The Trafalgar School at Downton

Knowledge Organiser

Year 8

2026/2027

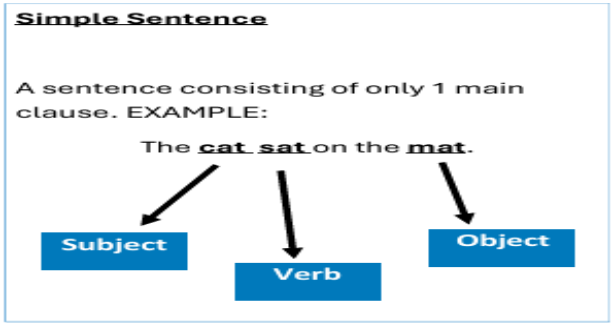
Name……..Tutor ……..

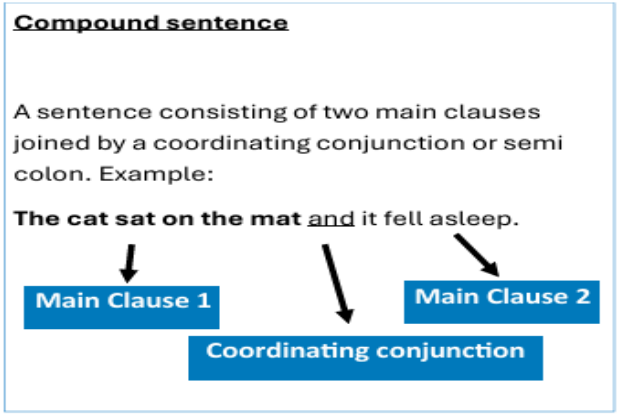
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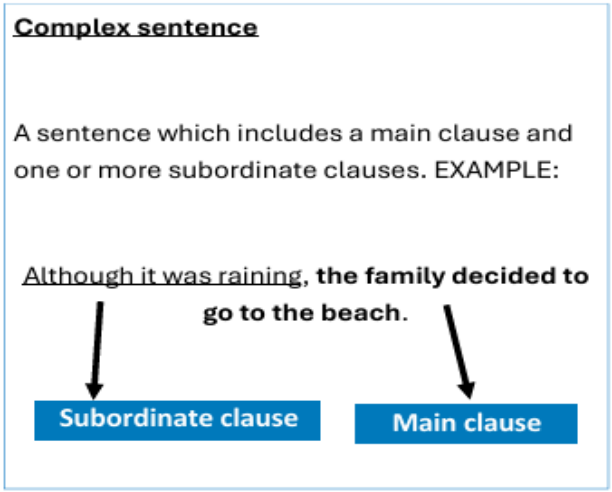
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Sentence Construction	
Capital letters	Used at the beginning of sentences and for proper nouns.
Main clause	A clause that makes sense on its own.
Subordinate clause	A clause that does not make sense on its own.
Subordinating conjunction **(I SAW A WUBUB)**	Introduces a subordinate clause e.g. If, since, as, when, although, while, after, before, until, because (not an exhaustive list).
Coordinating Conjunctions **(FANBOYS)**	A word that connects mains clauses or phrases e.g. for, and, nor, but, or, yet, so.
Declarative sentence	Makes a statement.
Imperative sentence	A command or an instruction.
Interrogative sentence	Asks a question.
Exclamatory sentence	Expresses strong emotion and ends with an exclamation mark.
Fragment	A 'sentence' that does not contain a verb and/or subject.
Simple sentence	A sentence consisting of only one main clause.
Compound sentence	A sentence which includes two main clauses joined by a semi-colon or coordinating conjunction.
Complex sentence	A sentence which includes a main clause and one or more subordinate clauses.







Punctuation	
Full stops	Used to mark the end of a sentence.
Commas	• To separate main and subordinate clauses • To separate items in a list. • After introductory clauses, phrases, discourse markers.
Apostrophes	Used to show omission or possession.
Semi-colon	• Used between two main clauses that are closely related. • Used in-between item of a list that are already complex due to the inclusion of extra detail.
Colon	• To introduce a list, information, ideas and explanation. • To introduce quoted information.
Dash	• To add extra information. • To signal a change in tone.
Hyphen	Used to combine words into a compound word e.g. well-being
Brackets	• Separates extra information in an informal style (round) • Gives alternatives (round) • Around an ellipsis where words have been omitted from a quotation [square]
Ellipsis	Used to create suspense, show words are missing or show a trailing off thought.

Word Types	
Abstract Noun	An idea or a concept.
Noun	A name, place or thing.
Proper Noun	Names of people and places which need a capital letter.
Adjective	A word that describes a noun.
Verb	An action word (doing word) or a state (be, have)
Adverb	A word that describes a verb. An adverb often ends with –ly.
Modal Verb	A verb that shows necessity, possibility or certainty. e.g. should, could, will, must.
Preposition	Indicates position, time or place.
Personal Pronoun	Used instead of the name for a person/thing. e.g. you, he, I, she
Collective pronoun	Singular – someone, somebody, something etc Plural – they, we, them etc

ENGLISH – Romeo & Juliet

Key Vocabulary	Definitions
Prologue	An introduction at the beginning of the play
Sonnet	A 14-line poem with a specific rhyme scheme (used in the prologue)
Soliloquy	A speech where a character speaks their thoughts aloud, alone on stage
Aside	A short comment made by a character to the audience, not heard by others
Foreshadowing	Hints about what will happen later
Irony	When the opposite of what's expected happens
Tragedy	A story that ends sadly, often with death
Conflict	A struggle between opposing forces (e.g., family feud)
Theme	The main idea or message of the play

Key Learning / Misconceptions

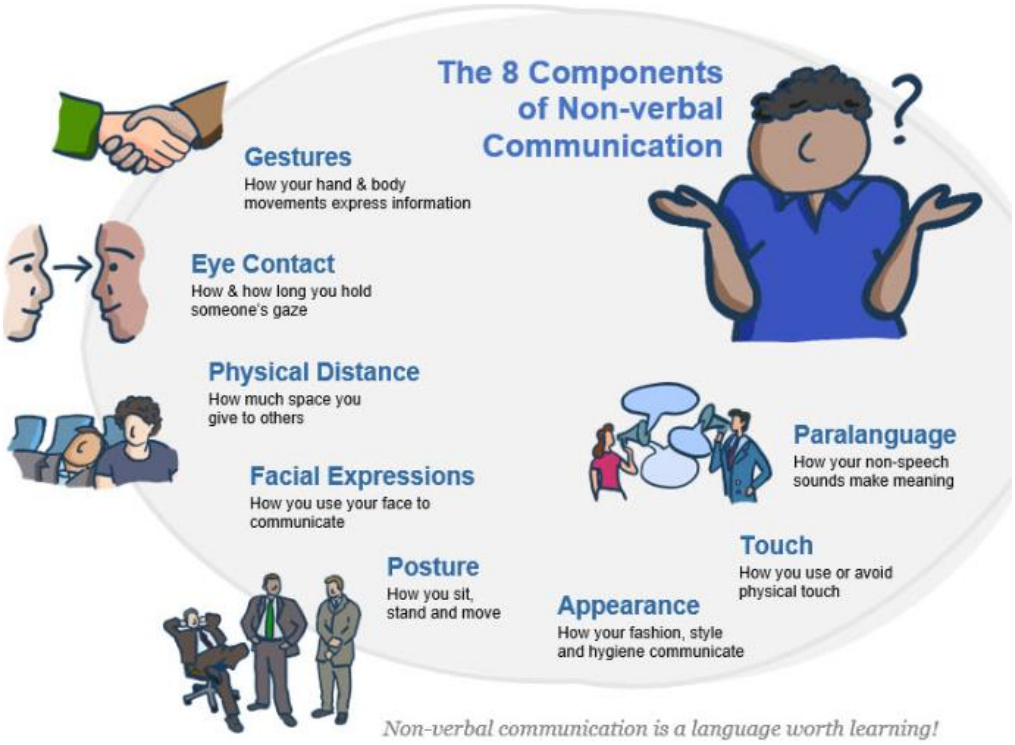
1. Romeo and Juliet Is <u>NOT</u> a Love Story with a Happy Ending
Misconception: It's a romantic fairy tale.
Reality: It's a tragedy. The play ends with the deaths of both Romeo and Juliet, and it's meant to show the destructive consequences of feuds and impulsive decisions.

4. Overlooking the Role of Fate and Family Conflict
Misconception: The story is just about two people in love.
Reality: The feud between the Montagues and Capulets, and the idea of fate ("star-crossed lovers"), are central themes that drive the tragedy.

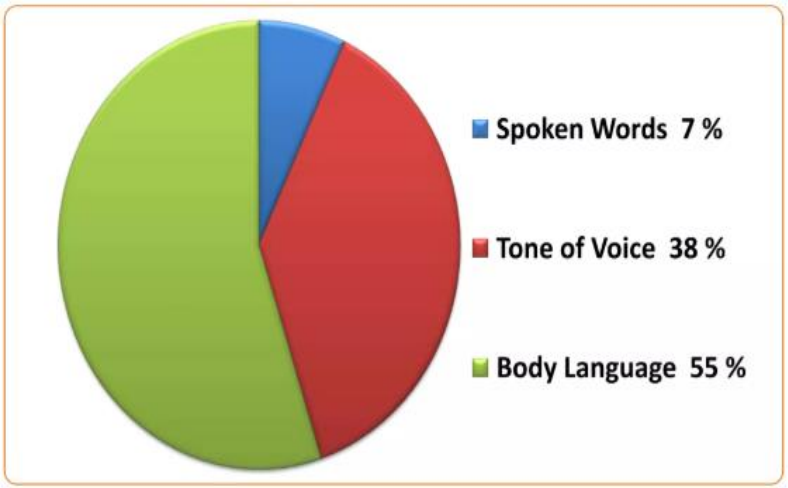
Key Vocabulary	Definitions
Montague / Capulet	The two feuding families
Feud	A long-standing argument or fight
Star-crossed	Ill-fated or doomed by the stars
Banishment	Being sent away from a place as punishment
Potion	A magical drink (used by Juliet)
Masquerade	A costume party with masks
Duel	A fight between two people, often with swords
Friar	A religious figure (like Friar Laurence)

Key Vocabulary	Definitions
Thou /Thee/Thy/Thine	You / You / Your / Yours
Art	Are
Hark	Listen
Fain	Gladly
Anon	Soon
Wherefore	Why (not "where"!)
Dost / Doth	Do / Does
Ere	Before
Wilt	Will
Woe	Sadness or grief

Key Vocabulary	Definitions
Anecdote	A short, personal story to emphasise a point.
Pronouns (personal and collective)	Words that are used to address the audience directly and to encourage ideas of togetherness.
Emotive Language	Language used deliberately to gain an emotional response.
Fact	A true statement.
Opinion	Someone's personal beliefs or thoughts.
Repetition	Where something is repeated for impact.
Rhetorical Questions	A question asked by the speaker which does not require an answer. It helps to make the audience think.
Experts	Using a figure of authority/specialist who can support your idea/point.
Statistics	Numerical data that can be used to reinforce your point.
Triple	A group of three words, in a list, used to describe something.
SPIVS	Speed, Pitch, Intonation, Volume, Structure



Is how you say something important?



ENGLISH – GOTHIC LITERATURE

Key Vocabulary	Definitions
Characterisation	A literary device where an author develops a character within a narrative.
Conventions	A defining feature of a specific literary genre.
Foreshadowing	A hint about a future event in a text.
Foreboding	A sense that something terrible is going to happen.
Framed narrative	A story told within a story.
Gothic Fiction	A genre of writing that is characterised by elements of fear, horror, death and heightened emotions.
Imagery	Words/phrases used in writing that create images in a reader's mind.
Macabre	Disturbing because concerned with or causing a fear of death.
Metaphor	When one thing is directly compared to another.
Motif	A repeated image or idea.
Pathetic fallacy	Where the weather/mature reflect the emotions of a character or the mood of a text.
Personification	Giving human characteristics/qualities to an object.

Key Vocabulary	Definitions
Setting	The time and place in which a story takes place in a piece of literature.
Simile	When one thing is compared to another using 'like' or 'as'.
Sublime	Describes things that are so grand they seem beyond measurement
Supernatural	Something that cannot be explained by science or reason.
Symbolism	Using a character or object to represent an important concept or idea.
Tension	The feeling of suspense and anticipation.
The Uncanny	Strange and/or mysterious, especially in an unsettling way.

Structure Vocabulary	Definitions
Analepsis	A flashback which shows past events.
Chronological	Where events are shown in time order.
Dual narrative	When a story is told from two viewpoints.
In medias res	When the text begins in the middle of the action, without the build.
Non-linear	When events are not shown in time order.
Prolepsis	A flash-forward which shows future events.

ENGLISH – GOTHIC LITERATURE

Key features of Gothic Literature
Death and darkness
Supernatural (magic, ghosts, vampires, monsters)
Fear, isolation and haunting
Betrayal and revenge
Madness, terror and suspense

Key contextual ideas	
Victorian Era	• Between 1837 - 1901
Victorian Values	• Victorian society valued religion. • There was a strict social code of conduct. • Men were expected to always be respectful, logical and rational.
Edwardian Era	• Between 1901 – 1910 • King Edward VII reigned as King before his death in 1910
Romanticism	• A literary genre in the 18th – 19th century • Celebrated nature, beauty and the imagination • Rejected industrialisation and rationalism

Good Examples of Gothic Fiction	
1764	The Castle of Otranto by Horace Walpole
1803	Northanger Abbey by Jane Austen
1818	Frankenstein by Mary Shelley
1845	The Raven by Edgar Allan Poe
1847	Wuthering Heights by Emily Bronte Jane Eyre by Charlotte Bronte
1859	The Woman in White by Wilkie Collins
1886	The Strange Case of Dr. Jekyll and Mr. Hyde by R. L. Stevenson
1896	The Red Room by H. G. Wells
1897	Dracula by Bram Stoker
1902	The Hound of the Baskervilles by Arthur Conan Doyle
1983	The Woman In Black by Susan Hill
2018	The City of Ghosts by Victoria Schwab

ENGLISH - 'ROLL OF THUNDER...'

Key Vocabulary	Definitions
Civil Rights	A class of rights that protect an individual's freedom from violation by governments, social organisations, and anybody else.
Discrimination	The prejudicial treatment of different categories of people, especially on the grounds of race, age, sex, or disability.
Equality	Everyone is treated fairly and has the same chances, no matter who they are or where they come from.
Hierarchy	A way of organising people or things from the most important to the least important, showing who or what is on top, in the middle, and at the bottom. People occasionally create their own.
Inequality	This means that things are not the same for everyone—some people have more, less, or are treated differently through no fault of their own.
Inferior	This means something is thought to be lower in rank, position, or quality compared to something else. In simpler terms, it refers to things that are not as good or valuable as others.
Injustice	A situation in which there is no fairness and justice.
Intolerance	Refusing to accept ideas, beliefs, or behaviours that are different from your own.
Justice	Fairness in the way people are dealt with.
Maverick	Someone who shows independence in thought and action.
Prejudice	Preconceived opinion that is not based on reason or actual experience; an irrational attitude of hostility towards an individual, group or race.
Segregation	The action or state of setting someone or something apart from others.
Superior	This means something is thought to be higher in rank, position, or quality compared to something else. In simpler terms, it refers to things that are better or more valuable than others.

ENGLISH - 'ROLL OF THUNDER...'

Key Context	
The Reconstruction Era (1865-1877)	A turbulent era in America following the Civil War in which Southern states were brought back into full political participation in the Union, guaranteeing rights to former slaves and defining new relationships between African Americans and white people.
The American Dream	The American Dream is the belief that anyone, regardless of where they were born or what class they were born into, can attain their own version of success in a society in which upward mobility is possible for everyone.
The Great Depression	The worst economic downturn in the history of the USA, lasting from 1929 – 1939. It began after the stock market crash of October 1929.
Sharecropping	A type of farming in which families rent small plots of land from a landowner in return for a portion of their crop, to be given to the landowner at the end of each year.
The 'Jim Crow' Laws	These began in 1877 and were enforced until 1965. The 'Jim Crow' laws mandated racial segregation in all public facilities in the South.
The Nightmen	Following the Civil War, groups emerged to suppress and victimise newly freed slaves. The groups took violent steps in an effort to ensure white racial and economic superiority in the South.

Key Characters	
Cassie Logan	Protagonist and narrator of the novel. She is 9 years old and naïve about racism and prejudice.
Stacey Logan	Oldest of the Logan siblings at 12 years old. He is protective of his siblings and understands the issues of racism and prejudice.
Christopher-John Logan	7 years old. His character is timid and therefore the opposite of his siblings.
Clayton 'Little Man' Logan	Youngest at 6 years old. He does not understand racism but he knows he does not like it.
David Logan, 'Papa'	He values his independence and works on the railroad.
Mary Logan, 'Mama'	Mother of the family. Worked at the elementary school.
Caroline Logan, 'Big Ma'	Grandmother of the Logan children. Main caretaker of the house.
Uncle Hammer	Uncle of the Logan children. He is hot tempered and has a lot of money.
T. J. Avery	The Logan children's friend. He is at the same school as the Logan children but has been held back a year.
Mr Morrison	Papa brings him home to work and protect the family. He's a quiet, strong intimidating and strong character.
Mr Jamison	A white lawyer who genuinely wants to help the local farmers.

Mathematics - Multiplicative Change - Ratio, Proportion, Scale

Key Vocabulary	Ratio & Proportion - Definitions
Ratio	Comparing the size of one part to another. The ratio of a to b is written as a:b.
Proportion	Shows how a part compares to the whole amount. E.g. 3 out of 10 cars are red: 3/10 and 7 out of 10 are blue: 7/10. As a ratio we can write this 3:7
Equal parts	Each part is the same size, amount, or value. Every part has the exact same fraction or percentage of the total.
Share	To **share in a ratio** means to split/divide the total amount based on given proportions, once you find the value of each part.
Multiplier	The number you multiply each part of a ratio by to scale it up or down, while keeping the parts in the correct proportion.
Factors	An integer that divides another integer exactly, without a remainder.
Common factors	A factor shared by two or more numbers . The only common factors of 10 and 15 are 1 and 5.
Equivalent ratio	Equivalent ratios are found by multiplying/dividing all parts of the ratio by the same value.
Scale	The fixed ratio that compares a measurement (e.g. on a map) to the actual size in real-life. 1:100 means one unit represents 100 units in real life.
Simplify (ratio)	Scale down a ratio into its smallest whole numbers whilst keeping the relationship between them the same.
Constant	A fixed number on its own.
Unit ratio	A ratio in which one of the quantities has been scaled to 1. can be in the form 1:n or n:1
Bar Model	A diagram using bars to represent quantities and their relationship.

Key Vocabulary	Proportion - Definitions
Direct Proportion	A relationship between two quantities where, as one increases, the other increases by the same multiplicative factor (if one doubles, the other doubles). On a graph, this always forms a straight line through the origin (0,0).
Indirect (inverse) proportion	A relationship between two quantities where, as one quantity is multiplied another quantity is divided by the same scale factor.
Linear	Anything that forms a straight line or increases by a constant amount.
Scale Factor	The number you multiply the side lengths of a shape to create a similar shape/enlargement (this can be fractional).
Similar	Shapes that have the exact same shape and corresponding angles but are different sizes because all lengths have been scaled up or down by the same scale factor.
Enlargement	Changing the size of a shape (making it larger or smaller) by multiplying all its dimensions by a scale factor.
Object	The original shape or diagram before any transformation or scale enlargement is applied.
Image	The new shape or diagram created after a transformation or scaling factor has been applied to the original object.
Orientation	Describes the direction a shape is facing. Standard enlargements keep the same orientation, while rotations, reflections, and negative scale factors cause the shape to face a different direction.
Corresponding	Matching sides or angles that hold the exact same relative position on two similar shapes or scale drawings.

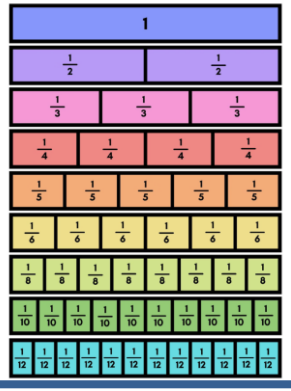
Mathematics - Multiplicative Change, Working with Fractions

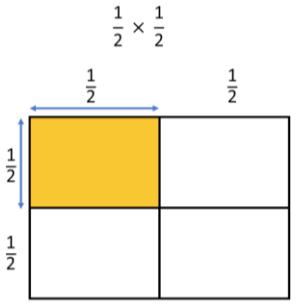
Key Vocabulary	Multiplicative change - Definitions
Rate	A comparison between two quantities measured in different units, showing how much of one unit changes relative to another (e.g., speed in miles per hour or price per kilogram).
Exchange Rate	The multiplier used to convert money from one currency into another e.g. US Dollars to Pounds Sterling.
Currency	The official system of money used in a particular country or region (e.g., Pounds Sterling, Euros, or US Dollars).
Conversion	Changing a measurement or value from one unit to another using a multiplier (e.g., converting kilometres to miles or centimetres to meters).

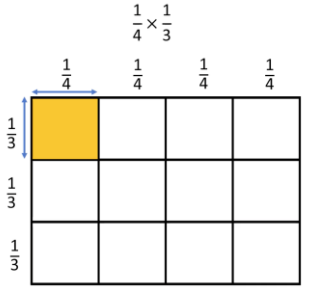
Key Vocabulary	Fractions - Definitions
Fractions	Equal parts of a whole or set, written as one number over another $\frac{a}{b}$
Integers	Whole numbers, including positive numbers, negative numbers, and zero (e.g., -3, 0, 5.
Numerators	The top numbers in fractions showing how many equal parts are selected.
Denominators	The bottom numbers in fractions showing the total number of equal parts in a whole.
Reciprocals	Is the number I need to multiply by to get an answer of 1
Products	The results obtained when two or more numbers are multiplied together.

Key Vocabulary	Definitions
Quotients	The results obtained when one number is divided by another.
Dividend	Is the total amount you start before you share or divide.
Divisor	The number you are dividing by.
Mixed	Mixed numbers consisting of a whole integer combined with a proper fraction e.g. $2\frac{1}{2}$
Improper	Fractions where the numerator is greater than or equal to the denominator e.g. $\frac{7}{3}$
Unit fraction	A fraction with a numerator of 1 e.g. ½).
Expression	A mathematical phrase containing numbers, operation symbols, or letters without an equal sign (e.g., ½ x a)
Commutative	A mathematical property where the order of numbers does not change the result (multiplication is commutative, but division is not).
Simplify	Writing a fraction in its simplest form by dividing the numerator and denominator by their highest common factor.

FRACTION WALL





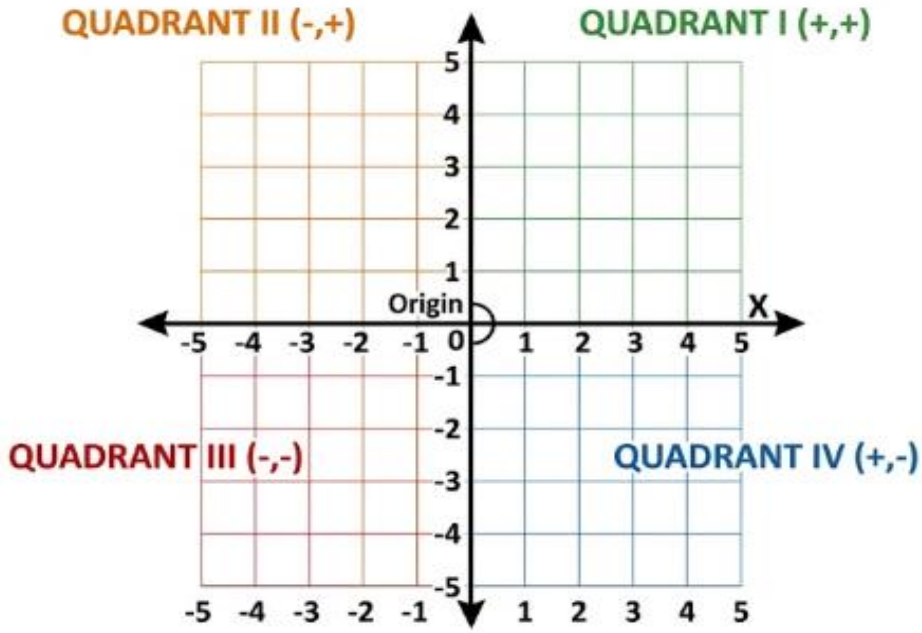


Mathematics - Cartesian Plane

Key Vocabulary	Definitions
Quadrant	One of the four regions formed by the intersection of the horizontal (x-axis) and the vertical (y-axis) axes
Coordinates	A pair of values (x, y) that gives the position of the point. An equation is the rule linking the x- and the y-coordinates
x-axis	The horizontal axis on a Cartesian plane.
y-axis	The vertical axis on a Cartesian plane.
Horizontal	Horizontal line – parallel to x-axis
Vertical	Vertical line – parallel to y-axis
Diagonal	A sloping line
Parallel	Lines that remain the same distance apart and never meet. Equations with the same gradient will be parallel lines
Scale	A ratio that compares the dimensions of a representation to the dimensions of a real object
Graph	A diagram that shows the relationship between values
Gradient	It shows the steepness of a straight line graph
Intercept	It shows where the graph (straight line or curve) meets one of the axes (x-axis or y-axis)
y-intercept	The value of y where a graph crosses the y-axis.
Negative gradient	A gradient less than zero; the line falls as x increases.
Straight line graph	A line graph with no bend or kink
Ratio	A way to compare two or more quantities by showing the relative size of one quantity to another
Curve	An object similar to a line, but it does not have to be straight
Midpoint	The point that lies exactly halfway between two points on a line segment

Key Vocabulary	Definitions
Equidistant	A point that is of equal distance from any other point
Segment	Segment (or line segment) is the part of a line that lies between two end points, including those two end points

Cartesian Plane



Every straight line has an equation in the form of:

$y = mx + c$

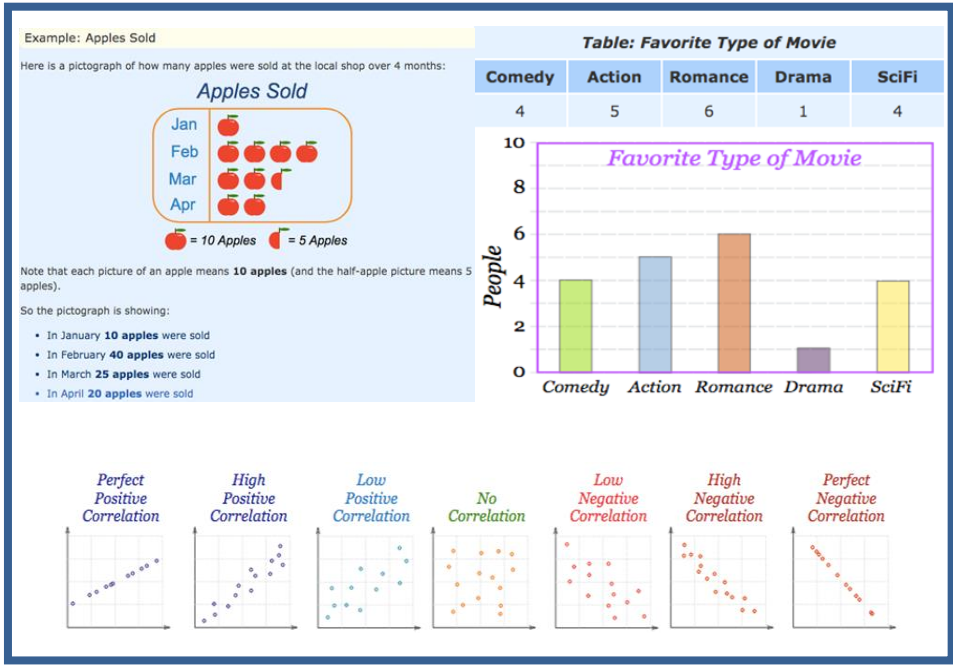
the steepness of the line
The **GRADIENT**

where the line cuts the y axis
The **y-INTERCEPT**

Mathematics - Representing Data

Key Vocabulary	Definitions
Data	Information that has been collected, usually so that it can be organised, represented and analysed.
Discrete data	A numerical data that can be counted
Continuous data	A numerical data that can be measured
Quantitative	Anything that can be measured, counted or expressed in numbers
Qualitative	Anything that describes qualities, rather than numbers
Variable	A symbol that represents a number (usually x or y)
Frequency	The number of times a particular value or category occurs.
Tally	A counting method using vertical marks
Frequency table	A table showing each value or category and how often it occurs.
Grouped Data	Numerical data organised into intervals or groups rather than listed as individual values
Class boundary	The values that lie exactly between the upper limit and the lower limit of classes
Positive correlation	It indicates that as one variable increases, the other variable tends to increase
Negative correlation	It indicates that as one variable decreases, the other variable tends to decrease
Line of best fit	It is drawn on a scatter plot to show the general direction that a group of points seems to follow
Extrapolate	To estimate a value beyond the range of known data points, based on the trend of existing data
Outlier	A data value that is much higher or lower than the rest of the data set

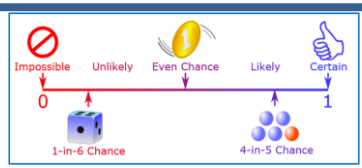
Key Vocabulary	Definitions
Range	The difference between the highest and the lowest number
Two Way Table	A table used to organise data according to two different characteristics.
Bar Chart	A graph using separate bars to represent the frequency of different categories or discrete values.
Tally Chart	A table in which tally marks are used to record frequencies.
Pictogram	A diagram that uses pictures or symbols to represent frequencies.
Pie Chart	A circular diagram divided into sectors so that each sector represents a proportion of the whole.



Mathematics - Probability

Key Vocabulary	Definitions
Event	Something that happens. e.g. rolling a dice. Playing a game, that has one or more possible outcomes.
Outcome	A single possible result of an experiment. e.g. rolling a 4 on a dice.
Sample space	The complete set of all possible outcomes of a random experiment
Set	A collection of objects, called elements, grouped together
Bias	Refers to a situation where outcomes of an experiment are skewed and don't have equal chance of occurring.
Fair	Every possible outcome of an event has an equal chance of occurring
Probability	The chance of something that is likely to happen
Intersection	Where two or more objects are meet each other
Union	The combination of all elements from two or more sets
Systematic	A structured, logical and step-by-step approach to solve problems
P (Event)	The probability of an event that is likely to happen
Product	The result from a multiplication from two or more numbers
Certain	An event that will definitely happen. Its probability is 1.
Impossible	An event that cannot happen. Its probability is 0.
Likely	An event that has a probability greater than 0.5 but less than 1

Key Vocabulary	Definitions
Unlikely	An event that has a probability greater than 0 but less than 0.5.
Even Chance	An event that is equally likely to happen or not happen. Its probability is ½ or 0.5.
Trial	One repetition of a probability experiment.
Venn Diagram	A diagram using circles to show how different groups or sets of objects or outcomes are related.
Sample Space Diagram	A diagram or table used to organise and display all the possible outcomes, particularly when considering two events. White Rose Year 8 includes calculating probabilities from sample spaces.
Relative frequency	The number of times an outcome occurs divided by the total number of trials.
Experimental probability	A probability estimated from the results of an experiment.
Theoretical probability	A probability calculated from known possible outcomes rather than experimental results.
Mutually exclusive events	Events that cannot happen at the same time in a single trial.
Complement	The event that a specified event does not happen.



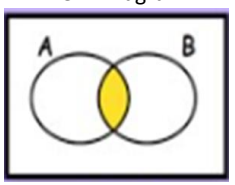
Theoretical Probability is a number between 0 and 1 representing the probability of something happening.

Number of favourable outcomes / Total number of outcomes

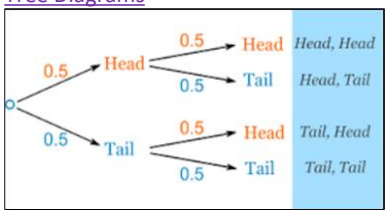
This sample space records all the possible outcomes of a game of rock, paper scissors

	ROCK	PAPER	SCISSORS
ROCK	RR	RP	RS
PAPER	PR	PP	PS

Venn Diagram



Tree Diagrams



Mathematics - Factorising, Equations, Sequences

Key Vocabulary	Algebra , Equations - Definitions
Variable	A quantity that can take different values and is usually represented by a letter.
Expression	A mathematical combination of numbers, variables and operations with no equals sign.
Term	One part of an algebraic expression, separated from other terms by addition or subtraction.
Coefficient	The number multiplying a variable.
Like terms	Terms containing exactly the same variable or combination of variables raised to the same powers.
Simplify	To write an expression in an equivalent but usually shorter or clearer form.
Collect like terms	To combine like terms into a simpler expression.
Expand	To remove brackets by multiplying each term inside a bracket by the term outside it.
Bracket	A symbol used to group mathematical terms or operations.
Factorise	To rewrite an expression as a product of its factors.
Equation	A mathematical statement showing that two expressions are equal.
Unknown	A value that is not yet known, often represented by a letter.
Solution	A value that makes an equation or inequality true.
Solve	To find the value or values that make an equation or inequality true.

Key Vocabulary	Equations - Definitions
Linear equation	Equation in which the highest power of the variable 1.
Inequality	A mathematical statement comparing quantities that are not necessarily equal.
Inequality symbol	A symbol such as <, >, <= or >= used to compare values.
Solution set	All values that satisfy an equation or inequality.
Substitution	Replacing a variable with a given value.

Key Vocabulary	Sequences - Definitions
Sequence	A set of numbers, shapes or objects arranged according to a rule or pattern.
Position	The place a term occupies in a sequence, for example 1st, 2nd or 3rd.
Term-to-term rule	A rule that tells you how to get from one term of a sequence to the next.
Arithmetic sequence	A sequence where the difference between consecutive terms is constant.
Common difference	The fixed amount added or subtracted to get from one term of an arithmetic sequence to the next.
nth term	An algebraic rule that gives the value of a term from its position in a sequence.
Position-to-term rule	A rule that connects the position number of a term to its value.
Fibonacci-type sequence	A sequence in which each term is generated by combining earlier terms in a specified way, commonly by adding the previous two.

Mathematics - FDP, Indices, Number sense

Key Vocabulary	Definitions
Decimal	A way of writing numbers using place value on both sides of a decimal point.
Percentage	A proportion expressed as a number of parts per hundred.
Equivalent fractions	Fractions that have the same value even though they are written differently.
Fraction-decimal-percentage equivalence	The fact that the same value can be represented as a fraction, decimal or percentage.
Percentage increase	An increase expressed as a percentage of the original amount.
Percentage decrease	A decrease expressed as a percentage of the original amount.
Percentage change	The change as a percentage of the original value.
Multiplier	A multiplier used to increase or decrease an amount by a percentage.
Reverse percentage	Finding an original amount when a value after a percentage change is known.
Standard form	A way of writing a number as A x 10^n, where 1 <= A < 10 and n is an integer.
Coefficient in standard form	The number A in A x 10^n, which is at least 1 but less than 10.
Power of ten	A number written as 10 raised to an integer power.
Negative power of ten	A power 10^n where n is a negative integer, representing a reciprocal power of ten.

Key Vocabulary	Indices - Definitions
Index	The small raised number indicating how many times a base is used as a factor.
Base	The number or expression that is raised to a power.
Power	A way of expressing repeated multiplication using a base and an index.
Index law	A rule for simplifying calculations involving powers with compatible bases.
Zero index	A power of zero; for any non-zero number a, a^0 = 1.
Negative index	An index that represents the reciprocal of the corresponding positive power.
Fractional index	An index that represents a root, or a combination of a root and a power.

Key Vocabulary	Number Sense - Definitions
Estimate	To find a value that is close to the exact answer.
Approximation	A value that is close to, but not necessarily exactly equal to, the actual value.
Round	To replace a number with a nearby value to a specified degree of accuracy.
Significant figure	A digit that contributes to the accuracy of a number, counting from the first non-zero digit.
Upper bound	The greatest possible boundary value for a rounded measurement or number.
Lower bound	The least possible boundary value for a rounded measurement or number.
Error interval	The interval of possible original values represented by a rounded value.
Degree of accuracy	The place value, decimal place or number of significant figures to which a value is rounded.
Estimation	The process of finding an approximate value, often by rounding values before calculating.

Mathematics - Parallel Lines and Polygons, Area of Shape

Key Vocabulary	Parallel Lines - Definitions
Angle	A measure of turn between two lines or line segments meeting at a point.
Parallel lines	Lines in the same plane that never meet.
Transversal	A line that crosses two or more other lines.
Corresponding angles	Angles in matching positions when a transversal crosses parallel lines; they are equal.
Alternate angles	Angles on opposite sides of a transversal; alternate interior angles are equal when the lines are parallel.
Co-interior angles	Interior angles on the same side of a transversal; when the lines are parallel, they sum to 180 degrees.
Vertically opposite angles	Opposite angles formed when two straight lines cross; they are equal.
Polygon	A closed 2D shape formed using straight line segments.
Regular polygon	A polygon in which all sides are equal and all interior angles are equal.
Interior angle	An angle inside a polygon at a vertex.
Exterior angle	An angle formed outside a polygon by one side and the extension of an adjacent side.
Interior angle sum	The total of all the interior angles of a polygon.
Exterior angle sum	The total of one exterior angle at each vertex of a polygon; it is 360 degrees.

Key Vocabulary	Area of circles - Definitions
Area	The amount of surface covered by a 2D shape, measured in square units.
Trapezium	A quadrilateral with at least one pair of parallel sides.
Circle	The set of all points in a plane that are the same distance from a fixed centre.
Centre	The fixed point inside a circle that is the same distance from every point on the circumference.
Radius	A line segment from the centre of a circle to its circumference.
Diameter	A line segment through the centre of a circle joining two points on the circumference; it is twice the radius.
Circumference	The distance around a circle.
Semicircle	Half of a circle, formed by a diameter and half of the circumference.
Sector	Part of a circle enclosed between two radii and the arc between them
Segment	Part of a circle enclosed by a chord and the arc between its endpoints.
Trapezium area	The area of a trapezium, found by multiplying half the sum of the parallel sides by the perpendicular height.
Area of a circle	The area enclosed by a circle, calculated using pi multiplied by the square of the radius.
Pi (π)	The constant ratio of circumference to diameter. Approximately 3.1415926536.....
Compound shape	A shape formed by combining two or more simpler shapes.

Mathematics - Transformation, Data Handling & Measures of Location

Key Vocabulary	Symmetry and Reflection - Definitions
Transformation	A process that changes the position, size or orientation of a shape according to a rule.
Symmetry	A property where a shape or object remains unchanged under a specified transformation.
Line symmetry	A property where a shape can be reflected in a line so that it maps exactly onto itself.
Line of symmetry	A line that divides a shape into two mirror-image halves.
Reflection	A transformation that maps each point to the opposite side of a mirror line at the same perpendicular distance.
Mirror line	The line in which a shape is reflected.
Object	The original shape before a transformation.
Image	The resulting shape after a transformation.
Perpendicular distance	The shortest distance from a point to a line, measured at a right angle to the line.

Key Vocabulary	Data Handling - Definitions
Data handling cycle	A process of posing a question, collecting data, processing and representing it, and interpreting the results.
Statistical enquiry	A process of asking a question, collecting suitable data, analysing it and drawing conclusions.
Population	The complete group being investigated.
Sample	A subset of a population selected for investigation.
Sampling	The process of selecting a sample from a population.
Primary data	Data collected first-hand for a particular purpose.
Secondary data	Data obtained from a source that has already collected it.
Questionnaire	A set of questions designed to collect data.

Key Vocabulary	Data Handling - Definitions
Bias	A systematic influence that makes data or conclusions unrepresentative.
Representative sample	A sample that reflects important characteristics of the population.
Hypothesis	A statement or prediction that can be investigated using data.
Conclusion	A statement reached from evidence, calculation or logical reasoning.

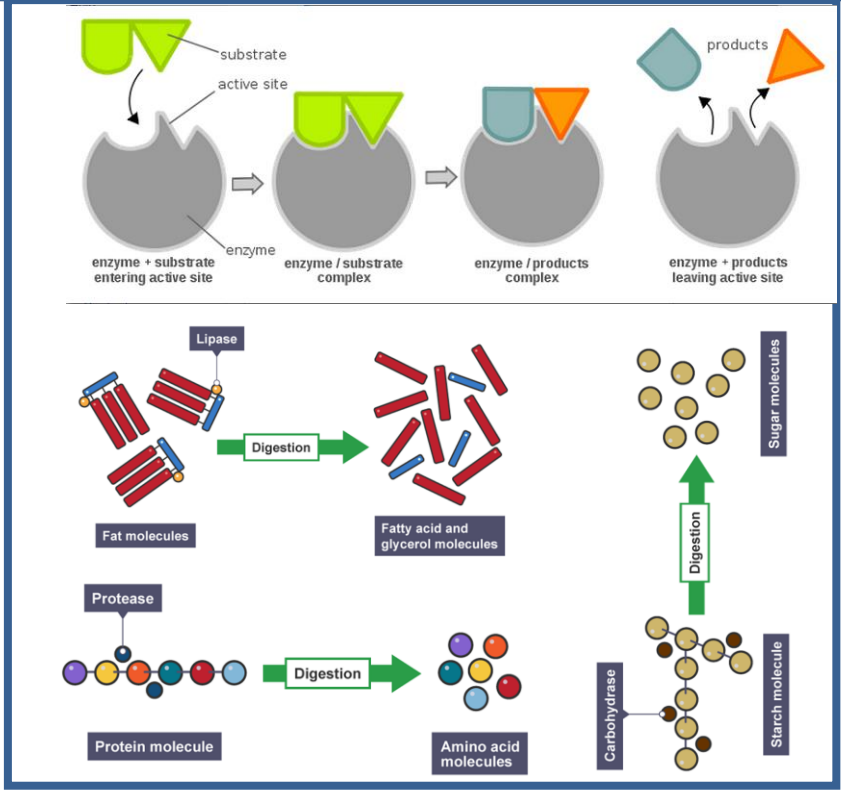
Key Vocabulary	Measures of location in data - Definitions
Mean	A measure of average found by dividing the total of a set of values by the number of values.
Median	The middle value when data is arranged in order; for an even number of values, it is the mean of the two middle values.
Mode	The value or category that occurs most often.
Range	The difference between the greatest and least values in a data set.
Modal class	The class interval with the greatest frequency.
Measure of central tendency	A value used to describe the centre of a data set, such as the mean, median or mode.
Measure of spread	A value used to describe how spread out a data set is.
Comparison of distributions	Using appropriate features such as averages and spread to compare data sets.
Outlier	Data value that is noticeably different to the others values in the data set. May affect how the data is interpreted.

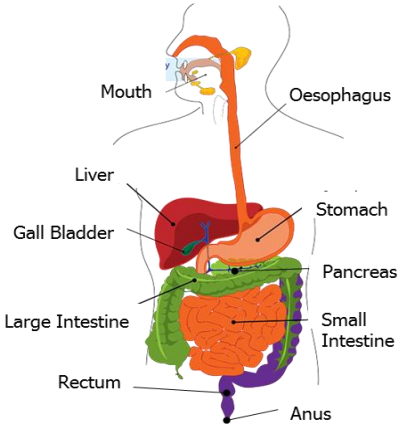
Science – Nutrition and Digestion

Food group	Found in...	Function
Carbohydrate	Potatoes, pasta, rice, bread	Quick source of energy
Protein	Meat, fish, eggs, dairy, seeds, nuts	Builds and repairs tissues
Fats (lipids)	Cheese, nuts, oily fish, chips, cakes	Stores energy, insulate us, protects organs
Fibre	Fruit, veg, wholegrain cereals	Prevents constipation, improves health
Minerals	Dairy, veg, fish, meat, nuts	Enables body to work & stay healthy
Vitamins	Fruit, veg, milk, eggs	Same as minerals
Water	Cucumber, drinks	Needed in cells, tissues & organs

Molecule	What is it made from?	Chemical Test	Positive results looks like
Sugar	Carbohydrates with one or two sugar units	Benedict's reagent and heat	Small amount = green Large amount = brick red
Starch	Complex carbohydrate made from long chain of glucose	Iodine	Turns black
Protein	Long chains of amino acids	Biuret reagent	Turns purple
Lipid / Fat	3 fatty acids bonded to a glycerol molecule	Ethanol Sudan III	Cloudy emulsion Red top layer

Key Vocabulary	Definitions
Digestion	Digestion is the break down of large insoluble molecules into small soluble molecules, so that they can be absorbed by the body.
Deficiency	When the body does not get what it needs from a balanced diet leading to health problems.
Villi	Finger like projections in the small intestine that increase surface area, helping with absorption

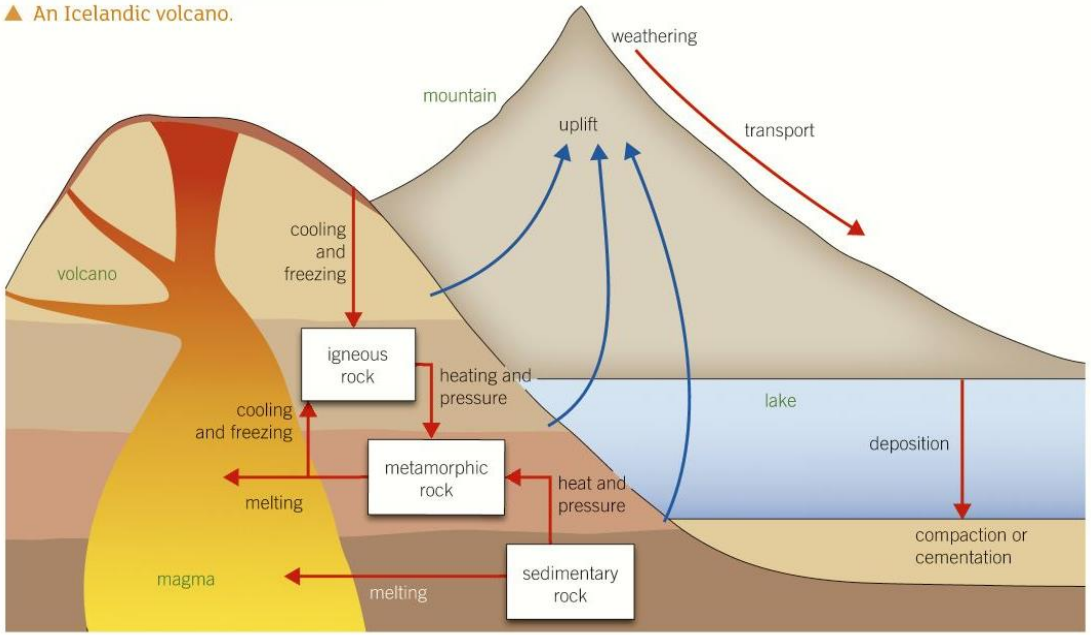




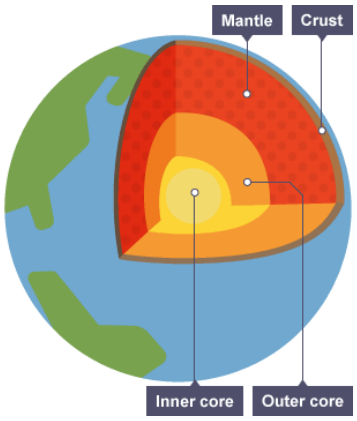
Science – Earth and Atmosphere

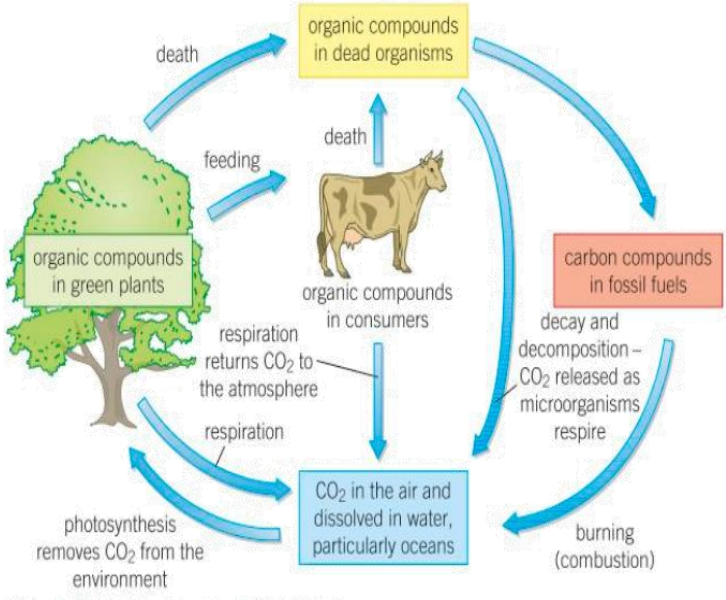
Key Vocabulary	Definitions
Core	Inner most layer of the Earth – made up of nickel.
Mantle	The largest part of the Earth's layers – heat convects through this to contribute to tectonic plate movement.
Crust	The outer most layer of the Earth. Tectonic plates are found here.
Atmosphere	A mixture of gases that surround the planet and support life.
Magma	Molten rock underground.
Lava	Molten rock at the surface of the Earth.
Igneous	Rocks that have been formed from the cooling of molten rock e.g. basalt, granite.
Sedimentary	Rocks formed by small rock pieces being transported by rivers and laid down in layers e.g. limestone, sandstone.
Metamorphic	Rock that is formed from another rock that is under high pressure and high temperature e.g. marble, slate.
Renewable	A resource that can be replaced quickly e.g. wind.
Finite	A resource that will eventually run out e.g. coal.
Carbon Cycle	A series of processes where carbon is recycled around the environment.

▲ An Icelandic volcano.



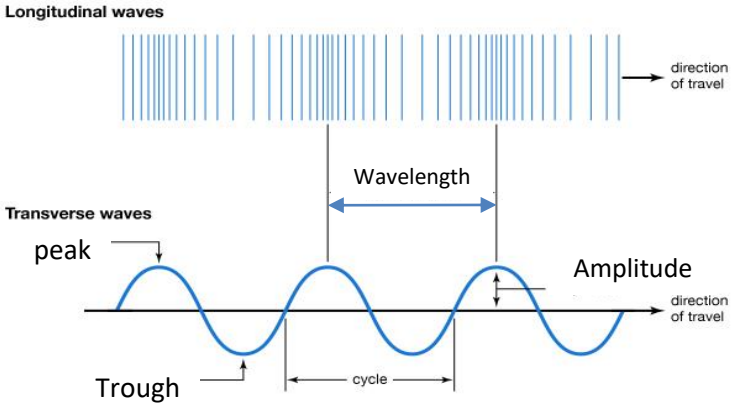
▲ The rock cycle.

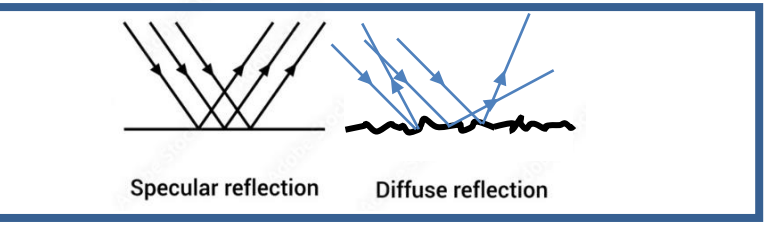


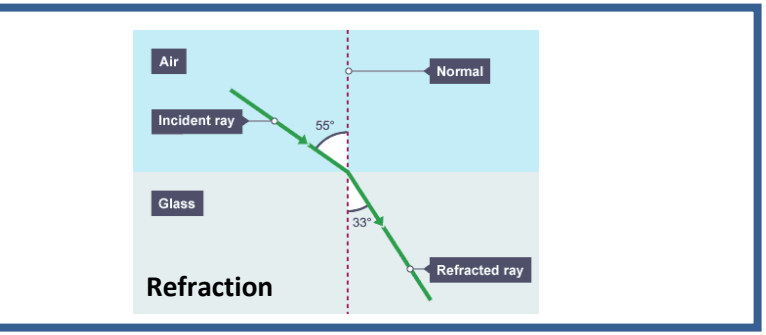


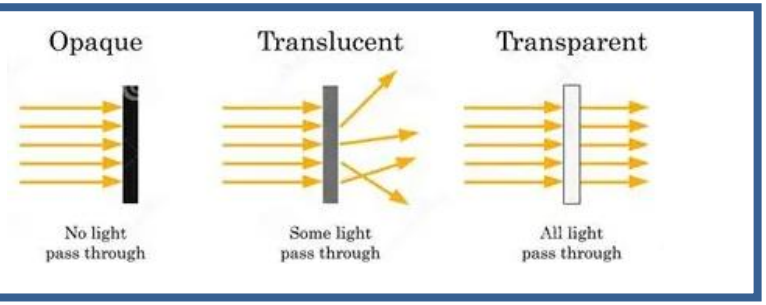
Science: Waves, light and sound

Key Vocabulary	Definitions
Wave	An oscillation that transfers energy without transferring matter
Oscillation	A back and forth motion or vibration in a medium
Medium	A material or substance e.g. Air, steel, water
Longitudinal wave	A wave where the oscillation is in the same direction to the direction of the wave motion
Transverse wave	A wave where the oscillation is at right angles to the direction of the wave motion
Frequency	The number of waves that pass a point each second (in Hertz, Hz)
Amplitude	The Maximum height of a wave from the rest position
Wavelength	The distance between two similar parts of a wave, e,g. from Peak to Peak
Pitch	How high or low a sound is (high frequency – high pitch, low frequency = low pitch)
Echo	A reflected sound wave
Reflection	When a wave changes direction when it hits a medium boundary back into the medium from which it originated
Refraction	When a wave changes direction when entering a new medium. Caused by a change in speed of the wave in the new medium
Normal line	A line drawn at 90 degrees to the medium boundary
Transparent	Material which light can travel / transmit through
Translucent	Material partially transmits light through, light is scattered so image appears blurry
Opaque	Material which does not transmit light (let light pass through)



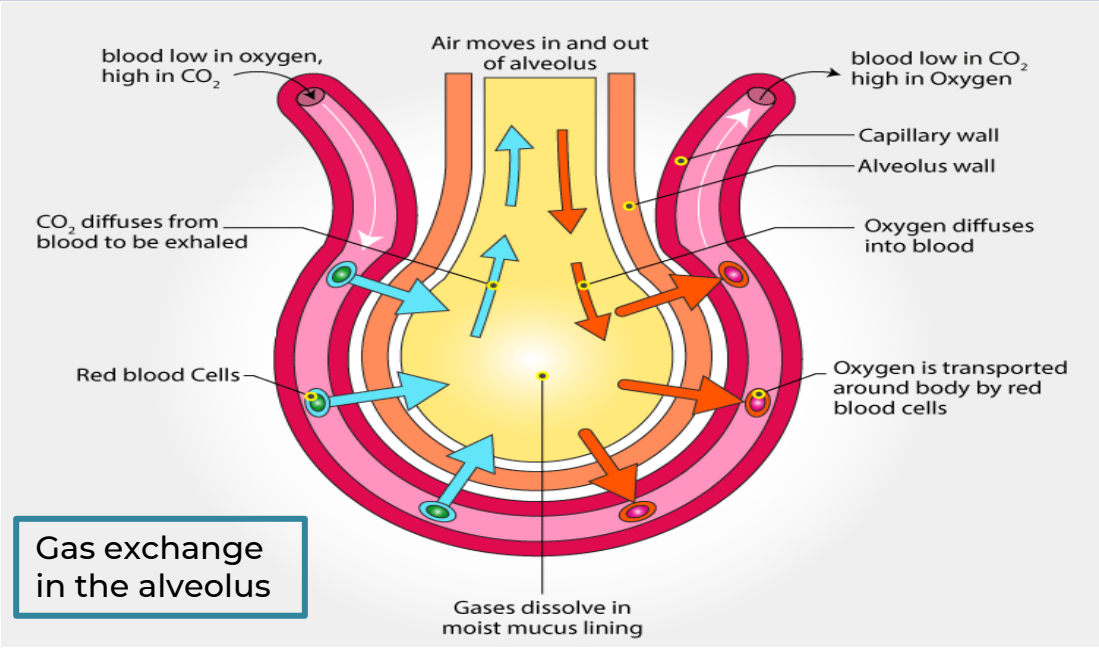






Science – Gas Exchange

Key Vocabulary	Definitions
Aerobic Respiration	Respiration that requires oxygen
Trachea	Windpipe, air passes between mouth and lungs.
Lung	Soft organ that inflates to draw in oxygenated air and deflates to expel air.
Bronchi	Branches off the trachea that distribute air to both lungs.
Bronchioles	Branches of the bronchi, that distribute the inhaled air throughout all of the lungs.
Alveoli	Tiny air sacs in the lungs, where gas is exchanged during breathing.
Intercostal muscles	Muscles between the ribs. They contract and relax with the diaphragm.
Diaphragm	A dome-shaped flat sheet of muscle under the lungs. It contracts and relaxes with the intercostal muscles during breathing.
Aerobic Respiration	Process in all living things where glucose is broken down to release energy.
Anaerobic Respiration	Respiration without oxygen.
Mitochondria	Organelle found in the cytoplasm of all cells where aerobic respiration takes place
Lactic Acid	Produced during anaerobic respiration, it is toxic and stops the muscles contracting properly.
Oxygen Debt	Extra oxygen required by the body to recover after vigorous exercise.



Gas exchange in the alveolus

Aerobic respiration in animals

Glucose + oxygen → carbon dioxide + water + energy

Anaerobic respiration in animals

Glucose → lactic acid + energy

Anaerobic respiration in plants and yeast

Glucose → ethanol + carbon dioxide

Science: Periodic table

Keyword	Definition – Periodic table
Atom	The smallest particle of an element made up of protons, neutrons and electrons
Atomic number	The number of protons found in an element, this is equal to the number of electrons.
Chemical Symbol	A symbol given to each element that includes a capital letter and sometimes a lower case letter.
Compound	Two or more different elements, chemically bonded together.
Diatomic	A molecule formed from 2 identical elements combined e.g. F_2
Element	A pure substance with only one type of atom.
Group	A column of elements on the periodic table.
Mendeleev	Russian chemist who came up with the first periodic table, he organised the elements in order of atomic mass and grouped them together in similar properties. He left gaps for undiscovered elements. These elements were later discovered supporting Mendeleev's idea.
Mixture	A group of elements or compounds found together that can be separated.
Molecule	More than one atom chemically bonded together.
Newlands	British chemist who created the law of Octaves.
Period	A row of elements on the periodic table.
Relative atomic mass	The mass of the element based on the protons and neutrons found in the nucleus.

1	2											3	4	5	6	7	0
							1 H hydrogen 1										4 He helium 2
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86
[223] Fr francium 87	[226] Ra radium 88	[227] Ac* actinium 89	[261] Rf rutherfordium 104	[262] Db dubnium 105	[266] Sg seaborgium 106	[264] Bh bohrium 107	[277] Hs hassium 108	[268] Mt meitnerium 109	[271] Ds darmstadtium 110	[272] Rg roentgenium 111	[285] Cn copernicium 112	[286] Uut ununtrium 113	[289] Fl flerovium 114	[289] Uup ununpentium 115	[293] Lv livermorium 116	[294] Uus ununseptium 117	[294] Uuo ununoctium 118

Key: relative atomic mass, **atomic symbol**, name, atomic (proton) number

Metals

Non-metals

* The Lanthanides (atomic numbers 58 – 71) and the Actinides (atomic numbers 90 – 103) have been omitted.

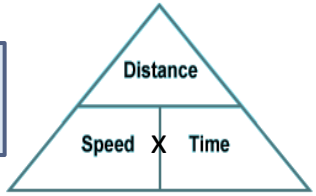
Relative atomic masses for **Cu** and **Cl** have not been rounded to the nearest whole number.

Word equations	Chemical reactions can be shown by a word equation E.g. Potassium + Water → Potassium Hydroxide + Hydrogen
Symbol equations	Chemical reactions can be shown by Symbol equations E.g. $K + H_2O \rightarrow KOH + H_2$
Alkali Metals	Group 1 is known as the Alkali metals. These are very reactive metals. As you go down group 1 their reactivity with oxygen and water increases and they get softer. They form an alkali solution and hydrogen when they react with water.
The Halogens	Group 7 elements are known as the Halogens. They are non-metals. As you go down group 7 the elements get less reactive and their melting and boiling points increase.
Displacement reaction	A more reactive metal will displace a less reactive metal from its compound
Metal Properties	Metals are generally hard, strong, sonorous, ductile, malleable, with high melting points.

Science : Speed and motion

Key Vocabulary	Definitions
Balanced forces	The object is stationary or moving at a constant speed
Unbalanced forces	The object is changing speed or changing direction or shape

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



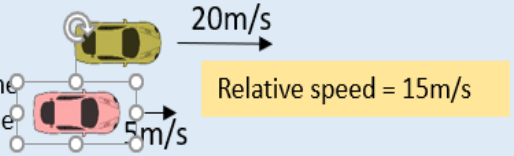
Stopping distance

A cars **Stopping distance** is made up of **Thinking distance** (reaction time) and **braking distance** (the distance you travel once you have applied the brakes)



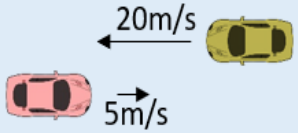
Relative motion

For two objects moving in the same direction, the relative motion is the **difference** between their speeds.



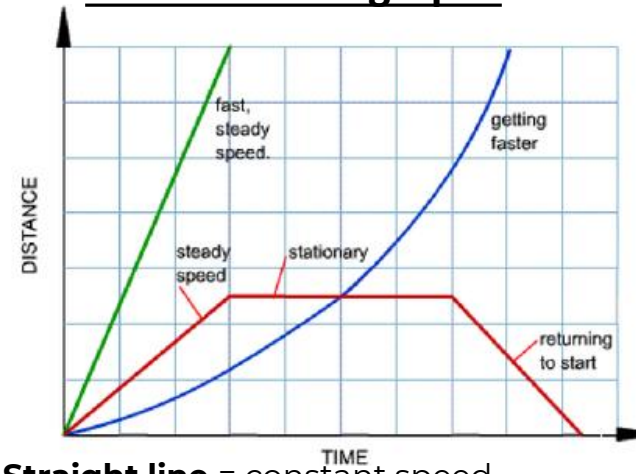
Relative speed = 15m/s

For two objects moving towards each other, the relative motion (sometimes called the approach speed) is the two speeds **added** together.



Relative speed = 25m/s

Distance time graphs

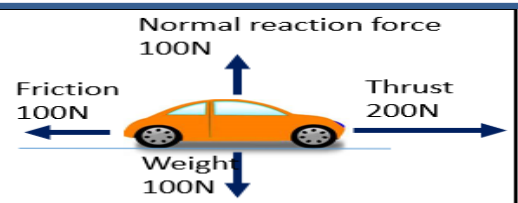


Straight line = constant speed
Horizontal straight line = stationary
Curved line = accelerating or decelerating

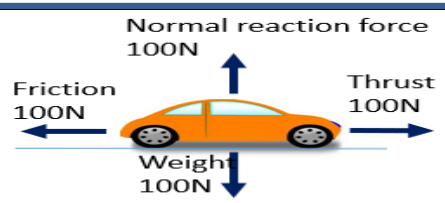
Car Safety Features:

Features to research:

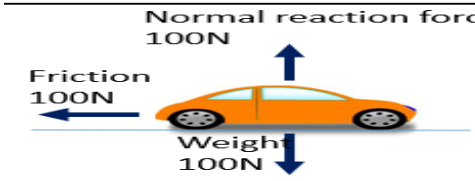
- Seat belts
- Air bags
- Crumple zones
- Child seats
- Side impact protection (SIPs)
- Electronic driver aids



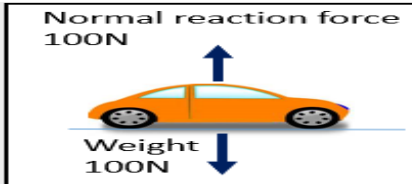
This car is accelerating as it has a larger thrust force than friction force (The resultant force is 100N →)



This car is travelling at a constant speed as it has an equal thrust force and friction force (The resultant force is zero)



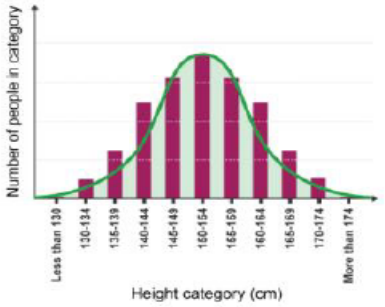
This car is decelerating as it has a larger friction force than thrush force (The resultant force is 100N ←)



This car is stationary as there is no friction or thrust forces (the resultant force is zero)

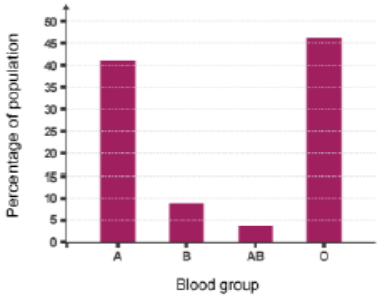
Continuous Variation

Human height is an example. It ranges from the smallest person on Earth to the tallest. Continuous variation shows characteristics that change gradually over time.



Discontinuous Variation

A characteristic of any species with only a limited number of possible values. Eye colour and blood group are examples.



DNA discovery

Rosalind Franklin made images of DNA in the 1950s and using her work James Watson and Francis Crick worked out a model for the structure of DNA. This model was then shown to be correct by Maurice Wilkins.

Watson and Crick worked out that in a DNS molecule:

- There are two strands
- The strands are twisted in a double helix
- The strands are held together by bonds between base pairs

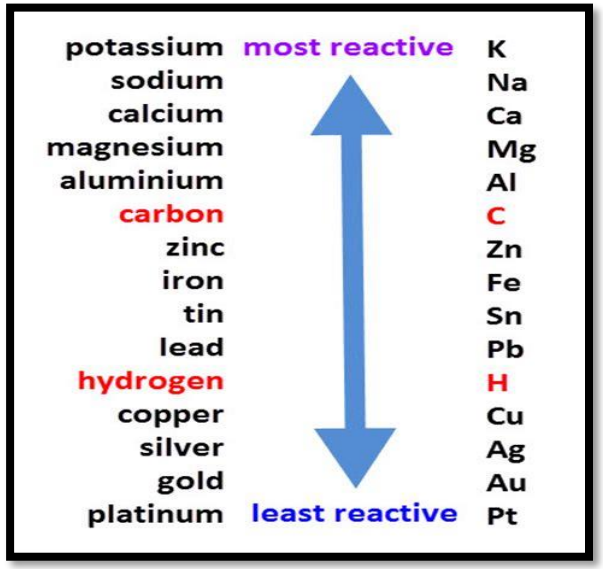


Chromosome



Key Vocabulary	Definitions
DNA	Genetic material. DNA is a polymer made up of two strands forming a double helix. The DNA makes up chromosomes.
Gene	A gene is a small section of DNA on a chromosome.
Chromosome	A long coil of DNA. Found in the nucleus.
Heredity	The passing on of characteristics and traits from parents to offspring.
Natural selection	The process by which the individuals best adapted to the environment survive and pass on their genes.
Species	Organisms that can produce fertile offspring.
Continuous variation	Variation that shows a wide range of intermediate values between two extremes. These can be measured e.g. hand span.
Discontinuous variation	Differences between individuals in a characteristic that can only be put into different categories e.g. blood groups.
Biodiversity	The variety of plant and animal life in a particular habitat.
Variation	Differences between individuals.
Extinction	Where there are no more individuals of a species alive.

Key Vocabulary	Definitions
Activation Energy	The minimum amount of energy that colliding particles must have for the to react
Catalyst	A substance that increases the rate of reaction but is not itself used up
Combustion	Burning fuel in oxygen e.g. Methane + oxygen → carbon dioxide + water
Displacement	A more reactive metal will displace a less reactive metal from its compound
Endothermic	Reactions that take in heat
Exothermic	Reactions that give out heat
Fuel	Contains hydrocarbons – compounds which contain only carbon and hydrogen atoms
Oxidation	Reaction of other elements with oxygen
Polymer	Long chain molecules made up of many monomers
Reactivity Series	List of metals in order of how reactive they are
Thermal decomposition	When a substance is broken down into two or more products by heat



Displacement Reactions

Displacement reactions involve a metal and a compound of a different metal. In displacement reactions, a more reactive metal will displace a less reactive metal from its compound.

Magnesium + Copper Sulfate → Magnesium Sulfate + Copper

Magnesium is more reactive than copper, so it displaces (pushes out) the copper within the compound.



Metal oxide + acid → salt + water

Help with naming the salt:

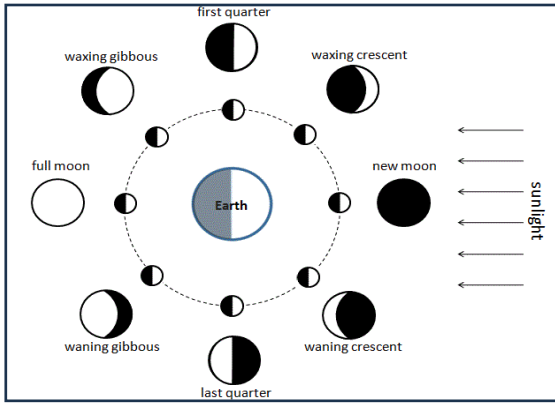
Hydrochloric acid makes chlorides.

Sulphuric acid makes sulphates.

Nitric acid makes nitrates.

Science: Space

Key Vocabulary	Definitions – Space
Universe	Everything that exists, including all stars, planets, galaxies, space, and time.
Galaxy	A huge collection of hundreds of billions of stars, gas, dust, and planets held together by gravity.
Milky Way	The galaxy that contains our Solar System.
Solar System	The Sun and all the objects that orbit it, including planets, moons, asteroids, and comets.
Star	A large ball of hot gas that produces its own light and heat through nuclear fusion.
Sun	The star at the centre of our Solar System.
Planet	A large spherical object that orbits a star and does not produce its own light.
Moon	A body that orbits a planet, sometimes called a natural satellite.
Orbit	The curved path followed by an object moving around another object due to gravity.
Gravity	The force that attracts objects with mass towards each other.
Asteroid	A rocky object that orbits the Sun, usually found in the asteroid belt between Mars and Jupiter.
Comet	A small icy object that orbits the Sun and develops a glowing tail when it gets close to the Sun.
Meteor	A streak of light seen when a piece of rock burns up in Earth's atmosphere.
Meteorite	A piece of space rock that survives its journey through the atmosphere and reaches Earth's surface.
Artificial Satellite	A human-made object placed into orbit around Earth or another body in space.
Axis	An imaginary line through the centre of a planet about which it spins.
Day	The time taken for Earth to rotate once on its axis.
Year	The time taken for Earth to complete one orbit around the Sun.
Season	A period of the year caused by Earth's tilted axis as it orbits the Sun.

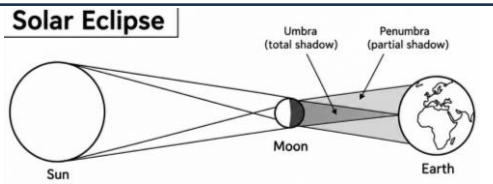


The moon has different phases due to the relative positions of the Earth, Moon and Sun.

Big Bang	The event that marks the beginning of the Universe, when all matter and energy started expanding from a very hot, dense point.
Red shift	The apparent observed increase in wave length of light from galaxies that are moving away from us. All distant galaxies show redshift. Showing the universe is expanding.
Light Year	The distance that light travels in one year, used to measure distances in space.
Nebula	A cloud of gas and dust in space where stars can form.
Solar eclipse	A solar eclipse happens when the Moon moves between the Sun and the Earth, blocking some or all of the Sun's light. The sun and moon have the same apparent size in the sky on earth.
Luna eclipse	Lunar eclipse – When Earth blocks the Sun's light from reaching the Moon, causing the Moon to darken and appear more red.

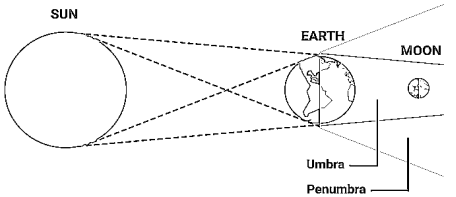


Solar eclipse





Luna eclipse



1. COMPUTER NETWORKS

Internet	A **global network** of **interconnected computers** that **communicate** using **standard protocols**, enabling the **sharing** of **information** and **resources**.
World Wide Web (WWW)	A system of **interlinked hypertext documents** and **multimedia content** accessed via the **Internet** using **web browsers**.
URL	(**Uniform Resource Locator**) The address used to access resources on the **World Wide Web**.
IP Address	A **unique numerical label assigned** to **each device connected** to a **computer network** that uses the **Internet Protocol** for **communication**.
Protocol	A **set of rules** governing the **exchange** or **transmission** of **data** between **devices**.
Wide Area Network (WAN)	A **telecommunications network** that extends over a **large geographic area**.
Local Area Network (LAN)	A **network** that **connects computers** within a **limited** area, such as a **residence**, **school**, or **office** building.
Data Packets	Small **units** of **data** transmitted over a **network**, containing both the data **being sent** and **information** for **routing**.
Packet Switching	A method of **data transmission** where **data** is **broken into packets** and **each packet** is sent **independently** over the network.
Domain Name	A **human-readable address** used to **identify** a **location** on the **Internet**, which is **translated** into an **IP address** by the **Domain Name System** (**DNS**).
Client-Server Network	A **network architecture** where **client devices** request **resources** and **services** from **centralised servers**.
Peer-to-Peer Network	A **decentralised network** where each device, or "**peer**," can **act** as both a **client** and a **server**.
Cloud Computing	The **delivery** of **computing services** over the **Internet**, allowing for **on-demand access** to **resources** such as **storage** and **applications**.

2. GRAPHICS

Vector Graphic	An **image** created using **mathematical equations** to **define geometric shapes** like **points**, **lines**, **curves**, and **polygons**.
Bitmap (Raster) Graphic	An image composed of a **grid** of **individual pixels**, each holding a **specific colour value**.
Pixel	The **smallest unit** of a **digital image**, representing a **single point** of **colour**.
Properties	**Attributes** that **define** the **appearance** and **behaviour** of an **object** in graphic design, such as **position**, **fill colour**, **stroke colour**, and **dimensions**.
Scalable	The ability of an image or graphic to be **resized** without **losing quality**. Vector graphics are **inherently scalable**.
Analogous Colour Scheme	A **colour scheme** that uses **colours adjacent** to each other on the **colour wheel**.
Complementary Colour Scheme	A **colour scheme** that **pairs colours opposite** each other on the **colour wheel**.
Monochromatic Colour Scheme	A **colour scheme** that utilises variations in **lightness** and **saturation** of a **single colour**.
DPI (Dots Per Inch)	A **measure** of an **image's resolution**, indicating the **number** of **individual dots** that can be placed within a **linear inch**.
Gradient Fill Effects	A **visual effect** where one **colour** gradually **transitions** into **another**.
Saturation	The **intensity** or **purity** of a **colour**.
Brightness	The **lightness** or **darkness** of a **colour**.
Contrast	The **difference** in **luminance** or **colour** that makes **objects distinguishable** from one another.
Resolution	The **detail** an **image** holds, typically measured in **pixels per inch** (**PPI**) or **dots per inch** (**DPI**).
Layer	The stacking of **multiple images** or **elements**, enabling independent **editing** and **manipulation** of each layer.
White Space	Refers to the **unmarked areas** of a design. Effective use can enhance **visual appeal** and **readability**.

COMPUTER SCIENCE - 3. HTML & WEBSITE DEVELOMENT & 4. DATABASE DEVELOPMENT

3. HTML & WEBSITE DEVELOMENT

HTML	(**HyperText Markup Language**) The standard **markup language** used to **create** and **structure content** on the **web**.
Tag	A **code element** in HTML that defines how **content** is **structured** or **displayed**. Tags are enclosed in **angle brackets**, e.g., <p> for a paragraph.
Attribute	A **modifier** of an **HTML element** that provides **additional information**. Attributes are included within the **opening tag** and usually come in **name/value** pairs, e.g., href="https://example.com" in an <a> tag.
CSS (Cascading Style Sheets)	A **stylesheet language** used to describe the **presentation** of a **document written** in **HTML** or **XML**. **CSS** controls the **layout**, **colours**, **fonts**, and overall **visual appearance** of a web page.
Style	A rule that **defines** the **appearance** of an **element** on a web page, specified using **CSS properties** and **values**.
Text Editor	A program that allows users to **write** and **edit plain text**, often used for **coding**. Examples include **Notepad**, **Sublime Text**, and **Visual Studio Code**.
Web Browser	A **software application** used to **access** and **display web pages**. Examples include **Google Chrome**, **Microsoft Edge**, **Mozilla Firefox**, and **Safari**.
Navigation	The system that allows users to **move** through **different sections** or **pages** of a **website**, typically implemented using **menus**, **links**, and **buttons**.
Responsive Design	An **approach** to **web design** that makes **web pages** render well on a **variety** of **devices** and **window** or **screen sizes**.
Hyperlink	A **reference** in an **HTML document** that **links** to another **document** or **resource**. Created using the <a> tag with the href attribute.
Template	A **pre-designed structure** or **layout** for a **web page** that can be **reused** to maintain **consistency** across **multiple pages**.

4. DATABASE DEVELOPMENT

Flat-File Database	A **database** that **stores data** in a **single table** or **worksheet**, with no **structural relationships** between **records** beyond the **table** itself.
Relational Database	A **database structured** to recognize **relationships** among **stored items** of information, **organising** data into **tables** that can be **linked** by **common fields**.
Table	A collection of **related data entries** consisting of **rows** and **columns**; in relational databases, tables are also known as **relations**.
Column	A **vertical set** of **data values** in a table, representing a **specific attribute** or **field** of the data.
Record	A **horizontal** set of data values in a **table**, representing a **single item** or **entity**; also known as a **row** or **tuple**.
Field	A **single piece** of data or attribute for a **record** in a table; **represented** by a **column**.
Query	A **request** for **data** or **information** from a **database table** or **combination** of **tables**, often using **specific criteria** to **filter** the **results**.
Parameter	A **variable** used in a **query** to **filter data dynamically**, allowing **users** to **input** criteria at **runtime**.
Criterion (plural: Criteria)	A **condition** or set of **conditions** used to **filter data** in a **query**.
Primary Key	A **field** or **combination** of **fields** that **uniquely identifies** each **record** in a table, **ensuring** that **no two records** have the **same primary key** value.
Linked Tables	Tables that are **connected through relationships**, typically using **primary** and **foreign keys** to **associate related data across tables**.

5. INTRODUCTION TO PYTHON

Integrated Development Environment (IDE)	A **software application** that provides comprehensive facilities to **computer programmers** for software **development**. It typically includes a **code editor**, **debugger**, and **build automation tools**.
IDLE	The default **IDE** for **Python**, which stands for "**Integrated Development** and **Learning Environment**." It allows programmers to **write**, **edit**, and **execute** Python code in an **interactive** mode.
Interactive Mode	A **mode** where Python **commands** are **executed one** at a **time**, and the results are **returned** immediately. This is useful for **testing** and experimenting with **code snippets**.
Script Mode	A mode where Python code is **written** in a **file** (**script**) and **executed** as a **whole**. This is used for writing **programs** that are more than a **few lines** long.
Variable	A **named location** in **memory** used to store **data** that can be changed during program **execution**. In Python, variables are created by **assigning** a **value** using the **equals** sign **(=).**
String	A sequence of **characters** enclosed within single **(' ')** or double **(" ")** quotes. Strings are used to represent **text** in Python.
Syntax	The **set** of **rules** that defines the combinations of symbols considered to be **correctly structured** programs in a programming language.
Assignment Statement	A statement that **assigns** a **value** to a **variable**. In Python, this is done using the equals sign (=), e.g., x = 5.
Augmented Assignment Operator	**Operators** that combine an **operation** with **assignment**, such as += (addition assignment) or *= (multiplication assignment). For example, x += 1 is equivalent to x = x + 1.
Data Type	A **classification** that specifies which **type** of **value** a **variable** has and what **type** of **operations** can be applied to it. Common data types in Python include **integers**, **floats**, and **strings**.
Integer	A **whole number** without a **fractional part**. In Python, integers are of type **int**.

5. INTRODUCTION TO PYTHON (CONTD.)

Float	A **number** that has a **decimal point** or is in **exponential** (scientific) notation. In Python, floating-point numbers are of type **float**.
Round	A built-in function in Python that **rounds** a **floating-point** number to a specified **number** of **decimal places**. For example, round(3.14159, 2) returns 3.14.
Selection	A **programming construct** that allows for **decision-making**, typically implemented using **if**, **elif**, and **else** statements in Python.
Sequence	The **specific order** in which **instructions** are **executed** in a program. In Python, code is **executed line by line** from **top** to **bottom** unless control flow statements say otherwise.
Iteration	The **repetition** of a **block** of **code**. In Python, iteration is commonly implemented using **loops**, such as **for loops** and **while loops**.
Module	A **file** containing **Python code** that can be **imported** and used in **other** Python **programs**. Modules allow for code **reusability** and **organisation**.
Function	A **block** of **reusable code** that performs a **specific task**. Functions can accept **input parameters** and can **return** a **result**. In Python, functions are defined using the **def** keyword.
Syntax Error	An **error** in the **structure** of a **program** that prevents it from being understood by the **interpreter**. **Syntax errors** occur when the code does not **conform** to the **rules** of the **programming language**.
Logic Error	An **error** that occurs when a **program runs** without **crashing** but produces **incorrect results**. This happens when the **logic** used in the program is **flawed**.
Debug	The process of **identifying**, **analysing**, and **removing errors** from computer programs.
Binary Search	An **efficient algorithm** for finding an **item** from a **sorted** list of items. It works by **repeatedly dividing** in **half** the portion of the list that **could contain** the item until the possible locations are reduced to just **one**.

Key Vocabulary	
Catholic	Christian led by the pope. Services in Latin. Churches had lots of decorations and gold.
Protestant	Christianity developed in the reformation, protesting corruption of the Catholics
Reformation	Movement to improve the church and replace corrupt Catholic practices.
Indulgence	Payment that could be made to supposedly remove sins to get straight into heaven.
Pope	Leader of the Catholic church, lived in Rome.
Martin Luther	German monk who led the reformation by listing 95 complaints about the church
Act of Supremacy	1534 Act which made the Monarch (Henry VIII) the supreme head of the Church
Annulment	Declaring a marriage to be invalid, avoiding the need for divorce
Illegitimate	A Child born out of marriage who therefore cannot inherit from their parents
Church of England	Protestant religious in England with the monarch as the head of the church
Monastery	Religious place where monks and nuns live, worship and serve the community
Dissolution	Formally ending, removing or destroying something
Heresy	Crimes against the country's state religion
Treason	Crimes against the monarch or government
Heir	Next person in line who will inherit titles or property
Puritan	An extreme form of Protestantism who wanted strict church reforms.

Tudor Monarchs	
Henry VIII, 1509-1547	1534: Creates Church of England with himself at head. Motivation: Money, power, divorce. 1356: Closes monasteries. Remains privately Catholic and did not change daily worship.
Edward VI, 1547-1553	King at age 9. Supported by 'protectors' – Seymour and Dudley who were Puritans. Protestant reforms: such as the new English Prayer book, removing all statues, painting and relics.
Lady Jane Grey	Edward tried to disinherit his Catholic sister from the throne and chooses Lady Jane Grey (a protestant) as his heir. However, the people do not support this and Mary I is backed as Queen. She marches on London and Lady Jane Grey is executed.
Mary I, 1553-1558	Catholic and married to king of Spain. Returned England to Catholic and ordered 284 Protestants to be burnt at the stake as 'heretics'. Given the nickname 'bloody Mary' for her executions.
Elizabeth I, 1558-1603	Protestant and returned to the Church of England. Tried to create a 'middle way' which appealed to most people. She punished both extreme Catholics and extreme protestants. She allowed Catholic worship in private.

Key Vocabulary	
Middle Way	Elizabeth's Religious settlement that tried to find a balance between Protestantism and Catholicism
Excommunicate	To be removed and excluded from the Catholic Church
Golden Age	A period of peace and prosperity with success in areas like science, politics, art, culture, economics.
Renaissance	A period that sees renewed interest in ideas of Ancient Greece and Rome – 'Rebirth'
Inflation	Prices of goods increase and the value of money decreases,
Puritan	A Protestant with extreme beliefs on how to worship
Culture	Literature, Music, Architecture also called 'The Arts'
Economy	The process or system by which goods and services are produced, sold, and bought in a country
Political Stability	A period that sees stable politics in a country, free of disruption, conflict, changes to government
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Spanish Amada

The **Spanish Armada** was a large fleet of ships sent by **Spain in 1588** to invade **England**. It was ordered by **King Philip II of Spain**. Its main purpose was to overthrow **Queen Elizabeth I**, restore Catholic rule in England, and stop English attacks on Spanish ships. The Armada was defeated by the English navy, helped by bad weather and strong defensive tactics.

Francis Drake	2nd in command of the English. Experienced and successful sailor in England.
Medina-Sidonia	Spanish leader: Chosen for rank. Had no experience at sea and a weak commander.
Phillip II	King of Spain. Had been married to Elizabeth's sister, Mary
Fire Ships	Tactic used by the English of sacrificing 8 ships, setting them on fire and sending into enemy ships to make them flee.

Why did the Spanish Armada Fail?

English Skill	Preparation and spies looking out for ship. Better commander (Drake) able to change tactics throughout the battle. Smaller, faster ships. Ability to sail into the wind to get desirable location. Canons used to avoid hand-to-hand combat. Fireship tactics forced the Spanish to break formation.
Spanish Mistakes	More priests than experienced soldiers. Used crescent formation (defensive only). Over reliance on hand-to-hand. Poor organisation, ran out of supplies. Panicked during fire ships and cut anchors despite no of own ships being on fire.
Luck	Ships fled north and struck by a terrible storm, many died of dehydration or were killed in Scotland and Ireland.

History - Stuarts and the English Civil War

James I
First Stuart King of England (1603-25). Replaced Elizabeth I. Mother was Mary of Scots, executed in 1587. Unlike his Catholic mother, James was a strong Protestant. Believed in the Divine Right. Faced gunpower plot by Guy Fawkes in 1605

Charles I	
Charles I	Son of James I. Second Stuart monarch (1625-49). Married a French Catholic. He went to war with Parliament – and lost.
Causes of the Civil War	**Political** - Believed in divine right of kings and did not want to share power with parliament. Ruled for 11 years without parliament. This was known as **personal rule** or the **11 years tyranny.** In Jan 1642 tried to arrest 5 MP's. **Religious** - Married a Catholic (Henrietta Maria). **Laud's Reform,** new religious policies which appeared catholic. Forced the Scottish to use his new English book of prayer **Economic** - Parliament refused to grant Charles taxes unless he gave them more power. Collected **ship tax** illegally. (Supposed to be only in coastal towns in times of war. Charles collected every year from entire country).
Laud's Reforms	Charles and his archbishop (Laud) were **Armenian.** This was a type of protestant who wanted decoration and ceremony. Reformed Church to include: organs, decorated altars, statues, colour. This was criticised for trying to make England Catholic.

Interregnum (1649-1660)	
Period when England had no monarch	
Lord Protector	Title given to Oliver & Richard Cromwell, who ruled in place of a monarch after the civil war. Oliver Cromwell became dismissed Parliament in 1653!
Puritans	Strict Protestants who wanted a 'purified' Church
Cromwell's Rule	**Hero:** Protected England from tyrant king. Created the New Model Army. Removed corrupt MP's. Supported Irish Protestants. **Villain:** Strict protestant rule (no pubs, theatre,), dictator, massacred Irish Catholics (3,500 in Drogheda)

English Civil War (1642-1649)	
Civil War	Two sides fighting each other in the same country.
Roundhead	The side in the English Civil War who thought Parliament should share power with the king. Also known as 'parliamentarians'
Cavaliers	The side in the English Civil War (1642-49) who supported the King against Parliament. Also known as Royalists.
Oliver Cromwell	Puritan MP and effective Parliamentary leader in the English Civil War and became Lord Protector of England after the war.
Short Parliament	Called in April 1640 following the Scottish rebellion over English Prayer book. Only lasted 3 weeks.
Long Parliament	Called in November 1640 to help fight Scottish and lasted for 20 years. Issued the Grand remonstrance and 19 propositions
Grand Remonstrance	1641: list of 204 grievances Parliament had over Charles I and demands to limit his powers.
Battle of Edgehill	1642: First major battle of Civil War. Ended with high casualties on both sides.
New Model Army	Full time, professional army set up by Fairfax and Cromwell.
Battle of Naseby	1645: Decisive victory for Parliament, using the New Model Army. Marked a turning point in the War.
1949	Charles I was executed for treason.

Restoration of the Monarchy	
After the failure of Richard Cromwell, England returned to Monarchy with Charles II (son of Charles I) in 1660	
Declaration of Breda	Charles II promised to religious freedom and pardons for parliamentarians in exchange for the English throne.
Glorious Revolution	William & Mary were crowned joint monarchs in 1689 to stop James II's Catholic rule. They accepted Parliament's 'Bill of Rights', restricting the monarch's power so that they share with Parliament.

History - The British Empire

The first British colony in 1585 (modern Canada) failed after conflicts with Natives. In 1607, Jamestown became the first successful colony, leading to the 13 Colonies in North America, which remained under British rule until American Independence in 1773.

Attitudes towards the Empire	
British during Empire	British felt very proud of their Empire. Believed in racial superiority and they had a 'civilising mission' to improve lives of colonies by spreading British culture.
Attitudes in colonies	Some colonies (such as Canada) enjoyed collaboration and economic gain. Other colonies (such as India) resented British control and wanted independence.
Modern Attitudes	In the Modern period Historians have began to acknowledge the brutality and cruelty that took place during the British Empire.

Key Vocabulary	
Empire	A group of countries, people or land controlled and ruled by one single powerful country
Colony	A country that is part of an Empire
Common-wealth	A group of countries with a shared loyalty or government
Mutiny	A rebellion against the authority within the military
Imperial	Belonging to an Empire
Prejudice	Preconceived opinion not based on actual experience
Segregation	The act of separating certain groups
Indigenous	Naturally occurring in a place
Conquest	Taking control of a place through military force
Missionary	Someone who visits another country to promote their religion
Loot	Take good illegally.
Sepoys	Indian solider in the EIC's army.

India	
East India Company	British company formed to trade in the Indian Ocean region. Conquered and colonised India.
Treaty of Allahabad	Gave the British rights to collect tax and have same powers as Nawabs (regional leaders).
Impact of British rule on India	Christianity was introduced. Some gained wealth building ships for the British. Sati was outlawed. Railways. Estimated 10 million died of famine.
Indian Rebellion 1857	Sepoys (Indian soldiers) mutinied (refused to fight) in revolt against British rule. This led to uprisings which were brutally supressed by the British. Led to direct British control in India.

China	
Qing Dynasty	Ruled China for 300 years. Used the 'Canton System' for trade: all goods through this port and taxed by Chinese officials. British wanted tea from China.
Opium Wars	First Opium War (1840–42): British bombarded China; Treaty of Nanjing allowed low-tax trade. Second Opium War (1856–60): more unequal treaties, Hong Kong expanded, more ports opened, opium legalised.
Impact of British on China	Defeat in Opium Wars led to 'Century of Humiliation' as chinses faced defeats, unfair treaties, social and economic problems from European exploitation.

Australia	
Aboriginals	Native Australians. Nomadic culture, used nature to find food, medicine shelter and weapons.
James Cook	British Naval commander exploring region who created 'New South Wales' colony in 1770.
Penal Colony	Send criminals here as a penalty for their crimes. Forced to do hard labour in harsh conditions.
Tasmanian Genocide	Violent conflict between British and Tasmanians which led to the extinction of this native group.

History – The Transatlantic Slave Trade

Language surrounding Slavery	
Slave vs **Enslaved**	Today most historians speak of ***enslaved people*** instead of *'slaves'*. This language separates a persons identity from his/her circumstances and highlights what happened to these people.
Owner/ Master vs **Enslaver**	The use of *'owner'* or *'master'* empowers the *enslaver* and **dehumanises** the enslaved person to a commodity rather than a person who has had slavery imposed upon them. *Enslaver* highlights the actions of those who purchased and kept slaves.

Vocabulary	Definitions
Triangular Trade	Three part journey between GB, Africa and USA transporting goods and enslaved people
Middle Passage	Journey of enslaved people between Africa and the Americas. It took 8-12 and 1 in 4 died in the awful conditions
Transatlantic	Going across the Atlantic ocean
Shackles	Iron chains used to fasten the legs/hands
Branding	To mark a person or animal with a hot iron to show ownership.
Cargo	Goods carried for trade
Zong Massacre	1781 ship carrying more than 470 enslaves people. The crew threw 132 people overboard.
Plantation	Large farm where one crop would be grown (typically cotton, sugar or tobacco)
Enslaved person	A person who is the property of another and is forced to work for little or no reward.
Overseer	Person in charge of the enslaved on a plantation
Abolition	Stopping a system, practice or institution by law
Abolitionist	Someone who campaigned to end the slave trade

Triangular Trade/Transatlantic Trade

Part 1: Britain to West Africa: Took cloth, guns, iron pots and swords to Africa. These were exchanged for enslaved African people.
Part 2: Africa to West Indies: The Middle Passage- Enslaved were transported across Atlantic ocean. This journey was notorious for its brutality and overcrowded, unsanitary conditions.
Part 3: West Indies to Britain: enslaved people were sold to work on plantations. Money was used to purchase goods (sugar, cotton, tobacco) to be returned to Europe and sold for large profits.

Enslavement in Africa	
Olaudah Equiano, Enslaved African who bought freedom	"One day, when all our people were gone out to their works as usual, and only I and my dear sister were left to mind the house, two men and a woman got over our walls, and in a moment seized us both, and, without giving us time to cry out, or make resistance, they stopped our mouths, and ran off with us"
Keeping Control	Africans kept in **slave forts** or **barracoons** awaiting purchase on the West Coast of Africa. This prevented them from running to freedom. **Collars** and **shackles** were also used to restrain them. Whippings would be used to increase fear and control over the captured.
Why did Africans enslave Africans?	Africa was split into several kingdoms with different cultures, often at conflict. Enslaved people were exchanged for weapons to increase power and protect own people. Many felt they had no choice, as they needed trade and good relations with (more powerful) Europe.

Historiography	
David Olusoga, *Black and British*:	"Slavery was the best way of controlling the black population and making them useful. Many of the racist ideas that still exist today were invented by enslavers"
Afua Hirsch, *Brit(ish)*	"The British economy was built on the backs of the enslaved Africans, and the wealth generated by the slave trade helped to fund the industrial revolution,

History – The Industrial Revolution

Key Changes	
Industrial Revolution	Change from being an agricultural society to an industrial (factory-based) one.
Economic Change	Home production to factory mass production. Coal-powered energy → steam power and new technologies. Growth of capitalism and consumer goods. Large profits made from factories.
Social Change	Urbanisation. Population growth. Improved public health. Free education. Better transport. Trade unions. Growth of the middle class.
Political Change	Reduced monarchy power, increased parliamentary power. Voting rights extended.

Causes of the Industrial Revolution	
Population growth	Increased rapidly from 10 to 40 million. Led to large workforce and greater demand for goods.
Banking and finance	Banks provided loans and investment, giving entrepreneurs money to start businesses.
Transport improvement	Canals and railways made it faster and cheaper to move goods and raw materials around
Raw materials	Coal, iron, and cotton were available to fuel machines and manufacture products.
Inventors inventions	Machines and technologies (e.g. steam engine) improved production speed and efficiency.
Peace and stability	Britain avoided major wars at home, allowing industry and trade to grow without disruption.
Agricultural improvement	Better farming methods increased food supply, freeing workers for industry.
Growth of capitalism	New economic ideas encouraged private investment and the creation of businesses.

Key Vocabulary	
Domestic System	Goods are made in the home by hand. Slow and inefficient. Items are unique and hand crafted.
Factory System	Goods are mass produced in factories using machines. Production is fast and efficient.
Trade Union	Group who ensure workers have fair rights
Suffrage	The right to vote in political elections
Democracy	A system of government where people vote for leaders
Chartist	A UK parliamentary reform movement of 1837-48 that called for universal suffrage (voting right) for all men

Working Conditions

Factories and mines were **dangerous** places with **long hours** (12-15 hours, 6 days a week), **low pay** and **harsh conditions**. **Cruel discipline**:. An overseer watched workers constantly!. **Accidents**: forcing children to crawl into dangerous, unguarded machinery led to many accidents and deaths. **Health**: Chest and lung disease from dust, hearing loss, phossy jaw, burns.

Living Conditions

Rapid **urbanisation** led to **overcrowded**, **unsanitary** cities. Air and water **polluted**.. B**ack-to-back housing** built to quickly and cheaply provided homes but they were often damp, dark and dirty. Widespread **poverty.**

Fight for Democracy

The Peterloo Massacre (1819) and Chartist Movement showed pressure for political reform from middle and working class. 1832 Reform Act began expanding voting rights, leading to full male suffrage by 1918.

Suffragists (peaceful) and Suffragettes (militant) campaigned for voting rights for women. **Emily Davison** was jailed multiple times for protests and force-fed during hunger strikes. In 1913, she ran onto the Epsom Derby racetrack and struck by the King's horse, becoming a martyr for the movement. **1918: Representation of the People Act** women over 30 with property could vote. **1928 Equal Franchise Act:** Equal voting rights to men.

Geography - Tourism

Key idea	Key knowledge
What is a tourist?	A tourist is a person who travels to a destination that is not their normal place, from 1 day up to a year. Most tourists are people on holiday but those that travel for business, leisure or other reasons are still tourists.
What is the tourist industry?	The tourist industry means all the activities that tourists take part in and the services that support them. Tourists, hotels, airports, taxi drivers and ice cream sellers are all part of the tourism industry.
How much has tourism grown?	Before 1950, tourist levels were relatively low. However, in the 1950s, it suddenly started to increase. As of 2015, more than 1 billion tourists travel every single year.
Where do people visit?	Europe is by far the most popular place to visit (with 50% of all visits) compared to Africa and the Middle East (both with only 4% of visitors). Europe receives the most tourists because it is very easy for people to travel between European countries. Also many European countries are considered HICs (high income countries) and are considered to be safer to travel. In contrast, many countries within some other regions have a smaller tourism industry, so it is harder for tourists to visit.
Tourism Environments	People may decide to visit a place based on 2 main features: Human (man-made) characteristics- people have built particular services to encourage visitors. Physical (natural) characteristics- naturally occurring such as beaches.

Key terms	Definitions
Honeypot Site	The characteristics of a honeypot site are: attractions, facilities and overcrowding at peak times.
Attractions	Places or things that make tourists want to visit (like a theme park, or museum)
Facilities for Tourism	Buildings and services made especially for tourists, like hotels, cafes, and gift shops.
Overcrowding	When too many people are in one place at the same time, making it feel packed and uncomfortable.
Peak Times	The busiest times of year for tourists (like summer holidays).
Infrastructure	The basic things a place needs to work well, like roads, airports.
Mass Tourism	Large numbers of people visiting the same place.
Biodiversity	The variety of different plants and animals living in one place.
Ecotourism	Tourism that focuses on protecting the environment and local people.
Multiplier Effect	How money from tourism keeps being spent in the local area, creating jobs and income.
Indigenous Populations	People who have lived in an area for a very long time, often before modern tourists arrived.

Geography - Crime

Key idea	Key knowledge
Where does crime occur?	As well as the demographics of an area, crime can also be influenced by certain locations. Similar crimes often happen in very similar areas.
Rural and Urban patterns	In many urban areas, you might be likely to find more fraud and assault. Where as, in a rural area, you might be more likely to find environmental crimes happening such as fly tipping where no one is around to see.
Geography and the use of GIS	We use GIS to plot and analyse crime trends. GIS stands for Geographical Information Systems and using a form of map with layers to look at overall patterns and connections between data– e.g. Police analysing crime.
Ways to reduce crime?	Protection methods such as building massive walls and installing alarm systems help reduce crime, but they can cost a lot of money and can often make the area look worse. Other methods can have more positive results in reducing crime/ maintaining a positive community, e.g. **Design Out Crime.**
Education and community support	Education of the public will them understand what to do if there is a crime as well as increasing community support by encouraging neighbourhoods to look out for one another through neighbourhood watch schemes. Encouraging the interactions between community liaison officers and the public means crime can be reported faster and people feel safer.
Improving living standards in an area	Two of the biggest causes of crime are poverty (linked to unemployment) and boredom (lack of activities). By reducing these issues we can prevent crimes from ever taking place.

Key terms	Definitions
Crime	An action or omission which constitutes an offence and is punishable by law.
Criminal	A person who has committed a crime.
Victim	A person harmed, injured, or killed as a result of a crime, accident, or other event or action.
Rural	Characteristics of the countryside rather than the town.
Urban	Characteristics of a town or city.
Demographics	Statistical data relating to the population and particular groups within it.
Vulnerable	Exposed to the possibility of being attacked or harmed, either physically or emotionally.
GIS	Geographic Information System.
Prevention	The action of stopping something happening.
Protection	The action of protecting, or the state of being protected.
Un-employment	The state of being without a job.
Green spaces	An area of grass, trees, or other vegetation set apart for recreation in an urban area.
Quality of life	The standard of health, comfort, and happiness experienced by an individual or group.
Standard of living	The degree of wealth and material comfort available to a person or community.
Natural Surveillance	The act of incidentally using your eye balls (not CCTV) to deter many crimes as it is more unpredictable.

Geography - Glaciation

Key idea	Key knowledge
Change in the amount of ice over time	When the Earth enters an ice age, we call that **a glacial period**. This means ice, mainly in the form of **glaciers**, starts to increase. There have been many ice ages during the last 2.6 million years but when people talk about the Ice Age, they are often referring to the most recent glacial period, which peaked about 20,000 years ago and ended just over 10,000 years ago. We are currently in **an interglacial period** (where temperatures have increased and glacial ice starts to decrease).
What is a glacier	A glacier is a huge mass of ice that moves slowly over land. It forms in cold environments and at high altitudes where snow falls layer upon layer. Over time, the layers get compacted to ice. If the ice does not melt and snow continues to fall, the ice mass will become bigger and heavier.
Glaciers can change landscapes through erosion and weathering	As the glacier moves it **erodes** (wears away) the landscape on either side and underneath it through **abrasion** and **plucking**, changing the landscape. **Freeze-Thaw weathering** also occurs on glaciers as frozen water expands in gaps of rocks which eventually causes the rocks to break off.
Glaciers can change landscapes through transportation	Transportation is all about the movement of eroded sediment on the glaciers, i.e. when it is carried/dragged/pushed. As the glaciers starts to move downhill due to **gravity**, so erosion can begin.
Glaciers can change landscapes through deposition	As **glaciers** melt, the glacier will lose a lot of its energy to transport eroded sediment. This means that it drops material (**deposition**) in an unsorted mixture. This is what we call **moraine.**

Key terms	Definitions
Glacier	A large, slow-moving river of ice that forms in high mountains or cold regions where more snow falls than melts.
Ice age	A period in Earth's history when large parts of the world were covered in ice sheets and glaciers.
Accumulation	The process where snow and ice build up on a glacier, adding more mass.
Ablation	The loss of ice from a glacier through melting, evaporation, or breaking off into icebergs.
Plucking	A process where a glacier freezes onto rocks and pulls them away as it moves.
Abrasion	The scraping and grinding of rock surfaces by stones and material carried by a glacier.
Moraine	A pile of rocks and sediment left behind or pushed along by a glacier.
Corrie (Cirque)	A rounded hollow on a mountainside, formed by glacial erosion, often containing a small lake (tarn).
Arête	A sharp, narrow ridge between two corries.
U-shaped valley	A valley with steep sides and a flat floor, carved out by a glacier (different from a river's V-shaped valley).
Drumlin	A smooth, oval-shaped hill made of glacial deposits, often found in groups.
Erratic	A large rock transported and left behind by a glacier, often different from the local bedrock.
Tourism	Travel for pleasure, such as visiting glaciated landscapes for hiking, skiing, or sightseeing.
Sustainability	Using resources in a way that meets today's needs without damaging the environment or limiting future generations.

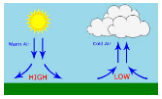
Geography - Globalisation

Key idea	Key knowledge
Changes in jobs through time	Normally we can tell how developed a country is by what employment structure you find there. An **LIC (low income country**) will generally have more primary jobs and a **HIC (high income country**) will tend to have more tertiary and even quaternary jobs.
Transnational Corporations are companies which operate in many different countries.	It may manufacture its products in one country, but sell its products in another. One good example of this is the sporting company, Nike. Nike manufacture many of their sporting goods in Asia and sell a lot of their products in Europe, but their headquarters are in USA.
TNCs and the environment	TNC activities generate more than half of the greenhouse gases emitted by the industrial sectors with the greatest impact on global warming. They control 50 percent of all oil extraction and refining, and a similar proportion of the extraction, refining, and marketing of gas and coal.
CASE STUDY: Shell Nigeria	Shell is a massive TNC that operates in many countries around the world. Extracting oil is a primary job, the refining of oil is a secondary job and they sell the final job which is a tertiary service. Shell's Nigeria operations are concentrated in the Niger Delta in a mining area of around 31,000sq km. They have more than 6,000km of pipelines, 87 flow stations, 8 gas plants. This has lead to large scale deforestations, environmental mining leading to the destruction of habitats, biodiversity.

Key terms	Definitions
Globalisation	The process by which the world is becoming more connected.
TNC (Transnational Corporation)	A company operating in multiple countries.
Interdependence	Countries relying on each other for goods, services, and ideas.
Outsourcing	When companies move parts of production to other countries.
Fair Trade	Trade that ensures producers in developing countries are paid fairly.
Economic leaching	Money is lost from the host country's economy because the TNC headquarters is in a HIC.
Informal Employment	A person who is informally employed does not receive a regular wage. They work when they need to or feel like it. Sometimes there are no deductions (e.g. tax) made from their earnings but if they do not work for any reason, they receive no payment.
Formal Employment	Someone who is formally employed is contracted to work and will receive sick pay and holiday pay. This means they receive more regular work, but have deductions through taxes.
Primary jobs	Collect or produce natural resources e.g. mining.
Secondary jobs	make or manufacture things e.g. construction.
Tertiary jobs	Provide a service e.g. jobs in health, education.
Quaternary jobs	High-tech service industry e.g. scientific research, advisory service.

Geography - Weather

Aspects of Weather

FACTOR	WHAT	HOW	SCALE
Temperature 	How hot or cold the air, water or ground is.	Thermo-meter	Measured in degrees Celsius (°C)
Wind speed + direction 	How fast the wind is moving.	Anemo-meter and weather vane	Can be measured in MPH, KM/H or Knots
Precipitation 	Moisture that falls from the sky.	Rain gauge	Millimetres
Humidity 	Amount of water vapour in the air	Hygro-meter	Measured as a % of vapour in atmo-sphere
Pressure 	The amount of air pressing down on the Earth's surface	Aneroid barometer	Millibars
Sunshine 	The amount of direct sunlight or solar radiation.	Sunshine recorder!	Number of sunshine hours

Key terms	Definitions
Weather	The day-to-day conditions of the atmosphere (e.g. temperature, rainfall, wind).
Climate	The average weather of a place over a long period of time (usually 30+ years).
Air Mass	A large body of air with similar temperature and moisture, which brings different types of weather to the UK.
Anticyclone	An area of high pressure that brings calm, clear, settled weather.
Depression	An area of low pressure that brings unsettled, wet and windy weather.
Isobar	A line on a weather map that joins places with the same air pressure.
Front	The boundary between two air masses, often bringing rain or cloud.
Precipitation	Water falling from the atmosphere to the ground (rain, snow, hail, sleet).
Microclimate	The small-scale climate of a particular place.
Forecast	A prediction of future weather based on data and models.
Global atmospheric circulation	Global atmospheric circulation is the large-scale movement of air around the Earth
Hadley Cell	(0°–30°): Warm air rises at the Equator and sinks around 30° latitude.
Ferrel Cell	(30°–60°): Air moves between the subtropical and polar regions.
Polar Cell	(60°–90°): Cold air sinks at the poles and flows toward lower latitudes before rising again around 60°.
The Coriolis effect	The apparent change in the direction of moving air or water due to the Earth's rotation.

BVT Unit 1: Our World

Key Vocabulary	Definitions
Big Bang	Scientific theory of an explosion which caused the creation of our universe
Climate Change	The climate changing due to Global Warming
COP Conference	Global meetings by world leaders to improve the environment
Creation	Religious belief of creation of our universe by God
Darwin	Scientist who looked at evolution of our species
Deforestation	Trees being cut down in large areas
Dominion	Christian belief that God created man as the dominant species
Fossil Fuels	Fuels of oil, gas and coal which are burnt and release CO2
Global Warming	Warming of the earth due to rise of CO2 and other greenhouse gases
Greta Thunberg	Campaigner who protests to help the environment
Humanists	Non religious group who believe humans have the potential to improve our world
Literalist	Christians that take the Bible creation at its word
Non Literalist	Christians that look at the message of creation, but not word for word.
Renewable energy	Energy that can be re-used e.g. solar. Not burnt to produce CO2
Stewardship	Belief God gave mankind the responsibility to care for Gods creation
Theory of Intelligent Design	Theory that God created the initial species with the ability and intellect for them to adapt

Beliefs / Practices:

- **Bible** – Creation in **6 days**, God rested on the 7th.
- Non literalists – creation over 6 longer stages.
- **Big Bang** – **14 billion** years ago an explosion created atoms and gases. 3 billion years ago life developed.
- **Pope Francis** campaigned for protecting God's creation
- **Humanists** care for the environment – protest, tree planting projects, write letters to Parliament.
- Humanists care for animals and don't believe they should suffer.

Key Quotes:

" In the beginning God created the Heavens and the earth" Bible

"The earth is the Lord's and everything in it" Bible

"Let them (man) have dominion" Bible

"The world is green and beautiful and Allah has appointed us stewards over it" Qur'an

" We can find beauty and wonder in what science has shown us" Richard Dawkins (Humanist)

"We need to use our science and knowledge to protect the future" Richard Dawkins (Humanist)

BVT Unit 2: Marriage

Key Vocabulary	Definitions
Adultery	Having sexual relations with another person when you are married
Annulment	This is given in the Catholic Church, which cancels the marriage, as divorce is not allowed.
Arranged Marriage	A marriage arranged by parents WITH the consent of the children/husband and wife to be
Celebrant	A person that conducts the ceremony at a Humanist Wedding
Chastity	Not having sex before you are married
Dowry	Gift from husband to wife at a Muslim wedding
Forced Marriage	Forcing someone to marry, no consent
Homily	Speech about marriage at the Christian wedding
Honour abuse	Abuse suffered for refusing a forced marriage
IMAAN	Muslim charity that supports LGBTQ+ Muslims
Imam	Muslim leader/priest at a mosque
Omnibenevolent	God is all loving
Procreation	Having sex for the purpose of conceiving children
Sacrament	Important stages and gifts from God for Christians
Shari'ah Law	Law based on the Qur'an and Muhammad's teachings, used in some Islamic countries

Beliefs / Practices:

- Marriage is a **sacrament** for Christians
- Many Catholics believe marriage between and man and woman is for **procreation** and what God intended through his creation of **Adam and Eve**.
- Many Muslims believe same sex marriage is sinful and against **Shari'ah law** in some countries such as **Iran**.
- Christians such as **Quakers** believe God is all loving and accepts everyone as equals.
- **Humanist** weddings: run by a **celebrant** and is very personal. Choose when, where, write their own promises. However **not legalised** recognised in UK, it is in Scotland. Humanists marry people of **different faiths** and **same sex** couples also.
- Many religious people believe **adultery** is sinful and divorce would be permitted.
- **Divorce** last resort is allowed especially if people are unsafe in marriage.
- However Catholics do not allow divorce.

Key Quotes:

"Man shall leave his mother and father and will join with his wife and become one flesh" Bible
"Be fruitful and multiply" Bible
"What therefore God has joined together, let not man separate." Bible
"Marry and do not divorce" Hadith
"Thou shall not commit adultery" 10 Commandments
"You shall not lie with a male as with a woman; it is an abomination (disgrace/outrage)" Bible
"As for 2 men guilty of lewdness (inappropriate sexual behaviour), punish both" Qur'an
"Neither Jew nor Greek, slave nor free, male nor female, for you are all one in Jesus Christ" Bible
"God made man in his image" Bible

BVT Unit 3: Origins of Islam

Key Vocabulary	Definitions
Adalat	Allah is just and fair
Allah	Muslim name for God
Cave Hira	Where Muhammad was chosen to be prophet
Hadith	Holy Book written about Muhammad's life and teachings, by his followers
Hafiz	Learning the Qur'an off by heart
Idols	Gods or spirits people worshipped instead of One God
Jibril	Angel who visited and gave revelations to Muhammad
Ka'aba	The black box holy shrine in Mecca
Mecca & Madinah	Cities converted by Muhammad to Islam
Predestination	When Allah knows you path in life
Qur'an	The main Holy Book for Muslims, written over 23 years, recited directly by Muhammad
Night of Power	The event when Muhammad was chosen to be prophet
Prophet	Humans chosen to be messengers / teachers of God
Revelation	When God connects with a human
Six Articles of Faith	The 6 key beliefs Muslims follow
Sunnah	Holy Book containing Muhammad's practices, including the 5 Pillars
Tawhid	Allah is One; omnipotent and absolute.

Beliefs / Practices:

- Muhammad grew up in Mecca, orphaned and raised by his extended family.
- He was a trader and married **Khadijah**, the daughter of a large trading family.
- Muhammad believed in One God, Allah and disliked the inequality, greed and corruption of Mecca
- At the **Night of Power Angel Jibril** visited Muhammad in **Cave Hira**. Jibril demanded he read a sacred text, but Muhammad could not, so the angel squeezed him and a miracle happened he could hear and see the words from Allah. He had been chosen as a **prophet**.
- Over **21 years** Muhammad had revelations from Allah, he remembered and recited these teachings which were written down into the early Qur'an (over 23 year).
- Muhammad converted the city of **Madinah** first and then through battles conquered and spread the faith to **Mecca**.
- To show his belief in Allah, he smashed the **idol statutes** around the **Ka'aba**.

Key Quotes: from the Qur'an

- "I declare there is no God but Allah and Muhammad is his Messenger"
- "He is Allah, One"
- "We will show you the truth of what you did"
- "Falsehood shall never come to it" (about the Qur'an)

BVT Unit 4: Muslims Practices

Key Vocabulary	Definitions
Adhan	Call to Prayer
Arafat	Mountain where Muslims visit on Hajj
Eid Ul-Fitr	Festival at the end of Ramadan
Hajj	Pillar for Pilgrimage
Ihram	White clothing worn at Hajj
Imam	Priest for Muslims who leads prayer
Jamarat	3 Pillars where pebbles are thrown to warn off evil on Hajj
Ka'aba	The black box Holy Shrine in Mecca
Mihrab	Alcove in wall where Imam leads prayer from
Minaret	Tower from where the call to prayer is given
Mount Arafat	Mountain at Hajj. Muslims ask for forgiveness here
Prostration	To bow and show obedience / respect in prayer
Rak'ah	Set movements and words of prayer
Ramadan	Month of fasting
Salah	Pillar of Prayer
Sawm	Pillar of Fasting
Shahadah	Pillar of Declaration of Faith
Ummah	Brotherhood - community
Wudu	Washing before prayer
Zakah	Pillar of Charity

Key Beliefs / Practices

- **Shahadah** is said at birth, death and prayer.
- Regular prayer happens **5** times a day either at mosque (where men and women are separated) or at home.
- **Friday prayer** is the important prayer night as a sermon (teachings and guidance) is given by the Imam.
- Muslims are expected to go on **pilgrimage** and visit **Mecca** at least once. Pilgrimage connects Muslims with the history of their religion and prophets like Muhammad. The **Ka'aba** is in Mecca and Muslims circle this to represent Muhmmad smashing the idols, demonstrating the **Oneness** of God (**Tawhid**).
- **Zakah** is giving to charity, **2.5%** of your saving. Muslims believe their wealth is **Allah's gift** to them and it is important to share this for the less fortunate.
- Zakah is given at the end of Ramadan at the **Festival of Eid**. Muslims are given the day off work and school for Eid, which celebrates completing Ramadan with a feast and gifts. Eid prayers and a sermon are read at mosque.
- **Ramadan** also represents the month when the **Qur'an** was passed down to Muhammad at the **Night of Power.**
- **Swam:** Muslims fast from sunrise to sunset from food/drink and give up bad habits during the month.

Key Quotes from the Qur'an

"I declare there is no God but Allah and Muhammad is His messenger" Words of the Shahadah
"Prostrate (bow) and draw near to Allah"
"Be steadfast (committed) in prayer and giving.. For God sees all that you do"
"Pilgrimage to the House (Ka'aba) is a duty to God"
"Ramadan is the month is which the Qur'an was sent down to humanity"

Key Vocabulary	Definitions
Quand	When?
Où	Where?
Comment	How?
Combien	Hom much/many?
Qui	Who?
Pourquoi	Why?
Quoi	What?
Qu'est-ce que	What?
Est-ce que	Do ? (Only for a question)
Le / La / Les	The (m) / The (f) / The (pl)
Un / Une / Des	A (m) / A (f) / Some (pl)

L'alphabet

A ah	H ash	O oh	V vay
B bay	I ee	P pay	W doobla-vay
C say	J shee	Q coo	X ix
D day	K car	R air	Y ee-grek
E er	L ell	S ess	Z zed
F eff	M emm	T tay	
G shay	N enn	U ooo	

Pronunciation

- Silent last consonants –**t/d/s**
- **é** - 'ay' café
- **è/ê** - père, fête
- **ç** - soft 's' - français
- **oi** - 'wah' - noir

Essential numbers that can be used to build others

1- un	2- deux	3- trois	4- quatre	5- cinq
6- six	7- sept	8- huit	9- neuf	10- dix
11- onze	12- douze	13- treize	14- quartorze	15- quinze
16- seize	17- dix-sept	18- dix-huit	19- dix-neuf	20- vingt
30- trente	40- quarante	50- cinquante	60- soixante	70- soixante-dix
80- quatre-vingts	90- quatre-vingt-dix	100- cent	71 = 70+11 91 = 90+11	

French Verb Conjugations – Present Tense

Avoir = to have			
J'ai	I have	**Nous avons**	We have
Tu as	You have	**Vous avez**	You all have
Il/elle/on a	He/she/one has	**Ils/elles ont**	They have

Faire = to do			
Je fais	I do	**Nous faisons**	We do
Tu fais	You do	**Vous faites**	You all do
Il/elle/on fait	He/she/one do	**Ils/elles font**	They do

Aller – to go			
Je vais	I go	**Nous allons**	We go
Tu vas	You go	**Vous allez**	You all go
Il/elle/on va	He/she/one goes	**Ils/elles vont**	They go

Être = to be			
Je suis	I am	**Nous sommes**	We are
Tu es	You are	**Vous êtes**	You all are
Il/elle/on est	He/she/one is	**Ils/elles sont**	They are

Regular Present Tense Verb Endings.
Remove the –er/-ir/-re first and then add the endings

	-ER	-IR	-RE
JE	-E	-IS	-S
TU	-ES	-IS	-S
IL - ELLE - ON	-E	-IT	----------
NOUS	-ONS	-ISSONS	-ONS
VOUS	-EZ	-ISSEZ	-EZ
ILS	-ENT	-ISSENT	-ENT

French Verb Conjugations – Past Tense (Passé Composé)

To make the past tense use the correct part of the verb to have and then add the past participle (verb in the past)

J'ai
Tu as
Il/elle/on a
Nous avons
Vous avez
Ils/elles ont

Remove the –er/ -ir/ -re to create the past participle and add the ending		
Jouer (to play)	jou-	joué
Finir (to finish)	fin-	fini
Vendre (to sell)	end-	vendu

Certain verbs need to use the verb être to create the past tense – add an **e** for feminine and **s** for plural

Je suis	allé(e)
Tu es	allé(e)
Il/elle/on est	allé(e)
Nous sommes	allé(e)s
Vous êtes	allé(e)(s)
Ils/elles sont	allé(e)s

I went

resté - stayed
arrivé - arrived

Past Tense Time Phrases	
hier	yesterday
l'année dernière	last year
L'été dernier	last summer
La semaine dernière	last week
Le weekend dernier	last weekend

French Verb Conjugations – Future

To make the future tense you use the verb aller and add the infinitive (verb ending in –er/-ir/-re)

Je vais
Tu vas
Il/elle/on va
Nous allons
Vous allez
Ils/elles vont



Infinitive
jouer
finir
vendre

Je vais jouer – I am going to play
Tu vas finir – you are going to finish
Elle va vendre – she is going to sell.

To create the simple future (will) you take the verb and add the following endings.
-er verbs remove the final e

I	Je
You	Tu
he/she/we	Il/elle/on
we	Nous
You /you all	Vous
theythey	Ils/elles



jouer**ai**
jouer**as**
jouer**a**
jouer**ons**
jouer**ez**
jouer**ont**

Je jouerai – I will play

Tu finiras – you will finish

Elle vendra – she will sell.

Future Tense Time Phrases	
demain	tomorrow
L'année prochaine	next year
L'été prochain	next summer
La semaine prochaine	next week
Le weekend prochain	next weekend

French Verb Conjugations – Imperfect (was ing.... / used to ....)

To make the imperfect tense you use the nous form of the verb in the present, remove **– ons** then add the endings

	-er verbs (jouons)	-ir verbs (finssons)	-re verbs (vendons)
Je	jou**ais**	finiss**ais**	vend**ais**
Tu	jou**ais**	finiss**ais**	vend**ais**
Il/elle/on	jou**ait**	finiss**ait**	vend**ait**
Nous	jou**ions**	finiss**ions**	vend**ions**
Vous	jou**iez**	finiss**iez**	vend**iez**
Ils/elles	jou**aient**	finiss**aient**	vend**aient**

Irregular verb – to be (used to be / I was)
J'étais
Tu étais
Il/elle/on était
Nous étions
Vous étiez
Ils/elles étaient

Je jouais – I used to play OR I was playing

Opinions	
J'aime / Je n'aime pas	I like / I don't like
J'adore / Je déteste	I love / I hate
Je m'intéresse à	I am interested in
Je me preoccupe de	I am worried about

If using a verb it needs to be in the infinitive

- J'aime jouer au foot - I like to play/playing football

French Adjective Agreements

Adjectives change their endings depending on whether the thing you are describing is masculine, feminine or plural

Regular Adjectives – most follow this pattern				
	Masculine	Feminine	Masculine Plural	Feminine Plural
petit	petit	petite	petits	petites
timide	timide	timide	timides	timides
fatigué	fatigué	fatiguée	fatigués	fatiguées

Adjectives in French go after the noun **NOT** before like in English

Le chat noir – the black cat
La personne intelligente – the intelligent person
Les garçons timides – the shy boys
Les filles fatiguées - the tired girls

Irregular adjectives				
	Masculine	Feminine	Masculine Plural	Feminine Plural
sérieux	sérieux	sérieuse	sérieux	sérieuse
gros	gros	grosse	gros	grosses
bon	bon	bonne	bons	bonnes
gentil	gentil	gentille	gentils	gentilles
blanc	blanc	blanche	blancs	blanches
actif	actif	active	actifs	actives

EXCEPT – the following go **before** the noun

beau/belle - beautiful
joli(e) - pretty
grand (e) - big
petit (e) - small
vieux / vielle - old

Possessive Adjectives - change depending on what is being described			
	Masculine	Feminine	Plural
Mine	**mon**	**ma**	**mes**
Yours	**ton**	**ta**	**tes**
His / Hers / Theirs	**son**	**sa**	**ses**
Ours	**notre**	**notre**	**nos**

Comparisons

le/la/les	plus (most) moins (less)	+ adjective
le/la	meilleur (the best pire (the worst)	

Key Vocabulary	Definitions
¿Cuándo?	When?
¿Dónde	Where?
¿Cómo?	How?
¿Cuánto?	Hom much/many?
¿Quién?	Who?
¿Por qué?	Why?
¿Qué?	What?
¿Cuál?	Which?
El / La / Los / Las	The (m) / The (f) / The (pl)
Uno / una / unos / unas	A (m) / A (f) / Some (pl)

Pronouns			
Yo	I	**Nosotros**	We
Tú	You	**Vosotros**	You all
Él / Ella / Usted	He / She / You formal	**Ellos / Ellas**	They

A - ah	B - beh	C - seh	D - deh	
E - eh	F - eh feh	G - heh	H - ah cheh	
I - ee	J - hoh tah	K - kah	L - eh leh	
M - eh meh	N - eh neh	Ñ - eh nieh	O - oh	
P - peh	Q - koo	R - eh reh	S - eh seh	
T - teh	U - oo	V - oo beh	W - oo beh doh bleh	
X - eh kiss	Y - yeh	Z - seh tah		

Sounds

ll - 'yay' ge - 'he' j - 'huh' rr – rolled qu - 'k'

Essential numbers that can be used to build others

1- uno	2- dos	3- tres	4- cuatro	5- cinco
6- seis	7- siete	8- ocho	9- nueve	10- diez
11- once	12- doce	13- trece	14- catorce	15- quince
16- dieciséis	17- diecisiete	18- dieciocho	19- diecinueve	20- veinte
30- treinta	40- cuarenta	50- cincuenta	60- sesenta	70- setenta
80- ochenta	90- noventa	100- cien	500 = quinientos	

Spanish Verb Conjugations – Present Tense

Tener = to have			
Tengo	I have	**Tenemos**	We have
Tienes	You have	**Tenéis**	You all have
Tiene	He/she/you formal has	**Tienen**	They have

Faire = to do			
Hago	I do	**Hacemos**	We do
Haces	You do	**Hacéis**	You all do
Hace	He/she /you formal does	**Hacen**	They do

Ir – to go			
Voy	I go	**Vamos**	We go
Vas	You go	**Vais**	You all go
Va	He/she/you formal goes	**Van**	They go

Être = to be			
Soy	I am	**Somos**	We are
Eres	You are	**Sois**	You all are
Es	He/she/ you is	**Son**	They are

Regular Present Tense Verb Endings. Remove the –ar/-ir/-re first and then add the endings

Pronouns		-ar	-er	-ir
I	Yo	o	o	o
You	Tú	as	es	es
He/she/it	Él/Ella	a	e	e
We	Nosotros	amos	emos	imos
You guys	Vosotros	áis	éis	ís
They	Ellos/Ellas	an	en	en

Spanish Verb Conjugations – Past Tense (Preterito)

Pronoun	-ar verbs (habl**ar**)	-er (com**er**) + -ir (viv**ir**) verbs
Yo (I)	hablé	comí / viví
Tú (You)	hablaste	comiste / viviste
Él /ella /usted (he/she/you formal)	habló	comío / vivío
Nosotros (We)	hablamos	comimos / vivimos
Vosotros (You all)	hablasteis	comisteis / vivisteis
Ellos/ Ellas (They)	hablaron	comieron / vivieron

Key Irregular Verbs

Pronoun	ir (to go) ser (to be)	tener (to have)	hacer (to do)
Yo	**fui**	**tuve**	**hice**
Tú	**fuiste**	**tuviste**	**hiciste**
Él /ella /usted	**fue**	**tuvo**	**hizo**
Nosotros	**fuimos**	**tuvimos**	**hicimos**
Vosotros	**fuisteis**	**tuvisteis**	**hicisteis**
Ellos/ Ellas	**fueron**	**tuvieron**	**hicieron**

Past Tense Time Phrases	
ayer	yesterday
el año pasado	last year
el verano pasado	last summer
La semana pasada	last week
el fin de semana pasado	last weekend

Spanish Verb Conjugations – Future (will)

Time Phrases	Infinitive + ending	
La semana próxima (next week) **mañana** (tomorrow) **El fin de semana próximo** (next weekend) **El año próximo** (next year) **En el futuro** (in the future) **Cuando sea más mayor** (when I will be older)	yo Tú él / ella / usted nosotros vosotros ellos / ellas	hablar**é** hablar**ás** hablar**á** hablar**emos** hablar**éis** hablar**án**
	Irregular Stems	
	hablar**é** hablar**ás** hablar**á** hablar**emos** hablar**éis** hablar**án**	tendr**é** har**é** dir**é** saldr**é**

To go		infinitve
voy	**a**	hablar comer vivir
vas		
va		
vamos		
vais		
van		

Future – am going to .....

Voy a ir a la playa – I am going to go to the beach

Vamos a jugar al fútbol - We are going to play football

Spanish Verb Conjugations – Imperfect (was ing.... / used to ....)

To make the imperfect tense take the infinitive and remove the –ar/-er/-ir + endings

	-ar (hablar)	-er/-ir (comer/vivir)
Yo	habal**aba**	com**ía**
Tú	habl**abas**	com**ías**
Él /ella /usted	habl**aba**	com**ía**
Nosotros	habl**ámos**	com**íamos**
Vosotros	habl**abais**	com**íais**
Ellos/ Ellas	habl**aban**	com**ían**

Irregular verbs ir-to go and ser (to be)	
iba	era
ibas	eras
iba	era
ibamos	eramos
ibais	erais
iban	eran

hablaba – I used to talk **OR** I <u>was</u> talking

Opinions	
Me gusta(n) / No me gusta(n)	I like / I don't like
Me encanta(n) / Me chifla(n) / Odio	I love / I love / I hate
Me preocupa(n)	It worries me
Me interesa(n)	I am interesed in

When talking about 1 thing
- Me gusta el chocolate

When talking about multiple things
- Me gusta**n** los gatos

If using a verb it needs to be in the infinitive
- Me gusta jugar al fútbol - I like to play football

Spanish Adjective Agreements

Adjectives change their endings depending on whether the thing you are describing is masculine, feminine or plural

Regular Adjectives – most follow this pattern				
	Masculine	Feminine	Masculine Plural	Feminine Plural
pequeño	pequeño	pequeña	pequeños	pequeñas
trabajador	trabajador	trabajadora	trabajadores	trabajadores
inteligente	inteligente	inteligente	inteligentes	inteligentes
feliz	feliz	feliz	felices	felices

Adjectives in Spanish go after the noun NOT before like in English

El gato negro – the black cat
La persona inteligente – the intelligent person
Los niños tímidos – the shy boys
Las niñas cansadas - the tired girls

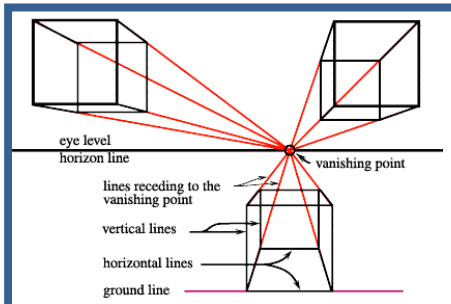
Comparisons in Spanish

el / la / los / las	más (most) menos (least)	+ adjective el más intelligente – the most intelligent la menos simpatica – the least nice
el / la	mejor – the best	peor – the worst

Possessive Adjectives - change depending on what is being described				
	Masculine	Feminine	Masculine Plural	Feminine Plural
Mine	**mi**	**mis**	**mis**	**mis**
Yours	**tu**	**tu**	**tus**	**tus**
His / Hers / Theirs	**su**	**su**	**sus**	**sus**
Ours	**nuestro**	**nuestra**	**nuestros**	**nuestras**

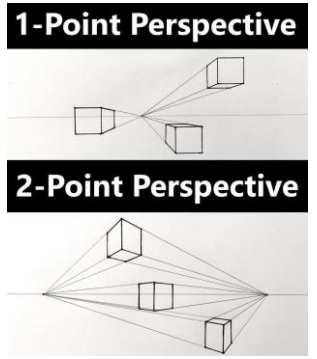
ART - ARCHITECTURE

FORMAL ELEMENTS	Definitions
Line	A **LINE** is the path left by a moving point, eg. A pencil or a brush dipped in paint. A **LINE** can take many forms, eg. Horizontal, diagonal or curved. A **LINE** can be used to show contours, movements, feelings and expressions.
Tone	**TONE** means the lightness or darkness of something. This could be a shade or how dark or light a colour appears.
Shape/ Form	A **SHAPE** is an area enclosed by a **LINE**. It could be just an outline or it could be shaded in. **FORM** is a three dimensional shape such as a sphere, cube or a cone. Sculpture and 3D design are about creating **FORMS**
Texture	**TEXTURE** is the surface quality of something, the way something feels or looks like it feels. There are two types of texture: **ACTUCAL TEXTURE** and **VISUAL TEXTURE**. **ACTUAL TEXTURE**: really exists so you can feel it and touch it **VISUAL TEXTURE**: created using different marks that represent actual **TEXTURE**
Colour	There are 3 primary **COLOURS**: **RED**, **YELLOW**, **BLUE** By mixing any 2 **PRIMARY COLOURS** together you create **SECONDARY COLOURS**; **ORANGE**, **GREEN**, **PURPLE**
Pattern	**PATTERN** is a design that is created by repeating **LINES**, **SHAPES**, **TONES** or **COLOURS.** Patterns can be manmade or natural.



TWO POINT PERSPECTIVE:
Two point perspective allows you to view the object or images so that you are looking at one corner with two sets of **parallel lines** moving away from you. Every set of **parallel line** has it's own **vanishing point**, hence **two point perspective**.

ONE POINT PERSPECTIVE:
A drawing that uses **one point perspective** contains only one **vanishing point** on the **horizon line**. Using this type of **perspective** you could create a drawing of a road, railway, hallways, or building.



Jon Measures:

- British mixed media artist based in Los Angeles.
- Measures is a graphic designer, illustrator and teacher.
- Measure's work often combines lots of view points of cities and urban landscapes.
- He creates mixed media work, using; paint, photography, digital editing, spray paint and collage.
- His work layers images together which in turn is a metaphor for the many layers and elements of city living.
- Measures includes buildings, roads, signs, lights, all manner of objects found in cities within his work.
- A lot of Measure's work focuses on the themes of; belonging, home, community.



ART - LANDSCAPE

- From the 17th century, western artists started to paint and draw landscapes as a single image, not just to form part of a background.
- In 19th century Britain, naturalistic art became popular, with the idea that nature was a reflection of God and to reconnect with it after the industrialisation of Britain.
- Later, in France, the impressionists revolutionised western art, with their new use of colour and line, replacing more traditional styles.
- In the second half of the 20th century, the definition of landscape art changed to include urban and industrial landscapes. This included the introduction of land art, with artists putting work directly into nature.



Watercolour paint is water soluble, water can be added even when dry and this will dilute some of the paint. This means there may be times you need to wait for a section to dry before applying more paint. With watercolour it is easier to leave areas of the paper white which will act as a highlight. Watercolour is built up in layers, light to dark.



Mixed or multi media is when you use more than one material in a single piece of work.
Acrylic paint and oil pastel, watercolour and fine line, collage and acrylic and pen.
By creating a mixed media piece, you can create a range of visual and actual textures within the work while building depth of tone and detail.

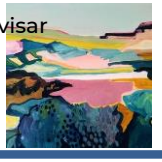
- What do these artworks have in common?
- How might they have been made?
- How could you create your own version?
- Why might artists want to paint the landscapes?
- How would you describe these artworks?


J.M.W. Turner


Paul Cezanne


Erin Hanson


Angie Lewin


Julie Avisar


Katsushika Hokusai

COLOUR	LINE	SHAPE/FORM/SPACE	PATTERN/TEXTURE	TONE
BRIGHT	FLUENT	CLOSED	REPEATED	BRIGHT
BOLD	CONTINUOUS	OPEN	UNIFORM	DARK
VIBRANT	CONTROLLED	DISTORTED	GEOMETRIC	FADED
PRIMARY	LOOSE	FLAT	RANDOM	SMOOTH
SECONDARY	POWERFUL	ORGANIC	SYMMETRICAL	HARSH
TERTIARY	STRONG	POSITIVE	SOFT	CONTRASTING
RADIANT	ANGULAR	NEGATIVE	IRREGULAR	INTENSE
VIVID	FLOWING	FOREGROUND	UNEVEN	SOMBRE
DULL	LIGHT	BACKGROUND	ROUGH	STRONG
CONTRASTING	DELICATE	COMPOSITION	BROKEN	POWERFUL
COMPLIMENTARY	SIMPLE	ELONGATED	GRID	LIGHT
HARMONIOUS	THICK	LARGE	FLAT	MEDIUM
MONOCHROME	THIN	SMALL	WOVEN	DARK
NATUARL	BROKEN	2D	ORGANIC	LAYERED
SATURATED	OVERLAPPING	3D	SMOOTH	DEPTH
PASTEL	LAYERED	TWISTED	ABSTRACTED	DEVELOPED
COOL	MARK MAKING	JAGGED	COLOURFUL	SOFT
WARM				

ART - THE HUMAN FIGURE AND ABSTRACTION

DIFFERENT FORMS OF ABSTRACTION

Geometric Deconstruction	Breaking figures up into geometric shapes (cubes and cones) and displaying multiple perspectives at once.
Organic and Natural Flow	Reducing the body into smooth, biomorphic shapes and introducing the concept of 'negative space', drawing connection between the human form and nature.
Emotional	Simplifying the body to just clothing, hair or colour which allows the viewer to project their own emotions onto the subject.
Spiritual	Early abstraction which used representational bodily auras and energy forms to express unseen realities.

HENRI MATISSE

Henri Matisse was a French painter and artist known for his use of colour which made him one of the most well known artists during the Fauvism movement (Fauves is French for 'wild beasts'). Matisse's style changed hugely throughout his career, with his paintings becoming bolder and more simplified. Later in life, after abdominal surgery, Matisse's health and mobility declined and he turned to the art of paper cut, also know as 'drawing with scissors'. His studio assistants would help pre-paint large papers which he would cut up into abstracted forms. These paper cuts were sometimes inspired by the natural world around him and sometimes by ancient stories, such as the tale of Icarus. These paper cuts were room sized pieces that allowed Matisse to wander through nature in the form of his cut-outs.

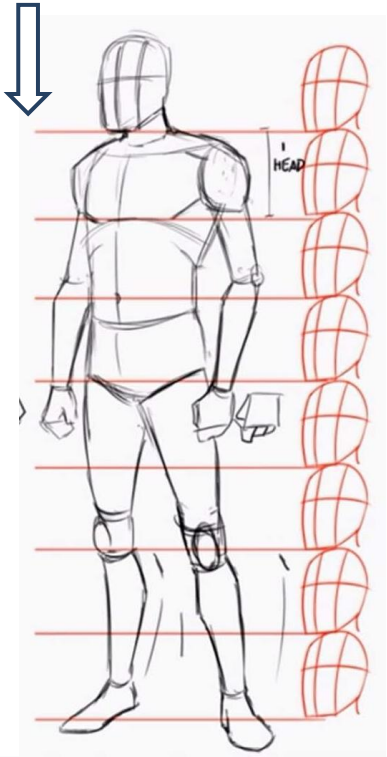


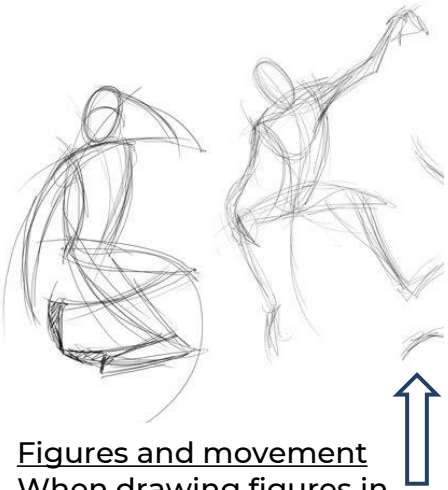



ABSTRACTION DEFINITION:

Abstraction is art work that does not attempt to be realistic or representational. Instead it aims to explore the use of form, shape, colour, line, tone and sometimes mark making to create an unrealistic piece.

Traditionally, when studying the human form, the length of eight heads makes up the (adult) human body, from the top of the head to the feet.





<u>Figures and movement</u>

When drawing figures in movement you don't have to worry about making your drawings exact and accurate.

Try to remember that eight heads go into a body but the movement of line is the most important factor.

Experiment with drawing figures quickly without detail. This in itself is a form of abstraction.

MUSIC - HOOKS AND RIFFS PLUS, REGGAE

Key Vocabulary	Definitions
Riff	A repeated musical patter often in the intro and chorus
Hook	A repeated music theme. The 'catchy bit'
Pitch	The highness or lowness of a note in sound frequency
Structure and Form	How the composition is built
Melody	The main tune which often contains the hook
Instrumentation	The instruments used by the composer
Bass Line	The lowest part of the music often played on the bass guitar
Harmony	All the musical parts that support the Melody
Off Beat Rhythm	Characteristic part of reggae making the 2nd and 4th beat of the bar strong
Syncopation	Rhythms played and sung off of the main beat
Call and Response	One singer calls a theme and the backing singers repeat it
Improvisation	Playing an unprepared solo
Common Time	Four beats in a bar

REPEAT SYMBOL – A musical symbol used in staff notation consisting of two vertical dots followed by double bar lines showing the performer should go back to either the start of the piece or to the corresponding sign facing the other way and repeat that section of music.



TREBLE CLEF – A musical symbol showing that notes are to be performed at a higher pitch. Also called the G clef since it indicates that the second line up is the note G.

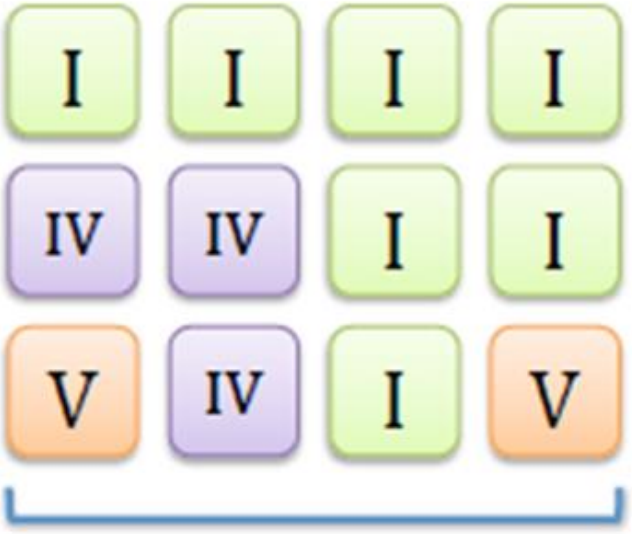


BASS CLEF – A musical symbol showing that notes are to be performed at a lower pitch. The BASS LINE part is often written using the BASS CLEF. Also called the F clef since it indicates that the fourth line up is the note F.



MUSIC - Variations and The Blues

Note Symbol	Note Name	Note Value
	Minim	2 beats
	Semibreve	4 beats
	Crotchet	1 beat
	4 semiquavers	4 quarter beats (1 whole beat)
	Pair of quavers	2 half beats (one whole beat)
	Quaver	Half a beat



The Turnaround

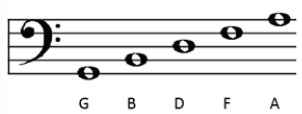
Key Vocabulary	Definitions
Theme	The main melodic theme
Variation	Changing the theme to make it sound different
Parallel motion	Two notes at the same time always the same distance apart
Contrary motion	Two parts moving in different directions
Walking Bass	The bass part plays a moving 'walking' part
12 bar Blues	Traditional style using three chords over twelve bars
Swing Rhythm	A dotted rhythm that gives a bouncy groove
Spiritual	Songs sung by slaves of yearning for freedom and suffering

MUSIC - All About the Bass and Saharan Sounds

Key Vocabulary	Definitions
Arpeggio	Playing the notes of a chord in a specific order
Broken Chord	Playing the notes of a chord NOT in a specific order
Alberti Bass	Playing the notes of a scale using the 1st, 3rd and 5th notes in a specific order
Bass Riff	Short, repeated, 'catchy, bass line
Bass Pedal	Sustained low frequency note for a very long duration
Form and Phrasing	The building of the rhythms specified by the master drummer
Ensemble	A small group of musicians
Tempo	The speed of the music, established by the master drummer
Dynamics	The volume established by the number of musicians playing
Ensemble Texture	Drum ensembles are usually made up of 3 – 5 players
Ornamentation	The drummers play using different accents

STAFF is the name given to the five lines where musical notes are written.
The position of notes on the stave or staff shows their **PITCH** (how high or low a note is).
The **BASS CLEF** is a symbol used to show low-pitched notes on the stave and is *usually* used for the left hand on a piano or keyboard to play the **BASS LINE** and also used by low pitched instruments (*see B.)*
The stave or staff is made up of 5 **LINES** and 4 **SPACES**.

Notes on the **LINES** of the **BASS CLEF**: **G, B, D, F, A**
Green **B**uses **D**rive **F**ast **A**lways



Notes in the **SPACES** of the **BASS CLEF: A, C, E, G**
All **C**ows **E**at **G**rass

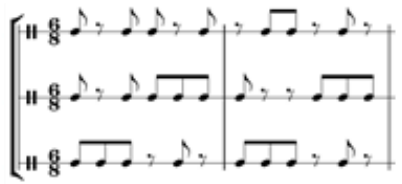


Bass Clef **STAFF NOTATION**:



REPETITION and **CYCLIC RHYTHMS** used to organise music. A repeated rhythm pattern (**OSTINATO** or **TIMELINE**) is used as a basis for **IMPROVISATION** to "hold the piece together". Use of **SYNCOPATION, POLYRHYTHMS** (shown below right), **CYCLIC RHYTHMS** and **CROSS-RHYTHMS** (shown below left). **MASTER DRUMMER** can give musical 'cues' to performers to change rhythms during a performance and can also choose to **ACCENT** different beats within a **RHYTHM CYCLE.**





Key Vocabulary	Definitions
Comedy	A play intended to make the audience laugh with humour
Horror	To shock and scare an audience- creating tension
Pantomime	A tradition within British theatre of storytelling with exaggerated stock characters and set storylines- traditionally performed around Christmas time
Flashback	Showing a moment from the past on stage
Soundscaping	Creating the sound effects and atmosphere with sounds alone
Stock characters	A character based on a stereotype with a set way of performing
Split- stage	Showing 2 locations on stage, concurrently
Non-linear narrative	Telling a story in the wrong order
Marking the moment	Highlighting to an audience an important moment in the plot
Slow motion	Depicting a moment by slowing the action down
Seven levels of tension	The 7 differing levels of tension that an actor can depict

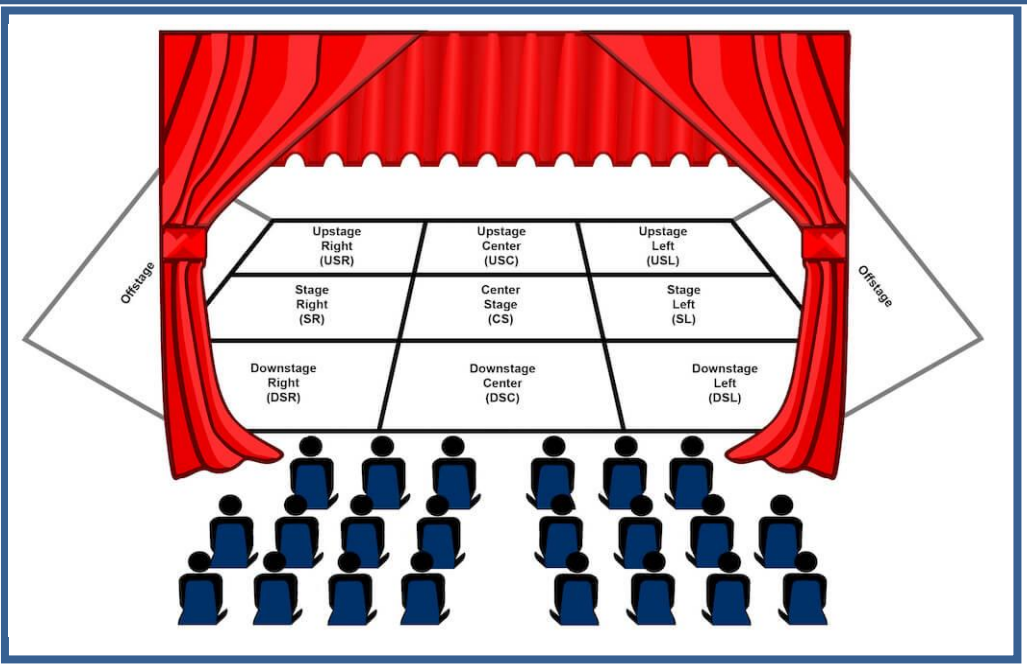
DRAMA TARGETS

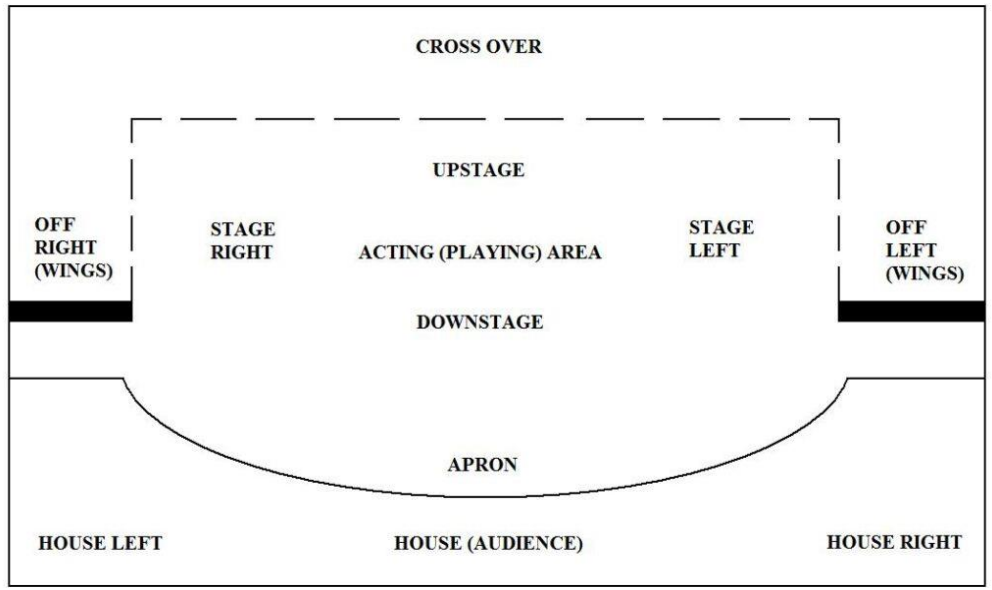


The Trafalgar School
DOWNTON

- ☐ I can cooperate
- ☐ I can perform confidently – taking an equal share of the lines and actions
- ☐ I can work with everyone
- ☐ I can lead
- ☐ I can use my voice to create a character
- ☐ I can compromise
- ☐ I can project my voice
- ☐ I can stay in role (no corpsing)
- ☐ I can stay focused on the task
- ☐ I can come up with and share creative ideas
- ☐ I can use Drama terminology accurately
- ☐ I can verbally evaluate my own and others' work (support and suggest)
- ☐ I can use my physicality to create a role

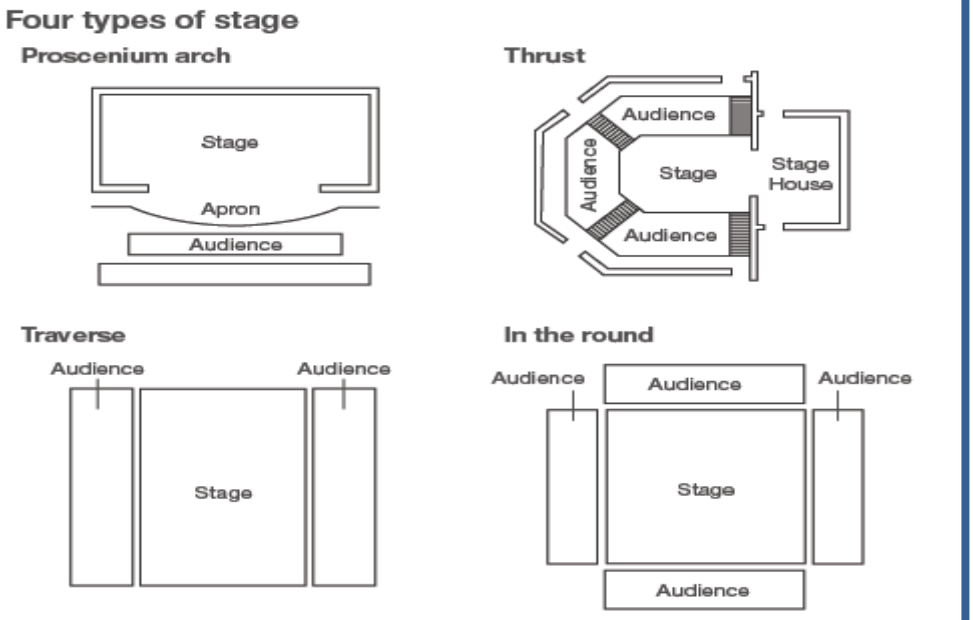
Drama - Staging conflict and devising competition

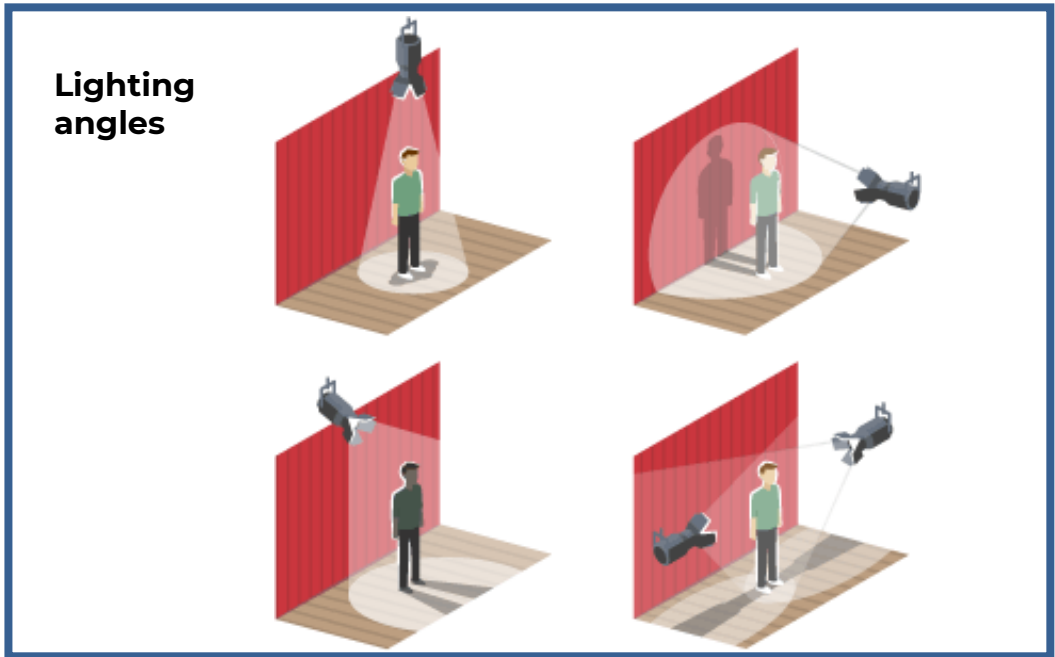




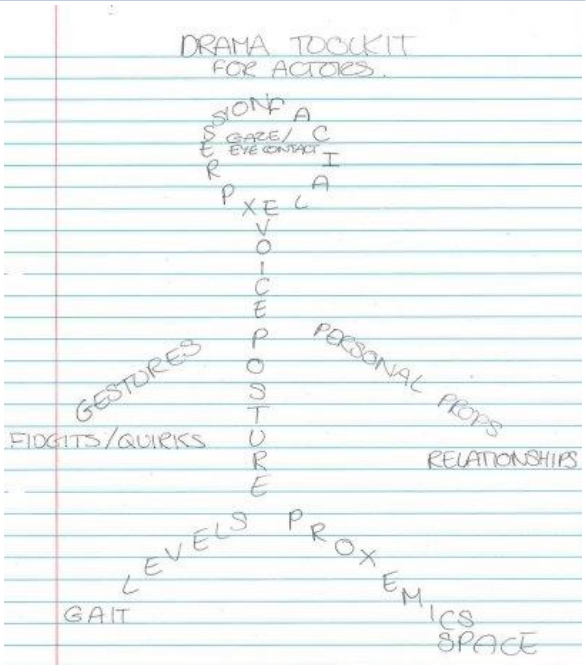
Key Vocal Vocabulary	Key Physical vocabulary
Tone- the mood suggested	Facial expression
Pitch- high, low or natural voice	Posture- the way you stand and sit
Pace- the speed at which you speak	Gait- the way you move
Volume- how loud or quiet you speak	Gesture- how you use your hands
Projection- to ensure every member of the audience can hear you	Proxemics- the distance between characters on stage, and what this shows
Diction- how clearly you speak and pronounce the words	Levels- how high or low you are on the stage, compared to others
Accent- identifies location and status of a character	Eye contact- whether your character makes and maintains eye-contact with others, and what this shows
Pause- to stop for a moment to create a dramatic effect	Costume- how the character looks, physically

Drama - Evacuees and Charlie and the Chocolate factory





Character	Characterisation
Charlie Bucket	Kind, family-orientated. Grateful for what he has.
Violet Beauregard	Competitive- champion gymnast, and gum-chewer!
Verucca Salt	Spoilt- wants material things, but inherently unhappy.
Mike Teevee	TV addict/ gamer.
Augustus Gloop	Motivated by greed- hunger for food



Key Vocabulary	Definitions
Kneading	To work the dough, to develop the gluten that is found in flour.
Reducing	Heating up a sauce based product to evaporate the water and making the sauce thicker in consistency.
Gelatinisation	The thickening of a liquid using starch.
Seasonality	Eating foods grown locally and foods that are in season in our own country.
Food Labelling	The government ensures that all food manufacturers must include certain information on their packaging to help protect the consumer.
Carbon Footprint	The amount of carbon we as individuals produce as a result of actions we do.
Food Miles	The distant food travels from production to the point of consumption.
Fair Trade	Making sure all of the people involved in food production are treated ethically.

Hygiene

Personal

Hair up – Reduces the risk of bacteria transferring to food through hair dropping in

Aprons on – Protects you from spillages and reduces risk of bacteria transferring to food from everyday clothing

Washing hands - regularly using hot soapy water to reduce the bacteria on your hands

Blue plasters – Blue plasters should be used to cover cuts and grazes as they will be easily seen if they accidentally fall into food.

Food – Understanding the 4 C's Concept

Cooking – thorough cooking kills bacteria so ensure food is cooked to 75°c to make sure all bacteria are killed – check this by using a food probe.

Cleaning – effective cleaning removes harmful bacteria and stops them spreading so ensure all work tops, utensils and equipment are cleaned thoroughly with hot soapy water.

Cooling – effective chilling prevents harmful bacteria multiplying so ensure all food is stored at the correct temperatures, ensure cooked food is cooled within 90 minutes.

Cross contamination – Good hygiene practice prevents Cross contamination so when raw food comes into contact with ready to eat food. For example raw meat juices spilling onto salad.

Each stage a food product can go through be fore it reaches us is known as the 'Farm to Fork' process.

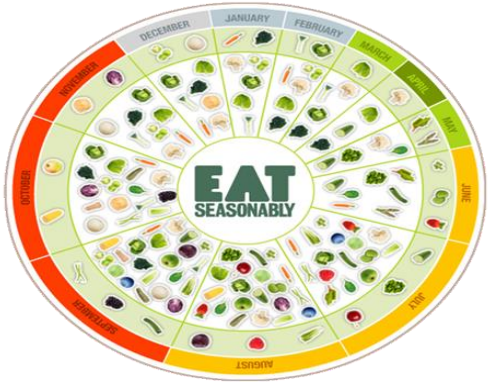


We look at the environment including the impact from the carbon footprint and food miles. Whilst looking at this important element we also recognise why eating seasonably helps reduce our footprint on the environment. We also acknowledge the ethics of Fair Trade produce.

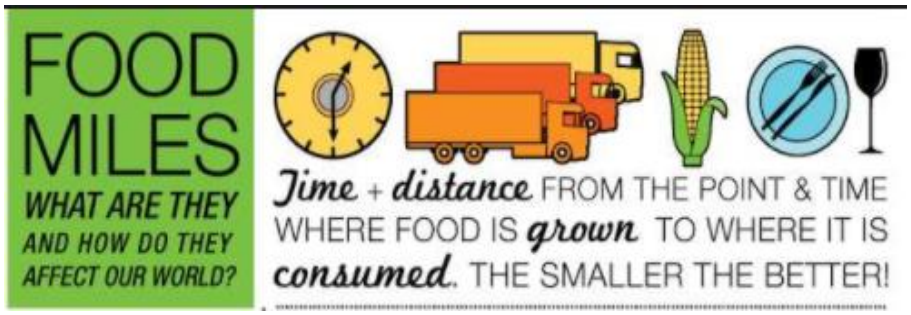
Carbon footprint means: The amount of carbon we as individuals produce as a result of actions we do – such as driving, shopping, using electricity etc.

Carbon dioxide in large amounts contributes to global warming and has a negative effect on our planet.



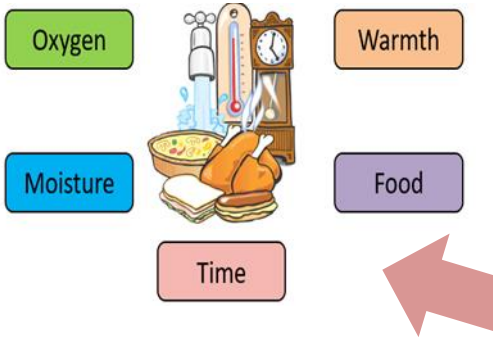


We can help reduce our carbon footprint by eating foods **grown locally** and foods that are **in season** in our own country.

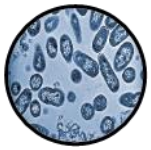


There are also rules and initiatives to help the *people* who are involved in food production to ensure they too are treated ethically.

FAIRTRADE



Bacteria are living organisms.



This means they need certain things to survive or like certain conditions to grow and multiply in, but what?



Food Labelling

The Government ensures that food manufacturers must include certain information to protect the consumer.

Fabric Construction Methods

WOVEN TEXTILES	Textiles made by **interlacing two sets of yarns** (warp and weft) at right angles. Examples include **denim, cotton sheeting, and canvas**
KNITTED TEXTILES	Textiles made by **looping yarns together**. Knitted fabrics are usually **stretchy and comfortable**. Examples include **T-shirt fabric, jumpers, and jersey**
NON-WOVEN TEXTILES	Textiles made by **bonding or felting fibres together** rather than weaving or knitting them. Examples include **felt, medical masks, and some disposable cleaning cloths**.

Textiles Fibre Types

NATURAL FIBRES	Fibres that come from **plants or animals** and occur naturally in the environment. Examples include **cotton, linen, wool and silk.**
SYNTHETIC (man-made) FIBRES	Fibres that are **man-made from chemicals**, usually derived from oil (petroleum). Examples include **polyester, nylon, and acrylic**.
REGENERATED FIBRES	Fibres that are made from **natural materials that have been chemically processed and regenerated into fibres**. Examples include **viscose, rayon, and lyocell**.

Construction (making) Key Words

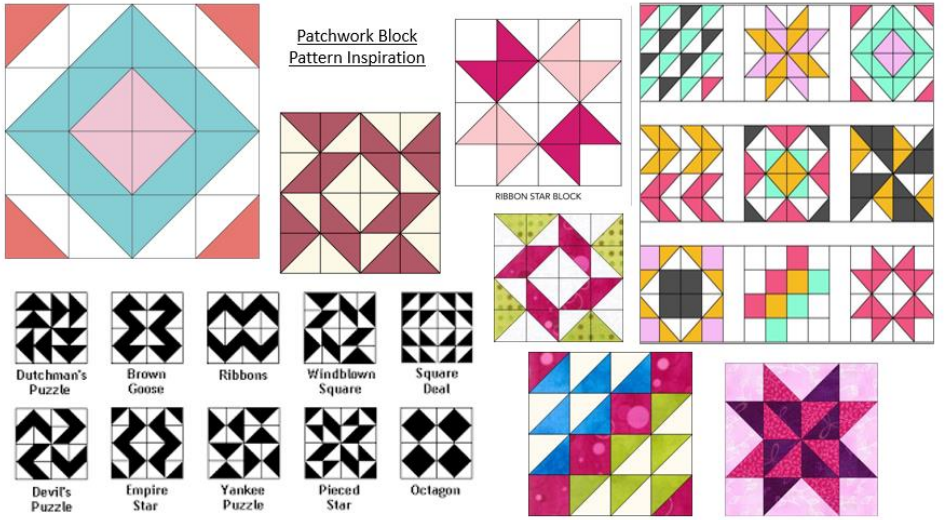
RIGHT SIDE	The side of the **fabric** is the side that is meant to be seen. It usually looks nicer.
WRONG SIDE	The side of the fabric that is not meant to be seen. It usually looks paler or faded.
PRESS	Iron the fabric/seam. This must be done after every stitched seam.
CROSS PIN	Placing pins in fabric horizontally to keep the two pieces together temporarily whilst stitching.
SEAM ALLOWANCE	The area between the fabric edge and the stitching line on two pieces of material being sewn together.
'10 LINE'	The 1cm distance from the machine needle to the line on the throat plate.
QUALITY CONTROL (QC) CHECKS	Checking for quality and accuracy of your stitching and construction throughout the construction process.



Tie-Dye	Definitions
	**FABRIC DYE** is a coloured chemical used to change the colour of fabric. The dye soaks into the fibres and changes the colour of the material permanently.
	**ELASTIC BANDS** are used to tie, twist, fold, or secure sections of fabric before dyeing. They prevent dye from reaching certain areas, creating the tie-dye pattern.
	A **DYE BATH** is a container or bucket that holds the dye solution. Fabric is placed into the dye bath so the dye can be absorbed into the material
	An **APRON** is a protective garment worn over clothing to stop dye and other substances from staining clothes while working.
	**NITRILE GLOVES** are worn when handling dyes to keep hands clean and protect skin from irritation or staining
	**SAFETY GOGGLES** are worn to shield the eyes from accidental splashes of dye or chemicals. In industry, eye protection is an important health and safety requirement when working with dyes.
	**PROTECTIVE SHEETING** is placed over tables and work surfaces to protect them from dye spills, stains, and splashes. It helps keep the work area clean

You must always follow the health and safety rules when using dyes.
An apron and gloves should be worn when working with dyes. In industry eye protection would be worn as well.
All equipment should be used correctly.

Key Terms	Definitions
Patchwork	A textile technique where small pieces of fabric are sewn together to create a larger piece of fabric, often forming decorative patterns and designs. Patchwork is a great way to consider the **6 Rs** and **RECYCLE** materials and fabrics – a good form of **SUSTAINABILITY**
Tie-Dye	**A resist technique.** The process of **tie-dye** typically consists of folding, twisting, pleating, or crumpling fabric or a garment and binding with string or rubber bands, followed by application of **dye/s.** Natural Fabrics are best for tie-dye. Pre washed cotton is more absorbent. New cotton fabric has a waxy finish applied to stop it creasing too much.
Care Labels	Labels on clothing that give instructions on how to care for and maintain a garment correctly and make sure that the garments we buy stay in the condition we buy them and do not shrink or stretch. Symbols provide the same information to everyone without language barriers.

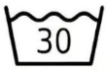


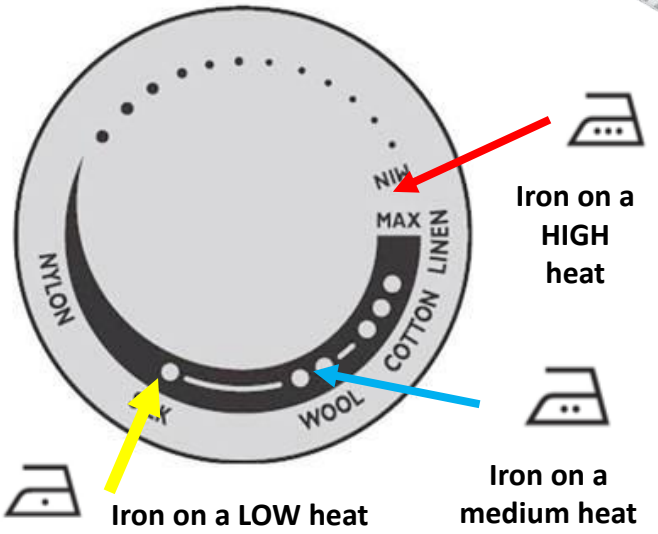
Iron Parts	Definitions
1. Temperature Dial	This dial adjusts the TEMPERATURE setting appropriate for the fabric you are ironing.
2. Power Lead	The electrical cable that connects the iron to the mains electricity supply. It should not trail on the floor.
3. Temperature Indicator Light	A light that switches off when the iron has reached the selected temperature.
4. Sole Plate	The flat metal base of the iron that becomes hot and presses the fabric. Do not touch it when the iron is on
5. Plug	Connects the iron to the electrical socket. The iron should not be used if the plug is damaged.
6. Steam Function	Produces steam to help remove stubborn wrinkles and creases more easily from fabric.
7. Water Tank/Reservoir	Holds the water that is heated to create steam.

The Iron



Care Label Symbols and the Definitions

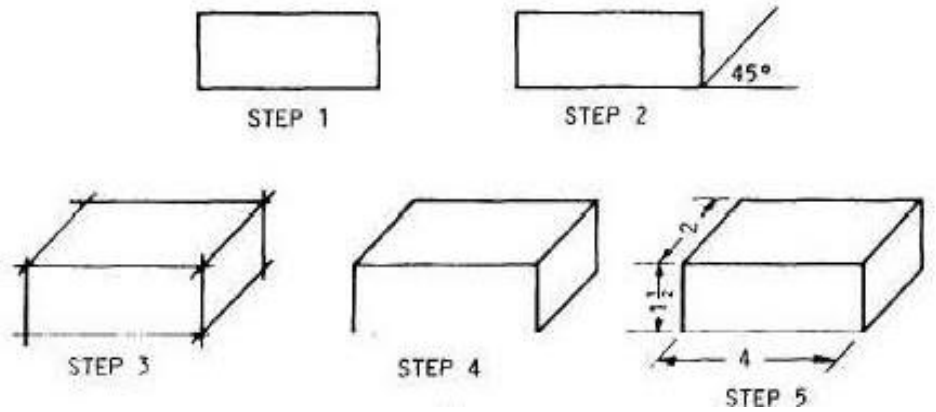
	Hand wash only		Do not bleach. It means bleach must not be used on the garment as it may damage the fabric or affect the colour.
	Machine wash at 30 degrees		Tumble dry. It means the garment can be dried in a tumble dryer. The number of dots inside indicates the heat setting to use.
	Machine wash at 40 degrees.		Do not tumble dry. heat and movement may shrink, damage, or change the shape of the fabric.
	Indicates whether the garment can be ironed and the correct temperature to use. The dots inside represent heat settings:		Line dry. It means the garment should be hung up to dry naturally rather than using a tumble dryer.
	Do not iron		means the garment should be cleaned professionally using special dry-cleaning chemicals instead of being washed with water at home.



Design and Technology Timbers

Motion	Definitions
Linear	Movement in a straight line in one direction. **Example: Bike chain or conveyor belt**
Reciprocating	Backwards and forwards motion in a straight line. **Example: Sewing machine needle, scroll saw blade**
Rotary	Continuous circular motion around a central axis point. **Example: Disc sander or bicycle wheel**
Oscillating	Swinging backwards and forwards in an arc from a pivot. **Example: Pendulum, fan, electric toothbrush**

Specification Point	Questions to Answer
Form including size	How will the automata be shaped and styled? What shape and style should it be?
Function	What will it do?
Client and user	How will it meet the needs? How will the product designed for the user?
Performance	How will it work? How will it do the job it is designed to do? What other factors and issues need to be taken into consideration?
Materials and Components	What materials and components should it be made from? What properties and characteristics should the materials and components have?
Scale of Production and Cost	What scale of production will be used? How will this affect the overall cost?
Sustainability	How will sustainability be taken into consideration?
Aesthetics	How will it made to be aesthetically pleasing?



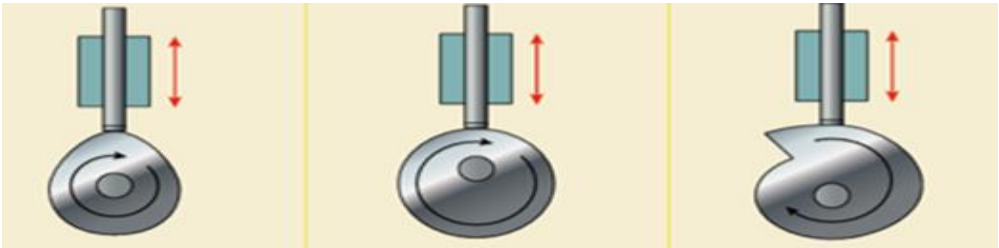
Oblique drawing
Sketch the true front face of the product in standard 2D.
Project construction lines back from each corner at 45 degrees.
Measure half the true depth along the 45° construction lines.
Draw parallel back lines to complete the 3D representation.

Scamper

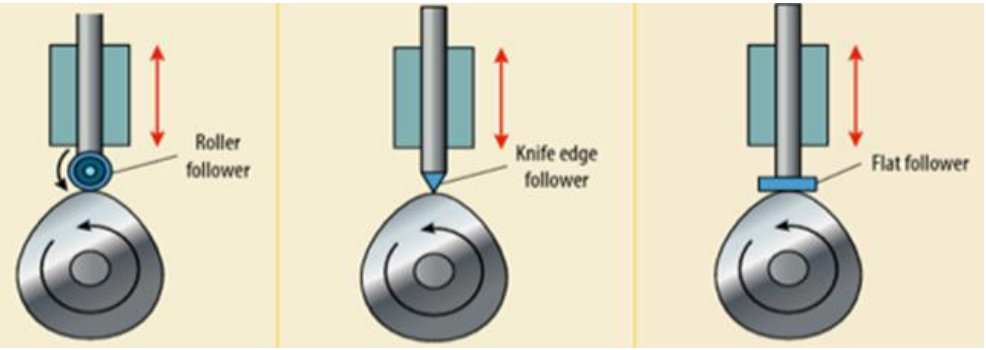
Creativity is a central component of innovation. Without an ability to address what can be changed, altered, or improved upon with regards to processes, technologies, products and artistic forms, there is no room for progress.
However, just telling someone to 'think creatively' doesn't provide them with the necessary questions or techniques to help guide them there – that's where SCAMPER comes in.
SCAMPER is simple, thought-provoking and multi-faceted, which makes it a perfect tool for promoting creativity. Each letter of the acronym provides different questions you can ask yourself to spur creativity:

Substitute	Change materials or parts.
Combine	Merge multiple functions.
Adapt	Adjust for another context.
Modify	Alter scale, colour, or form.
Put to Another Use	Repurpose for new applications.
Eliminate	Remove unnecessary components.
Reverse	Rearrange assembly sequences.

Design and Technology Timbers



Pear-Shaped Cam	Eccentric / Circular Cam	Drop / Snail Cam
Effect: Dwells (remains motionless) for half the cycle, then **rises** and **falls**.	**Effect:** Off-center pivot creates smooth, continuous **rise** and **fall**	**Effect:** Slow **rise** via spiral cross-section followed by an instantaneous **fall**.
Application: Engine valves opening & closing	**Application:** Fuel pumps, steam engine valves	**Application:** Automatic hammers, trip mechanisms

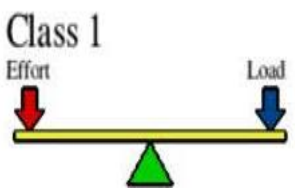
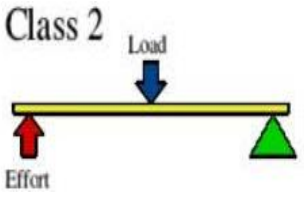
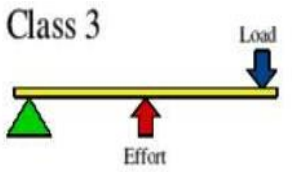


Roller Follower	Knife Edge Follower	Flat Follower
Low Friction: Rolling motion minimises wear. **Multi-part:** Contains separate roller mechanism bearings.	**High Accuracy:** Tracks complex cam profiles precisely. **Rapid Wear:** High concentrated point friction.	**Heavy Loads:** High load-bearing surface area. **Increased Friction:** Large flat contact patch.

Key Vocabulary	Definitions
Jigs	used to guide a drill or saw to cut in exactly the same place each time on every piece of timber - reduces marking out time thus increasing the efficiency of the manufacturing process
Fixtures	holds the piece of timber in place whilst it is being worked on
Templates	made out of paper, card, thin metal or wood, these are drawn around to mark out the same shape repetitively, with the aim of speeding up the marking-out process and decreasing the chance of an error occurring
Patterns	a collection of templates that go together to make a part, or all, of a product

Mechanical Advantage	Formula to calculate mechanical amplification

Mechanical advantage is a measure of how much a tool, machine, or mechanical system multiplies an applied input force to create a larger output force

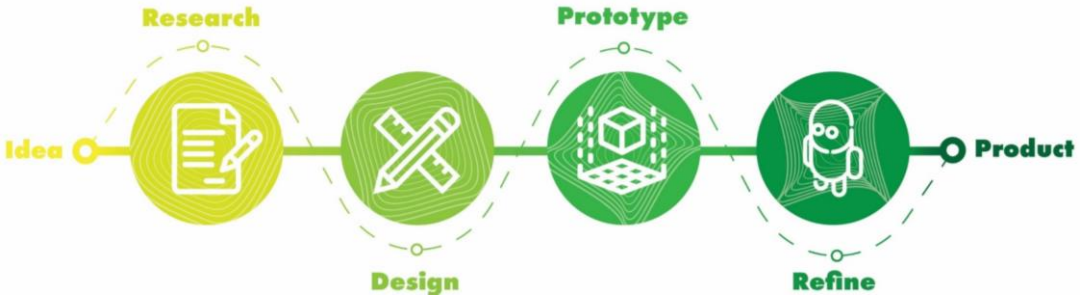
Class 1 Lever (1st Class)	Class 2 Lever (2nd Class)	Class 3 Lever (3rd Class)
Large input movement yields high force. *Examples: Pliers, crowbar, scissors.*	Fulcrum at one end; multiplies force output. *Examples: Wheelbarrow, eyelet press.*	Fulcrum at one end; multiplies force output. *Examples: Kitchen tongues, tweezers*
		
1	**2**	**3**
F	**L**	**E**

Key Vocabulary	Definitions
Graphic Design	The art or skill of combining text and pictures in advertisements, magazines, or books.
Design Process	An approach for breaking down a large project into manageable chunks.
Target Audience	A particular group at which a product is aimed towards.
Design Brief	Outlines the specifics of a design project which can include the design project overview, timelines, target audience information, and budget.
Research	A collection of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts and understandings.
Typography	The art of arranging and styling text so it is clear and visually appealing.
Layout	The way text, images, and other elements are arranged on a page or screen.
Contrast	The difference between elements, such as light and dark colours or large and small text.

What does a 'Product Designer do'?

- **A Product Designer, at it's core, is a problem solver.**
- A Product Designer is someone who uses the different facets and tools of design to create and execute a solution that solves for a user's experience deficiencies.

Product Design Process



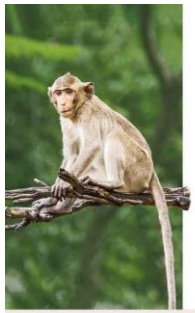
DESIGN BRIEF

Zoo Logo: We are seeking a logo that will capture the essence of our zoological society, which balances a fun, educational family day out with serious global conservation efforts. The logo should be versatile enough for both digital media and physical signage, and appeal to a broad audience. We're looking for a design that incorporates a recognizable animal motif, possibly using simple lines or negative space, with an updated, vibrant colour palette that still feels connected to nature.

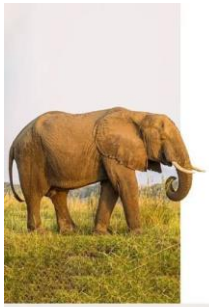
Interactive Zoo Station: To create an immersive and educational experience that inspires visitors to engage in conservation efforts. Your design must integrate educational signage and interactive elements within the design to teach visitors about the species and its habitat.

Marwell Zoo

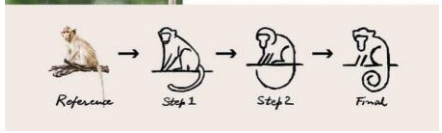
Design Technology 3D Design

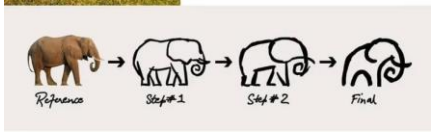












To simplify a zoo logo, you should focus on minimalism, clean lines, negative space, and clear, identifiable animal symbols. The goal is to create a design that is instantly recognizable, scalable, and versatile across different applications, from small icons to large signage.



Within graphic design, **using a colour palette inspired by nature and zoo animals** means choosing colours based on the natural colours found in animals, plants, and their habitats.
For example, a zoo-themed design might use:

- Lion: warm golden yellow, tan, brown and sandy beige
- Tiger: orange, black and cream
- Parrot: bright green, red, yellow and blue
  Giraffe: mustard yellow, brown and cream
- Elephant: grey, charcoal and earthy beige
- Animal habitats: greens, earthy browns, blues and natural neutrals

Key Vocabulary	Definitions
Logo	A logo is a symbol, design, or graphic used to identify a company, organisation, product, or brand.
Colour Theory	Colour theory is the study of how colours work together and how they can affect the way we see and feel.







Banksy is a British street artist who uses spray paint and stencils to create simple but powerful artworks in public places. His “concrete jungle” art shows how people, animals and nature interact with busy city environments.

Materials and techniques:

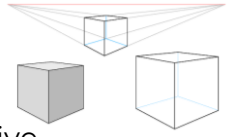
•Spray paint – used to quickly create bold images.
•Stencils – Banksy cuts shapes and images into card or other materials, then sprays paint over them.
•Black and white paint – often used to make his images simple and easy to understand.
•Found surfaces – such as brick walls, concrete and buildings become part of the artwork.

Drawing Equipment

	**Fine liner pens** are drawing and writing tools with a thin, precise fibre or plastic tip that produces a consistent line. In design, they are commonly used for technical drawing, sketching, outlining, detailing, and adding fine textures.
	**French curves** are drawing tools made of thin, curved templates used in design and technical drawing to create smooth, accurate curves that are difficult to draw using a compass or ruler.
	**Pro marker pens** are professional-quality, marker pens used in design, illustration, fashion, architecture, and technical drawing. They have a smooth, blendable ink that allows designers to create shading, gradients, highlights, and realistic colour effects.
	In **design and technical drawing**, mechanical pencils are used for creating accurate, consistent lines because the lead maintains a uniform thickness as it is used.

Drawing Techniques

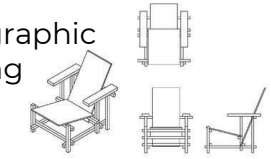
·**Perspective drawing** – Use vanishing points and horizon lines to create depth.
·**Orthograhic views** – Draw front, side, and top views to establish a 3D object's shape.
·**Shading & lighting** – Add highlights, midtones, and shadows to make flat shapes appear three-dimensional.



2 - point perspective



Orthographic Drawing



Traditional Zoo physical stations:

- **Height-measuring station:** Guests can compare their height to that of a giraffe or gorilla.
- **Soundboard station:** Guests press buttons to hear authentic animal sounds to learn more about how they communicate.
- **Paw print station:** Visitors can compare the size of their hand to the paw print of an animal to see how they measure up.
- **Robotic models:** Some zoos use large-scale, interactive robotic models of animals to demonstrate their features, such as a rhino's strength or a chameleon's ability to change colour.





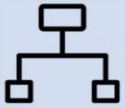




Your Knowledge Organiser is a vital document. It contains all the key things from your lessons that you will need to work on committing to your long-term memory.
Here are some useful methods to use that will help commit the information to your long-term memory

The Trafalgar School AT DOWNTON

How to use a knowledge organiser – step by step guide

	Look, Cover, Write, Check	Definitions to Key Words	Flash Cards	Self Quizzing	Mind Maps	Paired Retrieval
Step 1	Look at and study a specific area of your knowledge organiser 	Write down the key words and definitions 	Use your knowledge organiser to condense and write down the facts and or information on flash cards 	Use your knowledge organiser to create a mini quiz. 	Create a mind map with all the information you can remember from your knowledge organiser. 	Ask a partner or family member to have the knowledge organiser in their hands, read out what you remember. 
Step 2	Cover or flip the knowledge organiser over and write down everything you remember. 	Try not to use your knowledge organiser to help you 	Add pictures to help support. Then quiz yourself using the flash cards. You can write questions on one side and answers on the other. 	Answer the questions and remember to use full sentences 	Check your knowledge organiser to see if there were any mistakes with the information you have made. 	They can test you by asking you questions on different sections of your knowledge organiser. 
Step 3	Check what you have written down. Correct any mistakes in green pen and add anything you missed. Repeat. 	Use a different coloured pen to check and correct your work. 	Use a parent/carer or friend to help quiz you on the knowledge. 	You can also use family to quiz you. Keep self-quizzing until you get all questions correct. 	Try to make connections that link information together. 	Write down your answers. 