahr werde ich mit meinen Freunden nach Berlin fahren und ich freue mich schon darauf.	Next year I will travel with my friends to Berlin. I am already looking forward to it.
2	Ich möchte ins Café gehen und ich möchte Pizza essen. Ich werde mich amüsieren, weil ich Pizza liebe.	I would like to go to café and I would like to eat pizza. I will enjoy myself I love pizza.

Present Tense		
1	Ich bin	I am
2	Ich habe	I have
3	Ich mache	I do/make
4	Ich gehe	I go
5	Ich fahre	I travel
6	Ich mag	I like
7	Ich hasse	I hate
8	Ich spiele	I play
9	Ich esse	I eat
10	Ich trinke	I drink
11	Ich lese	I read
12	Ich sehe	I see
13	Ich kaufe	I buy
14	Ich arbeite	I work

Present tense other subjects		
1	Er/sie fährt Wir fahren	He/she travels We travel
2	Er/sie sieht Wir sehen	He/she sees We see
3	Er/sie isst Sie essen	He/she eats They eat
4	Er/sie liest Sie lesen	He/she reads They read

Perfect Tense		
1	Ich bin gegangen	I went
2	Ich bin gefahren	I travelled
3	Ich bin geflogen	I flew
4	Ich bin geblieben	I stayed
5	Ich habe gemacht	I did/made
6	Ich habe gespielt	I played
7	Ich habe gegessen	I ate
8	Ich habe getrunken	I drank
9	Ich habe gekauft	I bought
10	Ich habe gearbeitet	I worked
11	Ich habe gesehen	I watched
12	Ich habe gelesen	I read
13	Ich habe gefunden	I found
14	ich habe besucht	I visited

Past tense other subjects		
1	Er/sie hat...gespielt	He/she played
2	Sie/er ist... gegangen	She/he went
3	Wir haben...gemacht	We did/made
4	Sie sind...gefahren	They travelled

Simple Past		
1	ich war	I was
2	es war	it was
3	sie waren	they were
4	ich hatte	I had
5	es gab	there was/were

Conditional Fancy		
1	ich wäre	I would be
2	es wäre	it would be
3	sie wären	they would be
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1	Meiner Meinung nach	In my opinion
2	Meines Erachtens	In my opinion
3	Im Großen und Ganzen	All in all
4	Auf der einen Seite	On the one hand
5	Aber auf der anderen Seite	But on the other hand
6	Es scheint mir, dass	It seems to me that
7	Ich denke, dass...	I think that
8	Ich würde sagen, dass	I would say that
9	Obwohl ich weiß, dass	Although I know that
10	Ich glaube, dass...	I believe that
11	Ich muss sagen, dass	I have to say that

Connectives

1	und	and
2	aber	but
3	denn	because
4	sondern (neg)	but
5	jedoch	however
6	deshalb	therefore
7	trotzdem	nevertheless
8	außerdem	furthermore
9	weil/da	because
10	dass	that
11	obwohl	although
12	wenn	if/when

Intensifiers

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2	ich habe mich wirklich amüsiert	I really enjoyed myself
3	es hat sich wirklich gelohnt	it was really worth it
4	das hat mir gefallen	I liked it
5	ich hätte nie gedacht	I would have never thought
6	je (heißer), desto besser	the (hotter) the better
7	ich freue mich schon darauf	I am already looking forward to it
8	es wird bestimmt viel Spaß machen	it will definitely be lots of fun

1. Customer Needs

1	Why is it important to meet customer needs?	It will ensure the business is successful: - Increase sales - Increase reputation - Increase brand awareness
2	Difference between goods and services	Goods – something that you buy and you can touch. Laptop (TANGIBLE) Services – Something that you buy but can't touch. Eg, Haircut (INTANGIBLE)
3	What are the most important customer needs	1. Price 2. Choice 3. Quality 4. Convenience

3. Market Segmentation

1	How do we segment the market?	Markets can be broken down into different groups: age, gender, lifestyle, income, location, ethnicity, demographics
2	Why do market maps help?	They analyse 2 different factors in a market: price V quality They identify any gaps in the market They can analyse Business competitors
27	What is customer profiling?	Building a customer profile can help run a better marketing campaign that, in turn, increases profits

2. Market Research

1	What is market research	Market research is used to find out what potential target market customers need and wants
2	Different types of research	Primary Research (field research): Surveys, Questionnaires, Focus Groups Pop up ads, interviews Secondary Research (desk research): Market Reports, Internet, books
3	Types of Data	Qualitative Data (Quality) based on OPINIONS hard to analyse, more time consuming to collect, but offers more in-depth answers Quantitative Data (Quantity) based on STATISTICS Easier to analyse, quicker to collect, but limited feedback
4	How has social media changed market research?	Social media has offered new ways of collecting data. It is fast, directed at specific target markets globally, offers a wider range of answers
5	Reliable data sources	Market research can only be done on reliable information, like Gov Reports, credible sources. NOT google or Wikipedia

4. The Competitive Environment

1	What do we know?	Assessment of the competition in the market
2	How does it work?	S – Strengths W – Weaknesses O – Opportunities T – Threats
3	What impact does this have?	It allows the Business to make informed decisions based on their competitors

Key Word

Definitions

Market Segmentation	Breaking down a market to identify different target markets
Dynamic Market	A market that is constantly changing
Demographic	Demographic segmentation is market segmentation according to age, race, religion, gender, family size, ethnicity, income, and education
Focus Groups	a group of people assembled to participate in a discussion about a product before it is launched, or to provide feedback
Market Map	Market mapping is the process of using a graph to plot competitors and their products to understand competitor behaviour and spot a gap in the market
Gap in the market	Gaps in the market represent opportunities for Business to expand their customer base
Risk	Possibility of making a loss
Primary Research	Research that is collected for a specific reason and has never been collected before
Secondary Research	Research that has been carried out before by another person, for a different reason.
Qualitative Data	Data gathered using opinions 'I think that.....'
Quantitative Data	Data that can be expressed by numbers – statistics or percentages Gathered by multiple choice options for answers

1.2.1

Markets

A market is a place where buyers and sellers come together to exchange goods and services

A market can be a physical location such as a shop or a non physical location such as a web site

Buyers and sellers will interact in order to set a price

This will be based on the demand for and supply of scarce resources

Key concepts

Markets	A market is an opportunity for buyers and sellers to interact in order to establish price and agree to buy/sell
Consumers	People who buy goods/services produced by businesses
Producers	These are businesses who provide/make goods /services
Factor market	Factor markets are those where factor inputs are bought and sold e.g. Land, labour, capital
Produce markets	Product markets are those where goods and services that are produced by firms are sold to households and other firms.

1.2.2

Economic sectors

There are three economic sectors of the UK's economy (and any other economy)

Everyone that has a job will work in one of these three sectors.

The UK's service sector represents about 80% of the economy, manufacturing only 9% and primary roughly around 11%

Economic sectors

Primary sector (extraction, farming)	The primary sector includes those activities that are related to natural resources These activities include agriculture, fishing, mining and forestry
Secondary sector (manufacturing)	involves the transformation of raw or intermediate materials into goods, as in steel into cars, or textiles into clothing.
Tertiary sector (services)	This sector doesn't extract or manufacture. Instead the service sector provides services. This includes banking, finance, insurance, education, tourism, the health industry and the defence industry

Changes in the relative sizes of the economic sectors over time

The UK's economy used to have a very large secondary sector and a reasonable primary sector. There used to be many textile mills in the north of England, coal mines and car manufacturing plants based around the midlands. However, overtime the textile mills have closed, coal mines abandoned and car manufacturing shifted to cheaper locations in other parts of the world. This is an example of how our sectors have changed over time. Today the tertiary sector is the most important sector for the UK economy

1.2.3

What is specialisation?

Specialisation occurs when **individuals**, **firms** or **countries** focus on the production of particular **tasks**, **products** or **industries**

- When each employee in an organisation becomes an expert at their specific job
- When firms become experts in their field
- When countries concentrate on specific industries e.g. tourism or finance

Benefits of specialisation for producers

Firms can produce higher quality output at a lower cost due to faster and more skilled workers.

Economies of scale

Producers may develop expertise and hence a good reputation when they specialise in something

Costs of specialisation for producers

Mistakes in part of production line may impact overall production

Changes in consumer tastes and fashion may mean specialised workers skills are redundant and the product may no longer be in demand

Harder to cover staff as other workers are only trained in specific roles so there may not be any other available cover.

What is division of labour?

The division of labour is the process of **splitting a job into smaller, interconnected tasks and assigning each task to an individual worker**, thereby generating efficiency gains due to the positive effects of specialisation.

Benefits of specialisation for division of labour

Workers become experts in their area of work

Repetition of the same skill increases speed and ability.

Workers focus on tasks they are good at and are more likely to enjoy the work and be more motivated and hence more productive

Costs of specialisation for division of labour

May lead to boredom due to repetitive nature of work

Workers may have limited skills and therefore may not be able to do other things required by the business

A. Natural hazards pose major risks to people and property.

1	Natural Hazard	A natural processes that could cause death, injury or disruption to humans.
2	Types of natural hazard	Tectonic hazards, metrological hazards, hydrological hazards, climatological hazard.
3	Hazard risk	The probability or chance a natural hazard will take place.

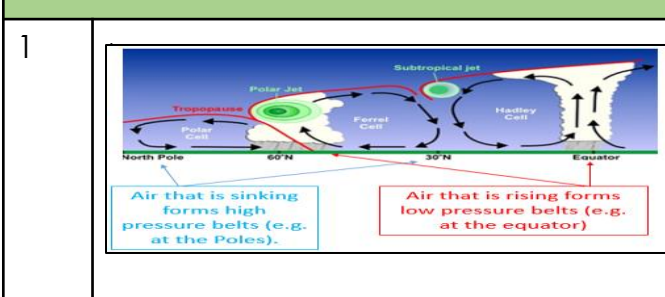
B. Earthquakes and volcanic eruptions are the result of physical processes

1	Plate tectonics theory	Is a theory that the earth is divided up into tectonic plates. Plate boundary types; Constructive destructive, conservative.
2	Distribution of tectonic hazards	The majority of tectonic hazards happen along plate boundaries. The Pacific Ring of Fire is the location of most tectonic hazards.

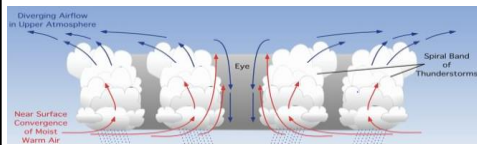
C. The effects of, and responses to, a tectonic hazard vary between areas of contrasting levels of wealth.

1	Examples	HIC- Italy 2009	LIC- Nepal 2015
2	Primary effect	300 deaths, 1500 people injured, 67,500 people homeless	9000 people dead, 20,000 people injured, 3 million homeless
3	Secondary effects	Fires in some collapsed buildings, broken water pipe caused a landslide.	Earthquake lead to an avalanche killing 19 people, road blocked.
4	Immediate response	Hotels provided shelter, Italian red cross carried out search and rescue.	Search and rescue teams, water and medical aid.
5.	Long term response	New settlement for 20,000 residents was built, Investigation into why buildings collapsed.	Roads repaired and stricter building regulations.

D. Global atmospheric circulation helps to determine patterns of weather and climate.



E. Tropical storms (hurricanes, cyclones, typhoons) develop as a result of particular physical conditions.

1	Distribution	All Tropical storms are located between the Tropics.
2	Causes	Tropical storms form over ocean water that is 27°C and low pressure, water vapour evaporates and rises, this draws in more air creating strong winds, the storm then rotates due to the spin of the Earth.
3	Structure	
4	Climate change	Climate change will increase the intensity and distribution of Tropical storms
5.	Example	Typhoon Haiyan, 2013
6.	Effects	Primary- 7500 people dead, 1.9 million homeless Secondary- Oil leak damaging fish stocks, seawater damaging farmland.
7.	Response	Immediate- 800,000 people evacuated, medical aid and search rescue. Long-term- Upgrade and rebuild damaged building 'build back better'

F. The UK is affected by a number of weather hazards.

1	Drought, river flash flooding, coastal flooding, slow onset river flooding, surface water flooding, extreme cold/heavy snow, heatwave, thunderstorm.
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G. Extreme weather events in the UK have impacts on human activity.

1	Example	Somerset floods 2014
2	Effects	Social- 600 homes flooded, people without power Economic- £10 million damage, 16 farms damaged. Environmental- Contaminated water affecting natural habitats.
3	Response	Immediate- Villages cut off used boats to act as transport, livestock was evacuated. Long-term- £20 million given by Government for a flood action plan., dredged 8km of the River Tone.

F. Climate change is the result of natural and human factors, and has a range of effects.

1	Evidence	Increased global temperatures, reduced ice coverage, irregular weather patterns.
2	Causes	Natural- changes in earth orbit and tilt, volcanic activity, increased solar energy. Human- enhanced greenhouse effect due to increased burning of fossil fuels.
3	Mitigation	Use of alternative energy and renewable energy source's to reduce carbon dioxide emissions.
4	Adaptation	Use of carbon capture to reduce carbon. Tree planting to capture carbon Use of drought resistance seeds to help adapt to warmer climate.

13) Planning	- Actions taken to enable communities to respond to, and recover from, natural disasters, through measures such as emergency evacuation plans, information management, communications and warning systems.
14) Prediction	- Attempts to forecast when and where a natural hazard will strike, based on current knowledge. This can be done to some extent for volcanic eruptions (and tropical storms), but less reliably for earthquakes.
15) Primary effects	- The initial impact of a natural event on people and property, caused directly by it, for instance the ground buildings collapsing following an earthquake.
16) Protection	- Actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design
17) Secondary effects -	The after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, for instance fires due to ruptured gas mains resulting from the ground shaking.
18) Tectonic hazard	- A natural hazard caused by movement of tectonic plates (including volcanoes and earthquakes).
19) Tectonic plate	- A rigid segment of the Earth's crust which can 'float' across the heavier, semi-molten rock below. Continental plates are less dense, but thicker than oceanic plates.
20) Volcano	- An opening in the Earth's crust from which lava, ash and gases erupt.

Subject: Geography	Topic: The challenge of natural hazards	Year Group: 10
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21) Economic impact	- The effect of an event on the wealth of an area or community.
22) Environmental impact	- The effect of an event on the landscape and ecology of the surrounding area
23) Extreme weather	- This is when a weather event is significantly different from the average or usual weather pattern, and is especially severe or unseasonal. This may take place over one day or a period of time. A severe snow blizzard or heat wave are two examples of extreme weather in the UK.
24) Global atmospheric circulation	- The worldwide system of winds, which transports heat from tropical to polar latitudes. In each hemisphere, air also circulates through the entire depth of the troposphere which extends up to 15 km.
25) Immediate responses	- The reaction of people as the disaster happens and in the immediate aftermath
26) Long-term responses	- Later reactions that occur in the weeks, months and years after the event.
27) Management strategies	- Techniques of controlling, responding to, or dealing with an event.
28) Monitoring	- Recording physical changes, such as tracking a tropical storm by satellite, to help forecast when and where a natural hazard might strike.

29) Planning	- Actions taken to enable communities to respond to, and recover from, natural disasters, through measures such as emergency evacuation plans, information management, communications and warning systems.
30) Prediction	- Attempts to forecast when and where a natural hazard will strike, based on current knowledge. This can be done to some extent for tropical storms (and volcanic eruptions, but less reliably for earthquakes).
31) Primary effects	- The initial impact of a natural event on people and property, caused directly by it, for instance buildings being partially or wholly destroyed by a tropical storm.
32) Protection	- Actions taken before a hazard strikes to reduce its impact, such as educating people or improving building design.
33) Secondary effects	- The after-effects that occur as indirect impacts of a natural event, sometimes on a longer timescale, for instance impact on access to potable water can lead to spread of disease.
34) Social impact	- The effect of an event on the lives of people or community
35) Tropical storm	- (hurricane, cyclone, typhoon) An area of low pressure with winds moving in a spiral around the calm central point called the eye of the storm. Winds are powerful and rainfall is heavy.
36) Adaptation -	Actions taken to adjust to natural events such as climate change, to reduce potential damage, limit the impacts, take advantage of opportunities, or cope with the consequences.

37) Climate change -	A long-term change in the earth's climate, especially a change due to an increase in the average atmospheric temperature.
38) Mitigation	- Action taken to reduce or eliminate the long-term risk to human life and property from natural hazards, such as building earthquake-proof buildings or making international agreements about carbon reduction targets.
39) Orbital changes -	- Changes in the pathway of the Earth around the Sun.
40) Quaternary period	- The period of geological time from about 2.6 million years ago to the present. It is characterized by the appearance and development of humans and includes the Pleistocene and Holocene Epochs.

1.1 Types of Care

Health care settings	Dental practice, GP surgery, Health centre, Hospital, Nursing home, Optician, Pharmacy, Walk-in centre
Health Care Examples	- Visiting the dentist twice a year for a check-up or A&E (Accident and Emergency) for a sports injury - Pregnant woman visiting the hospital for an ultrasound scan on her unborn baby
Social care settings	Residential home, Retirement home, social services department, support group, community centre, day centre, food bank, homeless shelter.
Social Care Examples	- An individual staying at a homeless shelter or struggling to cope with a physically disabled child - Dementia resident cannot care for themselves in their own home, now living in a residential care home.

1.2 The Rights of service users

Choice	- Choosing which activities they participate in - Choosing what to eat - Choosing the type of treatment
Confidentiality	- Service users have a duty of care to protect service users' personal information (verbal and written) - Service providers cannot discuss service users care with their family and friends not directly involved in their care. Conversations should be in a private room (cannot overhear) - Keep personal information secure in a locked cupboard or filing cabinet. Computers should be password protected. Providers need a log in with a secure email/ password to access data/wear a security badge
Consultation	- Service users should be involved in all decisions that are made about them. - Service providers must find out and respect the service users' opinions, beliefs and concerns to build trust. - Service users involved in decision-making will feel more in control reducing fears or worries they have.
Equal and Fair treatment	- Every service user can access health and social care services, regardless of who they are (not unfairly because of their colour, age, gender, money available or ability to care for themselves. - Misconception - we should treat everyone in the same way, but this means some will be disadvantaged. E.g., providing information in large print, different language, braille.
Protection from abuse and Harm	- Includes health and safety, safe working practices and knowledge of what to do if you have concerns. - Service providers have a duty to prevent harm and abuse - have a clear complaints procedure. - Staff should monitor behaviour, be vigilant and receive the correct training to be able to recognise signs of abuse and how to report them. Harm - Can occur in unsafe or inaccessible to service users (inadequate lighting, slippery floors, missing handrails equipment not checked regularly, procedures not followed) Abuse - Can occur deliberately or accidentally (racism, lack of training, sexual orientation) it could be cruel comments, physical action or isolation

Key Terms	
Consultation	Service providers share information with service users and vice versa, so care decisions can be made together.
Empowerment	Relates to the control or 'power' a service user feels they have over their life
Holistic approach	Consider the emotional and psychological needs as well as the physical health
1.3 The benefits to service users' health and wellbeing when their rights are maintained	
Empowerment - Control or 'power' will support the resident to feel stronger and more confident therefore more independent and self-reliant in making their own decisions	
Independence and self-reliance	Promoting self-worth and self-confidence. Contributing to self-esteem.
Feelings of Control	Ensuring their rights are met giving them a sense of control e.g., Am I okay to listen to your chest?
Choice	To increase their understanding and increase their self-esteem.
High self-esteem - if rights are maintained they will feel valued and respected increasing their self-esteem	
Feeling valued	Feeling worthy of care. More likely to ask for additional support in the future.
Feeling respected	Asking their preferred name and listening to them properly, developing a partnership
Positive mental Health	This contributes to a person's self-esteem and self-worth, allowing people to cope with change better Take a holistic approach considering how the person feels about their care.
Service users' needs are not met - care should be specific and well planned to the service user.	
Appropriate care or treatment	Service users receive care that is appropriate to their needs e.g. lifts, wide doorways and ramps.
Improvements in physical or mental health	Service users' health and wellbeing will benefit
Trust - service users will feel safe and confident with the care provided.	
Safety from harm	Trusting relationships will allow confidence to develop because they feel safe and secure
Best interests	Care should have their best interest at heart. Gives reassurance and confidence in their care. Staff training makes service users safe
Confidence in the care received	They will feel worthy, valued, respected and safe. Trust is linked to confidentiality where conversations are not overheard. This creates confidence.

1. The Great Depression

- | | | |
|---|--|---|
| 1 | What were the long term causes of the depression? | <ol style="list-style-type: none"> 1. Over-speculation – too many people had bought shares with borrowed money hoping that their value would increase 2. Overproduction – the demand for products fell as everyone who could afford the products had already bought them 3. Credit – too many people had bought products with borrowed money, meaning there was a lot of debt 4. Tariffs – taxes on US imports in other countries meant companies struggled to sell their extra product abroad. |
| 2 | What were the short term causes of the depression? | <ol style="list-style-type: none"> 1. Some shareholders began to lose confidence in the companies they invested in and from September 1929, they began selling their shares 2. As more people began to sell their shares, the value of these shares fell as the sellers were desperate to get rid of them. 3. This led to the Wall Street Crash |
| 3 | What was the Wall Street Crash? | <ol style="list-style-type: none"> 1. On 24th October 1929, 13 million shares were sold – x5 sold on a normal day. Share prices for almost all companies dropped further. 2. This day became known as 'Black Thursday' or the Wall Street Crash. |
| 4 | What was the short term impact of the Wall Street Crash? | <ol style="list-style-type: none"> 1. On 29 October there was another selling panic. 2. 16 million shares were sold. Shareholders lost a total of \$8 billion on the day. 3. Many had borrowed money to buy the shares and now couldn't afford to pay back their loans 4. Many banks went bankrupt as they could not recover their money. In 1929, 659 banks folded and many people lost their life savings. |

Key word	Definition
Buying on the Margin	A method of buying shares where an investor pays 10% of the share price and repays the rest with their profits
Bonus Army	The war veterans who marched on Washington in 1932 to demand payment of their war pensions
Dust Bowl	Parts of the interior USA which had become infertile for farming
Hobo	The term used for a person who moved around the country seeking work
Hooverville	The temporary slums that arose as a response to high levels of homelessness
Laissez-faire	A government policy of not getting involved in people's lives
Rugged individualism	The belief that individuals should solve their own problems for hard work rather than relying on the state
Share	A part of a business that is sold to get investment in the company
Speculation	Gambling on the stock market, often with borrowed money
Stock Market	Where stocks were bought and sold
Under-consumption	When not enough money is being spent to sustain a particular business or the wider economy

2. Effect of the Great Depression

1	What happened to employment after the Crash?	- By 1932, around 13 million people were jobless (25% of the total labour force). 12,000 people were losing their jobs every day by 1932 and 20,000 companies had shut down. - Between 1929 and 1932, factory production dropped by 45% and housebuilding by 80%.
2	Why did Hoovervilles develop?	- Up to 250,000 people lost their homes as they couldn't pay their mortgage. - Many were forced to live in Hoovervilles in improvised shacks built with unwanted materials - Many unemployed workers became 'hobos' and travelled the country looking for any work they could find. - Soup kitchens were set up in cities and many homeless people joined breadlines to find food.
3	How did the Depression affect farmers?	- Many farmers were struggling before the Crash. - Many farmers had to pay back bank loans (e.g. for equipment) and often struggled to do this. - By 1932, 1 in 20 farmers had lost their farms and homes as a result. - Drought and farming methods had turned much of the Midwest into a 'Dust Bowl' in which the topsoil was blown away leaving dry soil.
3	How did President Hoover respond to the crisis?	- He believed in 'rugged individualism' and felt the crisis would end quickly. - The Reconstruction Finance Committee lent money to farmers and struggling businesses. - A huge road and dam building programme created jobs. \$300m to help the unemployed was made available to the states but only \$30m was used. - The Hawley-Smoot Tariff of 1930 taxed imports but led to other countries taxing US goods, making US exports fall
4	How did people react to the Depression?	- Farmers in Iowa used guns and pitchforks to keep government officials from evicting farmers. - In summer 1932 250,000 ex-soldiers marched to Washington to demand their pension or 'bonus' to be paid early. - Hoover set the army on them and the 'Bonus Army' protesters were driven off with gas, guns and tanks. - People blamed Hoover's laissez-faire attitude for their suffering

3. The 1932 election		Hoover	Roosevelt
1	Background	- Elected as president in 1928 – part of the Republican Party. - Before politics he was a mining multi-millionaire.	- Part of the Democrat Party - New York governor after 1928 and spent \$20m of tax money helping the unemployed.
2	Policies	- Believed in rugged individualism and wanted America to solve its problems through hard work and without government help. - He only began to introduce measures to help citizens a few years after the Depression began.	- He promised a 'New Deal' for America - The 3Rs: 'Relief' (help for those in need), 'Recovery' (providing jobs) and 'Reform' (to improve America and minimise the impact of the Depression).
3	Reasons for outcome	- He was a poor speaker and his beliefs made him sound uncaring. - The Republicans were associated with causing the Depression	- Voters liked him due to his resilience and ideas. - He spoke all over the country up to 15 times a day. - He broadcast his policies on the radio in a series of 'fireside chats'

4. The New Deal			Key word	Definition
1	What did Roosevelt do in his first 100 days?	- The Emergency Banking Act closed and inspected all banks - only the well-run and fully financed banks were allowed to reopen. - The Economy Act cut government employees' salaries by 15% which saved the country \$1 billion. - The Beer Act ended Prohibition, put the gangsters out of business, and allowed the government to raise cash by taxing alcohol.	Alphabet Agencies	Government agencies created during the New Deal
2	What were the Alphabet Agencies?	- These were government organisations known by their initials. - The idea was that the government would create jobs by spending money, allowing buying to resume, therefore creating more jobs.	New Deal	FDR's policies designed to help the US recover from the Depression during the 1930s
3	How did the New Deal help unemployment?	- The CCC temporarily employed 2.5 million 18-25 year olds working clearing up the countryside - The CWA created 4 million temporary jobs building schools, airport and roads - The FERA gave \$500 million to states to help homeless, starving people.	Reservation	The term for an area of land given over to American Indians for their exclusive use
4	How did the New Deal affect farmers?	- The FCA lent money to farmers to repay loans - \$100 million loaned in 18 months - The AAA paid farmers to produce less and destroy extra food. Between 1933-1939 farmers' incomes doubled	Social Security Act	The 1935 measure that created America's first social welfare system
5	How did the New Deal affect industry & workers?	- The NRA encouraged workers and employers to create fair working conditions, including the right to join trade unions – 2.5 million companies joined the scheme - The TVA provided work building dams and electric power stations in one of the poorest areas of America - The HOLC gave loans to over 300,000 people to pay their mortgages	Supreme Court	The USA's highest court that can challenge or overrule new and existing laws
5. Opposition to the New Deal				
1	Republicans	Many Republicans felt FDR was becoming too powerful and letting the government dominate the lives of individuals.	Three Rs	Relief, Recovery, Reform: FDR's three main policy priorities after winning the Presidency
2	The Rich	The rich were annoyed at having to pay extra tax to support the New Deal.		
3	Businesses	Business owners felt the government was interfering with business and giving workers too many rights.		
4	The Supreme Court	- The Supreme Court argued that it wasn't the President's place to make laws on local state business - In 1935, the Court ruled the AAA was illegal		
5	Radical politicians	- Some politicians felt the New Deal wasn't doing enough - Huey Long suggested 'Share Our Wealth' where the government would take all fortunes above £5m, and sharing them so every family could buy a car, house and radio. - Francis Townsend suggested everyone should retire at 60 to allow younger people to enter the job market.		

6. Impact of the New Deal

1	What were the positive impacts of the New Deal?	1. The Social Security Act allowed the elderly, widows and disabled people to get pensions and for the sick or unemployed to get benefits. 2. The number of bank failures dropped dramatically. 3. Days lost to work strikes decreased between 1934 and 1938. 4. GNP (Gross National Product) rose between 1933-1941.
2	What were the negative impacts of the New Deal?	1. It interfered a lot in people's lives. 2. It failed to solve unemployment and 1 in 10 remained jobless. 3. Many people remained poor. 4. It wasted a lot of money on unsuccessful work programmes.
3	How did it affect women?	1. Many women found work in one of the Alphabet Agencies. 2. However the NRA set women's wages lower than men's - \$525 per year compared to \$1000 for men 3. Only 10,000 of the 2.5 million CCC jobs went to women
4	How did it affect workers?	1. The Alphabet agencies gave millions a basic wage 2. The Wagner Act gave workers the right to join trade unions 3. However big businesses remained powerful and unions were treated with suspicion
5	How did affect farmers?	1. Large-scale farmers benefited from rising prices and loans 2. But small farms continued to struggle in rural areas 3. Dust bowl farmers had to look for work elsewhere
6	How did it affect African Americans?	1. 200,000 African American employed by the CCC 2. But the CCC campsites were segregated 3. African Americans were not allowed to live in the newly built towns 4. Roosevelt refused to make changes to race discrimination because he feared losing support in the South
7	How did it affect Native Americans?	1. Government loans were provided to help Native Americans buy land and farming equipment 2. The Indian Reservation Act gave Native Americans the right to set up their own law courts 3. But many Native Americans still lived in poverty and suffered discrimination
8	How did the New Deal come to an end?	1. After FDR's re-election in 1936 he worried about the cost of his plans. 2. Fewer jobs were being created due to spending cuts. 3. Thousands of workers in the car and steel industries went on strike. 4. Unemployment rose to 10.5m in 1938 and production fell. 5. By January 1939 FDR acknowledged the New Deal was over.

7. Popular Culture in the 1930s

1	How did entertainment change?	1. Jazz was very popular and top stars sold lots of records. 2. Gramophone sales increased along with vinyl records. 3. Over 100m people went to the cinema each week. 4. Musicals, comedies, historical dramas and horror films were all popular. 5. Comic books became a hugely popular industry.
2	How did the arts change?	1. Plays, poetry and sports were broadcast by radio. 2. Authors wrote about the Depression and social issues. 3. The Works Progress Administration (WPA) provided work for unemployed artists of all kinds. 4. Much of the artistic output of this era became important and is still studied and enjoyed today. 5. The WPA was criticized for wasting taxpayers' money.

8. WW2 and the economy

- | | |
|---|--|
| 1 What was the US stance on involvement? | 1. America had not joined the League of Nations at the end of WWI and focused on building its own country
2. In 1935 the Neutrality Act banned loans to countries at war
3. In 1937, the government stopped the sales of weapons to any countries involved in conflict |
| 2 How did this change? | 1. In 1937 Roosevelt made a speech saying peace-loving nations needed to stand up to aggressive nations
2. When war broke out in 1939, America declared support for Britain and France. |
| 3 How did this change affect the economy? | 1. In Nov 1939, Britain and France began buying US weapons, warships and plans in the 'Cash and Carry plan'
2. In March 1941, FDR agreed to lend \$7000 million worth of weapons to Britain in the Lend Lease Deal
3. This created valuable production jobs
4. Unemployed men became trainee soldiers, sailors and pilots
5. By 1941, there were only 5.5 million unemployed compared to 10 million in 1937 |
| 4 How did joining the war help the economy? | 1. In Dec 1941, Pearl Harbor was attacked by the Japanese. The US joined WW2 on the side of Britain and France
2. In Jan 1942, the War Production Board converted peacetime industries to produce weapons
3. In 1944 96,000 planes were produced by US factories
4. More unemployed men joined the armed forces – by 1944 unemployment dropped to 670,000
5. Farmers benefitted from supplying food to the military
6. Coal, iron, steel and oil industries got a boost too |

Key word	Definition
Isolationism	The US policy of staying out of European affairs
Lend Lease	America's policy of lending Britain military equipment free of charge
NAACP	The National Association for the Advancement of Colored People – group that worked for equality for African Americans
Neutrality	Not supporting or helping either side in a conflict or disagreement
WAC	Women's Auxiliary Corps – non combat group in the US army
WAVES	Non combat group in the US navy

9. How did WW2 affect the lives of women?

- | | |
|--|--|
| 1 What was life like for women before WW2? | <ol style="list-style-type: none"> 1. Women were employed in traditional 'female roles' like nursing and teaching 2. They were often expected to leave their jobs once they got married |
| 2 What happened when war broke out? | <ol style="list-style-type: none"> 1. As millions of men joined the military, women began to fill their jobs in factories, railways and shipyards 2. Between 1940 and 1945 the number of women in work rose from 12 million to nearly 19 million 3. Women occupied a third of all America's jobs |
| 3 What did women do in the military? | <ol style="list-style-type: none"> 1. Over 300,000 women took on non combat roles in the military 2. The WAC was formed in 1942, which allowed women to serve in the army 3. Women in the WAC would have jobs like mechanics, electricians, typists, drivers and switchboard operators |
| 4 What was the impact of these changes? | <ol style="list-style-type: none"> 1. Women proved that they were capable of the same jobs that men were 2. Many more married women were employed – which wasn't common before the war 3. However, many men saw this as a threat 4. The government was reluctant to provide childcare help or more equal pay – women's pay was only 60% 5. Many expected women to return to their domestic role after WW2 6. The changes that were made were temporary |

10. How did WW2 affect the lives of African Americans?

- | | |
|---|--|
| 1 African Americans in the US | <ol style="list-style-type: none"> 1. Early on in the war there was a march planned to protest the treatment of African American workers especially in weapons factories 2. The government set up the FEPC to investigate. It found widespread discrimination and recommended the government didn't use these companies 3. By 1944, 2 million African Americans worked in factories |
| 2 What was it like for African Americans in the military? | <ol style="list-style-type: none"> 1. Over 1 million African Americans fought for the US in WW2 2. They faced widespread discrimination, segregation and limits on the roles they could hold – e.g. they could not be officers or pilots 3. As the war continued African Americans began to hold these important roles but still in segregated units |
| 3 What was it like for African American women? | <ol style="list-style-type: none"> 1. African American women were not allowed to serve in the WAVES 2. There were limits on the number of African Americans joining the WAC and becoming nurses 3. African American nurses were often only allowed to treat African American patients |
| 4 What was the impact of African American involvement in the war? | <ol style="list-style-type: none"> 1. Soldiers fighting abroad found less racial discrimination in European countries 2. Many African American soldiers felt it was hypocritical that the US asked them to fight in a war against racism in Germany, while experiencing racism in the military and at home 3. The Double V campaign led by an African American newspaper called for victory in the war and victory against inequality in the US 4. Membership of the NAACP increased to around 500,000 by the end of the war, showing people were ready for change |

Knowledge Key concept : Crime							
Define			Explain		Evidence		
1	What is crime ?	Action which breaks the law; can be against the person (eg murder), against property (eg vandalism), or against the state (eg treason).	Responses to people committing crime	Seek help to reform the person, use places such as prison for rehabilitation. Punishment such as prison	Explain one religious scripture	'let everyone be subject to the governing authorities' Bible NT	You must follow the law of your country as well as your religion
2	What is hate crime ?	Crime against a person because of race, gender, sexuality etc.	How do religions respond to hate crime?	Hate crime is not accepted and should be punished Victims should be supported	Explain one religious scripture	'made in the image of God' 'neither male nor female in the kingdom of heaven'	Christians believe everyone is made equal by God and is special therefore no one should be cruel to another.
3	What is Murder?	Unlawfully killing another person	How do religions respond to murder?	Punishment such as prison or going to hell	Explain one religious scripture	'do not kill' 10 commandments	Killing another is a great sin and should be punished.. This is a command from God.
4	What is theft?	Taking something without the owner's consent.	How do religions respond to theft?	Punishment then reformation, help the person if its through desperation	Explain one religious scripture	'do not steal' 10 commandments	Taking what is not yours is wrong in accordance with Gods commands

Knowledge Key concept : Reasons for Crime							
Define			Explain		Evidence		
1	What are good intentions?	When an action intends to have a good consequence	What is the impact or influence?	You will be rewarded for thinking positively and for always having a good intention, even if the action is wrong.	Explain one religious scripture	'Allah hears your hearts intentions' Quran	God is omniscient so knows your thoughts and intentions as well as sees your actions.
2	What are evil intentions?	Having the desire or thought to intentionally harm someone else	What is the impact or influence?	You will be severely punished for bad intentions even if you do not go through with the actions. Thoughts matter.			

Subject: RE

Topic: Crime and Punishment

Year Group: 10

Knowledge Key concept : Reasons for Crime



Define			Explain		Evidence		
3	What is upbringing?	The environment a child lives in, and the instructions they receive, while they are growing up; can be a cause of crime.	Why is it a reason for crime?	People may be brought up thinking crime is acceptable.	Explain one religious scripture	'Anyone who does not do what is right is not a child of God' Bible	You are in control of your own actions and if you chose to do bad you will be punished
4	What is poverty?	The state of being without the things needed for a reasonable quality of life; can be a cause of crime.	Why is it a reason for crime?	May use crime to better their lives e.g.: selling drugs for money	Explain one religious scripture	'Better is a poor man who walks in his integrity than a rich man who is crooked in his ways' Bible	Being poor is not sinful but doing bad actions as. You are judged on good deeds not material possessions
5	What is mental illness?	A medical condition that can cause changes to a person's behaviour; can be a cause of crime.	Why is it a reason for crime?	People are less aware of their actions and the consequences.	Explain one religious scripture	"Come to me, all you who are weary and burdened, and I will give you rest." – Bible	God will support all those who are struggling and sick. He will show compassion and love
6	What is addiction?	Being addicted to/dependent on a particular substance; can be a cause of crime (eg stealing money to pay for illegal drugs).	Why is it a reason for crime?	Desperation for drugs may take over their desire to be moral.	Explain one religious scripture	'Do not cast yourself into destruction with your own hands' Quran	If you commit crime due to an addiction, then you have brought on the bad deed yourself- you should not give in to desires and addiction
7	What is greed?	Wanting or desiring something or more of something.	Why is it a reason for crime?	People want what they don't have so take it instead	Explain one religious story	The parable of the rich man	A rich man who worships money will not get into money. Greed is against the 10 commandments.
8	What is an unjust law?	A legal requirement within a society that is believed to be unfair; a cause of crime if a person believes they cannot follow (or must act against) a law they believe is unjust.	How do people oppose an unjust law?	They believe the law is wrong so will break it. E.g. stealing from the rich	Explain one religious scripture	'let everyone be subject to the governing authorities' Bible NT	Religious people must always uphold the law and

Context

1	Priestley	Fought in WW1. Socialist and member of the Labour Party. Concerned about social inequalities. Influential in developing the idea of the welfare state.
2	Historical	- Set in 1912 at the end of the Edwardian era. - Titanic sank in 1912. - WW1: 1914-1918. - WW2: 1939-45. - First performed 1945 in Soviet Union. - First performed 1946 in Britain.
3	Political	- Liberal party in power in 1912. - Labour party in power in 1945. Formation of the 'Welfare State' 1945-1951. - In 1912 only men over 21 with property could vote. 1903-1914 saw the rise of the Suffragette movement. 1918 all men over 21 and women over 30 who met a property qualification could vote. 1928: All people over 21 could vote.
4	Social	1912: 10% of the population owned 90% of the wealth. No government assistance available. Charities were the only source of help for the poor.

Themes

1	Social responsibility	The Inspector goes to the Birlings' to encourage them to be accountable for their actions, and to take responsibility for others
2	Age	- Priestley shows hope lies with the young. - Mr and Mrs Birling stubbornly refuse to change, Sheila and Eric accept responsibility - This suggests the younger generation can learn and build a better future
3	Class	- Before WWII, Britain was deeply divided by class. - The war effort and rationing helped break down barriers, bringing people of different classes closer together.
4	Gender	Written after WWII, <i>An Inspector Calls</i> reflects changing gender roles. As women filled men's jobs, they gained freedom and independence, shown through Eva Smith. Priestley contrasts this with Mr Birling's old-fashioned sexism
5	Socialism	The Inspector is a symbol of Socialism – he wants everyone to look after each other and to view community as very important.
6	Capitalism	- Priestley shows Capitalism as self-centred and amoral, reducing people to profit. - Mr Birling symbolises its arrogance and dominance at the start of the century

Key Vocabulary

1	Socialism (Political theory)	Collective ownership of resources.
2	Capitalist	Private ownership of resources.
3	Didactic	Direct moral instruction.
4	Polemic	Verbal or written attack.
5	Patriarchal	Society controlled by men.
6	Fourth wall	The space between the actors and the audience.
7	Morality	Principles of right and wrong.
8	Caricature	Exaggeration of characteristics usually to ridicule.

Characters

1	Arthur Birling	- head of the Birling household. - wealthy 'hard-headed' business-man. - active member of the community - thinks that he might be in the running for a Knighthood.	5	Gerald Croft	- Around 30 years old - Attractive young man about town - Comes from upper class business owner family - Confident and charming - Has affair with Eva Smith
2	Sybil Birling	- Mr Birling's wife - cold hearted and snobbish - prominent member of a women's charity - still sees Eric and Sheila as children devoid of responsibility	6	Inspector Goole	- Not a big man but creates an 'impression of massiveness, solidity and purposefulness'. - Has a tendency to interrupt and control the conversation.
3	Eric Birling	- Son of Arthur and Sybil Birling - Half shy-half assertive, not at ease - Lacks confidence - Drinks a lot - Has an affair with Eva Smith - Steals money from father to help Eva	7	Eva Smith/ Daisy Renton	- Audience never meets Eva Smith - Young woman in 20's - Strong willed with a good sense of humour - Changes name to Daisy Renton
4	Sheila Birling	- Daughter of Arthur and Sybil Birling - Early 20's - Celebrating engagement to Gerald Croft - Giddy, naïve, childish - Can be assertive, insightful and intelligent	<u>Contextual Links: An Inspector Calls - GCSE English Literature Revision - AQA - BBC Bitesize</u> <u>An Inspector Calls - In Context (Part 1 of 2) - YouTube</u> <u>An Inspector Calls - In Context (Part 2 of 2) - YouTube</u> <u>An Inspector Calls (2018) - YouTube</u>		

Plot

1	Act 1	•The Birlings celebrate Sheila and Gerald's engagement. •Birling boasts to the men. •The Inspector arrives: Birling admits firing Eva, and Sheila confesses to getting her sacked from Milwards
2	Act 2	•Gerald admits 'rescuing' Eva, then leaves. •Mrs Birling confesses she denied Eva help and demands the baby's father be punished, not realising it's Eric, who then enters
3	Act 3	•Eric admits drinking, forcing himself on Eva, and stealing £50. •The Inspector gives a final speech and leaves. •Gerald returns. Sheila and Eric feel guilty but Mr and Mrs Birling refuse blame. •They convince themselves it was a hoax - until a call says a girl has died and an inspector is coming.

Dramatic Devices

1	Dramatic Irony	The audience knows more than characters.
2	Sounds	Doorbell, telephone interrupt the Birlings comfort and complacency.
3	Lighting	"pink and intimate" to "brighter and harder" when the Inspector arrives. Interrogating morals, cutting through the lies and pretence.
4	Entrances / Exits	Increase tension e.g. Eric walks in just as the audience realise that he is the father. Gerald's 'exit' in Act 2 prevents his remorse developing.
5	Props	Photograph: All Eva? Symbolic of the faceless poor that the wealthy pretend not to see. Sheila's ring as a symbolic of patriarchal control.
6	Stage directions	Indicate character attitudes, development, relationships setting and mood.

Berkoff's Background

Born 3rd August 1937.
 From Stepney, London.
 Actor, Director, Writer.
 Romanian Jewish background.

Berkoff's Theory and Style

1	Total Theatre	-Non-naturalistic and expressionistic -Every aspect of theatre must have purpose: every movement, line, lighting, sound effect and prop must create a powerful experience for the audience. -Extreme moods to give the audience an overwhelming experience and to shock, amuse, scare, or amaze them.
2	Minimalist	-Usually uses minimal, bare stages and makes use of the actors' bodies over anything else.
3	Political themes	-His plays often criticise social systems, corruption, and the abuse of power

Key Influences

1	Brecht influence	-Verfremdungseffekt (alienating the audience - making the familiar seem strange).
2	Artaud influence	-Theatre of danger and cruelty, using the power of words and gestures to release intense emotions.
3	Lecoq influence	Mime, movement, masks, and ensemble acting are all characteristics of Lecoq's theatre, which Berkoff uses.

Key Techniques in Total Theatre

1	Base Pulse	The rhythm and ensemble movement used in choral work
2	Chorus	A group of performers found in Greek drama who comment together on the dramatic action both vocally and physically
3	Ensemble	a group of actors performing together
4	Grotesque	Extremely overexaggerated to the point where it looks disturbing and ugly
5	Japanese Noh theatre	Stylised classical Japanese dance drama using characters masks
6	Kabuki	A classical Japanese dance drama with elaborate face make up, elegant movement and melodramatic expressions.
7	Mie	A character pose using a heightened physical style
8	Neutral state	When you are in a state of balance before you become a character
9	Neutral mask	Used to make your body the focus of expression
10	Mime	Suggesting an action or handling of an object using gestures
11	Motif	A repeated pattern
12	Burden	Something that a character feels guilty about, a problem they have or a way that they are being oppressed by society. This is usually shown by the actor through their physicality
13	Animalistic Trait	Presenting a character as an animal
14	Vocal colouring	Painting a picture with words, using vocal skills to the extreme
15	Tableaux	Creating a picture on the stage (a still image)
16	Mie	'Mie' – when the actor strikes a pose and holds it for a while – rest of cast freeze.
17	Direct Address	Directly speaking to the audience
18	Kvetch	To complain all the time. Usually with humour.
19	Levels of Tension	A technique used by Lecoq but also in Berkoff's work 1 – Exhaustion: Heavy, like a jelly fish 2 – Laid back: No worries, relaxed, on a sunny beach 3 – Neutral: No story, blank 4 – Alert: Curious, lost something, confused 5 – Suspense: Suspicious, cautious 6 – Passionate: Melodramatic, despair 7 – Tragic: Grief, petrified, frozen with fear

2.1 Mechanical Properties of Materials

1	Yield Strength	The maximum force that can be applied before a material begins to change shape permanently (will return to its original shape before this point is reached).
2	Tensile Strength	The maximum force that a material can take before breaking when it is stretched (pulled).
3	Compressive Strength	The ability of a material to withstand loads that reduce the size of that material (squash it).
4	Elasticity	The ability of a metal to resume its normal shape after being stretched or compressed.
5	Ductility	The ability of a material to be drawn out into wire or thread without losing strength or breaking.
6	Hardness	The measure of the resistance of a material to surface indentation, abrasion, or scratching.

2.2 Other Properties Influencing Manufacturing

7	Malleability	Is capable of being extended or shaped by beating with a hammer or by the pressure of rollers.
8	Machinability	A characteristic of a metal that makes it easy to drill, shape, cut, grind, etc. Materials with good machinability can be cut with relatively little power and low cost.
9	Material Cost	Material costs can be a balancing act between the function of the part and the cost. Usually the more expensive materials will be harder, greater wear and corrosion resistance, improved appearance.
10	Manufacturing Cost	The material selected will have an impact on the cost of manufacture. Some materials will be harder to machine and will take more time to work with which will have costs implications. Wear and tear on tools, greater energy costs, regular maintenance of machines.
10	Sustainability	Meeting the needs of today without compromising the ability of future generations to meet their own needs. Definition: The process of using resources in a way that does not compromise the environment or deplete the materials for future generations.

Standard Plastic Stock Shapes –

45



Sheet



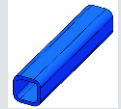
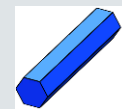
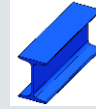
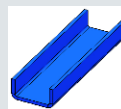
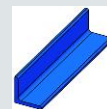
Rod

Tube



Granules

Standard Metal Stock Shapes –



Angle, Channel, I-Beam,, Sheet, Rod, Flat, Hex, Tube, Threaded Rod, Square Bar

2.3.1 Materials; Metals

Ferrous Metals		These Metals Contain IRON (Fe).
1	Iron	Machine Bases, Metalworking Vices
2	Tool Steel (Carbon Steels)	Screwdrivers, Hammers, Saws
3	Low Carbon Steel (Mild Steel) (<0.6% Carbon)	Low carbon steel has good enough strength for building frames in construction projects
4	High Carbon Steels (Tool Steel) (>0.6% Carbon)	Extreme hardness and resistance to wear, very high carbon steel often used for cutting tools that retain their sharp edge . (Not as high carbon content are used for Screwdrivers, hammers, saws)
5	Stainless Steel	Sinks, Rules, Cutlery
6	High Speed Steel	Drill Bits, Lathe Tools
Non-ferrous Metals		Metals which do not contain IRON.
7	Copper	Plumbing & Electrical Components
8	Aluminium	Cooking Foil, Sauce Pans, Ladders
9	Zinc	Coatings On Steel Products
Alloys		A mixture. of two or more metals.
10	Brass	Plumbing Accessories
11	Bronze	Boat Propellers

2.3.2 Materials; Polymers

Thermoplastics		Can be remoulded numerous times with the application of heat.
1	Acrylonitrile-butadiene-styrene (ABS)	Appliance casings
2	High Impact Polystyrene (HIPS)	Vacuum Forming, electronics casings
3	Polycarbonate	Safety Goggles, Bullet Proof Windows.
4	Poly(lactic acid) (PLA)	Eco-Products; cups, lids, cutlery, straws and containers made from a biopolymer called PLA. Made from starchy plants like corn. Also Medical Equipment, Food Containers .
Thermosetting Plastics		Polymers which cannot be remoulded once set in shape.
5	Polyester Resin	Used in GRP – Car/ Boat bodies
6	Urea-formaldehyde	Electrical fittings, Door Handles.
7	Epoxy Resin	Glue, Casings, Coatings.
8	Phenol-formaldehyde	Heat resistant saucepan handles

2.3.5 Materials; Smart & New Materials

Smart materials react to a stimulus in a controlled way, the change can also be reversed.

1	Shape-memory Alloys	Dental Braces, surgical implants, fire prevention.
2	Thermochromic Materials	React to heat - Thermometers for rooms, refrigerators, aquariums, and medical use.
4	Quantum Tunnelling Composite (QTC)	Responds to pressure to create circuits -Switches on mobile phones, pressure sensors and speed controllers
5	Photochromic Pigment	Reacts to light - Used to protect your eyes from harmful UV rays

2.3.3 Materials; Ceramics

Ceramics have a high resistance to heat and wear		
1	Tungsten Carbide	Cutting Tool Tips
2	Silicate Glass	Resistant to very high temperatures and very strong, used in the lining of melting furnace burners, as blocks with windows for pyrometers.
3	Silicon Glass	Silicon glass is widely used in optics, photometry and spectroscopy . It is used in laser lenses and mirror prisms

2.3.4 Materials; Composites

A material made from **two or more** different materials that, when combined, are stronger than those individual materials by themselves. The microstructure can be seen to the naked eye.

1	Glass Reinforced Plastic (GRP)	Car / Boat Bodies, Bike frames
2	Carbon Fibre	Bicycle Frames, Sports equipment

Standard conventions in **BS 8888** and how these are applied

Meaning Of Line Types:

Outlines		Visible outlines & edges
Hidden Detail		Hidden outlines and edges.
Centreline		Chain thin: Centre lines and lines of symmetry.
Projection, Leader Line		Continuous thin line
Dimension		Continuous thin line

Abbreviations

Across Flats	AF	Width across flats is the distance between two parallel surfaces on the head of a screw or bolt, or a nut.
Centre Line	CL	Centre lines denote a circular feature such as a shaft or a hole. Or a plane of symmetry.
Diameter	Ø	
Drawing	DRG	
Material	MATL	
Square	SQ	□ If preceding a dimension

Standard Conventions For Dimensions

Linear Measurements	Parallel Dimensioning Parallel dimensioning consists of a number of dimensions that originate from a specific edge (Datum Edge). Chain Dimensioning Chain dimensioning consists of a chain of dimensions. This method can lead to an accumulation of tolerances that will affect the function of the part.	
Radius		
Diameter		
Tolerances		
Surface Finish		Known as a 'tick' symbol.

Representation Of Mechanical Features

Threads	Male	Female
Holes	Through Hole	Blind Hole
Chamfers	Chamfer at 45°	A Symmetrical Sloping Surface At An Edge Or Corner
Countersinks	Countersink Plan view	Countersink Side view
Knurls		Knurling is a manufacturing process, whereby a pattern of straight, angled or crossed lines is rolled into the material

Knowledge Group 1: Media

1	Graphite	Graphite is a naturally occurring form of carbon used in art for drawing and creating detailed, versatile marks on paper or other surfaces.
2	Biro	Drawing with a biro pen involves mastering layering, cross-hatching, and careful control of pressure to create detailed, realistic artwork.
3	Pen	Drawing with pen is a versatile and expressive art form that allows you to create a wide range of marks, tones, and textures using different types of pens and techniques.
4	Sculpture	Sculpture is a three-dimensional art form that involves creating objects by shaping or combining materials, often to express ideas, emotions, or narratives.

Key Vocabulary

1	Observations	Observations in art are crucial for accurately depicting an object.
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Knowledge Group 2: Techniques

1	Tonal modelling	Used in art to create the illusion of volume and depth through the gradation of light and dark tones.
2	Implied texture	Visual illusion of a surface's texture in a two-dimensional artwork, suggesting how it might feel without any physical tactile quality.
3	Shadows	Are essential for creating depth, realism, and emotional impact, serving both technical and symbolic purposes.
4	Highlights	The brightest part of an object where light directly hits, used to create depth, form, and realism.
5	Hatching	Hatching is an artistic technique that uses closely spaced parallel lines to create shading, texture, and the illusion of volume in a drawing or print.
6	Pressure sensitivity	Pressure sensitivity is how hard you press, allowing for variations in line thickness, opacity.
7	Scoring	Technique used to create shallow cuts or grooves on the surface of clay, card or other materials.
8	Measuring	Is the practice of using tools and techniques to determine proportions and scale.
9	Paper mache	Craft technique where paper and adhesive are combined to create lightweight, durable, and mouldable objects.
10	Concertina fold	Create a series of alternating folds to form an accordion-like structure.
11	Prime	prepares a surface by creating a smooth, even base that improves adhesion, durability, and overall finish.

Knowledge Group 3: Artists

1	Sarah Graham	Artist known for hyper-realistic food paintings, often focusing on sweets, wrappers and desserts.
2	Nicola McBride	Illustrator known for hyper-realistic Biro pen drawings, capturing iconic Scottish foods and nostalgic objects from her childhood.
3	Claes Oldenburg	Swedish-born American sculptor renowned for his monumental public art and pioneering Pop Art sculptures of everyday objects.
4	Darell Wakelam	Mixed media artist who creates models, masks and sculptures with cardboard and simple recycled materials.
5	Kerby Rosannes	Illustrator renowned for his intricate black-and-white doodle art.

Knowledge Group 1. Photoshop Tools

	Rules	Digital rulers used to overlay precise and measured lines.
1	Header	Title & logo formally displayed.
2	Composition	Content carefully positioned to look well-balanced and visually pleasing.
3	Margins & Borders	Evenly spaced, minimal and consistent. Always aligned.
4	Images	High resolution with an original aspect ratio (not stretched or squashed).
5	Font/ Typography	Art of arranging type to make written language legible, readable and appealing.

Knowledge Group 2. Presentation

1	Free Transform (Ctrl T)	An action tool used to scale, rotate, flip, skew, distort, and warp images all using the free transform command.
2	Masking Technique	Placing an image into a clipping mask that is still editable. Helps composition.
3	Constrain Proportions	Scaling whilst keeping original proportions (aspect ratio – not squashing or stretching.)

Knowledge Group 3. Tools

1	Rulers	Digital rulers used to overlay precise and measured lines.
2	Search Engine Tools	Built in search engine (Google, Bing etc.) tools that enable content to be filtered.

Knowledge Group 3. Microsoft Powerpoint

1	Rulers	Digital rulers used to overlay precise and measured lines.
2	Search Engine Tools	Built in search engine (Google, Bing etc.) tools that enable content to be filtered.

Knowledge Group 4 Annotations

1	Contextual Analysis (Analysing the work of artists)	Annotations or keywords from a critical and analytical perspective about the artist's work. This will consist of a <i>Personal Response</i> and reflections on the <i>Aesthetics, Meaning and Context</i> .
2	Biographical Information	A short, concise summary of significant facts about an artist, their career and ideas.

Key Vocabulary

1	Digital Image	An image made of pixels. Printed text, photographs and artwork. Number of pixels define high quality.
3	Consistency (presentations)	The use of the same visual style, layout, colours, fonts and design elements throughout a project to create a clear and professional appearance.
4	Aspect Ratio	The ratio of the width to the height of an image or screen.
5	Alignment	Arrangement in a straight line or in correct relative positions
7	High Resolution	A large amount of detail. This would contain a lot of pixels to create.

Macronutrients

1	Carbohydrates – starchy	Provide slow releasing energy. Sources: bread, pasta, oats, rice, potatoes.
2	Carbohydrates – sugar	Provide instant energy. Can be natural or added. Sources: fructose, lactose, fizzy drinks, sweets
3	Protein	Essential for growth and repair. Provide a secondary source of energy.
4	HBV	Proteins that contain all the essential amino acids our body cannot produce itself. Sources: meat, fish, milk, cheese, yoghurt
5	LBV	Proteins that contain some of the essential amino acids our body cannot produce itself. Sources: beans, lentils, grains
6	Fat	Provides vitamins A, D, E and K. Keeps the body warm and offers insulation. Stored energy.
7	Saturated	Solid at room temperature often referred to as bad fat as can increase risk of heart disease Sources: meat, dairy, coconut
8	Unsaturated	Liquid at room temperature often referred to as healthy fat as can lower risk of heart disease Sources: olive oil, nuts, seeds, avocados
9	NSP / Fibre	Helps with digestion and lower cholesterol. Sources: wholegrains, nuts, seeds, fruit and veg
10	Water	Essential for existence. Transports nutrients, helps digestion, flushes out waste, maintains body temperature

Micronutrients & Minerals

Water soluble		
1	Vitamin B complex	Helps release energy from food. Consists of B1, B2, B9, B12 Each B vit is found in different food sources.
2	Vitamin C	Helps iron absorption. Improves immune system. Antioxidant. Sources: fruit and vegetables
Fat Soluble		
3	Vitamin A	Helps vision. Structure of skin and keeping immunesystem healthy. Sources: dairy, dark green veg, orange fruit/veg
4	Vitamin D	Helps calcium absorption. Prevents bones disease. Sources: fish oil, dairy, sunlight, fortified cereal and margarine
5	Vitamin E	Helps maintain healthy skin and eyes. Forms red blood cells. Sources: dairy, nuts, dark green veg
6	Vitamin K	Helps blood clot / needed for healthy bones Sources: dark green veg, fish, liver and fruit.
Minerals		
7	Calcium	Keeps bones and teeth health and strong Sources: dairy, dark green veg, fish bones
8	Iron	Needed to transport oxygen around the blood Sources: red meat, wholegrain foods, green veg
9	Sodium	Controls the amount of water in the body . Makes nerves and muscles work properly
10	Potassium	Help maintain fluid levels inside our cells
11	Magnesium	Helps maintain normal nerve and muscle function

Key Vocabulary

1	Macronutrients	A nutrient your body requires in large amounts (grams)
2	Micronutrients	A nutrient your body requires in large amounts (mg)
3	Water soluble vitamins	Vitamins that are found in water (vitamins B,C)
4	Fat soluble	Vitamins that are found in water (vitamins B,C)
5	Mineral	Nutrients our body requires in small amounts (calcium, iron, sodium)
6	RDI	Recommended Daily Intake. A guide provided by the NHS with the quantities we should be aiming for daily.
7	Portion control	Healthy diets not only have the correct balance, but have the right portion sizes. Vegetables = double cupped palm. Grains/Starches = clenched fist. Protein = palm of hand. Fruits = clenched fist. Thumb = fats.
8	Eat Well Guide	A guide provided by the Government to show the amount each food group we should be eating daily
9	Calories	The amount of energy in an item of food or drink is measured in calories
10	Source	Where the nutrient is found e.g. which foods contain it

 Research the RDI amounts

☐ Who is the Eat Well Guide not suitable for?

☐ How does food effect our mental health as well as physical?

AC1.1 Hospitality and catering providers

1	Commercial	For profit – to make money.
2	Non-commercial	Not for profit. Includes catering in education, healthcare and the armed forces.
3	Residential	You can sleep there
4	Non-residential	You don't sleep there.
5	Counter service	Order, pay and collect food at the counter
6	Table service	Order, pay and receive food at their table
7	Guerdon system	Food cooked or prepared for in front of customer on a trolley
8	Front of house	Front of house refers to any staff the customer may see.
9	Back of house	Back of house refers to staff the customer may not see,
10	Kitchen brigade	System of setting out job roles in the kitchen
11	Star rating – hotel standards	Rated from 1-5. 5 being the highest rating.
12	Restaurant standards	Michelin Guide, AA award rosettes, Good Food Guide
13	Food hygiene rating	Food Hygiene are the conditions and measures necessary to ensure the safety of food from production to consumption
14	Environmental standards	10 standards promoting sustainability and reducing the impact on the environment

AC1.2 Working in the hospitality and catering industry

1	Training	Lots of training courses available; food hygiene cert, City and Guilds, Level 1 2 and 3.
2	Personal attributes	Personality trait: Organised, reliable, team player, friendly, approachable ect,
3	Skills	Computer skills, good local knowledge, ability to multi-task, communication skills

AC1.3 Describe working conditions of different job roles across the hospitality and catering industry

1	Types of contracts	Full-time/part time permanent contract. Casual work/ zero hour contracts.
2	Supply & demand	There are certain times in the year when staff demand increases (New Year, Christmas).
3	Remuneration	Reward on top of basic pay. E.g. tips, service charge and bonuses
4	Holiday entitlement	Set number of Paid leave each year.

AC1.4 Explain factors affecting the success of hospitality and catering providers

1	Cost	Materials, labour costs, advertising
2	Profit	A business needs to make profit to be successful
3	Economy	Value of the £, food production in the world, price of oil/fuel and if the economy is stable
4	Environmental factors	Waste, reduce, reuse, recycle and sustainability
5	Technology	Social media, kitchen and food technology
6	Customer demographic	Different types of customers require different things.
7	Competition	There is lots of competition and it's important to stand out.
8	Trends/Media	Food trends, media advertising and search engine results.

Key Vocabulary

1	Hospitality	The friendly treatment of guests and strangers .
2	Customer	Person who books' receive the service.
3	Service	To do/provide something for someone else, this can be paid for or done for free depending on the business,
4	Business	the buying and selling of goods/services to make money ,
5	Accommodation	a room, group of rooms, or building in which someone may live or stay.
6	Catering	Offering the provision of food and beverages

1. Baroque era

1	Baroque period	Era in Western music between 1600 and 1750. Composers included Bach, Vivaldi and Handel.
2	Harpsichord	Baroque keyboard instrument, used to play the ground bass, chords and melody.
3	Terraced dynamics	Dynamics that are loud or quiet, nothing in between
4	Basso continuo	A type of instrumental accompaniment, common in Baroque music, played by organ, harpsichord or cello. Keyboard players often added chordal harmonies.
5	Small Orchestra	Ensemble used in the Baroque period of strings and some wind
4	Suite	A group of works for instruments, often dances.
5	Sonata	Work for solo instrument with continuo
6	Oratorio	Work for instruments and voices based on the bible.
7	Chorales	A hymn for four part voices
8	Trio sonata	A piece for two soloists and continuo

2. Classical era

1	Classical period	Era in Western music between 1750 and 1810. Composers included Haydn, Mozart and Beethoven.
2	Forte piano	The first piano, was able to play dynamics.
3	String quartet	Small ensemble of two violins, viola and Cello.
4	Symphony	A work for Orchestra, normally in four movements.
3	Solo sonata	A work for soloist, often with piano accompaniment.
4	Solo concerto	A work for soloist, accompanied by an Orchestra
5	Balanced, regular phrases	Balanced parts of a melody (like the phrases in a sentence) e.g. four bar phrases.

3. Key vocabulary

1	Repetition	A musical idea is repeated exactly.
2	Imitation	An idea is copied in another part
3	Sequence	Repetition of an idea in the same part at a higher/lower pitch.
4	Ostinato	A short, repeated pattern or phrase.
5	Drone	A long held or constantly repeated note(s).
6	Arpeggio/ broken chord	The notes of a chord played individually
7	Alberti bass	A broken chord accompaniment (I,V,iii,V) common in the Classical era.
8	Anacrusis	An 'up-beat' or pick-up before the first strong beat
9	Dotted rhythms	A rhythm using dotted notes (gives a 'jagged' or 'bouncy' type of effect).
10	Syncopation	Off beat accents
11	Conjunct	Notes that move in steps.
12	Disjunct	Notes that move in leaps/ intervals.

Other baroque pieces listen to **The four seasons (Vivaldi)**, **Tocatta and Fugue in D minor (Bach)**. For Classical pieces listen to **Symphony N0. 40 by Mozart** and **string quarters by Haydn**.

4. Romantic era

1	Romantic era	Period in Western music between 1810 and 1900. Composers included Tchaikovsky, Schumann, Brahms, and Wagner.
2	Lyrical, expressive melodies	Instrumental melodies that sound like someone singing, often with large leaps.
3	Large orchestra	An orchestra with all of the instrumental families, often 80 or more players.
4	Wide range of dynamics	Dynamics that go below quiet and above loud, large crescendo and diminuendo and sudden changes.
5	Chromatic chords	Chords with notes outside the normal key.
6	Programme music	Music written to tell a story, often based on other art forms.
7	Opera	A theatrical work that combines text, costume and music.

7 Form and Structure

1	Binary (AB)	Two sections: A usually ends in a related key (e.g. dominant or relative minor), but B returns to the tonic. B will contain with some change/contrast.
2	Ternary (ABA)	Three sections: section B provides a contrast (e.g. new tune key change). A may return exactly or with some slight changes
3	Rondo (ABACA)	A piece with a returning A section, with contrasting sections in between.
4	Minuet and trio (I: AB: II: CD: II: AB)	The minuet was a type of graceful dance from the 17-18th century, and was often used as the 3rd movement in symphonies in the Classical era.
5	Variations	The main theme (tune) is repeated and developed a number of times in a variety of different ways.
6	Strophic	A simple form where the song uses the same melody over and over.

6. Cadences

1	Perfect	Strong ending – sounds 'finished'; a musical full stop. V-I
2	Plagal	Sounds finished but softer. Amen. IV-I
3	Imperfect	Sounds unfinished. I-V, ii-V, vi-V.
4	Interrupted	Moves to an unexpected chord. Surprise. V-vi.

8. Key vocabulary

1	Chord	Two or more notes played together.
2	Triad	Three notes played together.
3	Chord Sequence	A series of chords.
4	Diatonic Harmony	The chords all belong to the key.
5	C Major	Happy sounding key – no sharps or flats.
5	F Major	Happy sounding key – 1 flat (Bb)
5	G Major	Happy sounding key – one sharp (F#)
5	Bb Major	Happy sounding key – two flats (Bb and Eb)
9	D major	Happy sounding key – two sharps (F# and C#)

Knowledge Group 1 Chemical/Applied Aesthetic

1	Chemical Aesthetic	Having the appearance of a chemical substance or reaction. Something that looks science related.
2	Applied Force	An item that has had a specific force applied to it, for example something that has been crushed.
3	Lava lamp	A vessel in which two liquids interact and move. Often different bright colours and lit from below.
4	Artificial/ Controlled Lighting	Using electric light to improve the look of an object when photographing it. This can be a lamp or torch.
5	Controlled background	A clear & featureless space in which to photograph your object. This can be made of materials like coloured card.

Knowledge Group 2 Chemical Photography

1	Framing	The process of positioning the object you wish to photograph in the composition whilst also considering the background.
2	Experimental photography	Creating a wide range of photographic images that show a unique approach to use of lighting, framing and composition.
3	Resourceful approaches	Linked to experimental photography. Making use of available resources to improve the look of your photos e.g. using a smart phone as a torch or source of coloured light.

Key Vocabulary

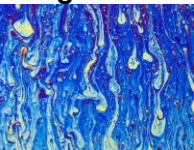
1	Macro Setting	Used for close up photography.
2	Crop	To remove part of an image.
3	Focus	When an image is clear and objects have sharp outlines.
4	Brightness / Contrast	A tool to manipulate light and dark effects in a photograph.
5	Hue Saturation & Vibrancy	Tools to manipulate the colour effects of a photograph.
6	Filters	Special visual effects that can be added to a photograph.
7	Layer Styles	One or more layer effects and blending options applied to a layer.
8	HDR Toning	A tool in photoshop for advanced colour editing techniques.

Knowledge Group 3 Reviewing Photographs

1	Contact Sheet	An A4 sheet of 35 of your photographs that will enable effective review of your work.
2	Annotation process	Green or red boxes placed around images on the contact sheet, with comments to identify successes and areas to improve on. And including any photographic techniques used.
3	Review slides	These contain 1 or 2 of your best images from the contact sheets to help celebrate and analyse your work.
4	Critical Reflection	The process of analysing your work and explaining how you have gone from one idea to the next. (<i>What, How, Why?</i>)

Knowledge Group 3 Editing

1	Reframing	Using the cropping technique to improve the composition of an image by removing unwanted elements from the edges of the image.
2	Colour editing	Enhancing the look of an image by adjusting Hue Saturation, Contrast & Brightness and Vibrancy in Adobe Photoshop.
3	Creative edits	Using a combination of tools and editing techniques for example: Filters and Layer Styles in Adobe photoshop to create eye-catching and unique images that showcase your creative skills.

Knowledge Group 1 – Experimentation			Knowledge Group 2 – Key Techniques			Key Vocabulary		
1	Development	Taking something seen in life and translating it into a series of shapes, patterns, colours and tones, in an attempt to convey its essence or true meaning.	1	Collage 	A technique and the resulting work of art in which pieces of paper, are arranged and stuck down onto a supporting surface.	1	Abstract	Something that does not show directly the visual representation of a given object. Instead, it represents the idea of it through shape line, tone and colour.
2	Simplification	Removing unwanted detail from an image and retaining the most critical part or parts.	2	Embroidery 	The craft of decorating fabric or other materials using a needle to apply thread or yarn.	2	Geometric	Characterized by or decorated with regular lines and shapes.
3	Aesthetically pleasing	An arrangement of shapes, forms, lines, tones, and colours that is visually interesting or successful. A piece of visual work that is enjoyable to look at and investigate.	3	Marbling 	Colouring or marking that resembles marble, especially as a decorative finish.	3	Layout	The way in which visual elements are arranged in a picture. From strikingly simple to highly complex, these are important choices each photographer must make while taking pictures.
			4	Mixed Media 	A term used to describe artworks composed from a combination of different media or materials.	4	Contrast	The way in which different elements in a picture interact and look, for example: light & dark, sharp & soft, focused & blurry, crowded & empty.
Knowledge Group 3 Reflection and analysis								
1	Lighting	The method used to illuminate an item. For example, directional light from a torch that gives strong shadows, or diffuse lighting from a window that gives softer tonal values and allows detail to be seen more clearly.						
2	Depth of field	The extent to which an image is focused. Depth of field can be used to highlight a certain feature or aspect within an image, it can also be used to emphasise depth in an image.						
3	Background	Objects or a scene behind the main picture. Your choice of black or white background will affect significantly the tonality of the photograph. Ensure that you experiment with both types of background for the best outcomes.						
						5	Leading lines	Lines found in the picture that help direct the attention of the viewer around the image. These are an important compositional tool.
						6	Architectural	Relating to buildings and the built environment, including all man-made structures.

1. Contextual links/ Artists

Frank Gehry



Frank Gehry is a Canadian-born American architect and designer known for his original and sculptural work. He is widely regarded as one of the most influential and important architects of the modern age. He is also the designer of the Guggenheim Museum Bilbao.

Harriet Popham



Harriet Popham is an illustrator, print maker and embroidery artist who specializes in lino printing, unique interior textiles and free style machine embroidery.

2. Techniques & Approaches

Applique

1



Applique is the process of applying one fabric onto of another and applying a zig zag stitch around the outside.

Reverse Applique

2



Reverse applique uses layers of fabric and cuts away the top layer to reveal the fabric underneath.

Free machine embroidery

3



Uses a free machine embroidery foot to move the fabric in any direction. Allows you to draw with the thread on the machine.

Slow stitch

4



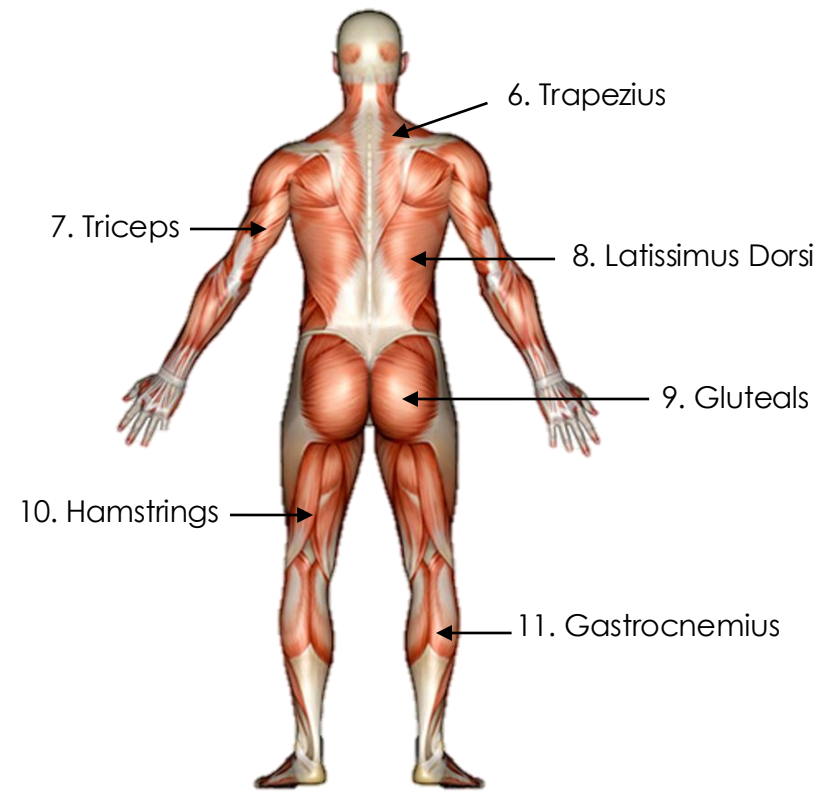
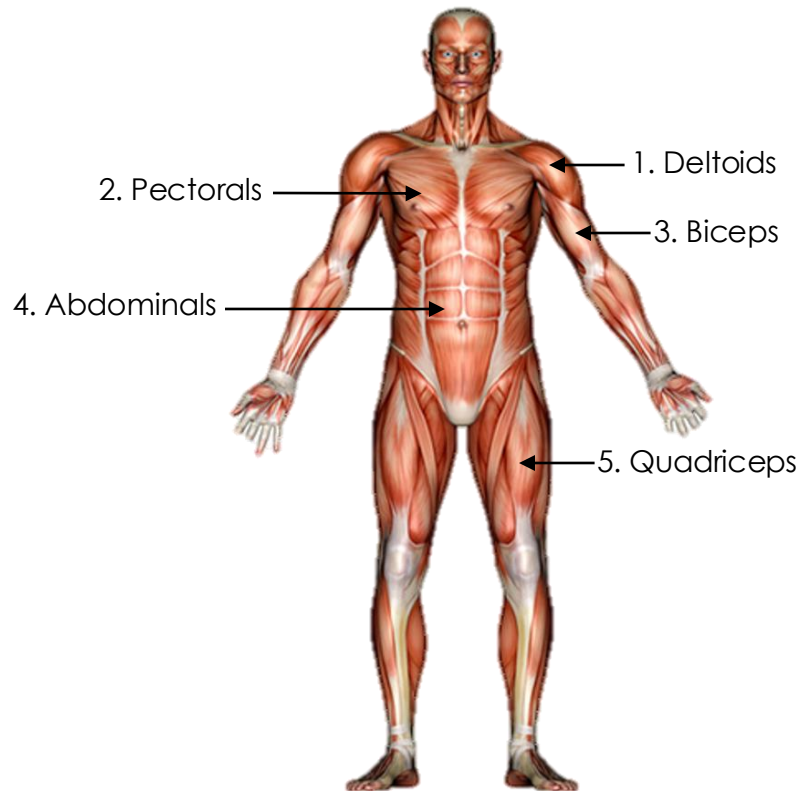
Hand embroidery which incorporates multi layered fabrics, different textures and colours of fabrics. Hand embroidery is then incorporated on the top.

3. Presentation

1	Contextual Analysis (Analysing the work of artists)	Annotations or keywords from a critical and analytical perspective about the artist's work. This will consist of a <i>Personal Response</i> and reflections on the <i>Aesthetics, Meaning and Context</i> .
2	Critical Reflection (Analysing your work as it develops)	The process of reflecting critically on your work as it develops. Annotations should explain how you have gone from one idea to the next. (<i>What, How, Why?</i>)
3	Good Composition (Layout)	Content carefully positioned which looks well-balanced and aesthetically pleasing.
4	Titles/ Headers	Clear and stylistic labels which are influenced by the contextual sources.
5	Margins & Borders	Gaps in or around a composition which are evenly spaced and carefully measured.
6	Supporting Images	High resolution primary or secondary images which have an original aspect ratio. (not stretched or squashed).
7	Biographical Information	A short, concise summary of significant facts about an artist, their career and ideas.

Key Vocabulary

1	Artist Study	A painting, drawing or sculpture emulating the techniques and approaches of the artist.
2	Elements of Art	The visual components of tone, form, pattern, line, colour, shape, space and texture. May be two or three-dimensional, descriptive, implied or abstract.
3	Assessment Objective 1 (AO1)	AO1: Develop ideas through investigations, demonstrating critical understanding of sources.
4	Assessment Objective 2 (AO2)	AO2: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.

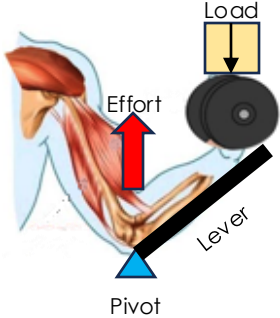
1.1.b The structure and function of the Muscular System**KG1 – Location of major muscle groups****KG2 – The roles of muscles in movement**

	Role	Definition	Example
12	Agonist	Muscle that creates the movement (Prime mover)	Diagram illustrating the roles of muscles in a bicep curl. The bicep is the Agonist, the triceps is the Antagonist, and the shoulder muscles are the Fixator.
13	Antagonist	Muscle that works in opposition to the agonist	
14	Fixator	Muscle that stabilises one part of the body to prevent unwanted movement	

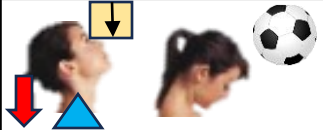
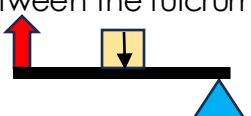
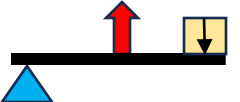
KG3 - Antagonistic muscle actions

	Joint	Muscle Group	Movement	Example	
15	Elbow	Biceps	Flexion		Preparing to shoot in netball
16		Triceps	Extension		Execution of shot in netball
17	Shoulder	Deltoids	Flexion		Throwing the ball up in a tennis serve
			Extension		Preparing to bowl in rounders
			Abduction		Outward phase of star jump
18		Latissimus Dorsi	Adduction		Inward phase of star jump
19		Pectorals	Horizontal adduction		Releasing a discus
20		Trapezius	Extension of the neck		Binding with opponent during a rugby scrum
21	Knee	Hamstring	Flexion		Preparing to kick a football (kicking leg)
22		Quadriceps	Extension		Execution of kicking a football (kicking leg)
23	Vertebral Column	Abdominals	Flexion		Curl the torso up during a sit-up
24	Hip	Gluteals	Extension		During an arabesque in gymnastics
			Abduction		Outward phase of star jump
			Rotation		Moving into 1 st position in ballet
25	Ankle	Gastrocnemius	Plantarflexion (pointing toes)		A ballet dancer as they go <i>en pointe</i>

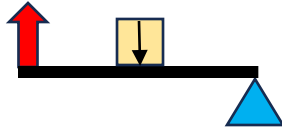
1.1.c Movement Analysis**KG1 – Lever Systems**

1	Lever	A rigid bar that moves around a fulcrum when effort is applied to move a load		
	Component	Definition	Example	
2	Lever 	A rigid bar		The radius and ulna are the rigid levers
3	Fulcrum 	A fixed pivot point		The elbow joint is the pivot point around which movement occurs
4	Effort 	Force applied to move the lever		The bicep is the effort that applies the force to cause movement
5	Load 	The weight / resistance to be moved		The dumbbell is the load being moved

KG2 – Classes of lever

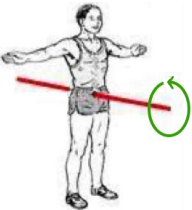
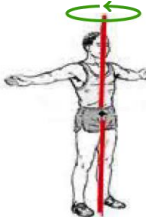
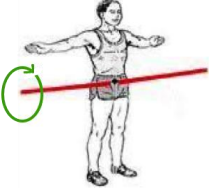
	Class of Lever	Description	Acronym	Example
6	First class lever	Fulcrum is between the effort and load 	EFL	 Heading a football
7	Second class lever	The load is between the fulcrum and the effort 	ELF	 Long jump take off
8	Third class lever	The effort is between the fulcrum and load 	FEL	 Bicep curl

Mechanical advantage

	Definition	Class of lever with mechanical advantage	Example
9	A lever can move a large load with a smaller effort because The load is closer to the fulcrum than the effort is	All second-class levers Some first-class levers 	 Long jump take off

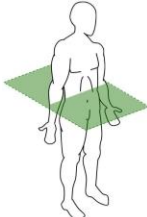
KG3 – Axes of movement

 We **turn around** an axis

	Axis	Definition	Sporting Example
10	Frontal Axis	 Axis that goes from Front to back	 Cartwheel in gymnastics
11	Longitudinal Axis	 Axis that goes top to bottom (Runs longways)	 Spin in ice skating
12	Transverse Axis	 Axis that goes from side to side (Splits you top and bottom)	 Front somersault in diving

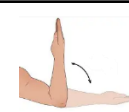
KG3 – Planes of movement

 We **move along** a plane

	Plane	Definition	Movement(s)	Sporting Example
13	Frontal Plane	 A vertical plane dividing the body into front and back	Abduction Adduction	 Cartwheel
14	Transverse Plane	 A horizontal plane dividing the body into top and bottom	Rotation	 Discus throw
15	Sagittal Plane	 A vertical plane dividing the body into left and right (side to side)	Flexion Extension	 100m Sprint

Memory hook
AXIS
Fat
PLANE
Fred

Likes
To

Taste
Sweets


Notes