



# Year 10 Knowledge Organiser HT2

Knowledge is Power

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## Week 1 - Context

Charles Dickens 1812-1870	Dickens was born into a middle class family, however, his father experienced financial difficulty which meant he was put into a debtor's prison.
Workhouses	In 1834 'The New Poor Law' was introduced which stated that for the poor to receive money or support they were to go to the workhouses, which were harsh and unforgiving prisons.
The Industrial Revolution	Dickens wrote ACC at the end of the Industrial Revolution. The mechanisation of industry meant less demand for workers, therefore many found themselves in poverty.

## Week 2 - Key Literary terms

Allegory	An allegory is a simple story that represents a larger point about society or human nature.
Socialist	Someone who advocates the rights of the working class and having society's income redistributed to public services.
Capitalist	Someone who advocates for assets to be owned by private firms and limited government spending on public services.
Proletariat	Working class people whose only economical power is their manual labour.
Bourgeoisie	Middle and upper class of society who own most of society's wealth and means of production.

## Week 3 - Characters

Scrooge	The protagonist of the Novella, The miserly owner of a London counting-house who the ghosts try to help change.
Marley's Ghost	Ebenezer Scrooge's partner. Marley died seven years before the narrative opens. He appears to Scrooge as a ghost condemned to wander the world bound in heavy chains.
Ghost of Christmas Past	The first spirit to visit Scrooge, a curiously childlike apparition with a glowing head. He takes Scrooge on a tour of Christmases in his past.
Ghost of Christmas Present	The second spirit to visit Scrooge, a majestic giant clad in a green robe. His lifespan is restricted to Christmas Day.
Ghost of Christmas Yet to Come	The third and final spirit to visit Scrooge, a silent phantom clad in a hooded black robe, that shows Scrooge his future.
Bob Cratchit	Scrooge's clerk, a kind, mild, and very poor man with a large family. Though treated harshly by his boss, Cratchit remains a humble and dedicated employee.

## Week 4 - Quotes

About Scrooge	'As solitary as an oyster.'
Marley's Ghost	'Mankind was my business.'
Belle	'Another idol has displaced me.'
About Ignorance and Want	The boy is ignorance. The girl is want. Beware them both and all of their degree, but most of all, beware this boy'.

## Week 5 - Key Terms

Benevolent	Being kind, generous and willing to help people.
Antithesis	A person or thing that is the direct opposite of someone or something else.
Didactic	A moral message, meaning to give instructions.
Novella	A short novel.
Redemption	The act of saving or being saved from sin, error or evil.
Misanthropic	A person who dislikes other people.
Stave	A set of 5 horizontal lines where music is written.
Purgatory	A medieval Christian belief which is a limbo between hell and life which gives you another chance to change and be ready for heaven.

## Week 6 - Quotes

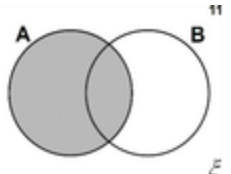
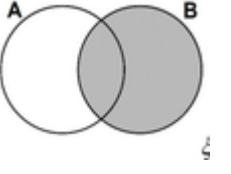
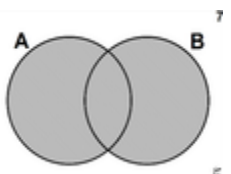
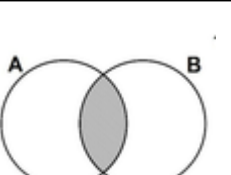
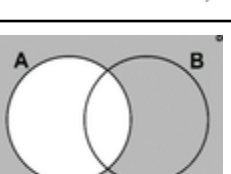

About Tiny Tim	'If these shadows remain unaltered by the future, the child will die.'
About Scrooge's Grave	'overrun by grass and weeds.'
Scrooge	'The Spirits of all Three shall strive within me.'
Scrooge	'I am as light as a feather, I am as happy as an angel, I am as merry as a school-boy. I am as giddy as a drunken man.'

# Maths – Year 10 (MP and MR)

## Probability

Key Word	Definition
Event	An event is something that happens that is recorded. For example throwing a coin is an event.
Outcome	An outcome is the result of an event.
Theoretical probability	This is the probability that something will happen in theory, it is based on the assumption that is something is tried an infinite number of times the outcomes will be this way.
Experimental probability	This is the probability calculated from an experiment
Relative Frequency	The probability of something relative to a number of trials or an experiment that has happened.
Mutually exclusive	an event that has two or more outcomes that cannot be true at the same time
Bias	Favouritism or when something has an unfair advantage, when the probability of each event is not equal there will be bias.

## Venn Diagrams – Set Notation

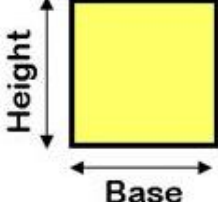
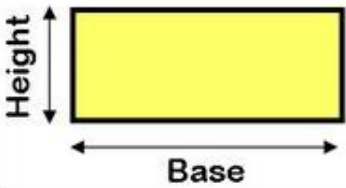
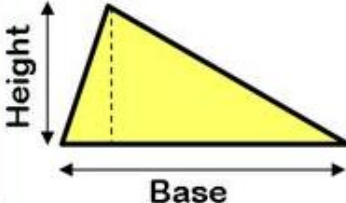
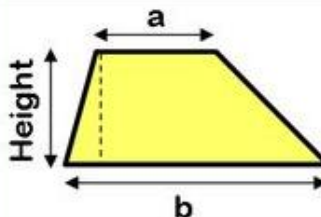
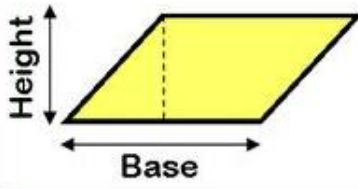
Set	Numbers that feature in a certain list/part of Venn diagram	
Element	An individual number within a set	
$Set A$	Everything inside the circle of A	
$Set B$	Everything inside the circle of B	
$A \cup B$	The 'union' of A and B – all the elements in both circles	
$A \cap B$	The 'intersection' of A and B – the elements in the cross over	
$A'$	The 'complement' of A – everything apart from elements in A	
$B'$	The 'complement' of B – everything apart from elements in B	

# Maths – Year 10 (MP and MR)

## Ratio and Proportion

Key Word	Definition
Ratio	Relationship between two or more numbers
Proportion	A comparison of two numbers that each represent the parts of a whole
Part	One 'part' of the ratio is how much one is worth
Share	Divide an amount into a ratio
Simplest form	Divide all numbers by the same amount until you cannot simplify further
Total	The whole amount (add)
Difference	Gap between two numbers (subtract)
Direct proportion	When one thing increases, the other thing increases at the same rate.
Inverse proportion	When one thing increases, the other thing decreases at the same rate.
Best value for money	The cheapest amount per item
Exchange rate	The rate at which the money of one country can be exchanged for the money of another country
Recipe	The amounts of each ingredient needed to cook something
Convert	To change one unit into another
Conversion graph	Graph we use to change one unit into another

## Area of 2D Shapes

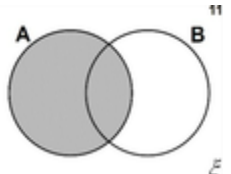
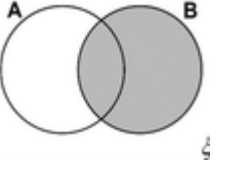
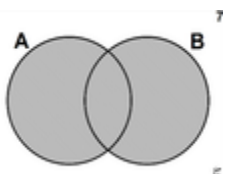
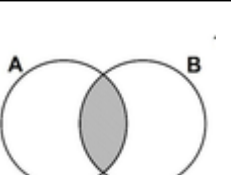
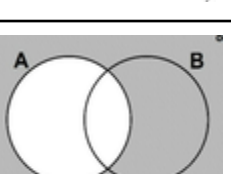

Shape	Name	Formula for Area
	<b>Square</b>	Base x Height
	<b>Rectangle</b>	Base x Height
	<b>Triangle</b>	Base x Perpendicular Height ÷ 2
	<b>Trapezium</b>	$\frac{(a + b) \times \text{height}}{2}$
	<b>Parallelogram</b>	Base x Perpendicular Height

# Maths – Year 10 (MI)

## Probability

Key Word	Definition
Event	An event is something that happens that is recorded. For example throwing a coin is an event.
Independent Event	Two events are independent if the occurrence of one event <b>does not</b> affect the chances of the occurrence of the other event
Dependent Event	Two events are independent if the occurrence of one event <b>does</b> affect the chances of the occurrence of the other event
Outcome	An outcome is the result of an event.
Theoretical probability	This is the probability that something will happen in theory, it is based on the assumption that is something is tried an infinite number of times the outcomes will be this way.
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# Maths – Year 10 (MA, MS, MI)

Algebra		
Key Word	Definition	Example
Expression	An expression is a group of mathematical symbols representing a number or quantity. Expressions never have an equals sign (=)	$3xy + 4x$
Equation	An equation is a mathematical statement that shows that two expressions are equal. It always includes an equals sign.	$3(x - 2) = 12$
Formula	A formula is a rule written using symbols that describe a relationship between different quantities. It always includes an equals sign.	$A = \pi r^2$ (area of a circle)
Identity	An identity is an equation that is always true, no matter what values are chosen.	$3a + 2a = 5a$
Inequality	show the relationship between two expressions that are not equal to one another ( $> < \geq \leq$ symbols)	$3m + 6 < 12$
Rearrange the formula	When you change the subject of the equation by using inverse operations	In the formula $F = ma$ $F$ is the subject because it is on its own
$y = mx + c$	This is the format of a linear graph (straight line). $m =$ gradient, $y =$ y-intercept	$y = 3x - 5$
Gradient	The steepness of a line. The steeper the line, the higher the gradient	
y – intercept	Where the line crosses the y-axis	
Quadratic	An expression or equation where the highest power is $x^2$	$x^2 + 10x + 24 = 0$
Roots/solutions	Where a quadratic graph crosses the x axis	
Simultaneous equations	two algebraic equations that share variables e.g. $x$ and $y$ , where the values of $x$ and $y$ are the same in both equations	$2x + 3y = 17$ $5x - 3y = 11$



**Section 1: Key terms**

1 Ecosystem	The <b>interaction</b> of a <b>community of living organisms (biotic)</b> with the <b>non-living (abiotic)</b> parts of their environment.
2 Habitat	The <b>area</b> in which an organism <b>lives</b> .
3 Community	<b>Two or more different species</b> in an ecosystem. A <b>stable community</b> is one <b>where all the species and environmental factors are in balance</b> so that <b>population sizes remain fairly constant</b> .
4 Population	The <b>total number of organisms of one species</b> in an ecosystem.
5 Competition	<b>Plants</b> often compete for <b>light, space, water and mineral ions</b> . <b>Animals</b> often compete for <b>food, mates and territory</b>
6 Interdependence	Within a community each <b>species depends on other species</b> for <b>food, shelter, pollination</b> etc.
7 Adaptations	A <b>feature</b> that an organism has that allows it to <b>survive</b> in its ecosystem.
8 Biodiversity	The <b>variety</b> of all the <b>different species</b> of organisms <b>on Earth, or within an ecosystem</b> .

**Section 2: Biotic and Abiotic Factors**

9 Biotic	10 Abiotic
Availability of <b>food</b>	<b>Light intensity</b>
New <b>predators</b> arriving	<b>Temperature</b>
New <b>pathogens</b>	<b>Moisture</b> levels
One species <b>outcompeting</b> another	<b>Oxygen</b> levels for aquatic animals
	<b>Wind</b> intensity and direction
	<b>Carbon dioxide</b> levels for plants
	<b>Soil pH</b> and <b>mineral</b> content

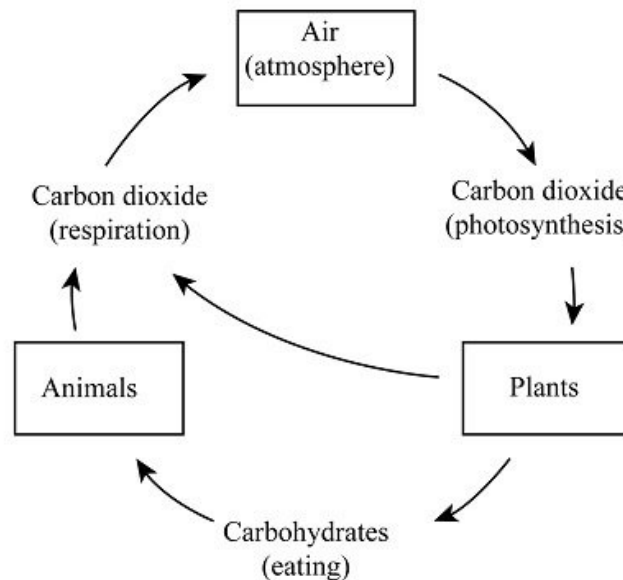
**Section 4: Adaptations**

20 Structural Adaptations	Part of the <b>body</b> that helps the organism survive. e.g. polar bears have a thick layer of fat for insulation.
21 Functional Adaptations	How the <b>body operates</b> that helps the organism survive. E.g. camels do not sweat.
22 Behavioural Adaptations	A <b>behaviour</b> that helps the organism survive. e.g. desert rats stay in their burrows during the hottest parts of the day.

**Section 5: Cycles**

**Section 5a: Carbon cycle steps**

24 Photosynthesis	<b>Plants absorb CO<sub>2</sub></b> from atmosphere.
25 Respiration	<b>Animals, plants and micro-organisms</b> respire, <b>releasing CO<sub>2</sub></b> into the atmosphere.
26 Decay	The carbon in dead organisms is <b>released to the atmosphere</b> by <b>micro-organisms respiring</b> .
27 Combustion	Carbon locked in <b>fossil fuels</b> is <b>released</b> as CO <sub>2</sub> when fuels are <b>burned</b> .



**Section 5b: Water cycle steps**

29 Evaporation	<b>Liquid water is turned into water vapour</b> in the <b>atmosphere</b> .
30 Condensation	Water vapour <b>condenses to form clouds</b> .
31 Precipitation	Water is deposited from clouds as <b>rain</b> .
transpiration	The <b>loss of water vapour</b> from the leaves by <b>evaporation from cells</b> and then out through the <b>stomata</b>



**Section 6: Human effects on biodiversity**

Human activity	Why it happens	Effects
32 Polluting water with fertiliser and sewage	Farmers spread <b>fertiliser</b> on fields. <b>Rain</b> washes fertiliser into <b>rivers</b> and ponds. Sewage is released directly into rivers.	Fertilisers and sewage cause an <b>increase in growth of algae</b> . When the algae <b>die</b> , they are <b>decomposed by bacteria</b> that <b>use oxygen</b> . Other animals <b>die due to a lack of oxygen</b> .
33 Using land	Humans <b>construct buildings</b> , create <b>quarries</b> and <b>farm</b> .	<b>Habitat</b> for plants and animals is <b>reduced</b> .
34 Destroying peat bogs	Humans <b>use peat to provide compost</b> to increase food production.	<b>Removes habitat, reducing biodiversity</b> . <b>Decay or burning of peat produces CO<sub>2</sub></b> .
35 Deforestation	To provide <b>land for cattle and rice fields</b> . To <b>grow crops for biofuels</b> .	<b>Burning or decomposing trees releases CO<sub>2</sub></b> . <b>Fewer trees to remove CO<sub>2</sub> from the atmosphere</b> . <b>Loss of biodiversity</b> .
36 Producing acidic gases	<b>Combustion of fossil fuels</b> releases <b>carbon dioxide, sulfur dioxide</b> and <b>nitrogen oxides</b> . These gases <b>dissolve in water</b> making it <b>acidic</b> .	<b>Acid rain</b> . <b>Damages plants</b> . Can cause <b>rivers and lakes</b> to become acidic, killing animals and plants.
37 Polluting water with toxic chemicals	<b>Pesticides</b> and other toxic chemicals (e.g. from <b>landfill</b> ) are washed into rivers and lakes by <b>rain</b> .	<b>Toxic chemicals accumulate</b> in animals. The <b>further up the food chain</b> , the <b>greater the accumulation</b> . Top predators die or fail to breed.
38 Increasing temperature of the planet (global warming)	Humans release extra <b>greenhouse gases (CO<sub>2</sub> and methane)</b> into the atmosphere and <b>less CO<sub>2</sub> is absorbed</b> by plants through photosynthesis. <b>Greenhouse gases absorb heat</b> and stop it escaping to space.	<b>Loss of habitat</b> as <b>sea levels rise</b> ; animals and plants can <b>no longer survive</b> in certain areas; <b>reduced biodiversity</b> ; <b>change in migration patterns</b> of animals.
Peat bog destruction.	Destruction of peat bogs to produce cheap compost for gardeners/farmers to increase food production.	The decay or burning of peat release CO <sub>2</sub> into the atmosphere

**Section 7: Maintaining biodiversity**

39 <b>Breeding programmes</b> for <b>endangered species</b> .
40 <b>Protection</b> and <b>regeneration</b> of <b>rare habitats</b> .
41 <b>Reintroduction of field margins</b> and <b>hedgerows</b> in agricultural areas where farmers grow only one type of crop
42 <b>Reduction of deforestation</b>
43 <b>Reduction of carbon dioxide</b> emissions by some <b>governments</b>
44 <b>Recycling resources</b> rather than dumping waste in landfill.

**Section 8: Measuring biodiversity**

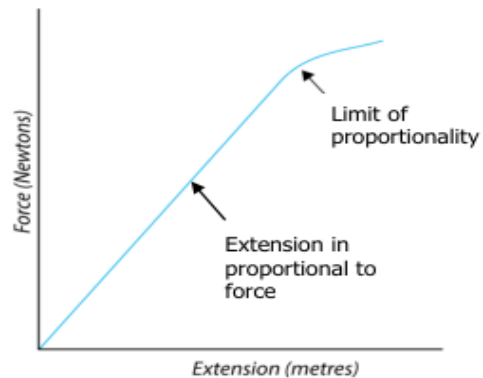
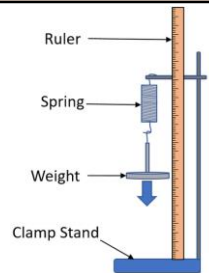
	Random Sampling	Systematic Sampling (transect)
45 Purpose	<b>Estimate the size of a population</b> in an area.	See how populations and communities <b>change over a distance</b> .
46 Method	<ol style="list-style-type: none"> <li>Choose a suitable number of quadrats to use.</li> <li>Assign <b>co-ordinates</b> to the area that you are sampling.</li> <li><b>Randomly</b> choose co-ordinates.</li> <li>Place the <b>quadrats</b> and count organisms present.</li> <li>Calculate the mean number of organisms.</li> </ol>	<ol style="list-style-type: none"> <li>Use a <b>tape measure</b> to create a long line (<b>transect</b>).</li> <li>Put <b>quadrats</b> at set distances.</li> <li>Count organisms present.</li> <li><b>Repeat</b> in a different place/ different time of year.</li> <li>Draw graphs to see how communities change over a distance.</li> </ol>

Section 1: Key terms	
1 Scalar	A value with magnitude (size) only, e.g. speed, distance.
2 Vector	A value with magnitude (size) and direction, e.g. all forces, displacement, velocity.
3 Contact force	Force between objects that are touching e.g. friction, air resistance.
4 Non-contact force	Force between separate objects e.g. gravitational force, magnetic force.
5 Weight	The force of gravity acting on an object's mass. Measured using a newtonmeter.
6 Centre of mass	The single point at which the object's weight appears to act.
7 Resultant force	A resultant force is a single force that has the same effect as all the forces acting on an object.
8 Work done	Work is done when an object is moved through a distance. When work is done against friction there is a temperature rise.
9 Momentum (HT)	Moving objects with mass have momentum. Momentum is "mass in motion".
10 Conservation of momentum (HT)	In a closed system, the total momentum before an event is equal to the total momentum after the event.

Section 2: Equations to learn			
Equation	Symbol equation	Units	
11 Weight = mass x gravitational field strength	$W = m g$	Weight – newtons (N) Mass – kilograms (kg) GFS – newtons per kilogram (N/kg)	
12 Work done = force x distance	$W = F s$	Work done – joules (J) Force – newtons (N) Distance – metres (m)	
13 Force = spring constant x extension	$F = k e$	Force – newtons (N) Spring constant – newtons per metre (N/m) Extension – metres (m)	
14 Distance = speed x time	$s = v t$	Distance – metres (m) Speed – metres per second (m/s) Time – seconds (s)	
15 Acceleration = $\frac{\text{change in velocity}}{\text{time taken}}$	$a = \frac{\Delta v}{t}$	Acceleration = metres per second squared (m/s <sup>2</sup> ) Velocity = metres per second (m/s) Time = seconds (s)	
26 Resultant force = mass x acceleration	$F = m a$	Force – newtons (N) Mass – kilograms (kg) Acceleration = metres per second squared (m/s <sup>2</sup> )	
17 (HT) Momentum = mass x velocity	$p = m v$	Momentum – kilograms metres per second (kg m/s) Mass – kilograms (kg) Velocity = metres per second (m/s)	

### Forces and elasticity

Elastic deformation	<i>The object has been stretched but returns to its original length</i>
Inelastic deformation	<i>The object has been stretched but does not return to its original length</i>
Extension	<i>The difference between stretched and unstretched lengths</i>



Stretching a spring	Force = spring constant X extension, $F = k X e$
	EPE = $\frac{1}{2}$ X spring constant X (extension) <sup>2</sup> , $EPE = \frac{1}{2} k e^2$

Elastic Potential energy (EPE)	<i>Energy stored in a stretched spring</i>
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Limit of proportionality

*Beyond this point the spring is permanently deformed*

### HIGHER ONLY

Resolving forces	<i>An object pulled with a force at an angle</i>	A single force can be split into two components acting at right angles to each other.
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### Forces and Vectors

Measure displacement / resultant force with a ruler or by  $F = \sqrt{a^2 + b^2}$

# History

## Key Words/ Individuals

<b>Mitigation</b>	Bringing people together to talk through their differences/problems
<b>Moral Condemnation</b>	To tell someone that they are in the wrong
<b>Economic Sanctions</b>	Punishing a country by stopping trade with them
<b>Refugee</b>	Someone who flees from their homeland because it is not safe to live there anymore
<b>Plebiscite</b>	When the people of a country, not just politicians, vote on a matter
<b>Dictator</b>	One ruler who has total power over a country
<b>Depression</b>	An economic state; when a country has little or no money
<b>Foreign Minister</b>	A politician responsible for a country's relationship with other countries
<b>Fascist</b>	Right-wing political group, holding strongly nationalistic views
<b>Stresa Front</b>	An agreement made in 1935 between Italy, France and Britain, declaring that they would unite against Hitler
<b>Haile Selassie</b>	Title of the ruler of Ethiopia

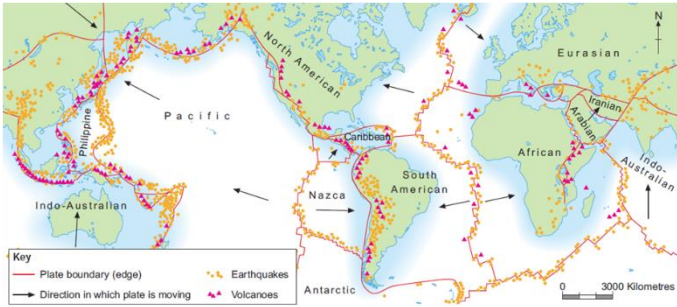
## Key Events

<b>1931</b>	Manchuria Crisis – Japan invades Manchuria
<b>1933</b>	Hitler leaves the League of Nations Disarmament Conference
<b>13 January 1935</b>	People in the Saar region vote to rejoin Germany
<b>March 1935</b>	Nazi Rearmament Rally
<b>18 June 1935</b>	Anglo-German Naval Agreement
<b>7 March 1935</b>	Remilitarisation of the Rhineland
<b>December 1935</b>	Abyssinia Crisis – Italy invades Manchuria
<b>July 1936</b>	Hitler and Mussolini support General Franco in the Spanish Civil War
<b>October 1936</b>	The Rome Berlin Axis is signed
<b>12 March 1938</b>	Anschluss with Austria
<b>September 1938</b>	Munich Agreement allows Hitler to have the Sudetenland region of Czechoslovakia
<b>15 March 1939</b>	Hitler invades the rest of Czechoslovakia

# Geography

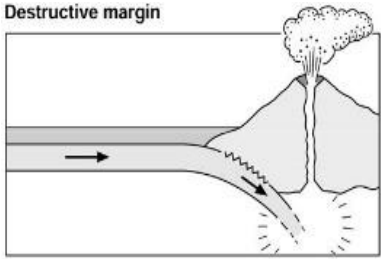
Key Word	Definition
Atmospheric hazards	natural hazards associated with Earth's atmosphere, such as hurricanes, tornadoes, wind, snow, drought, lightning and rain
Drought	a long, continuous period of dry weather
Earthquake	a sudden or violent movement within the Earth's crust followed by a series of shocks
Fatalities	deaths caused by disasters or accidents
Geological hazards	natural hazards associated with Earth's geological processes, such as volcanoes, landslides, mudflows, avalanches and earthquakes
Hazard risk	the probability or chance that a natural hazard may take place
Landslides	the movement of rock, earth or debris down the slope of a hill
Mudflow	when saturated soil and weak rock flow down a slope
Natural disaster	when a natural event, or hazard, impacts on human activities
Natural hazard	a natural event that poses a threat to humans and/or property
Poverty	deprivation in well-being, such as lack of access to wealth, food, shelter, water and education
Social impact	the effect of an event on the lives of people or community
Tropical storm (hurricane, cyclone, typhoon)	an area of low pressure with winds moving in a spiral around a calm central point called the eye of the storm – winds are powerful and rainfall is heavy
Tsunami	huge waves caused by earthquakes
Urbanisation	when an increasing percentage of a country's population comes to live in towns and cities
Volcano	a large landform, typically conical in shape, formed by a series of volcanic eruptions over a long period of time

## Tectonic Hazards



Distribution of plate margins

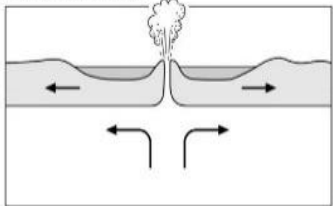
### Destructive margin



**Destructive margin= two plates move towards each other**

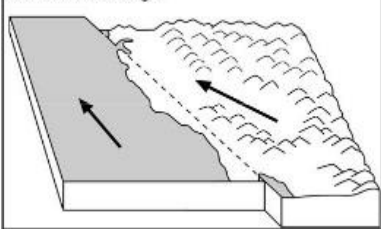
*Oceanic crust* = outer part of earth under oceans  
*Continental crust* = outer part of earth that make up the earths continents  
*Subduction zone* = where two plates collide underneath  
*Magma chamber* = a large pool of liquid rock beneath the surface of the Earth

### Constructive margin



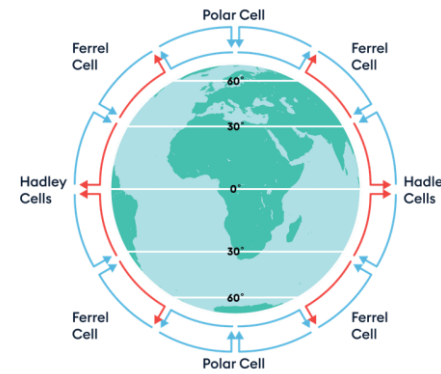
**Constructive margin = two plates moving a part**

### Conservative margin

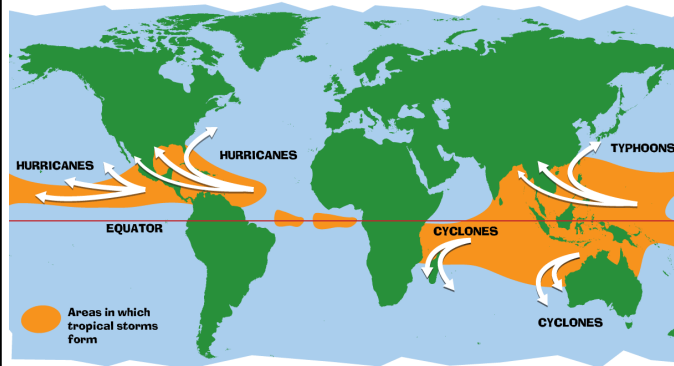


**Conservative margin = two plates that move side by side**

## Atmospheric hazards

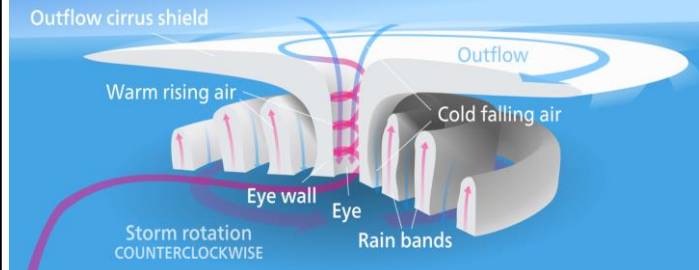


Global atmospheric circulation model



Distribution of tropical storms

## HURRICANE STRUCTURE IN THE NORTHERN HEMISPHERE



Structure of tropical storms

# Spanish

Spanish	English
el desayuno	breakfast
la comida/el almuerzo	lunch
desayunar	To have breakfast
la merienda	tea (meal)
la cena	dinner
Soy alérgico/a a...	I'm allergic to...
Soy vegetariano/a	I'm a vegetarian
tengo hambre	I'm hungry.
picante(s)	spicy
rápido/a	quick
rico/a(s)	tasty
sanos/a(s)	healthy
cien gramos de...	100 grammes of...
quinientos gramos de...	500 grammes of...
un kilo (y medio) de...	a kilo (and a half) of...
un litro de...	a litre of...
un paquete de...	a packet of...

Spanish	English
una barra de...	a loaf of...
una botella de...	a bottle of...
una caja de...	a box of...
una docena de...	a dozen...
una lata de...	a tin / can of...
Celebramos / Celebran	We / They celebrate
Comemos / Comen...	We / They eat...
Decoramos / Decoran	We / They decorate
Hacemos / Hacen hogueras.	We / They make bonfires
Llevamos / Llevan un disfraz	We / They wear a costume
Participamos / Participan en...	We / They participate in...
Quemamos / Queman las figuras.	We / They burn the figures
Vamos / Van a...	We / They go to...
Vemos / Ven los desfiles	We / They watch the processions
los fuegos artificiales.	the fireworks
Es una fiesta para niños	a festival for children
Fue una experiencia inolvidable	It was an unforgettable experience.

### Health and Fitness

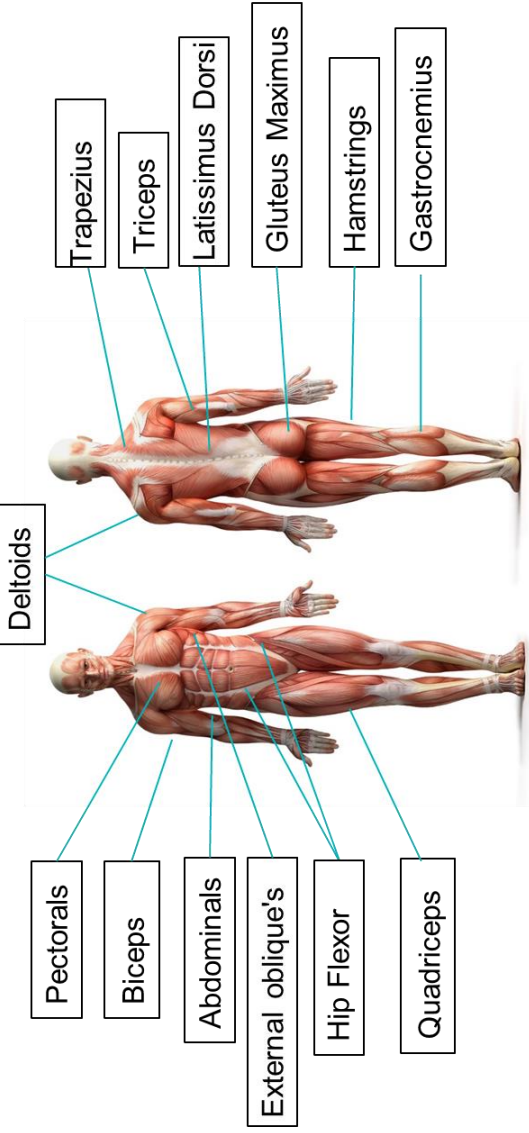
Muscular Strength	The amount of the force muscles can generate against a resistance
Muscular Endurance	The ability to use voluntary muscles, over long periods of time without getting tired
Flexibility	The range of movement at a joint
Cardiovascular Fitness (Aerobic Endurance)	The ability of the heart and circulatory system to meet the demands of the body for a long period of time
Body composition	The percentage of a body that is fat, muscle, bone and water
Coordination	The ability to move two or more body parts at the same time
Reaction Time	The time taken for a response to occur after a stimulus
Agility	The ability to change direction at speed
Balance	The ability to keep the body steady when in a static position or when moving
Speed	The time taken to cover a set distance/complete a movement
Power	The ability to combine speed and strength

### Principles of training

Progressive Overload	Working the body harder than normal/gradually increasing the amount of exercise you do
Reversibility	If training is not regular, adaptations will be reversed. This can happen when suffering from illness, injury or after an off season
Specificity	Training should be matched to the requirements of the sport or position the performer is in. Training must be specifically designed to develop the right muscles, type of fitness or skills
Individual needs	All PEP's would differ depending on performers goals/target, strengths /weaknesses, age/gender and current health/fitness levels
Overtraining	Occurs when you train too hard and do not allow the body enough rest/recovery time Signs include extended muscle soreness, frequent illness & increase injuries

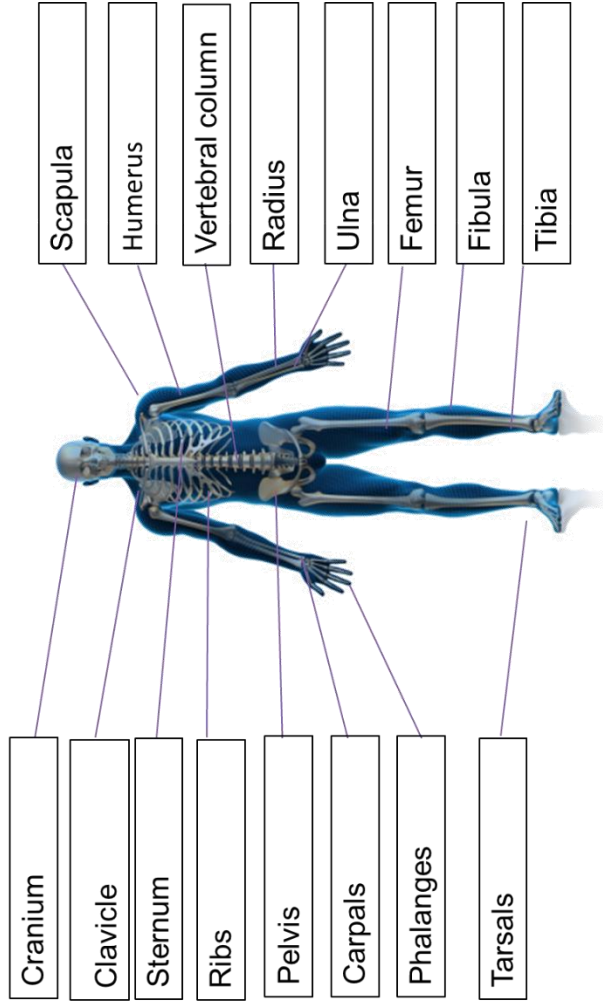


# Muscular System

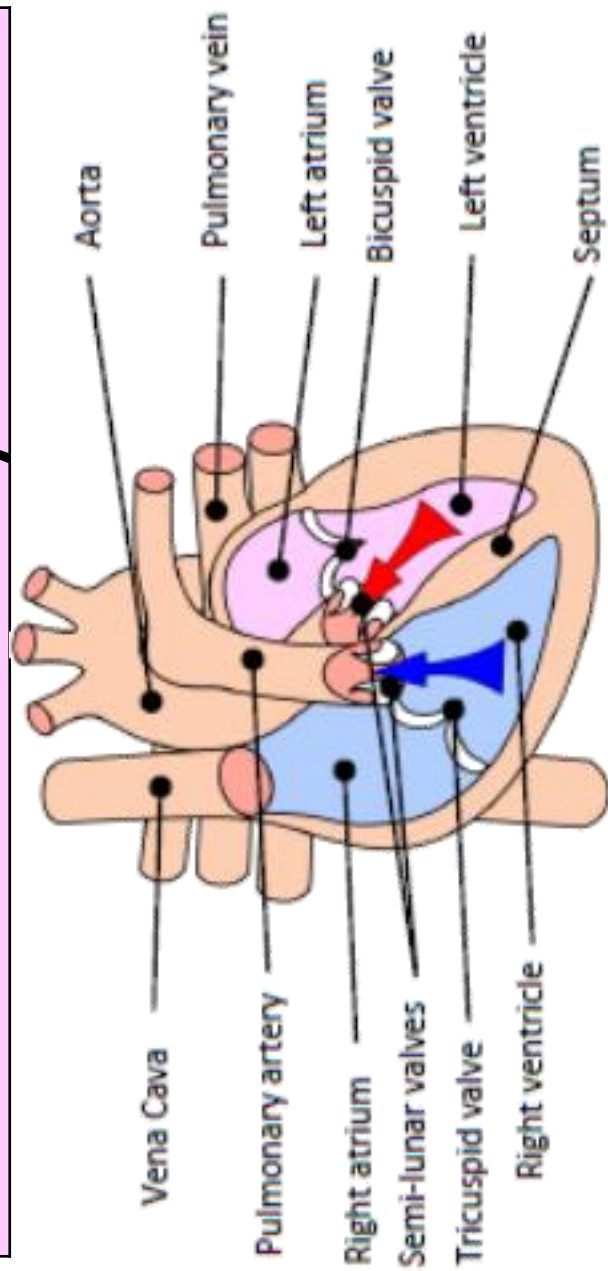


PE

# Skeletal System



# Cardiovascular System



### Cardiovascular System – Components of blood

Red blood cells	Carry oxygen from the lungs to the working muscles + Removes CO <sub>2</sub> .
Haemoglobin	A protein that binds and carries oxygen molecules.
White blood cells	Are part of the immune system and fight disease and infection.
Platelets	Blood platelets are formed in the bone marrow and are essential in the clotting of blood. Platelets are the workhorses of the cardiovascular system.
Plasma	Blood plasma is made up of 90% water. It contains a range of substances that aids the circulation between cells and tissues.

### Blood Vessels

Arteries	<p>Carry blood away from the heart, Oxygenated blood (except pulmonary artery)</p> <p>Thick/elastic walls High pressure Small lumen</p>
Veins	<p>Carry blood back to the heart Deoxygenated blood (except pulmonary vein)</p> <p>Thin walls + larger lumen Lower pressure Valves</p>
Capillaries	<p>In the tissue Site of gaseous exchange Very thin walls</p>

Types of practice	
Massed practice	When no rest intervals are given
Distributed practice	When a rest interval is given to allow recovery, feedback & coaching
Fixed practice	Uses repetition of the same activity to develop consistency in performance
Variable practice	Involves performing a skill in different situations where conditions are changeable
Goal Setting	
Goal Setting	Done to motivate performances
Short term goals	A goal you want to accomplish soon
Long term goals	A goal you want to accomplish in the future
Outcome goal	Helps the performer to focus on the big picture of what they are trying to achieve.
Performance goal	Allows the athlete to focus in on details of the performance, not just winning and losing
SMART Targets	Are used to help guide goal setting. SMART is an acronym for Specific, Measureable, Achievable, Realistic and Time bound
Specific	Targets must be concise
Measureable	Must be measured and compared
Achievable	Target must be challenging but yet reachable
Realistic	Matched to the performers skill level
Time bound	Set for a particular time to be completed.

<b>Mental preparation</b>	
Mental Preparation	Involves the athlete imagining themselves in an environment performing a specific activity using all of their senses
<b>Feedback</b>	
Feedback	Vital part of information processing which provides confidence, motivation and improves performance
Intrinsic feedback	This comes from within the performer. Kinaesthetic senses provide feelings from muscles/joints about the action
Extrinsic feedback	This comes from results and match analysis
Concurrent feedback	Information provided to the athlete during the performance
Terminal feedback	Information provided to the athlete before or after the performance

# Performing Arts

Drama Devices	
<b>Thought Tracking</b>	The character steps out of the scene to reveal their inner thoughts to the audience.
<b>Monologue</b>	A speech presented by a single character which expresses the thoughts of the character.
<b>Narration</b>	Speaking directly to the audience to give them information.
<b>Still Image</b>	A non-moving image. (A freeze frame is a moment that has been paused)
<b>Cross Cutting</b>	Two scenes taking place on the stage at the same time, each scene stopping to allow the other scene to take place.
<b>Body Propping</b>	Creating props using the actors rather than using props.
<b>Choral Speaking</b>	Speaking as a group. Often used in Greek Chorus and Artaud's work.
<b>Mime</b>	The use of movement to tell a story.
<b>Soundscape</b>	Place, time, mood and atmosphere can be created with recorded or live sound and the voices of the actors on stage.

Devising Drama	
<b>Devising Drama</b>	A method of theatre- making in which the script originates from a performing ensemble (team) working collaboratively.
<b>Stimulus</b>	A stimulus is a starting point to generate ideas. It may be a picture, song, poem, short story, object, or even just a word! It is meant to be explored, discussed and used to create an original piece of drama. The final piece of drama does NOT need to resemble any starting stimulus – the stimulus is simply the starting point in order to generate ideas to explore.
<b>The Devising Process</b>	<p><u>Research</u>- Explore each stimuli, finding out all the fact around it.</p> <p><u>Map ideas</u> – Write all your initial ideas on a mind map.</p> <p><u>Discuss</u> – Share your ideas with your group and decide on a final idea.</p> <p><u>Storyline</u> – Decide on a theme for your story, who is the protagonist?</p> <p><u>Structure</u> – How will you structure your piece? Linear, cyclical etc.</p> <p><u>Practitioner</u> – What style will chose? What techniques?</p> <p><u>Blocking</u> – Begin to piece your ideas together practically.</p> <p><u>Rehearse and refine your piece.</u> What changes and development have you made?</p>

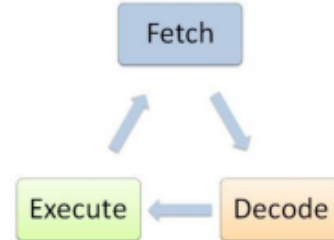
## 1.1 SYSTEMS ARCHITECTURE

### KEY CONCEPTS

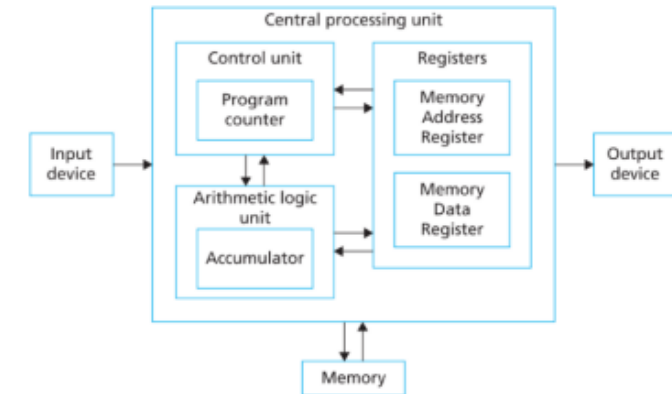
- Computer systems take data (input), process it and then output it.
- **Embedded systems** are computers built in to other devices like washing machines. They are dedicated to a single task so they are efficient.
- **Clock speed:** the number of instructions a processor can carry out per/second. Higher clock speed = faster CPU.
- Number of **Cores:** The more cores a CPU has the more instructions it can carry out at once (multitasking). More cores = faster processing.
- **Cache size:** A larger cache gives the CPU faster access to more data

### FETCH - DECODE - EXECUTE CYCLE

CPU **fetches** instruction from the RAM  
 (Copies memory address to MAR, copies  
 Instruction to MDR & adds 1 to PC.  
 CU **decodes** the instruction from the MDR  
 Instruction is **executed** by the CU  
 The next instructions is fetched and  
 The cycle repeats.



### THE CENTRAL PROCESSING UNIT (CPU)



**Control Unit (CU):** executes instructions and controls the flow of data in the CPU.

**Program counter:** holds the memory address for the instruction of each cycle.

**Arithmetic Logic Unit (ALU):** does all of the calculations and logic operations.

**Accumulator:** holds the result of any calculations in the ALU.

**Cache:** very fast memory that stores regularly used data so that the CPU can access it quickly.

**MAR (Memory Address Register):** holds the address about to be used by the CPU.

**MDR (Memory Data Register):** holds the actual data or instruction being processed by the CPU.

## 1.2 MEMORY and 1.3 STORAGE

### RANDOM ACCESS MEMORY (RAM)

- RAM is the computer's main memory that holds the data, programs and files while they are being used.
- RAM is volatile (power off = the data is lost)
- The CPU will fetch instructions from the RAM in the fetch - decode - execute cycle.
- When the RAM is full the computer uses **VIRTUAL MEMORY**. It uses the secondary storage as temporary RAM so that the computer can continue running (but slowly).

### READ ONLY MEMORY (ROM)

- The ROM is on a chip build into the motherboard
- It contains the BIOS (boot up sequence for the computer)
- ROM is non-volatile (data still stored after power is off)

### TYPES OF STORAGE

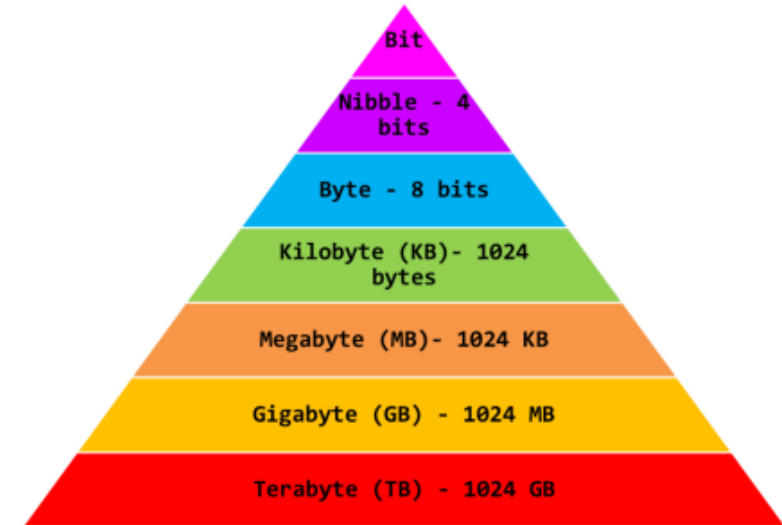
- Secondary Storage: where all data including the programs are stored when they are not being used.

Storage	Key Information
Hard Disk Drive (HDD)	Magnetic, has moving parts, large capacity, lower cost than SSD
Solid State Drive (SSD)	Flash memory, no moving parts, more robust than HDD, faster and more expensive than HDD
Flash memory	e.g. USB memory sticks, memory cards.
Optical Storage	e.g. CDs, DVDs. Cheap, portable and fairly robust.
Magnetic tape	Used for archive storage (backups). Very large capacity, low cost, slow.

Storage device comparison factors: speed, cost, durability, robustness, capacity and portability.

### STORAGE CAPACITY

Some storage methods such as a HDD or SSD have a large capacity (they can store lots of data. Other devices such as CDs and SD cards have smaller capacity. Measurements of capacity are shown below:



1000 instead of 1024 could be used when doing your conversion calculations, because you will not be allowed a calculator in your exam.



## Edexcel GCSE Business—1.3

<b>Aims and objectives</b>	Aims are general and objectives are more specific, with a date, time, %
	Examples of aims may be to increase sales or market share
	An aim will be to increase revenue by £20,000 in the next year
<b>Revenue</b>	Is money coming in from sales = Price X Quantity sold
<b>Fixed Costs</b>	Do not change with productivity. E.g. rent, insurance payments
<b>Variable Costs</b>	Do change with number of items made. E.g. Materials, packaging
<b>Total Costs</b>	Fixed Costs + Variable costs
<b>Profit</b>	Revenue—Total Costs
<b>Interest</b>	The extra amount on top of what you borrow that you have to pay back
<b>Break even point</b>	When total costs = total revenue
<b>Margin of safety</b>	Is the number of items less you can make before hitting your break even point
<b>Cash flow forecast</b>	Used to predict inflows and outflows over a given period
<b>Net cash flow</b>	Difference between inflows and outflows
<b>Sources of business finance</b>	Where a business chooses to get money from to start up or expand
<b>Short term sources</b>	Overdraft, trade credit
<b>Long term sources</b>	Personal savings, retained profit, bank loan, venture capital, share issue, crowd funding

## OCR Imedia -2.1

Target Audience	This is a group of people identified as likely customers for the digital product
Advertising Product	A product made with the intention of selling a product
Education Product	A product made with the intention of teaching about a subject
Entertainment Product	A product made with the intention of entertaining the audience
File format	Are extensions added to file names when saving documents on a computer. e.g. docx, pptx, xlsx, htm, pdf, txt, jpg, png, gif, tiff, wmv, mp4, wa
File compression	Is when file sizes are made smaller by computers, smaller files are quicker to email and transfer
Lossless file compression	Retains data that allows the file to be restored later to its original quality and condition
Lossy compression	When file sizes are reduced some data is lost, so it is difficult to restore the file to the original condition if needed
House Style /Brand Identity	The common layout, colours and fonts. Is the same across mediums so audience recognise the brand

## OCR Imedia -2.2

Visualisation Diagram	A visual representation of what the final product will look like. It will be represented by an image of the product and annotations of the design.
Storyboard	A visual representation that shows the flow of scenes that occur in a timeline and the chronological succession of events.
Mood Board	A collection of sample materials and products created using paper / cards on a notice board or with digital media software.
Mind Map	A diagrammatic representation used to organise thoughts and idea based on a central idea.
Client	The person or company who has asked for the media product to be made.
Client Brief	The project brief which is produced for a design team detailing detailed requirements from the client.

# Cooking and Nutrition

Key Word	Definition
Eatwell Guide	A diagram produced by the UK government to show the recommended percentage of each food group that should be consumed at mealtimes
Reference Intake (RI)	The recommended quantity of a nutrient that an adult should eat every day
Rickets	A disease caused by poor bone strength where the bones bend during formation
Antioxidant	A substance which helps prevent harmful chemicals such as pollutants from the air, entering the body and causing harm
Amino acids	The building blocks of protein
Saturated fats	These fats usually come from animal sources and can be harmful to health
Unsaturated fats	These fats usually come from plant sources and can be good for health
Protein alternatives	Sources of protein other than meat that are suitable for vegetarians
Nutrition	A study of what people eat and how all the nutrients in foods work together in the body
Nutrients	Natural chemical substances in foods that are essential for body growth, function and health
Macro-Nutrients	Nutrients needed by the body in large amounts
Micro-Nutrients	Nutrients needed in the body in smaller amounts
Balanced Diet	A balanced diet is one that contains the correct nutrients in the correct proportions, plus the correct amount of water and dietary fibre to meet the body's needs
Osteoporosis	A disease caused by lack of vitamin D and calcium where the bone degenerates and new bone is not created. The bones become weak and break easily
Anaemia	A disease caused by lack of Vitamin C and iron which means insufficient red blood cells are formed, so not enough oxygen can be carried around the body in the blood, causing tiredness
Soluble Fibre	This slows down the digestive process and can help lower blood sugar and cholesterol levels
Insoluble fibre	This absorbs water and helps prevent constipation

# Art

Key Word	Definition
Identity	Identity is the qualities, beliefs, personality traits, appearance, and/or expressions that characterize a person or group
Gender	either of the two sexes (male and female), especially when considered with reference to social and cultural differences rather than biological ones. The term is also used more broadly to denote a range of identities that do not correspond to established ideas of male and female.
Artist Analysis	An Artist study is the breakdown of the artistic elements in an artwork to discover how it portrays meaning. Analysing art is an aspect that many students find difficult, practicing it will help you develop your language and skills.
Artist Transcription	Transcription in painting is copying, but often with a different purpose than to produce a replica. Artists use transcription to learn how another artist worked: how she constructed her painting, produced brush strokes and visual effects, and how they mixed colours
Critic	a person who judges the merits of literary or artistic works, especially one who does so professionally.
Context	Specific to artwork, context consists of all of the things about the artwork that might have influenced the artwork or the maker (artist) but which are not actually part of the artwork.
Culture	the ideas, customs, and social behaviour of a particular people or society
Art styles	In the visual arts, style is a "... distinctive manner which permits the grouping of works into related categories" or "... any distinctive, and therefore recognizable, way in which an act is performed or an artefact made or ought to be performed and made".
Contemporary	Contemporary art is the art of today, produced in the second half of the 20th century or in the 21st century. Contemporary artists work in a globally influenced, culturally diverse, and technologically advancing world.
Mood	Mood is the atmosphere in a painting, or the feeling expressed. Is the art tranquil, or is it dark and disturbing? Tone refers to the lightness or darkness of colours used, which can help to create a sense of depth or distance in art.
Movement	An art movement is a tendency or style in art with a specific common philosophy or goal, followed by a group of artists during a specific period of time.
Concept	Concepts are defined as abstract ideas
Theme	Theme relates to the meaning of a painting, rather than the subject, which is specific and basic. A theme is deeper and broader and conveys something more universal.
Interpret	explain the meaning of (information or actions)
Surrealism	Surrealism is a cultural movement that developed in Europe in the aftermath of World War I in which artists depicted unnerving, illogical scenes and developed techniques to allow the unconscious mind to express itself.

# Graphics

Key Word	Definition
Concept	Concepts are defined as abstract ideas.
Brand	A brand is a name, term, design, symbol or any other feature that distinguishes one seller's good or service from those of other sellers.
Identity	Identity is the qualities, beliefs, personality traits, appearance, and/or expressions that characterize a person or group.
Logo	A logo is a graphic mark, emblem, or symbol used to aid and promote public identification and recognition. It may be of an abstract or figurative design or include the text of the name it represents as in a wordmark.
Colour psychology	Colour psychology is the study of hues as a determinant of human behaviour. Carl Jung has been credited as one of the pioneers in this field for his explorations into the properties and meanings of colours in our lives.
Illustration	An illustration is a decoration, interpretation or visual explanation of a text, concept or process, designed for integration in print and digital published media, such as posters, flyers, magazines, books, teaching materials, animations, video games and films.
Artwork	paintings, drawings, or other artistic works.
Target Audience	a particular group at which a product such as a film or advertisement is aimed
Packaging	the presentation of a person or thing in an advantageous way.
Product	a thing or person that is the result of an action or process.
Design brief	A design brief is a document for a design project developed by a person or team in consultation with the client/customer.
Photo-Montage	A montage constructed from photographic images.
Composition	The term composition means "putting together". It can be thought of as the organisation of the elements of art according to the principles of art.
Design Layout	Layout design is the process of arranging visual elements—like text, images, and shapes—on a given page. Layout design is important for any project that conveys a message through eye-catching visuals, like magazine layouts, website design, and advertisements
Kerning	the spacing between letters or characters in a piece of text to be printed.
Serif	serif is a decorative stroke that finishes off the end of a letters stem (sometimes also called the “feet” of the letters). An example includes Times New Roman.