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Knowledge Organiser

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Contents

Non-Fiction Study

Key Terminology		
1	Bias	An inclination or prejudice for or against one person or group.
2	Tone	Attitudes toward the subject and toward the audience implied in a literary work, for example: formal, informal, sarcastic, etc.
3	Empathy	The ability to understand and share the feelings of another.
4	View	A particular attitude towards or way of regarding something.
5	Imperatives	Verbs used to give orders, commands, warning or instructions.
6	Expert opinion	A belief or judgement about something given by an expert on a subject.
7	Fact	Something that is known to happen or to exist, especially for which proof exists.
8	Objective	Based on real facts and not influenced by personal beliefs or feelings.
9	Perspective	A particular attitude towards or way of regarding something.
10	Subjective	Influenced by or based on personal beliefs or feelings, rather than based on facts.

Key Knowledge: Non-fiction forms		
11	Autobiography	The account of a person's life written by that person.
12	Biography	The account of a person's life written by another person.
13	Diary	A book in which one keeps a daily record of events and experiences.
14	Essay	A short piece of writing on a particular subject.
15	Letter	A written or printed message which from one person to another, usually put in an envelope and delivered as mail.
16	Article	A piece of writing which reports news and is published in a newspaper or magazine.
17	Opinion Piece	An article in which the writer expresses their personal opinion on a particular issue or subject.
18	Speech	A formal talk usually given to a large number of people on a special occasion.
19	Review	A critical appraisal of a book, play, film, etc, often published in a newspaper or magazine.
20	Information leaflet	A leaflet is a little book or a piece of paper containing information about a particular subject.

Poetry Study

Key Terminology		
1	Alliteration	The repetition of the same consonant sound, often at the beginning of words.
2	Emotive language	Word choice which is used to evoke emotion in the reader.
3	Imagery	A literary device used to create a particular image to convey the key ideas/messages of themes in a text.
4	Metaphor	A comparison in which one thing is said to be another.
5	Personification	The attribution of human feelings, emotions, or sensations to an inanimate object.
6	Repetition	A literary device which repeats the same word or phrase a few times to make it memorable.
7	Rhyme scheme	The pattern of a poem's rhyme, often identified using letters e.g. ABABCC.
8	Simile	A comparison that uses 'like' or 'as'.
9	Stanza	A group of lines forming a unit in a poem.

Key Terminology		
10	Structure	The way a poem is organised.
11	Symbolism	The use of symbols to express ideas or qualities.
12	Tone	Feelings or ideas suggested by the language used by the poet.
13	Verse	Another word for poetry; a group of lines forming a unit in a poem, also known as a stanza.
14	Volta	A 'turning point' in a poem.

Form		
15	Form	The way a poem is set out, or a term used to categorise poems which follow particular conventions.
16	Villanelle	A 19-line poem consisting of five units of three lines, rhymed or unrhymed, followed by a quatrain.
17	Petrarchan sonnet	A poem that has 14 lines and a particular pattern of rhyme, for example ABAB CDCD EFGEFG.
18	Ballad	A narrative poem which is typically written in short stanzas.
19	Dramatic monologue	A poem in which an imagined speaker addresses a silent listener.

Prose Study (Bildungsroman)

Key Terminology		
1	**Bildungsroman**	A type of novel which focuses on the education, spiritual, psychological and moral development of its protagonist from childhood to adulthood (also known as a 'coming of age novel').
2	**Characterisation**	A literary device in which in an author builds a character in a narrative.
3	**Quest narrative**	A quest is used as a plot device in mythology and fiction. The story follows a difficult journey towards a goal, often symbolic or allegorical.
4	**Protagonist**	The central character or leading figure in a poem, narrative, novel or any other story. Sometimes can also be referred to as a "hero" by the audience or readers.
5	**Stock characters**	A fictional character based on common stereotypes. Stock characters rely heavily on cultural types or names for their personality, manner of speech, and other characteristics.
6	**Archetype**	A very typical example of a certain person or thing.
7	**First-person narrative**	A narrative or mode of storytelling in which the narrator appears as the 'I', recollecting his or her own part in the events which occur, either as a witness of the action or as an important participant in it.
8	**Literary device**	Literary devices are methods used by writers to hint at larger themes, ideas, and meaning in a story or piece of writing.
9	**Adventure**	Fast-paced, action-packed stories featuring elements of danger.
10	**Setting**	Setting is the time and place of the story, including the physical location, weather or cultural surroundings.

Key Vocabulary		
11	**Hero**	A main character in a literary work who, in the face of danger, combats adversity through feats of resourcefulness, bravery or strength.
12	**Heroism**	The qualities of a hero or heroine; exceptional or heroic courage when facing danger.
13	**Villain**	A character in a novel, play or film whose evil actions or motives are important to the plot.
14	**Moral**	Concerned with the principles of right and wrong behaviour.
15	**Moral ambiguity**	A lack of certainty about whether something is right or wrong.

Key Knowledge – Bildungsroman	
16	**How to pronounce bildungsroman:** bill-dungs-rome-ahn.
17	**The word is a combination of two German words:** bildung means education, and roman means novel.
	A Bildungsroman typically consist of three stages:
18	The set-up: The protagonist is introduced, often during his or her childhood.
19	Experiences that shape the protagonist's character, often involving some kind of crisis.
20	The protagonist reaches maturity, often involving them finding a sense of peace with themselves, or of belonging in the world.

Prose Study (Narrative Structure)

Key Terminology		
1	First-person limited narrative	The narrator's thoughts, feelings, and knowledge of situations closely follow one character's perspective.
2	Third-person omniscient narrative	Related by a narrator who knows the thoughts and feelings of all the characters in the story.
3	Characterisation	A literary device in which in an author builds a character in a narrative.
4	Pathetic fallacy	The attribution of human feelings and emotions to inanimate things or animals, often associated with the attribution of human emotions to aspects of nature (sun, sky, wind, etc.).
5	Symbolism	The use of symbols to express ideas or qualities.
6	Protagonist	The central character or leading figure in a poem, narrative, novel or any other story. Sometimes can also be referred to as a "hero" by the audience or readers.
7	Antagonist	A person who actively opposes or is hostile to someone or something; an adversary.
8	Foreshadowing	A literary device in which a writer gives an advance hint of what is to come later in the story.
9	Setting	Setting is the time and place of the story, including the physical location, weather or cultural surroundings.

Key Vocabulary		
10	Eerie	Strange and frightening.
11	Suspense	A state or feeling of excited or anxious uncertainty about what may happen.
12	Impetuous	Acting or doing something quickly without thought or care.
13	Predatory	Seeking to exploit others.
14	Menacing	Threatening or intimidating.

Key Knowledge – Narrative Structure		
15	Exposition	Refers to part of the story used to introduce background information about events, settings, characters, etc. to the reader.
16	Rising action	A related series of incidents in a literary plot that build toward the point of greatest excitement/interest.
17	Climax	The point of highest tension.
18	Falling action	Occurs immediately after the climax.
19	Resolution	Presents the final outcome of the story.

Prose Study (Gothic)

Key Vocabulary		
1	Melodramatic	Showing much stronger emotions than are necessary or usual for a situation.
2	Grotesque	Repulsively ugly or distorted, especially in a comical or frightening way.
3	Insidious	Something dangerous or unpleasant gradually and secretly causing harm.
4	Macabre	Disturbing because concerned with or causing a fear of death.
5	Malignant	Evil in nature; malevolent.
6	Pallor	An unhealthy pale appearance.
7	Redemption	The action of saving, or being saved from, sin, error, or evil.
8	Repulsion	A feeling of intense distaste or disgust.
9	Supernatural	Something that cannot be explained by the laws of science and that seems to involve gods or magic.
10	Superstition	The belief that particular events cannot be explained by reason or science and/or the belief that particular events bring good or bad luck.

Key Terminology		
11	Gothic fiction	Refers to a style of writing that is characterised by elements of fear, horror, death, gloom, and extreme emotions.
12	Epistolary novel	A novel written as a series of documents, usually in the form of letters, although newspaper clippings, diary entries and other documents can be used.
13	Characterisation	A literary device in which in an author builds a character in a narrative.
14	Mood	The feelings or atmosphere perceived by a reader in a piece of literature.
15	Symbolism	The use of symbols to express ideas or qualities.

Key Context	
16	The Gothic genre became popular in the late 18th and 19th centuries, during a time of great discovery and change.
17	Gothic novels emphasise mystery, horror, and the uncanny.
18	Typical Gothic settings are: medieval castles, old graveyards, crumbling buildings, gloomy chambers, dark forests, and wild, strange or dangerous locations.
19	Famous novel novels include Frankenstein by Mary Shelley (1818), Dracula by Bram Stoker (1897) and Rebecca by Daphne Du Maurier (1938).
20	'The Gothic sensibility in literature is seen by some as an attempt to deal with the feared and unknown consequences of social change.' (Steve Roberts, University of Brighton)

Prose Study (Dystopian Fiction)

Key Vocabulary		
1	Dystopia	An imagined place or state in which everything is unpleasant or bad, typically a totalitarian or environmentally damaged one.
2	Dehumanise	To deprive some one of positive human qualities.
3	Totalitarian	A system of government that is centralised and dictatorial and requires its people to obey the government or state without questions.
4	Fatalistic	Relating to or characteristic of the belief that all events are predetermined and therefore inevitable.
5	Futuristic	Having or involving very modern technology or design.
6	Oppressive	Something or someone that limits freedom of thought or action.
7	Paranoia	Unjustified suspicion or mistrust of people.
8	Rebellion	The action or process of resisting authority, control, or convention.
9	Societal norm	The unwritten rules of behaviour that are considered acceptable in a group or society.
10	Tyranny	Cruel, unreasonable and/or oppressive rule or government.

Key Terminology		
11	Dystopian fiction	Refers to a genre of writing which explores the loss of civil liberties, living under constant surveillance, laws controlling a woman's reproductive freedom, and denial of the right to an education.
12	Foreshadowing	A literary device in which a writer gives an advance hint of what is to come later in the story.
13	Mood	The feelings or atmosphere perceived by a reader in a piece of literature.
14	Motif	A dominant or recurring idea.
15	Symbolism	The use of symbols to express ideas or qualities.

Key Knowledge (Dystopian Fiction)	
16	Dystopia comes from the Greek dys ('bad') and topia ('place').
17	The worlds depicted are often controlled by a totalitarian or authoritarian government.
18	Dystopian stories are usually set in the future.
19	Dystopias are often thought to be 'cautionary tales' but are also used to explore the ideas of what it is to be human.
20	In dystopian stories, society itself is typically the antagonist as society is actively working against the protagonist's aims and desires.

Prose Study (Detective Fiction)

Key Vocabulary		
1	**Deduce**	Arrive at a fact or a conclusion by reasoning; draw as a logical conclusion.
2	**Deduction**	The process of reaching a decision or answer by thinking about the known facts.
3	**Idiosyncratic**	A word to describe behaviour which is considered to be distinctive or peculiar.
4	**Indiscretion**	Behaviour that is indiscreet or lacks good judgement.
5	**Temperament**	A person's or animal's nature/traits of personality, which have a permanent impact on their behaviour.

Key Terminology		
6	**Protagonist**	The central character or leading figure in a poem, narrative, novel or any other story. Sometimes can also be referred to as a "hero" by the audience or readers.
7	**Symbolism**	The use of symbols to express ideas or qualities.
8	**Tone**	The choice of writing style the writer employs to convey specific feelings, emotions or attitudes.
9	**Characterisation**	A literary device in which in an author builds a character in a narrative.
10	**Red herring**	A literary device that leads readers toward a false conclusion.

Key Terminology		
11	**Detective fiction**	A sub-genre of crime fiction and mystery fiction in which an investigator or a detective (professional, amateur or retired) investigates a crime, often murder.
12	**Literary conventions**	Defining features of particular genres such as novel, short story, ballad, sonnet, or play.
13	**First person peripheral narrator**	A type of narrative perspective in which the narrator is the another character in the story who witnesses the main character's story and conveys it to the reader.
14	**Exposition**	Refers to the part of the story used to introduce background information about events, settings, characters etc. to the reader.
15	**Antagonist**	A person who actively opposes or is hostile to someone or something.

Key Knowledge – Sherlock Holmes	
16	The Sherlock Holmes stories are a group of short stories about a fictional detective, written in the late 1880s and 1890s by Arthur Conan Doyle.
17	Doyle was influenced by Dr Joseph Bell, who was a master of logic, deduction and reasoning. Doyle felt that these were ideas that had been missing from the genre of detective fiction.
18	Doyle's Sherlock Holmes stories changed detective fiction forever, introducing many of the literary conventions that are now frequently seen in the genre.
19	One of Doyle's most important additions to the genre was including a first-person peripheral narrator (Dr Watson) who needs the events of the investigation explained to him by the protagonist (Sherlock Holmes).
20	"The love of books is among the choicest gifts of the gods." *Sir Arthur Conan Doyle*

Shakespeare Study (Comedy)

Key Terminology		
1	Magic realism	A literary genre when magic elements are a natural part in an otherwise ordinary, realistic environment.
2	Play within a play	A literary device in which an additional play is performed during the performance of the main play.
3	Soliloquy	A speech or passage in a drama when a character on stage speaks to himself or herself, expressing their inner thoughts and feelings.
4	Blank verse	Unrhymed lines written in a poetic meter and usually written in iambic pentameter (see below).
5	Rhymed verse	Poem or verse having a regular correspondence of sounds, especially at the end of lines.
6	Prose	Ordinary writing not organised with rhymes or fixed line lengths. It is the language that people speak in.
7	Rhyming couplets	Two successive lines of verse of which the final words rhyme with another.
8	Iambic pentameter	A line of verse consisting of one short (or unstressed) syllable followed by one long (or stressed) syllable, with the accent (or emphasis) placed on the second syllable.
9	Stage directions	Instructions written into the script of a play, indicating stage actions, movements of performers, or production requirements.
10	Setting	The time and place in which the story takes place in a piece of literature.

Key Vocabulary		
11	To reciprocate	To return affection or love for someone in the same way that they feel it. Also: to respond to a gesture or action by returning a similar gesture or action.
12	Cupid	Ancient Roman God of Love.
13	Besotted	To be intensely in love with someone.
14	To elope	To run away secretly in order to get married.
15	Unrequited love	When one person feels love for another but the other person does not return their feelings, or does not realise they feel that way about them.

Key Knowledge: Shakespeare's comedies		
16	Marriage	Comedies head towards marriage. Marriage would represent the achievement of happiness.
17	Misunderstandings	In Shakespearean comedies much that is funny arises from the misunderstandings of lovers or potential lovers.
18	Disguise	Shakespeare's comedies involve characters in disguise, particularly the disguising of women as young men.
19	Dramatic Irony	When the implications of something are not known by the characters on stage but are clear to the audience / reader.
20	Gender	The fact that women had to be played by young male actors adds to the dramatic irony of the use of gender disguises.

Shakespeare Study (History)

Key Vocabulary		
1	Lamentation	The passionate expression of grief or sorrow, which can include weeping and wailing.
2	Amoral	Not following any moral rules and not caring about what is right and wrong.
3	Corrupt	Having or showing a willingness to act dishonestly in return for money or personal gain.
4	Charismatic	Someone or something with a compelling and charming personality or traits that are attractive and alluring to others.
5	Machiavellian	Cunning, scheming, and unscrupulous, especially in politics.
6	Self-determination	The ability or power to make decisions for yourself.
7	Treacherous	Guilty of, or involving betrayal or deception.
8	Tyrant	A cruel and oppressive ruler.
9	Usurp	To take a position of power or importance illegally, or by force.
10	Villainous	Wicked or criminal behaviour.

Key Terminology		
11	Aside	A remark or passage in a play that is intended to be heard by the audience but is supposed to be unheard by the other characters on the stage.
12	History play	A play based on a historical narrative, often set in the medieval period.
13	Juxtaposition	The placement of two contrasting objects, images or ideas next to each other.
14	Rhyming couplets	Two successive lines of verse of which the final words rhyme with another.
15	Soliloquy	A speech or passage in a drama when a character on stage speaks to himself /herself or the audience, expressing their inner thoughts and feelings.

Key Knowledge	
16	Shakespeare's history plays are set in late medieval England.
17	Shakespeare's source for historical material, however, is generally believed to be Raphael Holinshed's The Chronicles of England, Scotland and Ireland.
18	Each historical play is named after, and focuses on, the reigning monarch of the period.
19	The history plays are based on real events but are not entirely accurate.
20	Shakespeare's history plays usually focus on the downfall of a leader.

Shakespeare (Tragedy)

Key Vocabulary		
1	**Abdication**	When a monarch renounces (gives up) their throne.
2	**Realm**	A kingdom.
3	**Disintegration**	The process of losing cohesion, strength or breaking down.
4	**Regicide**	The killing of a king.
5	**Treacherous**	Guilty of, or involving, betrayal or deception.
6	**Tyrant**	A cruel and oppressive ruler.
7	**Corrupt**	Having or showing a willingness to act dishonestly in return for money or personal gain.
8	**Machiavellian**	Cunning, scheming, and focused on the acquisition of personal power, especially in politics.
9	**Transgressive**	Violating (crossing) moral and social boundaries.
10	**Primogeniture**	The right of succession to the throne belonging to the first born, usually the son.

Key Terminology		
11	**Tragedy**	A play ending with the suffering and death of the main character.
12	**Hamartia**	The fatal flaw of a tragic hero.
13	**Anagnorisis**	The point in the plot, especially of a tragedy, at which the protagonist recognises their own character's true identity or discovers the true nature of their situation.
14	**Catharsis**	The process of releasing strong or pent-up emotions which can bring a release from tension.
15	**Soliloquy**	A speech or passage in a play when a character on stage speaks to himself or herself, expressing their inner thoughts and feelings.

Key Knowledge – Tragedy		
16	**Tragic hero**	A virtuous character whose downfall is caused by their flaws in their character.
17	**Good and Evil**	A struggle between good and evil take place as part of the plot or exists within the main character.
18	**Tragic Waste**	By the end of the play, good has been destroyed as well as evil.
19	**External Conflict**	The problem facing the hero as a result of evil forces or characters, or the events in the play.
20	**Internal Conflict**	The hero's struggle with their fatal flaw.

KPI 9.01 Place Value and Number Sense

1) Place value	The value of a digit relating to its position in a number. In 1482 the digits represent 1 thousand, 4 hundreds, 8 tens and 2 ones.	**2) Integer**	Whole numbers including zero. -2, -1, 0, 1, 2, 3, …	
3) Ascending	Smallest to largest	**4) Descending**	Largest to smallest	
5) Recurring decimals	A decimal that does not terminate.	**6) Using one calculation to perform another**	19 x 18 = 342 19 x 180 = 3420 190 x 18 = 3420 190 x 180 = 34200 1900 x 180 = 342000	108 ÷ 9 = 12 1080 ÷ 9 = 120 108 ÷ 90 = 1.2 108 ÷ 0.9 = 120 108 ÷ 0.09 = 1200
7) Inequality	$a < b$ a is less than b $a > b$ a is greater than b $a = b$ a is equal to b $a \neq b$ a is not equal to b			

KPI 9.02 Decimals

1) Multiplying decimals	1) Remove the decimal points. 2) Multiply. 3) Insert the same number of decimal points in the answer as in the question. 0.5 x 0.3 5 x 3 = 15 0.5 x 0.3 = 0.15	**2) Dividing a decimal by an integer**	0.72÷6 $6 \overline{)0.72}$ → 0.12 0.972÷8 $8 \overline{)0.9720}$ → 0.1215
		3) Dividing an integer by a decimal	1) Write as a fraction 2) Form an equivalent fraction 3) Divide

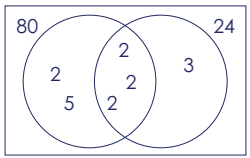
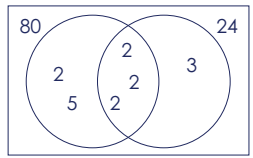
KPI 9.03 Rounding and Estimation

1) ≈	"approximately equal to"	**2) Truncation**	Ignoring all decimal places past a certain point without rounding.
3) Significant figures	The total number of digits in a number, not counting the zeros at the beginning of a number or at the end of a decimal number. 345 000 has 6 significant figures. 0.3047 has 4 significant figures.	**4) Estimate**	Find approximate answer by calculating with numbers rounded to one significant figure.
5) Error Intervals	The range of values (between the upper and lower bounds) in which the precise value could be. **least possible value ≤ x < greatest possible value**		

KPI 9.04 Indices, Powers and Roots

1) Multiplication law	$a^m \times a^n = a^{m+n}$ Same base numbers, ADD the powers.	**2) Division law**	$a^m \div a^n = a^{m-n}$ Same base numbers, SUBTRACT the powers.
3) Power to a power	$(a^m)^n = a^{m \times n}$ MULTIPLY the powers.	**4) Raising a fraction by a power**	$(ab)^n = a^n \times b^n$ Raise each number or variable to the same power.
5) Power of 0	$a^0 = 1.$ Any number or variable to the power of zero equals 1.	**6) Negative powers (integers)**	$a^{-1} = \frac{1}{a}$ $a^{-2} = \frac{1}{a^2}$ $a^{-n} = \frac{1}{a^n}$ A negative power represents the reciprocal.
7) Positive unit fractions	$a^{\frac{1}{2}} = \sqrt{a}$ $a^{\frac{1}{3}} = \sqrt[3]{a}$ $a^{\frac{1}{n}} = \sqrt[n]{a}$	**8) Negative unit fractions**	$a^{-\frac{1}{2}} = \frac{1}{\sqrt{a}}$ $a^{-\frac{1}{3}} = \frac{1}{\sqrt[3]{a}}$ $a^{-\frac{1}{n}} = \frac{1}{\sqrt[n]{a}}$
9) Positive non-unit fractions	$a^{\frac{m}{n}} = (\sqrt[n]{a})^m$	**10) Negative non-unit factions**	$(a)^{-\frac{m}{n}} = \left(\frac{1}{a}\right)^{\frac{m}{n}} = \left(\sqrt[n]{\frac{1}{a}}\right)^m$

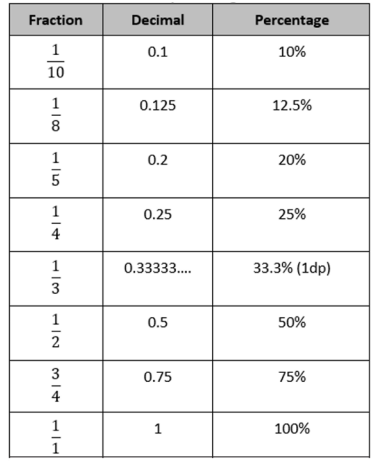
KPI 9.05 Factors, Multiples and Primes

1) Prime numbers	A prime number has two distinct factors; 1 and itself. 2 is the only even prime number. 1 is not a prime number. The first ten prime numbers are: 2, 3, 5, 7, 11, 13, 17, 19, 23 29		
2) Factor	Any whole number that divides exactly into another number leaving no remainder. Factors of 20 are: 1, 2, 4, 5, 10, 20	**3) Multiple**	The result of multiplying a number with a whole number. (times tables!) The multiples of 7: 7, 14, 21, 28, 35, 42, 49, 56, 63, 70 ...
4) HCF - Venn diagram	 HCF of 80 and 24 = 2 x 2 x 2 = 8	**5) LCM - Venn diagram**	 LCM of 80 and 24 = 2 x 2 x 2 x 2 x 3 x 5 = 240

KPI 9.06 Ratio

1) Ratio	A part-to-part comparison. The ratio of a to b is written a:b	**2) Ratio as a fraction**	 Fraction of shapes which are squares: 1:4
3) Equivalent ratios	Multiply or divide all parts of the ratio by the same number.	**4) Simplifying ratios**	Ratios can be simplified by dividing each part of the ratio by the same number. ÷5 (25:15 / 5:3) ÷5
5) Unitary Ratio	Write the ratio 5:3 in the form 1:n ÷5 (5:3 / $1:\frac{3}{5}$) ÷5	**6) Sharing into a given ratio**	**Add** the parts together. **Divide** the total. **Multiply** this by each part of the ratio.

KPI 9.07 Fractions, Decimals and Percentages

1) Fraction to percentage	If the denominator is a factor of 100, use equivalent fractions. If the denominator is not a factor of 100, use short division and then multiply the answer by 100.	**4) Common conversions**	
2) Percentage to fraction	Write the percentage as a fraction out of 100. Simplify where possible.		
3) Ordering fractions, decimals & percentages	Convert all the values into the same form - all fractions (with the same denominator), all decimals or all percentages. Order the values.		

Fraction	Decimal	Percentage
$\frac{1}{10}$	0.1	10%
$\frac{1}{8}$	0.125	12.5%
$\frac{1}{5}$	0.2	20%
$\frac{1}{4}$	0.25	25%
$\frac{1}{3}$	0.33333....	33.3% (1dp)
$\frac{1}{2}$	0.5	50%
$\frac{3}{4}$	0.75	75%
$\frac{1}{1}$	1	100%

KPI 9.08 Fractions

1) Writing one number as a fraction of another	Write £15 as a fraction of £25. $\frac{15}{25} = \frac{3}{5}$	**2) Reciprocal**	*Reciprocal of* $7 \rightarrow \frac{1}{7}$ *Reciprocal of* $\frac{2}{3} \rightarrow \frac{3}{2}$
3) Fractions of an amount	Divide the amount by the denominator and then multiply the result by the numerator.		
4) Add/Subtract fractions	Make the denominators the same (find the LCM). Use equivalent fractions to change each fraction to the common denominator. Add/subtract the numerators only.	$\frac{2}{7} + \frac{2}{5} = \frac{10}{35} + \frac{14}{35} = \frac{24}{35}$	
5) Multiplying fractions	Multiply the numerators. Multiply the denominators. Simplify where possible.	$\frac{4}{5} \times \frac{3}{8} = \frac{12}{40} = \frac{3}{10}$	
6) Dividing fractions	Keep the first fraction the same. Change the second to its reciprocal. Multiply the fractions. Simplify/convert to mixed number where possible.	$\frac{4}{5} \div \frac{3}{8} = \frac{4}{5} \times \frac{8}{3} = \frac{32}{15} = 2\frac{2}{15}$	

KPI 9.09 Percentages

1) Multiplier	A percentage written as a decimal is the percentage multiplier.	**2) Percentage of an amount with a calculator**	The percentage multiplier multiplied by the amount.
3) Finding 50%	To find 50% divide by two.	**4) Finding 25%**	To find 25% divide by four.
5) Finding 20%	To find 20% divide by five.	**6) Finding 10%**	To find 10% divide by ten.
7) Finding 5%	To find 5% divide by twenty.	**8) Finding 1%**	To find 1% divide by one hundred.
9) Percentage change	$\frac{\textit{difference}}{\textit{original}} \times 100$	**10) Reverse percentages**	$\textit{original} = \frac{\textit{new amount}}{\textit{multiplier}}$

KPI 9.10 Proportion

1) Direct proportion	A relationship between two variables where, as one increases, the other also increases.	**2) Unitary method**	To find the value of one unit first.
		3) Exchange rate	Tells us how much of one currency you can exchange for another currency e.g. £1 = $1.39

KPI 9.11 Notation			
1) 2a	2 x a	**2) ab**	a x b
3) a^2	a x a	**4) $3a^2$**	3 x a x a
5) a subtracted from b	b - a	**6) a less than b**	b - a
7) a divided by b	$\frac{a}{b}$	**8) b divided by a**	$\frac{b}{a}$
9) 4 times smaller than a	$\frac{a}{4}$ or $a \div 4$	**10) 4 times larger than a**	4 x a → 4a
11) 5th power of a	a^5	**12) Variable**	A letter used to represent any number.
13) Coefficient	The number to the left of the variable. This is the value that we multiply the variable by. $4x$ → The coefficient of x is 4. x → The coefficient of x is 1.	**14) Term**	A single number, variable or numbers and variables multiplied together.

KPI 9.12 Simplifying and Index Laws			
1) Multiplication law	$y^m \times y^n = y^{m+n}$ Same base numbers, ADD the powers. 2ab x 3b = $6ab^2$	**2) Division law**	$y^m \div y^n = y^{m-n}$ Same base numbers, SUBTRACT the powers. $\frac{10x^4 y^5}{2x^2 y} = 5x^2 y^4$
3) Power of 0	$y^0 = 1$. Any number or variable to the power of zero equals 1	**4) Negative powers (integers)**	$y^{-n} = \frac{1}{y^n}$ A negative power represents the reciprocal.

KPI 9.13 Expanding and Factorising

1) Expand	Multiply out the bracket(s) in the expression. E.g. $3(5x + 7) = 15x + 21$	**2) Factorise**	Identify the HCF and rewrite the expression with brackets. E.g. $6x^2 + 9x = 3x(2x+3)$.
3) Expanding double brackets	Writing two brackets next to each other means the brackets need to be multiplied together. $(x + 1)(x + 2) = (x + 1) \times (x + 2) = x^2 + 3x + 2$ Note: $(x + a)^2 = (x + a)(x + a)$		
4) Factorising quadratics	To factorise a quadratic, put it back into a pair of brackets. To find the terms that go in each bracket, look for a pair of numbers which multiply to give the constant and add together to give the coefficient of x		
5) Difference of two squares (DOTS)	$a^2 - b^2 = (a+b)(a-b)$	E.g. $x^2 - 16 = (x + 4)(x - 4)$	

x	x	+1
x	x^2	$+x$
+2	$+2x$	+2

KPI 9.14 Expressions and Substitution

1) Substitution	Replace a variable with a given value.	**2) Function machine**	Shows the relationship between two variables, the input and the output.
3) Formula	A mathematical relationship or rule expressed in symbols.		

KPI 9.15 Linear Equations

1) Solve	Use inverse operations to find the solution of an equation.	**2) Linear equation**	Contains an equals sign (=) and has one unknown. E.g. $5x - 2 = 2x + 7$

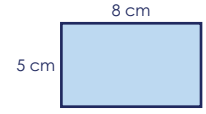
KPI 9.16 Linear Inequalities

1) Representing an inequality on a number line- closed circle	A closed circle is used to show greater than or equal to (or less than or equal to) the number. $x \geq 3$  	**2) Representing an inequality on a number line- open circle**	An open circle is used to show greater than (or less than) the number. $x > 3$ 

KPI 9.17 Perimeter and Area

1) Perimeter

The total distance around the outside of a closed shape.



Perimeter = 5 + 8 + 5 + 8 = 26cm

2) Area

A measure of the space inside a 2D shape. Area is measured in square units.

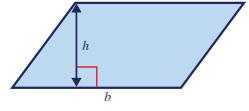
E.g. square centimetres (cm^2), square metres (m^2).

3) Area of a rectangle

Area = length x width

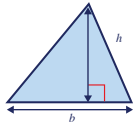
4) Area of parallelogram

Area = base x height



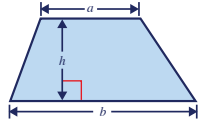
5) Area of triangle

$$\text{Area} = \frac{\text{base} \times \text{height}}{2}$$



6) Area of trapezium

$$\text{Area} = \left(\frac{a+b}{2}\right) \times h$$



7) Converting units of area

cm^2	$\times(10)^2$	mm^2
m^2	$\times(100)^2$	cm^2
km^2	$\times(1000)^2$	m^2

$1cm^2 = 100mm^2$

$1m^2 = 10\,000cm^2$

$1km^2 = 1\,000\,000m^2$

mm^2	$\div(10)^2$	cm^2
cm^2	$\div(100)^2$	m^2
m^2	$\div(1000)^2$	km^2

KPI 9.18 Pythagoras

1) Right-angled triangle

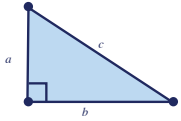
A triangle that contains a right-angle (90 degrees).

2) Hypotenuse

The longest side - opposite the right-angle.

3) Pythagoras' Theorem

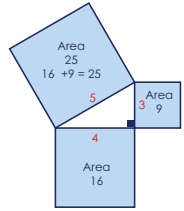
For any right-angled triangle, the area of the square of the longer length (the hypotenuse) is equal to the area of the squares of the shorter lengths added together.



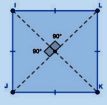
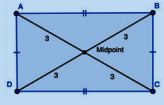
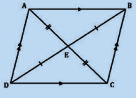
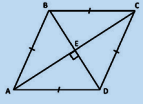
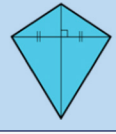
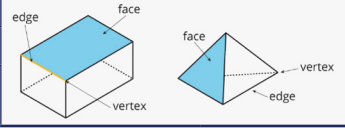
$c^2 = a^2 + b^2$

$a^2 = c^2 - b^2$

$b^2 = c^2 - a^2$



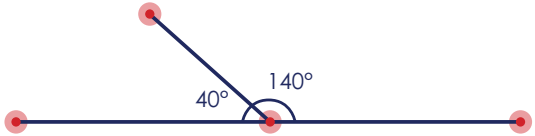
KPI 9.19 Properties of Shapes

1) Polygon	A polygon is a two-dimensional shape with 3 or more straight sides. A polygon is either regular or irregular: Regular – side lengths are equal, and all angles are equal. Irregular – side lengths are unequal, and angles are unequal.		
2) 3 sides	Triangle	**3) 4 sides**	Quadrilateral
4) 5 sides	Pentagon	**5) 6 sides**	Hexagon
6) 7 sides	Heptagon	**7) 8 sides**	Octagon
8) 9 sides	Nonagon	**9) 10 sides**	Decagon
10) 11 sides	Hendecagon	**11) 12 sides**	Dodecagon
12) Equilateral triangle	3 equal angles 3 equal sides 	**13) Isosceles triangle**	2 equal angles 2 equal sides 
14) Scalene triangle	All angles are different All sides are different 	**15) Right angled triangle**	One angle of 90°. Can be isosceles or scalene.
16) Square 	4 right angles 4 equal sides 2 pairs of parallel side Diagonals are of equal length, perpendicular and bisect each other.	**17) Rectangle** 	4 right angles 2 pairs of parallel sides 2 pairs of equal sides Diagonals are of equal length and bisect each other but are not perpendicular.
18) Parallelogram 	2 pairs of equal sized angles 2 pairs of parallel sides 2 pairs of equal sides Diagonals bisect each other but are not of equal length or perpendicular.	**19) Rhombus** 	4 equal sides 2 pairs of equal sized angles 2 pairs of parallel sides Diagonals are perpendicular and bisect each other but are not of equal length.
20) Trapezium	1 pair of parallel sides	**23) Kite** 	1 pair of equal sized angles 2 pairs of equal sides Diagonals are perpendicular and the longer one bisects the shorter one.
21) Right angled trapezium	2 right angles 1 pair of parallel sides		
22) Isosceles trapezium	1 pair of parallel sides 2 pairs of equal sides 2 pairs of equal sized angles		
24) Face	A face is a single flat surface		
25) Edge	An edge is a line segment between faces		
26) Vertex	A vertex is a **corner**		

KPI 9.20 Angle Facts

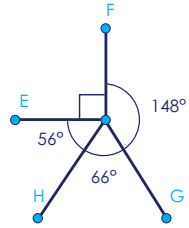
1) Angles on a straight-line

Angles on a straight-line sum to 180°



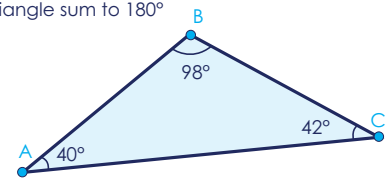
2) Angles around a point

Angles around a point sum to 360°



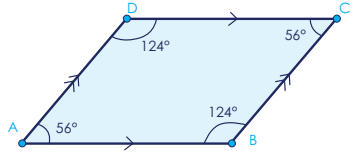
3) Angles in a triangle

Angles in a triangle sum to 180°



4) Angles in a quadrilateral

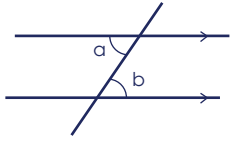
Angles in a quadrilateral sum to 360°



KPI 9.21 Angles in Parallel Lines

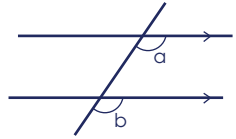
1) Alternate angles

Alternate angles are equal, so a = b



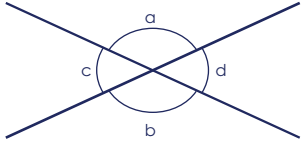
2) Corresponding angles

Corresponding angles are equal, so a = b



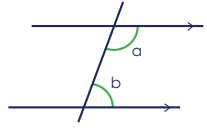
3) Vertically opposite angles

Vertically opposite angles are equal, so, a = b and c = d



4) Co-interior angles

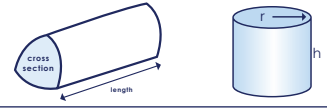
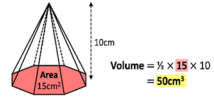
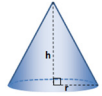
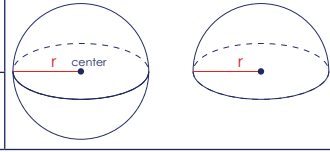
Co-interior angles sum to 180°, so a + b = 180°



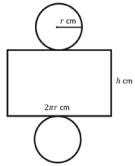
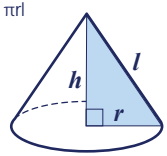
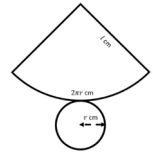
KPI 9.22 Circles

1) Circumference	The perimeter of the circle. $C = \pi d$	**5) Area of a circle**	$A = \pi r^2$
2) Perimeter of a semi-circle	$P = \frac{\pi d}{2} + d$	**6) Area of a semi-circle**	$A = \frac{\pi r^2}{2}$
3) Perimeter of a quarter circle	$P = \frac{\pi d}{4} + 2r$	**7) Area of a quarter-circle**	$A = \frac{\pi r^2}{4}$
4) Perimeter of a three-quarter circle	$P = \frac{3}{4} \pi d + 2r$	**8) Area of a three-quarter circle**	$A = \frac{3\pi r^2}{4}$

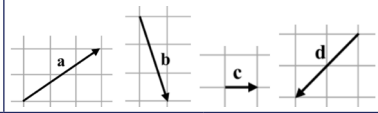
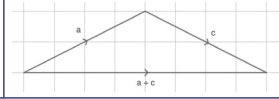
KPI 9.23 Volume

1) Volume	The volume of a solid body is the amount of 'space' it occupies. It is measured in cubic units e.g. cubic centimetres (cm^3).	
2) Prism	Volume of a prism = area of cross section × length.	
3) Cylinder	Volume of cylinder = $\pi r^2 h$	
4) Pyramid	Volume of a pyramid = $\frac{1}{3}$ × area of the base × perpendicular height	
5) Cone	Volume of cone = $\frac{1}{3} \pi r^2 h$	
6) Sphere	Volume of sphere = $\frac{4}{3} \pi r^3$	
7) Hemi-sphere	Volume of hemi-sphere = $\frac{2}{3} \pi r^3$	
8) Converting units of volume	cm^3 ×(10)³ mm^3 m^3 ×(100)³ cm^3	$1cm^3 = 1\,000mm^3$ $1m^3 = 1\,000\,000cm^3$
	mm^3 ÷(10)³ cm^3 cm^3 ÷(100)³ m^3	

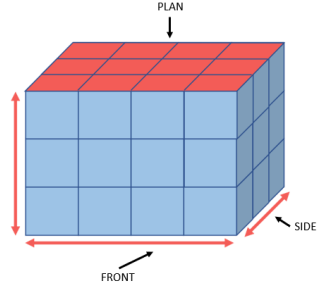
KPI 9.24 Surface Area

1) Surface Area	The total area of the surface of a three-dimensional object. For example, the surface area of a cube is the area of all 6 faces added together. It is measured in square units. E.g. square centimetres (cm²), square metres (m²).		
2) Cylinder	Surface Area = $2\pi r^2 + 2\pi rh$ 	**3) Cone**	Surface Area = $\pi r^2 + \pi rl$  
4) Sphere	Surface Area = $4\pi r^2$	**5) Hemi-sphere**	Surface Area of a Hemi-sphere = $3\pi r^2$

KPI 9.25 Basic Vectors

1) Vector	Vectors represent movement of a certain size in a certain direction, they are represented on a diagram with an arrow.		
2) Magnitude	Magnitude is defined as the length of a vector.	**3) Scalar**	A scalar is the number we multiply a vector by.
4) Column vector	$\begin{pmatrix} a \\ b \end{pmatrix}$	a: movement along the x-axis (left/right) b: movement along the y-axis (up/down)	
5) Adding and subtracting column vectors	$\begin{pmatrix} a \\ b \end{pmatrix} + \begin{pmatrix} c \\ d \end{pmatrix} = \begin{pmatrix} a+c \\ b+d \end{pmatrix}$	**6) Multiplying vectors**	To multiply a column vector by a number, we multiply both values in the vector by that number.
7) Resultant vectors	The resultant vector is the vector that results from adding two or more vectors together.		
8) Parallel vectors	Travel in the same or opposite direction. Can be of varying lengths. Must be scalar multiples of one another.	The vectors $\begin{pmatrix} 8 \\ 12 \end{pmatrix}$ and $\begin{pmatrix} 2 \\ 3 \end{pmatrix}$ are parallel because $\begin{pmatrix} 8 \\ 12 \end{pmatrix} = 4\begin{pmatrix} 2 \\ 3 \end{pmatrix}$	

KPI 9.26 Sequences			
1) Sequence	A pattern of numbers which fit a certain rule.	**2) Term**	A number in a sequence.
3) Term to term rule	The rule for how to get from one number to the next number in the sequence.	**4) Position**	Where a term is in a sequence.
5) Position to term rule	The rule for how to work out a number in a sequence if you know its position.	**6) Nth term**	Used to find a term in a sequence given its position E.g. 5n + 3
7) Linear sequence	The terms increase or decrease by the same amount each time. Also known as an arithmetic sequence. Nth term is written in the form, an + b.	**8) Quadratic sequence**	Nth term is written in the form $an^2 + bn + c$
9) Geometric sequence	A geometric sequence goes from one term to the next by always multiplying or dividing by the same value.	**10) Fibonacci sequence**	The Fibonacci sequence is unique because the next term is found by adding up the two previous terms 1, 1, 2, 3, 5, 8, 13, 21…

KPI 9.27 Plans and Elevations		
1) Plan	View looking vertically downwards.	
2) Side elevation	View looking horizontally from the side.	
3) Front elevation	View looking horizontally from the front.	

9BP - Plants And Photosynthesis

1. Photosynthesis

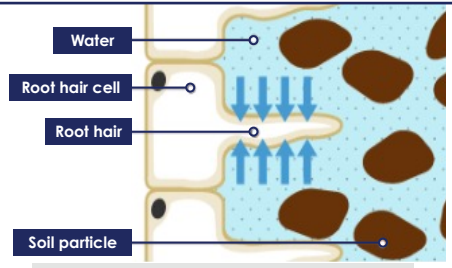
- Plants make their own food (for energy) in a process called **photosynthesis**.
- Photosynthesis helps keep:
  - Levels of oxygen high;
  - Levels of carbon dioxide low.

- Photosynthesis takes place in the **chloroplasts.**
- Chloroplasts contain **chlorophyll** which absorbs the energy transferred by light waves for photosynthesis.

The equation for photosynthesis is:
Carbon dioxide + water → glucose + oxygen

These are the things that plants need for photosynthesis:
- **Carbon dioxide –** absorbed through their leaves;
- **Water -** from the ground through their roots;
- **Light** (a source of energy) - from the Sun.

These are the things that plants make by photosynthesis:
- **Oxygen -** released into the air from the leaves;
- **Glucose:**
  - Turned into **starch** and plant oils, used as an energy store;
  - This energy is released by **respiration;**
  - Used to make **cellulose** for cell walls.



Water is absorbed from the soil by root hair cells

Water is absorbed into the roots by a process called **osmosis**, which does not use energy.
Minerals are absorbed into the roots by a process called **active transport**, which uses energy.

2. Leaves

Feature Of Plant Leaf	Function
Thin	Short distance for carbon dioxide to diffuse into the leaf
Waxy Layer	Prevents water loss by evaporation
Palisade Cells	Contain a lot of chloroplasts to absorb light
Chloroplasts Contain Chlorophyll	Absorbs light
Stomata	Allows carbon dioxide to diffuse into the leaf (and oxygen to diffuse out)
Guard Cells	Open/close stomata depending on conditions
Network Of Tubes (Xylem & Phloem)	Transports water (xylem) and food (phloem)

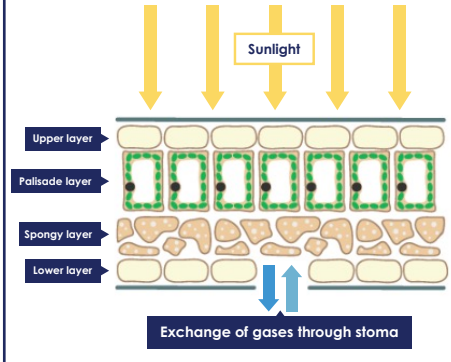
4. Water

- Water is absorbed through the roots, by **osmosis;**
- It is transported through tubes (**xylem**) to the leaf;
- The roots contain cells called **root hair cells:**
  - They increase the **surface area.**
  - They have **thin walls** to let water pass into them easily.
  - They **do not** contain chloroplasts.

6. Respiration v Photosynthesis

Photosynthesis:
Carbon dioxide + water → glucose + oxygen
Aerobic respiration is:
Glucose + oxygen → carbon dioxide + water
The equation for photosynthesis is the **opposite** of the equation for aerobic respiration.
- **Photosynthesis:**
  - **Produces** glucose and oxygen;
  - **Uses** carbon dioxide and water.
- **Respiration:**
  - **Produces** carbon dioxide and water;
  - **Uses** glucose and oxygen.

3. Cross-Section Of A Leaf



5. Carbon Dioxide

- Enters leaf by **diffusion** through the **stomata.**
- **Guard cells** control the size of the stomata.
- Stomata closes in **hot, windy** or **dry** conditions.
- Spongy layer has gaps between cells:
  - Allows carbon dioxide to **diffuse** to other cells in the leaf;
  - Allows oxygen produced in photosynthesis diffuse out of the leaf.

7. Food Security And Pollination

- **Pollination** is the transfer of pollen from one plant to another;
- Pollen can be transferred by **insects** or by **wind;**
- Insects that pollinate plants help us produce our food;
- Our food supply depends on plants:
  - Our food made of, and from plants;
  - The animals we eat feed on plants.

9PM - Matter

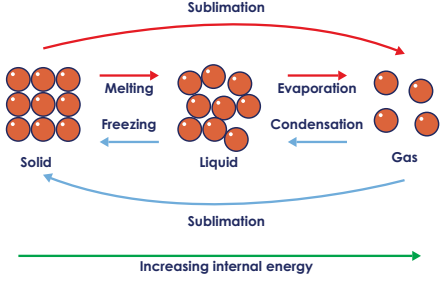
1. Change Of State

- Substances can change state, usually when they are heated or cooled;
- State changes are **reversible** – e.g. ice can be melted and then frozen again;
- No new elements or compounds are formed.

The closeness, arrangement and motion of the particles in a substance change when it changes state:

	Solid	Liquid	Gas
Closeness	All touching	Mostly touching	Far apart
Arrangement	Ordered	Random	Random
Motion	Vibrate, fixed position	Move freely	Move freely (faster than liquids)
Density	Decreasing density ---------->		
Internal Energy	Increasing internal energy ---------->		

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$



2. Pressure In Fluids

- A **fluid** is a liquid or gas;
- All fluids can change shape and flow from place to place;
- Fluids exert pressure at 90° to surfaces – we say that it acts normal to the surface.

4. Brownian Motion

- Gas particles move very quickly;
- Air particles move at 500 m/s on average at room temperature;
- Particles collide with each other very frequently;
- They change direction randomly when they collide;
- Their random motion because of collisions is called **Brownian motion**.

6. Diffusion

- Diffusion is the **movement of particles from an area of high concentration to an area of low concentration;**
- Diffusion does not happen in solids – only fluids (liquids and gases);
- Particles in a solid can only vibrate and cannot move from place to place;
- Diffusion is driven by differences in concentration;
- No diffusion will take place if there is no difference in concentration from one place to another;
- Diffusion in liquids is slower than diffusion in gases because the particles in a liquid move more slowly.

Explaining diffusion in a smelly gas

- When a perfume is released into in a room, the perfume particles mix with the particles of air;
- The particles of perfume are free to move quickly in all directions;
- They eventually spread through the whole room **from an area of high concentration to an area of low concentration;**
- This continues until the concentration of the perfume is the same throughout the room;
- The particles will still move, even when the perfume is evenly spread out.

Diffusion and temperature

Diffusion is faster if the fluid (gas or liquid) is hotter.

3. Atmospheric Pressure

The atmosphere exerts a pressure on you, and everything around you.

Atmospheric pressure changes with altitude. The higher you go:

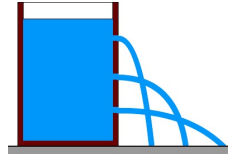
- The lower the weight of the air above you;
- The lower the atmospheric pressure.

5. Pressure In Liquids

Just like the atmosphere, liquids exert pressure on objects.

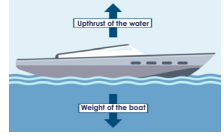
The pressure in liquids changes with depth. The deeper you go:

- The greater the weight of liquid above;
- The greater the liquid pressure;
- Pressure in a liquid increases with depth;
- Jet from the bottom of the bucket travels further.



7. Floating And Sinking

- Liquid pressure is exerted on surfaces of objects in liquids;
- This causes upthrust;
- When an object sinks, the pressure increases and so the upthrust increases;
- It will continue to sink if weight is greater than maximum upthrust;
- When and object floats, the upthrust is equal and opposite to the object's weight.



9PF - Forces In Action

1. Hooke's Law

Hooke's Law says that **the extension of an elastic object is directly proportional to the force applied.** In other words:
- The extension doubles, if the force is doubled;
- There is no extension, if no force is applied.

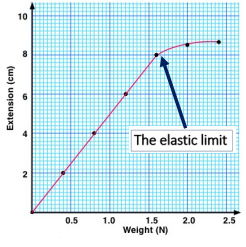
You can investigate Hooke's Law using a spring:
- Hang the spring from a stand and clamp;
- Measure its length with a ruler;
- Hang a mass from the spring and measure the new length of the spring;
- Work out: **extension = new length – original length**;
- Keep adding more masses, measuring the new length each time;
- Work out extension for each mass.

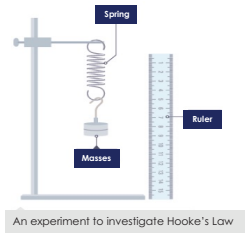
You can then plot a force-extension graph:
- Plot force on the vertical (y) axis;
- Plot extension on the horizontal (x) axis.

Force Applied (N) = Spring Constant (N/m) x Extension (m)

Using Hooke's Law

In a force-extension graph:
- The steeper the line, the stiffer the spring;
- The area under the line is the work done (energy needed) to stretch the spring.

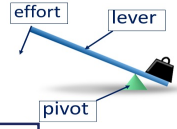




An experiment to investigate Hooke's Law

2. Moments

- A moment is a turning effect of a force.
- Forces can make objects turn if there is a pivot.
- When the turning forces are balanced - the moments are equal and opposite.



Calculating moments
To calculate a moment, you need to know:
- The distance of the force from the pivot;
- The size of the force.

Moment	=	Force	x	Perpendicular Distance
(Nm)		(N)		(m)
(Ncm)				(cm)

Force multipliers
- Increasing the distance will increase the moment for the same force;
- This is why a longer spanner will loosen a tight nut;
- And a crowbar or long lever can be used to lift heavy objects.

÷100
Centimetres - Metres
x100

÷1000
Metres - Kilometres
x1000

Work Done (J) = Force (N) x Distance (m)

4. Deformation

Elastic materials:
- **Change shape** when a force is exerted on them;
- **Return to their original shape/size** when the force is removed.

Deformation is a change in shape. There are two types of deformation:
- **Stretching** is when the object/material is pulled;
- **Compression** is when the object/material is squashed.

The greater the force exerted, the greater the amount of deformation. If the force is large enough, the object/material may no longer return to its original size. Until you reach this point, a special case called **Hooke's Law** applies.

3. Simple Machines

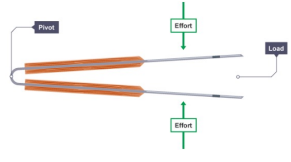
Example of simple machines are **see-saws, wheelbarrows** and forceps. **Simple machines give a bigger force but with a smaller movement.**

See–saw
A force is exerted in one place, causing movement and a force at another place in the see-saw. A see-saw will balance when:

Clockwise Moment = Anticlockwise Moment
Force (N) x Distance (cm) = Force (N) x Distance (cm)

Wheelbarrows
Wheelbarrows are a simple machine with the load near the pivot (the wheel) and the effort on the handles far from the pivot.

Forceps
With forceps, fingers provide the effort force, and this is nearer to the pivot than the load (the object you are picking up):



- Some machines give a smaller force but with a bigger movement.

This is the opposite to the see-saw and wheelbarrow, but again if you multiply the force by the distance travelled, you get the same value for the effort and for the load.

9CR Reactivity

1. Word Equations To Symbol Equations

- Replace names of each substance symbols or formula;
- Use numbers to balance the equation;

Example:

copper + oxygen → copper oxide

2Cu + O_2 → 2CuO

Two copper atoms (2Cu) react with one oxygen molecule (O_2) to produce two units of copper oxide (2CuO).

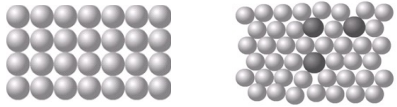
2. Typical Properties Of Metals

Appearance	Shiny
State At Room Temperature	Solid (except mercury, a liquid)
Density	High
Strength	Strong
Malleable Or Brittle	Malleable
Conduct Heat?	Good
Conduct Electricity?	Good
Magnetic Material	Only iron, cobalt & nickel
Sound When Hit	Make a ringing sound (sonorous)

3. Pure Metals V Alloy

The rows of atoms in a pure metal can slide over each other easily.
In an alloy, the different sized atoms disrupt the layers so the atoms can't slide.
This makes alloys more useful than pure metals.

Pure metal **Alloy**



4. Bases V Alkalis

A **base** is a substance that can react with acids and **neutralise** them. Many bases are insoluble in water. If a base does dissolve in water it is called an **alkali.**

Bases are usually:
- **Metal oxides**, such as copper oxide
- **Metal hydroxides**, such as sodium hydroxide, or **metal carbonates**, such as calcium carbonate

General word equations for neutralisation reactions:

Metal oxide + acid → salt + water
Metal hydroxide + acid → salt + water
Metal carbonate + acid → salt + carbon dioxide + water

The lab test for carbon dioxide
Bubble the gas through lime water and watch for it to turn from colourless to a cloudy milky colour.

5. Acids And Metals

Acids react with most metals to produce a salt and hydrogen. This is the general word equation :

metal + acid → salt + hydrogen

The lab test for hydrogen
Place **lighted splint** in the test tube and listen for the gas to burn with a squeaky pop.

6. Naming Salts

Hydrochloric acid → metal **chlorides**
Sulfuric acid → metal **sulfates**
Nitric acid → metal **nitrates**

7. Calculating Relative Formula Mass

Formula mass is calculated by adding together the mass number of each atom in a compound's chemical formula.

E.g. $MgCl_2$ **Ar Mg = 24** **Ar Cl = 35.5**

Formula mass = 24 + (2 x 35.5) = 95

There are 2 chlorines in the chemical formula

9CR Reactivity

8. Reactivity Series

The reactivity series is a list of elements in order of their reactivity:

Most reactive

Potassium
Sodium
Calcium
Magnesium
Aluminium
Carbon
Zinc
Iron
Tin
Lead
Hydrogen
Copper
Silver
Gold
Platinum

Least reactive

If a metal loses its outer electrons more easily, it will be more reactive.

9. Extracting Copper From Copper Oxide

Copper is so unreactive, it does not react with cold or hot water, so it is used for water pipes.

To extract copper:

- Mix **copper oxide** powder with **carbon powder**;
- Heat the mixture strongly in a **crucible**;
- Keep the lid on the crucible, to stop carbon reacting with oxygen in the air;
- The **carbon dioxide** formed in the reaction escapes into the air;
- Let the crucible cool down, you tip the mixture into cold water;
- Brown copper sinks to the bottom, leaving unreacted powder suspended in the water.

These equations represent the reaction:

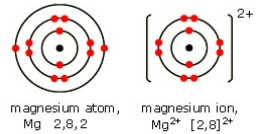
Copper oxide + carbon → copper + carbon dioxide

$2CuO + C \rightarrow 2Cu + CO_2$

10. Why Do Metals React?

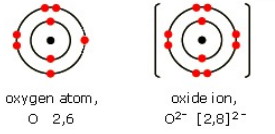
Metals react because they want to gain a full outer shell and become stable. They do this by **losing their outer electron(s)** to become **positively charged ions**

For example:
Magnesium loses its 2 outer electrons to become a +2 ion



Why do non-metals react?
Non-metals react because they want to gain a full outer shell and become stable. They do this by gaining electrons into their outer shell to become negatively charged ion.

For example:
Oxygen gains 2 electrons into its outer shell to become a -2 ion



11. Displacement Reactions

This is when a more reactive metal **displaces** a less reactive metal from its compound.

For example:

Magnesium + copper sulfate → magnesium sulfate + copper

If the more reactive metal is already in the metal compound, nothing happens. For example:

Magnesium sulfate + copper → no reaction

12. Carbon And Metal Extraction

Some metals can be extracted from their metal oxides using carbon if the metal is less reactive than carbon.

The metal is reduced – it has lost its oxygen

Metal oxide + carbon → metal + carbon dioxide

The carbon is oxidised – it has gained oxygen

This works for zinc, iron, tin, lead and copper because they are all less reactive than carbon.

9CE - Energetics And Rates

1. Rate Of Reaction

Reacting particles must **collide** with a minimum amount of energy **(activation energy)** for a chemical reaction to happen.

How quickly a reaction happens is called the **rate of reaction**, and always involves a **time measurement.**

We can **increase reaction rate** by:

1. **Increasing the concentration of liquid reactants** as it **increases the frequency of collisions;**
2. **Increasing the surface area of solid reactants** as it **increases the frequency of collisions;**
3. Using a **catalyst** as it **decreases the energy that particles need to collide with for a successful reaction.**

2. Some Ways To Measure The Rate Of A Reaction

- Time taken for a reactant to disappear;
- Time taken for the reaction mixture to change colour;
- Measure the number of bubbles produced in a certain time;
- Measure the volume of gas produced in a certain time;
- Measure the change in mass in a certain time.

3. Exothermic And Endothermic Reactions

- **Exothermic** reaction - **releases** energy to the surroundings;
- Causes a **rise** in temperature (**positive** temperature change);
- **Endothermic** reaction - **take in** energy from the surroundings;
- Causes a **drop** in temperature (**negative** temperature change).

4. Catalysts

- Speed up reactions;
- Are not used up during reactions;
- Are chemically unchanged after the reaction completes;
- Work by reducing the energy needed to start a reaction (**activation energy**).

In industry, using catalysts often results in **lower** temperature being used in industry, **saving money** and **cutting** the **use of fossil fuels** and their subsequent **emissions.**

Car exhausts have **catalytic converters**.

- They reduce amount of toxic gases released;
- They contain platinum and rhodium as catalysts.

5. Oxidation

In oxidation reactions, a substance **gains oxygen.**
Metals and non-metals can take part in oxidation reactions (be **oxidised**).
Examples:

- Magnesium reacts with oxygen to produce magnesium oxide:

Magnesium + oxygen → magnesium oxide

$2Mg + O_2 \rightarrow 2MgO$

- Carbon reacts with oxygen to form carbon dioxide:

Carbon + oxygen → carbon dioxide

$C + O_2 \rightarrow CO_2$

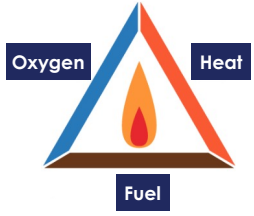
6. Identification Tests

Lime water – colour change from colourless to **cloudy when carbon dioxide.**
Glowing splint – will relight when placed in **oxygen.**
Blue cobalt chloride paper – colour change from blue to pink with **water.**
Hydrogen test - Lit split causes a squeaky pop when placed in **hydrogen.**

9CE - Energetics And Rates

7. Combustion

- **Combustion** is another name for burning fuels.
- It is an **exothermic** reaction.
- It is an example of an **oxidation** reaction.



8. Complete Combustion

- **Fuels** contain **hydrocarbons** which react with oxygen when they **burn;**
- With enough oxygen, **complete combustion** happens:
  - The hydrogen atoms combine with oxygen to make water vapour, H_2O
  - The carbon atoms combine with oxygen to make carbon dioxide, CO_2
  - The **maximum amount of energy** is released.

The equations for the complete combustion of **methane**.

Methane + oxygen → water + carbon dioxide

$CH_4 + 2O_2 \rightarrow 2H_2O + CO_2$

9. Incomplete Combustion

- Happens when there is **not enough oxygen**;
- Water vapour and carbon dioxide are still produced;
- Two other products are also produced:
  - **Carbon monoxide**, CO; colourless toxic gas.
  - Particles of **carbon** (soot/smoke); causes breathing problems.
- The **maximum amount of energy** is **NOT released.**

10. Thermal Decomposition

This is the **breaking down of a substance using heat**, to form two or more products.

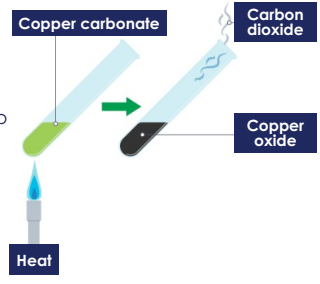
Many **metal carbonates** take part in thermal decomposition reactions.

For example, copper carbonate:
copper carbonate is green; copper oxide is black.
Copper carbonate → copper oxide + carbon dioxide
$CuCO_3 \rightarrow CuO + CO_2$

Other metal carbonates decompose in the same way. When they do, they follow this equation:
metal carbonate → metal oxide + carbon dioxide

For example, calcium carbonate:
calcium carbonate → calcium oxide + carbon dioxide
$CaCO_3 \rightarrow CaO + CO_2$

Thermal decomposition is an example of an **endothermic** reaction. Energy must be supplied **constantly** for the reaction to keep going.



11. Conservation Of Mass

Atoms are not destroyed nor created during chemical reactions, so in any reaction:

Total mass of reactants = total mass of products

9BB - Biological Systems And Processes

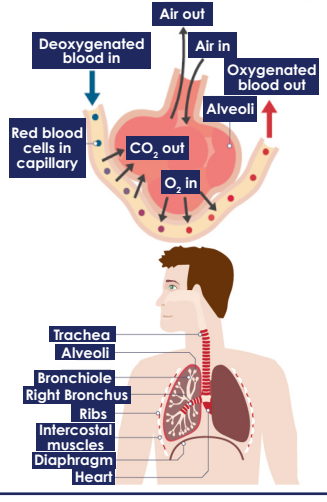
1. The Human Gas Exchange System

- Oxygen is needed for respiration;
- Carbon dioxide produced in respiration needs to be removed;

Gas exchange is moving oxygen from the air into the blood, and removing waste carbon dioxide from the blood into the air.

The respiratory system contains the organs that allow us to get the oxygen we need and to remove the waste carbon dioxide we do not need:

- Air passes from the mouth into the **trachea** (windpipe);
- The trachea divides into two **bronchi** - one for each lung;
- Each bronchus divides into smaller tubes called **bronchioles;**
- At the end of each bronchiole, there are air sacs **(alveoli)**;
- The alveoli increase the **surface** of the lungs.



2. Aerobic Respiration

Energy is needed for:

- Growth and repair;
- Movement;
- Control of body temperature in mammals/birds.

The equation for aerobic respiration is:

glucose + oxygen → carbon dioxide + water

- Glucose and oxygen react to produce carbon dioxide and water and release energy;
- It is **aerobic** respiration because oxygen is used;
- Respiration happens in all living cells, including plant and animal cells;
- Takes place in the **mitochondria** of the cell;
- Energy is released from glucose;
- **Do not** confuse respiration with breathing (which is called **ventilation**).

3. Ventilation

- Ventilation is another word for breathing;
- It involves movements of the **ribs, intercostal muscles** and **diaphragm** to move air in and out of the lungs;
- **Inhale** – breathing in; **exhale** – breathing out.

	Inhaling	Exhaling
Diaphragm	Contracts and moves downwards	Relaxes and moves upwards
Intercostal Muscles	Contract, moving the ribs upwards and outwards	Relax, letting the ribs move downwards and inwards
Volume Of Ribcage	Increases	Decreases
Pressure Inside The Chest	Decreases below atmospheric pressure	Increases above atmospheric pressure
Movement Of Air	Moves into the lungs	Moves out of the lungs

4. Features Of The Alveoli

- Increase surface area of lungs;
- Moist, thin walls (just one cell thick);
- A lot of tiny blood vessels called **capillaries.**

The gases move by **diffusion** (from a **high concentration to a low concentration**):

- Oxygen diffuses from the air into the blood;
- Carbon dioxide diffuses from the blood into the air.

5. Anaerobic Respiration

In humans: The equation for anaerobic respiration in humans is:

glucose → lactic acid

- Lactic acid builds up in the muscles;
- Causing pain and tiredness (fatigue);
- Can lead to cramp;
- Lactic acid is broken down when you start aerobic respiration again.

6. Fermentation

The equation for anaerobic respiration in yeast is:

Glucose → ethanol + carbon dioxide

- Anaerobic respiration happens in microbes (e.g. bacteria);
- They need to release energy from glucose;
- Yeast (unicellular fungi) can carry out an anaerobic process called **fermentation**;
- Ethanol (alcohol) is produced;
- The ethanol is used to make beer and wine;
- The carbon dioxide helps bread rise.

7. Comparing Aerobic & Anaerobic

	Aerobic	Anaerobic
Needs Oxygen?	Yes	No
Needs Glucose?	Yes	Yes
Product(S) Formed	Carbon dioxide and water	Lactic acid
Energy Released	More	Less

8. Impact Of Exercise

Exercise causes an increase in:

- Breathing rate;
- Tidal volume (volume of air breathed in/out in one breath);

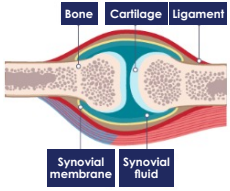
Regular exercise can increase the:

- Strength of the **diaphragm** and **intercostal muscles;**
- Vital capacity (volume of air that can be forcibly exhaled after inhaling fully).

9BB - Biological Systems And Processes

1. Joints

- Most joints allow parts of the skeleton to move;
- The human skeleton has joints called synovial joints.



The synovial joint

- The ends of the bones in a joint are covered with a tough, smooth substance called **cartilage**;
- This is kept slippery by a liquid called **synovial fluid;**
- Tough **ligaments** join the two bones in the joint;
- If two bones moved against each other, without cartilage they would eventually wear away;
- This is called **arthritis.**

Type of joint	Examples	Movement allowed
Hinge joint	Knee, elbow	The same as opening and closing a door, with no rotation (turning)
Ball and socket	Hip, shoulder	Back and forth in all directions, and rotation

2. The Skeleton

- Bone is a living **tissue** with a blood supply;
- It is constantly being dissolved and formed;
- It can repair itself if a bone is broken;
- Calcium and other minerals make bone strong but slightly flexible.

Four functions of the skeleton:

1) Support the body

- The skeleton supports the body. For example, without a backbone we would not be able to stay upright.

2) Protection of vital organs

- The skull protects the brain;
- The ribcage protects the heart and lungs;
- The backbone protects the spinal cord.

3) Movement

- Bones are linked together by joints;
- Some are **fixed joints** – e.g. in the skull;
- Some are **flexible joints** – e.g. the knee;
- Muscles move bones attached by joints.

4) Making blood cells

Two main types of blood cell:

- **Red blood cells**, which carry oxygen;
- **White blood cells**, which destroy **harmful microbes** (pathogens);
- Both are made in the bone marrow - soft tissue inside large bones protected by the hard part of the bone around it.

3. Muscles And Movement

- Muscles work by getting shorter - they contract;
- Muscles are attached to bones by strong tendons;
- During muscle contraction, it pulls on the bone, moving it.

Antagonistic muscles

- Muscles can only pull, they cannot push;
- Muscles work in pairs, called antagonistic muscles.

Your elbow joint has two muscles that move your forearm up or down. These are the **biceps** and the **triceps:**

- To raise the forearm, the biceps contracts and the triceps relaxes;
- To lower the forearm again, the triceps contracts and the biceps relaxes.

- Muscles exert a force on bones when they contract;
- You could work out the force exerted by the biceps muscle using the idea of moments;
- The way in which muscles and bones work together to exert forces is called biomechanics.

4. Drugs

Drugs are a substance that has an effect on the body.

They can be:

- **Medicines** are drugs that treat pain or disease;
- **Recreational drugs** are taken because people like the effects they have on their bodies;
- Some recreational drugs are legal, eg **caffeine**, **tobacco** & **alcohol;**
- Most recreational drugs are illegal, eg **cannabis**, **ecstasy** and **heroin;**
- Recreational drugs can be classified as a **depressant** or a **stimulant;**
- Most recreational drugs can be **addictive.**

5. Asthma

- Asthma affects the bronchioles;
- Airways can become inflamed, swollen and constricted (narrowed);
- Excess mucus is produced.

During an asthma attack:

- The lining of airways becomes **inflamed;**
- Fluid builds up in the airways;
- Muscles around bronchioles contract, which **constricts** airways.

Symptoms are:

- **Wheezing**, **tight chest** and **difficulty breathing.**

6. Smoking And Pregnancy

Smoking can damage the foetus during gestation. For example, it can:

- Increase the risk of complications in pregnancy and birth;
- Make it less likely to have a healthier pregnancy and a healthier baby;
- Increase the risk of stillbirth;
- Make it more likely to be born too early;
- Be more likely to be born underweight.

7. Smoking

Smoking is very harmful to health. Smoke contains harmful substances.

Tar

- Causes cancer of the lungs, mouth and throat;
- Coats the inside of the lungs causing coughing;
- Damages the alveoli, making gas exchange difficult.

Smoke

- Cells in the trachea, bronchi and bronchioles produce mucus;
- Mucus traps dirt and microbes;
- Cells with cilia move the mucus out of the lungs;
- Smoke and tar damages the cilia;
- Smokers cough to move the mucus and are more likely to get bronchitis.

Nicotine

- Nicotine is addictive;
- Nicotine increases heart rate and blood pressure, and makes blood vessels narrower;
- This can lead to heart disease.

Carbon monoxide

- Carbon monoxide takes the place of oxygen in red blood cells;
- This reduces amount of oxygen that the blood can carry;
- It means the circulatory system has to work harder, causing heart disease.

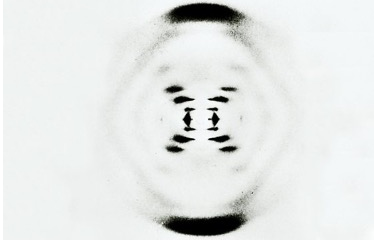
9BB - Biological Systems And Processes

1. Structure Of DNA

Genetic information is passed from one generation to the next.
This is called **heredity** and why we resemble our parents.

The genetic information itself is contained in a complex molecule called **DNA**.

Scientists worked out the structure of DNA in the 1950s. Rosalind Franklin made 'X-ray diffraction' images of DNA.



An X-ray diffraction image of DNA

James Watson and Francis Crick used information from one of her images to work out a model for the structure of DNA.

Work by Maurice Wilkins, a colleague of Franklin, supported their model.

4. Watson And Crick

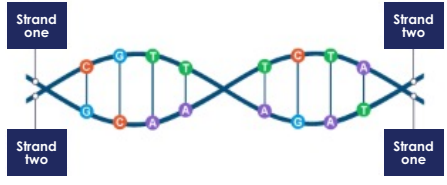
Watson and Crick worked out how DNA was arranged:

- DNA has two strands;
- The strands are twisted to form a **double helix;**
- The strands are held together by **bonds** between **base pairs.**

2. Key terms

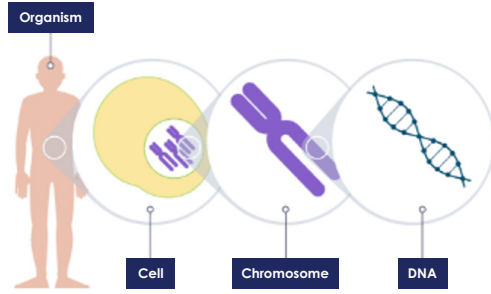
Key Terms	Definition
Base Pair	The pair of nitrogenous bases that connects the (complementary) strands of DNA
Bond	The chemical link that holds molecules together
Chromosome	Strands of DNA
DNA	Deoxyribonucleic acid. The chemical carrying the genetic code
Double Helix	The shape of DNA molecule, two strands twisted in a spiral
Gene	A section of DNA which we inherit from our parents, and which controls part of a cell's chemistry (protein production)
Heredity	Genetic information that determines an organism's characteristics, passed on from one generation to another
Nucleus	Controls what happens inside the cell, and contains chromosomes

5. Diagram of DNA



A DNA molecule showing its base pairs, G-C and A-T

3. Comparing Sizes



Each cell with a nucleus contains chromosomes, which are made from DNA

6. Chromosomes, DNA And Genes

The DNA in all of your cells is approximately two metres long, except for:

- Red blood cells which have none;
- Sperm or eggs only have about one metre.

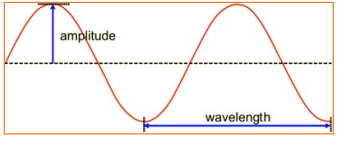
- It is coiled into structures called chromosomes.
- Chromosomes are found in the nucleus of each cell.

- Human body cells each contain **23 pairs of chromosomes;**
- Half of which are from each parent;
- Human gametes (eggs and sperm) each contain 23 chromosomes;
- When an egg is fertilised by a sperm, it becomes a cell with 23 pairs of chromosomes;
- We each have half of our chromosomes and DNA come from each parent;
- DNA makes up genes, which makes up chromosomes;
- One copy of all your chromosomes is called your **genome.**

9PS - Sound

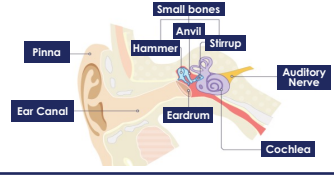
1. Wave Features

- **Amplitude:** the maximum height of the wave from its resting position:
  - The greater the amplitude, the louder the sound;
- **Wavelength:** the distance between two **crests** (tops) next to each other (or any other two identical point on waves next to each other);
- **Frequency:** the number of **waves per second (Hertz - Hz):**
  - The higher the frequency, the closer together the waves are, the higher the pitch.



2. Ears

- An ear has an **eardrum**, connected to **three small bones;**
- Vibrations in air make the eardrum vibrate which in turn vibrates the three small bones (called **ossicles**) to a spiral structure called the **cochlea;**
- Signals are passed from the cochlea to the brain through the **auditory** nerve.



3. Water Waves

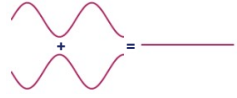
- Water waves move with a transverse motion;
- The **undulations** (up and down movement) are at 90° to the direction of travel;
- Water waves, like all waves, can be **reflected**, **refracted** and **diffracted.**

Superposition is where two waves meet and they affect each other: **adding** or **cancelling.**

Adding (constructive interference)

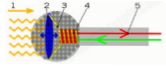
If two waves meet each other **in step**, they add together and reinforce each other. They produce a much higher wave, a wave with a greater **amplitude.**

Cancelling (destructive interference)
If two waves meet each other **out of step**, they cancel out.



4. Microphones

- Microphones contain a **diaphragm**, which does a similar job to an eardrum;
- The vibrations in air make the diaphragm vibrate. These vibrations are changed to electrical impulses.



5. Types Of Waves

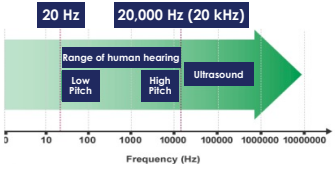
All waves transfer energy from place to place.
There are two types of wave: **longitudinal** and **transverse**:

Longitudinal waves
Sound waves are **longitudinal waves.**
The vibrations are **parallel to the direction of travel**.

Transverse waves
Light waves (and water waves) are **transverse waves.**
The vibrations are **perpendicular to the direction of travel**

6. Ultrasound

Human beings can generally hear sounds as low as 20 Hz and as high as 20,000 Hz (20 kHz).



Ultrasound is:
- Any sound with a frequency of more than 20,000 Hz;
- Too high pitched for humans to hear;
- Other animals (e.g. dogs, cats and bats) can hear it;

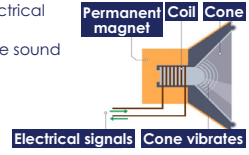
Ultrasound can be used to check on the health of unborn babies, clean jewellery and in physiotherapy.

7. Reflection

- Sound waves can reflect off surfaces;
- These reflections are heard as **echoes;**
- **Hard, smooth surfaces** are good at reflecting sound (more echoes);
- **Soft, rough surfaces** are good at absorbing sound (less echoes).

8. Loudspeakers

- Loudspeakers work by converting electrical current into vibrations;
- This moves the cone which creates the sound waves.



9. Sound Waves

- When something vibrates, it produces sound;
- These sound waves are carried by vibrating particles;
- Sound can only travel through solids, liquids or gases;
- They cannot travel through empty space (a **vacuum**).

The speed of sound is 340 m/s in air

Unit 1 - World War 1

A. Long Term Causes:

Keywords:

1. **Militarism** - A belief that it is necessary to have strong armed forces and that this force should be used as a solution to any threat.
2. **Alliance** - An agreement between countries that benefits each of them.
3. **Imperialism** - Extending a nation's power and influence by colonizing other countries.
4. **Nationalism** - An intense form of patriotism where the value and importance of your country is exaggerated.

Remember: the MAIN causes

5. **Great Powers** - Countries that have international influence and military strength.
6. **Balance of powers** - A belief in that the size and power of the alliances of the Great Powers would prevent either side starting a war.
7. **Encirclement** - To be surrounded.
8. **Arms race** - A competition between countries over the development and production of weapons e.g. the production of dreadnoughts (pictured).
9. **Schlieffen Plan** - German plan to quickly attack and defeat France, then turn their forces on Russia if war was to happen.
10. **Kaiser Wilhelm** - Germany's ambitious emperor.

B. Short Term Causes:

Key people:

1. **Archduke Franz Ferdinand** - An Austrian prince, assassinated (killed) in Sarajevo in 1914.
2. **Gavrilo Princip** - Serbian terrorist responsible for shooting the Archduke.

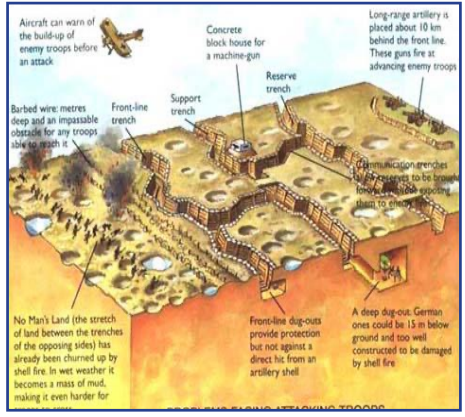
Keywords:

3. **Annex** - To seize (take) an area of land, normally by force, and make it part of your country.
4. **Balkans** – A peninsula in South Eastern Europe made up of countries like Serbia, Croatia, Bulgaria, Bosnia, Albania.
5. **Brinkmanship** - To pursue a dangerous policy to the limits of safety especially in politics.
6. **Ultimatum** - A final demand, the rejection of which will result in a break down of relations.

C. The Western Front:

Keywords:

1. **Conscription** - Forcing ordinary citizens to fight as soldiers in a war.
2. **Stalemate** - A situation where neither side fighting in a war can make progress.
3. **Trenches** - Connection of long narrow ditches for soldiers to take shelter from enemy fire.
4. **Artillery** - Heavy guns and cannons firing shells.
5. **Bombardment** - A continuous attack with shells (shelling), intended to destroy trench defences.
6. **Armistice** - Ceasefire between the Allies and the Germans.
7. **Naval blockade** - Allied efforts to restrict the supply of essential goods back to Germany.
8. **Gas** - A poisonous agent used in warfare.
9. **Tank** - A heavy armoured fighting vehicle carrying guns and moving on a continuous metal track.
10. **General Haig** - Led the British offensive at the Somme.



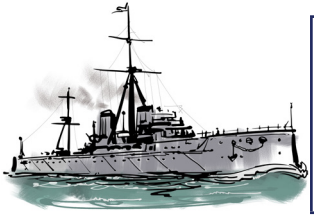
D. The Treaty Of Versailles:

Keywords:

1. **Big Three** - The leaders of the three main Allied powers – France, Britain, USA.
2. **Treaty** - A formal agreement between states.

Remember the Terms of ToV: LAMB

3. **Land** – Germany gave up 13% of its territory and demilitarised the Rhineland.
4. **Army** – Reduced to 100,000 men.
5. **Money/ Reparations** - Financial compensation for war damage paid by a defeated state. Germany paid £6.6 billion.
6. **Blame** – Germany had to accept the war guilt clause.
7. **Dolchtoss** – Stab in the back theory.



1882 The **Triple Alliance** between Austria-Hungry, Germany and Italy is signed.	**1907** The **Triple Entente** between Britain, France and Russia is signed.	**1908-1909** The **Balkan Crisis** occurred after Austria-Hungry annexed Bosnia and Serbia threatens war.	**28th June 1914** Archduke Franz Ferdinand is **assassinated** in Sarajevo by a Serbian terrorist group.	**23rd-25th July 1914** Austria issues Serbia with an **ultimatum** but it is rejected.	**4th August 1914** Britain issues an ultimatum to Germany and ultimately declares war.	**1916** The Battle of the Somme.	**1917** Russia leaves the war, USA joins.	**11th November 1918** The Armistice.	**1919** Germany signs Treaty of Versailles.

Unit 2 - The Suffrage Movement

A. Keywords

1. **Enfranchisement –** To be given the right to vote.
2. **Manifesto –** A public set of political aims written down.
3. **Propaganda –** Information used to promote a political point that can be misleading or untrue.
4. **Property Rights –** The ability to own land and housing, many women could not gain access to ownership.
5. **Representation –** speaking or acting on behalf of someone.
6. **Suffrage –** The right for women to vote in elections.
7. **Tactics –** An action or strategy carefully planned to achieve a specific end.

B. Suffragist Movement

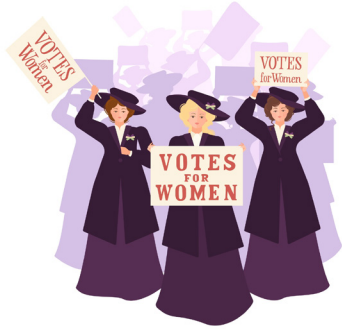
1. **Constitutional –** A peaceful way of campaigning, often using political methods, such as petitions.
2. **Marches –** A tactic used by both campaigns to get their message heard.
3. **NUWSS – National Union of Women's Suffrage Societies**, also known as suffragists, an organisation that wanted greater equality for women using peaceful methods of protest. Led by Millicent Fawcett.
4. **Suffragist –** A campaigner who believes in constitutional methods and tactics of campaigns.

D. War Time

1. **Home Front –** The people who stay and work in their country, during a foreign war.
2. **Munition factories -** Factories that supplied weapons during WWI, many women worked in them.
3. **Representation of the People Act -** Allowing men over 21 and women over 30 to vote.
4. **The Canary girls -** British women that worked in the munition factories, repeated exposure to TNT turned their skin orange, like canaries.
5. **War Effort -** People who were committed to supporting the troops abroad by mobilising at society at home, helping with supplies from food to munitions.

C. Suffragette Movement

1. **Arson –** Act of deliberately setting fire to property.
2. **'Cat and Mouse' Act –** A law that allowed the police to rearrest women. The police let suffragettes on hunger strike free from prison, until they had eaten, only to arrest them again (pictured).
3. **Force feeding –** Police put a tube down the throats of women on hunger strike in prison to feed them, many drowned using this method.
4. **Militant –** Using confrontational organised tactics, such as destroying property.
5. **Petition –** A document signed by many people demanding political action by the government.
6. **Suffragette –** A campaigner who is prepared to use militant or violent methods and break the law.
7. **Terrorism –** the unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims.
8. **WSPU –** Women's Social and Political Union, also known as the suffragettes, a political organisation for women only that were led by the Pankhurst family and that were prepared to use militant tactics to achieve their aims.



C. Suffragette Movement

1. **Arson –** Act of deliberately setting fire to property.
2. **Annie Kenney -** A working-class socialist feminist who was active in the WSPU as a militant member and was arrested.
3. **Christabel Pankhurst -** Speaker for the WSPU in 1905. She trained as a lawyer but could not practice as a woman. She fled the country in 1912 for fear for rearrest, and she unsuccessfully ran for parliament in 1918.
4. **Emeline Pankhurst -** Led the WSPU from October 1903. She took militant action such as arson and destroying property and was arrested many times, she went on hunger strike and was force-fed. She died in 1928. Mother of Christabel.
5. **Emily Wilding Davidson -** Joined the WSPU in 1906. By 1911 she was increasingly militant. She was killed whilst campaigning in 1913.
6. **Millicent Fawcett -** She was a leading suffragist and leader of the NUWSS for over 20 years. She was a pivotal in women achieving the vote. She was dedicated to constitutional means and argued militancy was counterproductive.
7. **Nancy Astor MP -** Became the first female MP in 1919, she was American-British, upper-class, and replaced her husband as MP.

1897 NUWSS was formed with Millicent Fawcett as their leader.	**1903** WSPU was formed by Emmeline Pankhurst and her daughters.	**1905** Militant campaign begins, Annie Kenney and Christabel Pankhurst were arrested.	**1908** Mass rally, c.400,000 in London with window smashing with pleas attached to the stones.	**1909** Hunger strikes begin and the police force feed prisoners.	**1913** Emily Wilding Davidson is struck by the King's horse at the Derby and dies.	**1914** World War I begins, all leaders urge women to join the war effort.	**1918** The Representation of the People Act is passed.	**1919** Nancy Astor, The first female MP was elected.	**1928** Equal Franchise Act.

Unit 3 - World War II

A. Keywords

1. **Allied Powers –** Alliance of countries opposing the Axis: Britain, and her Empire, USSR & USA (in 1941).
2. **Axis Powers –** Alliance of Fascist countries, Germany, Italy, Japan.
3. **Radar –** Technology that locates and tracks objects by bouncing radio waves off them.
4. **Total war -** An unrestricted war where the accepted rules of war are disregarded.
5. **Turning Point –** When something important happens that influences the course of the war.

B. Causes Of WWII

1. **Adolf Hitler –** Totalitarian leader of Nazi Germany 1933-45.
2. **Appeasement –** Giving in to a person or groups demands.
3. **Anschluss –** The unification of Germany with Austria.
4. **Blitzkrieg –** 'Lightning war'; German term for fast-moving warfare.
5. **Fascism –** Far right ideology that spread across Japan, Italy and Germany and other countries.
6. **Luftwaffe –** The German air force.

C. The War In The West

1. **Battle of the Atlantic –** Naval war at sea.
2. **Battle of Britain –** German aerial attack on Britain.
3. **Blockade –** U-boats (submarines) prevented American supply ships entering British seas.
4. **Blitz -** Aerial attack on civilian targets to break morale.
5. **D-Day –** Operation Overlord was the Allied amphibious invasion of Normandy in June 1944 (pictured).
6. **Dunkirk –** British soldiers were evacuated from northern France at the start of the war.
7. **Evacuation –** To remove people from somewhere dangerous to somewhere safe.
8. **RAF –** Britain's Royal Air Force.
9. **Rationing –** Limiting the number of supplies (food, fuel, clothes) in times of war.
10. **Winston Churchill –** Prime Minister of Britain, he led a war time coalition.

E. The Role Of USA

1. **General Eisenhower –** Led the D-Day landings for the allies.
2. **Isolationism –** Avoiding political and economic dealings with other countries.
3. **Lend-lease –** The American scheme to supply Britain and USSR in the war before their military joined in 1941.
4. **Manhattan Project –** American nuclear project that developed the first atomic bomb.
5. **Midway -** The naval battle where USA significantly hurt the Japanese fleet in 1942.
6. **FD Roosevelt -** 32nd President of USA from 1933-1945.
7. **Pearl Harbour –** American naval base in Hawaii that was bombed by Japan in 1941.

D. The Eastern Front

1. **Joseph Stalin –** Totalitarian leader of the Soviet Union (Russia).
2. **Operation Barbarossa –** German invasion of the Soviet Union.
3. **USSR -** After the communist revolution Russia became known as the USSR, the Union of Soviet Socialist Republics.
4. **Scorched Earth Policy –** The Soviets torched everything of use so the German offensive struggled to find supplies.
5. **Siege –** When a town is surrounded until the inhabitants surrender or starve.
6. **Stalingrad –** The Soviets defeated the German army by winning a brutal siege.

F. Origins Of The Cold War

1. **Capitalism -** An ideology that includes democratic elections, free trade, individual right, and freedoms.
2. **Cold War -** A war of words and threats, increasing tensions between two superpowers that threatened stability.
3. **Communism –** An ideology that has the Communist Party controlling government and the economy, it focuses on the rights of workers and greater equality.
4. **Conferences –** Yalta and Potsdam war conferences were held between the Grand Alliance to decide what to do with Germany.
5. **Ideology -** A system of ideas and beliefs that forms a political and economic system.
6. **Iron Curtain –** A symbolic barrier between the 'East' (communism) and the 'West' (democracy).
7. **Superpowers –** USSR and USA emerged from WWII as the world's biggest powers, but they had opposing ideologies and were suspicious of each other.
8. **Tension -** When tension increased there was a concern that it would lead to nuclear war.
9. **The Grand Alliance -** The Alliance created after 1941 to defeat Nazi Germany (Britain, USSR, and USA).

1933 Hitler becomes Chancellor and rearms Germany.	**Sept. 1938** The Munich agreement, Britain appeased Hitler.	**March 1939** Hitler invades Czechoslovakia.	**Sept. 1939** Britain and France declare war on Nazi Germany.	**May 1940** Evacuation of Dunkirk.	**July to October 1940** The Battle of Britain.	**June 1941** Germany invades Russia, Operation Barbarossa.	**Dec.1941** Pearl Harbour. America join the war.	**1943** Germany surrender at Stalingrad.	**6th June 1944** D-Day landings.	**8th May 1945** Germany surrender.	**August 1945** USA drop A-bombs on Japan. 	**1946** Churchill's 'Iron Curtain' speech; start of the Cold War.

Unit 4 - The Holocaust

Stage 1: Persecution Of The Jews In The Early 20th Century

Keywords:

1. **Anti-Semitism -** Hostility or prejudice against Jewish people.
2. **Pogrom -** Violent attacks directed against an ethnic minority.
3. **Stereotype -** A widely held but very simplified and often untrue view of a group of people e.g. English people all drink tea.

Key dates:

4. **1905 -** The worst of a wave of pogroms in Odessa; The Protocols of the Elder of Zion are published; The Alien Act passed in Britain.

Stage 2: Life For Jews In Nazi Germany 1933-39

Keywords:

1. **Aryan -** An ancient European race which was the racially pure master race according to Hitler.
2. **Nuremburg Laws -** Passed in 1935 stripping Jews of all their rights as German citizens.
3. **Kristallnacht -** The 'night of broken glass' in which the Nazis and SA smashed and burnt Jewish business and synagogues.

Key dates:

4. **1 April 1933 -** SA boycott of shops and business owned by Jews.
5. **1935 -** Nuremburg Laws passed.
6. **1938 -** Kristallnacht marks the first acts of violence against Jews in Nazi Germany.

Stage 3: The Treatment Of The Jews During WWII:

Key people:

1. **SS -** Elite Nazi troops who were involved in carrying out the Holocaust.

Keywords:

2. **Concentration camp -** Where political prisoners and undesirables were imprisoned and forced into hard labour.
3. **Collaborator -** Local people from invaded countries (e.g. Poland, Lithuania) who carried out atrocities and were also anti-Semitic.
4. **Ghetto –** Walled-off areas in cities in which Jews were forced to live.
5. **Systematic** - In which something is done methodically, according to a plan.

Key dates:

6. **1939 -** Jews are rounded up into ghettoes.
7. **1941 -** Einsatzgruppen start murdering Jews in occupied areas.

Stage 4: The Final Solution From 1942:

Key people:

1. **Himmler -** Head of the SS.
2. **Heydrich -** Head of SS Einsatzgruppen and architect of the Final Solution.
3. **Goering -** Head of the Nazi economy.
4. **Goebbels -** Minister for propaganda.

Keywords:

5. **Fuhrerprinzip -** The leader principle.

Key dates:

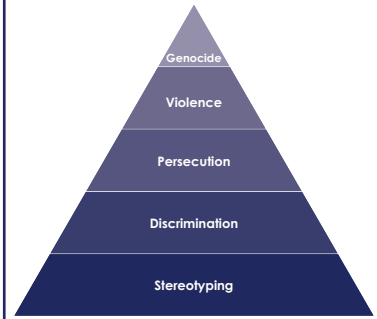
6. **1942-45 -** Zyklon B gas begins to be used to kill Jews in purpose built Extermination camps.

What Was Life Like For Jews In Germany Before The Nazis?

Keywords:

1. **Assimilation:** The process by which a minority integrates socially, culturally and politically into the dominant culture.
2. **Doltschoss:** The 'stab in the back'.

"There is, in fact, no group of people more attached to their native soil than the Jews. In Germany, the Jews have been continuously resident in the country since at least the year 320 and probably much longer."
Joseph Leftwich, 1936



Unit 5 - Civil Rights

A. Keywords

1. **Abraham Lincoln -** President who governed the north during the Civil War and issued the Emancipation Proclamation, which made all slaves free men and women and ended slavery.
2. **Confederacy -** A breakaway group of southern states during the American Civil War formed the Confederate States of America.
3. **Federal Government -** Government representing the whole of the USA, separate from State authority, based in Washington D.C.
4. **Integration -** Process of different groups of people learning to live and work together in a positive way.
5. **Jim Crow -** Laws in the southern states enforcing segregation between white and black Americans in housing, education, transport, and in workplaces.
6. **Segregation -** Forced separation of different racial groups in many parts of their lives, such as, housing, education, transport and workplaces.

B. American Civil Rights Movement

1. **Brown Vs Board –** A law that stated racial segregation of children in public schools was unconstitutional.
2. **Civil disobedience –** When people choose not to obey certain laws in protest, e.g. sit-ins.
3. **Freedom rides –** A tactic breaching segregation laws in Jim Crow states around where to sit on inter-state Greyhound buses.
4. **Lynching –** Brutal murder of a black person by a white mob.
5. **Martin Luther King Jr** – Non-violent Civil Rights Leader.
6. **NAACP -** National Association for the Advancement of Colored People.
7. **Police Brutality –** Human rights violations by the police such as use of dogs, water canons and tear gas on civil rights protesters.
8. **Sit-ins –** A tactic, where blacks sat at white-only lunch counters.
9. **Thurgood Marshall –** Black American lawyer who won the Brown Vs Board case and became the first black member of the Supreme Court.

C. Black Power

1. **Black Panthers –** Militant group that aimed to use force to win more rights for black Americans.
2. **Black Power –** Movement that broke away from the established Civil Rights Movement to reject integration and focus on black pride.
3. **Malcolm X –** Black civil rights leader who believed in creating an independent society using force.
4. **Stockley Carmichael –** Black power activist and leader of the SNCC (Student movement).

D. British Civil Rights Key People

1. **Altheia Jones-LeCointe -** Trinidadian doctor, also the leader of the British Black Panther movement.
2. **Anthony Bryan -** Victim of immigration enforcement, part of the Windrush scandal from 2018.
3. **Bernie Grant -** Labour MP and founder of the BTUSM to help protect black workers rights.
4. **Claudia Jones -** Trinidadian journalist, she founded the West Indian Gazette in 1958 and was a key figure in founding the Notting Hill Carnival.
5. **Gus Johns -** Grenadian educational campaigner, he wrote a pamphlet exposing reasons black migrant boys struggled with their learning in 1971.
6. **Harold Moody -** Jamaican doctor, campaigned against racial prejudice and founded the League of Coloured People in 1931.
7. **Olive Morris -** Jamaican black activist.
8. **Paul Stephenson -** Social worker and community activist, he led the Bristol Bus Boycott.

E. British Civil Rights

1. **Black Feminism -** A philosophy that identifies the value of black women and identifies the many opportunities for discrimination that they face.
2. **Exploitation -** Taking advantage of someone in order to profit from their work.
3. **Grassroots activism -** A community-led, local, movement that tried to create progress for their causes, e.g., in health, education and housing.
4. **Lobbying -** Attempt to try and influence government decisions by talking to the MPs who vote on laws.
5. **Mangrove 9 -** A group of British black activists tried for inciting a riot at a 1970 protest against the police targeting of The Mangrove, a Caribbean restaurant in Notting Hill.
6. **Mother Country -** Used by many from around the British Empire to refer to Britain after WWII.
7. **NHS –** The National Health Service was a huge employer of migrants from the Caribbean after WWII, especially in roles such as nurses and cleaners.
8. **Pamphlets -** On a single sheet of paper, these were used to inform people and spread short political messages.
9. **Strikes -** When people refuse to work as a form of protest, such as nurses in the NHS in the 1970s.

1863 Emancipation Proclamation.	**1948** HMS Windrush arrived in Britain.	**1954** Brown Vs Board of Education.	**1955** Montgomery Bus Boycott.	**1957** Little Rock Integration crisis.	**1961** Freedom Rides.	**1963** March on Washington. Bristol Bus Boycott.	**1964** Civil Rights Act.	**1965** Selma Protests. Malcom X assassinated.	**1965** Voter Registration Act.	**1968** Martin Luther King assassinated.	**1968** Mexico Olympics, BP salute.	**1970** Mangrove 9.

Unit 6 - Post War Britain

A. Post War Britain

Keywords:

1. **Rationing -** Redistributed food and commodities to ensure fair access, rationing continued until 1954.
2. **Beveridge Report -** A report that recommended housing, education, healthcare and work schemes to improve society and create social reform.
3. **NHS –** National Health Service, provides government-funded healthcare for everyone living in the UK without being asked to pay the full cost.
4. **Public health –** Preventing disease, prolonging life, and promoting health through the organised efforts of society.
5. **HMS Windrush –** The ship that arrived at Tilbury docks in 1948 symbolised the beginning of mass migration.
6. **The Commonwealth –** An association of nations consisting of the UK and several former British colonies that still pay allegiance to the British Crown. There are 15 countries in the commonwealth, e.g., Australia, Barbados, Canada, Jamaica, and New Zealand.
7. **Decolonisation –** The process of state(s) leaving an empire to become independent nation(s).
8. **Aneurin Bevan –** Labour MP and founder of the NHS.

C. Social Changes

Keywords:

1. **Legislation –** The process of making or enacting laws.
2. **Industrial action –** An act by an employee or employer to prevent work from happening, e.g., strikes, go-slows, overtime bans.
3. **Strikes –** A form of protest, when people stopped working to protest, such as the miners in the 1980s.
4. **Middle Class –** Social group of people between upper and working class, includes professionals and business owners.
5. **Working class –** Social group consisting people who are employed in unskilled or semi-skilled manual or industrial work.
6. **Winter of discontent –** The winter of 1978-79 was characterised by widespread strikes by trade unions demanding pay rises for workers of industries, such as the car manufacturing.
7. **The House of Lords –** The upper house of the Parliament of the United Kingdom. Membership is by appointment or as a hereditary peer.

B. The 'Swinging Sixties'?

Keywords:

1. **Abortion –** The deliberate termination of a pregnancy.
2. **Liberalisation –** The easing of restrictions on something, usually political, such as, legalising abortion.
3. **Capital Punishment –** The legally authorised killing of someone as a punishment.
4. **Decriminalisation –** To stop treating something as illegal.
5. **Feminism -** The belief and process of gaining greater social, economic, and political equality for women.
6. **Women's Liberation Movement -** A political alignment of feminism that emerged in the late 1960s and continued into the 1980s promoting political, intellectual, and cultural change.
7. **Mods and Rockers -** Two conflicting British youth subcultures of the early/mid 1960s to early 1970s.
8. **Pro-life campaigns –** People who oppose abortion and believe a fertilised egg is the start of a life.
9. **Ruth Ellis -** An abused woman who killed her partner, the last woman to be hung in 1955.
10. **Barbara Castle –** Labour MP that held important positions under Harold Wilson's campaign and helped with women's issues such as equal pay.

D. Britain And Europe

Keywords:

1. **EEC –** European Economic Community was an economic union of European nations that evolved into the European Union.
2. **Maastricht Treaty –** The Treaty that upgraded the EEC to the EU.
3. **Referendum –** A vote by the electorate on a single-issue for a direct decision.
4. **Brexit –** The withdrawal of Britain from the European Union.
5. **Eurosceptic –** Someone opposed to Britain being part of a European Union.
6. **The Establishment –** The dominant elites in society that control many aspects, from media to legislation.
7. **Enoch Powell -** Conservative MP that made a speech that fuelled racism and divisions in society, it is known as the 'rivers of blood' speech.

E. Key Dates:

1945 VE day
1948 Formation of the NHS
1948 HMS Windrush
1958 Notting Hill race riots
1962 & 1968 Commonwealth Immigrants Acts
1964 Battle of Brighton
1965 Abolition of the death penalty
1966 First Notting Hill Carnival
1966 England won the World Cup
1967 Decriminalised homosexuality
1967 Legalised (some) abortion
1968 Rivers of blood speech
1968 Dagenham pay strikes
1970 A women's role in the home taken in divorce settlement
1970 Equal Pay Act
1971 Attempt to legislate against Trade Union action
1978-79 Winter of discontent
1992 Maastricht Treaty
2016 Brexit

F. Key Prime Ministers

1. Clement Atlee
Labour, 1945-51

2. Winston Churchill
Conservative, 1951-55

3. Harold Wilson
Labour, 1964-70 & 74-76

4. Edward Heath
Conservative, 1970-74

5. James 'Jim' Callaghan
Labour, 1976-79

6. Margaret Thatcher
Conservative, 1979-90

Climate Change

Background

1. Since the 1860s the global climate has been recorded.
2. Since then, the climate globally has increased by 0.8° Celsius.
3. Climate scientists can use methods to find out about the global climate before we started recording it. **(B)**
4. From this evidence we can see that the planet has always gone through periods of warming and cooling. **(A)**
5. However, the rapid increase of CO_2 in the atmosphere from burning fossil fuels, is causing the enhanced greenhouse effect. **(D)**
6. The enhanced greenhouse effect is causing changes to the planet, such as the melting of Arctic sea ice, rising temperatures, and an increase in extreme weather events such as tropical storms. **(E, F)**
7. Countries are trying to resolve the issues related to climate change by limiting the amount of CO_2 released into the atmosphere, this is known as mitigation. **(G, H)**
8. Some countries are trying to adapt to climate change by building flood barriers and growing drought resistant crops. **(G, H)**

A - Changes In Climate (3)

Climate Change	The process of the Earth's climate changing over time.
Glacial Periods	Cold periods.
Inter-Glacial Periods	Warm periods.

B - Measuring Climate Change (3)

Ice Cores	Each layer of ice in a core represents a different year. CO_2 can be measured in each layer, and therefore the temperature.
Tree Rings	Each ring represents a different year. Thicker rings show a warmer climate.
Historical Evidence	Paintings and diaries e.g. paintings of ice fairs on the frozen Thames 500 years ago.

C - Natural Climate Change (3)

Volcanic Eruptions	Ash from volcanic eruptions can block sunlight, making it colder.
Sun Spots	The sun can give out more energy due to an increase in sun spots.
Orbital Change	The orbit of the sun changes from oval (ellipse) to circular approx. 98,000 years

D - Human-Induced Climate Change (5)

Greenhouse Effect	The way that gases in the atmosphere trap heat from the sun. Like glass in a greenhouse they let heat in, but prevent most from escaping.
Greenhouse Gases	Gases like CO_2 and methane that trap heat around the Earth, leading to climate change.
Transport	More cars, so more CO_2 causing the enhanced greenhouse effect.
Farming	Farming livestock produces methane, this is a greenhouse gas.
Energy	More energy required, meaning more fossil fuels burnt, so more CO_2.

E - Effects On People (6)

Tropical Storms	Increase in frequency and intensity so more damage.
Sea-Level Rise	Increased risk of floods, damaging property and businesses.
Melting Arctic Ice	Affects trading routes in the Arctic Circle.
More Droughts/ Floods	Crop failure, could lead to starvation and famine.
Cost Of Defence	Governments have to spend more money on disasters instead of developing.
Environmental Refugees	Pressure on countries to accept refugees.

F - Effects On The Environment (4)

Sea Temperature Rises	Coral bleaching and destruction of marine ecosystems.
More Droughts	Migration/ death of species which can not survive drought conditions.
Melting Glaciers (Ice Rivers)	Will send more fresh water into the sea, causing the sea level to rise.
Melting Arctic Ice	Loss of habitats for animals, such as polar bears.

G - Strategies To Resolve Climate Change (4)

Adaptation	Adapting to climate change to make life easier.
Adaptation Examples (3)	1. Building flood defences. 2. Growing new crops to suit the new climate. 3. Irrigation channels, sending water from areas of surplus to deficit.
Mitigation	Trying to stop climate change from happening by reducing greenhouse gases.
Mitigation Examples (3)	1. International agreements. 2. Alternative energies. 3. Carbon capture.

H - Place Specific Examples (2)

Adaptation	**The Thames Barrier.** Positive: Stops flooding due to rising sea levels. Negative: Expensive
Mitigation	**The Paris Agreement.** Positive: Countries are trying to lower CO_2 emissions. Negative: The USA pulled out and China did not sign up.

Glaciation

Background

1. Glaciers are important features that have created landscapes all over the world. **(A)**
2. All glaciers have common features that affect how big they are and how they affect the environment around them. **(B, C)**
3. A glacier grows, shrinks, and flows downhill like a very slow river. **(B, C)**
4. Glaciers erode the land and create several distinctive landforms, due to melting and retreating, we can see these landforms today. **(C, D)**
5. When a glacier melts and retreats, it can leave behind several landforms of deposition. **(E)**
6. Glacial landscapes have many uses. **(F)**
7. The Lake District is a glacial landscape that offers opportunities and challenges for living there. **(G)**
8. Glacier National Park is being greatly affected by climate change. **(H)**

A - Ice Around The World (3)

Glacier	Large masses of ice that fill valleys or the sides of mountains.
Ice Sheet	Extremely large glacier, only found at the north and south pole. Extends further during ice ages.
Ice In The UK	20,000 years ago ice covered most of Scotland, Ireland and Wales.

B - Features Of A Glacier (4)

Accumulation Zone	More snow falls on the glacier than melting occurs. The glacier grows.
Ablation Zone	Melting is faster than new snow can add to the glacier. The glacier shrinks.
Snout	The end of a glacier.
Meltwater Stream	Melting ice flowing out of the snout of a glacier.

C - Processes That Affect Glaciers (3)

Abrasion	Bits of rock stuck below the glacier scrape the land as it moves downhill.
Plucking	Rocks on the ground freeze into a glacier and are then 'plucked' from the landscape as the glacier advances.
Freeze Thaw Weathering	Water gets into cracks in rocks, freezes and expands. This widens the crack. This repeats until large sections of rock break off.

D - Landforms Of Erosion (5)

Corrie	A hollow cut out of the side of a mountain by a glacier.
Arête	A steep ridge created between two corries.
Pyramidal peak	A pointed mountain peak formed when three or more back-to-back glaciers erode a mountain.
U-shaped valley	Deep valleys with a flat bottom and steep sides carved out by a glacier.
Hanging valley	Formed when a small glacier flows into a bigger one.

E - Landforms Of Deposition (3)

Moraine	Frost-shattered rock debris and material eroded from the valley floor and sides, transported and deposited by glaciers.
Drumlin	Egg-shaped hill of moraine material deposited in a glacial trough.
Erratic	Rocks transported and deposited by glacial ice to a different location, often hundreds of kilometres away.

F - Economic Uses Of Glacial Landscapes (4)

Farming	Usually sheep or goat farming because the soil is too thin for crops or bigger animals.
Forestry	Trees are planted, grown and harvested. The wood can be used for building or furniture.
Quarrying	Digging rocks out from the ground for use in building, sculptures or in a wide variety of factories and other industries.
Tourism	Skiing, snowboarding, hiking, and mountain climbing are all common activities in glacial environments. Supporting industries like hotels or restaurants benefit from the visitors.

G - Example: Human Activity In Glacial Landscapes

Where	Lake Windermere, Lake District

Opportunities (3)

1. Visitors spent over £1 bn in 2014 in the tourism industry.
2. 2,500 people work in farming in the Lake District.
3. People are employed in the last slate mine in the UK.

Challenges (3)

1. Hikers cause footpath erosion.
2. Cars and speed boats cause noise and air pollution.
3. Prices in shops have risen due to tourism.

H - Example: Climate Change Impacts Glacier National Park

Where	Glacier National Park, USA

Evidence Of Shrinking (2):	Impacts Of Melting (2)
1. In the last 150 years, the global temperature has increased by 0.8˚C. 2. Out of 150 glaciers, the national park now only has 30 remaining.	1. Rapid melting is causing rockslides, flooding, and avalanches. 2. Meltwater is decreasing, making hydro-electric power plants less effective at making energy so they may close.

Life In An Emerging Country

Background

1. Development means positive change that makes things better.
2. As a country develops it usually means that the people's standard of living and quality of life improve. **(B)**
3. Different factors can affect development such as economic, social, and political factors. **(A)**
4. Emerging countries have begun to experience higher rates of development, with a rapid growth in secondary industries. **(A, C)**
5. Emerging countries have some of the fastest rates of urbanisation in the world. **(D)**
6. This is causing urban areas (cities) to become highly populated; this process can have both opportunities and challenges. One such challenge is the growth of squatter settlements. **(E)**
7. Emerging countries often host the factories of many transnational companies. They provide wages and taxes and can promote development. However, they can also cause negatives impacts. **(F, G)**

A - Characteristics Of Emerging Countries (7)

Bric Countries	Brazil, Russia, India, China.
Mint Countries	Mexico, Indonesia, Nigeria, Turkey.
Industrialisation	The process of a country moving from mostly agriculture (farming) to manufacturing (making) goods.
Employment Structure	How the workforce is divided up between primary, secondary, tertiary and quaternary employment.
Secondary Industry	An industry which manufactures goods.
Exports	Sending goods to another country for sale.
Urbanisation	The growth in the number/ proportion of people living in towns and cities.

B - Development Indicators (3)

GDP Per Capita	The total value of goods and services sold by a country in a year divided by the population.
Human Development Index (HDI)	A development measure which combines GDP per capita, life expectancy and education.
Life Expectancy	The average age you are expected to live to in a country.

C - Encouraging Development (4)

Subsidy	Money given by a government to help an industry keep down the cost of exports.
Tax Breaks	This reduces the amount of tax a company must pay (normally for a fixed period), therefore increasing profit.
Minimum Wage	The lowest wage permitted by law in a country.
Trade Unions	An organisation of workers who work to protect the rights of those employed.

D - Rural To Urban Migration (4)

Rural To Urban Migration	The movement of people from rural areas (countryside) to urban areas (cities).
Push Factor	Things that make people want to leave an area e.g. a lack of jobs.
Pull Factor	Things that attract people to live in an area e.g. good health care.
Mechanisation	When machines begin to do the work which humans once completed.

E - Squatter Settlements (5)

Squatter/ Shanty Settlement	An area (often illegal) of poor quality housing, lacking basic services e.g. water.
Inequality	Differences in wealth, and wellbeing.
Sanitation	Measures to protect public health e.g. clean water and disposing of sewage.
Informal Economy	Jobs which are not taxed, workers do not have contracts or rights.
Quality Of Life	A measure of how 'wealthy' people are, but measured using housing, employment and environment, rather than income.

F - Transnational Corporations (TNCs) (5)

Transnational Corporation	Those that operate across more than one country.
Footloose	Industries which are not tied to a location due to natural resources or transport links.
Globalisation	The increased connectivity of countries around the world e.g. through trade.
Host Country	The country where the TNC places its factories e.g. in an emerging or developing country.
Source Country	The country where the headquarters for the TNC is located e.g. a developed country.

G - Impact Of TNCs

Positive: (5)	1. More jobs. 2. More taxes. 3. Invest in infrastructure projects. 4. GDP increases. 5. Develop workers skills.
Negative: (3)	1. Can exploit workers e.g. long hours. 2. Most of the profits from TNCs leave the country where production takes place. 3. Increased levels of pollution e.g. air and water (from industrial waste).

Energy

Background

1. The consumption and production of energy is not evenly distributed. **(A)**
2. Many factors can influence energy use, including the wealth of the country and availability. **(A)**
3. Energy consumption impacts quality of life. **(B)**
4. There are two main sources of energy, these can be classified as non-renewable and renewable. **(C, E)**
5. The energy mix worldwide has shifted in recent years, with a decline in coal and oil, and a growth in renewables and nuclear. **(D, E)**
6. Fracking for gas is also growing worldwide. **(H)**

A - Factors Affecting The Energy Mix (6)

Population	More people means more energy needed.
Wealth	Greater wealth leads to a greater energy demand.
Availability	If a country has its own natural resources e.g. coal, oil, wind etc.
Consumption	The amount of energy or power used.
Emissions	The by-product given off by burning an energy source e.g. carbon dioxide.
NIMBYism	Abbreviation for 'not in my backyard.'

B - Importance Of Energy (4)

Social Well Being	Normally refers to quality of life, e.g. happiness.
Economic Well Being	Having present and future financial security.
Energy Dependence	To rely on other countries for your energy supply e.g. to import oil.
Energy Security	To be relatively self-sufficient regarding to your energy supply.

C - Types Of Energy (3)

Renewable	Energy, which is infinite, sustainable and is easily replenished.
Non-renewable	Energy, which is finite, is not sustainable and takes a long time to replenish.
Finite	Something which will run out, come to an end.

D - Nuclear Energy (3)

What it is:	This is non-renewable and comes from uranium.
Positive	1. Small amounts of uranium produces lots of energy.
Negative (2)	1. Nuclear waste is toxic and must be stored for hundreds of years. 2. Nuclear accidents can occur, which is a risk to human health.

E - The Impacts Of Energy Sources

		Advantages	Disadvantages
Non-renewables (3)	**Coal**	1. Efficient, cheap and reliable.	1. Creates carbon dioxide. 2. Finite.
	Oil	1. Easy to transport. 2. Efficient.	1. Oil spills. 2. We must import this from other countries.
	Gas	1. Supplies available in the North Sea and from fracking. 2. Jobs in extraction created.	1. Finite. 2. Carbon dioxide produced.
Renewables (3)	**Wind**	1. Sustainable and will not run out. 2. Jobs created in the manufacture and installation of these.	1. Noise and visual pollution. 2. Bird strikes.
	Solar	1. Easy to install on houses. 2. Jobs created in the manufacture and installation of these.	1. Unreliable e.g. if it is not sunny. 2. The panels are constructed from toxic materials.
	Hydro-electric	1. One of the most reliable non-renewables. 2. Reservoirs create tourism and also provide clean water.	1. Vegetation/ forests cleared for reservoir creation. 2. Farmland and settlements flooded to create reservoirs.

F - Fracking

Fracking	Gas trapped in shale rock is released by pumping water and sand into the ground, which widens cracks in the ground, allowing the gas to escape.

Positive (3):	**Negative (4):**
1. Blackpool council could make £1.7m per year. 2. Many jobs would be created in the north-west. 3. The UK would become less dependent on importing energy from other countries.	1. Small earthquakes could damage homes. 2. Huge areas of countryside destroyed. 3. Noise and air pollution would be created from the heavy machinery. 4. Underground water could become contaminated.

Issues Of Urbanisation

Background

1. Urban areas have normally developed and grown due to their physical or human locational advantages. **(A)**
2. When urban areas develop, patterns of land use can often be seen. **(B)**
3. Urban areas go through stages of growth and sprawl. **(C)**
4. In the UK, the government has attempted to protect rural areas from this urban sprawl. **(F)**
5. On occasions urban areas can fall into decline. In the UK, a process of counter-urbanisation has been taking place in recent years. **(D)**
6. In attempts to improve urban living, many strategies have been put in place to improve them.
7. Urban areas are becoming increasingly sustainable and through regeneration schemes, those areas that were once in decline are often growing again. **(E, G)**

A - Factors Influencing The Growth Of Cities (2)

Site	The actual place where a settlement first grew up. This refers mainly to its physical setting e.g. a coastal location, or a flat valley.
Situation	The location of a place relative to other features nearby e.g. accessibility and the availability of natural resources.

B - Urban land use (5)

Central Business District (CBD)	The middle of a town or city where most of the shops and offices are found.
Inner City	An area close to the CBD. Old factories and terraced housing are often located here.
Suburbs	An area of housing estates beyond the inner city. Detached and semi-detached housing is common.
Rural-Urban Fringe	The area where the countryside meets a city or town.
Land Use	What the land is used for e.g. residential, commercial, industrial etc.

C - Urban Growth (4)

Urbanisation	The movement of people from rural areas to urban areas (cities).
Suburbanisation	The movement of people from inner cities to the suburbs.
Urban Sprawl	Unplanned growth of urban areas into surrounding rural areas.
Positive Multiplier Effect	The introduction of a new industry in an area also encourages growth in other industrial sectors, leading to further growth.

D - Urban Decline (4)

Deindustrialisation	The closure of industries, and the resulting impacts e.g. a reduction in jobs.
Counter-Urbanisation	The movement of people from urban areas into villages.
Dereliction	Abandoned buildings and waste land.
Negative Multiplier Effect	The closure of an industrial sector, leading to further decline.

E - Sustainable Urban Areas (4)

Urban Greening	Increasing or preserving open space in urban areas e.g. public parks.
Integrated Transport Systems	Different forms of transport are linked together, making it easy to transfer from one to another.
Waste Recycling	Reusing useful substances found in waste.
Energy Conservation	Reducing energy consumption, by being more efficient.

F - Containing Urban Areas (4)

Greenfield Land	A plot of land which has not been built on before, normally in rural areas or on the rural-urban fringe.
Brownfield Land	Land which has been used, abandoned and now awaits reuse.
Greenbelt	A strip of land, often surrounding urban areas, which can not be built on.
Planning Permission	When permission is required to build.

G - Regeneration Scheme Example: The Queen Elizabeth Olympic Park, Stratford, East London.

Urban regeneration	Reversing urban decline, by modernising or redeveloping a particular area, aiming to improve the local economy and environment.	
	Advantages	**Disadvantages**
Social	9,000 affordable homes created in East Village.	450 home owners were forced to relocate for the construction of the Olympic Park.
Economic	Many new jobs created, 8,000 of which were at Westfield shopping centre.	Many people who lost their jobs when the dockyards closed, have not benefited from the new jobs.
Environmental	25 acres of urban greening has taken place.	Some parts of Carpenters Estate have suffered from vandalism and urban dereliction.

Unit 9: Family and Relationships

9.1.1 Décris ta famille - Describe your family	
Mon père/beau-père	My Dad/stepdad
Ma mère/belle-mère	My Mum/stepmum
Mon frère aîné	My older brother
Mon frère cadet/plus jeune	My younger brother
Mon demi-frère	My half brother
Ma soeur aînée	My older sister
Ma soeur cadette/plus jeune	My younger sister
Ma demi-soeur	My half sister
Mes parents	My parents
Mes grands-parents	My grandparents
Elle/il a les cheveux/yeux …	S/he has … hair/eyes
Elle/il a … ans.	S/he is … years old
Elle/il est…/Ils/elles sont…	S/he is…/They are…

9.1.2 Est-ce que tu t'entends bien avec ta famille? - Do you get on well with your family?	
Je m'entends bien avec…	I get on well with…
Je ne m'entends pas bien avec…	I don't get on well with…
On sort	We go out
On discute	We discuss
On partage	We share
On se dispute	We argue
On a beaucoup en commun	We have lots in common
Elle/il m'énerve	S/he annoys me
Elle/il me fait rire	S/he makes me laugh
Ensemble	Together

9.2.1 Que fais-tu et quand? - What do you do and when?	
Je joue	I play
Je joue au basket/Je joue au parc	I play basketball/I play in the park
Je fais	Literally: I do/make (many expressions need faire)
Je fais de la natation/Je fais du sport	I swim – I go swimming/I do sport
Je vais	I go
Je vais au centre/Je vais à une fête	I go to town/I go to a party
Je sors	I go out
Je reste dans ma chambre	I stay in my room
Je joue du/de la/de l' + instrument	I play an instrument
Je joue du piano/Je joue de la guitare	I play the piano/I play the guitar

9.2.2 Que fait ton frère/ta sœur le weekend? - What does your brother/sister do at the weekend?	
Elle/il joue	S/he plays
Elle/il fait	Literally: S/he does/makes (many expressions need faire)
Elle fait du sport/Il fait les devoirs	She does sport/He does homework
Elle/il va	S/he goes
Elle/il sort	S/he goes out
Elle/il reste dans sa chambre	S/he stays in his/her room
Elle/il s'entraîne	S/he trains
Elle/il aime (+infinitive)…	S/he likes (to…)
Elle/il est fan de …	S/he is a fan of…
Elles/ils jouent …	They play…
Elles/ils font…	They do…
Nous sommes très différents	We are very different
Nous avons des goûts similaires	We have similar likes/interests
Son/Sa/Ses (agrees with the object)	Her/his

Unit 9: Family and Relationships

9.3.1 Comment serait ton petit ami idéal/ta petite amie idéale? - What would your ideal boyfriend/girlfriend be like?	
Aimerais-tu te marier ou avoir une famille ?	Would you like to get married or have a family?
Mon petit ami idéal/ma petite amie idéale	My ideal boyfriend/girlfriend
(Ne) serait (pas)…	Would (not) be…
(N') aurait (pas)…	Would (not) have…
Aimerait	Would like…
Je voudrais/J'aimerais	I would like
Me marier	To get married
Séparer	To separate
Divorcer	To divorce
Tomber amoureux	To fall in love
Me fiancer	To get engaged
Vivre ensemble	To live together
Le mariage	Marriage/wedding
Célibataire	Single
La liberté	Freedom

9.3.2 À ton avis, qu'est-ce qu'un bon ami/une bonne amie? - In your opinion, what is a good friend?	
Un bon ami/une bonne amie est…	A good friend is…
Me fait rire	Makes me laugh
Me fait heureux/heureuse	Makes me happy
M'aide avec les problèmes	Helps me with problems
M'accepte	Accepts me
Me comprend	Understands me
Partage tout	Shares everything
L'amitié	Friendship

9.3.3 Quels sont tes projets pour le weekend? - What are your plans for the weekend?	
Je vais (+ infinitive)	I am going
Je vais faire la fête	I am going to go partying
Elle/il va (+ infinitive)	S/he is going
Nous allons (+ infinitive)	We are going
Elles/ils vont (+ infinitive)	They are going
J'espère (+ infinitive)	I hope
Ça va être	It's going to be
Ce sera	It will be
Comme d'habitude	As usual

9.4.1 Qu'est-ce que tu as fait le weekend dernier? - What did you do last weekend?	
J'ai dû (+ infinitive)	I had to…
Je voulais (+ infinitive)	I wanted to…
C'était…	It was…
Je me suis bien amusé(e)	I enjoyed myself
Il faisait chaud/froid	It was hot/cold
Il pleuvait	It rained

9.4.2 Qu'est-ce que tu faisais le week-end quand tu étais petit(e)? - What did you (used to) do at the weekend when you were little?	
Quand j'étais petit(e)	When I was little
J'aimais/J'adorais ça	I liked/loved it/used to like/love it
J'aimais/J'adorais (+infinitive)	I liked/loved to…/I used to like/ love to…

Unit 10: Festivals and Traditions

10.1.1 Qu'est-ce que tu aimes manger? - What do you like to eat?	
Le petit-déjeuner	Breakfast
Le déjeuner	Lunch
Le casse-croûte/Le goûter	A snack
Le dîner	Dinner/tea
Je grignote	I snack
Je mange	I eat
Je prends	I take (or 'I have' + food)
Manger équilibré	To eat a balanced diet
Manger sainement	To eat healthily
Le repas	Meal
Un plat à emporter	A takeaway
La viande	Meat
Le repas végétarien	Vegetarian meal
Les légumes	Vegetables
Le riz	Rice
Les pâtes (à la sauce tomate)	Pasta (in a tomato sauce)
Le poisson (le thon/le saumon)	Fish (tuna/salmon)
Vers midi/vers 18h	At about midday/At about 18:00
Mon plat préféré	My favourite dish
En famille	Together as a family

10.1.2 Que penses-tu de la cuisine francophone? - What do you think of French food?	
La cuisine traditionnelle	Traditional food/dishes
Une spécialité	A speciality
Les pays francophones européens	European French-speaking countries
Les pays francophones africains	African French-speaking countries
Le plat national	The national dish
Semblable à	Similar to
Un piment	A chilli
Un poivron	A pepper
Les noix	Nuts
Les gaufres	Waffles
Les moules-frites	Mussels and chips
La fondue au fromage	Cheese fondue (a melted cheese dish)
En comparaison avec	Compared to

10.2.1 Quelles fêtes sont célébrés en France/dans les pays francophone? - Which festivals/celebrations are celebrated in France/French-speaking countries?	
On fête…	We/One celebrates…
La Saint Sylvestre	New Year's Eve
Le Jour de l'an	New Year's Day
Le Noël	Christmas
Pâques (f)	Easter
La Fête des mères	Mothers' Day
La fête nationale	Bastille Day/ 14th July (in France) or Independence Day in other countries.
Jours fériés (m)	Public holidays/bank holidays
Un défilé (militaire)	A (military) parade
Les chars (m)	Floats (in a parade)
Les feux d'artifice (m)	Fireworks
Un grand repas	A big meal
Les concerts (m)	Concerts
Les cadeaux (m)	Presents
Le gâteau d'anniversaire	Birthday cake
Les bougies (f)	Candles
On va à l'église	We go to church
On offre des cadeaux	We offer/give presents.
On fête dans les rues	We celebrate in the streets
On décore…	We decorate…

10.2.2 Parle-moi d'une fête que tu as célébrée - Tell me about a festival/celebration that you (have) celebrated	
L'année dernière	Last year
Il y a deux mois/un an	Two months/ a year ago
J'ai fêté…/On a fêté…	I celebrated/ we celebrated
J'ai fait un gâteau/Il/elle a fait un gâteau	I made a cake/He/she made a cake
… m'a acheté un/une…	… bought me a…
J'ai invité mes amis chez moi	I invited my friends to my house
J'ai organisé une boum/une fête	I organised a party
J'ai porté un déguisement	I wore fancy dress
Mes parents m'ont permis de/d'… (+ infinitive)	My parents allowed me to…
Avoir une boum	To have a party
Sortir	To go out

Unit 10: Festivals and Traditions

10.2.3 Quel festival/Quelle fête voudrais-tu visiter et pourquoi? - What festival would you like to visit and why?	
Ça a l'air passionnant	It looks exciting
Ça a l'air intéressant	It looks interesting
Je m'intéresse à la culture	I'm interested in culture
Je m'intéresse aux traditions	I'm interested in traditions
Je (ne) suis (pas) religieux/religieuse	I am (not) religious
Le Poisson d'Avril	April Fools' Day
Les blagues	Jokes/pranks
La Chandeleur	Candlemas (religious holiday where pancakes are eaten)

10.3 Comment cela se compare-t-il aux traditions de ton pays? - How does it compare to traditions in your country?	
En comparaison de…	In comparison to…
Que/Qu'en France	Than/Than in France
C'est plus/moins…	It's more…
Tandis que/qu'	Whereas
On met/Ils mettent	We put/they put
On a/Ils ont	We have/they have
On mange/Ils mangent	We eat/they eat
On fait/Ils font	We do/they do
On fête/Ils fêtent	We celebrate/they celebrate
Une couronne	A crown
Jour des Rois	Epiphany (King's day in French) - 6th January
La galette des rois	King cake/epiphany cake
Les pétards de Noël	Christmas crackers
Semblable à	Similar to
(Vraiment) différent(e)	(Really) different
Le Mardi gras	Shrove Tuesday

10.4 Qu'est-ce qu'il y a sur la photo?	
Sur la photo	In the photo
Il y a	There is/are
(Aussi) Je peux voir	(Also) I can see
Une famille/ des personnes/gens/des jeunes/ des enfants	A family/ some people/young people/ children
Un homme/Une femme/un garçon/une fille	A man/A woman/a boy/a girl
Dehors/à l'intérieur	Outside/indoors
Elle/il a l'air (content/triste)	S/he seems… (happy/sad)
Elles/ils ont l'air (content/triste)	They seem… (happy/sad)
Des bâtiments (modernes/vieux)	Some (modern/old) buildings
Un lac/une montagne/Un jardin	A lake/ a mountain/ a garden
Elle/il parle /se dispute/joue/travaille/ marche/mange	S/he is speaking/ is arguing/is playing/is working/is walking/is eating
Elles/ils parlent/se disputent/jouent/ travaillent/marchent/mangent	They are speaking/arguing/playing/ working/walking/eating
Elle/il porte	S/he is wearing
À gauche/à droite	On the left/on the right
Au premier plan	In the foreground
En arrière-plan	In the background

Unit 11: A City Or Region In A French Speaking Country

11.1.1 Où habites-tu? - Where do you live? **Qu'est-ce qu'il y a dans ta ville/région? -** What is there in your town/local area?	
Dans ma ville il y a…	In my town there is/are…
Dans ma ville il n'y a pas de…	In my town there isn't…
Une piscine	A swimming pool
Une gare/gare routière	A train station/ bust station
Une boulangerie	A bakery
Une bibliothèque	A library
Un musée	A museum
Un parking	A car park
Un hôtel de ville/ une mairie	A town hall
Un centre commercial	A shopping centre
Un supermarché	A supermarket
Un centre de loisirs	A leisure centre
Un cinéma	A cinema
Un commissariat	A police station
Un parc d'attractions	A theme park

11.1.2 Qu'est-ce qu'on peut faire dans ta région? - What can you/one do in your local area?	
Il y a beaucoup à faire	There is lots to do
Il n'y a rien à faire/il n'y a pas grand-chose à faire	There is nothing to do/there isn't much to do
On peut (+ infinitive)	You/one can
On ne peut pas (+ infinitive)	You/one can't
En été	In summer
En hiver	In winter

11.1.3 Comment était ta région avant? - What was your local area like in the past?	
Dans le passé	In the past
Il y a dix/vingt/cinquante ans	10/20/50 years ago
Il y avait	There was/were or there used to be
Était	Was/used to be
Plus (+ adjective)	More
Plus de (+ noun)	
Plus à (+ verb)	
Moins (+ adjective)	Less/fewer
Moins de (+ noun)	
Moins à (+ verb)	

11.3.1 Comment ça se compare à…? - How does it compare to…?	
En comparaison avec …	In comparison with …
Que/Qu'à Paris	Than/Than in Paris
C'est plus…	It's more…
C'est moins…	It's less…
Ma région est…	My region is…
Le paysage est…	The scenery/landscape is…
La faune et flore est…	The fauna and flora are…
Il y a plus de choses à faire	There are more things to do
Il y a moins de choses à faire	There are fewer things to do
Ma région a plus/moins de…	My region has more/fewer…
Le volcan	Volcano
Les animaux	Animals
Les touristes	Tourists

Unit 11: A City Or Region In A French Speaking Country

11.3.2 Où aimerais-tu habiter à l'avenir? - Where would you like to live in the future?	
J'aimerais/voudrais (+ infinitive)	I would like
Je n'aimerais pas (+ infinitive)	I would not like to
À l'étranger	Abroad
Quelque part (en/au/aux + country)	Somewhere (in + country)
Un pays chaud	A hot country
Un pays francophone	A French-speaking country
Je suis fan de…	I am a fan of
…me plaît	I like …
Les sports d'hiver	Winter sports
La nourriture	The food
La mode de vie	The way of life
Les gens sont…	The people are
Loin	Far (away)
Près (de)	Close (to)

11.4.1 Qu'est-ce que tu veux acheter? - What do you want to buy?	
Je veux acheter	I want to buy
Ça coûte combien ?/Ça fait combien ?	How much does it cost?
Ça coûte…/Ça fait…	That costs…/That comes to …
Quelle couleur ?	Which colour?
Ce souvenir	This souvenir
Ce sweat à capuche	This hoodie
Ces porte-clés	These key rings
Cette écharpe	This scarf
Cette carte postale	This postcard
Cette crème solaire	This sun cream
Collectionner	To collect

11.5.1 Quel pays francophone aimerais-tu visiter? - Which French-speaking country would you like to visit?	
Je voudrais/aimerais visiter…	I would like to visit…
Je visiterais…	I would visit…
Je ferais…	I would do…
La Côte d'Ivoire	The Ivory Coast
La Suisse	Switzerland
La Tunisie	Tunisia
Le Canada	Canada
Le Maroc	Morocco
Le Sénégal	Senegal
Les Seychelles	The Seychelles
La culture nord-africaine	North African culture
La culture nord-américaine	North American culture
Les villes anciennes	Ancient cities
Le désert	Desert
Le Lac Rose	Lake Retba (pink lake in Senegal)
Les plages tropicales	Tropical beaches
Les sports d'hiver	Winter sports

11.5.2 Qu'est-ce que tu veux faire là-bas? - What do you want to do there?	
Je voudrais	I would like
Je veux	I want
Découvrir	To discover
Essayer	To try
La nourriture locale	Local food
Les fêtes traditionnelles	Traditional festivals

11.4.2 Qu'est-ce que tu as acheté récemment? - What have you bought recently?			
J'ai acheté/voulu…	I bought/wanted…	**Un jogging**	A tracksuit
J'ai oublié	I forgot	**Un ballon**	A football
J'ai dû	I had to	**Du maquillage**	Make up
Une gourde	A flask/water bottle	**Le choix**	Choice
Un cadeau d'anniversaire	A birthday present	**Fermé**	Closed

Unit 12 : The World Around Us

12.1.1 Quels sont les problèmes avec l'environnement dans ta région? - What are the environmental problems in your local area?	
Les problèmes	The problems
Grave(s)	Serious
Il y a/Il n'y a pas	There is/are/There isn't/aren't
La pollution de l'air/ de l'eau	Air pollution/ water pollution
Trop de…	Too many/too much…
Assez de…	Enough…
Pollué(e)	Polluted
Les déchets (m)/les ordures (f)	Litter/rubbish
Par terre/dans la mer/dans les rivières	On the ground/ in the sea/ in the rivers
Les espaces verts/ les sites naturels	Green spaces/ natural areas
Mauvais pour les animaux	Bad for the animals
Un sac en plastique	A plastic bag
Le gaz d'échappement	Exhaust fumes
La circulation	Traffic
Les usines	Factories
Le gaz carbonique	Carbon dioxide
C'est une catastrophe!	It's a catastrophe!

12.1.2 Qu'est-ce qu'on peut faire pour protéger l'environnement? - What can we do to protect the environment?	
Nous pouvons/On peut	We can
Nous devrions/on devrait	We should
Il faut	It's necessary to (we must)
Il ne faut pas	We must not
Recycler	(to) recycle
Utiliser	(to) use
Acheter	(to) buy
Protéger	(to) protect
Économiser	(to) save
Les produits écologiques	Eco-friendly products
Du verre	Glass
Du papier	Paper
Une bouteille	A bottle
Une boîte	A can/a box
La poubelle	The bin

12.1.3 Quand tu étais petit(e), faisais-tu plus ou moins pour protéger l'environnement? - When you were little did you do more or less to protect the environment?	
Quand j'étais petit(e)	When I was little
J'étais plus/moins écologique	I was more/less environmentally friendly
Que maintenant	Than now
Je faisais beaucoup	I used to do a lot
Je ne faisais rien	I didn't to do anything
J'allais à pied/ à vélo	I used to walk /go by bike
J'économisais	I used to save
Je (ne) recyclais (pas)	I used to/didn't use to recycle
Une gourde	A flask/water bottle
Réutilisable	Reusable
J'utilise	I use
Je recycle	I recycle

Unit 12 : The World Around Us

12.2.1 Quels droits ont les enfants dans le monde? - What rights do children have in the world?	
Le droit	The right
J'ai le droit de…	I have the right to…
Je n'ai pas le droit de…	I don't have the right to…
Les enfants ont le droit de…	Children have the right to…
Les enfants n'ont pas le droit de…	Children don't have the right to…
Avoir une identité/une nationalité	To have an identity/nationality
Avoir une famille	To have a family
Avoir accès à l'eau	To have access to water
Manger	To eat
Aller à l'école	To go to school
Être protégé(e)(s)	To be protected
Être soigné(e)(s)	To be cared for
Aimer	To love
Sortir	To go out
C'est juste/ injuste/ essentiel	It's fair/unfair/essential

12.2.2 Qu'est-ce que tu veux faire à l'avenir? - What do you want to do in the future?	
Je (ne) veux (pas)	I (don't) want
J'ai l'intention de/d'…	I have the intention of…/I intend to…
Étudier à l'université	To study at university
Combattre l'injustice	To fight injustice
Aider les autres	To help others
Faire du travail bénévole	To do volunteer work

12.3.1 Comment pouvons-nous/peut-on aider les autres - How can we help others?	
Nous pouvons/on peut (+ infinitive)	We can
Être sympa à tous	To be nice to everyone
Collecter des fonds (pour)	To fundraise (for)
Donner	To give/donate
Faire du travail bénévole	To volunteer
Sensibiliser le public	To raise awareness
Organiser un événement	To organise an event
Une association caritative	A charity
L'argent	Money
Les vêtements	Clothes

12.3.2 Comment veux-tu aider à l'avenir? - How do you want to help in the future?	
Je veux /voudrais	I want /would like
C'est enrichissant/important	It's enriching/rewarding/important
Une cause noble/essentielle	A worthy/essential cause
Les SDF	Homeless
Une banque alimentaire	A food bank
Un refuge pour animaux	An animal shelter
Pauvre(s)	Poor

Unit 9 - Relationships

9.1.1 Describe tu familia - Describe your family	
Mi padre/ mi padrastro	My dad/stepdad
Mi madre/mi madrastra	My mum/stepmum
Mi hermana/o mayor	My older sister/brother
Mi hermana/o menor	My younger sister/brother
Mi media/o hermana/o	My half sister/brother
Mis padres	My parents
Mis abuelos	My grandparents
Tiene(n) el pelo …	S/he has (they have)… hair
Tiene(n) … años	S/he is (they are)… years old
Es…	S/he is…
Son…	They are…

9.1.2 ¿Te llevas bien con tu familia? - Do you get on well with your family?	
Me llevo bien con…	I get on well with…
No me llevo bien con…/Me llevo mal con…	I don't get on well with…
Salimos	We go out
Discutimos	We argue
Compartimos	We share
Nos peleamos	We argue/fight
Tenemos mucho en común	We have lots in common
No tenemos nada en común	We have nothing in common
Me fastidia	S/he annoys me
Me hace reír	S/he makes me laugh
Juntos	Together

9.2.1 ¿Qué haces y cuándo? - What do you do and when?	
Juego	I play
Juego al baloncesto/ Juego en el parque	I play basketball/I play in the park
Hago	Literally: I do/ make(many expressions need hacer)
Hago natación/Hago escalada/Hago ejercicio	I swim – I go swimming/I climb/I exercise
Voy	I go
Voy al centro/Voy a una fiesta/Voy de paseo	I go to town/I go to a party/I go for a walk
Salgo	I go out
Me quedo en mi habitación	I stay in my room
Toco + instrumento	I play an instrument
Toco la guitarra/Toco la batería	I play the guitar/I play the drums

9.2.2 ¿Qué hace tu hermano/a? - What does your brother/sister do at the weekend?	
Juega	S/he plays
Hace	Literally: I do/make(many expressions need hacer)
Hace deporte/Hace sus deberes	S/he does sport/S/he does his/her homework
Va	S/he goes
Sale	S/he goes out
Se queda en su habitación	S/he stays in his/her room
Se entrena	S/he trains
A… le gusta (+ infinitive)…	S/he likes (to…)
Es aficionado/a de …	S/he is a fan of…
Juegan …	They play…
Hacen…	They do…
Somos muy diferentes	We are very different
Tenemos gustos similares	We have similar likes/interests
Su/sus (agrees with the object)	Her/his (su = his or her singular, sus = his or her plural)

Unit 9 - Relationships

9.3.1 ¿Cómo sería tu pareja ideal? - What would your ideal partner be like?	
¿Te gustaría casarte o tener una familia?	Would you like to get married or have a family?
Mi novia/o ideal	My ideal boyfriend/girlfriend
(No) sería…	S/he would (not) be…
Tendría…	S/he would have…
Le gustaría	S/he would like…
Me gustaría	I would like
Casarse	To get married
Separarse	To separate
Divorciarse	To divorce
Enamorarse	To fall in love
Estar comprometido/a	To get engaged
Vivir juntos	To live together
El matrimonio	Marriage
La boda	Wedding
Soltero/a	Single
La libertad	Freedom

9.4.1 ¿Qué hiciste el fin de semana pasado? - What did you do last weekend?	
Tuve que (+ infinitive)	I had to…
Quería (+ infinitive)	I wanted to…
Era/fue…	It was…
Me divertí mucho	I enjoyed myself
Hacía/hizo calor/frío	It was hot/cold
Llovía/llovió	It rained

9.4.2 ¿Qué hacías cuando eras pequeña/o? - What did you used to do when you were little?	
Cuando era pequeña/o	When I was little
Lo que más me gustaba era	The thing I liked the most was…
Me gustaba (+infinitive)	I liked to … /I used to like to…
Me encantaba (+infinitive)	I loved to…/I used to love to…
No soportaba (+ infinitive)	I could not stand…

9.3.2 En tu opinión ¿Qué es un buen amigo? - In your opinion, what is a good friend? (see Exercise Book for adjectives)	
Un buen amigo/una buena amiga es…	A good friend is…
Me hace reír	Makes me laugh
Me hace feliz	Makes me happy
Me ayuda con mis problemas	Helps me with problems
Me acepta	Accepts me
Me entiende	Understands me
Comparte todo	Shares everything
La amistad	Friendship
Comprensiva/o	Understanding

9.3.3 ¿Cuáles son tus planes para el fin de semana? - What are your plans for the weekend?	
Voy a (+ infinitive)	I am going to (+verb/activity)
Voy a salir de fiesta	I am going to go partying
Va a (+ infinitive)	S/he is going
Vamos a (+ infinitive)	We are going
Van a (+ infinitive)	They are going
Espero (+ infinitive)	I hope
Va a ser	It's going to be
Será	It will be
Como siempre	As usual

Unit 10 - Festivals And Celebrations

10.1.1 La comida - Food	
El desayuno	Breakfast
Desayunar	To eat/have breakfast
El almuerzo/la comida	Lunch
La merienda merendar	Afternoon snack
La cena	Dinner/tea
Cenar	To eat /have dinner
Como/Tomo	I eat/I take
Tomo cereales con leche	I take cereals with milk
Una dieta equilibrada	A balanced diet
Comer sano	To eat healthily
La comida grasosa/ grasa	Fatty food
Una comida	A meal
Comida para llevar	Takeaway food
La carne	Meat
Una comida vegetariana/vegana	A vegetarian/vegan meal
Las verduras	Vegetables
El arroz	Rice
La pasta (en salsa de tomate)	Pasta (in a tomato sauce)
El pescado (el atún/el salmón)	Fish (tuna/salmon)
Alrededor del mediodía/ de las seis	At about midday/At about 18:00
Mi plato preferido	My favourite dish
Al volver a casa	When returning home…
Me levanto y luego…	I get up and then…
Juntos en familia	Together as a family

10.1.2 La variedad de la cocina hispánica	
La cocina tradicional	Traditional food/dishes
Una especialidad	A speciality
En América Central	In Central America
En Sudamérica	In South America
El plato nacional	The national dish
Similar a	Similar to
Picante	Spicy
El ajo	Garlic
El maíz	Corn
Los mariscos	Shellfish
Relleno/a de…	Filled with…
En comparación con…	Compared with…

10.2.1 ¿Qué celebraciones se celebran en España/en países de habla hispana? - Which festivals/celebrations are celebrated in Spain/Spanish speaking countries?	
Celebramos…	We/One celebrates…
La Nochevieja	New Year's Eve
El Año Nuevo	New Year's Day
La Navidad	Christmas
La Pascua/la Semana Santa	Easter
El día de la madre	Mothers' Day
El Día de los Muertos	Day of the dead (celebrated in Mexico)
Los Sanfermines	Festival with the running of the bulls
Las Fallas de Valencia	Traditional celebration in Valencia every year
La feria de Abril de Sevilla	April festival of Seville
Un desfile/una procesión	A parade
Los fuegos artificiales	Fireworks
Los regalos	Presents
La tarta de cumpleaños	Birthday cake

Unit 10 - Festivals And Celebrations

10.2.2 Háblame sobre una fiesta que celebraste - Tell me about a past festival/celebration	
El año pasado	Last year
Hace dos meses/un año	Two months/ a year ago
Celebré…/Celebramos…	I celebrated/ we celebrated
Hice/hicimos una tarta de cumpleaños	I made a cake/He/she made a cake
… me compró…	… (s/he) bought me a…
Bailé	I danced
Invité a mis amigos a mi casa	I invited my friends to my house
Organicé una fiesta	I organised a party
Participé	I participated in…
Llevé un disfraz	I wore fancy dress
Fui	I went…
Fue + adjective	It was + adjective
Toda la noche/ todo el día	All night/day
Me divertí mucho	I enjoyed myself
Lo pasé/pasamos genial/ fenomenal/bomba	I/we had a great time

10.2.3 ¿Qué festival/qué fiesta te gustaría visitar y por qué? - What festival would you like to visit?	
(No) me gustaría (+ infinitve)	I would (not) like
Me encantaría (+ infinitve)	I would love
Parece + adjective	It seems + adjective
Parece emocionante	It seems exciting
Me interesa la cultura	I'm interested in culture
Me interesan las tradiciones	I'm interested in traditions
(No) soy religiosa/o	I am (not) religious

10.3 ¿Cómo se compara con las tradiciones de su país? - How does it compare?	
En comparación con…	In comparison to…
Que	Than
Que en España/México	Than in Spain/Mexico
Than in Spain/Mexico	It seems exciting
Es más…	It's more…
Es menos…	It's less…
Mientras que	Whereas
Ponemos/ ponen	We put/they put
Tenemos/ tienen	We have/they have
Comemos/Comen	We eat/they eat
Hacemos/ hacen	We do/they do
Celebramos/celebran	We celebrate/they celebrate

10.4 ¿Qué hay en la foto? - What is there in the photo?	
En la foto hay	In the photo there is/are
Puedo ver	I can see
Una familia/algunas personas/ jóvenes/niños	A family/ some people/young people/ children
Un hombre/ una mujer/un chico/una chica	A man/a woman/a boy/a girl
Al aire libre/dentro	Outside/indoors
Los turistas	Tourists
Parece…(feliz/triste)	S/he seems… (happy/sad)
Parecen (felices/tristes)	They seem… (happy/sad)
Los edificios (modernos/viejos)	Some (modern/old) buildings
Un lago/ una montaña/ un jardín	A lake/ a mountain/ a garden
Hace sol	It's sunny
Hace buen/mal tiempo	It's nice/bad weather
Habla/discute/juega/trabaja/ camina/come	S/he is speaking/ is arguing/is playing/is working/is walking/ is eating
Hablan/discuten/ juegan/ trabajan/caminan/comen	They are speaking/arguing/ playing/working/walking/ eating
Lleva (una camiseta/un jersey/ un vestido/vaqueros/ zapatillas/gafas)	S/he is wearing (a T-shirt/a jumper/a dress/jeans/trainers/ glasses)
A la izquierda/a la derecha	On the left/on the right
En primer plano	In the foreground
Al fondo	In the background

Unit 11: City Or Region In A TL Country

11.1.2 ¿Qué se puede hacer en tu región? - What can you do in your area?	
Hay mucho que hacer	There is lots to do
No hay nada que hacer	There is nothing to do
(No) se puede (+ infinitive)	You/one can (not)
En invierno	In winter
En verano	In summer

11.1.3 Mi región antes - My area before	
Antes	Before
En el pasado	In the past
Había	There was/were or there used to be
Estaba/era	It was/used to be
Más (+ adjective)	More
Menos (+ adjective)	Less/fewer

11.3.2 ¿Dónde te gustaría vivir en el futuro? - Where would you like to live in the future?	
(No) me gustaría/Me encantaría (+ infinitive)	I would (not) like to/ I would love to (+ verb)
En algún lugar (en Francia/en España/en Australia)	Somewhere (in France, in Spain, in Australia)
Un país cálido	A hot country
Un país de habla hispana	A Spanish speaking country
Soy fan de…	I am a fan of
Me entusiasma…	I love/am excited by …
Los deportes de invierno	Winter sports
La comida	The food
El modo de vida	The way of life
La gente es… (people in Spanish is singular!)	People are
Lejos de	Far (away) from
Cerca de	Close to

11.4.1¿Qué quieres comprar? - What do you want to buy?	
Quiero comprar	I want to buy
¿Cuánto cuesta?	How much does it cost?
Cuesta…	It costs…
¿De qué color?	Which colour?
Un recuerdo	A souvenir
Un regalo	A present

11.4.2¿Qué compraste recientemente? - What have you bought recently?	
Compré…	I bought…
Fui a las tiendas/ Fui de compras.	I went to the shops/shopping.
Quise/quería	I wanted
Esperaba	I hoped/was hoping to
Olvidé	I forgot
Tuve que (+ infinitive)	I had to…
Un regalo de cumpleaños	A birthday present
El vendedor/La vendedora	Shop assistant
Cerrado/a	Closed

11.5.1¿Qué país de habla hispana te gustaría visitar? - Which Spanish speaking country would you like to visit?	
Me gustaría visitar…	I would like to visit…
Me encantaría visitar…	I would love to visit…
Visitaría…	I would visit…
Haría …	I would do…
La cultura sudamericana	South American culture
Las ciudades antiguas	Ancient cities
La selva	The jungle
Las montañas	The mountains
Las playas tropicales	Tropical beaches

11.5.2 Los países de habla hispana – ¿Qué quieres hacer allí? - What do you want to do there?	
Quiero (+ infinitive)	I want to (+ verb)
Quisiera/me gustaría (+ infinitive)	I would like to (+ verb)
Descubrir	To discover
Ver	To see
Probar	To try
La comida típica	Local food
Los festivales	Festivals

Unit 12: The World Around Us

12.1.1 ¿Qué problemas medioambientales hay en…? - What environmental problems are there in…?	
(No) hay	There is/are (no)
Tráfico (el)	Traffic
Bolsa de plástico (la)	Plastic bag
Ruido (el)	Noise
Basura (la)	Rubbish
Polución(del aire/del agua) (la)	Pollution
Contaminación (del aire/ de la agua) (la)	Contamination
Espacios verdes (los)	Green areas
No es sostenible	It is not sustainable
Es un desastre	It is a disaster/ a catastrophe

12.1.2 ¿Qué se puede/debería hacer? - What can/should we do/be done?	
Se puede/podemos (+ infinitive)	We can …
Se debería (+ infinitive)	We should …
Usar	Use
Reciclar	Recycle
Reusar	Reuse
Reducir el consumo de	Reduce the consumption of
Ahorrar	Save (as in save up, not to rescue or salvage)
Apagar la luz	Turn the light off
Desenchufar los aparatos eléctricos	Unplug electrical devices
El transporte público	Public transport
Menos	Less
Agua	Water
Una bolsa de plástico	A plastic bag
La energía	Energy
La basura	Rubbish
Las latas	Tins
Las botellas	Bottles
El vidrio	Glass

12.1.3 Cuando eras pequeña/o, ¿hacías más o menos para proteger el medio ambiente? - When you were little did you do more or less to protect the environment?	
Cuando era pequeña/o	When I was little
Antes	Before (in the past)
Era más/menos ecológica/o	I was more/less environmentally friendly
Que ahora	Than now
Hacía mucho - Hago	I used to do a lot – I do
No hacía nada	I didn't used to do anything
Iba a pie – Voy a pie	I used to walk – I walk
Ahorraba - Ahorro	I used to save – I save
(No) reciclaba - Reciclo	I used to/didn't used to recycle – I recycle
Reutilizable	Reusable

Unit 12: The World Around Us

12.2.1 ¿Qué derechos tienen los niños? - What rights do children have?	
El derecho	The right
(No) tengo derecho a…	I (do not) have the right to…
Los niños (no) tienen derecho a…	Children (do not) have the right to…
Tener una identidad	To have an identity
Tener una nacionalidad	To have a nationality
Tener una familia	To have a family
Tener acceso al agua	To have access to water
Comer	To eat
Ir al colegio	To go to school
Ser atendido/a (s)	To be cared for
Salir	To go out
Es justo	It's fair
Es injusto	It's unfair
Es esencial	It's essential

12.2.2 ¿Qué quieres hacer en el futuro? - What do you want to do in the future?	
(No) quiero	I (don't) want
Tengo la intención de …	I have the intention of…
Quiere	S\he wants
Quieren	They want
Estudiar en la universidad	To study at university
Luchar contra la injusticia	To fight injustice
Ayudar a los demás	To help others
Trabajar de voluntaria/o	To do volunteer work
En el futuro	In the future
Me parece	It seems to me

12.3.1 ¿Cómo se puede ayudar a los demás? - How can we help others?	
Podemos/se puede (+ infinitive)	We can
Ser amable con todos	To be nice to everyone
Dar dinero	To give/donate money
Dar ropa	To give/donate clothes
Trabajar de voluntaria/o	To volunteer
Educar a la gente	To raise awareness
Organizar un evento	To organise an event
Una tienda benéfica	A charity shop
Las personas sin hogar = los sintecho	Homeless people

12.3.2 ¿Cómo quieres ayudar en el futuro? - How do you want to help in the future?	
Quiero	I want
Me gustaría	I would like
Cuando sea mayor	When I am older
Recaudar fondos	To fundraise
Un refugio de animales	An animal shelter
Una causa noble	A worthy cause
Una causa importante	An important cause
Una asociación de ayuda (al refugiado, a los animales, a la infancia)	A charity (for refugees, animals, children)

Life and Death

Life and Death					
1	Morality	Principles concerning the distinction between right and wrong or good and bad behaviour.	11	Relativism	The view that morality exists in relation to culture, society, or historical context, and is not absolute.
2	Ethics	Moral principles that govern a person's behaviour or the conducting of an activity.	12	Agape	Unconditional love, "the highest form of love, charity" and "the love of God for man and of man for God".
3	Sanctity Of Life	The view that all life is sacred because it is made by God.	13	Abortion	A procedure to end a pregnancy.
4	Quality Of Life	The standard of health, comfort, and happiness experienced by an individual or group.	14	Pro-Life	Opposing abortion and euthanasia.
5	Rules	One of a set of explicit or understood regulations or principles governing behaviour.	15	Pro-Choice	Advocating the legal right of a woman to choose whether or not she will have an abortion.
6	Natural Moral Law	A system of laws based on close observation of human nature, given to humans by God.	16	Euthanasia	The painless killing of a patient suffering from an incurable and painful disease or in an irreversible coma.
7	Precept	A general rule intended to regulate behaviour or thought.	17	Capital Punishment	The legally authorized killing of someone as punishment for a crime.
8	Reason	The power of the mind to think, understand, and form judgements logically.	18	Animal Rights	The rights of animals to live free from human exploitation and abuse.
9	Absolute	A value or principle which is regarded as universally valid.	19	Dominion	To be in charge of something or rule over it.
10	Situation Ethics	The view that there should be flexibility in the application of moral laws according to circumstances.	20	Stewardship	The job of supervising or taking care of something.

Extremism

Extremism					
1	**Extremism**	The holding of extreme political or religious views.	11	**Misinformation**	False or inaccurate information, especially that which is deliberately intended to deceive.
2	**Militant**	Favouring confrontational or violent methods in support of a political or social cause.	12	**Conspiracy Theory**	A belief that some covert but influential organization is responsible for an event.
3	**Right-wing Politics**	The view that certain social orders and hierarchies are inevitable, natural, normal, or desirable, typically supporting this position on the basis of natural law, economics, or tradition.	13	**Religious Extremism**	Any form of religion that opposes democracy, the rule of law, individual liberty and mutual respect and tolerance of different faiths and beliefs.
4	**Left-wing Politics**	Supports social equality, often in opposition to social hierarchy.	14	**Fundamentalist**	A person who believes in the strict, literal interpretation of scripture in a religion.
5	**Alt-right**	A right-wing movement which rejects mainstream politics and uses online media to spread provocative content, often expressing opposition to racial, religious, or gender equality.	15	**Nazi**	A member of a German fascist party controlling Germany from 1933 to 1945 under Adolf Hitler.
6	**Radicalisation**	The action or process of causing someone to adopt radical positions on political or social issues.	16	**Neo-Nazi**	A member of an organisation which has similar views to the German Nazi party.
7	**Nationalism**	Identification with one's own nation and support for its interests, especially to the exclusion of the interests of other nations.	17	**Separatist**	A person who supports the separation of a particular group of people from a larger body on the basis of ethnicity, religion, or gender.
8	**Fascism**	A form of far-right, authoritarian ultranationalism characterized by dictatorial power, forcible suppression of opposition and strong regimentation of society.	18	**Racism**	Prejudice, discrimination, or antagonism by an individual, community, or institution against a person or people on the basis of their membership of a particular racial or ethnic group.
9	**Terrorism**	The unlawful use of violence and intimidation, especially against civilians, in the pursuit of political aims.	19	**Hate Group**	A social group that advocates and practices hatred, hostility, or violence towards members of a race, ethnicity, nation, religion, gender, gender identity, sexual orientation or any other designated sector of society.
10	**Anti-Semitism**	Hostility to or prejudice against Jewish people.	20	**Homophobia**	Dislike of or prejudice against gay people.

Equality

Equality					
1	**Equality**	The state of being equal, especially in status, rights, or opportunities.	11	**Racism**	Prejudice, discrimination, or antagonism by an individual, community, or institution against a person or people on the basis of their membership of a particular racial or ethnic group.
2	**Privilege**	A special right, advantage, or immunity granted or available only to a particular person or group.	12	**Slavery**	A condition of having to work very hard without proper pay or appreciation.
3	**Prejudice**	Pre-judging a person or group based on aspects of their identity in a negative way.	13	**Liberation**	The action of setting someone free from imprisonment, slavery or oppression.
4	**Discrimination**	The unjust treatment of different categories of people, especially on the grounds of race, age, sex, or disability.	14	**Liberation Theology**	A movement in Catholic Christianity which attempts to address the problems of poverty and social injustice as well as spiritual matters.
5	**Justice**	Fairness; the principle that people receive that which they deserve.	15	**Social Change**	Changing of the social order of a society.
6	**Diversity**	The practice or quality of including or involving people from a range of different social and ethnic backgrounds and of different genders, sexual orientations, etc.	16	**Gender**	A word that is used to talk about how people express masculine (traits most people think of as male) or feminine (traits most people think of as female) traits.
7	**Persecution**	Hostility and ill-treatment, especially because of race or political or religious beliefs.	17	**Gender Equality**	The state in which access to rights or opportunities is unaffected by gender.
8	**Rights**	A moral or legal entitlement to have or do something.	18	**Feminism**	The advocacy of women's rights on the ground of the equality of the sexes.
9	**Universal Declaration of Human Rights**	An international document that states the rights and freedoms of all human beings.	19	**LGBTQ**	An acronym for lesbian, gay, bisexual, transgender and queer or questioning. Terms are used to describe a person's sexual orientation or gender identity.
10	**Status**	Position or rank in relation to others.	20	**Disability**	A physical or mental condition that limits a person's movements, senses, or activities.

Unit 1 - What Makes A Good Song

1. Musical Context

Song structure: includes Intro, Verse, Pre-chorus, Chorus, Middle 8/Bridge, Outro
Typical instrumentation:

- Rhythm section: Drum kit and Bass guitar
- Electric guitars: Rhythm guitar, Lead guitar
- Keyboards and/or Synths
- Singers: Lead singer, backing singers

EDM (Electronic Dance Music)

- A song written for electronic and technology – mixing, producing
- 'Break' section of the structure (similar to verse), '4 on the floor' from the bass drum
- Build up and Drop, snare drum
- The remix, when a producer changes the song to change the genre and/or mood

Use of voice

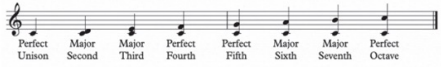
- A Capella, a song for voices and no instruments
- Rap, developed in New York in the 1970s from Jamaican sound system culture
- Flow, the rhythms and rhymes of lyrics in rap and how they work together
- Flow in old school rap is slower and more basic
- Flow in drill and grime is more complex and faster in tempo

2. Terminology

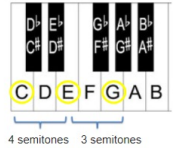
Melody	Tune
Structure	The order of the sections in a piece of music
Texture	The layers of sound
Tonality	The key of a piece of music or individual chord i.e. minor
Tempo	Speed of the music

4. Theory

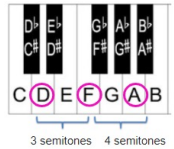
Interval: Distance between notes i.e. tone/major second, semitone



Major chord:
Root + 4 + 3



Minor Chord:
Root + 3 + 4



Primary chords: I IV V
Secondary chords: II, III, VI
In any major key: primary chords are major – secondary chords are minor

Perfect Cadence: Moving from chord V-I
Imperfect Cadence: End on chord V

3. Vocabulary

Intro	First section of a song, often an instrumental
Verse	A section of a song that has the same melody and different lyrics
Pre Chorus	Build up to the chorus, will have same melody and lyrics
Chorus	Includes the main hook of the song and will have same lyrics and melody
Middle 8/Bridge	Contrasting section, often 8 bars, with new musical material
Outro	Final section
Improvisation	Creating music in the moment
Root Note	Lowest note in a chord, often the bass
Monophonic	One line in music i.e. A solo
Homophonic	All parts moving at the same time/chordal
Melody Dominated Homophony	A tune and accompaniment
Polyphonic	Multiple independent music lines heard at the same time
Countermelody	Two or more independent melodies being heard at the same time
Hook	The catchiest part of the song
Riff	Short catchy phrase, often found in intro or instrumental
Motif	Short melodic idea

Unit 2 - Music & Film

1. Musical Context

- Music in Film sets the mood, support the story telling Genre: Horror, Fantasy, Westerns
- Composers: John Williams, Hans Zimmer, Danny Elfman, Debbie Wiseman, Delia Derbyshire, Segun Akinola

Instrumentation in Film Music

Woodwind	Sounds of nature
Brass	War, military
Harp	Love
Glockenspiel	Magic, supernatural
Timpani/ Drums	Conflict
Strings	Expressing emotion
Tremolo Strings	Tension
Electronic Timbres	Futuristic, outer space

2. Terminology and Impact (Fingerprints/Cliches)

Tempo	Fast	Excitement, action
	Slow	Thoughtful
Melody	Ascending	Moving up – hope
	Descending	Moving down – despair
	Chromatic	Tension
Harmony	Major	Optimism
	Minor	Seriousness and sadness
	Dissonant	Scariness or pain
Rhythm and Metre	Strong pulse	With purpose
	Ostinato	Menacing, creating tension
	Irregular rhythm	Unpredictable and exciting
Dynamics	Loud	Powerful, large, surprising
	Soft	Weak, small, gentle
	Crescendo	Getting nearer
	Diminuendo	Moving further away

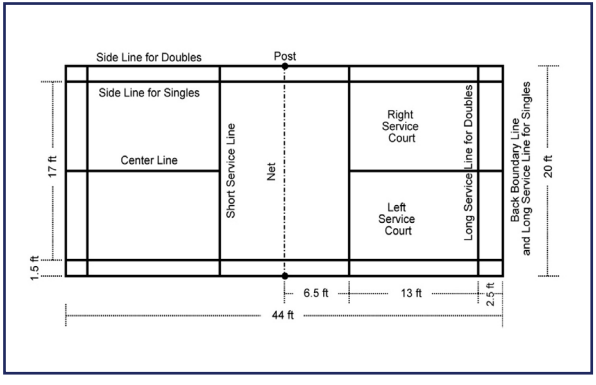
3. Vocabulary

Mickey mousing	When the music fits precisely with a specific part of the film
Cues	The parts of the music that require music
Syncing/sync point	A precise moment where the timing of the music needs to fit with the action
Underscore	When music is played at the same time as the action or dialogue
Diagetic	Music that is part of the action, the characters can hear it
Non-diagetic	Music that is not part of the action, the characters in the audience cannot hear it
Leitmotif	A short melody that is associated with a character or idea

Badminton

Warm Up

Phases of Warm up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the Badminton court.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders – opening closing the gate.	
Stretching	Static – stationary - Dynamic – stretches on the move.	Hamstring stretch or lunges.	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles, fast feet and bounding.	
Skill Rehearsal	Practising movement patterns and skills that will be used in badminton.	Passing forehand with a partner.	



Key Skills

	Key Skills	What is it?	Why is it used?
Defending	Clear Shots	Shots that are hit high and to the back of the court.	To reduce pressure by creating time to regain centre court positioning and to set up more attacking shots in the rally.
Attacking	Smash/Drive	Shots that are hit hard and either flat (straight drive, into body of the opponent) or downwards (smash).	To put pressure on your opponent and reduce the time they must play a return shot. These types of shots are point winning shots.
Positioning Doubles	Sides	This is where you and your partner play alongside each other and take responsibility for shots on your side of the court.	Generally used in men's and women's doubles when teammates are equally strong.
	Front And Back	This is when one player covers the front of the court and the other covers the back-court area.	Mainly used in mixed doubles or when one player has a particular strength in game play.
Outwitting Your Opponent	Drop Shot	A disguised shot which is made to like it is being hit hard to the back of the court but is just touched over the net, dropping short.	This is used to try and catch your opponent unaware. The idea is to win the point or put so much pressure on your opponent they are then out of position and off balance.

Key Skills For Being An Effective Player

Skills	Why it's used
Reading Play	Good players can read the play and react quickly using their – • PERCEPTUAL SKILL - how we see our surroundings/ interpreting a stimulus. For example, reading the opponent's body position to anticipate the type of shot they may play. • COGNITIVE SKILL - thinking skills. Anticipating the opponent's next shot or your next shot depending on court position. • MOTOR SKILL - learned movement outcome.
Positioning	• Maintain a central position on the court to allow to be able to reach all shots. • When playing doubles position, make sure you and your teammate are in opposite areas of the court to ensure full court coverage.
Timing	• Make contact with the shuttle at the highest point. • Racket in the ready position at all times, so you are prepared to play the correct shot. • Use your non racket hand to point at the shuttle to create good body positioning.

Cricket

Warm Up

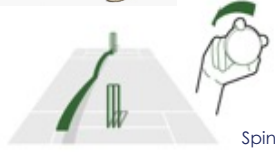
Phases of Warm up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the outfield.	• Warming up muscles. • Preparing physically and mentally for competition. • Increase body temperature. • Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders – opening and closing the gate.	
Stretching	Static – stationary - Dynamic - moving stretches.	Hamstrings stretch or lunges.	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles and fast feet. Running between the wickets.	
Skill Rehearsal	Practising movement patterns and skills that will be used in the activity.	Bowling run up.	

Key Skills

	Key Skills	What is it?	Why is it used?
Batting	Cut Shot	Attacking cross batted shot played off the back foot towards the offside.	Attacking shot to score runs, played to a delivery that is pitched short and either straight or on the offside.
Fielding	Wicket Keeping	Fielding position directly behind the stumps.	To catch the ball or stop the ball if the batsman misses it. The only fielder that can stump the batsman out.
Bowling	Spin Bowling	Bowling but when the ball pitches (lands) it spins in a slightly different direction.	To try and get a batsman out with an unexpected delivery. To outwit the batsman.

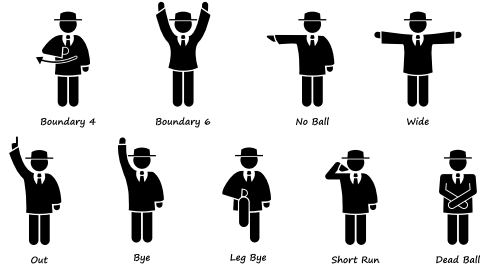
Cut shot

Wicket keeping



Spin bowling

Key Skills For Being An Effective Player

Skills	Why it's used
Batting – Judging The Delivery	Good players when batting will be able to judge where the ball will pitch quickly, therefore they can play the relevant shot or try to hit the ball into the gaps in the field to score more runs.
Bowling – Varying Speed When Bowling	Good players when bowling will be able to vary the speed to outwit the batsman and try and get him out.
Fielding – Run Outs	Good players when fielding will be able to stop/catch the ball but also judge which stumps to throw to attempt a run out.
Umpire Signals	

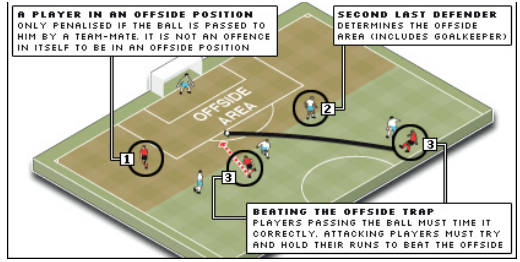
Football

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the football pitch.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders, opening/closing the gate.	
Stretching	Static – stationary - Dynamic - moving stretches.	Hamstring stretch or lunges .	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles, fast feet and bounding.	
Skill Rehearsal	Practising movement patterns and skills that will be used in the activity.	Pass and moving – rondo.	

Football Rules

- A free kick is given for a foul OUTSIDE the 18-yard box.
- A penalty is given for a foul INSIDE the 18-yard box.
- If it goes out of play off an attacking player on the base line, then it is a goal kick.
- If it comes off a defending player, it is a corner kick.
- Offside -



Key Skills

	What is it?	Why is it used?
Long Passing	Using accuracy and power to move the ball over a long distance to a teammate.	To create attacking opportunities for your team or to prevent losing possession of the ball in a defensive area (clearance). It is also used for goal kicks or corners.
Defending	A role within the team all players must fulfil. Keeping a low body position to put pressure on the opposition.	To prevent the opposition from creating attacking opportunities. To win back the possession of the ball.
Shooting	Using accuracy and power to create opportunities to score in front of the goal.	To create scoring opportunities for your team. Always be prepared for the rebound.

Formations

4-3-3

3-5-2

Gymnastics - Vaulting & Compositional

Key Skills

	What is it?	Why is it used?
Entry	The movement **INTO** a skill.	Allows you to link a variety of skills together easily.
Exit	The movement **OUT** of a skill.	Allows you to link a variety of skills together easily.
Vaulting	Being able to spring, using hands & feet over an apparatus to land safely.	To be able to negotiate apparatus to move over it, on top of it and around it.
Mount & Dismount	Getting onto and off a piece of apparatus – usually a vault or block.	To travel over, on and off a high piece of apparatus, allows you to fluently move through skills using apparatus.
Taking Weight On Hands	Using the hands to take the weight of your body e.g. handstand, through vault, cartwheel, handspring (see diagram).	To show strength in gymnastics. The ability to create shapes & movements where the weight is on your upper body.
Decision Making	Working out how a basic skill can be performed or adapted to add different apparatus.	To show your ability to adapt skills for apparatus. To work out how a skill can be performed differently (entry/exit etc) when using apparatus.
Flight	The action of flying through the air. In gymnastics this is with the aid of a vault, springboard etc.	Flight in gymnastics allows you to create different shapes and rotations in the air before landing safely e.g. straddle jump; handspring; somersault.

Key Terminology

Term	Definition
Extension	Straightening/extending the arms and legs to show clarity of shape. e.g. point the toes, keeping legs straight.
Control Of Movement	How the movement is held at the start, during (balance, speed), and at the end – there should be no wobbling or falling over!
Aesthetics	How a skill or routine looks to the audience.
Fluency	Moving from one skill to another easily and smoothly.
Body Tension	Tensing & stretching the muscles in order to keep the body in line & held in a shape during a skill.
Shape	The position the body holds during a skill.
Explore	Try out different ways of performing basic skills, e.g. rolls – forwards, backwards, sideways; creating different shapes in the air, during a skill.
Take Off	The preparation for a jump. Two feet together, swing arms behind and upwards to push the feet off the floor.
Landing	The placement of the feet on the floor/apparatus at the end of a jump/flight. Bend the knees on contact with the floor/apparatus, arms out in front of the body to control the landing.
Compositional Gymnastics	Using apparatus to link skills together and create routines. Use of vaults, benches, springboards to develop key gymnastics skills.
Flight	The action of flying through the air.
Apparatus	Different equipment used in gymnastics. Mats, vaults, benches, springboards, trampettes etc.

Handball

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging up and down the handball court.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Shoulder rotations.	
Stretching	Static/stationary/dynamic/moving stretches.	Triceps/deltoid/hamstring stretches.	
Dynamic Movements	Show a change in speed and direction.	Shuttles and changing direction at speed.	
Skill Rehearsal	Practising movement patterns and skills that will be used in activity.	Passes to a partner.	

Tactics

Passing	• Using the correct passes at the correct time. • Entice players towards you and offload before you are tackled, or your space has gone. • Can you create gaps in the defence and exploit them with a pass?
Receiving	• When receiving the pass in attack, be on the move. • This makes you a more difficult player to mark and defend. • Creates spaces and opportunities to beat defenders and shooting chances.
Shooting	• Look to beat defenders using a feint and dodge. • Use the jump shot to get a better angle of shot and to get closer to the goal. • Use your three steps to beat defenders and get shots away from inside the area (using your jump).
Defending	• Standing together and make yourself tall - create a barrier. • Decision making- when to step off the 6m line to engage in contact. • Always tackle from the front, use your feet to stay in front of attackers.
Attacking	• Use set plays, swap over positions to confuse defenders and utilise the space.
Decision Making	Which pass to use and when. Your positioning on the court, can you swap positions whilst in play? When to tackle and when to let attacker shoot.

Set Plays

Possession Play	Making a lot of passes. Keeping the ball away from the opposition. Be patient with passes.
Fast Break	• Looking to use the quick players who can get up the court quicker than the defenders can get back to defend. • Fast break every time the goalkeeper has the ball. • Look to release the ball as quickly as you can and catch opponents out.
Free Throws	• All players behind the 9 metre line. • You can shoot directly from a free throw. • Move the ball quickly to a wide position. • Take all shooting opportunities.
Penalties	Penalties are awarded for dangerous play when shooting. You must take the shot from the 7 metre mark and your foot must remain behind the line and can not move when taking the shot.
Defending	Staying as tall as possible, meet attackers before they get to the line. Look to force attacking team as wide as possible to make shooting angle as small as possible.
Centre Passes	Once the ball is back to the centre, all attacking players must start in their own half. You do not have to wait for the defending team to be back, this can lead to fast breaks.

Health Related Fitness

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the field.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders – opening/closing the gate.	
Stretching	Static – stationary - Dynamic - moving stretches.	Hamstring stretch or lunges.	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles, fast feet and bounding.	
Skill Rehearsal	Practising movement patterns and skills that will be used in the activity.	Depending on sport.	

Key Terms

Aerobic	With oxygen.
Anaerobic	Without oxygen.
Maximum HR	Maximum heart rate = 220 - AGE.
RHR	Resting Heart Rate.
Aerobic Threshold	60-80% of Maximum heart rate (HR).
Anaerobic Threshold	80-90% of maximum heart rate (HR).
VO^2 Max	Maximum uptake of Oxygen.
RPE	Rate of perceived exertion.

Principles of Training

Basic Principles of Training	Frequency	How often you train.
	Intensity	How hard you train.
	Time	How long you train for.
	Type	What type of training you do.

Method of Training

Method of Training	Description	Example
Circuit	Exercises performed at stations: - Usually 6-8 stations. - Works all components of fitness.	Station 1: Press ups. Station 2: Burpees Station 3: Sit ups. Station 4: Mountain Climbers. Station 5: Tricep Dips. Station 6: Sprint shuttle.
Interval	High intensity with rests.	Sprint Shuttles.
Continuous	Moderate intensity for a minimum of 20 minutes.	Cross country run around the school field.
Fartlek	This is where the intensity of the training is varied with speeds or different terrains. Known as speed play.	Lines of different cones. Sprint to one colour, jog to another, walk to another then repeat.
Flexibility	This is using a range of stretching movements to increase the range of motion around a joint to improve flexibility.	Stretching after exercise.

Netball

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing heart rate and body temperature.	Jogging around the netball court.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders – opening/closing the gate.	
Stretching	Static/stationary/Dynamic/moving stretches.	Hamstring stretch or lunges.	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles, fast feet and bounding.	
Skill Rehearsal	Practising movement patterns and skills that will be used in the activity.	Pass and moving – bow-tie.	

Key Skills

	Key Skills	What is it?	Why is it used?
Passing	Centre Passes	Centre steps into the circle. On whistle all key players drive forward to receive the pass.	To start the game. WA, WD, GA and GD drive to give options to C player.
Ball Handling	Free Passes	Who should take the pass and movements of the other players?	When a player has been called for contact, obstruction, or footwork.
Shooting	Semi-Circle Tactics	Movement in and around the semi-circle to get the best opportunity to shoot.	Set patterns of play involving GS, GA, WA, C, to maximise shooting opportunities.
Defend	Rebounds	Be able to have quick reactions when a player misses the shot.	Jump higher than others to retrieve the ball.
	Interceptions	Be able to turn over ball and keep control when landing to.	Turnover ball and start the attack to your end.
	Marking	Apply 1M rule and get your distance before hands. You can man mark or mark the space. This is known as zoning.	Perform this everywhere on court to turn over ball (man to man). Working in a zone with your team to block the attack.
Attack	Dodging	Use either sprint or feint to create space anywhere on court.	Used effectively during a centre pass, back or side-line passes.

Key Skills For Being An Effective Player

Skills	Why it's used
Reading Play	Good players can read the play and react quickly using their – • PERCEPTUAL SKILL - how we see our surroundings/ interpreting a stimulus. • COGNITIVE SKILL - thinking skills. • MOTOR SKILL - learned movement outcome.
Positioning	• Players can position themselves between their players and the ball. • Aware of movement of others and not to all crowd an area. • Position during centre passes – one on the inside and outside of their opposition and WA and C positioning around the circle.
Timing	• Knowing when to move and when to hold your space. • Pass the ball in front of the receiving player to move the ball up court. • Timing for rebounds to get the best chance to turn over ball.

Rounders

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the rounders pitch.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders – opening/closing the gate.	
Stretching	Static – stationary - Dynamic - moving stretches.	Hamstring stretch or lunges.	
Dynamic Movements	Show a change in speed and direction.	Sprint shuttles, fast feet and bounding.	
Skill Rehearsal	Practising movement patterns and skills that will be used in the activity.	Catching and throwing in groups.	

Key Skills

	Key Skills	What is it?	Why is it used?
Fielding	Overarm Throw	Fast and powerful throw over a distance.	Deep fielders use to get the ball into bases. Backstop would use to get the ball to 2nd base.
	Underarm Throw	Short but quick throw.	Ball hasn't travelled far, and fielders passes into a base if they are close to 2nd or 4th base.
	Catching	Retrieving the ball from the air.	Throwing to 2nd or 4th base to get batter out.
	Long Barriers On Move	Position yourself for a quick pick up.	Quickly and efficiently collect the ball making an accurate throw to 2nd or 4th base.
Batting	Placement	Changing body position to direct the ball.	Place the ball where no fielders are stood – backhand shot. Adjusting body for the type of shot.
	Contact	To hit the ball consistently into deep field.	The further the ball goes the more likely a batter is to get back to 4th base.
Bowling	Fast	Increase speed of bowl.	Fast bowl reduces the chance of the batter hitting the ball, reducing chance of scoring. Decision making – judging which type of bowl to use depending on batters' strengths and weaknesses.
	Spin	To get the bowl to the batters but adding backspin.	With backspin added to a ball it will not go as far meaning less likely to score.
	Donkey Drop	Ball bowls up and falls at the front of batter's box.	Due to the direction of the ball, batters usually hit the ball vertically into air making it easier to catch.

Key Skills For Being An Effective Player

Skills	Why it's used
Reading Play	Good players can read the play and react quickly using their – • PERCEPTUAL SKILL - how we see our surroundings/ interpreting a stimulus. • COGNITIVE SKILL - thinking skills. • MOTOR SKILL - learned movement outcome.
Positioning	Fielders can position themselves effectively depending on the batting team's ability to hit. Remove 3rd base and have an extra deep fielder.
Timing	• Knowing when to move for a ball. • Knowing when to move to hit the ball.

Key Rules

Rules	Definition
Batters	• Batters can take a no ball and score in the usual way, but once you reach 1st post you cannot return. • You cannot be caught out or stumped out at 1st post on a no ball.
Running Around The Pitch	• If a batter stops at a post, they must keep in contact with the post, with hand or bat. If they don't, the fielding side can stump the following post to put the batter out. • Batters can run on to a post even if it has been previously stumped (you don't score if the post immediately ahead has been stumped). • Batters can move on as soon as the ball leaves the Bowler's hand, including no balls.

Rugby

Positions	Numbers
Prop in the front row of the scrum, aim to drive the scrum forward.	1 + 3 Forward
Hooker in the middle of the front row. The hooker's job is to hook the ball back towards his team in the scrum.	2 Forward
Second Row are locked in behind and in between the prop and hooker. Their job is pushing the front row forward.	4 + 5 Forward
Flankers are on the outside of the scrum; their main job is to break off the scrum quickly and tackle the ball carrier.	6 + 7 Forward
Number 8 is at the back of the scrum, between the two second rows. Their role is to control the ball at the back of the scrum.	8 Forward
Scrum Half put the ball into the scrum. As well as this, the scrum half is the key passer of the team. They will pass the ball to the fly half from most rucks.	9 Back
Fly Half is the play maker of the team. The fly half's job is to distribute the ball and bring other players into the game.	10 Back
Centres are in commonly found in the middle of the pitch and must be able to perform all the main skills (passing, tackling & rucking).	12+13 Back
Winger are usually on the outsides of the pitches and their job is to run and score tries.	11+14 Back
Fullback is found at the back of defensive line and acts as a defensive sweeper, like a last line of defence.	15 Back

Key Skills

	Key Skills	What is it?	Why is it used?
Passing/ Decision making	**Miss Pass**	Passing the ball behind the back of a dummy runner. So, **the ball skips a player** in the attacking line.	To suck in defenders and create space out wide.
	Attack in pods 3 vs 2	Attack in packs of three to isolate parts of the defensive line i.e., 2 forwards (Props) as they are less agile players and cover distance slower.	Expose gaps in defence and create a mismatch in the defensive line.
Rucking	**Rucking (Golden Metre)**	This means the first player **going past the ball (1 metre),** in the ruck, clearing out any opposing team members.	To retain possession after a tackle.
	Counter Rucking (Jackal)	If the attacking team are slow to the ruck, the initial player from the defending team should look to **'Jackal'** the tackled player.	To steal possession off the attacking team after a tackle.
Attack	**Working in Pods**	In attacking play, players should **work in groups 3.**	To gain ground.
Kicking	**Punt**	Kicked from hands, as far as possible.	Used to clear the ball out from defensive line.
	Grubber	Kicked from hands, along the floor.	Advanced attacking kick.
	Place	From a cone/tee, over the posts.	To score conversion/ penalty.

Key Skills For Being An Effective Player

Skills	Why it's used
Fly Hack	Players are allowed the kick the ball when it is in the floor. This is called a fly hack.
Strike And Push	1. When scrummaging players are now allowed to strike (hookers, competing for the ball). 2. The forwards in the scrum are also allowed to push against one another.
Offside	A player is in an offside position if that player is further forward (nearer to the opponents' goal line) than the teammate who is carrying the ball or the teammate who last played the ball.
Ruck	1. Players must enter the ruck through the gate and not from the side. 2. Players must always remain on their feet and not use their hands in the ruck.
Tackle	1. The tackler must release the ball carrier once the tackle has been made. 2. The tackler must then roll away or get back to their feet, before re-joining play. 3. The ball carrier must also release the ball once they have been tackled to the floor.
Uncontested Lineout	Both teams will set up a 3-person lineout comprising of three of the forwards, commonly the second row. The two teams must stand a metre apart in order to create a throwing channel. The team's hooker who has possession will then throw the ball into play but the opposition cannot compete for the ball.

Tennis

Warm Up

Phases Of Warm Up	What it is?	Specific Examples	Benefits of Warm up
Pulse Raiser	Slowly increasing HR.	Jogging around the tennis court.	• Warming up muscles. • Preparing the body physically and mentally for competition. • Increase body temperature - Improve flexibility of muscles and joints. • Reduce chance of injury.
Mobility	Taking joints to their full range of movement.	Circling shoulders, high knees.	
Stretching	Static/stationary/dynamic/moving stretches.	Hamstring walk, rotated lunges, triceps and upper arm stretches.	
Dynamic movements	Show a change in speed and direction.	Sprint shuttles, agility cones, small quick feet.	
Skill rehearsal	Practising movement patterns and skills that will be used in the activity.	Bouncing the ball on racket – stationary, moving, rotating the racket.	

Key Skills

	Key Skills	What is it?	Why is it used?
Ground stroke	Slice	A shot that uses backspin to create a low bounce and travels back in the direction from where it came.	To keep the ball low, forcing your opponent to really stretch to get to the ball over the net.
	Topspin	A shot that spins end-over-end and bounces very high in the direction it was hit upon impact.	Increase the player's consistency, allows a player a greater margin of error because topspin brings the ball down toward the ground quicker, a player can hit the ball higher over the net, thus increasing the margin of error.
Advanced shot	Overhead/ Smash	A shot that is hit powerfully above the hitter's head with a serve-like motion.	Usually following a poorly hit lob close to the net.
	Lob	A high, loopy shot meant to go over the head of a player at the net.	To put the ball in the open space near the baseline.
	Passing shot	A shot from the backcourt that is designed to go past an opponent at the net, often hit on the run.	When one's opponent is running to the net or at net already.
	Drop shot	A shot that just goes over the net with some disguise and a low bounce.	To make your opponent run forward for the ball, keeping them off balance.

Key Skills For Being An Effective Player

Skills	Why it's used
Reading Play	Good players can read the play and react quickly using their: • **PERCEPTUAL SKILL** - how we see our surroundings/ interpreting a stimulus. • **COGNITIVE SKILL** - thinking skills. • **MOTOR SKILL** - learned physical skill that create movement.
Coordination	The ability to move two or more body parts under control, smoothly and efficiently. E.g. when serving.
Muscular Endurance	The ability to move your body and muscles repeatedly without fatiguing. E.g. hitting 18 shots in a rally.
Power	The ability to exert a maximal force in as short a time as possible. E.g. when hitting a smash.
Speed	The ability to move quickly across the ground or move limbs rapidly through movements. E.g. running to a wide sliced backhand.
Reaction Time	The ability to respond quickly to a stimulus. E.g. Moving to a ball that has unexpectedly hit the net,

Notes

Notes

Notes

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