



Year 10 Knowledge Organiser

Knowledge is Power

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English

Week 1 - Context

Superstition	At the time Shakespeare was writing, many people believed in Witchcraft and so would have seemed believable and frightening to an audience in
Role of Women	Women were expected to obey all men, not be violent or powerful, and be religious. Lady Macbeth defies these gender expectations through her powerful and manipulative ways.
The Real Macbeth	Macbeth is loosely based on true events in Scotland in the 11th Century and would have been known to King James (the monarch after Elizabeth I).

Week 2 - Key Literary terms

Tragedy	A serious drama with an unhappy ending, usually resulting in the death of the main characters. This usually evokes sympathy.
Tragic Hero	A character who is usually depicted as perfect and honorable, yet has one 'fatal flaw', hamartia.
Foil	A character with qualities that are in contrast with another character.
Catharsis	The process of letting go of or providing liberation from strong or suppressed emotions.
Hamartia	A character's tragic flaw.

Week 3 - Characters

Macbeth	A. loyal warrior who becomes disloyal as he becomes obsessed with the witches' prophecies of power
Lady Macbeth	Macbeth's wife who drives his ambition in the beginning but loses her control and sanity by the end.
Banquo	Macbeth's close friend and ally who also receives prophecies from the witches. He is a foil to Macbeth.
Duncan	King of Scotland at the beginning of the play who is portrayed as a strong and respected leader.
Malcolm	Duncan's oldest son and next in line to the throne. Joins the English army to defeat Macbeth at the end of the play.
Macduff	Macbeth's antagonist: A brave warrior who is loyal to Duncan and is consistently suspicious of Macbeth.

Week 4 - Quotes

Lady Macbeth	When you durst do it, then you were a man (1.7)
Macbeth	Is this a dagger I see before me? (2.1)
Macbeth	Full of scorpions is my mind dear wife (3.2)
Lady Macbeth	All the perfumes of Arabia will not sweeten this little hand (5.1)
Lady Macbeth	Out damned spot (5.1)

Week 5 - Key Terms

Soliloquy	Dramatic device whereby a character stands alone on stage and addresses the audience, giving voice to their deepest thoughts and feelings.
Hubris	An exaggerated self-pride or self-confidence which often leads to a fatal retaliation.
Peripeteia	A sudden turn of events or an unexpected reversal.
Microcosm	Using a place, group of people or event in the small-scale to represent something larger. For example, the battle at the start of the play is a microcosm for the whole play.
Fate	The belief that all our actions are pre-determined and there is nothing we can do to change our destiny.
Free Will	The belief that we have control over our actions and behaviour and we choose the direction of our lives.

Week 6 - Quotes

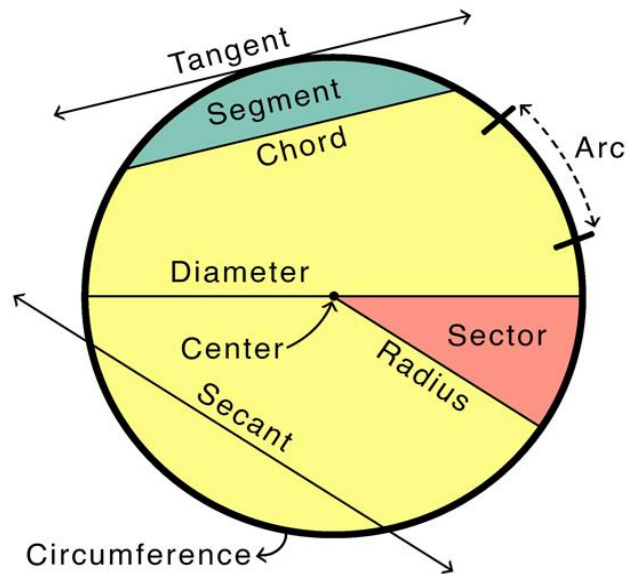
Witches	Fair is foul and foul is fair (1.1)
Macbeth	Stars, hide your fires/Let not light see my black and deep desires (1.4)
Lady Macbeth	Come, you spirits... Unsex me here (1.5)
Macbeth	'this Duncan/Hath borne his faculties so meek, hath been/ so clear in his great office. (1.7)

Maths

Key Term	Definition
Area of Rectangle and Parallelogram	$base \times height$
Area of Triangle	$\frac{base \times height}{2}$
Area of Trapezium	$\frac{a + b}{2} \times height$
Area of Circle	$\pi \times radius^2$
Circumference	$\pi \times diameter$

Key Term	Definition
Discrete Data	Data that can only take certain values. These values do not have to be whole numbers, but they are fixed values..
Continuous Data	Data that can take any value e.g. height, weight, temperature, length.
Grouped Data	Data grouped together into categories (class intervals)
Class interval	When data is collected and arranged in a class, and the width of this class is known as the class interval.

Parts of a Circle

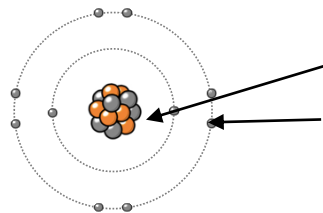


Key Term	Definition
Diameter	A straight line that passes through the centre of the circle
Radius	A straight line from the centre to the circumference (half the diameter)
Tangent	A straight line that touches the circumference at a point
Segment	The smallest part of a circle made when it is cut by a chord.
Chord	A straight connecting two points on a circle's circumference.
Arc	Part of the circumference.
Sector	A sector is formed when two radii of the circle meet at both ends of the arc.
Secant	A straight line that intersects a circle in two points.

Science – Periodic Table

Atoms, elements and compounds

Atom	The smallest part of an element that can exist	Have a radius of around 0.1 nanometres and have no charge (0).
Element	Contains only one type of atom	Around 100 different elements each one is represented by a symbol e.g. O, Na, Br.
Compound	Two or more elements chemically combined	Compounds can only be separated into elements by chemical reactions.



Central nucleus	Contains protons and neutrons
Electron shells	Contains electrons

Name of Particle	Relative Charge	Relative Mass
Proton	+1	1
Neutron	0	1
Electron	-1	Very small

Electronic shell	Max number of electrons
1	2
2	8
3	8
4	2

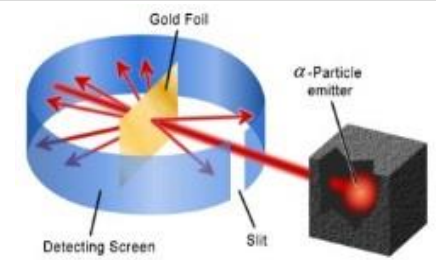
Relative electrical charges of subatomic particles

7 ← Mass number	The sum of the protons and neutrons in the nucleus	
Li	The number of protons in the atom	Number of electrons = number of protons
3 ← Atomic number		

The development of the model of the atom

Describe Rutherford's experiment

- Fired alpha particles at gold foil
- Most alpha particles passed through, but a few were deflected
- Proved atomic structure was mainly empty space with a small, positively charged nucleus



James Chadwick

Provided the evidence to show the existence of neutrons within the nucleus

Periodic Table

Describe how Mendeleev arranged the Periodic Table

Arranged by atomic mass and he left gaps for undiscovered elements

Describe how the modern day Periodic Table is arranged

Elements are arranged by atomic number (proton number). Elements in the same group have similar chemical properties

Relative atomic mass

Isotopes

Atoms of the same element with the same number of protons and different numbers of neutrons

³⁵Cl (75%) and ³⁷Cl (25%)

Relative abundance = (% isotope 1 x mass isotope 1) + (% isotope 2 x mass isotope 2) ÷ 100

e.g. (25 x 37) + (75 x 35) ÷ 100 = 35.5

The group number indicates how many electrons are in the outer shell of an atom

1	2		3	4	5	6	7	0
		H						He
Li	Be		B	C	N	O	F	Ne
Na	Mg		Al	Si	P	S	Cl	Ar
K	Ca		Ga	Ge	As	Se	Br	Kr
Rb	Sr		In	Sn	Sb	Te	I	Xe
Cs	Ba		Tl	Pb	Bi	Po	At	Rn
Fr	Ra							

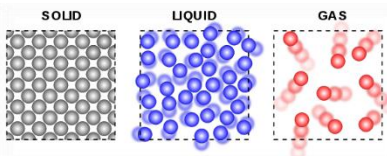
As you go down a group, the number of electron shells increases by 1

As you go across the Periodic Table, the number of electrons in the outer shell increases by 1

Science – Bonding

Solid, liquid, Gas

Melting and freezing happen at melting point, boiling and condensing happen at boiling point.



The amount of energy needed for a state change depends on the strength of forces between particles in the substance.

(HT only)
Limitations of simple model:

- There are no forces in the model
- All particles are shown as spheres
- Spheres are solid

s solid

l liquid

g gas

Ionic bonding

Electrons are transferred so that all atoms have a noble gas configuration (full outer shells).

Metal atoms lose electrons and become positively charged ions

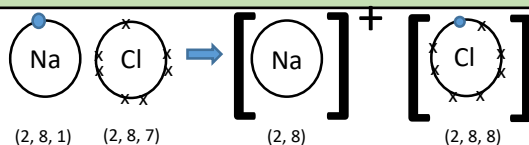
Group 1 metals form +1 ions
Group 2 metals form +2 ions

Non metals atoms gain electrons to become negatively charged ions

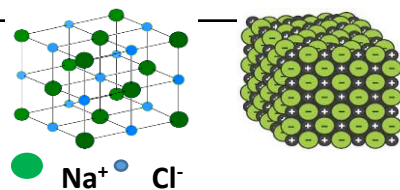
Group 6 non metals form -2 ions
Group 7 non metals form -1 ions

Ionic compounds

Dot and cross diagram



Giant structure



Structure

- Held together by strong electrostatic forces of attraction between oppositely charged ions
- Forces act in all directions in the lattice

Chemical bonds

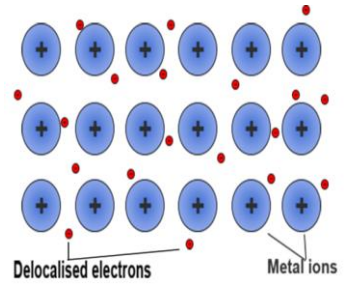
Ionic	Particles are oppositely charged ions	Occurs in compounds formed from metals combined with non metals.
Covalent	Particles are atoms that share pairs of electrons	Occurs in most non metallic elements and in compounds of non metals.
Metallic	Particles are atoms which share delocalised electrons	Occurs in metallic elements and alloys.

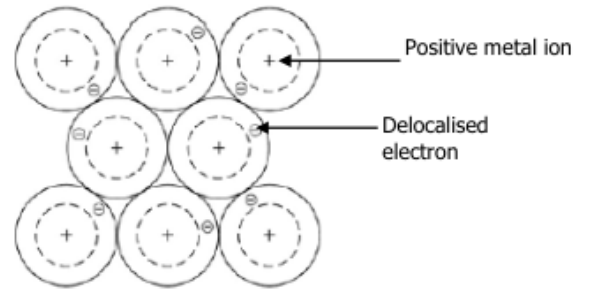
Properties of ionic compounds

High melting and boiling points	Large amounts of energy needed to break the bonds.
Do not conduct electricity when solid	Ions are held in a fixed position in the lattice and cannot move.
Do conduct electricity when molten or dissolved	Lattice breaks apart and the ions are free to move.

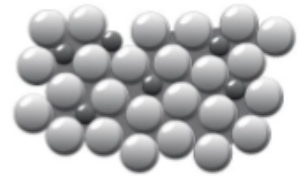
State when an ionic bond will be formed	Ionic bonds are formed when metals bond with non-metals
Describe how ionic bonds are formed	<ul style="list-style-type: none"> - Metal atoms will lose their outer electron(s) to form positive ions - Non-metals atoms will gain electrons to form negative ions - Oppositely charged ions are held together by strong electrostatic attraction

Metallic bonding

Giant structure of atoms arranged in a regular pattern	 <p>Delocalised electrons</p> <p>Metal ions</p>	Electrons in the outer shell of metal atoms are delocalised and free to move through the whole structure. This sharing of electrons leads to strong metallic bonds.
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35 A pure metal. It consists of metal ions in layers with delocalised electrons.



36 An alloy. The layers have been distorted by the presence of other elements


Good conductors of electricity	Delocalised electrons carry electrical charge through the metal.
Good conductors of thermal energy	Energy is transferred by the delocalised electrons.
Metals as conductors	
High melting and boiling points	This is due to the strong metallic bonds.
Pure metals can be bent and shaped	Atoms are arranged in layers that can slide over each other.

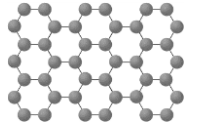
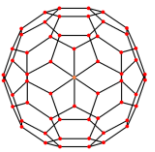
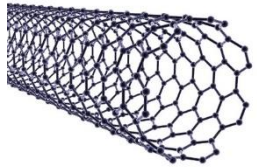
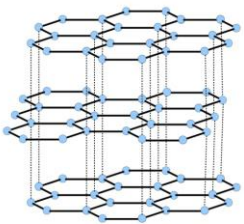
Metals	To the left of the Periodic table	Form positive ions. Conductors, high melting and boiling points, ductile, malleable.
Non metals	To the right of the Periodic table	Form negative ions. Insulators, low melting and boiling points.
Malleable	Being able to bend or shape easily.	
Ductile	Materials that can be stretched.	
Brittle	Will shatter when broken and has a high melting point.	
Electrostatic forces	Experienced by any charged particle in an electric field e.g. Opposite charges (+ and -) attract or Like charges (- and -, or + and +) repel.	

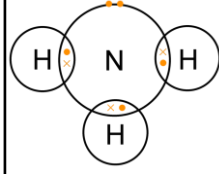
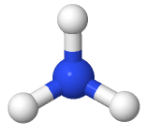
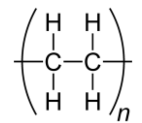
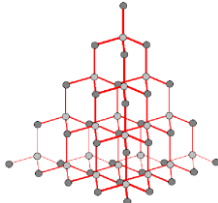
Properties of metals and alloys

Alloys	Mixture of two or more elements at least one of which is a metal	Harder than pure metals because atoms of different sizes disrupt the layers so they cannot slide over each other.
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Metal Alloys

<p>Define the term 'metal alloy'</p> 	A mixture of two or more elements, at least one of which is a metal
<p>Describe how the properties of metal alloys are different to pure metals</p>	<p>Metal alloys are:</p> <ul style="list-style-type: none"> - Harder - More dense
<p>Explain why metal alloys are harder than pure metals</p>	The layers cannot slide over each other easily, because the alloys have an irregular structure

Graphene and fullerenes				Properties of small molecules			
Graphene		Excellent conductor.	Contains delocalised electrons.	Usually gases or liquids	Covalent bonds in the molecule are strong but forces between molecules (intermolecular) are weak	Low melting and boiling points.	Due to having weak intermolecular forces that easily broken.
		Very strong.	Contains strong covalent bonds.			Do not conduct electricity.	Due to them molecules not having an overall electrical charge.
Fullerenes		Buckminster fullerene, C ₆₀ First fullerene to be discovered.	Hexagonal rings of carbon atoms with hollow shapes. Can also have rings of five (pentagonal) or seven (heptagonal) carbon atoms.			Larger molecules have higher melting and boiling points.	Intermolecular forces increase with the size of the molecules.
						Carbon nanotubes	
Graphite	Each carbon atom is bonded to three others forming layers of hexagonal rings with no covalent bonds between the layers		High tensile strength.	Reinforcing composite materials.			
			Large surface area to volume ratio.	Catalysts and lubricants.			
		Slippery.		Layers can slide over each other.			
		Very high melting point.		Strong covalent bonds.			
		Does conduct electricity.		Delocalised electrons between layers.			
State when a covalent bond will be formed		Covalent bonds are formed when only non-metal elements bond together					
Describe how covalent bonds are formed		<ul style="list-style-type: none"> - Non-metals will share a pair of electrons - The atoms are held together by the attraction between the negative electrons and the positive charge in the nucleus 					

Covalent bonding			
Atoms share pairs of electrons	Can be small molecules e.g. ammonia	 <p>Dot and cross : + Show which atom the electrons in the bonds come from - All electrons are identical</p>	2D with bonds: + Show which atoms are bonded together - It shows the H-C-H bond incorrectly at 90°
		 <p>3D ball and stick model: + Attempts to show the H-C-H bond angle is 109.5°</p>	
Can be giant covalent structures e.g. polymers			
Giant covalent structures			
Diamond, graphite, silicon dioxide	Very high melting points	Lots of energy needed to break strong, covalent bonds.	
Each carbon atom is bonded to four others		Very hard.	Rigid structure.
		Very high melting point.	Strong covalent bonds.
		Does not conduct electricity.	No delocalised electrons.

Transition metals (Chemistry only)				
Compared to group 1	<ul style="list-style-type: none"> Less reactive Harder Denser Higher melting points 	<ul style="list-style-type: none"> Cu²⁺ is blue 	<p style="text-align: center;">Transition Metals</p>	
	<ul style="list-style-type: none"> Many have different ion possibilities with different charges Used as catalysts Form coloured compounds 	<ul style="list-style-type: none"> Ni²⁺ is pale green, used in the manufacture of margarine Fe²⁺ is green, used in the Haber process Fe³⁺ is reddish-brown Mn²⁺ is pale pink 	<p>State properties of transition metals.</p>	<ul style="list-style-type: none"> hard conduct electricity and heat high melting points malleable
Typical properties			<p>Describe the reactions of transition metal compounds.</p>	Transition metals will form <u>coloured</u> precipitates on addition of ammonia solution.
			<p>Describe the reactions of Group 1, 2 and 3 metal compounds.</p>	These metals will form <u>colourless (white)</u> precipitates on addition of ammonia solution.

Size of particles and their properties (Chemistry only)				
Nanoparticles	Between 1 and 100 nanometres (nm) in size	1 nanometre (1 nm) = 1 x 10 ⁻⁹ metres (0.000 000 001m or a billionth of a metre).	<p style="text-align: center;">Nanotechnology</p>	
			<p>State the size of a nanoparticle</p>	1 - 100nm
Use of nanoparticles	Healthcare, cosmetics, sun cream, catalysts, deodorants, electronics.	Nanoparticles may be toxic to people. They may be able to enter the brain from the bloodstream and cause harm.	<p>Describe what nanotechnology is</p>	Nanotechnology is the use of tiny particles to improve the properties of materials
			<p>Describe three uses of nanotechnology</p>	Medicine – gold nanocages could be used to deliver drugs in the body Clothing – to stop odours developing Plasters – silver nanoparticles can be used to give plasters antibacterial properties to prevent infection
			<p>Explain why nanoparticles behave differently</p>	Nanoparticles have a far greater surface area to volume ratio. A larger surface area leads to a faster rate of reaction
			<p>Suggest the risks of using nanoparticles in products</p>	<ul style="list-style-type: none"> Breathing nanoparticles could damage the lungs Nanoparticles could enter the blood stream with unpredictable effects on our cells

Science – Ecology

Section 1: Key terms

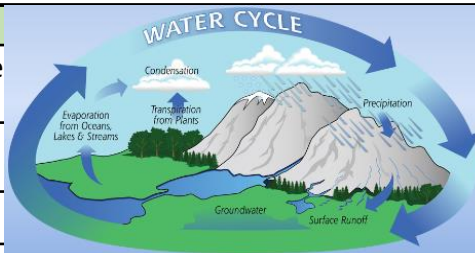
1 Ecosystem	The interaction of a community of living organisms (biotic) with the non-living (abiotic) parts of their environment.
2 Habitat	The area in which an organism lives .
3 Community	Two or more different species in an ecosystem. A stable community is one where all the species and environmental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

Section 2: Biotic and Abiotic Factors

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

Section 5b: Water cycle steps

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



Section 3: Food Chains and Predator-Prey Relationships

→
→
→

11 Producer –
Start of a food chain. Produces **glucose** through **photosynthesis**.

12 Primary Consumer – Eats a **producer**. **Prey** of secondary consumer.

13 Secondary Consumer – Eats a **primary consumer**. **Predator** of primary consumer.

14 Tertiary Consumer – **Predates** on **secondary consumer**.

Predator-prey cycles

15 The population of the **prey** **increases**

16 **More food** is available for the **predators**, so their population **increases**.

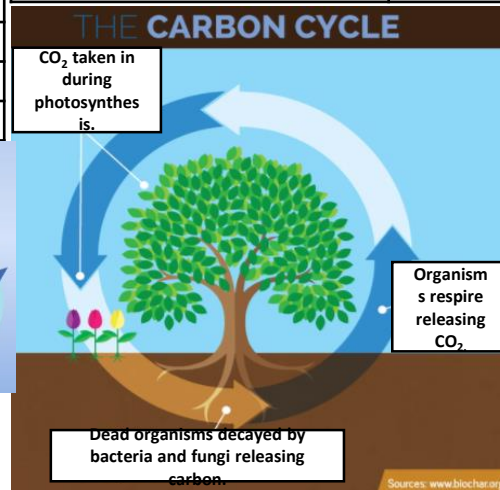
17 There are **more predators** so the **population of the prey** **decreases**.

18 There is **less prey to feed on** so the population of **predators** **decreases**.

19 The **cycle restarts** from the beginning.

Section 4: Adaptations

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



Section 5a: Carbon cycle steps

24 Photosynthesis	Plants absorb CO₂ from atmosphere.
25 Respiration	Animals, plants and micro-organisms respire, releasing CO₂ into the atmosphere.
26 Decay	The carbon in dead organisms is released to the atmosphere by micro-organisms respiring .
27 Combustion	Carbon locked in fossil fuels is released as CO₂ when fuels are burned .

Section 6: Human effects on biodiversity		
Human activity	Why it happens	Effects
32 Polluting water with fertiliser and sewage	Farmers spread fertiliser on fields. Rain washes fertiliser into rivers and ponds. Sewage is released directly into rivers.	Fertilisers and sewage cause an increase in growth of algae . When the algae die , they are decomposed by bacteria that use oxygen . Other animals die due to a lack of oxygen .
33 Using land	Humans construct buildings , create quarries and farm .	Habitat for plants and animals is reduced .
34 Destroying peat bogs	Humans use peat to provide compost to increase food production.	Removes habitat, reducing biodiversity . Decay or burning of peat produces CO₂ .
35 Deforestation	To provide land for cattle and rice fields . To grow crops for biofuels .	Burning or decomposing trees releases CO₂ . Fewer trees to remove CO₂ from the atmosphere . Loss of biodiversity .
36 Producing acidic gases	Combustion of fossil fuels releases carbon dioxide, sulphur dioxide and nitrogen oxides . These gases dissolve in water making it acidic .	Acid rain . Damages plants . Can cause rivers and lakes to become acidic, killing animals and plants.
37 Polluting water with toxic chemicals	Pesticides and other toxic chemicals (e.g. from landfill) are washed into rivers and lakes by rain .	Toxic chemicals accumulate in animals. The further up the food chain , the greater the accumulation . Top predators die or fail to breed.
38 Increasing temperature of the planet (global warming)	Humans release extra greenhouse gases (CO₂ and methane) into the atmosphere and less CO₂ is absorbed by plants through photosynthesis. Greenhouse gases absorb heat and stop it escaping to space.	Loss of habitat as sea levels rise ; animals and plants can no longer survive in certain areas; reduced biodiversity ; change in migration patterns of animals.

Section 7: Maintaining biodiversity		Section 8: Measuring biodiversity	
39 Breeding programmes for endangered species .		Random Sampling	Systematic Sampling (transect)
40 Protection and regeneration of rare habitats .	45 Purpose	Estimate the size of a population in an area.	See how populations and communities change over a distance .
41 Reintroduction of field margins and hedgerows in agricultural areas where farmers grow only one type of crop	46 Method	1. Choose a suitable number of quadrats to use.	1. Use a tape measure to create a long line (transect).
42 Reduction of deforestation		2. Assign co-ordinates to the area that you are sampling.	2. Put quadrats at set distances.
43 Reduction of carbon dioxide emissions by some governments		3. Randomly choose co-ordinates.	3. Count organisms present.
44 Recycling resources rather than dumping waste in landfill.		4. Place the quadrats and count organisms present.	4. Repeat in a different place/ different time of year.
		5. Calculate the mean number of organisms.	5. Draw graphs to see how communities change over a distance.
Biodiversity is the variety of all different species of organisms on Earth, or within an ecosystem		Processing data	
		Median	Middle value in a sample.
		Mode	Most occurring value in a sample.
		Mean	The sum of all the value in a sample divided by the sample number.

Science – Ecology – Triple only

Food production (biology only)

Factors affecting food security

Enough food is needed to feed a changing population

- Increasing birth rate.
- Changing diets in developing countries.
- New pests and pathogens affecting farming.
- Environmental changes e.g. famine when rains fail.
- Cost of agriculture input.
- Conflicts (war) affecting water of food availability

Farming techniques

Sustainable fisheries

Increasing efficiency of food production

Fish stocks in oceans are declining

Reduce energy waste, limiting movement, control temperature, high protein diet to increase growth.

Maintain/grow fish stocks to a sustainable level where breeding continues or certain species may disappear. By controlling net size, fishing quotas.

Some people have concerns about the treatment of animals

Biotechnology

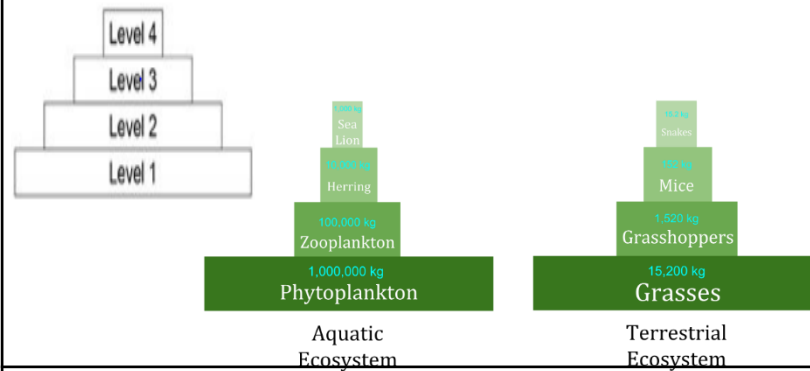
Meeting the demands of a growing population

Fungus *Fusarium* to produce mycoprotein. Requires glucose syrup, aerobic conditions. Biomass is harvested and purified.

GM bacterium produces insulin to treat diabetes.

GM crops to provide more/nutritional food (golden rice).

Trophic levels and biomass (biology only)



Trophic levels can be represented by numbers and biomass in pyramids.

Trophic levels are numbered sequentially according to how far the organisms is along the food chain.

Level 1	Producers	Plants and algae.
Level 2	Herbivores	Primary consumers.
Level 3	Carnivores	Secondary consumers.
Level 4	Carnivores	Tertiary consumers.

Apex predators are carnivores with no predators.

Transfer of biomass

Biomass is lost between the different trophic levels

Producers transfer about 1% of the incident energy from light for photosynthesis.

Large amounts of glucose is used in respiration, some material egested as faeces or lost as waste e.g. CO₂, water and urea in urine.

Approximately 10% of the biomass from each trophic level is transferred to the level above.

Impact of environmental change (Biology HT only)

Temperature

Availability of water

Composition of atmospheric gases

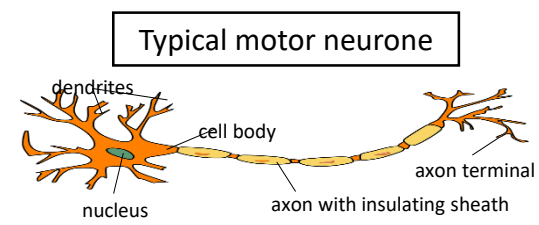
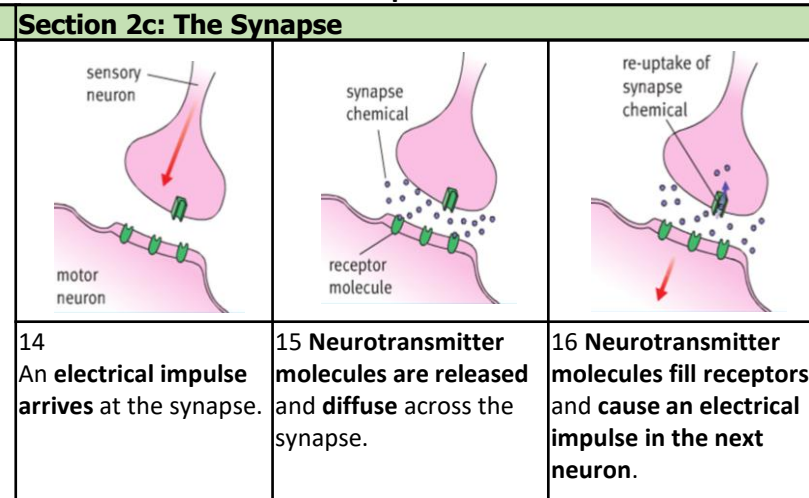
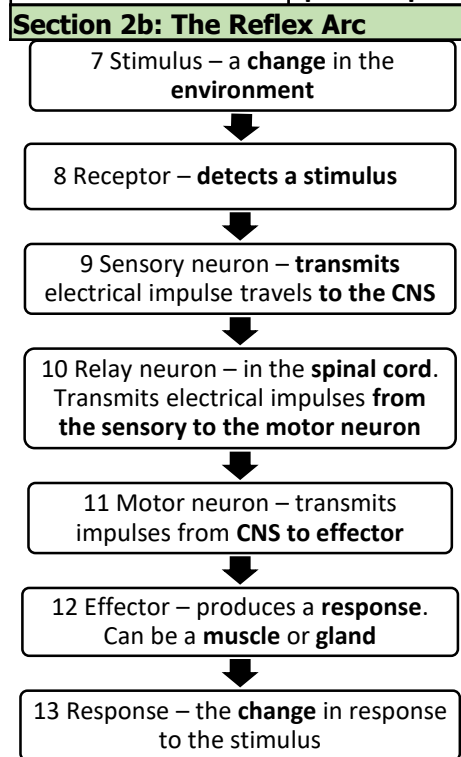
These changes might be seasonal, geographic or caused by human interaction.

Example: Several species of bird migrate from cold winter conditions to warmer conditions closer to the equator.

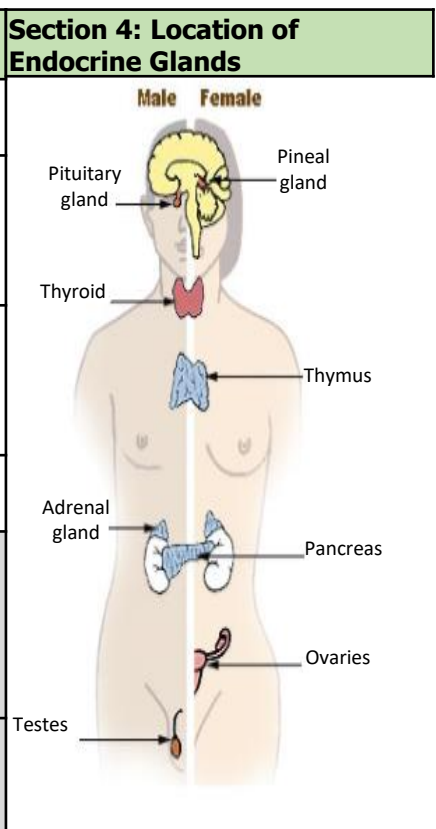
Science – Homeostasis

Section 1: Key Terms	
1 Homeostasis	Regulating internal conditions to keep them at an optimum, despite internal and external changes . Maintains optimum conditions for enzymes .
2 Negative Feedback (HT)	Negative feedback ensures that changes are reversed and returned back to the optimum level .

Section 2a: Nerve Reflexes Key Terms	
2 Central nervous system (CNS)	The brain and spinal cord together. Co-ordinates the response of effectors .
3 Reflex action	A fast, automatic reaction. Does not involve thinking parts of the brain.
4 Coordination Centre	Receives and processes information from receptors e.g. CNS, pancreas.
5 Synapse	The gap between two neurons . Allows many different neurons to connect.
6 Myelin sheath	Some neurons are surrounded by myelin. Myelin insulates the neuron and speeds up the transmission of electrical impulses .



Section 3: Hormonal Control Key Terms	
17 Endocrine System	The system of glands that secrete hormones .
18 Hormone	A chemical secreted by a gland that travels in the blood and has an effect on a target organ . The effects are slower and longer-lasting than responses from the nervous system.
19 Pituitary Gland	A gland that secretes several hormones into the blood. These hormones in turn act on other glands to stimulate other hormones to be released to bring about effects.
20 Testosterone	Male hormone produced by testes . Stimulates sperm production .
21 Adrenaline (HT)	Hormone produced by the adrenal glands in times of fear/ stress . It increases the heart rate and boosts the delivery of oxygen and glucose to the brain and muscles , preparing the body for 'flight or fight'.
22 Thyroxin (HT)	Hormone produced by the thyroid gland . Thyroxine stimulates the metabolic rate . Important in growth and development .

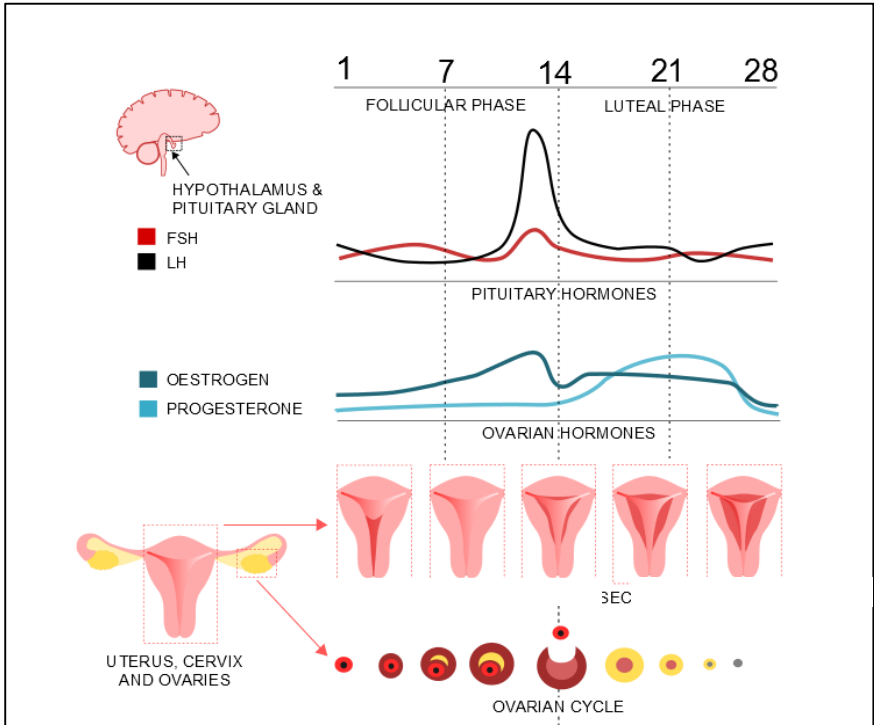


Section 5: Blood Glucose Control Key Terms	
29 Pancreas	The gland that monitors and controls blood glucose concentration .
30 Insulin	A hormone produced when blood glucose concentration is too high . Causes glucose to move from the blood into the cells . In liver and muscle cells excess glucose is converted to glycogen .
31 Glucagon (HT)	A hormone produced when blood glucose concentration is too low . Causes glycogen to be converted into glucose and released into the blood.
32 Glycogen	A storage molecule made from many glucose molecules bonded together . Found in liver and muscle cells.
33 Type I Diabetes	Disorder in which the pancreas fails to produce enough insulin . Causes uncontrolled high blood glucose levels. Treated with insulin injections .
34 Type II Diabetes	Body cells no longer respond to insulin produced by the pancreas . A carbohydrate controlled diet and exercise are common treatments. Obesity is a risk factor .

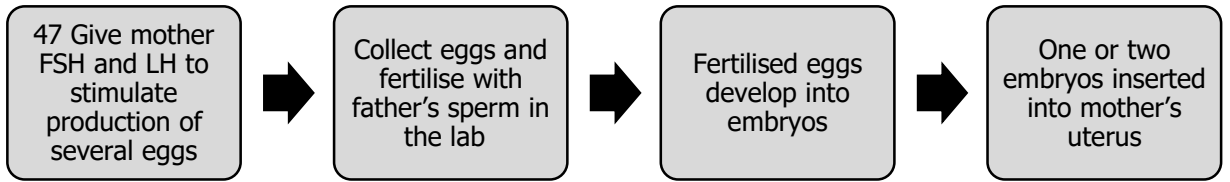
Section 6: Menstrual Cycle (Some HT)	
35 Ovulation	The release of an egg cell . Occurs approximately every 28 days .
36 FSH	Produced by the pituitary gland . A hormone that causes an egg to mature in the ovary . Causes oestrogen to be produced .
37 Oestrogen	Produced by the ovaries . Causes blood lining of uterus to develop . Stops FSH being produced . Stimulates release of LH .
38 LH	Produced by the pituitary gland . A hormone that causes ovulation .
39 Progesterone	Produced by the ovary . Maintains blood lining in uterus. Stops production of LH and FSH .

Section 8: Methods of Contraception		
Method	How it works	Pros (+) and Cons (-)
40 Oral contraceptives	The contraceptive pill. Contain hormones to inhibit FSH production so eggs do not mature .	+ 99% effective + Reduces risk of some cancers - Can cause side effects e.g. nausea
41 Progesterone	Injection, implant or skin patch of slow-release progesterone to stop eggs maturing and being released .	+ Fewer side effects than pill. + Doesn't need to be taken daily so less likely to be forgotten - Less effective than pill
42 Barrier methods	Condom or diaphragm . Prevents sperm reaching the egg .	+ 98% effective (when used correctly) + Prevent STIs - Can break or be used incorrectly
43 Spermicide	Kills or disables sperm . Used with diaphragms to make them more effective.	+ Increases effectiveness of some barriers - Can't be used on its own
44 Avoiding intercourse	Avoiding intercourse when an egg might be in an oviduct.	- High risk of becoming pregnant
45 Sterilisation	Undergoing surgery to stop sperm or eggs being able to fertilise.	+ Permanently stops pregnancy - Risks from surgery - Expensive to reverse and may not work
46 Intra-uterine device (IUD)	An implant into the uterus that prevent fertilised eggs implanting into the wall of the uterus or release hormones .	+ Long lasting but can be reversed - Small risk of infection or uterus damage when IUD is implanted

Section 7: Changes in the Menstrual Cycle (HT)



Section 9: IVF (HT)

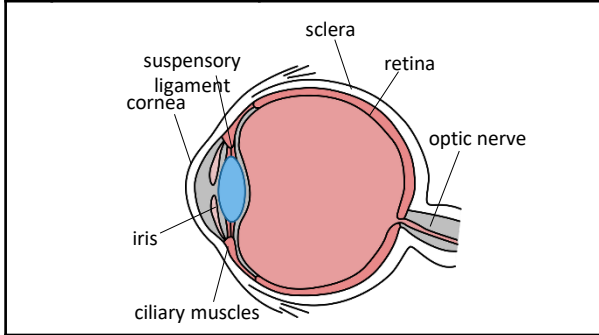


Section 9a: IVF Disadvantages

- 48 Emotionally and physically stressful.
- 49 Success rates are low.
- 50 Can lead to multiple births which are risky for mother and babies

The Eye (Bio only)

Structures of the eye	Retina	Light sensitive cell layer.
	Optic nerve	Carries impulse to brain.
	Sclera	Protects the eye.
	Cornea	Transparent layer that covers the pupil and iris.
	Iris	Pigmented layer, controls size of pupil.
	Ciliary muscles	Controls thickness of lens.
	Suspensory ligaments	Connects lens to ciliary muscles.



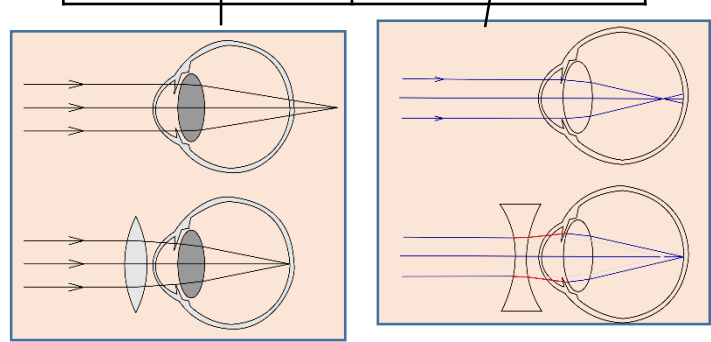
The iris can dilate the pupil (aperture) to let in more light in dim conditions

Sense organ containing receptors sensitive to light intensity and colour

Accommodation is the process of changing the shape of the lens to focus

Near object	Far object
Ciliary muscles contract, suspensory ligaments loosed, lens get thicker, light is more refracted.	Ciliary muscles relax, suspensory ligaments pulled tight, lens pulled thin, light is only slightly refracted.

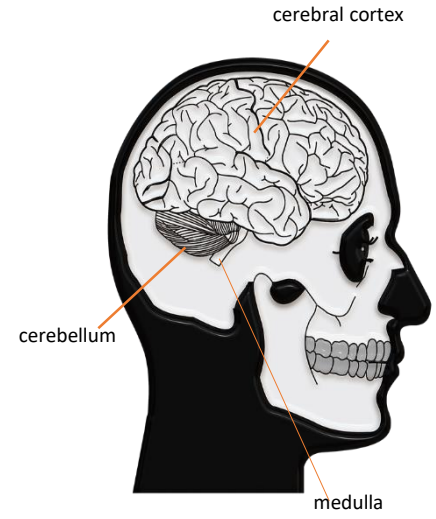
Hyperopia (long sightedness)	Myopia (short sightedness)
Treated using a convex lens so the light is focused on the retina.	Treated using a concave lens so light is focused on the retina.



New technologies now include hard/soft contact lens, laser surgery to change the shape of the cornea and a replacement lens in the eye.

The Brain (Bio only)

The brain controls complex behaviour. It is made of billions of interconnected neurones.



The brain has different regions that carry out different functions.	Cerebral cortex	Largest part of the human brain. Higher thinking skills e.g. speech, decision making.
	Cerebellum	Balance and voluntary muscle function e.g. walking, lifting.
	Medulla	Involuntary (automatic) body functions e.g. breathing, heart rate.

(HT) The complexity and delicacy of the brain makes investigating and treating brain disorders very difficult

Neuroscientists have been able to map regions of the brain by studying patients with brain damage, electrical stimulation and MRI.

Treating brain damage and disease	e.g. Lobotomy – cutting part of the cerebral cortex	Benefit: thought to alleviate the symptoms of some mental illnesses.
		Risks: bleeding in the brain, seizures, loss of brain function. Procedure was abandoned in the 1950s due to risk.

Control of body temperature (Biology only)

Thermoregulatory centre (hypothalamus)

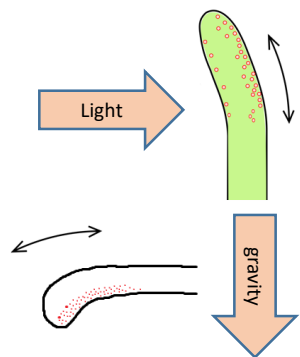
Monitoring body temperature	Thermoregulatory centre	Contains receptors sensitive to the temperature of the blood.	
	Skin	Contains temperature receptors, sends nervous impulses to the thermoregulatory centre.	
Body temperature	Too high	Blood vessels dilate (vasodilation), sweat produced from sweat glands.	(HT) Thermal energy is lost from blood near the surface of the skin, sweat evaporates transferring thermal energy.
	Too low	Blood vessels constrict (vasoconstriction), sweating stops, muscles contract (shivering).	(HT) Thermal energy loss at the surface of the skin is reduced, respiring muscles cells transfer chemical to thermal energy.

Plant hormones

Plants produce hormones to coordinate and control growth

(HT only) Gibberellins are important in initiating seed germination.

(HT only) Ethene controls cell division and ripening of fruits.



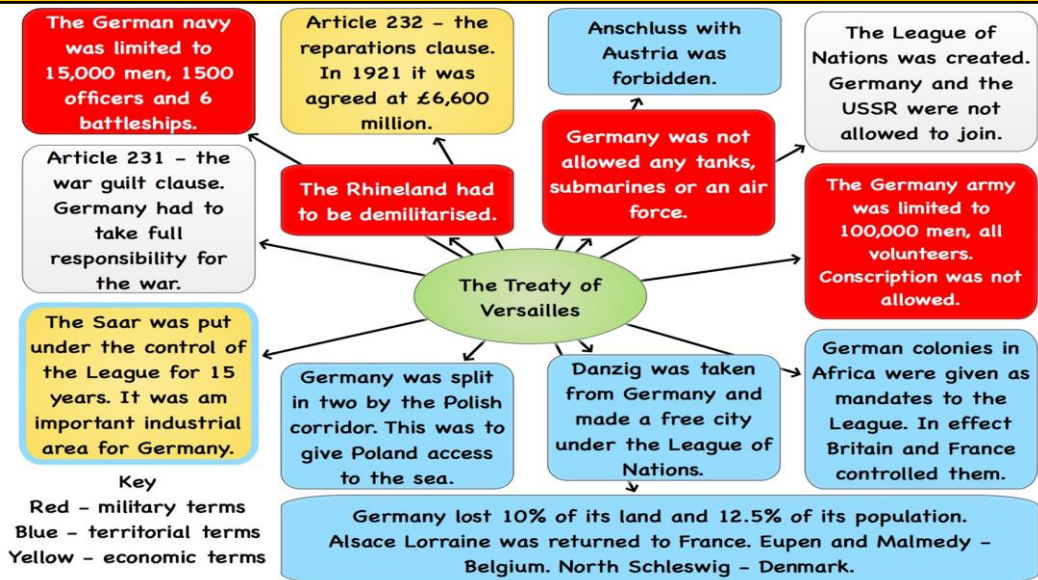
Plant responses using hormones (auxins)	Light (phototropism)	Light breaks down auxins and they become unequally distributed in the shoot. The side with the highest concentration of auxins has the highest growth rate and the shoot grows toward the light.	Plant growth hormones are used in agriculture and horticulture	Auxins	Weed killers, rooting powders, promoting growth in tissue culture.
	Gravity (geotropism or gravitropism)	Gravity causes an unequal distribution of auxins. In roots the side with the lowest concentration has the highest growth rate and the root grows in the direction of gravity.		Ethene	Control ripening of fruit during storage and transport.
In new shoots from a seedling the unequal distribution of auxins causes the shoot to grow away from gravity.		Gibberellins		End seed dormancy, promote flowering, increase fruit size.	

Water and nitrogen balance (Biology only)

If body cells lose or gain too much water by osmosis they do no function efficiently.	Uncontrolled water/ion urea loss	Water exhaled in lungs, water, ions and urea in sweat.	
	Controlled water/ion/urea loss	Via the kidneys in urine.	
Kidney function	Maintain water balance of the body.	Produce urine by filtration of the blood and selective reabsorption of glucose, ions and water.	(HT only) digestion of proteins results in excess amino acids. In the liver they are de-aminated to form toxic ammonia which is converted to urea
(HT only) ADH	Acts on kidney tubules to control water levels.	Released by pituitary gland when blood is too concentrated. Water is reabsorbed back into the blood from the kidney tubules (NEGATIVE FEEDBACK) .	Kidney failure is treated by organ transplant or dialysis.
		A dialysis machine removes urea from the blood by diffusion while maintaining ion and glucose levels.	

History

The Treaty of Versailles



Key Individuals – The Big Three

Woodrow Wilson - USA	David Lloyd George - Britain	Georges Clemenceau - France
Aims - world peace. He wanted self-determination for countries to rule themselves and suggested the creation of the League of Nations.	Aims - elected by promising to punish the Germans but wanted them to be strong enough to trade with. To protect the empire and navy.	Aims - Germany destroyed so that it would never again be able to invade France. Wanted them to pay for the damage caused to French land.
Opinion - so harsh that Germany would seek revenge leading to another war. Happy league was established but sad that USA did not join.	Opinion - felt it was too harsh, that Britain would have to fight another war in 25 years' time. Pleased with military terms and Empire larger than ever.	Opinion - felt it was not harsh enough as Germany was not destroyed. More money wanted and the Rhineland should be independent. Voted out.

Other Peace Treaties

St Germain - Austria. Land to Italy, Romania, Czechoslovakia, Yugoslavia and Poland. Army 30,000 no conscription, no navy. No anschluss with Germany. Reparations but amount not fixed.

Neuilly - Bulgaria. Land to Yugoslavia, Greece and Romania. £100 million. Army 20,000, no conscription, no air force, 4 battleships.

Trianon - Hungary. Land to Romania, Czechoslovakia, Yugoslavia and Austria. Reparations not fixed. Army 30,000, no conscription, 3 patrol boats.

Sevres - Turkey. Land to Greece and all European land except area around Constantinople. Army 50,000 7 sail 6 torpedo boats.

Lausanne. Turkey regained some land from Greece, control of Dardanelles, Bosphorus straits and armed forces. Reparations cancelled.

League of Nations – Key Facts

The idea of American President Woodrow Wilson to bring the world together in peace. It would be a group of countries that would work together to solve world problems.

Aims: To stop war from breaking out again, To encourage disarmament, To improve working conditions, To tackle deadly diseases

Based in Geneva, Switzerland where the Red Cross was also based. The USA never joined when the Senate refused to agree. The plan was to keep peace through collective security, where the countries worked together to keep the peace and look after the interests of every nation.

LoN Membership	Strengths	Weaknesses
Britain 1919 - 1945 France 1919 - 1945 Japan 1919 - 1933 Italy 1919 - 1937 Germany 1926 - 1933 USSR 1934 - 1939 USA never joined At its largest it had 63 member states.	It was written into all of the peace treaties at the end of WW1. It had a large membership which could work well with mitigation, moral condemnation, and economic sanctions.	Membership. The USA did not join. The USSR and Germany were not allowed to join. Countries could leave when they wanted to. No army so could not enforce decisions. Decisions were difficult due to unanimous votes and the structure made it slow.

Geography

Key Term	Definition
African Union	An organisation of 54 countries formed to encourage co-operation between African nations
Commercial farming	Growing crops or raising livestock for profit, often involving vast areas of land
Commonwealth	A voluntary association of 53 independent and equal sovereign states, most being former British colonies
Developmental aid	Long-term support given by charities, governments and multi-lateral organisations, which aims to improve quality of life
ECOWAS (Economic Community of West African States)	A trading group of west African countries
Gross Domestic Product (GDP)	The total value of goods and services produced by a country in a year
Employment structure	Relative proportion of the workforce employed in different sectors of the economy
International aid	Money, goods and services given by single governments or an organisation like the world bank or IMF to help the quality of life and economy of another country
Manufacturing	Making goods by processing raw materials
Mining	Extraction of raw materials from the ground
Newly-Emerging Economies (NEE)	Countries that have begun to experience high rates of economic development, usually along with rapid industrialisation
African Union	An organisation of 54 countries formed to encourage co-operation between African nations
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Geography

Key Term	Definition
Oil spills	The accidental leakage of oil from rigs or refineries into the surrounding area, resulting in severe environmental damage and pollution
Primary product	Unprocessed raw materials extracted from the earth or agricultural products
Primary sector	Employment sector that includes farming, mining and other related activities
Quality of life	How good a person's life is as measured by such things as quality of housing and environment, access to education, health care, security and levels of happiness
Secondary sector	Employment sector that involves manufacturing
Tertiary sector	Employment sector that includes service industries, such as health care, offices, financial services and retailing
Transnational corporation (TNC)	A company that has operations (factories, offices, research and development, shops) in more than one country
Trade	Buying and selling of goods and services between countries
Trading group	Countries which have grouped together to increase trade between them by cutting tariffs to discourage trade with non-members
Quaternary sector	Employment sector that includes jobs in hi-tech industries, research, information technology and the media
Oil spills	The accidental leakage of oil from rigs or refineries into the surrounding area, resulting in severe environmental damage and pollution
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Spanish

Spanish	English
Mi familia	My family
El padre/la madre	Father/mother
El hermano	Brother
La hermana	Sister
El abuelo/la abuela	Grandfather/grandmother
Uso...para...	I use ... for ...
Es una aplicación para	It's an application for
Una red social	A social network
Tiene los ojos...	He/She has ... eyes
Tiene el pelo...	He/She has ... hair
Lleva gafas/barba/bigote	He/She wears/has glasses/a beard/ a moustache
Es...	He/She is ...
Estoy/Está enganchado/a	I am/He/She is hooked on...
Lo bueno/malo es que es...	The good/bad thing is that ...
¿Quieres salir conmigo?	Do you want to go out with me?
No puedo porque...	I can't because
Tengo que...	I have to...
¿A qué hora/Dónde quedamos?	What time/ Where shall we meet?

Spanish	English
Cada día/Todos los días	Every day
A menudo	Often
Generalmente/Normalmente	Generally/ Normally
De vez en cuando	From time to time
Una vez a la semana	Once a week
Dos veces a la semana/ al mes	Twice a week/ a month
Nunca	Never
Un ventaja/ desventaja es...	An advantage/ disadvantage is...
Conocí a mi major amigo/a...	I met my best friend...
Nos hicimos novios	We started going out
Generalmente/Normalmente	Generally/ Normally
De vez en cuando	From time to time
Una vez a la semana	Once a week
Dos veces a la semana/ al mes	Twice a week/ a month
Nunca	Never
llevarse	(to get on)
Me llevo	I get on
Te llevas	you get on
Se lleva	He/She gets on

Spanish	English
bien con	well with
mal con	badly with
Os lleváis	You (pl) get on
Se llevan	They get on
Soy alto	I am tall
es honesto/a	He/She is honest
Es profe	He/She is a teacher
estoy leyendo	I am reading
estoy cansado	I am tired
estoy contento	I am happy
Me divierto con...	I have a good time with...
Me peleo con...	I argue with...
Nos llevamos superbién.	We get on really well.
Tenemos mucho en común.	We have a lot in common
Me hace reír	Makes me laugh
los blogs	blogs
los tebeos/los cómics	comics
los periódicos	newspapers
las revistas	magazines
las poesías	poems

PE – Respiratory System

Key Term	Definition
Trachea	The tube that takes air into the chest, also known as the windpipe
Bronchi	Tube along which air passes from the trachea into the lungs
Bronchioles	Smaller branches coming from the bronchi
Alveoli	Tiny air sacs at the end of bronchioles where gaseous exchange takes place
Diaphragm	The primary muscle used in the process of inspiration. A dome-shaped sheet of muscles that separates the chest from the rest of the body cavity.

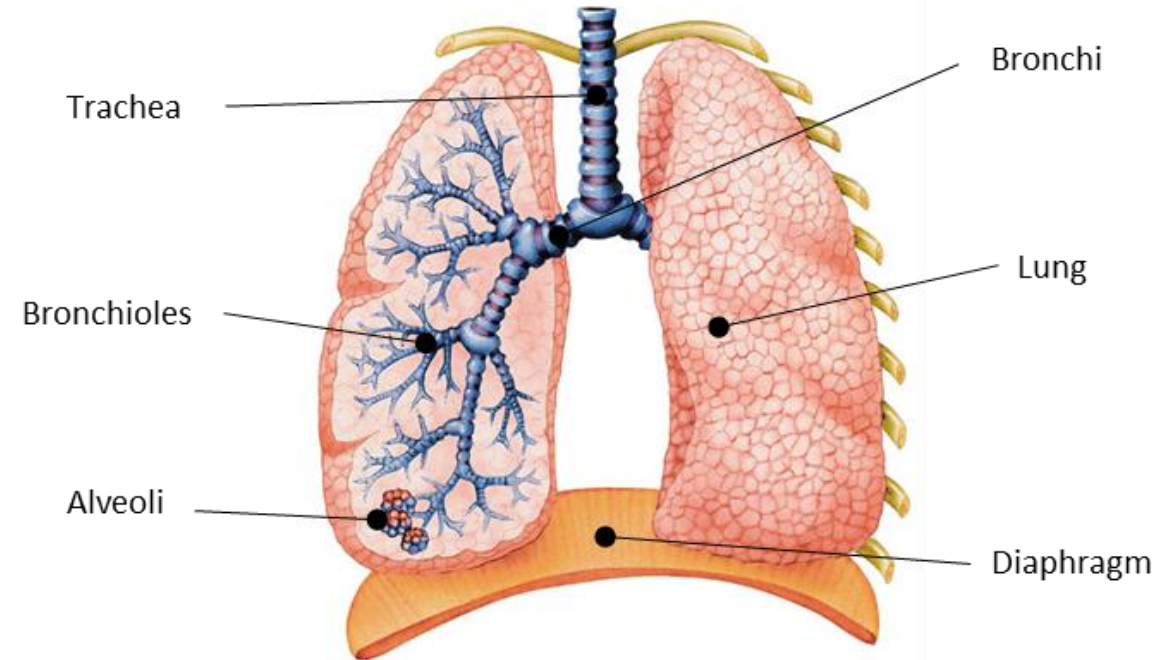
Respiratory values

Tidal Volume	the amount of air inhaled and exhaled per breath. Resting value = 500ml
Vital Capacity	The maximum amount of air exhaled following a maximal breath in.
Residual volume	The amount of air remaining in the lungs after maximal expiration
Oxygen debt	The amount of oxygen required to remove the lactic acid, and replace the body's reserves of oxygen

Gaseous exchange and diffusion

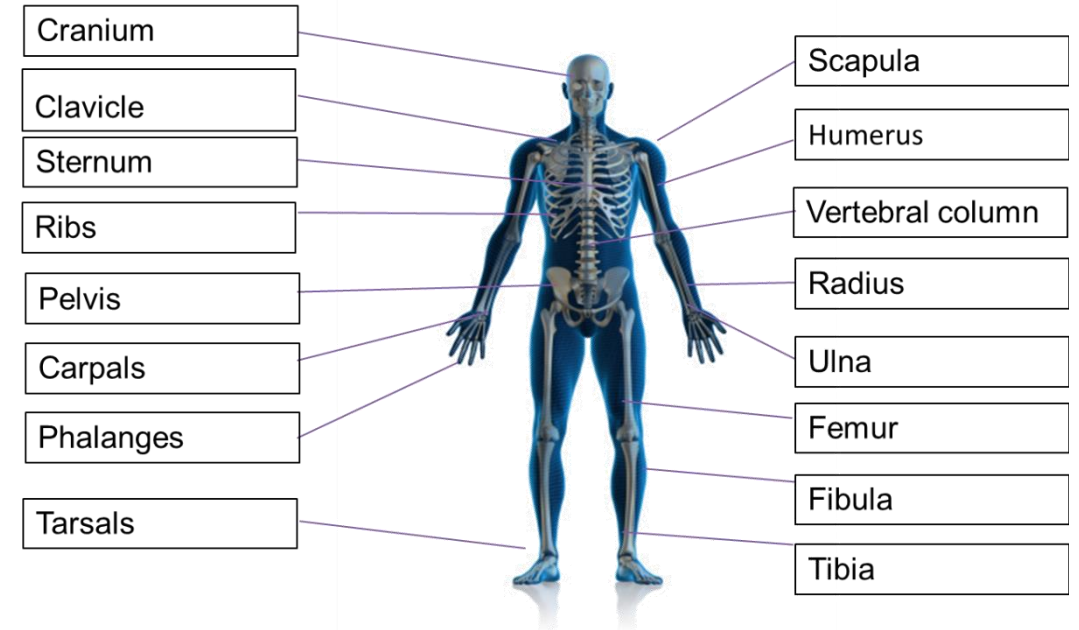
Gaseous exchange	The movement of oxygen and carbon dioxide between the lungs and the blood at the alveoli
Diffusion	Occurs when gases move from a high concentration to a low concentration

Structure of the respiratory system



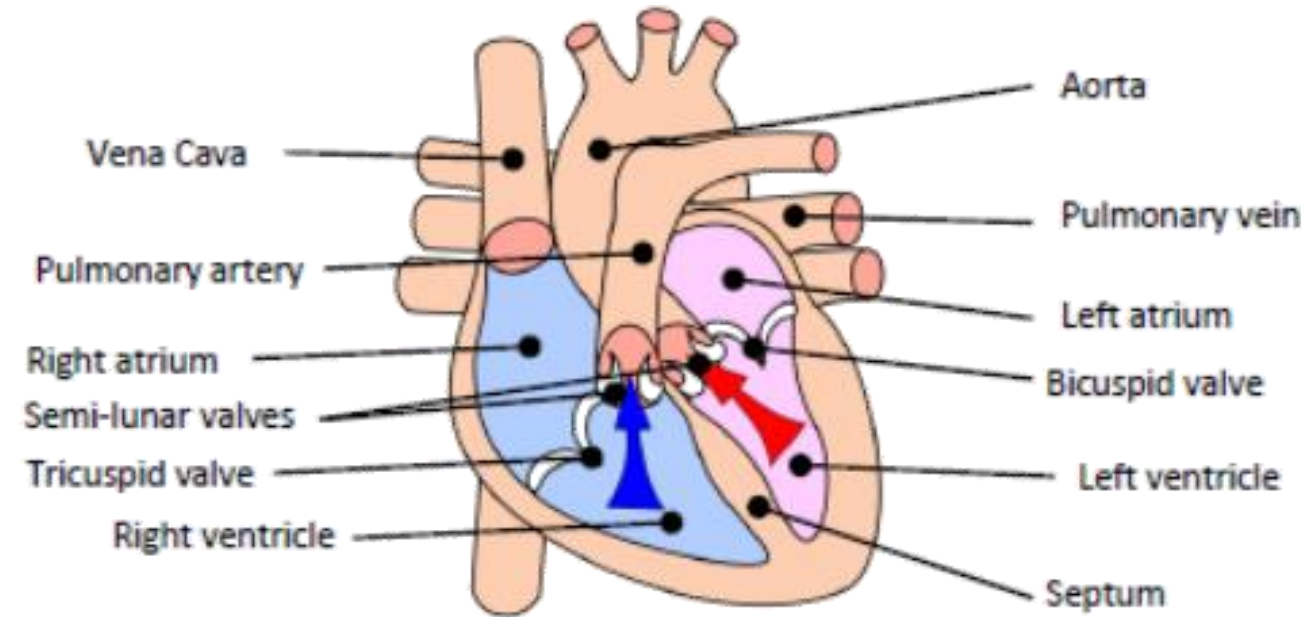
PE – Skeletal System

Function of the skeleton	Classification of joints
Protection of vital organs	Pivot (neck – atlas and axis)
Muscle attachment	Hinge (elbow and knee)
Joints for movement	Ball and socket (hip and shoulder)
Blood cell production (platelets, red and white)	Condyloid (wrist)
Storage of calcium and phosphorus	
Key Term	Definition
Flexion	Decreasing the angle at a joint (bending)
Extension	Increasing the angle at a joint (straightening)
Adduction	Limbs moving towards the midline of the body
Abduction	Limbs moving away from the midline of the body
Rotation	A twisting/turning action around a joint
Circumduction	A combination of flexion, extension, adduction & abduction
Dorsi-Flexion (ankle joint)	When the toes are turned up to the body
Planter-Flexion (ankle joint)	When the toes are pointed away from the body



PE - Components of blood

Key Term	Definition
Red blood cells	Carry oxygen from the lungs to the working muscles + Removes CO ₂ .
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.
Arteries	Carry blood away from the heart, Oxygenated blood (except pulmonary artery) Thick/elastic walls High pressure Small lumen
Veins	Carry blood back to the heart Deoxygenated blood (except pulmonary vein) Thin walls + larger lumen Lower pressure Valves
Capillaries	In the tissue Site of gaseous exchange Very thin walls

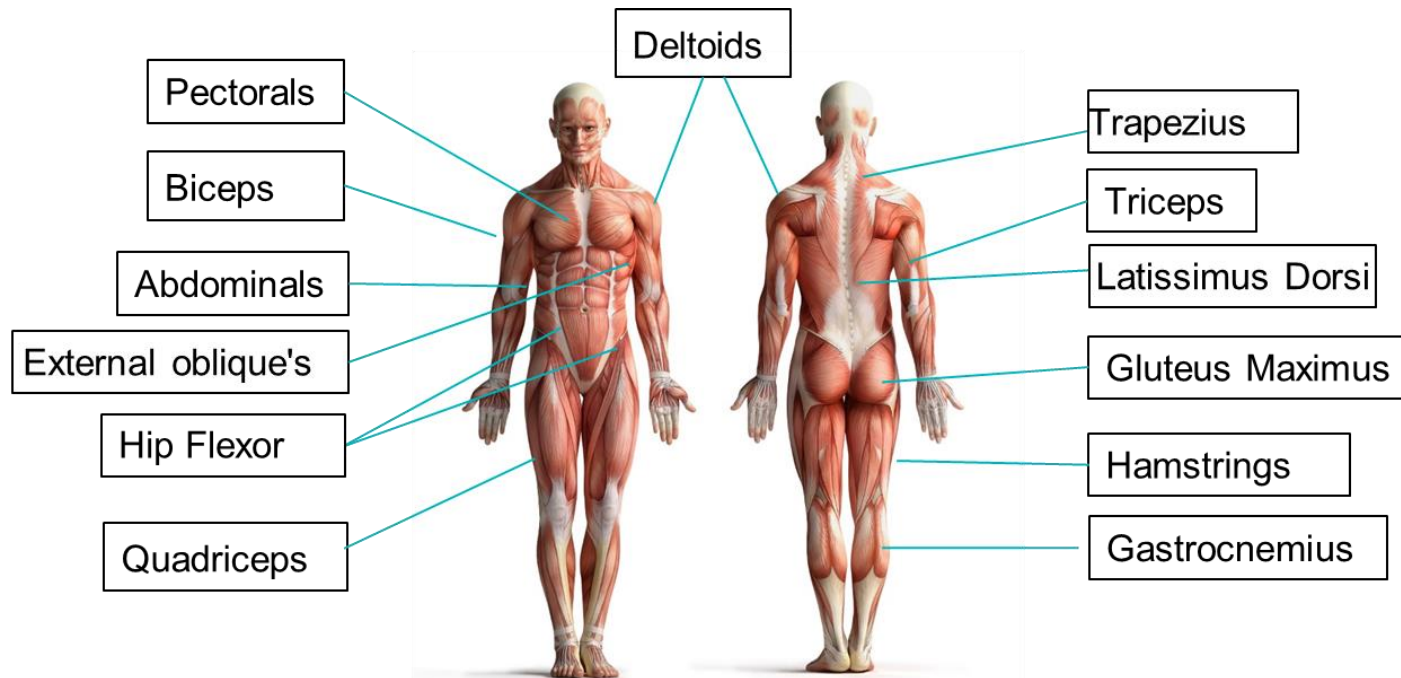


Deoxygenated blood = BLUE (Right side)

Oxygenated = RED (Left side)

PE – Muscular System

Key Term	Definition
Muscular system	Works in conjunction with the skeleton to produce movement of the limbs and body
Antagonistic pairs	Muscles are arranged in antagonistic pairs. As one contracts, its partner relaxes
Agonist	The muscle that contracts to produce movement
Antagonist	The muscle that relaxes to allow the movement to occur



Performing Arts

	Constantin Stanislavski 1863 - 1938	Bertolt Brecht 1898 – 1956	Anton Artaud 1896-1948	Frantic Assembly 1994 – Present
Style	Naturalism	Epic Theatre	Theatre of Cruelty	Physical Theatre
Beliefs	Believed that the audience should emotionally connect with the characters. Actors should use their own experience to make their characters as believable as possible.	Believed that theatre should be used to spread a message and comment on society. The audience should always be aware they are watching a play and constantly questioning what they see.	Everything is larger than life - acting space, large & extensive lighting, sound, costume, acting style, masks, giant puppets. Wanted to get rid of words – thought they were limiting. He used words for their sound quality rather than their meaning. Wanted theatre that would shock and absorb the audience – a sensory explosion. Actor and audience experience pain and suffering.	World-renowned theatre company who use physical theatre to devise performance. Wanted to create non-realistic pieces of theatre through the use of movement and music.
Techniques	<ul style="list-style-type: none"> • The fourth wall • Emotional memory • The magic ‘if’ • Sense memory • Objectives • Given circumstances • Subtext • Method of physical actions 	<ul style="list-style-type: none"> • Audience are aware they are watching a performance • Audience challenged to think (often political/social issues) • Scenery and set changes happen on stage, stage directions read aloud • Multi rolling • Placards used to ask questions and repeat information • Direct address to the audience (talk to the audience, breaking the 4th wall) • Costumes are simple • Narration 	<ul style="list-style-type: none"> • Overwhelming sounds and bright lights to stun the audience's senses. • Audience Placement • Breath Control • Movement is expressive rather than narrative • Visceral Sounds 	<ul style="list-style-type: none"> • Chair duet • Hymn hands • Lifts • Walk the grid • Mirroring • Round-By-Through
Quote	‘The actor must use his imagination to be able to answer all questions (when, where, why, how).’	‘Art is not a mirror to reflect reality, but a hammer with which to shape it.’	“The actor is an athlete of the heart”	‘We began with little more than a fierce work ethic and a desire to do something different and to do it differently.’

Computing

Integral hardware		
Central Processing Unit	CPU	Main processing unit of the computer, comprising the Arithmetic and Logic Unit, the Control Unit and the immediate access store
Network Interface Controller	NIC	The part of the computer which connects to networks
Hard Disk Drive	HDD	The storage hardware which stores data permanently
Heat sink		A device which draws heat away from any component which is likely to overheat
Graphics Card		A piece of hardware which contains the GPU
Graphical Processing Unit	GPU	Dedicated processor for rendering images
Motherboard		The printed circuit board on which the CPU is installed, with connectors to peripherals
Network hardware		
Hub	A device which receives signals and rebroadcasts it to all connected nodes	
Repeater	A device which listens for a signal and then resends it on to help reduce data collisions	
Router	A device which connects networks together, and also splits data into packets, and forwards packets onward	
Server	A computer which provides services for the rest of the network	
Switch	A device which receives data and sends it only to the intended destination	

Network media vocab	
Cat 5e/ Cat 6	Common types of UTP
Coaxial cable	Single copper wire surrounded by a metallic mesh for shielding
Fibre optic cable	Glass or plastic cable where data is transmitted as light
Shielding	Anything which goes around a data carrying wire to absorb interference
Unshielded Twisted Pair (UTP)	A type of copper wire which is often used for wired networks
Wireless	Without wires
Peripherals	
Peripheral	Input, output or storage device which is not integral to the computer
Input device	A device which introduces data to the computer
Mouse, touchscreen, keyboard, microphone, webcam, scanner, digital camera, controller, accelerometer	
Output device	A device which displays or transmits data from the computer
Speaker, screen, printer, headphones, buzzer, motor	
Storage device	A device which can hold, read and write data
HDD, DVD drive, CD drive, USB stick, SD card reader	
Dongle	A device which attaches to a networked computer and makes it behave like a WAP

Computing

Key vocab	
Algorithm	A set of instructions for a specific task
Application	A program which has a user interface
Data	A unit of information without context, measured in bits
Device	A tool or machine with a particular purpose
Email	A system of sending message files over the internet
File	Data, stored and named
General purpose computer	A computer which is designed to do a variety of jobs
Hardware	Physical parts of a computing
Image	Visual stored data
Internet	A huge network of millions of networks
Memory	Normally a synonym for RAM
Network	A collection of computers and other devices (nodes), connected together (by links)
Program	A series of coded instructions which can be run by a processor
Random Access Memory (RAM)	Volatile primary storage which contains the data and instructions for any program being currently run, including the OS
Sampling	Converting an analogue sound signal to a digital signal by recording the sound values at set intervals
Software	Completed computer programs in general
Storage	Where data, programs and files are kept semi-permanently
World Wide Web	The collection of web pages available over the internet

Computer systems	
Control system	A computer which is used to control machinery
Dedicated system	A computer which is dedicated to a specific job
Embedded system	A computer which is dedicated to a specific job as part of a larger device
Real time system	A system which can guarantee response time to be short and fixed. Useful for safety-critical systems
LECE	
Cyber bullying	Emotionally abusing someone via social media or other online methods
Cyber security	Issues surrounding protection of data and computers from the threat of hacking or malware
Digital divide	The inequality created by the fact that some people have greater access to technology than others
Sharing economy	Technology enabled renting of services or products such as Uber or AirBnB
Stakeholder	Someone with an interest
Trolling	Trying to provoke arguments or upset people online

Business

Key Term	Definition
Why new business ideas come about	Changes in technology Changes in what people want Products and services becoming obsolete
How new businesses come about	Original ideas Adapting existing products services
Risk	Risk of business failure, financial loss, lack of security
Reward	Business success, profit, independence
The role of business enterprise	To produce goods or services To meet customer needs To add value: (convenience, branding, quality, design, USP)
Add Value	Use the above to make sure the price charged is higher than the cost paid
Branding	Name, logo, colours, design, packaging, font
Unique Selling Point	Something none of your competitors have.
The role of entrepreneurship	Is to organise resources , make business decisions, take risks

Key Term	Definition
Consumer needs	The customer requires a reasonable price, good quality, choice, convenience
Market research	Is finding out wlt can find a gap in the market Will reduce risk of failure Inform business decisions hat the public want from a product or service
Primary research	Is collected live and is up to date. Can be in the form of surveys, questionnaires, focus groups, observations
Focus group	A small group of people will be selected to answer detailed questions and give in depth responses to questions from a company. This goes way beyond what is collected from a simple questionnaire
Secondary research	Is second hand, out of date. Can be found on-line, journals, books, newspapers etc. and may not be entirely accurate or fit for purpose. A lot cheaper to organise and collect though.
Quantitative data	Is statistics, numbers, percentages. Can be put in to graphs
Qualitative data	Is in depth responses and reasons why. Usually in written form.
Market segmentation	Is a the way you split the population in to a clear group of people to aim your product or service at. The market can be split by age, gender, income, lifestyle, occupation. This gives you a better chance of advertising/promoting in the correct places and also meeting the needs of one specific segment.
Market mapping	Is a tool used to plot your immediate competitors, maybe using price against quality. Allows to spot a gap in the market.
The competitive environment	Understanding your competitors and how to remain competitive with them. What are their strengths and weaknesses based on price, quality, location, product range, customer service

I Media

Key Term	Definition
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.
Script	A piece of written work that can be for a movie, audio, audio-visual product or screenplay showing the spoken words and actions of characters at specific times.
Test Plan	A document that outlines tests to be carried out on the final product.
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.
Graphic Designer	A visual communicator who creates concepts by hand or by using specialised graphic design software.
Target Audience	A particular group at which a product such as a film or advertisement is aimed at.

Key Term	Definition
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.
Copyright	A form of intellectual property law, that protects original works of authorship including literary, dramatic, musical, and artistic works.
Royalties	Means letting a Company use the design rights for usually an unlimited period of time where the Company produces the product and pays a fee to use it.
Watermark	Is a message (usually a logo, stamp, or signature) superimposed onto an image, with a great deal of transparency.
Stock library	The photographer or author of a stock photo makes it available for licensing, meaning you can pay a fee to get the right to use it in your designs legally.
Trademark Symbols	TM the trademark symbol serves as a warning for infringers and counter-fitters
Trademark Symbols	® The R symbol signifies that the trademark is registered and protected from infringement under the Trademark laws.
Trademark Symbols	© The © symbol stands for copyright and is a reserved right notice concerning any work that can be copyrighted like artwork, photography, videography, books, literary works, etc.

I Media

Key Term	Definition
Visual identity	A collection of images that go towards representing the brand.
Brand	A style you recognise with a product—Colour, name, slogan, font style, logo
Typography	How your text appears. The style, shape, size and colour of your lettering.
Connotations	How a certain word/image makes you feel and what you associate with it.
House style	Consistent style with all company products. All branded with logo, name etc.....
Conventions	Getting the message across to the viewer in as simple way as possible
Bitmap	Defines a display space and the colour for each pixel or "bit" in the display space
Pixels	The very tiny parts that make up the whole image or bitmap
Vector	Rather than a grid of pixels, a vector graphic consists of shapes, curves, lines, and text which together make a picture
Scalability	Scaling is a process of modifying or altering the size of objects.
File Format	The format in which the final product will be played which will affect the file size and the way in which it can be accessed.
JPG	JPEG is a lossy raster format that stands for Joint Photographic Experts Group. It is used for online photos and/or artwork , print photos
TIFF	TIFF is a lossless raster format that stands for Tagged Image File Format. Because of its extremely high quality, the format is primarily used in photography and desktop publishing.
SVG	You want to create computer generated graphs and diagrams for publishing on the web

Key Term	Definition
PNG	PNG is a lossless raster format that stands for Portable Network Graphics. Think of PNGs as the next-generation GIF. This format has built-in transparency, but can also display higher colour depths
GIF	GIF is a lossless raster format that stands for Graphics Interchange Format . Use web animation or small file.
PDF	PDF stands for Portable Document Format and is an image format used to display documents and graphics correctly, no matter the device, application, operating system or web browser
PSD	PSD is a proprietary layered image format that stands for Photoshop Document. These are original design files created in Photoshop that are fully editable with multiple layers and image adjustments
AI	AI is a proprietary vector image format that stands for Adobe Illustrator
File Compression	File compression is when file sizes are made smaller by computers, smaller files are quicker to email and transfer.
Lossless File Compression	Lossless file compression retains data that allows the file to be restored later to its original quality and condition.
Lossy File Compression	Lossy file compression loses some data when file sizes are reduced, so it is difficult to restore the file to the original condition if needed.
Layers	Placed on top of each other for effect when using graphics software.
Re-touching	Photo manipulation to change the look
Creative Commons	A CC license is used when an author wants to give other people the right to share, use, and build upon a work that the author has created

Cooking and Nutrition

Key Term	Definition
Food contamination	The presence of unwanted foreign body in food that can cause illness or harm
Physical contamination	When something that can be seen visibly falls into the food
Chemical contamination	When chemicals such as cleaning agents or pest control products get into the food
Biological contamination	When bacteria or toxins contaminate food. When this occurs, it can either cause food poisoning or food spoilage
Hazard	Something that is dangerous and likely to cause damage
Risk	How likely it is that someone may be harmed or injured by a hazard
Risk assessment	A process that is used to identify and evaluate the level of risk of a hazard causing harm or injury
Control Measure	An activity or action that is put in place to prevent or reduce the risk of a hazard causing harm or injury
HACCP	Hazard Analysis Critical Control Point. This is a food safety management system to identify hazards to food safety
Micro-organism	Tiny plants and animals that are only clearly visible under a microscope. Examples include bacteria, yeast and moulds
Bacteria	A single celled living organism, some of which cause food poisoning
Contaminate	Making a food unsafe to eat by allowing it to come in contact with micro-organisms that will grow and multiply in it
Cross contamination	How micro-organisms are spread from one place to another (usually by people, surfaces or objects)
Pathogenic	Something that is capable of causing illness in people
High Risk Foods	A ready to eat food that if not stored correctly, could grow harmful micro-organisms.
Boning Knife	A knife that is used to remove bones from poultry, meat and fish. It tend to have a narrow blade that ends at a sharp tip.

Art

Key Term	Definition
Identity	Is the way we perceive and express ourselves. Artists often address their multiple, intersecting identities in a work of art
Gender	Is a cultural and social classification of masculinity and femininity. Gender presentations in art are the outcome of the cultural process of defining sexual and social identity
Artist Analysis	Is the process of analysing an artwork. Formal analysis is the examination of the “form” of the artwork, meaning its visual elements.
Artist 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
Critic	Is a person who specialises in evaluating art. Their written critiques, or reviews, are published in newspapers, magazines, books and on web sites
Context	In your drawings and artwork provide visual links that helps us to fully understand what your art is about
Culture	Culture is the ensemble of social forms, material traits, customary beliefs, and other human phenomena that cannot be directly attributed to a religious, racial, or social group
Style	Describe the way the artwork looks. Style is determined by the characteristics that describe the artwork, such as form, colour, and composition, to name just a few
Contemporary	Contemporary art is the art of today, produced in the second half of the 20th century or in the 21st century
Mood	Is the atmosphere in a painting, or the feeling expressed
Movement	An art movement is a tendency or a style of art with a particularly specified objective and philosophy that is adopted and followed by a group of artists during a specific period of time
Concept	Concept art is a form of illustration where the main goal is to convey a visual representation of a design, idea, and/or mood for use in films, video games, animation, or comic books
Theme	In art is the intended purpose or idea in the art work by the artist or the interpreter

Graphic Design

Key Term	Definition
Concept	Is about determining a specific image of how a design will look. It involves the choice of colours and shape
Brand	Refers to a business and marketing concept that helps people identify a particular company, product, or individual
Identity	Visual identity is a preview of your brand. Each part of your design is a clue that tells the viewer what they can expect
Logo	It is a design that is used by an organisation for its letterhead, advertising material, and signs as an emblem by which the organization can easily be recognized, also called logotype
Colour psychology	Is the study of how colours affect people's feelings and emotions
Illustration	Is a drawing (or painting, collage, engraving, photo, etc..) that explains something
Art work	Is an aesthetic physical element or artistic creation
Target audience	Is a distinct group of consumers which can be identified as purchasers of a company's product or service
Packaging	Involves the design and creation of a product's container and how it looks to consumers who might purchase it
Product	Is the item offered for sale. A product can be a service or an item
Design Brief	Is an outline that focuses primarily on the business objectives, outcomes, and results of project design, rather than the actual design itself

Music

Key Term	Definition
Appraising	To listen to music
Orchestra	An ensemble made up of four sections—Strings, Woodwind, Brass, Percussion
String	Violin 1, Violin 2, Viola, Cello, Double Bass, Harp
Woodwind	Flute, Oboe, Clarinet, Bassoon
Brass	Trumpet, French Horn, Trombone, Tuba
Percussion	Timpani, Cymbal, Gong, Snare drum, Xylophone, Glockenspiel
Doubling instrument	Instruments that have a larger or smaller version—similar but not exactly the same
Vibrato	A slight wobbling of the pitch, often used in expressive passages of music
Pizzicato	To pluck a string
Arco	To use the bow on a string
Articulation	The way a note is produced on an instrument e.g. arco, pizzicato or tongued, legato on woodwind