

KNOWLEDGE ORGANISER YEAR 9 2024/2025

Name:

Student Number:

C2



Every day all students at DAA are expected to be the best they can be.

All students are expected to achieve their mission as detailed below and strive for this every day by giving 100% at all times.

“At DAA, I developed good moral principles and achieved exceptional outcomes that enabled me to have ambitious life choices”

During their time with us they will achieve this through their industry by showing hard work and resilience in all that they do every day.

Our core values are:

Happiness

The joy of life and learning. In the context of your emotional state, including positive and pleasant emotions ranging from contentment to intense joy. It is important you to have a grasp on your own happiness and well-being and your capacity to influence other people's happiness and well being

Industry

(Hard work & resilience) – This is how hard you work and how you overcome the challenges you face in your learning and life; if you can rise to the challenge when it matters you will be successful.

Responsibility

This is being accountable for the choices that you make and making the right choices to be organised, behave properly and achieve as much as you can. Taking responsibility for your learning will help you to be successful at DAA.

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CYCLE 2 SPELLINGS

WEEK 2	
1. agility	Ability to move quickly and easily.
2. element	A substance made up of one type of atom.
3. erosion	The wearing away and removal of material.
4. ammunition	Projectiles fired from weapons.
5. salvation	To save the soul from sin .
6. communism	State control of goods and services.
7. deportation	Forcing someone to leave a country.
8. legislation	The process of making or enacting laws .
9. equilateral	Having all its sides the same length .
10. illusion	A deceptive appearance or impression.

WEEK 4	
1. sibilance	A repeated 'S' sound.
2. filtration	Separates insoluble solid from a liquid using filter paper.
3. urbanisation	Increase in the proportions of people living in cities .
4. incarnate	God is Jesus / human in flesh.
5. impersonal	God is beyond human understanding .
6. attrition	Type of war that wears down the enemy.
7. bayonet	Stabbing weapon attached to rifles.
8. quadrilateral	A four-sided polygon.
9. neutrality	Not getting involved in a conflict.
10. liaison	Communication between two or more groups.

WEEK 3	
1. abrasion	The wearing away of cliffs.
2. compound	A substance made of 2+ types of atom and chemically joined .
3. attrition	Erosion caused when rocks are broken into smaller pieces.
4. trinity	God is the father, holy spirit and son.
5. resurrection	Jesus raised from the dead .
6. liberty	Freedom from oppression.
7. abdication	The act of the monarch leaving the throne.
8. deterrent	Something that discourages someone from doing something.
9. denominator	The bottom part of a fraction .
10. artillery	Larger guns.

WEEK 5	
1. euphemism	A polite way of saying something controversial .
2. crystallisation	The process of forming crystals .
3. migration	The movement of people from one place to another to live.
4. ascension	Jesus rose to heaven after resurrection, teaching final lessons .
5. grace	God's unconditional love.
6. cavalry	Soldiers on horses.
7. perpetrator	Active participants in the Holocaust.
8. immediately	At once; instantly
9. recurring	A decimal number with a digit that repeats forever .
10. distribution	How data is shared and spread out.

WEEK 6	
1. motifs	A recurring subject, image, theme or idea within a text.
2. distillation	Selective boiling and condensation of a component in a liquid.
3. chlorine	Used to purify water.
4. crucifixion	The killing of Jesus / suffering on a cross .
5. motif	A theme or idea that is frequently repeated .
6. grenades	Explosives thrown by hand.
7. foreshadow	When a writer hints at what is to come.
8. estimate	Rough calculation of the value, number or quantity of something.
9. gradient	How steep a line is (divide distance up by distance across.)
10. criticism	The expression of disapproval of someone or something.

WEEK 7	
1. hamartia	The flaw of a hero which leads to their tragic downfall .
2. chromatography	Separates a mixture of coloured liquids.
3. weathering	Natural process causing the breakdown of rocks.
4. stewardship	Humans are carers of the Earth .
5. collectivisation	The state merges several independent businesses into one.
6. morale	Feeling of goodwill or hope .
7. stalemate	Complete inability to move or gain land.
8. foreign	External to one's own country or nation.
9. feasible	Possible to do easily or conveniently.
10. parapet	Position where soldiers can fire from trenches.

WEEK 8	
1. agility	Ability to move quickly and easily.
2. element	A substance made up of one type of atom.
3. erosion	The wearing away and removal of material.
4. ammunition	Projectiles fired from weapons.
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9. equilateral	Having all its sides the same length .
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WEEK 12	
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9. feasible	Possible to do easily or conveniently.
10. parapet	Position where soldiers can fire from trenches.

WEEK 2	WEEK 3	WEEK 4	WEEK 5	WEEK 6
1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.
4.	4.	4.	4.	4.
5.	5.	5.	5.	5.
6.	6.	6.	6.	6.
7.	7.	7.	7.	7.
8.	8.	8.	8.	8.
9.	9.	9.	9.	9.
10.	10.	10.	10.	10.
WEEK 7	WEEK 8	WEEK 9	WEEK 10	WEEK 11
1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.
4.	4.	4.	4.	4.
5.	5.	5.	5.	5.
6.	6.	6.	6.	6.
7.	7.	7.	7.	7.
8.	8.	8.	8.	8.
9.	9.	9.	9.	9.
10.	10.	10.	10.	10.
WEEK 12	WEEK 13	NOTES		
1.	1.			
2.	2.			
3.	3.			
4.	4.			
5.	5.			
6.	6.			
7.	7.			
8.	8.			
9.	9.			
10.	10.			

SECTION 1 - Social and historical context

The American Dream – The American dream is the belief that anyone, regardless of where they were born or what class they were born into, can attain their own version of success in a society in which upward mobility is possible for everyone. The American dream is believed to be achieved through sacrifice, risk-taking, and hard work, rather than by chance. Homeownership and education are often seen as paths to achieving the American dream.

The Civil Rights Movement – The civil rights movement was a struggle for social justice that took place mainly during the 1950s and 1960s for Black Americans to gain equal rights under the law in the United States. The story highlights many racial issues in Chicago and in the United States as a whole during the Civil Rights Movement. One of the major issues presented is race restriction in neighborhoods. Race-restricted housing areas prohibited Black families from living in White communities

1950's American pop culture – The 1950's is well-remembered to be the Golden Age of Broadway and Hollywood. The rising popularity of film and theatre came as these pastimes became more affordable for people and as technology advanced. Major studios such as Paramount, Fox and Warner Bros dominated the screens along with iconic masterpieces from Walt Disney such as Cinderella and Peter Pan.

SECTION 2 - Timeline of key events

1950 – Korean War Begins

1951 – Colour TV

1952 – Polio Vaccine

1953 – **Rosenberg's Executed** – accused of being Soviet spies during the War and sentences to execution

1955 – **Rosa Parks** - an American activist in the civil rights movement best known for her pivotal role in the Montgomery bus boycott.

1956 – **Elvis Presley** - an American singer and actor. Dubbed the "King of Rock and Roll", he is regarded as one of the most significant cultural figures of the 20th century.

1957 – **Sputnik** - the first artificial Earth satellite. It was launched into an elliptical low Earth orbit by the Soviet Union on 4 October 1957 as part of the Soviet space program.

SECTION 3 - Key themes

Generational divide - Beneatha and Mama's dreams are separated because of Beneatha's dreams of becoming a doctor. Mama undermines Beneatha as a doctor or any other female doctor because Mama was raised in a generation where the workforce was dominated by men while women were housewives. Another choice Mama disagrees with is Beneatha choice to not get married. Mama pesters Beneatha many times about marriage, but Beneatha wants to be a strong independent female doctor and not a housewife

Gender roles - *A Raisin in the Sun* anticipates the massive changes in gender relations – principally, the rise of feminism and the Sexual Revolution – that would transform American life in the 1960s. Hansberry explores controversial issues like abortion (which was illegal in 1959), the value of marriage, and morphing gender roles for women and men. Each of the Youngers takes a different attitude towards shifting gender roles, and the characters' perspectives shed light on their identities. Beneatha, holds the most modern views, pursuing her dream to become a doctor (a male-dominated profession at the time) and telling a shocked Mama and Ruth that she isn't concerned about marriage—and that she might not ever get married at all.

Money - Money provides a constant source of conflict and preoccupation in the Younger household. Within moments of the play's opening, Walter Lee asks Ruth, "Check coming today?" in reference to the insurance payment that his mother is due to receive as a result of her husband's death. The pursuit of money reveals a lot about each character's dreams and desires.

Race - In 1959 much of the United States, including Chicago, remained *de facto* segregated, meaning that racial segregation persisted in education, employment, and housing even though the Supreme Court had overturned segregation that was established by law as unconstitutional.

Dreams - Each character clings to distinct dreams, which have long been deferred due to socioeconomic limitations placed on the family by racism. The persistence of these dreams lends the play a pervasive sense of hope, despite the conclusion's foreshadowing of coming struggles for the family in Clybourne Park.

<u>Describes</u>	<u>Suggests</u>	<u>Shows</u>	<u>Represents</u>	<u>Uses</u>	<u>Causes</u>	<u>Shows importance</u>	<u>Makes clear</u>	<u>Refers to</u>	<u>Demonstrates</u>	<u>Puts across</u>	<u>Creates</u>
Depicts	Implies	Reveals	Symbolises	Employs	Provokes	Emphasises	Clarifies	Alludes to	Proves	Conveys	Builds
Portrays	Insinuates	Displays	Epitomises	Utilises	Incites	Accentuates	Exemplifies	Makes reference to	Displays	Expresses	Establishes
Illustrates		Indicates	Denotes	Exploits	Arouses	Highlights					Conjures up
Evokes		Reflects			Elicits						
		Signifies									

SECTION 4 A- Key terminology:

Tragic Flaw: A character trait which may be responsible for the downfall of a tragic hero

Foreshadow: when a writer hints at what is to come

Stage Directions: A description of the physical actions or what is seen rather than said in the play

Dialogue: The lines spoken by the characters in the play

Accent: a particular way of pronouncing words which can reveal where the speaker is from

Dialect: vocabulary and or grammar which is specific to a particular group, area or region

Slang: very informal language

Standard English: the dialect of English that is used in formal speech and writing

Protagonist: The main character in the play

SECTION 4 B- Key terminology:

Tragedy: A play in which the leading character experiences reversal of fortune, leading to an unhappy ending

Motif: A theme or idea that is frequently repeated throughout the play; a recurring subject

Symbolism: Where an image, object, idea or symbol is used to represent something other than its literal meaning

Stereotype: a common and oversimplified idea of what a particular type of person or thing is like

Soliloquy: when a character speaks directly to the audience as if thinking aloud, revealing their inner thoughts, feelings and intentions

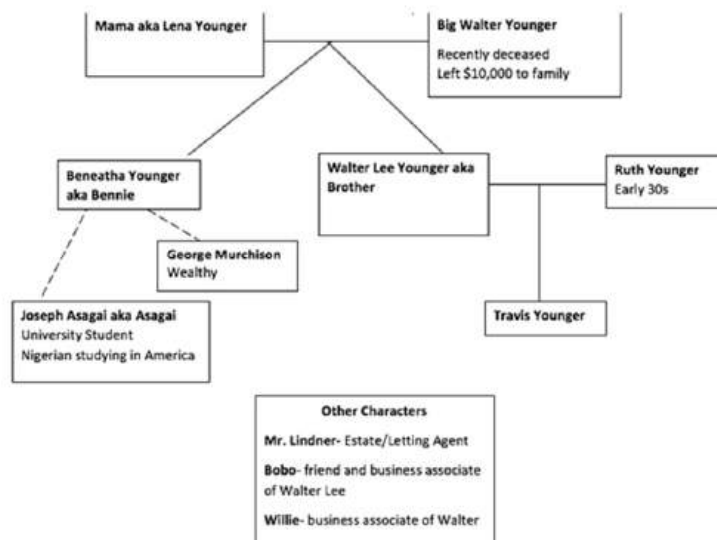
Juxtaposition: two ideas, images or objects positioned close together to highlight their differences

Dramatic Irony: when the audience or reader is aware of something but the character in the play is not

Dramatic techniques: the purposeful use of staging and lighting to create particular effects on the stage

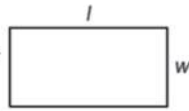
SECTION 5 - The cultural position of dance

In African societies, dance serves a complex diversity of social purposes. Dance in Africa expresses feelings, not only of worship, but also of social communication: passionate relational feelings and even transitional life stages, as persons move from one stage of maturity to another. It also communicates virtues, values and even teachings about social manners that are used to help individuals mature and celebrate.

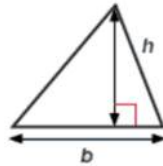


Section 1: Formulae

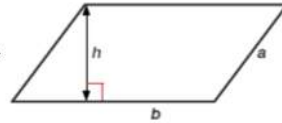
1) Area of rectangle = $l \times w$



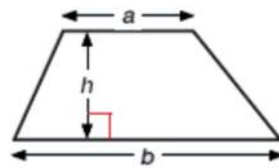
2) Area of triangle = $\frac{b \times h}{2}$



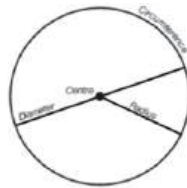
3) Area of parallelogram = $b \times h$



4) Area of a trapezium = $\frac{1}{2}(a + b)h$

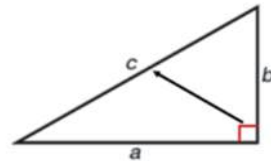


5) Area of a circle = πr^2



6) Circumference of a circle = πd and $2\pi r$

7) Pythagoras' Theorem: $a^2 + b^2 = c^2$



Section 2: Conversion

10mm = 1cm

100cm = 1m

1000m = 1km

1000mg = 1g

1000g = 1kg

1000kg = 1 tonne

1000ml = 1 litre

1000cm³ = 1 litre

100p = 1 pound

24 hours = 1 day

60 seconds = 1 minute

14 days = A fortnight

7 days = 1 week

60 minutes = 1 hour

365 days = 1 year

Section 3: Percentage

% of amount: 36% of 120 = 0.36×120

Multiplier: Increase by 16% = $100 + 16 = 116\% \rightarrow 1.16$

Decrease by 23% = $100 - 23 = 77\% \rightarrow 0.77$

Compound interest: investment x multiplier^{no. of years}

% change: $\frac{\text{amount changed}}{\text{Original}} \times 100$

Section 4: Rules of indices

The first rule: $a^n \times a^m = a^{m+n}$

The second rule: $(a^n)^m = a^{mn}$

The third rule: $a^m \div a^n = a^{m-n}$

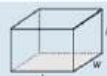
The fourth rule: $a^0 = 1$

The fifth rule: $a^1 = a$

Section 5: Volume & SA

Volumes

Cuboid = $l \times w \times h$



Prism = area of cross section x length

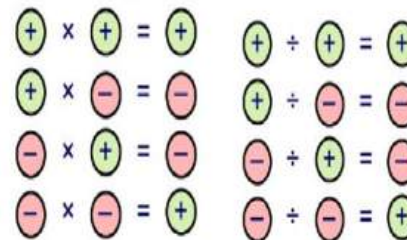


Surface Area (SA):

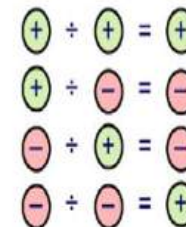
The surface area of a solid object is a measure of the total area that the surface of the object occupies.

Section 6: Negative Number Rules

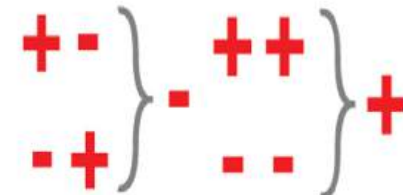
Multiplication



Division

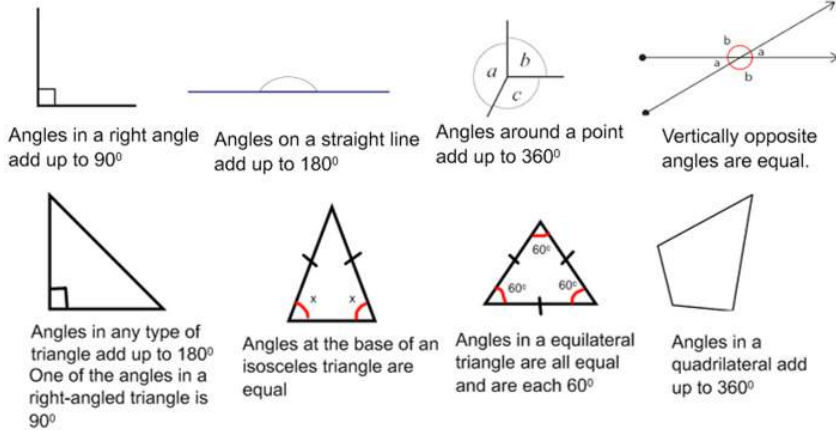


Addition and Subtraction

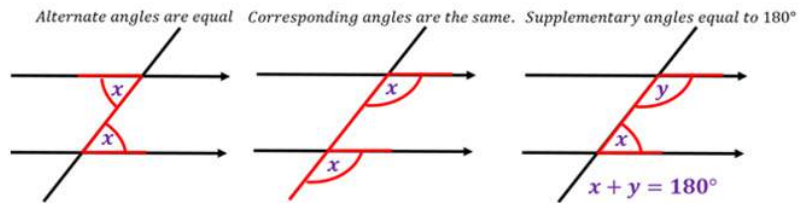


Section 7: Angle Theories

1) Basic Angle Theories (learn the full sentence)



2) Angles in Parallel Lines (learn the full sentence)



3) Angles in polygons: Formulae

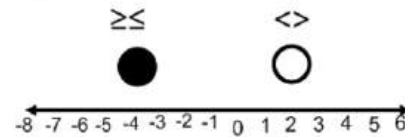
- a) The sum of interior angles = $(n - 2) \times 180$
- b) One exterior angle = $\frac{360^\circ}{n}$ this is only use for regular polygons

Section 8: Fractions

- 1) **Adding and subtracting fractions**- you must find a common denominator
- 2) **Multiplying fractions** - Multiply the numerators then multiply the denominators.
- 3) **Dividing fractions** - Keep Change Flip (KCF)

Section 9: Inequalities

\geq : Greater than, greater than or equal to
 $< \leq$: Less than, less than or equal to



Section 10: Equation of a Line

The equation of a line: $y = mx + c$ where m is the gradient and c is the y intercept.

$M = \frac{\text{change in } y}{\text{change in } x}$

Section 11: Averages:

- Mode** - The most common (popular) number / word / picture
- Range** - The largest number subtract the smallest number
- Median** - Put the numbers in order and find the middle number
- Mean** - Add up all the values and divide by how many values there are

Section 12: Venn Diagrams








Section 13: Speed

Speed

$\text{speed} = \frac{\text{distance}}{\text{time}}$



Section 14 Linear Graphs		
$y = x$	every point on this line, the y coordinate is equal to the x coordinate e.g. (3,3), (-2,-2), (0,0)	
$y = -x$	every point on this line, the y coordinate is equal to the negative of the x coordinate e.g. (3, -3), (-2,2)	
$y = a$	these lines are always horizontal for example $y = 2$, every point on this graph, the y coordinate equals 2, e.g. (0,2), (5,2)	
$x = a$	these lines are always vertical for example $x = 2$, every point on this graph, the x coordinate equals 2, e.g. (2,0), (2,5)	
$y = kx$	these lines always go through the origin for example $y = 2x$, every point on this graph, the y coordinate is double the x coordinate, e.g. (2, 4), (1, 2)	
$y = mx + c$	the general equation of a linear graph m is the gradient c is the y-intercept when plotting: use a table of values, substitute in values of 'x' to generate 'y', plot the coordinates, join with line	
gradient	How steep a line is. Can be positive or negative. $\frac{\text{(Change in y)}}{\text{(Change in x)}}$ It gives the rate of change.	
y- intercept	where the line crosses the y-axis (0, a)	

Section 15 Sequences	
sequence	a pattern of terms/numbers which follow a rule
position-to-term rule (n^{th} Term)	a rule which allows you to calculate any term that is in the n^{th} position of the sequence
generate	to produce or create
linear sequences	a sequence where the difference between terms increases or decreases by the same amount each time also known as an arithmetic sequence use DiNO to find the n^{th} term to generate a sequence substitute values of 'n' in, e.g. 2nd term, $n=2$ algebraically: $x_n = an + b$
common difference	the amount we add or subtract each time in a linear sequence
quadratic sequences	a sequence of numbers with an n^2 in the position to term rule (n^{th} term) the second difference between consecutive terms is constant algebraically: $x_n = an^2 + bn + c$
geometric sequences	a sequence of numbers where each term is found by multiplying the previous one by a number called the common ratio 'r' algebraically: $x_n = ar^{n-1}$ increasing: the ratio is an integer, decreasing: the ratio is a fraction
common ratio (r)	the amount we multiply by each time in a geometric sequence, can be a fraction

Section 16 EQUATIONS AND INEQUALITIES	
rearrange	changing the subject of a formula sometimes called transposing use inverse operations and the balancing method, like when we solve an equation
inverse	the opposite
balance an equation	do the same to both sides of the "=" use to solve an equation, or rearrange a formula
subject of an equation	a single unknown or variable that everything else is equal to
solution of an equation	a value we can put in place of a variable that makes the equation true
order of operations	the laws regarding the order in which to calculate, used in algebra too brackets, other, multiply and divide, add and subtract
solving inequalities	using the balancing method to write an inequality in its simplest form
solving quadratic equations	To solve you must factorise the quadratic equation then set each bracket equal to zero to find solutions for x.

1 – Cell Organisation

Cells	Building blocks of life.
Tissue	Group of similar cells that work together.
Organ	Group of different tissues that work together.
Organ System	Group of organs that work together.
Organism	Group of organ systems that work together.

2 - Enzymes

Enzymes	Biological catalysts -> increase the speed of a reaction without being changed or used up. They are proteins.
Substrate	Molecule that binds to the active site of an enzyme. Forms an enzyme-substrate complex.
Lock and Key Model	Only one type of substrate can fit in the active site of an enzyme.
Denaturing	Active site changes shape -> due to high temperatures or extreme pH -> substrate can no longer bind.

3 - Digestive Enzymes

Enzyme	Function	Site of production	Site of action
Carbohydrase <u>e.g.</u> amylase	Carbohydrates -> simple sugars <u>e.g.</u> starch -> maltose	Salivary glands Pancreas Small intestine	Mouth Small intestine
Protease <u>e.g.</u> pepsin	Proteins -> amino acids	Stomach Pancreas Small intestine	Stomach Small intestine
Lipase	Lipids -> fatty acids and glycerol	Pancreas Small intestine	Small intestine

4 - Other Digestive Chemicals

Bile	Made in liver -> stored in gall bladder -> released into small intestine. Two functions: 1. Alkaline so neutralises acidic food from stomach. 2. Emulsifies lipids (breaks into smaller droplets) -> larger S.A..
Hydrochloric acid	Found in stomach. Two functions: 1. Kills pathogens. 2. Provides optimum pH for pepsin enzyme.

5 – Food Tests

Prepare sample	Crush food -> add water -> mix -> filter out solid bits.
Test for sugars	Benedict's solution -> put in water bath at 75 °C -> turns from blue to green, yellow or brick-red.
Test for starch	Iodine solution -> turns from brownny-orange to blue-black.
Test for proteins	Biuret solution -> turns from blue to pink or purple.
Test for lipids	Sudan III solution -> forms a bright red top layer. Or shake with ethanol -> forms a cloudy emulsion.

6 - Lungs

Structure	Trachea (windpipe) -> bronchi -> bronchioles -> alveoli
Oxygen	Diffuses from alveoli into red blood cells in capillaries.
Carbon dioxide	Diffuses from blood plasma in capillaries into alveoli.
Adaptations of alveoli for gas exchange	1. Many small alveoli -> large surface area. 2. Thin walls -> short diffusion pathway. 3. Good ventilation and capillary network -> steep concentration gradient maintained.

7 - Heart

Double Pump	Right side pumps blood to lungs. Left side pumps blood to body cells.
Vena cava	Carries deoxygenated blood from body cells into right atrium.
Pulmonary artery	Carries deoxygenated blood from right ventricle to lungs.
Pulmonary vein	Carries oxygenated blood from lungs to left atrium.
Aorta	Carries oxygenated blood from left ventricle to body cells.
Pacemaker	Cells in right atrium wall that control resting heart rate. Produce a small electrical impulse -> makes muscle cells contract.

1 – States of Matter

Particle Model	Atoms or molecules represented by small, solid, spherical particles. Particles identical in each state – only arrangement and energy change.
Solids	Particles are regularly arranged, close together and vibrating in fixed positions. Strong forces.
Liquids	Particles are randomly arranged, close together and moving around each other. Weak forces.
Gases	Particles are randomly arranged, far apart and moving randomly in all directions at a range of speeds. No forces.

2 – Gas Pressure

How do gases exert pressure?	Particles collide with the walls of the container and exert a force. Pressure is the force per unit area.
Temperature of a gas	Related to the average kinetic energy of the particles.
Temperature and pressure	Temperature of gas increases -> particles have more K.E. -> move faster -> more frequent collisions with walls -> and larger force exerted -> pressure increases.
High pressure	May cause container to break, burst or explode.

3 – Changes of State

3 key facts	1. Physical changes. 2. Mass is always conserved. 3. Easily reversible.
Melting	Solid to liquid. Energy supplied. Forces weaken. Occurs at melting point when heating.
Boiling	Liquid to gas. Energy supplied. Forces break. Occurs at boiling point when heating.
Condensing	Gas to liquid. Energy given out. Forces reform. Occurs at boiling point when cooling.
Freezing	Liquid to solid. Energy given out. Forces strengthen. Occurs at melting point when cooling.

4 – Density

Definition	Mass per unit volume. Measured in kg/m^3 .
Equation	density = mass / volume
Density of regular solid (e.g. cuboid)	1. Measure length, width and height with a ruler. 2. Calculate volume: length x width x height. 3. Measure mass with a mass balance. 4. Use density equation.
Density of irregular solid (e.g. a stone)	1. Fill eureka can with water and insert object. 2. Collect displaced water in a measuring cylinder to measure volume. 3. Measure mass with a mass balance. 4. Use density equation.
Density of liquid	1. Measure volume with a measuring cylinder. 2. Measure mass with a mass balance. 3. Use density equation.

5 – Internal Energy and Energy Transfers

Internal energy	Total kinetic energy and potential energy of all the particles in a system.	
Change in internal energy	Causes either a change in temperature or a change in state.	
Heating & cooling curves	Diagonal line	Temperature is increasing or decreasing.
	Horizontal line	A change of state is occurring (temperature remains constant).
Specific heat capacity	Definition	Amount of energy required to increase the temperature of 1 kg of a substance by 1 °C. Measured in $\text{J/kg } ^\circ\text{C}$.
	Equation	Energy change = mass x SHC x temp change
Specific latent heat	Definition	Amount of energy required to change the state of 1 kg of a substance without changing its temperature. Measured in J/kg .
	Equation	Energy change = mass x specific latent heat

1 – Blood Vessels

Arteries	Carry blood away from the heart. Thick muscle and elastic layer in walls to withstand high pressure .
Capillaries	Allow exchange of substances between blood and cells . Tiny with thin permeable walls (one cell thick) .
Veins	Carry blood back to heart . Valves to prevent backflow of blood . Larger lumen as blood at lower pressure .

2 – Parts of the Blood

Red blood cells	Carry oxygen . Biconcave disc shape . No nucleus . Contain haemoglobin -> binds to oxygen -> forms oxyhaemoglobin .
White blood cells	Fight infections . Can engulf and digest pathogens (phagocytosis). Can produce antibodies and antitoxins .
Platelets	Small fragments of cells . Clot the blood and form scabs by producing fibrin fibres . Stops bleeding .
Plasma	Liquid part of the blood -> carries blood cells, platelets, glucose, amino acids, carbon dioxide, urea, hormones .

3 – Cardiovascular Diseases

Cardiovascular diseases	Diseases of the heart and blood vessels .
Coronary artery	Supplies heart muscle tissue with oxygenated blood .
Coronary heart disease	Fatty deposits build up -> narrows coronary artery -> heart tissue supplied with less blood -> can cause heart attack .
Stents	Wire mesh tube -> keeps arteries open .
Statins	Lowers bad cholesterol -> slows down rate of formation of fatty deposits .

4 – Causes of Disease

Communicable diseases	Caused by pathogens -> can spread between people / animals . <u>E.g.</u> measles, malaria, HIV, salmonella.
Non-communicable diseases	Not caused by pathogens -> cannot spread . Often last a long time and get worse . <u>E.g.</u> asthma, cancer, heart disease.
Risk factors	Increase your chance of getting a disease .

5 – Tumours and Cancer

Tumour	Changes in cells -> uncontrolled cell division -> forms a tumour (a mass of cells) .
Benign tumours	Not cancerous . Stay in one place .
Malignant tumours	Cancerous . Cells can break off -> travel in blood -> form secondary tumours .
Cancer risk factors	Smoking, obesity, UV exposure, viral infection, genetics .

6 – Plant Tissues

Palisade mesophyll tissue	Where most photosynthesis occurs -> tightly packed palisade cells -> contain many chloroplasts .
Spongy mesophyll tissue	Loosely packed cells -> air spaces to allow gas diffusion .
Epidermal tissue	Covers plant -> coated in waxy cuticle -> reduces water loss .
Phloem tissue	Forms tubes that carry food substances (dissolved sugars) . Columns of living cells with small pores in end walls.
Xylem tissue	Forms tubes that carry water and mineral ions . Columns of dead cells with no end walls . Strengthened with lignin .
Meristem tissue	Found at growing tips of shoot and roots . Contain stem cells .

7 – Transpiration and Translocation

Translocation	Movement of dissolved sugars in phloem tubes .
Transpiration stream	Movement of water from the roots, through xylem tubes and out of the leaves (by evaporation and diffusion) .
Transpiration rate	Increased by: higher light intensity, higher temperature, faster air flow, lower humidity .
Potometer	Used to estimate rate of transpiration by measuring uptake of water by a plant .
Stomata	Tiny holes in lower epidermis . Guard cells control opening and closing . Allow gas exchange and water loss .

1 – States of Matter

Particle Theory		<u>Models</u> particles as small, solid, inelastic spheres.
Solid	Particles	Regular arrangement, touching each other, strong forces, vibrating in fixed positions.
	Properties	Fixed shaped and volume. Cannot flow or be compressed.
Liquid	Particles	Random arrangement, touching each other, weak forces, moving around each other.
	Properties	No fixed shape but fixed volume. Can flow but cannot be compressed.
Gas	Particles	Random arrangement, not touching each other, no forces, moving randomly in straight lines at a range of speeds.
	Properties	No fixed shape or volume. Can flow and can be compressed.

2 – Changes of State

Melting (S → L)	Particles gain energy and move faster → forces <u>weaken</u> → particles break free from positions.
Boiling (L → G)	Particles have enough energy to break the forces between them.
Condensing (G → L)	Particles no longer have enough energy to overcome forces. Forces re-form .
Freezing (L → S)	Particles lose energy and move slower → forces strengthen → particles held in positions.
Melting Point	Temperature at which a <u>solid melts</u> or a <u>liquid freezes</u> .
Boiling Point	Temperature at which a <u>liquid boils</u> or a <u>gas condenses</u> .
Energy Required	Stronger forces → more energy required → higher melting and boiling points.

3 – Formation of Ions

Ions	Charged particles.
Cations	Positive ions formed when electrons are lost.
Anions	Negative ions formed when electrons are gained.
Group 1 metals	Lose 1 electron → form ions with 1+ charge.
Group 2 metals	Lose 2 electrons → form ions with 2+ charge.
Group 6 non-metals	Gain 2 electrons → form ions with 2- charge.
Group 7 non-metals	Gain 1 electron → form ions with 1- charge.

4 – Ionic Bonding

Electron Transfer	Electrons transferred from metal to non-metal atoms. Both gain full outer shells.
Ionic Bond	Electrostatic attraction between a positive metal ion and a negative non-metal ion.
Structure of Compound	Lattice of oppositely charged ions held together by strong electrostatic forces in all directions.
Melting & Boiling Points	High → many strong electrostatic forces → require a lot of energy to break.
Electrical Conductivity	Solid = does not conduct → ions not free to move Molten or aqueous = does conduct → ions free to move.

5 – Explaining Reactivity Trends in Group 1 and 7

Group 1 Trend	More reactive as you go down the group.
Group 1 Explanation	Down the group: number of shells increases → outer shell electron further from nucleus → less attraction → electron lost more easily.
Group 7 Trend	Less reactive as you go down the group.
Group 7 Explanation	Down the group: number of shells increases → outer shell electrons further from nucleus → less attraction → electron gained less easily.

1 – Covalent Bonding

Covalent Bond	Bond formed between two non-metal atoms when they share a pair of electrons.
Double Covalent Bond	Bond formed between two non-metal atoms when they share two pairs of electrons .
Electrostatic Attraction	Between the negative shared electrons and the positive nuclei of the atoms.

2 – Simple Molecular Covalent Substances

Structure	Small molecules made up of atoms covalently bonded together. Weak intermolecular forces between molecules. <u>E.g.</u> methane (CH_4), ammonia (NH_3).
Melting & Boiling Points	Low -> intermolecular forces are weak -> do not require much energy to break.
Size of Molecule	Larger molecules -> stronger intermolecular forces -> higher melting and boiling point.
Conductivity	Do not conduct -> no charged particles.

3 – Polymers Covalent Substances

Structure	Long chain molecules made up of repeating units called monomers . Intermolecular forces between molecules. <u>E.g.</u> poly(ethene)
Melting & Boiling Points	Higher than simple molecular covalent as larger molecules . But lower than ionic and giant covalent.
Conductivity	Do not conduct -> no charged particles.

4 – Giant Covalent Substances

Structure	Giant molecule made up of very many atoms all bonded to each other by strong covalent bonds . <u>E.g.</u> diamond, graphite and silicon dioxide (SiO_2).
Melting & Boiling Points	High -> many strong covalent bonds -> require a lot of energy to break.
Conductivity	Do not conduct -> no charged particles (except graphite).

5 – Allotropes of Carbon (contain covalent bonds)

Diamond	Each carbon bonded to 4 others. Very hard . Very high melting point. Does not conduct . Uses -> cutting and drills .
Graphite	Each carbon bonded to 3 others. Sheets of atoms arranged in hexagons . Weak forces between sheets -> can slide over each other. Conducts electricity -> free electrons . Uses -> lubricants and pencil lead .
Graphene	Single sheet of graphite. Very light and conducts electricity . Uses -> strengthening materials and electronics .
Fullerenes	Molecules of carbon shaped like tubes or balls . <u>E.g.</u> Buckminsterfullerene = C_{60} . Uses -> lubricants, electronics, catalysts and strengthening .

6 – Metallic Bonding

Structure	Lattice of positively charged metals ions surrounded by a sea of delocalised electrons . Held together by strong electrostatic forces .
Melting & Boiling Points	High -> many strong electrostatic forces -> require a lot of energy to break.
Electrical Conductivity	Conduct electricity -> free electrons can move through whole structure -> carry charge .
Thermal Conductivity	Conduct heat -> free electrons can move through whole structure -> carry thermal energy .
Malleability	Can be bent or hammered into shape -> layers of atoms can slide over each other.
Alloys	Mixture of metals or a mixture of a metal and a non-metal .
Strength of Alloys	Different sized atoms -> distorts layers so they cannot slide over each other -> stronger than pure metal .

4.1 - Structure of an Atom

Protons	Found in the nucleus , mass = 1 , charge = +1 .
Neutrons	Found in the nucleus , mass = 1 , charge = 0 .
Electrons	Found on the energy levels , mass = very small , charge = -1 .
Atom	Overall charge = zero , radius = 1.0 x 10⁻¹⁰ m .
Nucleus	Overall charge = positive , radius = 1.0 x 10⁻¹⁴ m (very small compared to whole atom -> 1/10000 the size).
Electron absorbs/emits EM radiation	Absorbs = moves to higher energy level (further from nucleus). Emits = moves to lower energy level (closer to nucleus).

4.2 - Atomic Number, Mass Number and Isotopes

Atomic number	Number of protons .
Mass number	Total number of protons and neutrons .
Isotopes	Atoms of same element , with same number of protons , different numbers of neutrons .

4.3 - Development of the Model of the Atom

Plum Pudding Model	Electron discovered by JJ Thomson -> negative electrons embedded in a ball of positive charge .
Rutherford's Experiment	Fired positive alpha particles at thin gold foil . Most passed straight through , small number deflected .
Rutherford's Nuclear Model	Tiny positively charged nucleus -> nearly all mass is concentrated here -> most of atom is empty space .
Bohr's Nuclear Model	Electrons orbit the nucleus in energy levels at specific distances from the nucleus.
Chadwick	Discovered neutrons .

4.4 - Radioactive Decay

Radioactive decay	Random process -> unstable nuclei emit nuclear radiation -> alpha particles, beta particles, gamma rays and neutrons .
Activity	Number of nuclei that decay per second , measured in becquerels (Bq)
Count-rate	Number of radiation counts reaching a detector per second , measured in counts per min or counts per s .
Half-Life	Time it takes for number of nuclei to halve , or time it takes for activity (or count rate) to fall to half its initial level .

4.5 - Alpha, Beta and Gamma

Alpha particle	Made up of 2 protons and 2 neutrons (a helium nucleus).
Alpha properties	Range in air = a few cm , low penetration (absorbed by paper), highly ionising (large and positive charge)
Beta particle	Electron emitted from nucleus when neutron turns into proton .
Beta properties	Range in air = a few m , moderate penetration (absorbed by a few mm of aluminium), moderately ionising .
Gamma ray	EM waves emitted from nucleus -> travel at speed of light .
Gamma properties	Range in air = infinite , high penetration (absorbed by few cm of lead or few m of concrete), weakly ionising .

4.6 - Nuclear Decay Equations

Alpha decay equation	Mass number decreases by 4 . Atomic number decreases by 2 .	${}^4_2\text{He}$
Beta decay equation	Mass number does not change . Atomic number increases by 1 .	${}^0_{-1}\text{e}$
Gamma Decay Equation	Mass number does not change . Atomic number does not change .	${}^0_0\gamma$

4.7 - Dangers of Nuclear Radiation

Ionising power	Radiation can knock electrons off atoms , creating positive ions .
Cell damage	Radiation can ionise atoms in cells -> causes cell damage . Can cause cancer if atoms in DNA are ionised.
Irradiation	Object/person is exposed to radiation .
Contamination	Object/person gets radioactive source in or on them .
Inside Body	Alpha is most dangerous -> absorbed by cells -> highly ionising .
Outside Body	Gamma and beta most dangerous -> can penetrate body .
Reducing Risk	Reduce exposure time , increase distance , increase shielding .
Working with radiation	Use tongs , store in lead boxes , use remote controlled arms , wear a film badge , wear a full body suit , leave the room, stand behind barrier .

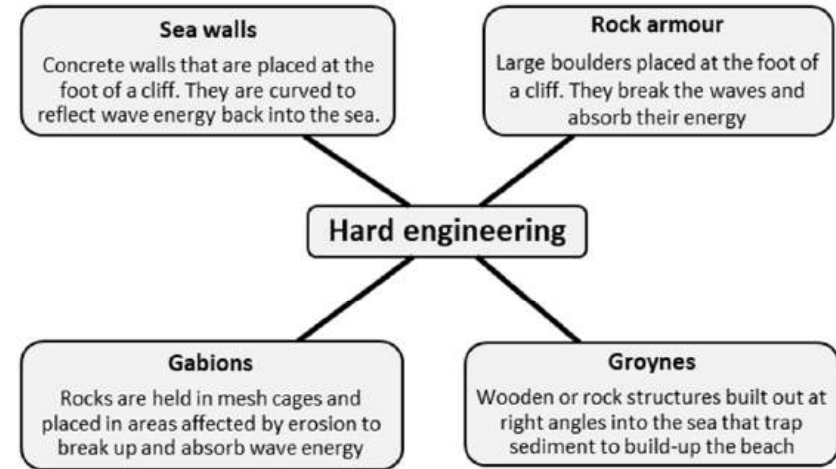
1. Key terms

Abrasion (or corrosion)	The wearing away of cliffs by sediment flung by breaking waves.
Attrition	Erosion caused when rocks and boulders transported by waves bump into each other and break up into smaller pieces.
Deposition	Occurs when material being transported by the sea is dropped due to the sea losing energy.
Erosion	The wearing away and removal of material by a moving force, such as a breaking wave.
Hard engineering	The use of concrete and large artificial structures by civil engineers to defend land against natural erosion processes.
Hydraulic power	The process by which breaking waves compress pockets of air in cracks in a cliff. The pressure may cause the crack to widen, breaking off rock.
Longshore drift	The zigzag movement of sediment along a shore caused by waves going up the beach at an oblique angle(wash) and returning at right angles(backwash). This results in the gradual movement of beach materials along the coast.
Mass movement	The downhill movement of weathered material under the force of gravity.
Mechanical weathering	Weathering processes that cause physical disintegration or break up of exposed rock without any change in the chemical composition of the rock, for instance freeze thaw.
Soft engineering	Managing erosion by working with natural processes to help restore beaches and coastal ecosystems.

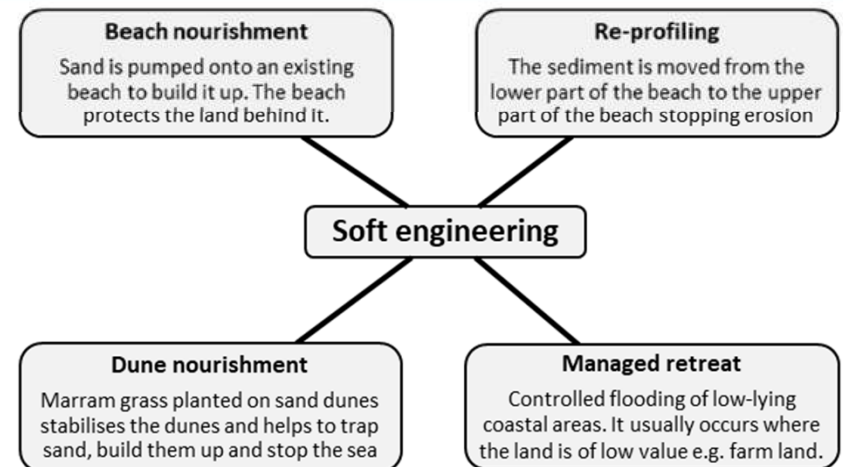
2. Landforms

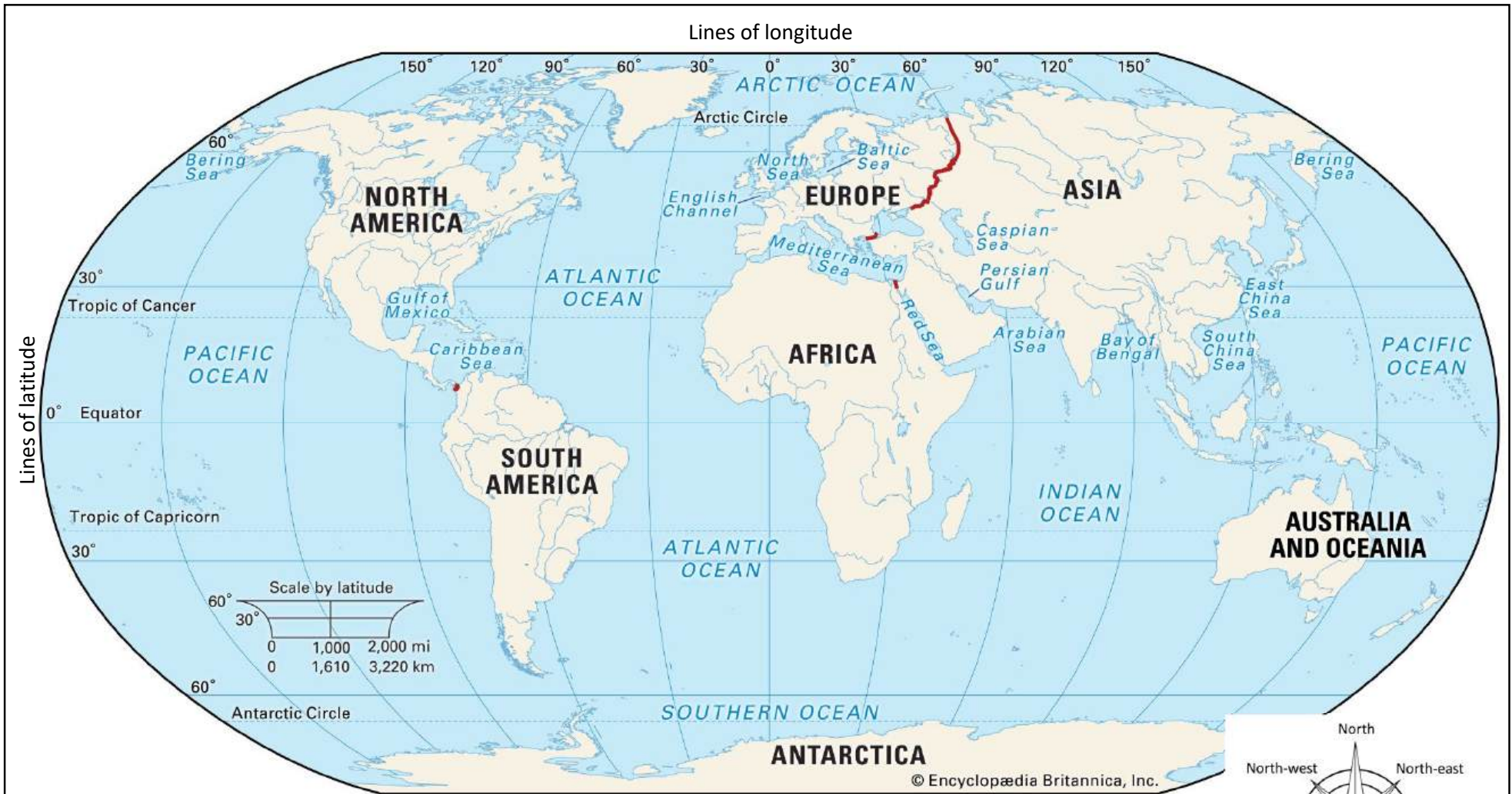
Erosional	Depositional
Headlands & bays- Coastlines are made of different rocks which erode at different rates. Headlands have more resistant rock	Beaches- Made in sheltered areas by constructive waves that deposit eroded material that has been moved by waves
Cliff- Shaped through erosion and weathering. Soft rock erodes quickly forming sloping cliffs, hard rock is more resistant creating steep cliffs	Spits- A spit is an extended stretch of sand or shingle jutting out into the sea from the land. Spits occur when there is a change in the shape of the landscape or there is a river mouth.
Caves, arches, stacks and stumps- Found on headlands when lines of weakness are eroded and weathered	Bars- Sometimes a spit can grow across a bay and joins two headlands together. This landform is known as a bar. They can trap shallow lakes behind known as lagoons

3. Coastal management



4. Coastal management





Across the world there are:

7 continents: Europe, Asia, Africa, Oceania, Antarctica, South America, North America

5 oceans: Arctic, Southern, Pacific, Indian, Atlantic

Europe



The United Kingdom



Europe	A continent made up of 44 countries, the UK is part of this continent.
United Kingdom	Made up of England, Wales, Scotland, Northern Ireland.
Great Britain	Made up of England, Wales, and Scotland.
British Isles	A group of islands, the largest is Great Britain. Made up of England, Wales, Scotland, Northern Ireland, and the Republic of Ireland.
Capital cities	The main city in a country, where the government is based.

1 Militarism	
Key Term	Definition
Arms Race	Competition to make the largest military
Dreadnought	Largest battleship created (1906)
Navy	Military used at sea
Militarism	Desire to have the strongest military

Nation	Key Facts
Britain	Largest Navy. Largest empire. Experienced army
Germany	Strong military culture. Growing navy. Well-prepared
France	Outdated army. Aging military leaders. Large army
Russia	Largest army by far. Outdated equipment and tactics. Politically unstable
America	Modern army. Unaffected by the war in Europe. Isolationist until 1917

3 Alliances		Date	Alliance
Key Term	Definition		
Triple Entente	Britain, France, Russia	1879	Dual Alliance (Germany and Austria-Hungary)
Triple Alliance	Germany, Austria-Hungary, Italy	1882	Triple Alliance
Encircled	Surrounded by other nations	1894	Franco-Russian Alliance (France and Russia)
Alliance	Agreement between nations	1907	Triple Entente

4 Crisis	Consequence
1905 First Moroccan Crisis	Germany embarrassed at international conference, alliances strengthen
1908 Austria Hungary annex Bosnia	Pan-Slavism increases, Russia back down from war, tension increases
1911 Second Moroccan Crisis	Germany back down and lose colonies, tension at its highest point
1912-1913 Balkan Wars	Austria-Hungary defeated, Ottomans pushed from Europe, nationalism increases

5 Imperialism	
Key Term	Definition
Crisis	A time of difficulty or danger
Place in the Sun	Germany's desire to have an Empire
Annex	To take someone else's territory
Imperialism	The desire to increase the size of an Empire

6 Nationalism	
Key Term	Definition
Weltpolitik	Germany's desire to be a world power
Pan-Slavism	The movement towards Slavic unity
Isolationism	Desire to take no part in international affairs
Nationalism	Zealous love of one's country over other countries

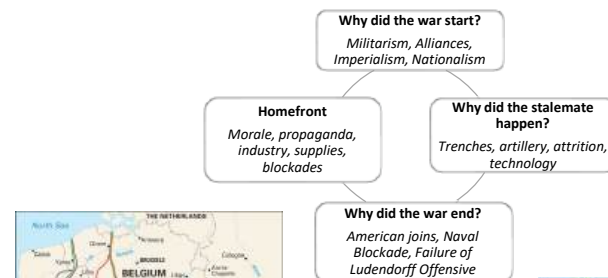
7 Stalemate				
Battle	Nations	Key Moments	Casualties	Consequence
Marne Sept 1914	Germany France	<ul style="list-style-type: none"> France stop the German Schlieffen Plan at the Marne river & defend Paris 	<ul style="list-style-type: none"> 250,000 French 260,000 German 	<ul style="list-style-type: none"> German advance stops Paris protected Stalemate begins
Verdun Feb-Dec 1916	France Germany	<ul style="list-style-type: none"> German general Falkenhayn begins attritional warfare 	<ul style="list-style-type: none"> 355,000 German 400,000 French 	<ul style="list-style-type: none"> France defends Verdun Britain supports defenders
Somme July-Nov 1916	Britain France Germany	<ul style="list-style-type: none"> Heavy British losses in early stages First use of tank 	<ul style="list-style-type: none"> 420,000 British 440,000 German 200,000 French 	<ul style="list-style-type: none"> Minimal territorial gain Germany eventually fall back to Hindenberg line
Passchendaele July-Nov 1917	Britain France Germany	<ul style="list-style-type: none"> Quagmire conditions Constant heavy rain 	<ul style="list-style-type: none"> 240-400,000 British and French 200-400,000 German 	<ul style="list-style-type: none"> British victory Very heavy losses Germany badly weakened

Nation	Culture	8
German	<ul style="list-style-type: none"> Strong military culture "Young" nation wanting to make history Ambitious leader Desire for power on a global stage 	
British	<ul style="list-style-type: none"> Largest global empire Historically dominant at sea Wealthy and proud of prominence 	
Slavic	<ul style="list-style-type: none"> Frustrated at Austro-Hungarian imperialism Nationalist secret societies 	
France	<ul style="list-style-type: none"> Historic rivalry with Germany from 1870 Wealthy Empire Historically powerful, but outdated against Germany 	

Key Term	11	Definition
Blockade		Cutting a location off from all supplies and trade
U-Boat		German submarine
Abdicate		Monarch gives up their title
Storm-Troopers		Elite German shock-troops
Mutiny		Soldiers refusing to follow commanders' orders
Armistice		Agreed ceasefire
Homefront		The civilian world during war
Morale		The overall mood of a group of people

9	Key Term	Definition
	Stalemate	When neither army could make a decisive move
	Trench	Defensive ditch or fortification soldiers fought and lived in
	Artillery	Long-range explosive weapon
	Bombardment	Prolonged artillery attack on defences
	Shell-shock	PTSD for soldiers following bombardments
	Attrition	Grinding down the enemy
	Trench-foot	Foot condition soldiers contracted standing in muddy trenches
	Tank	Heavily armoured fighting vehicle
	Shrapnel	Metals shards that came from explosives, wounding soldiers
	No Man's Land	Area of land between two armies' trenches
	Outflank	Move around the enemy to attack from a better position

10	End of the War	
Event	Cause	Consequence
Jutland May – June 1916	<ul style="list-style-type: none"> German fleet attempts to break British Naval dominance No clear victor German fleet destroyed, British fleet still dominant 	<ul style="list-style-type: none"> Germans adopt U-Boat warfare German fleet destroyed Naval blockade
Russian Revolution February 1917	<ul style="list-style-type: none"> Russia suffers heavy casualties on Eastern Front Russian population starving and angry Russian Tsar deeply unpopular 	<ul style="list-style-type: none"> Russia leaves the war German troops redeployed to Western Front
America joins the war 1917	<ul style="list-style-type: none"> Lusitania sunk May 1915 Zimmerman Telegram 1917 Submarine warfare damages US ships 	<ul style="list-style-type: none"> USA commits 2 million troops to war 90,000 tonnes of meat ships USA finances allies
Ludendorff Offensive March 1918	<ul style="list-style-type: none"> Germany has more troops on Western Front America is joining war, German chance of victory is shrinking 	<ul style="list-style-type: none"> Initial German victory Unsustainable German advance German troops cut off and captured
100 Days Offensive August 1918	<ul style="list-style-type: none"> Germans are weakened and on brink of defeat Unified command under General Foch American troops join allies 	<ul style="list-style-type: none"> Significant allied territory gains German army in full retreat Allied victory close
Kaiser Wilhelm abdicates Nov 1918	<ul style="list-style-type: none"> German civilian and military morale at breaking point Kiel mutiny shows military no longer follows Kaiser's orders German people starving from the blockade 	<ul style="list-style-type: none"> Germany cannot continue with war Armistice signed November 1918



Trinity	God is the Father, Holy Spirit & Son	Salvation	Saving the soul from sin
Incarate	God is Jesus/Human in flesh	Resurrection	Jesus raised from dead
Ascension	Jesus rose up to heaven 40 days after his resurrection & teaching his final lessons.	Omnipotence	All-powerful
1 & 2		Omniscience	All-knowing
		Omnibenevolence	All-loving
Just	God is fair	Impersonal	God is beyond human understanding
Crucifixion	The killing of Jesus/suffering on cross	Grace	God's unconditional love
Stewardship	Humans are carers of the earth		
<i>Influence – How does something affect you, inspire you, does it compel certain actions?</i>			
<i>Similar – Are there any beliefs, teachings & quotes that are similar?</i>			

3	Nature of God	The Trinity	The Bible teaches,	Atheists argue,
	<ul style="list-style-type: none"> Christians see God as: Just, graceful, omnipotent, omnibenevolent, omniscient & merciful Christians pray to Him; ask for forgiveness 	<ul style="list-style-type: none"> Christians see God in 3 ways: The Father in heaven, the Holy Spirit that inspires us & the son incarnate – Jesus 	<ul style="list-style-type: none"> <i>'I am always with you'</i> <i>'You'll receive power with the Holy Spirit'</i> <i>'Obey God not men'</i> 	<ul style="list-style-type: none"> Freud argues God is only in the human mind God is not real you can't see him / his power

4	The Creation Story	Problem of Evil	The Bible teaches,	Atheists argue,
	<ul style="list-style-type: none"> Book of Genesis says how God made the world; Day 1: God made light Day 2: heavens & earth Day 3: land & sea Day 4: Sun, Moon/Stars Day 5: Fish & birds Day 6: Animals/humans Day 7- God rested We are stewards of the earth 	<ul style="list-style-type: none"> If an all-loving God exists, how can He allow humans to suffer in the world? Moral (human) evil / natural (beyond this) Floods, famine, diseases, war... 	<ul style="list-style-type: none"> <i>'God made the heavens & earth'</i> <i>The Prodigal Son: A father forgives & welcomes his son back after his losses</i> <i>The Story of Job: life is a test. Job loses his wealth & family but God returns it testing his faith through suffering.</i> 	<ul style="list-style-type: none"> God should not make people suffer; If God created the world why is it not perfect? Why are their floods, natural & moral evil?

5	The Original Sin	The Bible teaches,	Influence
	<ul style="list-style-type: none"> Adam & Eve ate from the forbidden tree inspired by Satan Everyone sins no one is perfect (Adam/Eve) Sin breaks God's Law causes separation Jesus' death atones (makes up) for our sins. 	<ul style="list-style-type: none"> <i>'Faith without good action is dead faith'</i> <i>'Christ died for our sins'</i> 	<ul style="list-style-type: none"> Wrongs can be made right with the right intention We must be careful with our freedom

6.	Incarnation	The Bible teaches,	Some argue,
	<ul style="list-style-type: none"> God comes to the earth as a human Mary gives birth to a son through the Holy Spirit Christians appreciate God's link to humanity God is fully human & divine 	<ul style="list-style-type: none"> <i>'The Word (God) became flesh'</i> 	<ul style="list-style-type: none"> Difficult to understand – how can an omnipotent God be human at the same time? Can be seen as a miracle

7.	Crucifixion	The Bible teaches,	Some argue,
	<ul style="list-style-type: none"> Jesus was nailed to a cross & killed He spoke to God saying he felt abandoned This act atoned for everyone's sins Jesus betrayed by Judas for 30 silver pieces 	<ul style="list-style-type: none"> <i>'Jesus died for our sins'</i> <i>Jesus predicts own death</i> 	<ul style="list-style-type: none"> Crucifixion reminds Jesus' pain & sacrifice / moral evil Important for atonement – Christians work to do no sin

8.	Resurrection	The Bible teaches,	Influence
	<ul style="list-style-type: none"> Jesus rose from the dead on the 3rd day after his crucifixion Jesus' risen body was different & glowed 	<ul style="list-style-type: none"> <i>'Jesus had risen'</i> <i>'The body raised is imperishable'</i> 	<ul style="list-style-type: none"> Resurrection possible for everyone Shows God's power

9.	Salvation	The Bible teaches,	Influence
	<ul style="list-style-type: none"> Salvation cannot be achieved if you sin We can achieve salvation by: following God's Law, Holy Spirit & His grace Jesus spent 40 days spreading God's word 	<ul style="list-style-type: none"> <i>'Your word is a lamp'</i> <i>'Obey God rather than men'</i> 	<ul style="list-style-type: none"> Christians follow Jesus Salvation & grace must be taught to others Some baptise themselves

10.	Ascension	The Bible teaches,	Influence
	<ul style="list-style-type: none"> After 40 days of resurrection, Jesus rose up to heaven Jesus told disciples to carry on spreading Christian teachings 	<ul style="list-style-type: none"> <i>'He was lifted up'</i> <i>'A cloud took him from their sight'</i> 	<ul style="list-style-type: none"> Christians will not stray from God's path; Jesus in heaven comforts others

11.	Afterlife & Judgement	The Bible teaches,	Influence
	<ul style="list-style-type: none"> Afterlife, God will judge you fairly Heaven, Hell or Purgatory (in between) The point of life is to aim for heaven 	<ul style="list-style-type: none"> <i>The Parable of Sheep & Goat (evil)</i> <i>'Do not judge for you will be judged'</i> 	<ul style="list-style-type: none"> Ask for forgiveness Give charity & share Not steal or lie

12.	Tip: Always unpack quotes	Where is it from? The Bible / Jesus teaches,	What does it mean? This means / Some Christians believe This influences,	Why is it important? This signifies / highlights, This supports / challenges,

Sunni 6 Articles of Faith	Tawhid, Prophets, Angels, Holy Books, Judgement, Al-Qadr (Predestination)	Usul ad-Din 5 Shia Roots Transcendent	Tawhid, Prophets, Justice, Leaders & Resurrection God is beyond space & time
Akhirah	Belief in afterlife	Hadith	Written sayings of the prophet
Risalah	God communicates with us in 3 ways: Quran (Holy Books)/Prophets/Angels	Omnipotence Omniscience	All-powerful All-knowing – God is immanent (close to humans)
Just	God is fair	Impersonal	God is beyond human understanding
Barzakh	State of waiting after death	Sunnah	Written practices of the prophet
Influence – How does something affect you, inspire you, does it compel certain actions? Similar – Are there any beliefs, teachings & quotes that are similar?			1 & 2

3 Nature of God – God is ‘One’	The Quran teaches,	Influence
<ul style="list-style-type: none"> Muslims see God as: Just, omnipotent, omniscient & immanent Muslims pray to ask for guidance (God is merciful) God is the provider: food, water (rain) & more.... 	<ul style="list-style-type: none"> <i>‘God is the light of the heavens & the earth’</i> <i>‘God is closer to you than your jugular vein’</i> <i>Surah 112 – God is eternal</i> 	<ul style="list-style-type: none"> Knowing God’s different roles helps know his true powers You should not compare God to other beings this is blasphemy

4 Six Sunni Articles of Faith	The Quran teaches,	Influence
<ul style="list-style-type: none"> Tawhid- The oneness of God Angels; have different roles from God Holy Books - Qur’an, Torah, Gospel Prophets- God’s messengers Day of Judgement – life after death Al-Qadr (predestination) – nothing happens without God’s will. 	<ul style="list-style-type: none"> <i>‘Whoever disbelieves in God; His angels, Books, Messengers & the Last Day, has gone astray.’</i> 	<ul style="list-style-type: none"> Its about having good intentions as a Muslim; strengthens actions Tawhid unites all Muslims as you need this is part of your faith

5 5 Roots of Usual ad-Din	The Quran teaches,	Influence
<ul style="list-style-type: none"> Tawhid Prophets – God’s messengers Justice (Adalat); God is a fair planner Resurrection: judgement/afterlife Imamate (Leadership of Muslims after Muhammad) – 12 Imams related to the Prophet; Shias respect them as leaders that guide them. E.g. Imam Ali 	<ul style="list-style-type: none"> <i>‘We made the imams & guided them’</i> <i>‘Enjoin good & forbid evil’</i> <i>‘God will not burden you beyond that which you cannot bear’</i> 	<ul style="list-style-type: none"> Shia Muslims mainly trust in justice – God is the perfect of planners & fair Imams clarify God’s words

6 Risalah – Angels	Risalah – Prophets	Risalah – Holy Books	Some argue,
<ul style="list-style-type: none"> Have no freewill, serve God Can’t sin / made from light Jibril brings God’s messages down to prophets Mikail sends down rain / food; for sustenance Angels guided the prophets 	<ul style="list-style-type: none"> Messengers of God Muhammad/final prophet Quran revealed to him in the Cave of Hira by Jibril His Sunnah (actions) & Hadith (sayings) are followed today 	<ul style="list-style-type: none"> Torah (Musa), Gospel (Isa), Hadith, Sunnah, Zabur (Dawud) – convey God’s words Quran is the most authoritative book in Islam; its unchanged Quran guides Shariah laws; diet, marriage, wars... 	<ul style="list-style-type: none"> Humanity has evolved; Imams, tech; clarify God’s laws, times change God is ‘evolver’
<ul style="list-style-type: none"> <i>‘Angels only have intellect’ - Q</i> <i>‘He sends guardian angels’ - Q</i> 	<ul style="list-style-type: none"> <i>‘Obey God & His Messenger’ - Q</i> 	<ul style="list-style-type: none"> <i>‘There has come to you a light & clear book’ - Q</i> 	<ul style="list-style-type: none"> <i>‘You have ...evolved’ - Q</i>

7 Prophet Adam	Prophet Ibrahim	Prophet Muhammad	Some argue,
<ul style="list-style-type: none"> First man & prophet He taught mankind – is ‘khalifah’ - God’s steward First to build the Kaaba Teaches anyone can wrong but God is merciful 	<ul style="list-style-type: none"> Considered as ‘hanif’ – commit to worship 1 God Passed God’s faith test on sacrificing his Son, Ismail Teaches Muslims to sacrifice things they love for God (Eid ul Adha) 	<ul style="list-style-type: none"> Received the Quran, still in its original form today Preached monotheism despite rejection Established 5 pillars of Islam 	<ul style="list-style-type: none"> There is no Islam without Muhammad Islam has been shaped by all prophets of the past.
<ul style="list-style-type: none"> <i>‘Satan misled them’ - Q</i> 	<ul style="list-style-type: none"> <i>‘You aren’t pious until you give that which you love’ - Q</i> 	<ul style="list-style-type: none"> <i>‘The messenger is an excellent model’ - Q</i> 	<ul style="list-style-type: none"> <i>‘Prophets are warmers of truth’ - Q</i>

8 & 9 Akirah	Al-Qadr	The Quran teaches,	Some argue,
<ul style="list-style-type: none"> This life is temporary & all actions will be judged After you die the state of waiting to be judged is called Barzakh Actions will be weighted on a scale for you to go heaven / hell; Akirah is eternal 	<ul style="list-style-type: none"> Everything happens on Allah’s will; life is planned Humans still need to make the right choices with their freewill & commit good Adam & Eve’s wrongdoing acts a warning to remind us 	<ul style="list-style-type: none"> <i>‘Every atom’s weight shall be rewarded or punished’</i> <i>‘Death will find you even in the highest of towers’</i> <i>‘There is not a leaf that falls without Him knowing’</i> 	<ul style="list-style-type: none"> Belief in the end of the world is also important: Imam Mahdi will come to earth & help Isa fight false prophets The living will die The Quran will be taken to paradise & no one will remember its words

10	Tip: Always unpack quotes!	Where is it from? The Quran / Prophet teaches,	What does it mean? This means / Some Muslims believe This influences,	Why is it important? This signifies / highlights, This supports / challenges,
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1 School subjects

El arte dramático	drama
El dibujo	art
El español	Spanish
El inglés	English
La biología	biology
La educación física	PE
La geografía	geography
la historia	history
La informática	ICT
La lengua	language
La química	chemistry
La religión	RE
La tecnología	technology
Los idiomas	languages
Las empresariales	business studies
Las matemáticas	maths
La materia	subject
La asignatura	subject

2 Uniform

Tengo que llevar	I have to wear
Tenemos que llevar	We have to wear
(No) llevamos	We (don't) wear
(No) llevo	I (don't) wear
Es obligatorio llevar	It is compulsory to wear
Un jersey (de punto)	A (knitted) sweater
Un vestido	A dress
Una camisa	A shirt
Una camiseta	A T-shirt
Una chaqueta (a rayas)	A (striped) jacket
Una chaqueta de punto	A cardigan
Una corbata	A tie
Una falda (a cuadros)	A (checked) skirt
Unos pantalones	Trousers
Unos calcetines	Socks
Unos vaqueros	Jeans
Unas medias	Tights
El uniforme mejora la disciplina	Uniform improved behaviour
El uniforme limita la individualidad	Uniform limits individuality
El uniforme da un imagine positivo del insti	Uniform gives a positive image of the school
Ahorra tiempo por la mañana	Saves time on a morning
Llevo una camisa blanca	I wear a white shirt
Llevamos un vestido negro	We wear a black dress
Tenemos que llevar unos zapatos rojos	We have to wear red shoes
Los chicas tienen que llevar unas medias negras	The girls have to wear black tights

3 Teachers

Mi profesor / profesora de... es	My...teacher is
El profesor / La profesora es	The teacher is
Se llama	S/he is called
Sincero/a	Honest
Divertido/a	Fun
Serio/a	Serious
Simpático/a	Kind
Tonto/a	Silly
Listo/a	Clever
Generoso/a	Generous
Inteligente	Intelligent
Raro / a	Strange
Severo/a	Strict
Paciente	Patient
Mi profe	My teacher...
enseña bien	Teaches well
Tiene un buen sentido de humor	Has a good sense of humour
Tiene expectativas altas	Has high expectations
Crea un buen ambiente de trabajo	Creates a good working environment
Nunca se enfada	Never gets angry
Me hace pensar	Makes me think
Nos da consejos	Give us advice
Nos pone demasiados deberes	Gives us too much homework

4 Opinions on school and school subjects

¿Te gusta el teatro?	Do you like drama
Me gusta (mucho) el teatro	I like drama
No, no me gusta (nada) el teatro	No, I don't like drama (at all)
Me encanta el inglés	I live English
¿Te gustan las ciencias?	Do you like science?
Me gustan (mucho) las ciencias	I (really) like science
No me gustan (nada)	I don't like science (at all)
Me chiflan las matemáticas	I'm crazy about maths
Me interesa(n)	I'm interested in
Me fascina(n)	I'm fascinated by
Prefiero	I prefer
Pienso que	I think that
Porque es / son	Because it is / they are

5 Comparing things and justifying your opinions

El español es más...que...	Spanish is more...than...	Lo bueno / lo malo es que	The good / bad thing is that
El español es menos...que...	Spanish is less...than...	Lo mejor/lo peor es que	The best / worst thing is that
Es mejor / peor que...	It is better / worse than...	Lo que más me gusta es / son	What I like the most is/are
Tan...como...	As...as...	Lo que menos me gusta es / son	What I like the least is / are
Fácil(es)	Easy	No...ningún / ninguna	Not a single...
Difícil(es)	Difficult	Ni...ni...	(n)either...(n)or...
Exacto/a/os/as	Precise	Nada	Nothing / anything
Lógico/a/os/as	Logical	Nadie	No-one / anyone
Exigente(s)	Demanding	Tampoco	Not either

6 Primary school

Mi escuela primaria era...	My primary school was...
En mi escuela primaria había...	In my primary school there was/were...
Mi escuela primaria tenía...	My primary school had...
Más / menos	More / fewer, less
Exámenes	Exams
Deberes	Homework
Muebles	Furniture
Espacios verdes	Green spaces
Pizarras interactivas	Interactive boards
Poco espacios	Little space
El edificio era	The building era
El día escolar es / era	The school day is / was
(in)adecuado	Inadequate
Corto / largo	Short / long
Las clases son / eran	The lessons are / were

9 School rules continued

Un problema del insto es..	One problem of my school is...
...el estrés de los exámenes	...exam stress
...el acoso escolar	...school bullying
...la presión del grupo	Peer pressure
Hay (unos) alumnos que...	The are (some) students who...
...se burlan de otros	...make fun of others
...sufren intimidaciones	...are victims of intimidation
...tiene miedo de	...are scared of
...hacen novillos	...skive
...quieren ser parte de la pandilla	...want to be part of the friendship group
...son una mala influencia	...are a bad influence

12 Extra curricular activities

Voy al club de / Soy miembro del club de	I go to the...club / I am a member of ...club
...ajedrez / fotografía	...chess / photography
Pienso que / creo que las actividades extraescolares son...	I think that / believe that extra curricular activities are...
Te ayudan a...	They help you to...
...olvidar la presión del colegio	...forget the pressure of school
...desarrollar tus talentos	...develop your talents
...hacer nuevos amigos	...make new friends
Te dan...	They give you...
...una sensación de logro	...a sense of achievement
...más confianza	...more confidence

7 What is your school like?

En mi insti(tuto) (no) hay...	In my school there is (not)...
Mi insti(tuto) tiene...	My school has
...un campo de fútbol	...a football pitch
...un comedor	...a dining hall
...un gimnasio	...a gym
...un patio	...a playground
...una biblioteca	... a library
...una piscina	... a swimming pool
...unos laboratorios	...labs
...unas aulas	...classrooms
Mi instituto es...	My school is...
mixto	Mixed
público	State
privado	Private
Masculino / femenino	All boys / girls

10 School day

Salgo de casa a las...	I leave home at
Voy a pie / en coche / en autobús	I go by foot / car / bus
Las clases empiezan a las / terminal a las	Classes start at / finish at
Tenemos...clases al día	We have...classes a day
Cada clase dura...	Every class lasts
El recreo / la hora de comer	Break / lunch

11 Going on a school trip

Voy a... / Vamos a...	I am going... / we are going...
...ir a	...to go to
...llegar	...to arrive
...llevar ropa de la calle	...to wear casual clothes/ non-uniform
...hacer una visita guiada	...to do a guided tour
...pasar todo el día en	...to spend all day in
...asistir a clases	...to attend classes
...practicar el español	...to practise Spanish
Va a ser...	It is going to be

8 School rules

Está prohibido...	It is forbidden...
No se permite...	You are not allowed...
No se debe...	You / one must no
...comer chicle	...to eat chewing gum
...correr en los pasillos	...to run on the corridors
...usar el móvil en clase	...to use your mobile in class
...dañar las instalaciones	...to damage the facilities
...ser agresivo o grosero	...to be aggressive or rude
...llevar piercings	...to wear piercings
Hay que...	You have to...
...ser puntual	...to be on time
...respetar el turno de palabra	...to wait your turn to speak
...mantener limpio el patio	...to keep the playground clean
La norma más importante es respetar a los demás	The most important rule is to respect other
Las normas son..	The rules are...
...necesarias	...necessary
...demasiado severas	...too strict
...para fomentar la buena disciplina	...to promote good behaviour
...para limitar la libertad de expresión	...for limiting freedom of expression
...para fastidiar a los alumnos	...to annoy the pupils
...para sacar buenas notas	...in order to get good grades

13 Extra-curricular activities

El año / trimestre / verano pasado...	Last year / term / summer...	Este trimestre / verano...	This term / summer...
...participé en un torneo	...I took part in a tournament	Voy a ...	I am going...
...gané un trofeo	...I won a trophy	...aprender a	...to learn to
...toqué un solo	...I played solo	...continuar con	...to continue with
...ganamos una competición nacional	...we won a national competition	...dejarlo	...to stop doing it
...dimos un concierto	...we gave a concert	...apuntarme al club de	...to sign up for the ... club
Fue...	It was...	...montar un obra de teatro	...to put a play on
Va a ser...	It is going to be...	...conseguir	...to achieve

9.1 Healthy living		
صحت مند رہنے کے لیے میں۔۔۔	sihhat-mand rehney kay liyay...	To stay healthy I ...
۔۔۔ تھوڑا کھاتا / کھاتی ہوں۔	... mai thoRa khaata/khaati hoo	...eat less.
۔۔۔ روزانہ دوڑتا / دوڑتی ہوں۔	... mai rozaana daRta/dauRti hoo	... run everyday.
۔۔۔ جلدی سوتا / سوتی ہوں۔	... mai jalldi sota/soti hoo	... go to sleep early.
۔۔۔ پھل سبزی کھاتا / کھاتی ہوں۔	phal sabzi khaata/khaati hoo	... eat fruits and vegetables

9.2 Exercise		
ورزش کرنا	warrzish karna	to exercise
کھیلوں کا مرکز	khaylo kaa marrkaz	sports centre
وزن اٹھانا	wazn uTaana	to lift weights
سائیکل چلانا	cycle chlaana	to cycle
عموماً	umooman	normally

Masculine and Feminine
In many languages, including Urdu, most nouns are considered to be either masculine or feminine. e.g. The Urdu word for chair (<i>kurrsee</i>) is considered to be a feminine word whereas the Urdu word for door (<i>darrwaaza</i>) is considered to be masculine. Adjectives used to describe nouns will agree with them e.g. peelee kurrsee (yellow chair) and peela darrwaaza (yellow door).

9.3 Food and Health		
غذا / خوراک	food, nutrition	Giza / Khowraak
طبی امداد	First Aid	Tibbi Imdaad
میں ٹھیک ہوں	I am well	Mai teek hoo
میں ٹھیک نہیں ہوں	I am not well	Mai teek nahi hoo
موٹا	fat/obese	moTa
چربی والا	fatty	Charbee wala
اپنی مرضی سے	voluntarily	Apni Mazee say
والتطير	volunteer	Volunteer
ٹوٹا پھوٹا	broken	TooTaa phooTa
صحت مند	healthy	Siht Mand
صحت	health	Siht
وزن	weight	Wazan

9.4 Clothing		
کپڑے	kapRay	Clothes
یونیفارم / وردی	uniform/warrdi	Uniform
جوتے	jootay	shoes
جراہیں	juraabay	socks
قمیص	gameess	Shirt
پتلون	patloon	trousers
بلیزر	blazer	blazer
شناختی کارڈ	shnaakti card	ID card
دستانے	dastanay	gloves
دوپٹہ	dopaTTa	scarf
آرام دہ	aaramday	comfortable

Verbs
In Urdu, all infinitive verbs end in <i>naa</i> , e.g. <i>khaanaa</i> (to eat), <i>jaanaa</i> (to go), <i>khaylnaa</i> (to play) etc. To use these in a sentence you need to remove the <i>naa</i> ending and replace it with <i>taa</i> for a male, <i>tee</i> for a female, and <i>tay</i> for plural male. e.g. <i>khaylnaa</i> → <i>khayl + taa</i> = <i>khayltaa</i> (male) e.g. <i>khaylnaa</i> → <i>khayl + tee</i> = <i>khayltee</i> (female) e.g. <i>khaylnaa</i> → <i>khayl + tay</i> = <i>khayltay</i> (male plural)

9.5 Important Verbs		
میں گیا / گئی	mai gyaa/ee	I went (m/f)
ہم گئے	ham ga-ay	We went
میں جاتا / تی ہوں۔	mai jaataa/ee hoon	I go (m/f)
ہم جاتے ہیں۔	ham jaatay hain	We go
میں نے دیکھا	mai nay daykhaa	I saw
ہم نے دیکھا	ham nay daykhaa	We saw
میں دیکھتا / تی ہوں	mai daykhtaa/tee hoon	I see
ہم دیکھتے ہیں	ham daykhtay hain	We see
کھیلنا	khaylnaa	to play
کھانا	khaana	to eat
گزرنا	guzrna	to pass (by)
گزارنا	guzaarna	to spend (time)
انتظام کرنا	intizaam karna	to arrange/or ganise

9.6 – 9.7 Customs & Festivals		
تقریب	event	Taqreeb
مہمان نوازی	hospitality	Mehman nawaazi
جلوس	procession	jaloos
یوم آزادی	independence day	Yowm Azaadi
عقیقہ	child birth ceremony	Aqeeqah
آتش بازی	fireworks	Aatash Baazi
رسم حنا	henna ceremony	Rasm Hena
شہنائی	wedding music	Shehnaee
بارات	wedding procession	Bharaat
ولیمہ	after wedding ceremony	Walima
دعوت نامہ	invitation	Dawat naama
تلاوت قرآن پاک	recitation of Quran	Tilaawat Quran paak
عید میلاد النبی	Eid Milad uNabi	Eid Milad un Nabi
سحری	pre-dawn meal before fasting	Sehri
افطاری	meal at the time of breaking fast	Iftaari

9.8 – Connectives		
شاید	Shayad	Probably
گو یا کہ	Goya kay	As If / whether
پہلے	Pehlay	Before
جب تک	Jab tak	Until
اس کے علاوہ	Is kay ilawa	Besides / apart from

9.9 – Tenses		
میں نے کھیلا	Mai nay khaylaa	I played
میں کھیلتا ہوں۔ میں کھیلتی ہوں	Mai khayltaa hoo / Mai khayltee hoo	I play
میں کھیلوں گا میں کھیلوں گی	Mai khayloongaa Mai khayloongee	I will play
مجھے کھیلتا چاہیے تھا	mujhay khaylna chahiyay thaa	I should have played
میں کرنے والا ہوں۔ میں کرنے والی ہوں	Mai karnay walaa Mai karnay walee hoo	I am about to ____
میں کھیلتا تھا۔ میں کھیلتی تھی	Mai khaylta tha / khayltee tee	I used to play
میں کھیل چکا ہوں۔ میں کھیل چکی ہوں	Mai khayl chukka / chukee hoo	I have already played

Pronouns

Urdu does not have different pronouns (he, she, they etc.) for masculine/feminine or singular/plural. All you need to look at is if someone/thing is here or there. If it is here, we use *yay*. If it is there, we use *wo*.

So, the word *wo* is used for **that** and also, **he, she, they** and **it**. Similarly, *yay* is used for **this** and also for **he, she, they** and **it**.

9.10 – Tenses		
میں نے دیکھا	Mai nay daykha	I saw
میں فٹ بال دیکھتا ہوں میں فٹ بال دیکھتی ہوں	Mai football daykhta hoo Mai football daykhtee hoo	I watch football
میں سینما جاؤں گا۔ میں سینما جاؤں گی	Mai seenima jaoon ga / Mai seenima jaoon gee	I will go to the cinema
ہم کو مدد کرنی چاہیے۔	Hum ko madad karni chahyay	We should help
میں نے کمرہ صاف کر لیا ہے	Mai nay kmra saaf kiya	I have cleaned my room

Notes

n – an underlined n is pronounced with a very soft *n* sound from the nose. It sounds like the letter *n* in the word *uncle* or *long*.

CaPiTaL LeTtErS – any Roman Urdu words with capital letters will be pronounced with a hard sound. e.g. *D* will be pronounced like a normal *D* in English. However, a *d* will be pronounced very softly with your tongue touching your front teeth. This is the same with *T* and *t*.

You will now begin to learn about the assessment objectives used in art. This project focuses on two of the objectives.

AO1 Research.

Using artist styles and writing about them. Using images/text from the internet, magazines, books and galleries. Independently finding further techniques to try from places such as Instagram and you tube.

1

This does not mean 'copying' the artist's picture. It means taking their style and ideas to apply to your work in your own way. When you write about the art, the examiner doesn't want to know when the artist was born or where they lived. They want to know how you are going to use it, your thoughts and ideas.

AO2 Experiment to develop.

Using different materials in the project. Choosing the most successful ones to develop further work.

2

This does not mean using every material or image you can get your hands on. It means you purposely choose materials and ideas to continue using and to stop using. Even better if you write the reasons why you are doing this as you go along!



3

Halima Cassell
A successful British Pakistani artist who uses pattern from her culture to inspire her work. She makes clay tiles, bowls and sculptures based on repeat pattern and symmetry



Key Words 4

1. Composition = *How you combine all of the parts of a piece of art together.*
2. Tonal Gradient = *Tone that goes from dark to light gradually. Like a fade, blending or an ombre.*
3. Kiln = *a big oven that fires (cooks) the clay.*
4. Bisque-wear = *clay that has been fired in the kiln.*



5

Woodblock print by the Japanese artist Katsushika Hokusai (1760 – 1849)

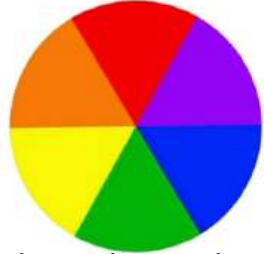


Key Words 6

1. Wood block print – a print made by carving into wood.
2. Poly Print – a print made by carving into polystyrene
3. Ink – a thick paint used for printing
4. Pressure – important in print making to achieve a good print

Section 1

COLOUR THEORY!

The colour wheel

The colour wheel is made out of 3 primary colours and 3 secondary colours

Section 4

Harmonious Colours

These are next to each other on the colour wheel and are similar shades

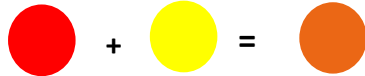
Poly Printing

1. Draw and carve a letter into a piece of poly print
2. Roll layers of even ink onto the poly print
3. Place the paper over the top and roller with a dry roller
4. Peel off the paper



Section 5

Section 2 Mixing colours



Yellow



Blue

Section 6 Health & Safety & Important stuff with Clay

- No drinking or eating when working with clay
- Make sure you wash your hands well after using clay
- Always wipe any bits of clay up when you have finished
- Keep clay covered up in plastic if you need to keep working on it so it doesn't dry out
- When you've finished, you can leave it uncovered to dry
- **DO NOT THROW CLAY / TAKE CLAY = UNIT**
- **NO WANDERING AROUND THE CLASSROOM –**
- **PUT YOUR HAND UP IF YOU NEED ANYTHING OR NEED TO MOVE**

Section 7 Making a clay letter



Use guide sticks to roll the clay out evenly. It should be the same thickness all the way along!

Section 8

Clay is a naturally occurring material that is taken from the ground. Over long periods of time, rocks are broken down into tiny particles - minerals. These particles are weathered for thousands and even millions of years and can form clay

Section 3 Complementary Colours

These are opposite on the colour wheel and are one primary and one secondary



Section 1 Top 5 tips when taking a Photograph



Lighting— Do not face the sun, your subject needs the most light. Think about Shadows too.



Angle Matters— Think about the meaning of your photograph and the impact you want.



Composition— There is more than your subject, consider the background too. Do you need to think about the rule of thirds? Get closer to your subject.



Do not Shake— Hold your breath and keep your elbows in tightly when you press the button.



Get Creative— Be adventurous when taking photographs, take multiple photographs with different angles. Use a torch, get really close and have fun.

Section 2 Digital Camera Parts

The digital camera has the capability to take photographs and store them digitally through memory cards. They have limited functions and their capture method is to 'point and shoot'.



Section 3 Photography Rules

	Rule of Thirds Position subject on the crosshairs		Framing Frame subject with surrounding objects - buildings, people, trees
	Repetition Look for repeating objects - pile of fruit, row of poles etc		Leading Lines Road, rails, lines of lampposts, buildings etc leading to subject
	Negative Space Leave space for subject to move into		Colour Use complimentary or opposing colours in background
	Balancing Elements Balance background interest with foreground subject		Differential Focus Subject in sharp focus to guide the eye
	Symmetry Half of the image is a mirror of the other half		Patterns Look for naturally occurring & constructed patterns
	Depth (layers) Position subject in front of and behind objects to create 3D depth		Depth of Field Blur background &/or foreground to separate your subject
	Viewpoint Photograph from different angles - get low, get high		Triangles & Diagonals Look for diagonals in a scene, create triangles
	Fill the Frame Get in close and fill the frame with your subject		Simplicity Cut out distractions - get close, blur background, darken background
	Left to Right Rule Moving subjects should go from left of frame to right of frame		Rule of Space Leave space around your subject
	Rule of Odds Look for odd numbered design elements - 3 arches, 5 windows etc	brought to you by www.thelenslounge.com 	

Section 4 Slinkachu and Peter Root

Slinkachu (Devon, UK) has been “abandoning” his miniature people on the streets of cities around the world. His work embodies elements of street art, sculpture, installation art and photography and has been exhibited in galleries and museums globally.

Peter Root’s work involves turning staples into Cityscapes. Thousands of staples are stacked and aligned to look like cities. These are then Photographed using strong depth of field and focus. There are many hours put into these.



Section 5 Key Vocabulary

Ambient light/Natural light Is the light that is already present in the scene you are shooting.

Camera Angle Is the specific location at which the camera is located so it can take the shot.

Contrast (noun) Is the difference between the light and dark areas within your images. High contrast means the blacks are darker and whites are brighter, vice versa.

Depth of Field (noun) is the distance between the closest and farthest subjects in a scene that look noticeably sharp in an image.

Exposure (noun) Is the amount of light entering the camera’s sensor. Too much light and the image is overexposed and not enough light and it’s underexposed.

Focal Point (noun) Is the main part of the image or a point of interest within the image.

Blur (noun) The loss of sharpness in a photographic image resulting from motion of the subject or the camera during exposure.

Section 6 The Formal Elements

Black & White— Images that have zero colour. It consists of shades of grey tone.

Colour— Images that capture the full spectrum of colour.

Experimental— Are the use of capturing images in the non- traditional way. It’s about taking your photographs beyond the norm to create unique pieces of art.

Line— A line in a photo is a point that moves, leading towards something. Some obvious, and some are implied. The viewer's eyes are naturally drawn along.



Pattern— Images that have captured a repetition of the formal elements this includes shapes, colours or textures, perfect examples of repetition exist all around us.

Perspective— The sense of depth or spatial relationship between objects in a, along with their dimensions with respect to what viewer of the image sees.

Texture—An image that shows the visual quality of the surface of an object. Texture brings life and vibrancy to images that would otherwise appear flat and uninspiring.

Tone— A photograph that captures a variety of light in an image. The 'tone' is the difference between the lightest and darkest areas on a.



A01 <u>Research.</u> Using artist styles and writing about them. Using images/text from the internet, magazines, books and galleries. Independently finding further techniques to try from places such as Instagram and YouTube.	♦ Research artists, find imagery and annotate your thoughts using content, form, process, mood method.
A02 <u>Experiment to develop.</u> Using different materials, techniques and processes in the project. Choosing the most successful ones to develop further work.	♦ Using Phone apps/photoshop/ other digital media to edit photographs in the style of a certain artist or technique. Gather different subjects and ways to capture photographs of. Think creatively using hands on/physical photography e.g. Hand drawn textures. ♦ Photographing a variety of subjects that link to the theme. This could include a range of portrait, building, landscape, object photography outside the classroom. ♦ Photographs of your chosen subject/theme but in a variety of angles, styles, edits.
A03 <u>Record.</u> Ability to draw, photograph, write down ideas and show how you think	♦ Draw ideas for how you might want your piece to look. These can be quick sketches. ♦ Further worked up idea that includes annotation of thoughts/colour use/ artist style use and meaning your piece is communicating to the viewer.
A04 <u>Final piece.</u> Ability to make a final idea that shows all of the research you have done.	

Section 2 The Formal Elements

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Your teacher will start to guide you through the project—but then it is up to you how you respond successfully. You must be independent with your photography, capturing photographs that link with the theme. You may want to include even more experimental photography looking at inspiration from other artist's, photographers and techniques you have explored from social media, internet and ideas.

How your outcomes will be up to you with planning alongside your teacher. You will take ownership of your work and take responsibility for meeting deadlines.

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Focal Point (noun) Is the main part of the image or a point of interest within the image.

Midtone (noun) Or middle tone, describes the middle tones between two colours. For example, grey is the midtone of black and white.

Saturation (noun) Can provide a colour boost to your image by allowing you to change selective colours within the image. Monochrome images are 100% desaturated as there is no colour.

Useful Websites

<https://www.pinterest.co.uk/seanr1132/formal-element-photography/>

<https://www.pinterest.co.uk/Dixonsaart/>

<http://ushphotographygcse.weebly.com/formal-elements.html>

Section 4

Threshold Concept #5



Cameras 'see' the world differently to the way we see the world with our eyes. We tend to see only the subject depicted rather than the photograph itself. All photographs are, to some extent, abstractions. All photographic images have been shaped by the technology the photographer chooses and by a process of selection, editing and manipulation. Each and every photographic image is therefore made or constructed, rather than being a window onto the world.

The ability to:

understand photographic vision and the ways in which the camera transforms the subject, creating an image which appears to be real but is actually an abstraction.



Challenging assumptions



Tolerating uncertainty



Reflecting critically

"I photograph to find out what something will look like photographed."
— **Garry Winogrand**

"Every photograph is a fiction with pretensions to truth ... photography always lies; it lies instinctively, lies because its nature does not allow it to do anything else."
— **Jean Pontcuberta**

Section 5 Top 5 tips when taking a Photograph



Lighting— Do not face the sun, your subject needs the most light. Think about Shadows too.



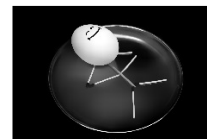
Angle Matters— Think about the meaning of your photograph and the impact you want.



Composition— There is more than your subject, consider the background too. Do you need to think about the rule of thirds? Get closer to your subject.



Do not Shake— Hold your breath and keep your elbows in tightly when you press the button.

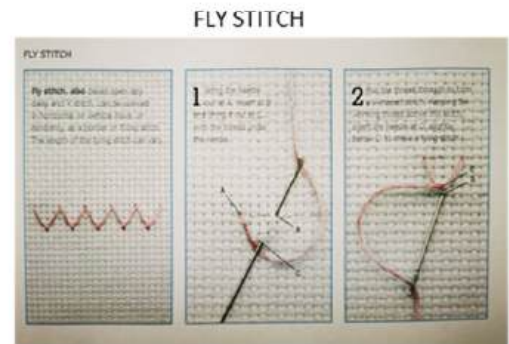
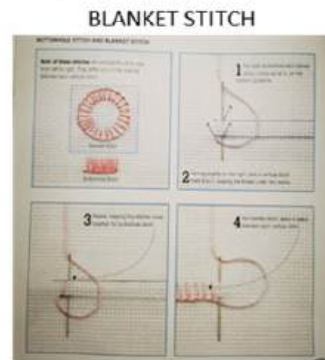
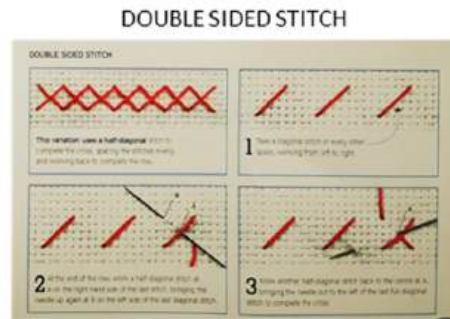
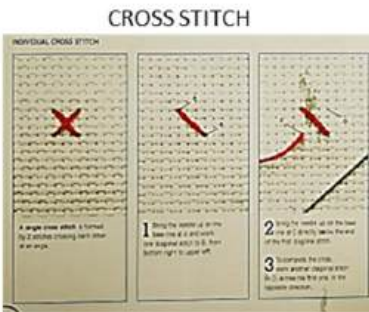
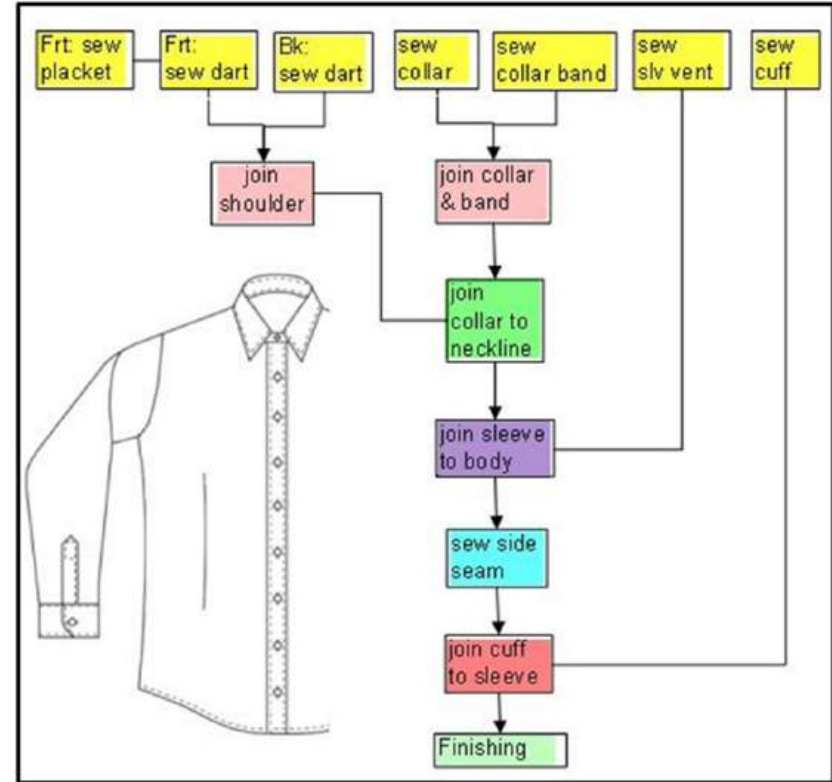


Get Creative— Be adventurous when taking photographs, take multiple photographs with different angles. Use a torch, get really close and have fun.

This cycle we are going to be looking at incorporating techniques learnt into a garment and practicing hand stitching.

Key Equipment and its use:

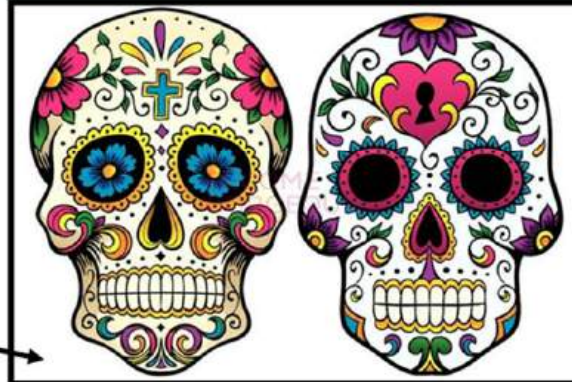
- Sewing Machine:** This is used to stitch fabric together faster and neater.
- Screen Printing:** Screen printing the process of pressing ink through a stencilled mesh screen to create a printed design.
- Squeegee:** A squeegee is used in screen printing to force the ink through the image section of the screen
- Printing Ink:** This is used with a squeegee to print an image.
- Stencil:** This is used to create a pattern to be printed.
- Puff Binder:** This is used with a screen to print creating a 3D textured effect.
- Heat Gun:** This is used with the puff binder to create a 3D textured effect,
- Batik:** a method (originally used in Java) of producing coloured designs on textiles by dyeing them, having first applied wax to the parts to be left undyed.
- Tjanting Tool:** This is used with a wax pot to create designs with wax.
- Wax Pot:** This is used to melt wax for batik.
- Felt:** This is a fabric used to create textile products.
- Cotton Thread:** This is used with a sewing machine or needle to stitch.
- Overlocking Machine:** This is used to finish the edges of fabric off so they look neat.



This cycle we are going to be looking at the Mexican festival of the day of the dead and the importance of sugar skulls.

What is a sugar skull?

A sugar skull is a representation of a human skull. The term is most often applied to edible or decorative skulls made from either sugar or clay that are used in the Mexican celebration of the Day of the Dead.



Key Equipment and its use:

Sewing Machine: This is used to stitch fabric together faster and neater.

Screen Printing: Screen printing the process of pressing ink through a stencilled mesh screen to create a printed design.

Squeegee: A squeegee is used in screen printing to force the ink through the image section of the screen

Printing Ink: This is used with a squeegee to print an image.

Stencil: This is used to create a pattern to be printed.

Puff Binder: This is used with a screen to print creating a 3D textured effect.

Heat Gun: This is used with the puff binder to create a 3D textured effect,

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Tjanting Tool: This is used with a wax pot to create designs with wax.

Wax Pot: This is used to melt wax for batik.

Felt: This is a fabric used to create textile products.

Cotton Thread: This is used with a sewing machine or needle to stitch.

Overlocking Machine: This is used to finish the edges of fabric off so they look neat.

ART BATIK WAX

WHAT YOU NEED

- 2 Strips of tape
- Material
- Coloured Pencil
- A3 Paper

1 Draw your design in pencil, then cover your paper with the material and tape in place.

Print
Save as
Share
Read aloud

2 Tjanting to trace your design in the hot wax, then use the dyes to add colour to your piece.

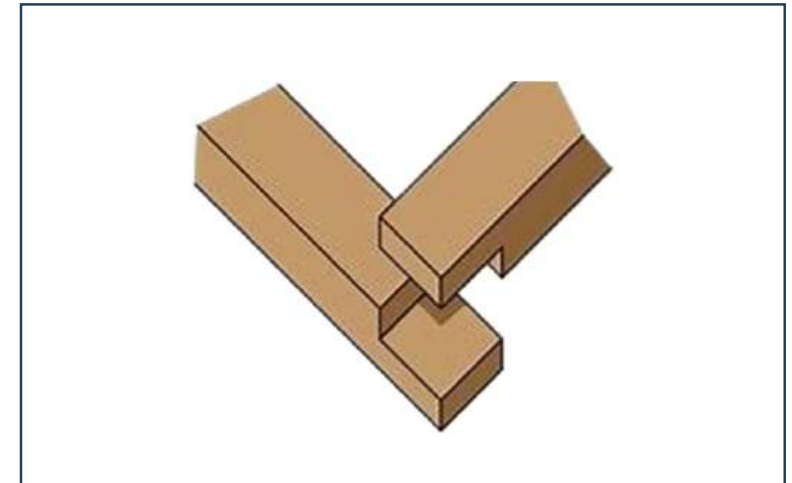
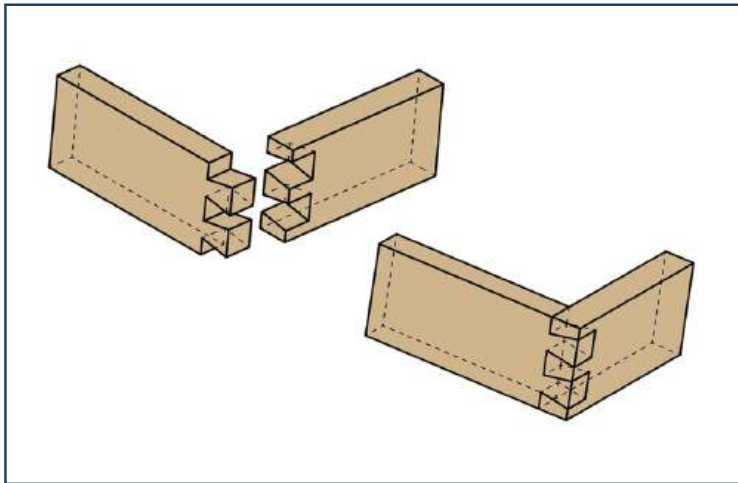
3 Blend and mix the dyes with each other and water to get various effects, experiment!

NOT WAX POT
DANGER
HOT WAX IS HOT, IT CAN BURN! HANDLE WITH CARE!

TJANTING
If you like you could use a brush for applying melted wax to fabric in order to draw pictures and patterns.

- The organdie (special fabric) is stapled to a frame to create a screen.
- Stick the masking tape around the underside of the screen.
- Make your stencil out of paper, cutting out a simple design.
- Place the stencil underneath the frame but on top of a piece of plain paper.
- Pour a thick line of ink at one end of the screen.
- Using the squeegee press down and draw the ink across the screen.
- Carefully lift the screen off.
- Repeat and evaluate.

**1. Match the diagrams to the correct description
and 2. Draw accurately in pencil using a ruler the 3 Wood joints below:**



**A mortise and tenon
Joint connects two
pieces of wood or other
material. Woodworkers
around the world have
used it for thousands of
years to join pieces of
wood at right angles**

**A half lap joint
involves joining
two same-sized
pieces of material
by removing half
the thickness of
each piece where
they connect. This
creates a smooth,
strong connection.**

**A box joint is a
woodworking joint
made by cutting a set of
complementary,
interlocking profiles in
two pieces of wood,
which are then joined
(usually) at right
angles, usually glued.**

During year 9 you will use a wide range of foods and skills to design and make a variety of sweet and savoury products with a Mexican theme.

In practical work you will work out your ideas with some precision, considering how food products will be made, stored and eaten and who will use them. You will use a range of equipment safely with a moderate to high degree of accuracy.

Facts about the day of the dead Section 1

- It's not the same as Halloween.
- It originated in Mexico and Central America.
- It's a celebration of life, not death.
- The ofrenda is a central component.
- Flowers, butterflies and skulls are typically used as symbols.
- Following the Aztec tradition, skulls remain a vital part of Día de Muertos today—but thankfully for the squeamish among us, they're mostly made of sugar.



Skills completed in year 9

Section 2

Crushing



Rolling



Dry frying



Stir frying



Baking



Reducing sauce



Beating Batter



Boiling



Key Vocabulary: Section 3

Cross contamination, (noun) bacteria are spread from equipment, by air or touch from one food to another.

Aesthetically pleasing (adjective) how a product looks, smells, and tastes.

Layering (noun) the process of joining together ingredients
Vitamins (noun) Are found in food and only needed in small amounts.

Pathogenic bacteria (noun) Are bad bacteria that can cause food poisoning.

Glaze (noun) shiny layer used on pastries and breads to make them appealing.

Tolerance (noun) The correct colour, thickness and size of food

Function of ingredients. (noun) the job that the ingredient does in cooking.

Design Brief (noun) a task with detailed points to include in the solution.

Temperature probe. (noun) used for checking the temperature of high risk food eg. Meat.

Plating (noun) is the process of arranging and decorating food to enhance its presentation. Improving the presentation of a dish .

Boil (noun) to cook at full heat with the liquid rapidly bubbling.

Simmer (verb) to cook or cook in a liquid at or just below the boiling point.

Designing (adjective) creating ideas, sketches, plans and products.

Finish (noun) the final look and presentation of food.

Forming (noun) shaping an ingredient into a shape e.g. meat into a burger.

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

The Eatwell Guide

Section 1

The Eatwell Guide is the UK Healthy Eating Model. It shows what we should eat as a balanced diet. The size of the sections represents the proportion of our diet that particular food group should make up. The Eatwell Guide was updated in 2016 to take into account scientific opinion and public opinion. The main change was that sugary and fatty foods are shown off the plate as they are not part of a healthy diet.

Water makes up just over 2/3 of the human body and is required for:

- Maintain body temperature
- Metabolise fat
- Aid digestion
- Lubricate organs
- Transport nutrients
- Flushes out waste and toxins



Fruits & Vegetables

- Eat 5 portions a day!
- Choose a variety
- Provides fibre for healthy digestion
- Provides vitamins and minerals for healthy body functions and immune system

40 %

Starchy Foods

- Provide slow release carbohydrate used by the body for energy
- Choose wholegrains for increased fibre (good digestion, reduced risk of heart disease)

Water Intake

A balanced diet must include water, it is required for nearly all brain and other bodily functions.

Water rich foods



96% water



90% water



94% water



92% water



95% water



95% water



89% water



89% water

Fatty and Sugary Foods

- These are the danger foods!
- They are not part of a healthy diet
- Eat them only occasionally
- Eating too much fatty and sugary processed food is linked to increased risk of weight gain/obesity, diabetes, tooth decay and cardiovascular disease

0%



Click to add text

Oils & Spreads

Provide fat soluble vitamins A,D,E & K
Are high in calories & energy so keep use to a minimum
It is recommended to choose unsaturated oils like olive oil.

1%

8 Tips for healthy eating

1. Eat more fibre
2. Eat more fruits and Vegetables
3. Eat more oily fish
4. Eat less salt
5. Eat less fat
6. Eat less sugar
7. Choose wholegrains
8. Drink 6-8 glasses of water per day

Beans, Pulses, Eggs, Meat, Fish

- Provide protein for growth, repair and maintenance of body cells
- Choose a combination of plant proteins
- Avoid eating too much processed meat like bacon and sausages as these are linked with increased risk of bowel and stomach cancer

12 %

Dairy Foods

- Provide calcium for healthy bones, teeth and nails
- The body needs Vitamin D to absorb calcium effectively

8%

Soluble fibre dissolves in water and the insoluble kind doesn't.
Soluble fibre helps reduce blood cholesterol and sugar.

Insoluble fibre helps absorb water and bulk up stools. It does not dissolve in water.

PORTION SIZES:
Healthy diets not only have the correct balance, but have the right portion sizes. Here is a 'handy' guide ...

YOUR HAND IS YOUR PORTIONING TOOL



A serving of protein = 1 palm



A serving of vegetables = 1 fist







A serving of carbs = 1 cupped hand



A serving of fats = 1 thumb

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Function of Nutrients in the Body Section 2

	Nutrient	Types	Function	Effects too little (deficiency)	Effect of too much (excess)
MACRONUTRIENTS	Carbohydrates 4kcal per gram 	Starches (complex): found in cereal grains such as rice, wheat, oats, plus starchy tubers (potatoes and sweet potatoes) and vegetables (carrots, beets, corn). Digest slowly, long lasting energy. ✔	Carbohydrate is the body's main source of energy (fuel) . Carbohydrate breaks down to glucose , which is the only form of energy the brain recognises. Basically, without carbohydrate, your brain wouldn't function! All carbohydrates, no matter what type, provide 4kcal of energy per gram . The difference is complex carbs take longer to break down and therefore satisfy hunger for longer, whereas simple sugars leave you feeling empty and wanting more. Complex carbs provide dietary bulk and fibre which makes us feel fuller for longer. Dietary fibre: complex carbohydrate found in the cell wall of fruits, vegetables and cereals. Aids with removal of waste from the body.	Deficiency of carbohydrates is extremely rare in the UK as we have good access to carbohydrate rich foods. Long term lack of carbohydrates in the diet can cause ketosis - a condition where the body switches to using protein as an energy source. Visible symptoms: Lack of energy and weight loss. Non-visible symptoms: Not enough fibre from wholegrains foods leads to constipation and other intestinal/bowel problems.	If not used for energy, excess carbohydrates are converted to glycogen and stored in the muscles and liver. Visible symptoms: Weight gain and obesity. Non-visible: Eating too much non-refined (white) carbohydrates leads to tooth decay, raised blood sugar levels and increased risk of developing type 2 diabetes. (See carbohydrates and glycemic index slides 7-8).
		Sugars (simple): lactose found in milk and dairy, fructose found in honey, fruits and some vegetables (peppers, tomatoes). Digest and enter the bloodstream quickly for a burst of energy. ✘			
	Proteins 4kcal per gram	High Biological Value (HBV) protein: Meat, fish, poultry, dairy foods (milk), eggs, soya. Contain all the essential amino acids the body cannot make itself. ✔	Protein is digested by the body into its component parts - called amino acids . There are 8 which are essential for adults and 10 for children. Protein is essential for the growth, maintenance and repair of body tissue .	Visible symptoms: • Wasting of muscle & muscle loss • Oedema - build up of fluids in the body • Slow growth in children Severe deficiency leads to kwashiorkor (bloating of the stomach). Non-visible symptoms: Weaker immune system, as it needs protein to function properly. This can lead to prolonged recovery from illness or getting ill more frequently.	Visible symptoms: Excess stored as fat, which can lead to weight gain and obesity. Non-visible symptoms: Increased protein consumption leads to hyperfiltration - a state in which the kidney faces increased pressure in order to filter and remove waste from the body. Over the long term, hyperfiltration may lead to kidney damage .
	Low Biological Value (LBV) protein: Quorn, Tofu, peas, beans, lentils, nuts, seeds and cereals. Missing one or more of the essential amino acids. Mainly come from plant sources. Two or more LBV proteins can be combined to make a complete protein. This is called protein complementation . Example: beans on toast. ✔	Protein is part of every living cell and some tissues like skin, muscle, hair and the core of bones and teeth!	 		
	Fats 9kcal per gram	Monounsaturated Fat: Avocado, many nuts and seeds, olive oil, almond oil, sunflower oil. ✔	<ul style="list-style-type: none"> • Protection of internal organs • Thermoregulation (temperature control) • Insulation of nerve cells (conduct electrical messages) • Uptake of fat soluble vitamins (A, D, E & K) • Growth, development and repair of body tissues • In women, storage and modification of reproductive hormones (oestrogen) 	Visible symptoms: Bruising of the bones as they are not protected. Lack of fat in the diet can lead to deficiencies of fat soluble vitamins A, D, E & K. Fat deficiency can also lead to impaired in fertility in women due to anovulation. *Anovulation - happens when an egg (ovum) doesn't release from the ovary during the menstrual cycle. An egg is needed to have a pregnancy.	Common issue in the UK: Over consuming foods high in fat can raise the blood cholesterol levels (fat in the blood). Cholesterol is a fatty substance that is needed for the body to function properly, however there are two types, LDL (bad) and HDL (good) . LDL cholesterol comes from saturated fats, such as meat and cheese. Eating too much saturated fat can lead to obesity and higher 'bad' cholesterol levels as well as an increased risk of developing type 2 diabetes and heart disease. Unsaturated plant sources of fats are much healthier for us.
	Polyunsaturated Fat: Vegetable oil, corn oil, safflower oil, nuts, oily fish. ✔				
	Saturated Fat: Mainly from animal sources. Meat, butter, cream, eggs. ✘				
	Omega 3, 6 and 9 Fatty Acids: Oily fish, seeds and oils, flax seeds, pumpkin seeds, walnuts, soya beans, dark green vegetables, vegetable oils, margarines (polyunsaturated). ✔	<ul style="list-style-type: none"> • Forms a vital part of cell membranes • Supports mental health • Improves heart health • Supports health weight management • Shown to reduce inflammation • Supports infant brain development • Promotes brain health 			



AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Fat Soluble Vitamins Section 3

A vitamin that can dissolve in fats and oils. Vitamins are nutrients that the body needs in small amounts to stay healthy and work the way it should. Fat-soluble vitamins are absorbed along with fats in the diet and are stored in the body's fatty tissue and in the liver.

Key Words

Deficiency	A shortage of a substance (such as a vitamin or mineral) needed by the body.
Absorb	Nutrients are taken into the body and (absorbed) and transported by the bloodstream to other parts of the body for use or storage.

	Fat Soluble Vitamin	Needed For	Found In	Deficiency/Excess
MICRONUTRIENTS	A Adults aged 19 to 64 need (per day): 700mcg men 600mcg women	<ul style="list-style-type: none"> helping your body's natural defence against illness and infection (the immune system) work properly helping vision in dim light keeping skin and the lining of some parts of the body, such as the nose, healthy 	<ul style="list-style-type: none"> cheese eggs oily fish fortified low-fat spreads milk and yoghurt liver and liver products such as liver pâté <p>Liver is a particularly rich source of vitamin A, so you may be at risk of having too much vitamin A if you have it more than once a week (pregnant women should avoid eating liver or liver products).</p>	<p>Deficiency - Night blindness. Xerophthalmia the eyes may become very dry and crusted, which may damage the cornea and retina. Frequent skin irritations.</p> <p>Excess Having more than an average of 1.5 mg (1,500 µg) a day of vitamin A over many years may affect your bones, making them more likely to fracture when you're older. This is particularly important for older people, especially women, who are already at increased risk of osteoporosis, a condition that weakens bones.</p>
	Beta-Carotene	You can also get vitamin A by including good sources of beta-carotene in your diet, as the body can convert this into retinol.	<ul style="list-style-type: none"> yellow, red and green (leafy) vegetables, such as spinach, carrots, sweet potatoes and red peppers yellow fruit, such as mango, papaya and apricots 	
	D Adults aged 19 to 64 need: 10mcg per day	<ul style="list-style-type: none"> keep bones, teeth and muscles healthy. 	<ul style="list-style-type: none"> oily fish - such as salmon, sardines, herring and mackerel red meat liver egg yolks fortified foods - such as some fat spreads and breakfast cereals 	<p>Deficiency - A lack of vitamin D can lead to bone deformities such as rickets in children, and bone pain caused by a condition called osteomalacia in adults.</p> <p>Excess - Taking too vitamin D over a long period of time can cause too much calcium to build up in the body (hypercalcaemia). This can weaken the bones and damage the kidneys and the heart.</p>
	E Adults aged 19 to 64 need: 4mg men 3mg women	<ul style="list-style-type: none"> helps maintain healthy skin and eyes and strengthen the body's natural defence against illness and infection (the immune system). 	<ul style="list-style-type: none"> plant oils - such as rapeseed (vegetable oil), sunflower, soya, corn and olive oil nuts and seeds wheatgerm - found in cereals and cereal product 	<p>Deficiency - Any vitamin E your body does not need immediately is stored for future use, so you do not need it in your diet every day.</p> <p>Excess - N/A</p>
	K Adults aged 19 to 64 need: 1 microgram per kg of body weight.	<ul style="list-style-type: none"> a group of vitamins that the body needs for blood clotting, helping wounds to heal. 	<ul style="list-style-type: none"> green leafy vegetables - such as broccoli and spinach vegetable oils cereal grains small amounts can be found in meat and dairy foods. 	<p>Deficiency - Taking 1mg or less of vitamin K supplements a day is unlikely to cause any harm.</p> <p>Excess - Rare, however vitamin K can interact with several common medications, including blood-thinners, anticonvulsants, antibiotics, cholesterol-lowering drugs, and weight-loss drugs.</p>

Key outcomes	Definition
Government policies	Government policies are rules or principles that guide decisions. They include health care, budgets, benefits, tax etc.....
Citizen participation	Citizen participation in the economy comes through activities such as spending, borrowing, earnings and the amount of tax paid.
Government influence	Citizens are influenced by government policies as decisions they make can impact an individuals finances. Examples – tax – interest rates – regulations.
Public spending	Public spending is the amount of tax payers money spent on public services such as the health, fire service and police.
Bank of England	It is the Bank of England's job to keep inflation low as they set how high financial providers can set interest.
Inflation	The rate at which the price of goods and services increase over time.
Economic climate	If the economy is doing well then this is called a 'boom' as there is lots of money in the system. If the economy is doing badly then this is called a recession as there is little money in the system. During a 'boom' there is very low unemployment, very high employment, lower amounts of debt and lots of public spending. During a boom period profit making companies usually thrive because of the amount of money in the economy. During a recession unemployment is high and there is a large amount of debt. Companies struggle because there is so little money in the economy.
Financial values	Financial values are a set of beliefs how individuals behave with financial decisions.

Key outcomes	Definition
Features of money	Recognisable, portable, scarce, divisible, stable, durable
Counterfeiting	Counterfeiting is when fake money is made which is illegal. Security features appear on real bank notes to avoid counterfeiting, these include; Raised print Water marks Holograms Fluorescent ink
Future of money	Due to technology less cash is being used and we spend more electronically using debit cards, direct debits, credit cards etc....
Direct tax	Tax that is taken directly from income such as income tax and national insurance contributions.
Indirect tax	Tax that people pay within the price of goods such as VAT.
Purposes of tax	Tax is used to pay the national purse and is how much the government can spend on the country.
Social justice	Social justice in the government ensures that although most money is used to improve public service, it also goes towards services that provide for people who are vulnerable or in need. This is the idea that people have equal opportunities and equal access to resources.
Corporate social responsibility	Corporate social responsibility in the government concentrates on making sure profit making organisations are doing the correct thing in with regards to health and the environment.

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Water Soluble Vitamins Section 4

A vitamin that can dissolve in water. Vitamins are nutrients that the body needs in small amounts to stay healthy and work the way it should. Water-soluble vitamins are carried to the body's tissues but **are not stored in the body**.

	Water Soluble Vitamin	Needed For	Found In	Deficiency/Excess
MICRONUTRIENTS	C Antioxidant Adults aged 19 to 64 need 40mg of vitamin C per day.	<ul style="list-style-type: none"> helping to protect cells and keeping them healthy maintaining healthy skin, blood vessels, bones and cartilage helping with wound healing 	<ul style="list-style-type: none"> citrus fruit, such as oranges and orange juice peppers strawberries blackcurrants broccoli brussels sprouts potatoes 	<p>Deficiency - Scurvy, very rare symptoms include bleeding gums, wounds not healing properly, tiredness. Lack of vitamin C effects absorption of iron.</p> <p>Excess Taking large amounts (more than 1,000mg per day) of vitamin C can cause:</p> <ul style="list-style-type: none"> stomach pain diarrhoea Flatulence <p>Vitamin C is water soluble so excess can easily be excreted by the body.</p>
	B1 Thiamin Adults aged 19 to 64 need: 1mg men 0.8mg women	<ul style="list-style-type: none"> helps the body break down and release energy from food keep the nervous system healthy 	<ul style="list-style-type: none"> peas some fresh fruits (such as bananas and oranges) nuts wholegrain breads some fortified breakfast cereals liver 	<p>Deficiency - Beri-beri (disorder of the nervous system).</p> <p>Excess - body excretes it.</p>
	B2 Riboflavin Adults aged 19 to 64 need: 1.3mg men 1.1mg women	<ul style="list-style-type: none"> keep skin, eyes and the nervous system healthy release energy from food 	<ul style="list-style-type: none"> milk eggs fortified breakfast cereals mushrooms plain yoghurt <p>UV light can destroy riboflavin, so these foods should be kept out of direct sunlight.</p>	<p>Deficiency - Dry cracked skin around the mouth and nose.</p> <p>Excess - body excretes it.</p>
	B3 Niacin Adults aged 19 to 64 need: 16.5mg men 13.2mg women	<ul style="list-style-type: none"> release energy from food keep the nervous system and skin healthy 	<ul style="list-style-type: none"> meat fish wheat flour eggs <p>Niacin cannot be stored in the body, so you need it in your diet every day.</p>	<p>Deficiency - disease pellagra. Symptoms can include dermatitis, dementia and diarrhea.</p> <p>Excess - body excretes it.</p>
	B9 Folate Adults aged 19 to 64 need: 200mcg In pregnancy: 400mcg	<ul style="list-style-type: none"> form healthy red blood cells reduce the risk of birth defects called neural tube defects, such as spina bifida, in unborn babies 	<ul style="list-style-type: none"> broccoli Brussels sprouts leafy green vegetables, such as cabbage, kale, spring greens and spinach peas chickpeas and kidney beans liver (but avoid this during pregnancy) breakfast cereals fortified with folic acid 	<p>Deficiency - can lead to folate deficiency anaemia. Symptoms can include insomnia, depression and forgetfulness.</p> <p>Excess - Taking doses of folic acid higher than 1mg can mask the symptoms of vitamin B12 deficiency, which can eventually damage the nervous system if it's not spotted and treated. This is particularly a concern for older people because it becomes more difficult to absorb vitamin B12 as you get older.</p>
	B12 Cobalamin Adults aged 19 to 64 need: 1.5mcg	<ul style="list-style-type: none"> make red blood cells and keeping the nervous system healthy release energy from food use folate 	<ul style="list-style-type: none"> meat fish milk cheese eggs some fortified breakfast cereals 	<p>Deficiency - If you eat meat, fish or dairy foods, you should be able to get enough vitamin B12 from your diet. Vitamin B12 is not found naturally in foods such as fruit, vegetables and grains, vegans may not get enough of it.</p> <p>Excess - body excretes it.</p>

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Minerals Section 5

A vitamin that can dissolve in water. Vitamins are nutrients that the body needs in small amounts to stay healthy and work the way it should. Water-soluble vitamins are carried to the body's tissues but are not stored in the body.

	Mineral	Needed For	Found In	Deficiency/Excess
MICRONUTRIENTS	Iron	<p>Iron is important in making red blood cells, which carry oxygen around the body.</p> <ul style="list-style-type: none"> 8.7mg a day for men over 18 14.8mg a day for women aged 19 to 50 8.7mg a day for women over 50 	<ul style="list-style-type: none"> liver (but avoid during pregnancy) meat beans nuts dried fruit - such as dried apricots wholegrains - such as brown rice fortified breakfast cereals soybean flour most dark-green leafy vegetables - such as watercress and curly 	<p>Deficiency - Iron Deficiency Anaemia</p> <ul style="list-style-type: none"> tiredness and lack of energy shortness of breath noticeable heartbeats (heart palpitations) pale skin <p>Excess Side effects of taking high doses (over 20mg) of iron include constipation, feeling sick, vomiting, stomach pain. Very high doses of iron can be fatal, particularly if taken by children.</p>
	<p>Calcium</p> <p>Adults aged 19 to 64 need: 700mg</p> <p>See older adults (slide 13) for more info.</p>	<ul style="list-style-type: none"> helping build strong bones and teeth regulating muscle contractions, including heartbeat making sure blood clots normally 	<ul style="list-style-type: none"> milk, cheese and other dairy foods green leafy vegetables - such as broccoli, cabbage and okra, but not spinach soya beans tofu soya drinks with added calcium nuts bread and anything made with fortified flour fish where you eat the bones - such as sardines and pilchards 	<p>Deficiency A lack of calcium could lead to a condition called rickets in children and osteomalacia or osteoporosis in older adults.</p> <p>Excess Taking high doses of calcium (more than 1,500mg a day) could lead to stomach pain and diarrhoea.</p>
	<p>Sodium/Salt</p> <p>Adults aged 19 to 64 need: No more than 6g per day</p>	<p>The human body requires a small amount of sodium to conduct nerve impulses, contract and relax muscles, and maintain the proper balance of water and minerals.</p> <p>Salt is also called sodium chloride. Sometimes, food labels only give the figure for sodium. There is a simple way to work out how much salt you are eating from the sodium figure: Salt = sodium x 2.5 Adults should eat no more than 2.4g of sodium per day, as this is equal to 6g of salt.</p> <p>Children aged:</p> <ul style="list-style-type: none"> 1-3yrs no more than 2g salt a day (0.8g sodium) 4-6yrs no more than 3g salt a day (1.2g sodium) 7-10yrs no more than 5g salt a day (2g sodium) 11+yrs no more than 6g salt a day (2.4g sodium) 	<ul style="list-style-type: none"> anchovies bacon cheese gravy granules ham olives pickles prawns salami salted and dry-roasted nuts salt fish smoked meat and fish soy sauce stock cubes yeast extract <p>Other high salt products:</p> <ul style="list-style-type: none"> bread products such as crumpets, bagels and ciabatta pasta sauces crisps pizza ready meals soup sandwiches sausages tomato ketchup, mayonnaise and other sauces breakfast cereals 	<p>Deficiency Hyponatremia is a condition that occurs when the sodium in your blood falls below the normal range. In severe cases, low sodium levels in the body can lead to muscle cramps, nausea, vomiting and dizziness. Eventually, lack of salt can lead to shock, coma and death.</p> <p>Excess Too much salt can raise your blood pressure, which puts you at increased risk of health problems such as heart disease and stroke. You don't have to add salt to food to be eating too much - 75% of the salt we eat is already in everyday foods such as bread, breakfast cereal and ready meals.</p>

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Nutritional Needs: Adults Section 6



The NHS recommends the average healthy adult has the following intakes of each nutrient per day.



Following a healthy, balanced diet helps make sure that adults get all the nutrients needed to work well from day to day and can also reduce the risk of diseases like heart disease, stroke, type 2 diabetes and some types of cancer in the longer term.



Nutrient	Amount	Calories per gram
Energy (calories) Male Female	2,500kcal 2,000kcal	
Carbohydrate of which sugars	At least 260g 90g	4kcal
Protein	50g	4kcal
Fat of which saturates	Less than 70g Less than 20g	9kcal

Micronutrients are vitamins and minerals needed by the body in very small amounts, however a deficiency in any of them can cause severe and even life-threatening conditions! Notice males and females require different amounts of some nutrients.

Nutrient	Males	Females
Vitamin A	700mcg	600mcg
Vitamin D	10mcg	
Vitamin E	4mg	3mg
Vitamin K	1mcg per kg of body weight	
Vitamin B	Thiamin: 1mg Niacin: 16.5mg Riboflavin: 1.3mg Vitamin B12: 1.5mcg	Thiamin: 0.8mg Niacin: 13.2mg Riboflavin: 1.1mg Vitamin B12: 1.5mcg
Vitamin C	40mg *Vitamin C cannot be stored in the body, so you need it in your diet every day.	
Sodium (Salt)	Less than 6g	
Iron	All (M) 8.7mg	(F) 19-50yrs 14.8mg / 50yrs+ 8.7mg
Calcium	700mg	



The main principles of a health balanced diet for an adult are:

- including plenty of a range of fruit and vegetables - at least 5 A DAY
- including plenty of fibre-rich foods, especially wholegrains
- including a range of protein-sources especially beans, peas and lentils
- including some dairy foods or fortified alternatives
- choosing mainly unsaturated fats and oils, and
- minimising foods and drinks that are high in fat, salt and sugars.

Fruit and vegetables provide a range of essential nutrients and fibre, as well as chemical compounds that occur naturally in plants that may have health benefits.

Different types and colours of fruits and vegetables contain different combinations of important nutrients like:

- **vitamin C** - important for maintaining healthy body tissues.
- **vitamin A** - important for maintenance of normal vision, skin and the immune system.
- **folate** - important for normal and healthy blood formation.
- **fibre** - helps to maintain a healthy gut.
- **potassium** - helps to maintain a healthy blood pressure and is also important for the normal functioning of the nervous system

Key Words

Healthy diet	A diet low in fat, salt and sugar but high in fibre.
Energy needs	The average amount of energy required from food by individuals. Measured in calories (kcal). This can be different for different life stages and activity levels.
Reference intakes (RIs)	Guidelines about the approximate amount of particular nutrients and energy required for a healthy diet. Provided by the NHS.
Macronutrients	Nutrients needed by the body in large amounts.
Micronutrients	Nutrients needed by the body in smaller amounts.

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Nutritional Needs: Children Section 7

Like adults, children should follow a healthy balanced diet to support their growth and development. However, there are some nutrients children should consume in smaller amounts to prevent becoming overweight, e.g., fat.

Children 3-7yrs

Males	Female
Calories per day 1,300kcal increasing to 1,600kcal	Calories per day 1,250kcal increasing to 1,500kcal
Carbohydrate: 130g	Carbohydrate: 130g
Protein: 20g	Protein: 20g
Fats: 50g Saturates: 15g	Fats: 50g Saturates: 15g
Vitamins and Minerals Iron: 6.1mg/d Calcium: 450mg/d Sodium: 700mg/d	Vitamins and Minerals Iron: 6.1mg/d Calcium: 450mg/d Sodium: 700mg/d
Fibre: Male: 20g	Fibre: Female: 20g

Children need lots of:

- Protein for **growth** and **development**
- Calcium and vitamin D for growth of **bones and teeth**
- Food containing lots of energy such as **wholegrain foods**
- Vitamin C to help release iron from foods and for clear skin and to fight **infections**
- Milk to provide **calcium and fats**
- Many children diets vary but it is recommended they eat 1300kcal per day made up of the right balance of **nutrients**
- Avoid sweets as these **can cause tooth decay**
- Avoid fatty foods as this will **cause children to consume too many calories**
- Build up **good eating habits in early life.**

Children 7-10yrs

Males	Female
1,649kcal	1,530kcal
1,745	1,625kcal
1,840	1,721kcal
2,032	1,936kcal

Children aged 7 to 10 years old need lots of energy and nutrients because they're **still growing**. Children in this age group need **slightly more calories** than children aged 3-7yrs. **A healthy, balanced diet for children aged 7 to 10 should include:**

- 5 portions of a variety of fruit and veg per day
- meals based on starchy foods, such as potatoes, bread, pasta and rice
- some milk and dairy products or alternatives
- some foods that are good sources of protein, such as meat, fish, eggs, beans and lentils

Carbohydrate Function: For energy. Starchy carbohydrates are the best source of energy for a growing child and will encourage healthy eating habits for life.

Food sources:

- Complex carbohydrates:** potatoes, bread, rice, pasta, breakfast cereals, oats, couscous and other grains.
- Simple carbohydrates:** fizzy drinks, juice drinks, sweetened drinks chocolate, sweets, cakes, breakfast cereals and biscuits.



Protein Function: For growth, maintenance and repair of the body. Protein foods also provide other important nutrients, such as iron, omega 3s, zinc, B vitamins, vitamin D, calcium and selenium. **Plant-based proteins** are a great addition and contain vitamins and minerals as well as extra **fibre**. Examples include beans, lentils and pulses such as chickpeas.

Food sources:

- HBV Protein:** lean meat, fish, dairy products, eggs and soya products.
- Some HBV proteins** are also high in saturated fat, such as red meat.
- LBV Protein:** peas, beans, nuts, lentils, cereals (rice, oats, barley, rye) and cereal products (bread, pasta), seeds. Protein alternatives are manufactured food products, with a high protein content, e.g. mycoprotein (Quorn), tofu, TVP and tempeh. They are used instead of meat in meals.

Fats Function: Some fat is needed in the diet, but it needs to be the right type of fat and in the right amount. Unsaturated fats are healthier than saturated fats, which are linked to long term ill health such as heart disease and obesity. Unsaturated fat is also a good source of Omega 3 and 6 fatty acids.

Children need fats to **fuel** the body and help **absorb** some **vitamins**. They also are the building blocks of **hormones** and they **insulate** the body.

Food Sources:

- Unsaturated fats:** olive, rapeseed, sunflower and corn oils, oily fish, nuts and seeds.
- Saturated fat:** animal products such as fatty meats, butter, lard, ghee, and dairy products and foods made with these such as cakes, biscuits and pastries.

Omega 3 and 6 Fatty Acids Function: Function: Long chain omega 3's are essential for normal brain development. Our bodies cannot make this type of fat, so it is important we get it from the diet.

- Food sources:** Oily fish such as salmon, mackerel, trout and sardines.

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Nutritional Needs: Teenagers Section 8

Teenagers require more energy from food than adults because they are growing and often very active. Puberty is a time of rapid growth and changing energy requirements and therefore a risk period for developing obesity.

Teenagers often struggle to meet their daily recommended intake of **iron, calcium, vitamin D, and zinc**, so it's important to eat foods that are rich in these. Teenagers should also remember to eat foods containing **vitamin C and protein**, which are essential for supporting their immune system and muscles.

Teenagers 13-19yrs	
Nutrient	Food Source
Iron	Meats (including beef, chicken, and pork), legumes and nuts, dried fruit, green leafy vegetables, and beans.
Vitamin C	Most fruits and vegetables, particularly citrus fruits, leafy greens, red and green peppers, tomatoes, and broccoli.
Calcium	Milk, cheese, tinned fish (such as sardines), green leafy vegetables, tofu, and beans.
Vitamin D	Egg yolks, oily fish, beef liver, and fortified foods (such as margarine and breakfast cereals).
Zinc	Shellfish, red meats, dairies, legumes (such as chickpeas and lentils), and fortified foods.
Protein	Meats, fish, poultry, eggs, beans and legumes, seeds and nuts, and tofu.

Teenagers need lots of:

- **Protein** for growth and repair
- **Calcium** and **vitamin D** to reach peak bone mass
- **Girls** especially need **iron** to replace that lost during their **periods**.
- **Vitamin C** to help absorb **iron** from foods and for clear skin and to fight infections
- Many teenagers vary their diet, but it is recommended they eat **1800kcal** per day made up of the right balance of nutrients.
- **Boys** need **extra iron** initially for growth and muscles, but this need decreases after age 19.
- **Boys** need more **protein** and **energy** than girls due to their later growth spurt
- Many **UK teenagers** are lacking in calcium, iron and vitamin A.



Vegetarian Teenagers

Teenagers who follow a vegetarian or vegan diet may experience a lack of iron, which is needed for healthy red blood cells, so it is important to find good alternatives.

Vegetarian sources of iron include:

- Leafy green vegetables
- Dried fruit
- Fortified cereal
- Beans
- Lentils



However, vegetarian sources of iron aren't absorbed by the body as well as animal sources. To help with this, a glass of vitamin C-rich orange juice could be taken at mealtimes to help the body absorb iron.

Vegetarians and vegans also need to make sure they get enough Omega 3, a fatty acid essential for keeping the brain and cells healthy, as the body cannot produce it on its own. Good food sources include a handful of walnuts, tofu or soya.

Healthy Hormones

Zinc is needed in the diet for making many enzymes and hormones, including growth hormones, insulin and testosterone. This is particularly important for teenagers who are developing fast and need the best nutrition they can get.

Zinc can be found in red meat, seeds, spinach, cocoa, mushrooms and oysters.

B-vitamins and Omega 3 can be found in oily fish, wholegrain bread, eggs, milk and vegetables and help to balance hormone production, which is particularly supportive for girls suffering with negative symptoms of PMS.

Alcohol, sugar, saturated fat and caffeine intake have a strong impact on the amount of testosterone in a teenage body, which can easily cause acne breakouts. Consumption of these types of food should be limited to improve skin conditions and mood swings.

AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Nutritional Needs: Older Adults Section 9

Like adults, older adults should follow a healthy balanced diet to support the maintenance and proper function of the body. Many older adults experience a lowering or loss of appetite, and may need some nutrients in more or less amounts.

Diabetes

Elderly diabetics find it **difficult to control their blood sugar levels**, so they need to eat starchy foods at regular intervals. **They should avoid foods high in sugar.**

Low fat diets

Older adults **do not need as many calories** due to being less active. This could be due to retirement or from lack of mobility because of medical conditions such as arthritis.

Low salt diet

Older adults should **avoid foods high in salt** as this can cause heart problems.



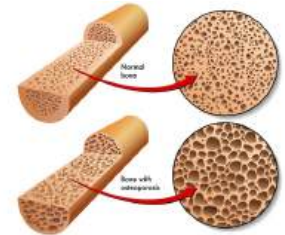
The Elderly 65+yrs	
Males	Females
Calories per day Inactive males: 2,000kcal Somewhat active males: 2,200kcal	Calories per day Inactive females: 1,600kcal Somewhat active females: 1,800kcal
Carbohydrate: 130g - 260g	Carbohydrate: 130g - 260g
Protein: 50g	Protein: 50g
Fats: 70g Saturates: 20g	Fats: 70g Saturates: 20g
Vitamins and Minerals Iron: 8.7mg/d Calcium: 1,000 - 1200mg/d Sodium: 1600mg/d	Vitamins and Minerals Iron: 8.7mg/d Calcium: 1,000 - 1200mg/d Sodium: 1600mg/d
Fibre: Males: 30g	Fibre: Females: 21g

Women reach **peak bone mass** around the age of **25 to 30 years**, when the skeleton has stopped growing and bones are at their strongest and thickest.

The female hormone, **oestrogen**, plays an important role in maintaining bone strength. **Menopause** (the natural ending of periods that usually occurs between the ages of **45 and 55**) can increase your risk of developing osteoporosis, a condition in which bones become thin (less dense) and may fracture easily.

The **drop in oestrogen levels** that occurs around the time of menopause results in **increased bone loss**. It is estimated that, on average, women lose up to **10 per cent of their bone mass in the first five years after menopause**.

To reduce the risk of osteoporosis, post-menopausal women should eat a diet **rich in calcium** and do regular weight-bearing exercise.



Before menopause, older female adults should have **1,000 mg of calcium daily**.

After menopause, older female adults should have up to **1,200 mg of calcium daily**.

Vitamin D is also very important for **calcium absorption** and bone formation.

Although **osteoporosis** is perceived as a female disease, **1 in 8 men over 50 years** will experience a fragility fracture during his lifetime;

SUMMARY

- Loss of appetite
- **Diabetes** - need to eat starchy foods at regular intervals. They avoid foods high in sugar.
- Need **less calories** - dishes should be **low in saturated fat**.
- **Low salt diet** - elderly people avoid foods high in salt as this can cause medical problems such as **high blood pressure**.
- Regular **exercise and activity** helps boost appetite, which some elderly people cannot manage.
- Many older adults **don't get enough fluids and** become **dehydrated** more easily because of age-related changes or **medications** they're taking.



AC2.1.1 Nutrition: Describe functions of nutrients in the human body.

Nutritional Needs: Pregnancy Section 10

Because the body becomes **more efficient at absorption during pregnancy**, normal nutritional requirements apply until the **last trimester of pregnancy**, when some **extra energy and calcium is required**. Pregnant and lactating women should eat a varied diet rich in fresh fruit and vegetables and wholegrains (**in line with the Eatwell Guide**).

High Risk Foods to Avoid:

- Unpasteurised milk products and undercooked meats/cured meat products - they may contain listeria which is harmful to unborn babies
- Pate, liver and liver products - due to high vitamin A content (Vitamin A is harmful to unborn babies if eaten in large quantities)
- Swordfish, marlin and shark as they are high in mercury which can be harmful to unborn baby

FOLIC ACID IN PREGNANCY

It's recommended to take:

- 400 micrograms of folic acid every day - from before pregnancy until 12 weeks pregnant
- This is to reduce the risk of problems in the baby's development in the early weeks of pregnancy.

VITAMIN D IN PREGNANCY

Pregnant women need 10 micrograms of vitamin D each day and should consider taking a supplement containing this amount between September and March.

Vitamin D regulates the amount of calcium and phosphate in the body, which are needed to keep bones, teeth and muscles healthy.

Vitamin D can be found in the following foods:

- oily fish (such as salmon, mackerel, herring and sardines)
- eggs
- red meat
- Vitamin D is added to some breakfast cereals, fat spreads and non-dairy milk alternatives. The amounts added to these products can vary and might only be small.

Having more than 100 micrograms (4,000 IU) of vitamin D a day as it could be harmful.

IRON IN PREGNANCY

During pregnancy, a woman's blood volume increases to support the growing baby.

This means more red blood cells are needed and therefore more iron to make them. Not having enough iron to meet this demand could lead to **tiredness and anaemia**.

Lean meat, green leafy vegetables, dried fruit, and nuts contain iron.

Many breakfast cereals have iron added to them.

CALCIUM IN PREGNANCY

Calcium is vital for making the growing baby's bones and teeth.

Sources of calcium include:

- milk, cheese and yoghurt
- green leafy vegetables, such as rocket, watercress or curly kale
- tofu
- soya drinks with added calcium
- bread and any foods made with fortified flour
- fish where you eat the bones, such as sardines and pilchards

Differences to non-pregnant women

Avoid high risk foods when pregnant:

- raw or undercooked meat
- liver and liver products
- all types of pâté, including vegetarian pâté
- game meats such as goose, partridge or pheasant
- any other foods made from unpasteurised milk, such as soft ripened goats' cheese
- pasteurised or unpasteurised soft blue cheeses
- unpasteurised cows' milk, goats' milk, sheep's milk or cream
- raw or partially cooked hen eggs that are not British Lion or produced under the Laid in Britain scheme
- raw or partially cooked duck, goose or quail eggs
- smoked fish, such as smoked salmon and trout
- alcohol
- no more than 200mg caffeine per day
- **More calories in 2nd and 3rd trimester**

Possible deficiencies when pregnant:

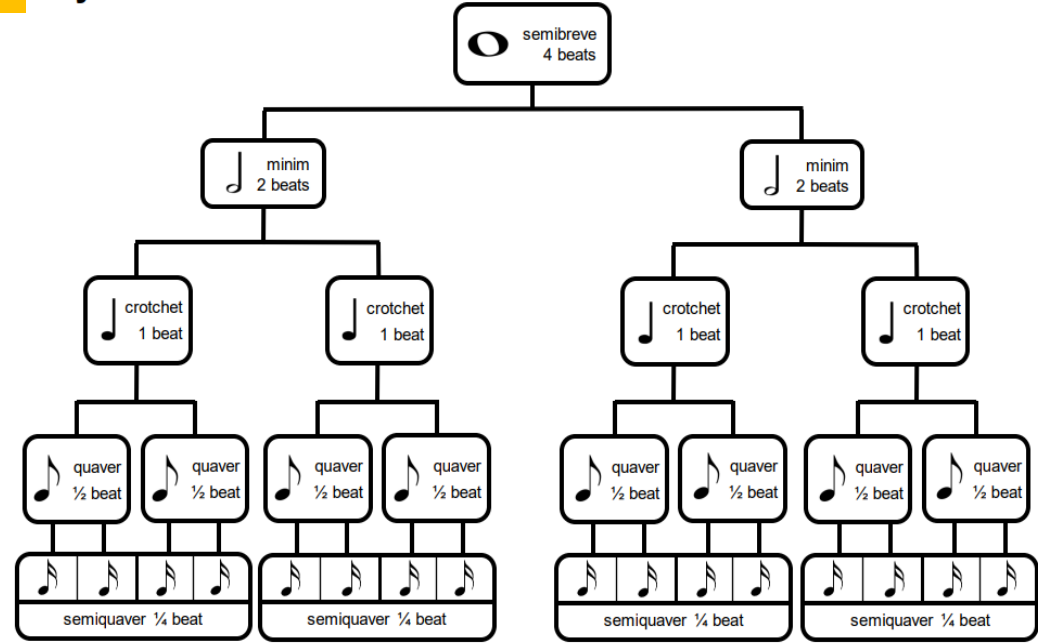
- Iron
- Vitamin B12
- Folate
- Iodine
- Zinc
- Vitamin D
- Vitamin C
- Calcium
- Fibre
- Water



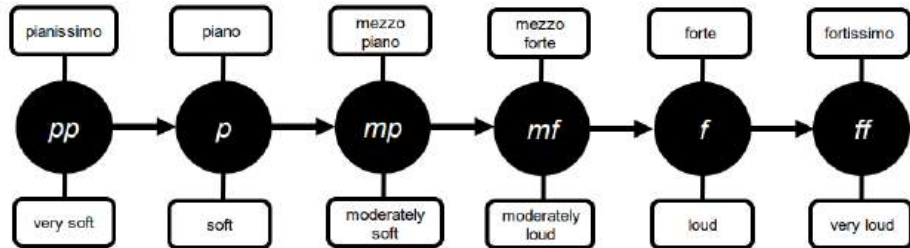
1

Keyword	Definition	Example
Pulse	The beat of the music. Every piece of music has a heartbeat. It doesn't need to be played by drums - you can 'feel' the beat.	"the pulse of the music is steady"
Tempo	The speed of the music. Music can change speed within a piece. We often describe it using Italian words	"the tempo is fast"
Pitch	How high or how low a sound is.	"the music is high"
Dynamics	The Volume of the Music. Music can change dynamics within a piece. We often describe it using Italian words	"the music is quiet and then gets louder"
Structure	Music is divided into sections. The order of these sections create structure. For example verse and chorus/ Binary/Ternary	"the music starts with an 'A' section"
Texture	How the different musical layers combine. A single melody creates a thin sound. Adding more parts/layers creates a thicker sound.	"there are lots of instruments playing lots of different melodies"
Timbre	Each instrument has a unique sound - this individual sound is its timbre. When describing sound first try to describe the instrument and then how it is played	"the flute has a warm timbre when played low down"
Rhythm	Each note can have a long or short duration. Putting different notes together creates a rhythm	"there are lots of crotchet rhythms in this piece"
Melody	The 'tune' of the music - the part we sing along to	"the melody of this song is made up of lots of repeated sections"

2 Rhythm - note durations

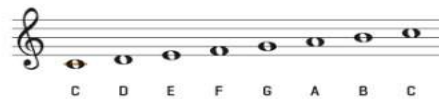


4 Dynamics - volume



3 Pitch

Treble Clef Notes



Notes on the line: Every Good Boy Deserves Food

Notes in the space: FACE

Bass Clef Notes



Notes on the line: Good Burritos Don't Fall Apart

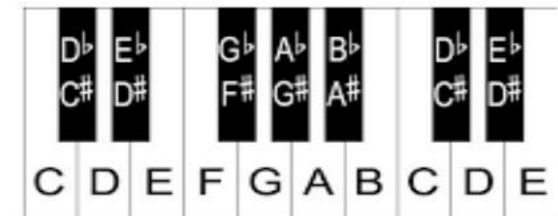
Notes in the space: All Cows Eat Grass

Sharp A sharp makes the note higher

b Flat A flat makes the note lower

♮ Natural A natural cancels out any sharps or flats

Chromatic Notes that are sharp and flat - but they were not in the key signature - they just appear in the music



Computer and Video Game Music



1

Early Computer and Video Game Music

Early video game music consisted primarily of **SOUND EFFECTS** (an artificially created or enhanced sound used to emphasize certain actions within computer and video games), **CHIPTUNES** or **8-BIT MUSIC** (a style of electronic music which used simple melodies made for programmable sound generator (PSG) sound chips in



vintage computers, consoles and arcade machines) and early sound **SYNTHESIZER** technology (an electronic musical instrument that generates audio signals that may be converted to sound). **SAMPLING** (the technique of digitally encoding music or sound and reusing it as part of a composition or recording) began in the 1980's allowing sound to be played during the game, making it more realistic and less "synthetic-sounding".

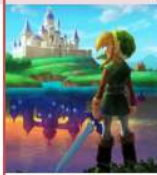
How Computer and Video Game Music is Produced

Fully-orchestrated **SOUNDTRACKS** (video game music scores) are now popular – technology is used in their creation but less in their performance. The composer uses **MUSIC TECHNOLOGY** to create the score, it is then played by an **ORCHESTRA** and then digitally converted and integrated into the game. Video game **SOUNDTRACKS** have become popular and are now commercially sold and performed in concert with some radio stations featuring entire shows dedicated to video game music.



How Computer and Video Game Music is used within a Game

Music within a computer or video game is often used for **CUES** (knowing when a significant event was about to occur). Video game music is often heard over a game's title screen (called the **GROUND THEME**), options menu and bonus content as well as during the entire gameplay. Music can be used to **INCREASE TENSION AND SUSPENSE** e.g. during battles and chases, when the player must make a decision within the game (a **DECISION MOTIF**) and can change, depending on a player's actions or situation e.g. indicating missing actions or "pick-ups".



Musical Features of Computer and Video Game Music

JUMPING BASS LINE Where the bass line often moves by LEAP (DISJUNCT MOVEMENT) leaving 'gaps' between notes 	STACCATO ARTICULATION Performing each note sharply and detached from the others. Shown by a dot. 	CHROMATIC MOVEMENT Melodies and bass lines that ascend or descend by semitones. Chromatic Scale 	SYNCOPIATION Accenting the weaker beats of the bar to give an "offbeat" "jumpy" feel to the music.
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Character Themes in Computer and Video Game Music

Characters within a video game can also have their own **CHARACTER THEMES** or **CHARACTER MOTIFS** – like **LEITMOTIFS** within Film Music. These can be manipulated, altered and changed – adapting the elements of music – **ORCHESTRATION** (the act of arranging a piece of music for an orchestra and assigning parts to the different musical instruments), **TIMBRE, SONORITY, TEXTURE, PITCH, TEMPO, DYNAMICS** – depending on the character's situation or different places they travel to within the game.



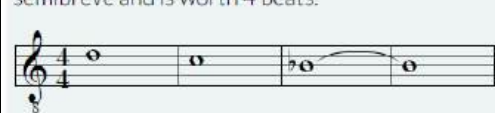
Famous Computer and Video Game Music Composers and their Soundtracks

 Koji Kondo Super Mario Bros. (1985) The Legend of Zelda (1986)	 Michael Giacchino The Lost World: Jurassic Park (1997) Medal of Honour (1999) Call of Duty (2003)	 Mieko Ishikawa Dragon Slayer (1993)	 Martin O'Donnell and Michael Salvatori Halo (2002)	 Daniel Rosenfield Minecraft (2011)	 Rom Di Prisco Fortnite (2017)
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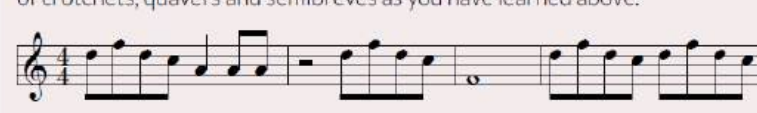
RIFF Use your right hand for this part. Remember to use a metronome/click track to help you stay in time (the original is around 135bpm). A crotchet (♩) is worth 1 beat and quavers (♪) are worth 1/2 beat each.



BASSLINE Use your left hand for this part. Each note is a semibreve and is worth 4 beats.



COUNTER-MELODY This melody fits over both parts as a different layer. It uses a combination of crotchets, quavers and semibreves as you have learned above.



4

3. Grime

2



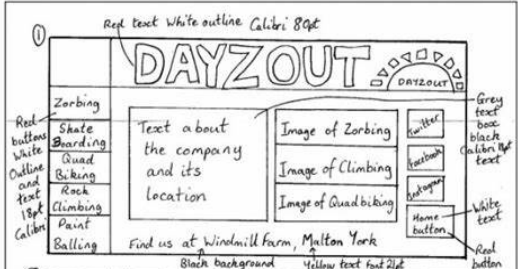
1	Grime music	a genre of EDM created in London in the early 2000s. It was influenced by garage and jungle.
2	Musicians	Skepta, Dizzee Rascal and Stormzy

3	Note Symbol	Technical Name	Note Duration
		Semibreve	4 beats
		Dotted Minim	3 beats
		Minim	2 beats
		Dotted Crotchet	3/4 beats
		Crotchet	1 beat
		2 Quavers	1/2 + 1/2 = 1
		Triplet	3 quavers in the time of 2 beats
		Quaver	1/2 beat

Treble Clef: Played by the right hand with higher pitches.
Bass Clef: Played by the left hand with lower pitches.

	Lines of the Stave	Spaces of the Stave
Right Hand (Treble Clef)	 E G B D F Every Good Boy Deserves Football	 F A C E FACE in the spaces
Left Hand (Bass Clef)	 G B D F A Green Busses Drive Fast Always	 A C E G All Cows Eat Grass

Pre-Production	Documents	Client brief	Purpose	Audience
Audience requirements	Client requirements	Success criteria	House style	Mind map
Mood board	Visualisations	Storyboards	Layout	Timing
Annotation	Script	Plan	Design	Hardware
Software	Legislation	Work plan	File types	Evaluate

Section 1			
Mood board	<p>A mood board is a collection of sample materials and products.</p> <p>Generate ideas by collecting a range of material. To show creativity.</p>	<p>Mood boards can be digital or physical.</p> <p>Images, colours, typography (text)</p> <p>Digital: sound, video and animation</p> <p>Physical: fabrics, materials, objects</p>	
Mind Map	<p>A way of organising thoughts and ideas.</p> <p>To develop and show links between different parts of the project.</p>	<p>Central node</p> <p>Sub nodes</p> <p>Connectors</p> <p>Text</p> <p>Images</p>	
Visualisation	<p>This is rough drawing or sketch of what the final product is intended to look like.</p> <p>Usually, hand drawn. To plan the layout in a visual manner.</p>	<p>Image (description, size, type)</p> <p>Text (style, size, colour)</p> <p>Background colour</p> <p>Dimensions</p> <p>Annotations</p>	

Pre-Production	Documents	Client brief	Purpose	Audience
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Section 2

Storyboard

A storyboard is used to illustrate a sequence of moving images and has a flow of scenes that follow a timeline.

Storyboards may include:

- Number of scenes
- Camera Shots
- Camera Movement
- Timings
- Lighting
- Sounds SFX
- Locations
- Camera Shots**
- LS:** Long Shot
- MS:** Medium Shot
- CU:** Close Up
- Camera movements**
- Zoom, pan, tilt, dolly, truck
- Camera angles**
- High, low, wide



Scripts

A script is a piece of written work that can be for a movie, audio, audio-visual or screenplay.

It provides the dialogue.

Dialogue

Set or location

Scene direction

Camera shot

Camera movement

Character names

EXT. IN THE FOREST



SHREK

Face it, Donkey! We're lost.


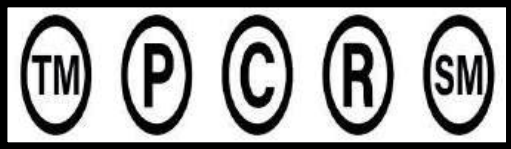
DONKEY


We can't be lost. We followed the King's instructions exactly. "Head to the darkest part of the woods..." "Past the sinister trees with scary-looking branches." The bush shaped like Shirley Bassey!

Section 3

<p>Hardware</p>	<p>Hardware refers to the physical elements of a computer. Examples of hardware in a computer are the keyboard, the monitor, the mouse and the central processing unit.</p>	<p>Internal hardware CPU Motherboard Hard disc drive RAM Fan</p> <p>External hardware Monitor Mouse Keyboard Printer Speakers Microphone</p>	
<p>Software</p>	<p>Software is a computer program (or programs) that provide the instructions for telling a computer what to do and how to do it.</p>	<p>Applications software Microsoft Office Adobe Web browser</p> <p>Systems software Windows IOS</p>	

Section 4

<p>File Types</p>	<p>A file format is a standard way that information is encoded for storage in a computer file. A computer recognises each file type.</p>	<p>Software DOC, PPT, XLS, PUB, PSD</p> <p>Images JPEG, TIFF, PNG, GIF, PDF</p> <p>Sound MP3, WAV</p> <p>Video MOV, WMV, MP4</p>	
<p>Legislation</p>	<p>Intellectual Property: Refers to creations of the mind. A way of protecting your creation so you benefit from your own work. A form of protection.</p>	<p>Copyright Creative Commons Fair Use Patent Trademark</p>	

Section 5	
Brand	A type of product manufactured by a particular company under a particular name.
Brand Identity	Is what other people think about you, your company, your product or service. Communicates values and core principles to the user or customer.
Examples of Brands	Nike, Adidas, Starbucks, IKEA.
Purpose	The reasons a product exists e.g. to entertain, promote, inform, educate, persuade, guide, warn.
Logo	To represent a business.
Examples of logos	
Visual Identity	What the brand looks like, a preview of your brand e.g. text, slogan, colour scheme, logo etc

Visual Identity Example



Section 6

Client Brief	A written document given to the client to explain the client requirements and ideas for a new product/project.
Content of a Client Brief	<ul style="list-style-type: none"> Purpose Audience Audience requirements Client requirements Success criteria Initial ideas Planning and design

Background – The Events Industry

The purpose of studying the events industry is for scholars to use their knowledge and understanding of events so that they can eventually process event operations in practice (take part in a real life event)

Considerations;

What factors need to be considered when planning an event? Example – weather

What if you are organizing an event in a marquee and flooring doesn't arrive?

Are all events profitable?

Different types of events

- Fundraising/charity – raising money for a cause
- Corporate – profit making organisations (Apple)
- Social – an occasion with friends/family (Wedding)
- Sports – sporting event such as DAA sports day
- Outdoor – any event that has to be held outside (F1 racing)
- Indoor – any event that has to be held indoors

Home study project

Write a details explanation as to why 'activities involved in event organisation' are important (box below) and what would happen if they were not planned correctly.

Please include all the criteria from the box below in your answer. You can use the internet to get more information.

Event risks

- Health and safety e.g food hygiene
- Security
- Cancellation due to external factors e.g weather
- Permissions e.g Bradford council
- Financial risks e.g what if nobody buys any tickets?
- Technical e.g quality technology (Microsoft)
- Legal – very important that the law is not broken whilst putting on an event.
- Staffing – the right amount of staff need to be recruited.

Organisations involved in events

- Local authorities (Bradford council)
- Emergency services (Police).
- Entertainment (music)
- Media (newspapers – T&A)
- Transport providers
- Equipment providers

Activities involved in event organisation

- Select suitable date
- Find appropriate location venue
- Identify resource requirements
- Marketing – (attracting customers/advertising)
- Developing a communication strategy
- Setting aims and objectives
- Allocating roles and responsibilities
- Working within a budget
- Administrative processes

Factors to consider at an event

- Environmental – weather
- Organisational – administration
- Legal – acceptable noise levels
- Technical – effective sound system
- Financial constraints – price of supplies
- Promotion – effective promotional materials such as fliers, posters, radio adverts etc.....

Physical Components M M B S F C – My Mum Bakes Sweet Fairy Cakes.

Box No 1 : Physical components: Muscular Endurance

Definition	Sporting examples	Links to learning aim B + C
The ability of the muscular system to work efficiently, where a muscle can continue contracting over a period of time against a light to moderate fixed resistance load.	<ul style="list-style-type: none"> ● Marathon runner ● Rower ● Boxer ● Cyclist 	<p>Methods of training: Strength, muscular endurance and power training – Circuit, Free weight and plyometric.</p> <p>Fitness Testing: One-minute sit up and one-minute press up test.</p>

Box No 2 : Physical components: Muscular Strength

Definition	Sporting examples	Links to learning aim B + C
The maximum force (in KG or N) that can be generated by a muscle of muscle group.	<ul style="list-style-type: none"> ● Weight Lifter ● Boxer ● Rugby player ● Gymnast 	<p>Methods of training: Strength, muscular endurance and power training – Circuit, Free weight and plyometric.</p> <p>Fitness Testing: Hand grip dynamometer tests usually measured In KGW.</p>

Box No 3 : Physical components: Body Composition

Definition	Sporting examples	Links to learning aim B + C
The relative ratio of fat mass to Fat free mass (Vital organs, muscle, bone) In the body.	<ul style="list-style-type: none"> ● Sumo Wrestler – needs large physique ● Darts player – Body comp doesn't matter ● Ballet Dancer – Slim physique ● Rugby player – Muscly Physique 	<p>Methods of training: Any method of training relevant to maintaining correct body composition for the selected sport to ensure best performance.</p> <p>Fitness Testing: BMI Test – Sum of skinfold test – BIA test.</p>

Box No 4 : Physical components: Speed

Definition	Sporting examples	Links to learning aim B + C
<p>Speed = Distance divided by time taken.</p> <p>Three Types of Speed:</p>	<ul style="list-style-type: none"> ● Speed skater ● Sprinter ● Gymnast – Running up to a vault. ● Long Jump – Take off phase ● Hockey player – speed endurance used throughout the game – elements of speed. 	<p>Methods of training: Speed training: Hollow Sprints – Acceleration Sprints – Interval training</p> <p>Fitness Testing: 35m Sprint test Measured in S.</p>

Box No 5 : Physical components: Flexibility

Definition	Sporting examples	Links to learning aim B + C
<p>Having an adequate range of movement in all joints of the body; the ability to move joints fluidly through its complete range of movement.</p>	<ul style="list-style-type: none"> ● Gymnast in a split jump. ● High jumper – back flexibility ● Diving ● Figure skating 	<p>Methods of training: Flexibility training: Static (Active (Alone) and Passive (Partner) – Ballistic (Fast jerky movements) and Proprioceptive Neuromuscular Facilitation (PNF).</p> <p>Fitness Testing: Sit and reach test measured in Cm or Inches</p>

Box No 6 : Physical components: Aerobic Endurance

Definition	Sporting examples	Links to learning aim B + C
<p>The ability of the cardiorespiratory system to work efficiently, supplying oxygen and nutrients to working muscles during sustained physical activity.</p> <p>Alternative names: Cardiorespiratory fitness – Cardiorespiratory endurance – Aerobic Fitness.</p> <p>The cardiorespiratory system consists of heart blood and blood vessels – Lungs and airways. It is responsible for the uptake of O₂, transporting nutrients and oxygen and removal of waste products such as CO₂.</p>	<ul style="list-style-type: none"> ● Marathon Runner ● Netball player ● Long distance swimmer ● Cross country Skier 	<p>Methods of training: Aerobic endurance training: Circuit – Interval – Fartlek and continuous.</p> <p>Fitness Testing: Multi stage fitness test (MSFT) and Forestry step test.</p>

Human Development – PIES

Physical growth and development

Growth patterns
 Puberty
 Aging & Menopause
 Mobility and movement
 Lifestyle and fitness
 muscle tone/strength
 Skin elasticity



Gross = large (arms, legs)
 Fine = small (hands & finger)

Emotional development

Feelings
 Identity
 Confidence
 Self esteem and self image
 Adapting to trauma
 Bonding and attachment
 Independence
 Security
 Contentment
 Decisions and control



Intellectual development

Thinking
 Memory
 Learning
 Language and communication
 Creativity
 Problem solving and logic
 Expression



Social development

Relationships
 Friends
 Socialisation
 Interaction
 Communication



Stay safe,

tell someone...

All the staff are here to help and support you

Safety and well-being...

If you are worried about your welfare or safety, or that of a friend you could access the NSPCC services. www.childline.org.uk 0800 1111

Free anonymous NHS online counselling for young people can be accessed via a platform called Kooth. www.Kooth.com

For support with your mental health and staying happy and healthy visit the Mental Health Foundation. www.mentalhealth.org.uk

For non-emergency advice you can email DAA_safeguarding@dixonsaa.com. Give your full name and Year group.



Safeguarding Team:

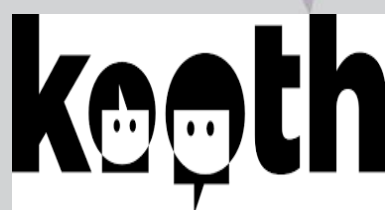
Mr Bibby (Designated Safeguarding Lead)

Ms McDonald (SENDCO)

Physical activity...

It is recommended that young people should be physically active for at least 1 hour a day. This can be anything from organised sport to going on a bike ride with your friends. For more ideas visit;

www.nhs.uk/change4life/activities



Happiness

Industry

Responsibility



Dixons Allerton Academy, Rhodesway, Bradford , BD8 0DH

Telephone: 01274 089 890 [Email: admin@dixonsaa.com](mailto:admin@dixonsaa.com)