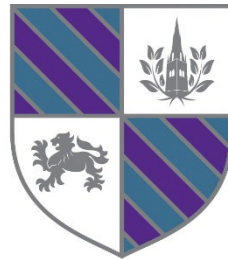Student Name:

MAGNUS CHURCH OF ENGLAND ACADEMY

Knowledge Organiser: January 2025

Year 10

"Wise men and women are always learning, always listening for fresh insights."
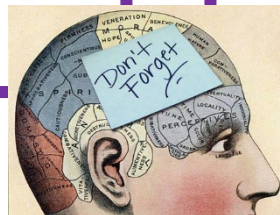*Proverbs 18:15 (The Message)*

Determination — Integrity — Ambition — Humility — Compassion

Using Your Knowledge Organiser

Your teachers have worked hard to produce this document for you and have selected the most important knowledge that you will need to know to make good progress in their subjects. **You should aim to learn all the information in your knowledge organiser off by heart.**

Try out some of the strategies listed here to help you achieve this.

1. Read the knowledge organiser and ensure you understand it. Try and make links between the information on it and what you already know and do.

2. Look, Cover, Write, Check – the traditional way of learning spellings!

3. Create a Mnemonic – Using the first letters of keywords create a memorable sentence or phrase.

4. Create an acronym – using the first letters of keywords to create a word to prompt you to remember all of the information.

5. Write it out in full on a blank version of the same format.

6. Write it out in note form, reducing it to key ideas or words. Try the same format but a smaller piece of paper.

7. Recreate the knowledge organiser as a series of images and words

8. Write a set of test questions for yourself using the organiser.
   - Answer these without the organiser the next day.
   - Swap your questions with a friend to increase challenge.
   - Turn your questions in to a game by putting them on cards and playing with friends.

9. Chunk the knowledge into smaller bitesize sections of around 5 pieces of information. Concentrate on mastering a chunk before you start on the next.

10. Try to make connections between the information and people you know. E.g. Visualise yourself trying these strategies with a specific teaching group.

11. Talk about the information on the knowledge organiser with another person. Teaching someone else about it helps us learn it.

12. Say the information out loud – rehearse it like learning lines for a play, or sing it as if you are in a musical!

Year 10 Half term three key vocabulary

English Language	English Literature	Maths (F)	Maths (H)	Science - Biology	Science-Chemistry
Dialogue	Dramatic irony	Linear Graph	Function	Endocrine system	Dynamic equilibrium
Anecdote	Cliffhangers	Quadratic Graph	Composite function	Hormone	Reversable reaction
Realistic	Stage directions	Cubic Graph	Intercept	Gland	Concentration
Motif	Dramatic tension	Reciprocal Graph	Asymptote	Contraception	Pressure
Zoomorphic	Well-made play	Exponential Graph	Turning point	Ovaries	Rate of reaction
Extended metaphor	Morality play	Asymptote	Volume	Abiotic	Activation energy
Mood	Crime thriller	Gradient	Surface area	Biomass	Catalyst
Emotions	Pre and Post War Britain	Y-intercept	Area	Biotic	Frequency
Opening	The Titanic			Carbon cycle	Surface area
Development	Socialism			Decomposer	
Problem				Ecosystem	
Reaction				Food chains	

Science – Physics	History	Geography	French	Core RS	GCSE RS
Decay	Communism	Urbanisation	Noun	Afterlife	Worship
Irradiated	Lebensraum	Sustainable urban living	Adjective	Eternity	Liturgical worship
Radioactive contamination	Plebiscite	Water conservation	Verb	Funeral	Non-liturgical worship
Ionising radiation	Anschluss	Energy conservation	Connective	Heaven	Informal worship
Half-life	Appeasement	Waste recycling	Opinion verb	Hell	Private worship
Isotope	Conscription	Integrated transport system	Infinitive	Judgement	Nonconformist
Activity	Demilitarised	Brownfield site	Frequency expression	Medium	Sacraments
Count rate	Fascist	Greenbelt area	Conjugate	Nibbana	Holy Communion
Force	Nazi-Soviet Pact	Urban regeneration	Adjectival agreement	Near death experience	Agape
Scalar	Foreign Policy		Wow phrase	Paranormal activity	Mission
Vector			Exclamation		

Business	Child Development	Acting	Musical Theatre	Art	Sociology
Insolvent	Growth	Forum Theatre	Character	Response	Home education
Consumables	Cell	Improvisation	Rhythm	Primary source	Vocational education
Trade Credit	Health visitors	Action	Style	Experiment	Specialist school
Overdraft	Head circumference	Form	Musicality	Annotate	Faith school
Cheque	Centile chart	Still image	Fluidity	Review	Academies
Venture Capital	Hormones	Body language	Spatial Awareness	Reflect	Free Schools
Return on investment	Nutrients	Facial expression	Vocal Technique	Independent	Independent schools
Shareholders	Holistic development	Use of voice	Interpretation	Formal elements	State schools
Asset	Milestones	Rehearse	Intonation	Analyse	Grammar school
Limited Liability	Developmental norms	Character	Projection	Media	Comprehensive school

Technology	iMedia	Hospitality and Catering	Music	Construction	PE
A static load	Visual Identity	Kitchen Brigade	Pitch and melody	Plasterboard	Aerobic endurance
A dynamic load	Visualisation Diagram	FIFO	Articulation	Masonry	Muscular endurance
Tension	Mind Map	Dress code	Dynamics	Sub-soil	Muscular strength
Tensile	Moodboard	Stock	Texture	Polymers	Speed
Compression	Central Subject Node	High risk food	Harmony	Maintenance	Flexibility
Compression strength	Topic Node	Work flow	Rhythm	Aggregates	Body composition
Torsion	Sub Node	Stock ledger	Metre	Disposal	Power
Torsional strength	Connector/Branch/Line	Delivery note	Duration	Recycle	Agility
Bending	Conventions	Invoice	Leitmotif	Hard-core	Reaction time
Shear	Concept sketches	Food safety documentation	Theme	Rubble	Balance
		EPOS	Motif		Coordination
		Accident book	Timbre		

Year 10 — English Language Component 1– Narrative Writing

1. Narrative: 5 Part Structure

Opening: the beginning; initial part of a narrative.	Open with **dialogue** or a **statement** _or_ ask the reader a **question**. Introduce yourself as the narrator – give a little **anecdote** to show what sort of a person you are. Explain the **background** to the story.
Development: the story begins to unfold and take shape; holds the reader's interest.	Set the scene where the problem happens (**place**, **atmosphere**, **mood**, **relevant senses**). **Build up** to the problem; **hold back** on key information about the main event.
Problem: a conflict that affects the characters or causes big disasters but is usually solved at the end.	Describe what happens; **1** piece of action only. **Hold the moment** – describe your **inner thoughts** and **feelings**.
Reaction: something done, felt, or thought in response to a situation or event.	Describe your body's **physical reaction**. How do **other people react**? Was their reaction what you **expected**?
Reflection: serious thought or consideration.	How does it **end**? Looking back, how do you **feel now**? The **long term impact** of what happened? On **you/** on **others**?

2. Vocabulary: Different Emotions

Term	Definition
To suggest anger or hatred:	Annoyed, frustrated, irritated, affronted, aversive, outraged, incensed, indignant, appalled, belligerent, seething, vengeful, vicious.
To show shame and guilt:	Abashed, mortified, embarrassed, humbled, penitent, rueful, sheepish, reproachful, demeaned, guilt-ridden, humiliated, disgraced.
To suggest fear, anxiety or panic:	Alert, apprehensive, edgy, cautious, hesitant, disconcerted, perturbed, startled, wary, horrified, petrified, panicked, paralyzed.
To suggest happiness or joy:	Amused, hopeful, content, delighted, optimistic, ecstatic, blissful, jubilant, euphoric.

3. Key Vocabulary: Writing

Term	Definition
Dialogue	a conversation between two or more people as a feature of a book, play, or film.
Dialogue Tags	used to indicate which character is speaking.
Anecdote	a short amusing or interesting story about a real incident or person.
Realistic	based on what is real rather than on what is wanted or hoped for; sensible and appropriate; believable.
Motif	a symbolic image or idea that appears frequently in a story. _Motifs_ can be symbols, sounds, actions, ideas, or words.
Zoomorphism	a derivative of the Greek words zōon, which means "animal," and morphē, which means "form," or "shape." A literary technique in which animal attributes are imposed upon non-animal objects, humans, and events; animal features are ascribed to humans, gods, and other objects.
Extended Metaphor	a metaphor is a literary device that extends through several lines or even an entire piece of writing.
Mood	a temporary state of mind or feeling.
Emotions	a strong feeling deriving from one's circumstances, mood, or relationships with others.

4. Rules of Speech:

- New person speak- start a new line.
- Use speech marks around the actual words that the character speaks (you can write more than one sentence per speech).
- Use a capital letter to start speech with.
- Put punctuation **_inside_** speech marks (,.!?)
- Start the narrative/ speech tag after speech with a lower-case letter unless the word is a proper noun.
- Punctuate the end of the narrative.
- Use detailed description surrounding the narrative, including imagery (similes/ metaphors, adjectives to describe).

Year 10 — 'An Inspector Calls', by J. B. Priestley

1. Context— *An Inspector Calls* was written by J.B. Priestley, and was first performed in the UK in 1946. However, it is set in 1912.

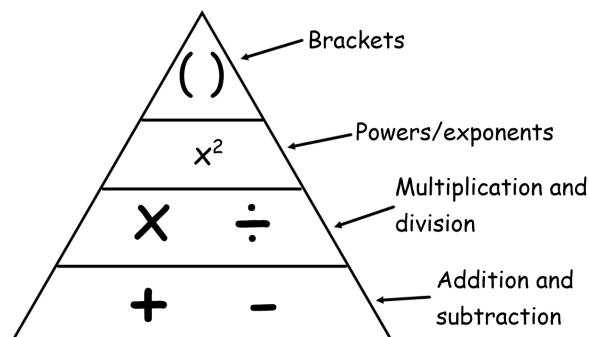|	
J. B Priestley	John Boynton Priestley was born in Yorkshire in 1894. He fought in the first world war and came very close to death on a couple of occasions. In the 1930s, Priestley became concerned with the effects of social inequality in Britain, and in 1942 set up a new political party, the Common Wealth Party. It merged with the Labour Party, and it was integral in developing the welfare state.
Pre and Post War Britain	Before the First World War, there was deemed to be a general air of complacency regarding the prospect of any war taking place. There were strong distinctions between upper and lower classes, and women were subservient to men in society. After the Second World War ended in 1945, class distinctions had been greatly reduced by the two wars, and women had earned a more valued place in society (they had filled in for men whilst there were away at war). After 1945, there was a greater desire for social change.
The Titanic	RMS Titanic was a British passenger liner that sank in the North Atlantic Ocean in the morning hours of 15th April 1912. As around 1.500 people died, it was one of the deadliest commercial maritime disasters in modern history. In 'An Inspector Calls', Birling claims this, thus immediately losing respect from the audience.
Socialism	Socialism is an approach to economic and social systems that is characterised by social ownership, democratic control, high levels of equality. Socialist regimes are generally concerned with ensuring that disparities between wealth and social status are erased across society. After the two World Wars, British society was far more open to socialist ideas. In 'An Inspector Calls', the Inspector harbours socialist attitudes.

3. Dramatic Devices

Dramatic Irony	Arthur Birling suggests that the Titanic is unsinkable, and yet the audience knows it sank on its maiden voyage.
Cliffhangers	At the end of Act One, the Inspector appears and says 'Well?' to Gerald, leaving the audience to wonder how Gerald is implicated.
Stage Directions	The precise directions detailing Gerald 'gravely' stating his involvement with Daisy Renton adds more detail to aid the actor's delivery.
Dramatic Tension	The audience feels an increase in tension as the await information regarding how each character is implicated in Eva Smith's death.

2. Key Themes

Age	Priestley uses age to show the different prevailing attitudes in society at the time. The older characters represent an outdated way of thinking; characters such as Arthur and Sybil believe in only looking after themselves and their family. The younger characters (Sheila and Eric) represent new attitudes towards caring about others in society.
Social Responsibility	All of the family are forced to reflect upon their behaviour towards Eva Smith/Daisy Renton, and consider how responsible they are for her death. Some characters admit responsibility and feel guilt more readily, such as Sheila and Eric. On the other hand, characters such as Arthur and Sybil are more unwilling to accept responsibility for the girl's demise.
Class and Gender	Class and gender are also predominant themes in the play. Eva Smith's position in society is severely weakened because she is from a lower class background and she is also a woman. Because of biases related to class and gender, Birling is dismissive of the hundreds of working class women looking for a pay-rise, whilst Mrs Birling refers to her a 'a girl of that sort' in a derogatory manner.
The Supernatural	The presence of the Inspector weaves a supernatural element into the play. His surname (Goole) is certainly a play on the word 'ghoul' (a ghost). He is unheard of by other members of the police force, leading the characters to at first dismiss him as a hoer, yet he seems to have prior knowledge of the characters' actions, and foresees the suicide before it happens.

4. Form

Well-Made Play	• A popular type of drama from the 19th century. • The events build to a climax. • Primarily concerned with events that happened before the play. • Plot is intricate and complex.
Morality Play	• These were most popular during the 15th and 16th centuries. • They taught the audience lessons that focussed on the seven deadly sins. • Characters who committed these sins were punished.
Crime Thriller	• As the name suggests, this involves a gripping tale based around a crime. • The audience receives clues and must guess what has happened before the end. • All is revealed by the climax.

Order of Operations

- Brackets
- Powers/exponents
- Multiplication and division
- Addition and subtraction

Inverse Operations

$+$ ⟷ $-$

$\times$ ⟷ $\div$

$\square^2$ ⟷ $\sqrt{\square}$

$\square^3$ ⟷ $\sqrt[3]{\square}$

Multiplying Integers
If the signs are the same, the result is positive.

$+ \times + = +$ $- \times - = +$

$+ \times - = -$ $- \times + = -$

Adding Negative Numbers

+ add +	Add the numbers; end result is a positive E.g. 3 + 5 = 8
+ add –	Find the difference between the numbers; end result takes the sign of the number with largest magnitude. E.g. 3 + - 5 = -2
– add –	Add the integers; end result is a negative -3 + -5 = -8

Square Numbers
1 x 1 or 1^2 = 1
2 x 2 or 2^2 = 4
3 x 3 or 3^2 = 9
4 x 4 or 4^2 = 16
5 x 5 or 5^2 = 25
6 x 6 or 6^2 = 36
7 x 7 or 7^2 = 49
8 x 8 or 8^2 = 64
9 x 9 or 9^2 = 81
10 x 10 or 10^2 = 100
11 x 11 or 11^2 = 121
12 x 12 or 12^2 = 144

Cube Numbers
1^3 = 1 x 1 x 1 = 1
2^3 = 2 × 2 × 2 = 8
3^3 = 3 × 3 × 3 = 27
4^3 = 4 × 4 × 4 = 64
5^3 = 5 × 5 × 5 = 125

Column Addition

9+5=14
14 is more than 10!

Column Subtraction

(10+4=14)

Written methods
Multiplication (Grid method)
26 x 5

✖	20	6
5	100	30

The 26 is broken into 20 and 6. These numbers are multiplied as shown.

The results are then added, 100 + 30 = 130.

Division (Bus stop)

186 ÷ 6

6 doesn't divide into 1, so the 1 carries.
6 divides into 18, 3 times.
6 divides into 6, once.

Rounding (to different degrees of accuracy)

* 5 and above rounds up *

24|356 To the nearest integer (whole number)

24

24.3|56 To 3 significant figures (starting at first non-zero digit)

24.4

24.35|6 To 2 decimal places (digits after the decimal point)

24.36

Draw in your line then check the number to the right

Subject terminology – Algebra and Graphing	
Linear Graph	A straight line in the form y=mx + c. The highest power of x is one
Quadratic Graph	A curve where the highest power of x is 2 in the general form $ax^2+bx+c=0$
Cubic Graph	A curve where the highest power of x is 3. The general form is $ax^3+bx^2+cx+d=0$
Reciprocal Graph	A curve whereby the numerator stays constant and the denominator varies.
Exponential Graph	A curve whereby the base remains constant and the power varies.
Asymptote	A line on a plane whereby the curve will tend to but never reach.
Gradient	The steepness of a line. Defined by the formula $\frac{Change\ in\ y}{Change\ in\ x}$
Y-intercept	The point where a curve crosses the y-axis on a graph.

Gradient of a Straight Line
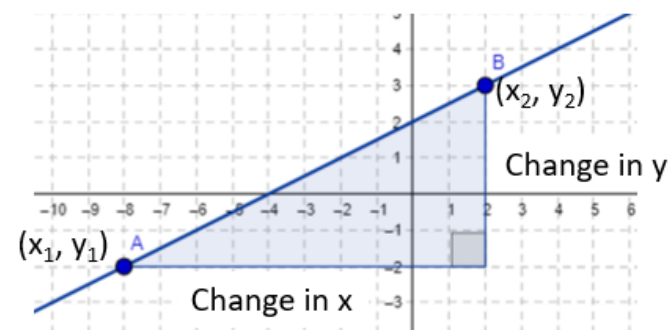
Gradient = $\dfrac{y_2 - y_1}{x_2 - x_1}$ = $\dfrac{\text{Change in y}}{\text{Change in x}}$

So here gradient = $\dfrac{5}{10}$ = 0.5

How to: find the equation of a line given two points	
Step one: Calculate the gradient (denoted m) using the formula	E.g. for (1, 5) and (3, 9) $m = \dfrac{y_2 - y_1}{x_2 - x_1} = \dfrac{9-5}{3-1} = \dfrac{4}{2} = 2$
Step two: Substitute one of the coordinates into y=mx + c and solve for c to find the y intercept	$y = mx + c$ $5 = 2 \times 1 + c$ $5 = 2 + c$ $3 = c$
Step three: Substitute your values for m and c into the general form of an equation of a straight line	y = 2x + 3

Types of Graphs

Linear (straight line)

$y = mx + c$

Positive Grad

$y = -mx + c$

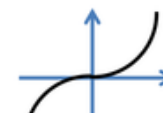Negative Grad

Quadratic

$y = ...x^2 + ...$

Positive x²

$y = -...x^2 + ...$

Negative x²

Cubic

$y = ...x^3 + ...$

Reciprocal

$y = \dfrac{1}{x}$
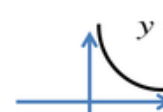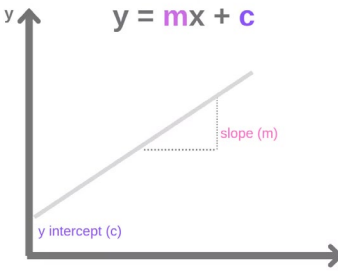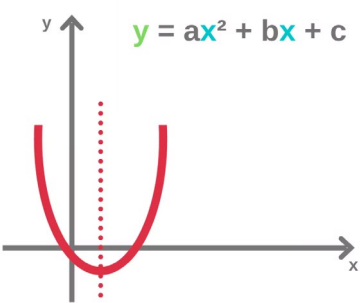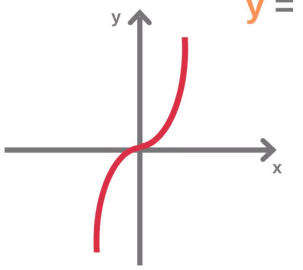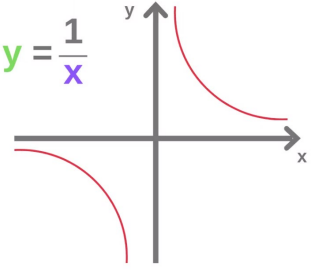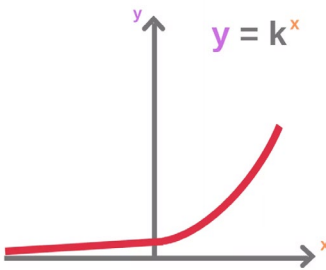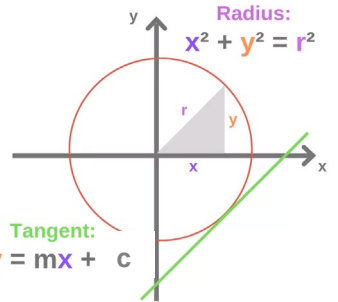
Subject terminology

Function	A set of instructions we apply to numbers or terms
Composite function	A function made by combining two or more functions
Intercept	Where a graph crosses an axis (either the x-intercept or y-intercept)
Asymptote	A straight line which a curve approaches but never touches
Turning point	The point at which a graph changes direction
Volume	The amount of 3-dimensional space a solid takes up
Surface area	The total area of all faces of a 3-dimensional solid

How to: find the equation of a line given two points

Step one: Calculate the gradient (denoted m) using the formula	E.g. for (1, 5) and (3, 9) $$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 5}{3 - 1} = \frac{4}{2} = 2$$
Step two: Substitute one of the coordinates into y=mx + c and solve for c to find the y intercept	$$y = mx + c$$ $$5 = 2 \times 1 + c$$ $$5 = 2 + c$$ $$3 = c$$
Step three: Substitute your values for m and c into the general form of an equation of a straight line	y = 2x + 3

Function notation

Notation	What it means
f(x)	A function f with input x
f(2)	The function f evaluated at x = 2
fg(x)	A composite function, applying function g first and then f
$f^{-1}(x)$	The inverse of function f

Key graph shapes

Straight Line Graphs

y = mx + c

A straight line with gradient m and y-intercept c

Quadratic Graphs

$y = ax^2 + bx + c$

A parabola with y-intercept c

Cubic Graphs

$y = x^3$

A curved graph which may have more than one change of direction

Reciprocal Graphs

$y = \frac{1}{x}$

Asymptotes of the x-axis and the y-axis

Exponential Graphs

$y = k^x$

Increases sharply in the y direction and has an asymptote of the x-axis

Circle Graphs

Radius: $x^2 + y^2 = r^2$

Tangent: y = mx + c

Pythagoras' Theorem gives the equation of the circle with centre (0,0)

Order of Operations

- Brackets
- Powers/exponents
- Multiplication and division
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$( )$ — Brackets

x^2 — Powers/exponents

$\times$ $\div$ — Multiplication and division

$+$ $-$ — Addition and subtraction

Inverse Operations

$+ \longleftrightarrow -$

$\times \longleftrightarrow \div$

$\square^2 \longleftrightarrow \sqrt{\square}$

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$5^3 = 5 \times 5 \times 5 = 125$

Column Addition

$29 + 35 = 64$

9+5=14 14 is more than 10!

Column Subtraction

$64 - 27 = 37$ (10+4=14)

Written methods

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26×5

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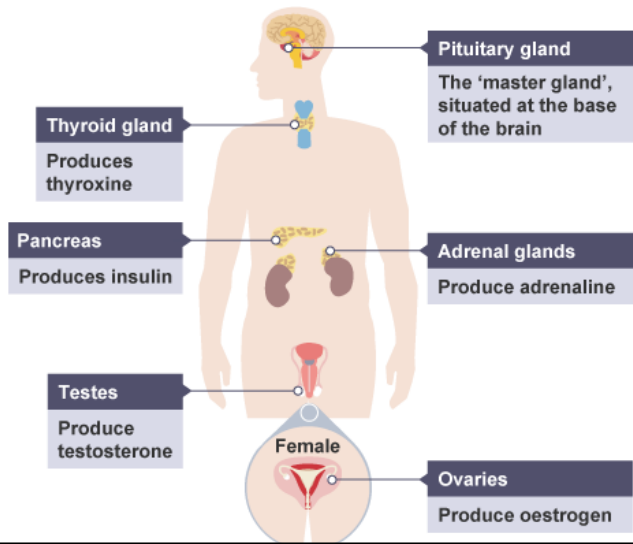
24.4

$24.35\underline{6}$ — To 2 decimal places (digits after the decimal point)
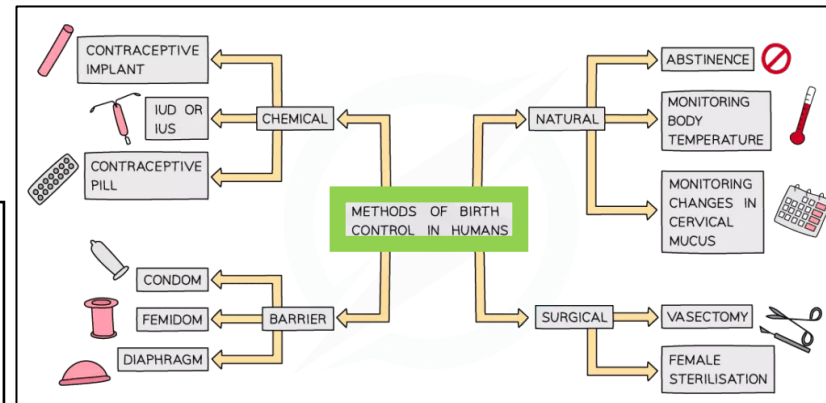
24.36

Draw in your line then check the number to the right

Endocrine System

Pituitary gland
The 'master gland', situated at the base of the brain

Thyroid gland
Produces thyroxine

Pancreas
Produces insulin

Adrenal glands
Produce adrenaline

Testes
Produce testosterone

Female

Ovaries
Produce oestrogen

Negative Feedback Loop

Conditions in the body change from set point → Change detected → Corrective mechanisms activated → Conditions returned to set point → Corrective mechanisms switched off

In general this works by:

- if the level of something rises, control systems reduce it again
- if the level of something falls, control systems raise it again

Control of Blood Glucose

Action of insulin	Low glucose	High glucose
Effect on pancreas	Insulin not secreted into the blood	Insulin secreted into the blood
Effect on liver	Does not convert glucose into glycogen	Converts glucose into glycogen
Effect on blood glucose level	Increases	Decreases

Type 1 vs Type 2 Diabetes

	Type 1	Type 2
Cause	Inability of pancreas to produce insulin	Cells of the body become resistant to insulin or insufficient insulin produced by the pancreas
Treatment	Monitoring blood glucose levels and injecting human insulin throughout the day (particularly after meals consumed)	Maintain a low-carbohydrate diet and regular exercise to reduce need for insulin

Methods of birth control in humans: CHEMICAL (Contraceptive implant, IUD or IUS, Contraceptive pill), BARRIER (Condom, Femidom, Diaphragm), NATURAL (Abstinence, Monitoring body temperature, Monitoring changes in cervical mucus), SURGICAL (Vasectomy, Female sterilisation)

Subject Terminology	Definition
Hormone	Chemical messenger produced in glands and carried by the blood to specific organs.
Gland	An organ or tissue that makes a substance for release such as a hormone.
Endocrine system	The glands that produce the hormones that control many aspects of the development and metabolism of the body
Contraception	Methods of preventing pregnancy
Ovaries	Female sex organs that produce eggs and sex hormones
Ovulation	The release of an egg from the ovary
Testosterone	The main male sex hormone that controls the male secondary sexual characteristics at puberty and the production of sperm
Oestrogen	Female sex hormone that controls the development of secondary sexual characteristics in girls at puberty and the build-up and maintenance of the uterus lining during the menstrual cycle

The Menstrual Cycle

Changes to the uterine lining during the menstrual cycle.

The average menstrual cycle is 28 days long and there are four overall stages:

- **Follicular phase days 1-13**
- **Menstruation days 1-5** – loss of lining from the uterus, occurs at the start of the cycle if no fertilisation has occurred
- The lining starts to thicken
- **Ovulation day 14** occurs around the middle of the cycle (about day 14), the egg travels down the oviduct towards the uterus
- **Luteal phase days 15-28** - The lining is maintained ready to accept a fertilized egg

4 hormones control the menstrual cycle
- FSH causes eggs to mature
- LH stimulates the release of an egg
- Oestrogen and progesterone maintain the lining of the uterus.

Trophic levels for a simple food chain

| TROPHIC LEVEL 1 (PRODUCER) | TROPHIC LEVEL 2 (PRIMARY CONSUMER) | TROPHIC LEVEL 3 (SECONDARY CONSUMER) | TROPHIC LEVEL 4 (TERTIARY CONSUMER) | TROPHIC LEVEL 5 (QUATERNARY CONSUMER) |

GRASS → GRASSHOPPER → FROG → PYTHON → EAGLE

APEX PREDATOR

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The carbon cycle

CARBON DIOXIDE IN THE ATMOSPHERE

CARBON IS RELEASED INTO THE ATMOSPHERE WHEN FOSSIL FUELS ARE BURNED (COMBUSTION)

CARBON IS RELEASED INTO THE ATMOSPHERE DURING RESPIRATION OF PLANTS, ANIMALS AND DECOMPOSERS

USED IN PHOTOSYNTHESIS TO PRODUCE CARBOHYDRATES + OTHER BIOLOGICAL MOLECULES

PLANTS ARE EATEN BY ANIMALS

SUN

CARBON IN DEAD AND DECAYING MATTER IS BROKEN DOWN BY DECOMPOSERS

CARBON DIOXIDE IN DECAYING MATTER & WASTE

FOSSILISATION OF DEAD PLANTS AND ANIMALS OCCURS IN SPECIFIC CONDITIONS

CARBON STORED IN FOSSIL FUELS (COAL & OIL)

The factors that affect the rate of decay

Factor	How factor affects the rate of decay
Temperature	• At warmer temperatures, **enzymes** involved in decomposition can work at a faster rate, increasing the rate of decay. • If the temperature is too high, these enzymes will **denature** and the rate of decay will decrease. • At low temperatures, the enzymes involved in decomposition work slowly, decreasing the rate of decay — this is why we keep food in a fridge.
Water	• Decomposers require water to survive (water being essential for certain biological processes). • Many decomposers also function by **secreting enzymes** onto decaying biological matter and **absorbing** the **products** of this chemical digestion — without water these reactions cannot occur. • As water availability decreases, so does the rate of decay.
Availability of oxygen	• Oxygen is needed by many decomposers for **aerobic respiration** — without oxygen, they cannot survive. • For these decomposers, the rate of decay decreases as oxygen availability decreases. • However, some microorganisms can **respire anaerobically** (they don't require oxygen to survive), resulting in **anaerobic decay** (such as in biogas generators).

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Subject Terminology	Definition
abiotic	Non-living elements of an ecosystem, such as climate, temperature, water, and soil type.
biomass	The dry mass of an organism.
biotic	Living elements of an ecosystem, such as plants and animals
carbon cycle	The processes and events involved in recycling carbon in the environment
Decomposer	An organism which eats dead organisms, fallen leaves, animal droppings, etc, and breaks them down into simpler materials
Ecosystem	The living organisms in a particular area, together with the non-living components of the environment.
Food chains	A sequence (usually shown as a diagram) of feeding relationships between organisms, showing which organisms eat what and the movement of energy through trophic levels.
Food webs	A network of food chains, showing how they all link together.
primary consumer	The name given to an organism that eats a producer. A herbivore.
producer	Plants that begin food chains by making energy from carbon dioxide and water.
secondary consumer	An organism that obtains its energy by eating the primary consumer.

Calculating the mean rate of reaction

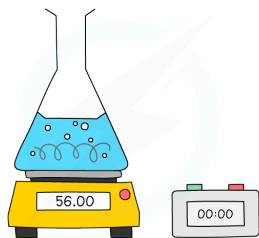$$mean\ rate\ of\ reaction = \frac{quantity\ of\ reactant\ used}{time\ taken}$$

$$mean\ rate\ of\ reaction = \frac{quantity\ of\ product\ formed}{time\ taken}$$
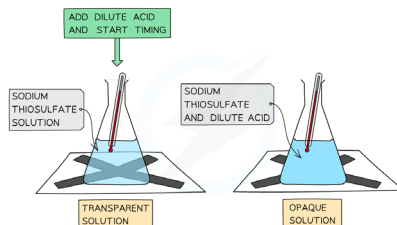
Rates of reaction can use several units, including:

- g/s or g/min
- cm^3/s or cm^3/min.
- mol/s or mol/min.

Practical methods used to measure the rate of reaction

Measuring mass changes on a balance

Measuring concentration change: Turbidity

Measuring changes in gas volume
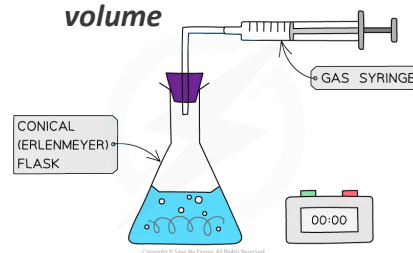
Factors affecting the rate of a reaction
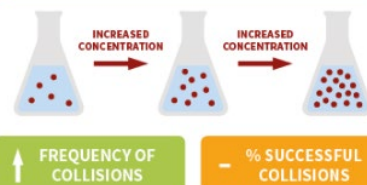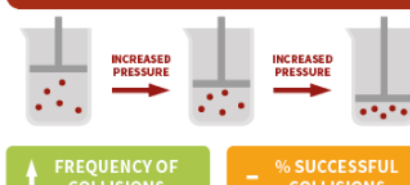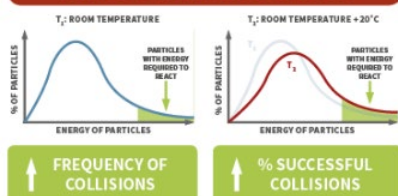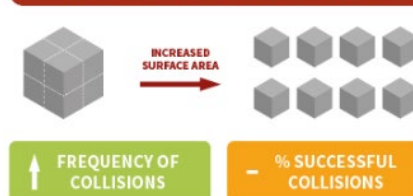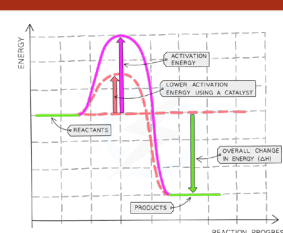
Subject terminology	Definition
Dynamic equilibrium	A reversible reaction when the forward and reverse reactions occur at the same rate
Reversible reaction	A reaction that occurs in both directions at the same time.
Concentration	The mass of a substance dissolved in a known volume of a liquid. The higher the concentration the greater the number of particles are present.
Pressure	Force exerted over an area. The greater the pressure, the greater the force exerted over the same area.
Rate of reaction	Refers to the speed at which the products are formed from the reactants in a chemical reaction
Activation energy	The minimum amount of energy that colliding particles must have for them to react.
Catalyst	A substance that changes the rate of a chemical reaction without being changed by the reaction itself.
Frequency	The total number of times an event occurs
Surface area	The amount of space covering the outside of a three-dimensional shape.

Reversible reactions
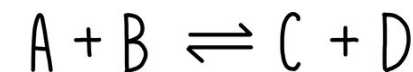
A reversible reaction occurs when the products of a reaction can turn back into the reactants.
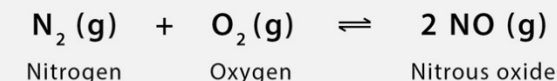
The symbol $\rightleftharpoons$ has two half arrowheads, one pointing in each direction. It shows that the reaction is reversible

$$A + B \rightleftharpoons C + D$$

$N_2\ (g)\ +\ O_2\ (g)\ \rightleftharpoons\ 2\ NO\ (g)$
Nitrogen   Oxygen   Nitrous oxide

$H_2\ (g)\ +\ I_2\ (g)\ \rightleftharpoons\ 2\ HI\ (g)$
Hydrogen   Iodine   Hydrogen iodide

Nuclear Notation

MASS NUMBER (PROTONS + NEUTRONS)

ATOMIC NUMBER (NUMBER OF PROTONS)

$^{2}_{1}H$ $^{23}_{11}Na$ $^{235}_{92}U$

HYDROGEN   SODIUM   URANIUM

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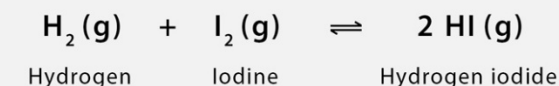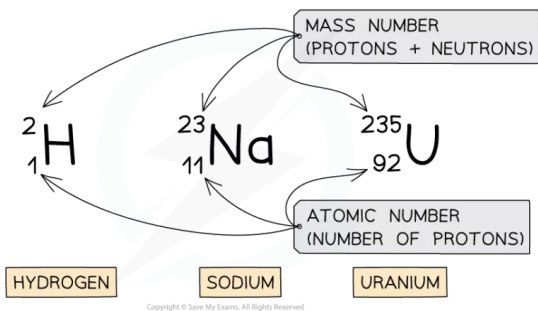
Rutherford Scattering Experiment

Rutherford's alpha scattering experiment
Disproved the plum pudding model

1. Alpha particles were fired at very thin gold foil
2. They expected the alpha particles to pass straight through because the positive charge was evenly distributed through the atom.
3. The actual result was that most went through the gold foil but some alpha particles were partially deflected, some particles bounced straight back.
4. They decided there must be something dense and charged in the centre of the atom (the nucleus) but the rest of the atom was empty space.

OBSERVED RESULT
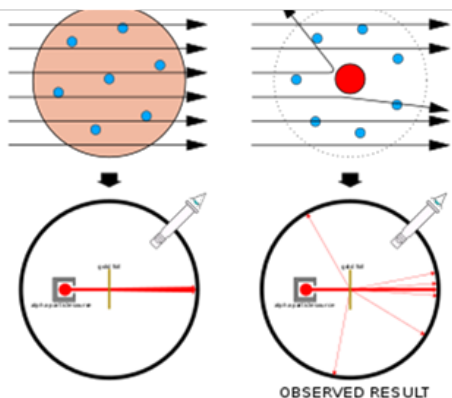
Subject Terminology	Definition
Decay	The process of an unstable nucleus becoming more stable by emitting radiation.
Irradiated	an object that has been exposed to ionising radiation
Radioactive contamination	the unwanted presence of materials containing radioactive atoms on other materials
Ionising radiation	radiation emitted from unstable nuclei that can dislodge outer electrons from other atoms causing them to become ions.
Half-life	average time taken for the number of nuclei of the isotope (or mass of the isotope) in a sample to halve
Isotope	atoms with the same number of protons and different numbers of neutrons
Activity	the number of unstable atoms that decay per second in a radioactive source
Count rate	the number of counts per second detected by a Geiger counter

Plum Pudding Model

Positively charged sphere

Randomly scattered electrons
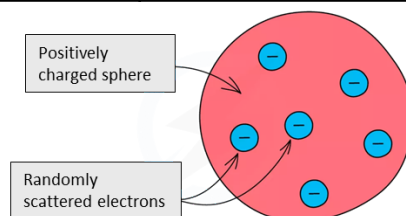
Properties of Ionising Radiation

Particle	What is it	Charge	Range in air	Penetration	Ionisation
Alpha (α)	2 protons + 2 neutrons	+2	Few cm	Stopped by paper or skin	High
Beta (β⁻)	Electron	−1	1m	Stopped by few mm Aluminium	Medium
Gamma (γ)	Electromagnetic wave	0	Infinite	Stopped by thick lead or concrete	Low

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Half –life

The time it takes for the activity/count rate/mass of a sample to halve.

The half-life of this sample is 2 days.
The activity started at 80 Becquerel's and took 2 days to decrease by half to 40 Becquerel's.
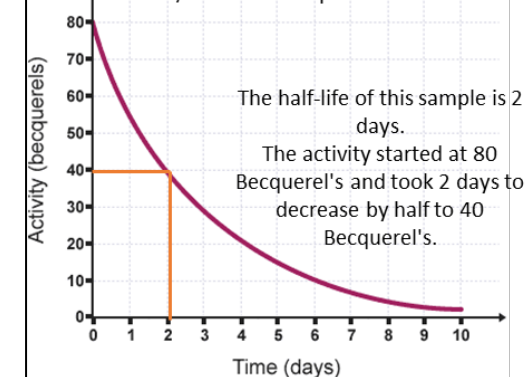
Ionisation vs Excitation

incoming photon is absorbed by an electron in the atom

electron moves to outer shell
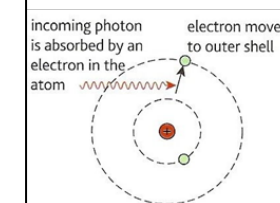
Excitation: an electron absorbs energy and moves to a higher energy level.

Ionisation: an electron is removed from the atom.

	Irradiation	Contamination
Description	Object is exposed to radiation but does not become radioactive	the unwanted presence of materials containing radioactive atoms on other materials
Source	Danger is from radiation emitted outside the object	Danger from radiation emitted within the object
Prevention	Prevented by using shielding, such as lead clothing	Prevented by safe handling of sources and airtight safety clothing
Causes	Caused by the presence of radioactive sources outside the body	Caused by inhalation or ingestion of radioactive sources

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SCALAR	VECTOR
DISTANCE	DISPLACEMENT
SPEED	VELOCITY
TIME	ACCELERATION
ENERGY	FORCE
MASS	WEIGHT
	MOMENTUM

Calculating resultant forces

When the forces are in the same direction, add them.

When the forces are in the opposite directions. subtract them.

5N ← A → 5N

3N → B →
7N ↓

7N ← C → 3N

RESULTANT FORCE = 0N (THE FORCES ARE BALANCED)

RESULTANT FORCE = 3 + 7 = 10 N (TO THE RIGHT)

RESULTANT FORCE = 7 – 3 = 4 N (TO THE LEFT)

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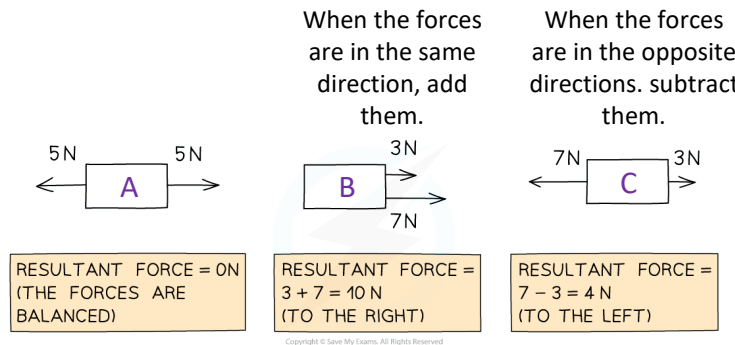
Newton's First Law

When the forces are **balanced/in equilibrium/there is no resultant force** (like block A above):
- A moving object will continue to move in the same direction at the same speed.
- A stationary (still) object will stay at rest (stay still)

When the forces are not balanced/not in equilibrium/there is a resultant force
The object will either (like blocks B and C above):
- speed up
- slow down
- change direction.

Subject Terminology	Definition
Force	A push or a pull that acts on an object due to the interaction with another object. Measured in Newtons, N.
Scalar	Quantities that have magnitude only e.g. speed, temperature, mass
Vector	Quantities that have magnitude and direction e.g. velocity, displacement, force
Displacement	Displacement is the distance moved in a straight line, in a given direction, from the starting point.
Magnitude	A scientific word that means size.
Friction	A contact force that acts between two surfaces that are sliding or trying to slide across each other.
Resultant force	A single force which can replace all the forces acting on an object and have the same effect.
Centre of mass	The point in an object where all the mass of an object appears concentrated.
Equilibrium	There is no overall (resultant) force.

Free body Diagrams

Show the forces acting on an object in a free body diagram. The arrows represent the size and direction of the forces acting.

When drawing a force diagram:
- represent the object with a small box or dot
- draw the arrows with a pencil and ruler
- draw the arrows from the centre of the box or dot
- label the arrow with the name of the force and the size of the force

Skiing down a hill

Friction (300 N)

Normal reaction force (400 N)

Weight (500 N)

A book resting on a table

Normal reaction force (1 N)

Weight (1 N)
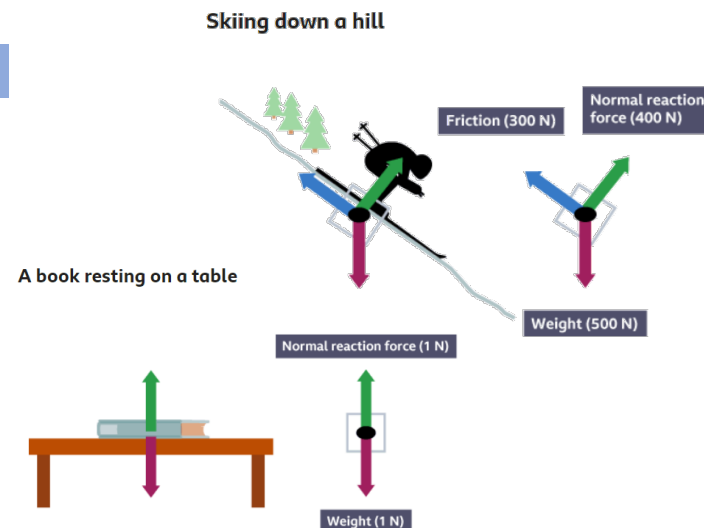
Finding the centre of mass of regular objects

The centre of mass is located at the centre of the lines of symmetry.
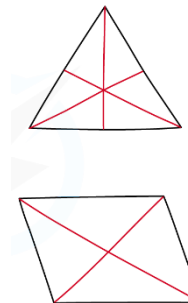
Finding the centre of mass of irregular objects

THE CENTRE OF MASS LIES ALONG THE LINE OF THIS THREAD

THE INTERSECTION OF THE TWO LINES IS THE CENTRE OF MASS

STEP 1
HANG UP THE IRREGULARLY SHAPED OBJECT

STEP 2
SUSPEND THE SHAPE FROM A LOCATION NEAR AN EDGE. DROP A PLUMB LINE AND MARK ON THE OBJECT

STEP 3
SUSPEND THE SHAPE FROM ANOTHER LOCATION NOT TOO CLOSE TO THE FIRST. DROP A PLUMB LINE AGAIN AND MARK ITS POSITION
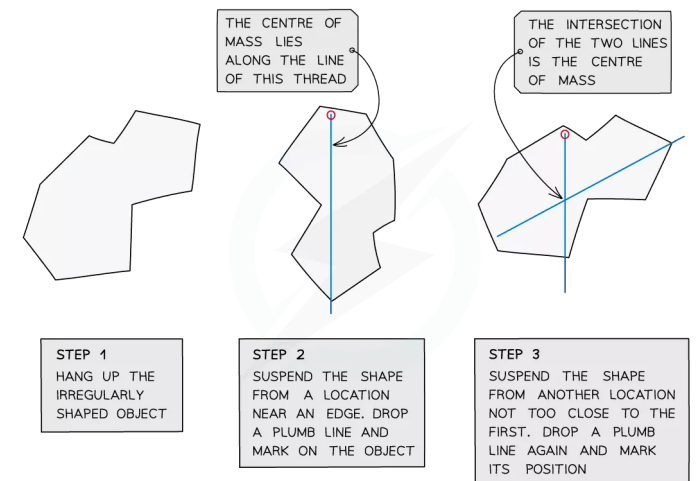
What is Urbanisation?

This is an increase in the amount of people living in urban areas such as towns or cities. In 2007, the UN announced that for the first time, more than 50 % of the world's population live in urban areas.

Where is Urbanisation happening?

Urbanisation is happening all over the word but in LICs and NEEs rates are much faster than HICs. This is mostly because of the rapid economic growth they are experiencing.
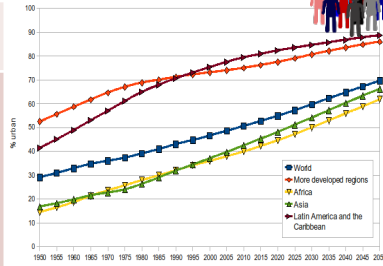
Causes of Urbanisation

Rural - urban migration (1)	The movement of people from rural to urban areas.

Push	Pull
• Natural disasters • War and Conflict • Mechanisation • Drought • Lack of employment	• More Jobs • Better education & healthcare • Increased quality of life. • Following family members.

Natural Increase (2)	When the birth rate exceeds the death rate.

Increase in birth rate (BR)	Lower death rate (DR)
• High percentage of population are child-bearing age which leads to high fertility rate. • Lack of contraception or education about family planning.	• Higher life expectancy due to better living conditions and diet. • Improved medical facilities helps lower infant mortality rate.

Types of Cities

Megacity	An urban area with over 10 million people living there.
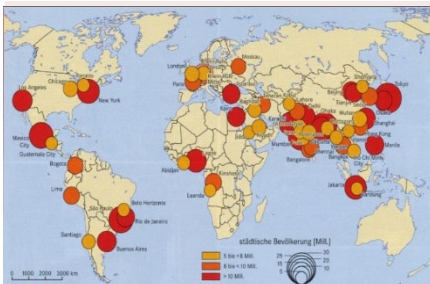
More than two thirds of current megacities are located in either NEEs (Brazil) and LICs (Nigeria). The amount of megacities are predicted to increase from 28 to 41 by 2030.

Sustainable Urban Living

Sustainable urban living means being able to live in cities in ways that do not pollute the environment and using resources in ways that ensure future generations also can use then.

Water Conservation

This is about reducing the amount of water used.
• Collecting rainwater for gardens and flushing toilets.
• Installing water meters and toilets that flush less water.
• Educating people on using less water.

Energy Conservation

Using less fossil fuels can reduce the rate of climate change.
• Promoting renewable energy sources.
• Making homes more energy efficient.
• Encouraging people to use energy.

Creating Green Space

Creating green spaces in urban areas can improve places for people who want to live there.
• Provide natural cooler areas for people to relax in.
• Encourages people to exercise.
• Reduces the risk of flooding from surface runoff.

Waste Recycling

More recycling means fewer resources are used. Less waste reduces the amount that eventually goes to landfill.
• Collection of household waste.
• More local recycling facilities.
• Greater awareness of the benefits in recycling.

Unit 2a

AQA

Urban Issues & Challenges

Sustainable Urban Living Example: Freiburg

Background & Location

Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.

Sustainable Strategies

• The city's waste water allows for rainwater to be retained.
• The use of sustainable energy such as solar and wind is becoming more important.
• 40% of the city is forested with many open spaces for recreation, clean air and reducing flood risk.

Integrated Transport System

This is the linking of different forms of public and private transport within a city and the surrounding area.

Brownfield Site

Brownfield sites is an area of land or premises that has been previously used, but has subsequently become vacant, derelict or contaminated.

Traffic Management

Urban areas are busy places with many people travelling by different mod of transport. This has caused urban areas to experience different traffic congestion that can lead to various problems.

Environmental problems

• Traffic increases air pollution which releases greenhouse gases that is leading to climate change.

Economic problems

• Congestion can make people late for work and business deliveries take longer. This can cause companies to loose money.

Social Problems

• There is a greater risk of accidents and congestion is a cause of frustration. Traffic can also lead to health issues for pedestrians.

Congestion Solutions

• Widen roads to allow more traffic to flow easily.
• Build ring roads and bypasses to keep through traffic out of city centres.
• Introduce park and ride schemes to reduce car use.
• Encourage car-sharing schemes in work places.
• Have public transport, cycle lanes & cycle hire schemes.
• Having congestion charges discourages drivers from entering the busy city centres.
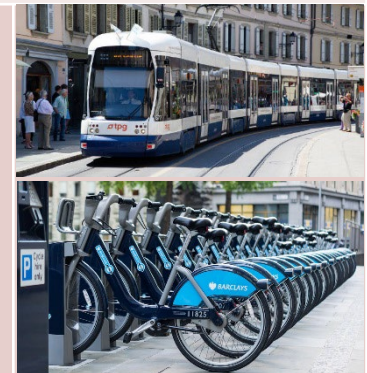
Traffic Management Example: Bristol

In 2012 Bristol was the most congested city in the UK. Now the city aims to develop it's integrated transport system to encourage more people to use the public transport. The city has also invested in cycle routes and hiring schemes.

Greenbelt Area

This is a zone of land surrounding a city where new building is strictly controlled to try to prevent cities growing too much and too fast.

Urban Regeneration

The investment in the revival of old, urban areas by either improving what is there or clearing it away and rebuilding.

Urban Change in a Major UK City: London		Urban Change in a Major NEE City: Lagos Case Study	
Location and Background	**City's Importance**	**Location and Background**	**City's Importance**
London is a city in the south-east of the UK. It has a population of 10 million people. The city was founded by the Romans and grew dramatically during the industrial revolution. Docks and ports traded around the world.	The city enjoys a large sporting heritage with famous athletes and football clubs. • London is the centre of UK trade and a hub of financial trade • London attracts graduates from all over the UK and the world to work in it s many expanding businesses. UK's wealthiest city • Major UK transport hub – airports etc	Lagos is located in the southwest of Nigeria on the coast of the Gulf of Guinea. It was the capital of Nigeria until 1991.	Has 80 of industry in Nigeria • Accounts for 25% GDP • 80% of imports and 70% of exports pass through the docks • Media centre and huge film industry • One of highest standards of living in Africa • Hosted African cup of Nations tournament • ICT centre of West Africa • Home to most financial institutions
Migration to London	**City's Opportunities**	**Migration to Lagos**	**City's Opportunities**
During the industrial revolution, the population dramatically increased with people migrating from nearby rural communities. With attraction of making money and getting a job people came from all over the world. Lots of people from India, Nigeria, Jamaica. One of the most multicultural places on the planet. Recent migration from Eastern Europe. Due to free movement from the EU.	Social: Cultural mix, lots of recreation facilities and tourist attractions. Lots of bars and restaurants and theatres. Economic: Major world financial centre, highly skilled workforce. Likely to be employed in managerial/professional roles, which earn more money. Environmental: Urban greening –increase the % of green spaces in a city. Rooftop gardens - better quality of life, reduce flooding, wildlife habitats. Lots of parks for walking and a better environment	The city was initially a fishing village but developed into a thriving colonial sea port. Since 1970s and the oil boom thousands of people migrate daily. Rural to urban migration has accounted for most of this growth in the last 50 years due to poor rural services, low wages, land shortages and climate change. People come from within Nigeria and from surrounding countries. 60% live in slums • Most in Lagoon area e.g. Makoko • Lack basic facilities, communal toilets, waste put into the lagoon causing disease. 3km to communal water point • Crime in the slums an issue • Eco Atlantic – New city of 250, 000	More schools and universities • Growing industry – fashion, finance and film (Nollywood) • Healthcare available • 68% have secondary education (40% of people in rural areas don't get a primary education) • Above average healthcare, education and employment – 9 years education, 53 years life expectancy 2 power stations planned. • Wealthy houses and businesses have generators • Rich have pipes water • Rest use public taps, boreholes or buy from vendors More jobs in Lagos in both the formal and informal economy • Evo Atlantic – new financial hub – 150, 000 jobs • Nollywood film indu
City Challenges	**London Olympic Regeneration Projects**	**City Challenges**	**Sustainable Transport System**
Social: Urban deprivation, inequalities in housing, education, health, employment. House prices too high, unequal incomes, children do not get equal exam grades, people in wealthy areas live longer than those in poor areas. Different cultures do not always mix. Economic: Employment rate is above national average 10% - major issue. Lack of integration between cultures. **Environmental**: Urban sprawl has led to increased pressure and decline of greenfield sites around the city. Dereliction – lots of empty brownfield sites. Waste disposal and air pollution – lots of traffic. Waste – lots of waste, incineration and landfill, developing more recycling.	**Why was it needed**: Socially deprived area of Newham Lea Valley was a former industrial area now in decline Lack of school spaces Idea to improve the area through regeneration – reuse the land, new homes, improve infrastructure and buildings **Success** Socially – Athletes village used for new housing estate/new school/unemployment fell Economically: new tube station/improved infrastructure/9bn of investment Environmentally- new parkland, improve water quality River Lea **Problems** Socially – new rents too high, people moved out of their homes to make the new housing Economically – 5bn over budget – could be spent on deprivation Environmentally – much wildlife relocated, 3.3 mill tonnes of CO2	Shanty towns are established around the city, typically on unfavourable land, such as swamps and the lagoon • There are a severe shortage of housing, schools and healthcare centres available. • The city suffers from a high crime rate that includes gun/gang violence and drugs. • The rapid urbanisation causes dangerous levels of pollution and traffic congestion. • Large scale social inequality, is creating tensions between the rich and poor.	The authorities have introduced a Bus Rapid Transport System • A separate bus lane is used • 200,000 people are transported every day to the CBD on Lagos Island • This will be incorporated into an integrated transport system linking buses, taxis (danfos), ferries and railways. • In 2016 a new light railway opened and further rail routes are planned

Steps to War

Germany in the 1930's	Nazi party in charge – want to tear up TOV so: - Left the League of Nations, - Rearm and rebuild the military, - Plan to build a new German empire but need space (lebensraum) from other countries. - Wanted to unify all German people into one country. - Wider context - Manchuria Crisis (Japan invade China) – 1931
March 1935	Hitler violates the Treaty of Versailles by introducing military conscription. - Wider context – Invasion of Abyssinia by Italy - 1935
Rhineland Crisis March 1936	German soldiers not supposed to enter border area between France and Germany. Hitler sends in the army. France and Britain unhappy but don't want war. Also Germans still keep to their side of the border.
Unification with Austria March 1938	Hitler bullies Austria into joining with Germany (Anschluss). TOV bans this, but LON can't do much to stop it.
Sudetenland Crisis Sep 1938	Hitler wants to take over the border around Czechoslovakia because 3 million Germans live there. Using false accusations of violence against the Germans, Hitler's army entered Czechoslovakia and occupied the area. In a **conference in Munich** in September of 1938 France, Great Britain and Italy agree to German occupation of the Sudetenland in return for promise of peace and no more territorial demands. (Munich Agreement). France wants war, but Britain not ready. Instead, British PM (Chamberlin) gives Hitler what he wants in the hope that Hitler will stop. This was called appeasement.
Invasion of Czechoslovakia	In March 1939 Hitler occupies the rest of Czechoslovakian territory, totally disregarding the Munich Agreement.
Nazi-Soviet Pact 1939	An agreement between Nazi Germany and the Communist USSR. Germany and the USSR both agreed that the other could control half of Poland (Poland did not agree).
Germany invaded Poland 1939	After the success in Munich Hitler started making similar demands from Poland. He demanded the so called Polish Corridor and was trying to convince the Polish government to cooperate with Germany against USSR. When Polish government refused Hitler decided to attack.
Britain declares war on Germany 1939	On the 3rd September 1939 Great Britain declared war on Germany.

TECHNICAL VOCABULARY

Communism	Political system based on equality
Lebensraum	Living space for Germans in the East
Plebiscite	A public vote
Anschluss	Political union
Appeasement	The policy followed by Britain and France in the 1930's towards Hitler, giving him what he wanted to keep peace.
Conscription	A system whereby people are forced to join the army or navy
Demilitarised	An area without armed troops or weapons
Fascist	Extreme right-wing supporters, such as the Nazi's in Germany and Mussolini's party in Italy.
Nazi-Soviet Pact	The alliance between Germany and the USSR in Aug 1939 which made the Second World War inevitable
Sudetenland	Area of Czechoslovakia where most people spoke German
Foreign Policy	A government's strategy in dealing with other nations.

Key People

Neville Chamberlain	British Prime Minister(1937 – 1940) in favour of Appeasement to avoid another World War.
Edward Daladier	French leader at the outbreak of World War Two
Adolf Hitler	Fuhrer of Germany – initiated World War Two.
Josef Stalin	Leader of the USSR. He was very wary of every country, especially Germany as Hitler had promised to destroy communism.
Franklin D Roosevelt	Leader of USA. America had adopted a policy of isolationism in the 1920's and this continued into the 30's.

Hitler was to blame	**Appeasement**	**Failure of the LoN**	**Failure of the LoN**	**Nazi Soviet Pact**	**The Depression**	**T of Versailles**
In Mein Kampf Hitler vowed to overturn ToV & take Lebensraum (living space). This was the basis of his foreign policy and meant he would have to invade countrries. He also vowed to make Germany Strong again.	The policy of apeasement aimed to prvent another war and is linked particulary with Chamberlain. Many believe he made a mistake by trusting Hitler. Britan and France could have stopped Germany but many opportuniites to do so were missed.	Its strucutre and organisation made the League weak. Its lack of army ment it could not force nations to comply. Membership – countries could leave, the USA never joined and USSR and Germany were not allowed to join at first.	Manchuria showed that the League was weak and would not deal with a member of the council. Abyssinaia showed Britain and France undermined it easily. Weakness of the league gave confidence to others.	Stalin felt alienated by the Munich Agreement and this encouraged him to sign the pact even though he and Hitler hated each other. It was a truce to agree to share Poland and would help Hitler avoid a war on two fronts – made Hitler more confident.	The Wall Street Crash and subsequent depression made countires around the world look inwards and desperate to sort their own problems. Less international co-operation and desperate people turned to extremist parties and leaders.	By the 1930's many people believed that Germany had been treated too harshly including Britain. As a result they didn't stop the steps Hitler was taking. Hitler promised to overturn the T of V and reunite all German speaking speoples in a Greater Germany.

Conflict and Tension: The Interwar Years
HISTORICAL SUBSTANTIVE CONCEPTS

MONARCHY

In 1917, against a backdrop of changing political and social ideology Tsar Nicholas II abdicated the Russian throne. Defeat in 1918 for Germany led to Kaiser Wilhelm II's abdication, a republic being formed and a new constitution. Karl I, Emperor of Austria issued a proclamation in which he recognized the rights of the Austrian and Hungarian people to determine their form of government.

RELIGION

The Catholic Church used the war as a way to preach peace, mediate international conflict and commit humanitarian works. The greatest obstacle was the nationalism that spread through the War era.

INVASION

Invasion of the Ruhr (1923) when France sent troops into the area to collect the money they were owed by Germany.
Aggressive nationalism is best represented by Japan's invasion of China in 1931/32 and Italy's invasion of Abyssinia in 1935.
Germany invaded Poland in 1939 to lead to WW2.

POLITICAL REFORM

The creation of the League of Nations represented an effort to break the pattern of traditional power politics.
This era also saw the rise of communism, starting in Russia.

IDEOLOGY

The aim of the Treaty of Versailles was to ensure peace and avoid another war like World War One.
The League of Nations was established to ensure World Peace.

CONFLICT

During the 1920's the League of Nations had a mixture of success es and failures when dealing with conflict.
Success – Aaland Islands – Sweden and Finland accepted the LON negotiation to give the Aaland Islands to Finland.
Failure – Poland – The Poles invaded Vilna. LON ordered Poland to withdraw, and they refused. The League could do nothing. However, in the 1930's aggressive nations and economic depression led to many failures.

REVOLUTION

Between 1917 and 1923 a revolutionary wave of political unrest and revolts sprung up around the world, inspired by the success of the Russian Revolution and the disorder created by the aftermath of World War One. The uprising were socialist or anti-colonial.

TAX & ECONOMY

The Central Powers were punished severely by the war's concluding treaties and the reparation payments that were imposed were considered impossible to meet. This led to hyper-inflation occurring in Germany in 1921-1923
The European Allies had their own financial problems. They ended the war deeply indebted to the United States.

Year 10 HT3 French – Free time activities – Qu'est-ce que tu fais pendant ton temps libre?

Opinion Phrases				
Opinion	Infinitive	Nouns	Connective	Adjective
J'adore = I love	jouer = to play	au football = football	parce que c'est = because it is	amusant = fun
J'aime beaucoup = I really like		au basket = basketball		(des)agréable = (un)pleasant
J'aime = I like	aller = to go	au cinéma = to the cinema		divertissant = entertaining
Je m'intéresse à = I am interested in		au centre sportif = to the sports centre		animé = lively
Je suis fasciné par = I am fascinated by	manger = to eat	le fastfood = fast food		drôle = funny
Je m'en fiche de = I don't care about		la nourriture saine = healthy food		difficile = difficult
Ça me dérange de = It annoys me	faire = to do	mes devoirs = my homework		facile = easy
Je n'aime pas = I don't like		de l'escalade = climbing		génial = great
Je n'aime pas du tout = I really don't like	regarder = to watch	un film d'action = an action film	car c'est = because it is	cool = cool
Je déteste = I hate		un film d'amour = a romantic film		fantastique = fantastic
Je ne supporte pas = I can't stand	sortir = to go out	avec mes cousins = with my cousins	puisque c'est = because it is	reposant = relaxing
		avec mes copains = with my friends		ennuyeux = boring
				embêtant = annoying

Present tense							
Verb	Time expression	Nouns	Connective	Noun	Verb	Infinitive	Nouns
Je joue = I play	toujours = always	aux échecs = chess aux cartes = cards	mais = but	je = I	préfère = prefer	jouer = to play	au tennis de table = table tennis
	presque toujours = almost always			mon frère = my brother	préfère = prefers	aller = to go	aux fléchettes = darts
Je vais = I go	normalement = normally	à la galerie = to the gallery	cependant = however	ma mère = my mum			au théâtre = to the theatre
	souvent = often	au musée = to the museum		mon père = my dad			au concert = to the concert
Je sors = I go out	généralement = generally	avec mes amis = with my friends	pourtant = however	ma cousine = my cousin (f)		manger = to eat	la nourriture indienne = Indian food
	en général = in general	avec ma petite amie = with my girlfriend		mon frère et moi = my brother and I	préférons = prefer		la nourriture chinoise = Chinese food
Je fais = I do	quelquefois = sometimes	des arts martiaux = martial arts	en revanche = on the other hand	mon grand-père et moi = my grandpa and I		faire = to do	les courses = shopping
	parfois = sometimes	les tâches ménagères = household chores		mon père et moi = my dad and I			les lits = the beds
Je regarde = I watch	de temps en temps = from time to time	un film d'action = an action film	tandis que = whereas	mes parents = my parents		regarder = to watch	un film d'aventure = an adventure film des series = TV series
	rarement = rarely			mes grands-parents = my grandparents	préfèrent = prefer		
	ne...jamais = never	un film d'amour = a romantic film	alors que = whilst			sortir = to go out	avec mes grands-parents = with my grandparents avec mes copains = with my friends

Future Tense – If Clauses

If clause starter	Verb	Noun	Connective	In my opinion	I think that it is	Adjective
Si j'ai beaucoup d'argent = If I have a lot of money Si j'ai assez d'argent = If I have enough money Si j'ai de la chance = If I am lucky Si j'ai l'occasion = If I have the opportunity Si je peux = If I can Si j'ai beaucoup de temps = If I have lots of time	je jouerai = I will play	au foot = football au rugby = rugby au basket = basketball	parce que	à mon avis		génial = great fantastique = fantastic reposant = relaxing merveilleux = great animé = lively difficile = difficult facile = easy divertissant = entertaining amusant(e) = fun (dés)agréable = (un)pleasant ennuyeux(se) = boring ambitieux(se) = ambitious embêtant(e) = annoying important = important
	j'irai = I will go	au café = to the café au centre commercial = to the shopping centre au centre-ville = to the town centre	car	selon moi	je pense que c'est je considère que c'est je crois que c'est	
	je ferai = I will do	des courses = the shopping du sport = sport de l'équation = horse riding de la natation = swimming	puisque	pour moi	il me semble que c'est	
	je regarderai = I will watch	un film d'action = an action film un film d'amour = a romantic film		en ce qui me concerne	ce sera = it will be	
	je sortirai = I will go out	avec mes amis = with my friends avec ma petite amie = with my girlfriend			ce ne sera pas = it will not be	
Si j'avais beaucoup d'argent = If I had a lot of money Si j'avais assez d'argent = If I had enough money Si j'avais de la chance = If I was lucky Si j'avais l'occasion = If I had the opportunity Si je pouvais = If I could Si j'avais beaucoup de temps = If I had a lot of time	je jouerais = I would play	au foot = football au rugby = rugby au basket = basketball			ce serait = it would be	
	j'irais = I would go	au café = to the café au centre commercial = to the shopping centre au centre-ville = to the town centre			ce ne serait pas = it would not be	
	je ferais = I would do	des courses = the shopping du sport = sport de l'équation = horse riding de la natation = swimming				
	je regarderais = I would watch	un film d'action = an action film un film d'amour = a romantic film				
	je sortirais = I would go out	avec mes amis = with my friends avec ma petite amie = with my girlfriend				

Past tense – Imperfect and Perfect

Time Expression	Verb	Noun	Connective	Verb	Qualifier	Adjective
Hier = Yesterday Avant-hier = The day before yesterday Hier matin = Yesterday morning Hier soir = Yesterday evening La semaine dernière = Last week Le week-end dernier = Last weekend L'année dernière = Last year Il y a deux mois = Two months ago	j'ai joué = I played	au foot = football au rugby = rugby au basket = basketball	et = and	c'était = it was	trop = too	drôle = funny amusant(e) = fun (dés)agréable = (un)pleasant ennuyeux(se) = boring ambitieux(se) = ambitious embêtant(e) = annoying rapide = fast lent = slow cool = cool génial = great fantastique = fantastic reposant = relaxing merveilleux = great animé = lively difficile = difficult facile = easy divertissant = entertaining
	je suis allé = I went	au café = to the café au centre commercial = to the shopping centre au centre-ville = to the town centre	mais = but	je trouvais que c'était = I found that it was	très = very	
	je suis sorti = I went out to	avec mes amis = with my friends au cinéma = to the cinema au centre sportif = to the sports centre	cependant = however	je pensais que c'était = I thought that it was	un peu = a bit	
	j'ai fait = I did	des courses = the shopping du sport = sport de l'équation = horse riding de la natation = swimming	pourtant = however en revanche = on the other hand	je croyais que c'était = I believed that it was	assez = quite vraiment = really	
	j'ai regardé = I watched	un film d'action = an action film un film d'amour = a romantic film	toutefois = however	je considérais que c'était = I considered that it was	extrêmement = extremely	
	j'ai écouté = I listened	de la musique rock = to rock music de la musique classique = to classical music de la musique pop = to pop music	néanmoins = nevertheless	ce n'était pas = it was not		

GCSE DANCE KNOWLEDGE ORGANISER

EXAM COMMAND WORDS

Analyse: Separate information into components and identify characteristics to be able to explain and interpret.

Comment: Present an informed option.

Compare: Identify similarities and/or differences.

Consider: Review and respond to information given.

Define: Specify meaning.

Describe: Set out characteristics.

Discuss: Present key points taking into account different ideas, characteristics and/or features.

Evaluate: Judge from available evidence and make an informed design on the effectiveness.

Explain: Set out purposes or reasons.

Give: Produce an answer from recall.

How: State in what ways.

Identify: Name or characterise.

Interpret: Translate information into recognisable form demonstrating an understanding of meaning.

Name: Identify correctly.

Outline: Set out main characteristics.

State: Express in clear terms.

Suggest: Present a possible case or possible answer.

Tick: Put a mark to indicate something is correct.

What: Specify something.

Which: Specify from a range of possibilities.

Why: Give a reason or purpose.
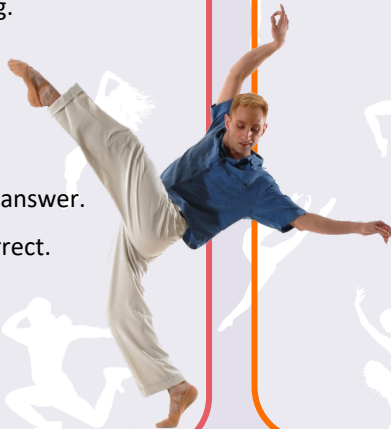
KNOWLEDGE, UNDERSTANDING AND SKILLS FOR PERFORMANCE

Expressive skills
Projection
Focus
Spatial awareness
Facial expression
Phrasing
Musicality
Sensitivity to other dancers
Communication of choreographic intent
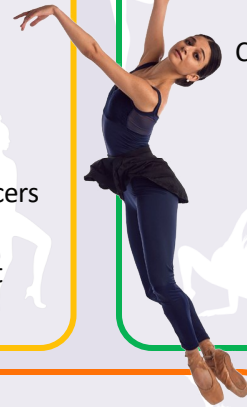
Physical skills
Posture
Alignment
Balance
Coordination
Control
Flexibility
Mobility
Strength
Stamina

Technical skills
Action
Space
Dynamics
Relationships
Timing
Rhythmic content
Moving in a stylistically accurate way

Mental Skills
Prep for performance:
Systematic repetition
Mental rehearsal
Rehearsal discipline
Planning of rehearsal
Response to feedback
Capacity to improve

During performance:
Movement memory
Commitment
Concentration
Confidence

Safe Practice
Prep for performance:
Warming up
Cooling down
Nutrition & Hydration

During performance:
Safe execution

Appropriate dance wear:
Footwear
Hairstyle
Clothing
Absence of jewellery

GCSE DANCE KNOWLEDGE ORGANISER

KNOWLEDGE, UNDERTSANDING AND SKILLS FOR CHOREOGRAPHY

Action
Travel
Turn
Elevation
Gesture
Stillness
Use of different body parts
Floor work
Transfer of weight

Dynamics
Fast/slow
Sudden/sustained
Acceleration/deceleration
Strong/light
Direct/indirect
Flowing/abrupt

Spatial Content
Pathways
Levels
Direction
Size of movement
Patterns
Spatial design

Relationship Content
Lead and follow
Mirroring
Action and reaction
Accumulation
Complement and contrast
Counterpoint
Contact
Formations

Choreographic Processes
Researching
Improvising
Generating
Selecting
Developing
Structuring
Refining and synthesising

Structuring devices and form
Binary
Ternary
Rondo
Narrative
Episodic
Beginning/middle/end
Unity
Logical sequence
Transitions

Choreographic devices
Motif and development
Repetition
Contrast
Highlights
Climax
Manipulation of number
Unison
Canon

KNOWLEDGE, UNDERTSANDING AND SKILLS FOR CRITICAL APPRECIATION

Features of Production

Staging/set: Eg. projection, furniture, structures, backdrop, screens
Features of these such as colour, texture, shape, decoration, materials.
Lighting: Eg- Colour, placement, direction, angles etc.
Properties: Eg- Size, shape, materials, how used etc.
Costume: Footwear, masks, make up, accessories
Features such as colour, texture, material, flow, shape, line, weight, decoration and how they define character or gender, identify characters, enhance or sculpt the body and enhance the action.
Dancers: Number and gender.
Aural setting: Eg: Song, instrumental, orchestral, spoken word, silence, natural sound, found sound, body percussion, style, structure and musical elements such as tone, pitch and rhythm.
Dance for camera: Eg- Placement, angle, proximity, special effects.

CHOREOGRAPHY KEY WORDS

Stimulus
The starting point for a dance piece.

Motif
A short phrase of movement that reflects a stimulus.

Choreographic Intention
What the choreographer would like the audience to learn about the dance.

Choreographic Approach
How the choreographer created movement material eg. improvisation, collaboration, choreographic tasks.

Communication of Choreographic Intent
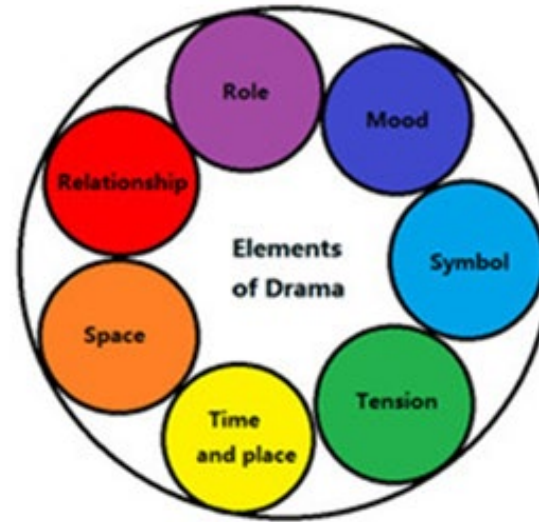Mood
Meaning
Idea
Theme Style/style fusion

Performance Environment
Proscenium arch
End stage
Site-sensitive
In-the-round

An Explorative Strategy is a _technique to explore and deepen understanding_ of the drama you create. Used to understand characters, to explore scenes and to experiment with characterisation.

- Role Play is the basis of all dramatic activity. The ability to suspend disbelief by stepping into another character's shoes by adopting a role, becoming and acting like another person.

- Thought Tracking (also called thought tapping) is a quick fire strategy enabling actors to verbally express their understanding of the characters and their situations without the need for rehearsal. It is letting the audience know how the character is thinking and feeling.

- Hot Seating is a strategy in which a character or characters, played by the teacher or a student, are interviewed by the rest of the group. Before engaging in this strategy, prepare the person or people who will be in the hot seat to successfully take on their role.

Subject Terminology	
Forum Theatre	Encourages audience interaction and explores different options for dealing with a problem or issue
Improvisation	Is a form of live theatre in which the plot, characters and dialogue of a game, scene or story are made up in the moment.
Action	Consists in the events that the characters take part in as they act the play.
Form	Is the way that the story is told, the way the characters play their parts, and/or the way the themes are explored.

- Narration is a technique whereby one or more performers speak directly to the audience to tell a story, give information or comment on the action of the scene or the motivations of characters. Characters may narrate, or a performer who is not involved in the action can carry out the role of 'narrator'.

- Cross-Cutting is a drama technique borrowed from the world of film editing, where two scenes are intercut to establish continuity. In drama and theatre the term is used to describe two or more scenes which are performed on stage at the same time (Juxtaposition – Contrast).

- Marking the Moment: is a dramatic technique used to highlight a key moment in a scene or improvisation. This can be done in a number of different ways: for example through slow-motion, a freeze-frame, narration, thought-tracking, lighting or music.

- Flash Forward: (more formally known as prolepsis) is a scene that temporarily takes the narrative forward in time from the current point of the story in literature, film, television and other media.

- Flash Backwards: (sometimes called an analepsis) is an interjected scene that takes the narrative back in time from the current point in the story. Flashbacks are often used to recount events that happened before the story's primary sequence of events to fill in crucial backstory.
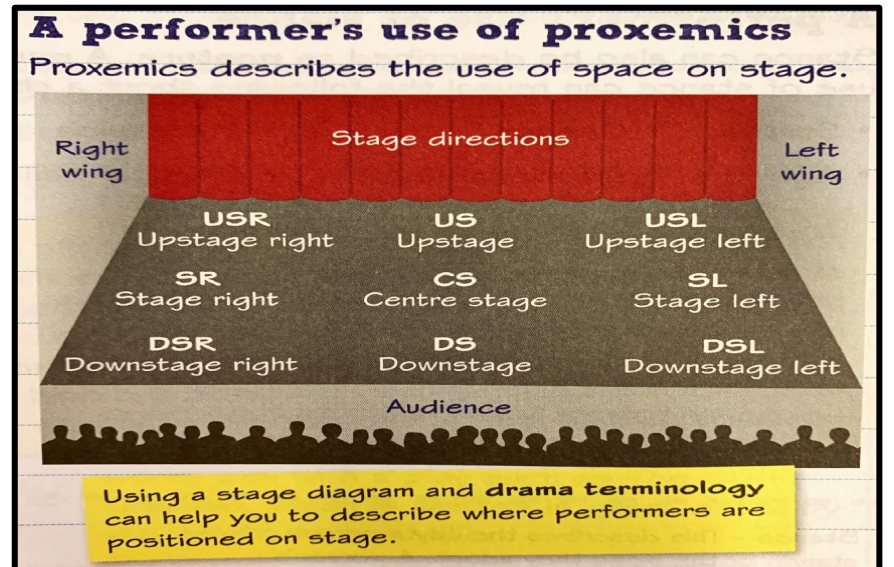
Use of Voice

Tone	Does your voice sounds appropriate - perhaps harsh or soft, angry or happy? Is it suitable for the character you're playing?
Volume	Have you got the loudness or quietness of your character right?
Pitch	Does your character speak with a high or low pitched voice? If you were playing a hanging judge, would a squeaky voice sound right?
Pace	How quickly do you say your lines? Too fast, and the audience won't keep up, too slow and they might get bored. Can you change the pace according to what's happening in the play?
Articulation	Have you practiced speaking very, very clearly? It's crucial!

Movement

Dynamics	There are moments where tension and atmosphere build, moments of activity, stillness, pauses and sections of higher and lower energy.
Body language	How you move/ hold your body to show attitude and feelings.
Facial expression	How you move/ hold your face to show attitude and feelings.
Emotions	How your character moves to show the emotions they are feeling.
Eye contact	Do you need to have eye contact with another character or is your character shy?
Character	The person you are acting.
Posture	How your character stands to show their age, confidence, disability, etc.
Gesture	A movement of part of the body, especially a hand or a head, to express an idea or meaning.

SUBJECT TERMINOLOGY

Still Image	A frozen moment in time- shows action and relationships through body language, facial expression, levels and space.
Body language	How you move/hold your body to show attitude and feelings.
Facial expression	How you move/hold your face to show attitude and feelings.
Use of voice	How you use your voice in performance to show character.
Rehearse	Practice the performance
Character	The person you are playing
Blocking	Working out the movement in a performance.
Thought tracking	What a character is thinking. Not what they are saying.
Gesture	A movement of part of the body, especially a hand or a head, to express an idea or meaning.

A performer's use of proxemics
Proxemics describes the use of space on stage.

Using a stage diagram and drama terminology can help you to describe where performers are positioned on stage.

The Purpose of Music in Film

Film Music is a type of Descriptive Music that represents a mood, story, scene or character through music; it is designed to support the action and emotions of the film on screen.

To create or enhance a mood

Frequent effects used by Film Music composers to create or enhance a mood include:

- A repeated **OSTINATO** pattern
- Sustained notes of **LONG DURATION**
- **TREMOLO** strings
- A **CRESCENDO** with the **DYNAMICS** gradually getting louder
- Increasing **TEMPO** (Accelerando)
- **PITCH** getting higher
- The use of **SILENCE** before something dramatic (to make you jump!)
- Unusual harmonies such as the use of minor and **DISSONANT** or **CHROMATIC CHORDS**, **DISCHORDS** and **DIMINISHED CHORDS**
- **IRREGULAR TIME SIGNATURES** (5/4, 7/8)
- Rapid Scale Patterns help create a frantic mood and a feeling of unrest and urgency
- **INTERRUPTED CADENCES** create a sense of tension and suspense
- The use of the **TRITONE** (Augmented 4th)
- The use of low pitch brass and strings to provide a "dark sound"
- The use of percussive metallic sounds
- The use of **SUSPENSIONS** that don't resolve to build tension and make you think danger is near
- Frequent changes in **DYNAMICS** to hint an imminent danger
- The use of electronic sounds and synthesisers
- The use of **SAMPLED SOUNDS**
- The use of effects such as **REVERB** or **DISTORTION** applied to electronic, synthesised or sampled sounds to change and manipulate the sound
- The use of unusual (often electronic) instruments e.g. Rósza's use of the Theremin in his soundtrack to Alfred Hitchcock's thriller 'Spellbound' (1945)

To function as a Leitmotif

A frequently recurring short melodic or harmonic idea which is associated with a character, event, concept, idea, object or situation which be used directly or indirectly to remind us of one not actually present on screen. Leitmotifs can be changed (sequencing, repetition, modulation) giving a hint as to what will happen later in the film or may be heard in the background giving a "subtle hint" to the viewer/listener.

To link one scene to another and smooth over visual cuts, providing continuity

Repeated sections of music can be used to link different parts of the film together – it can remind you of something that happened earlier in the film. The style of music can also change within a film with different sections of the film having different moods – love, humour, battle/war. Film scores may be **MONOTHEMATIC** where the entire film score is based upon a single melody e.g. David Raksin's "Laura" (1944) which is heard so often and in many different circumstances, that it comes to "haunt the listener".

To emphasise a gesture

This is known as **MICKEY-MOUSING** and is used especially in animated films, cartoons and comedy films and is where the music mimics every small movement reinforcing or illustrating the action e.g. sliding trombones as characters journey up and down in a lift, a descending chromatic scale as a character goes down a set of stairs. Timing is crucial when using Mickey-Mousing and Film Music composers often use **CLICK TRACKS** to help them time their music exactly.

To give added commercial impetus

The independent commercial 'afterlife' of the film score has become an increasingly important aspect of Film Music. "Hit" songs will help sell the film and are often used in the opening or closing credits. Songs may be used as title tracks but can return 'in the background' of the film soundtrack later. All of the James Bond films feature 'big songs' often released as popular music singles independently to help advertise the film and add commercial impetus.

To provide unexpected juxtaposition/irony

Using music which the listener/viewer wouldn't normally expect to hear creating a sense of uneasiness, comparison or even humour e.g. Tchaikovsky's "Swan Lake" is heard in the 'Dracula' (1931) film.

To influence the pacing of a scene making it appear faster/slower/more comprehensive

Film Music composers often use fast, dramatic music in action sequences to "drive the action and pace forward". In love or romantic scenes, a slow, sweeping theme on the Strings can be used to "slow the pace down".

To illustrate geographic location or historical period

Westerns often use music "from the time" to set the scene using 'traditional' instruments. Films set in a different country often combine traditional instruments "associated with a particular country" in their soundtracks to help the audience imagine the film's setting and give a sense of "place" e.g. the Sitar can help "place a film" in India or the Bagpipes help "place a film" in Scotland. Films set in a particular historical period e.g. the 1970's or 1980's, may use pop songs from the time to set the scene with the audience recognising the songs and reminding them of that particular decade.

Musical Features of Film Music

Pitch & Melody	Articulation	Dynamics	Texture	Harmony
LEAPS (DISJUNCT MELODIC MOVEMENT) and **CHROMATICISM** for weirdness and "baddies" – **STEPWISE (CONJUNCT MELODIC MOVEMENT)** and **DIATONIC** melodies for happiness and "goodies". **RISING MELODIES** for increasing tension or increasing triumph – **FALLING MELODIES** for decreasing tension or hopelessness/defeat. Westerns often feature a "**BIG THEME**" played on sweeping Strings. **Q&A** phrases can represent "Good vs. Evil". The interval of a **FIFTH** is often used in Sci-Fi film soundtracks as its "bare, open and sparse" sound quality matches that of "outer space".	**LEGATO** or flowing for happier situations – **STACCATO** or spiky for more challenging ones or to represent 'frozen' or 'brittle'. **ACCENTS (>)** for violence **SFORZANDOS** (*sfz/sf*) for sudden emphasis and to create a 'shock'. **PIZZICATO** (strings) – plucking the strings to create short, detached notes. **ARCO** (strings) – using the bow to play.	**LOUDER** for bolder or more powerful (whether good or bad) – **SOFTER** for more timid/weak **CRESCENDOS** used for increasing threat, triumph or proximity – **DECRESCENDOS** and **DIMINUENDOS** used for subsiding things and things 'going away into the distance'. Horror Film soundtracks often use **EXTREME DYNAMICS** or **SUDDEN CHANGES IS DYNAMICS** to enhance sudden actions on-screen and to "shock" the listener.	**THIN** or **SPARSE** textures used for bleak or lonely situations. **THICKER** or **FULLER** textures used for warmer, more "normal" situations and **THICK, DENSE** orchestral sounds heard during battles and chases. Complex **POLYPHONIC** textures for confused or very active situations. **HOMOPHONIC MELODY AND ACCOMPANIMENT** texture used for more straightforward or calm situations or for "love themes".	**DIATONIC** harmony for simpler situations and good characters. **CHROMATIC** harmony for more complex situations or bad characters. **CONSONANCE** for normal situations or "good" characters. **DISSONANCE** for scary situations or "evil" characters often using notes which are a semitone apart. **MAJOR** for happier – **MINOR** for sadder. **SEVENTH CHORDS** (including the use of the flattened 7th) often used to create harmonic richness, especially in Westerns. Sudden changes of harmonies create unexpected moods. **ATONAL** and **BITONAL** harmonies used to create ambiguous atmospheres often in Sci-Fi or Supernatural Film soundtracks.
Rhythm	**Metre**	**Duration**	**Leitmotifs, Themes & Motifs**	**Timbre & Sonority**
FAST for chases and hectic situations. **SLOWER** can mean more hesitant. **IRREGULAR** rhythms for threatening or unusual situations and **REGULAR** rhythms for safety or more "normal" situations. **OSTINATO** rhythms for repeated sounds *e.g. horse's hooves*. **SYNCOPATION** and **CROSS-RHYTHMS** to create tension and unease. "Traditional" dance rhythms *e.g. American Square Dance, Tango and Bolero* often used in soundtracks to Westerns.	2/4 or 4/4 for Marches, 3/4 for Waltzes. Metre isn't as important in Film Music as the importance is on the music directly matching and enhancing the on-screen action which sometimes doesn't fall into the regular divisions of a time signature. "Big Themes" and songs used within films are often in 4/4 metre. **IRREGULAR TIME SIGNATURES** often used to create unease and tension with a lack of clear pulse.	**LONG**, held notes are often used in Westerns to show the vast open spaces of the North-American plains or to help describe the vastness of open space in a Sci-Fi film soundtrack. **SHORT** notes are often used to describe "busy", chaotic or hectic situations *e.g. a bustling crowd, a chase scene or a battle*. **PEDAL** notes are long held notes in the bass line above changing harmonies and melodies and can also create tension and suspense.	A frequently recurring short melodic or harmonic idea which is associated with a character, event, concept, idea, object or situation which be used directly or indirectly to remind us of one not actually present on screen. Leitmotifs are often *fragmented* e.g. in Horror films to show the deteriorating state of the hero or heroine as the film progresses. The **SIGH MOTIF** is often used – a short rising then falling melody in an arch shape. Animated films and cartoons use a range of **MUSICAL CLICHÉS** – short motifs e.g. pedal notes, 'calamity motif', cluster chords etc. which are used every time a character does a certain action or ends up in a certain situation.	Traditional orchestral instruments often combined with electronic instruments. Orchestral instruments played in different ways *e.g. slashing the bow across the strings of a violin* Sound Effects combines with traditional and electronic instruments. Brass Fanfares often used in Space Film soundtracks and in films when there is a battle or warfare. "Traditional" musical instruments 'of the time' help *place* a film in a specific place or time period. Unusual instruments often used in Sci-Fi, Space or Horror films – Theremin, Celesta. Instruments such as a the glockenspiel used in Horror film soundtracks to create tension.

Half-Term: HT3+4   Y10 Coursework Project   Subject: KS4 Art   Threshold Concept Link(s): Draw from observation and use a range of tone and media

Assessment Taxonomy					
LIMITED	BASIC	EMERGING COMPETENT	COMPETENT & CONSISTENT	CONFIDENT & ASSURED	EXCEPTIONAL
Unstructured Clumsy Disjointed Minimal Elementary	Deliberate Methodical Superficial Unrefined Simplistic Tentative	Reflective Predictable Growing Control Broadening Endeavour Safe	Informed Purposeful Secure Engaged Skilful Thoughtful Cohesive	Advanced Convincing Comprehensive Focused Perceptive Refined Resolved Risk-taking	Accomplished Inspired Intuitive Insightful Powerful Extraordinary Unexpected Outstanding
1-12 marks	16-24 marks	28-36 marks	40-48 marks	52-60 marks	64-72 marks

TECHNICAL VOCABULARY	
Response	A reaction (to the work of an artist)
Primary source	Observed first hand
Experiment	To test (with different art media)
Annotate	Explanatory notes
Review	Evaluate
Reflect	Reconsider and modify
Independent	On your own
Formal Elements	The Formal Elements are the parts used to make a piece of artwork. They should be commented on when discussing your own work
Analyse	To examine in detail
Media	Different art equipment like paint

Observational drawing in different media.

Initial research

Research will cover the 4 different themes of; man-made, people, environment and natural world. For each theme you will produce a double page of primary resources and research an artist, produce a copy of their work and then a response to their work. This will cover another double page.

Use your own photos not pictures from the internet.

Research on chosen artist

Annotation explains links to artist and reflects on use of media

Copy of chosen artist.

Response to chosen artist using own photo to draw from.

Technical principles – Knowledge organiser

What	Definition	What	Definition
A static load	Does not move	**NET**	2D object which is cut scored and folded into a 3d. Cut lines shown as solid lines
A dynamic load	Moving	**Carbon footprint**	is the amount of carbon produced from its raw material being made to its product.
Tension	pulling force is applied to either end of a material Stretching	**Ecological and social footprint**	
Tensile	resist being pulled apart	***Folding and bending***	techniques can be used to improve the mechanical and physical properties of a material
Compression	occurs when a pushing force is applied to either end of a material	**Laminating**	bonding two or material to improve its strength, stability and flexibility.
Compression strength	the ability of a material to resist being compressed or squashed	**Fabric interfacing**	Used in textiles and garments to add support, strength and structure to areas that are needed. These are sewn in Collars in shirts - Peak in the baseball caps.
Torsion	when something is twisted two ends of the material rotate the opposite way.	**Folding and bending**	Materials manipulated through reshaping can gain many physical advantages
Torsional strength	is the ability of a material to resist being twisted	**Curves, arches and tubes**	can also be added to give more strength whilst using minimum material
Bending	occurs when both sides are under compression and tension.	**Ecological and social footprint**	This measures the impact of a persons life on the environment by quantifying the amount of Co2 that are being used.
Shear	occurs when a force applies on an object in a perpendicular to its length	***Safe working conditions***	In Britain we have employment protect laws that protect us workers. The law holds accountability to the company/ Boss!!! Heath and Safety Executive HSE
Strengthening and enhancing materials	To strengthen or enhance its strength you need to consider the forces that it will have upon it.	***Ecological issues in the design and manufacturing***	When products are made, natural resources are used, so designers and manufacturers have to make decisions which have a direct impact on the consumption of the earths resources
Webbing	Webbing is a strong fabric woven into strips from yarns, which are often made of synthetic fibres such as nylon or polyester, or even Kevlar Very light but strong and flexible	**Deforestation**	cutting down of trees
Stiffening Materials	Materials can be *laminated* to improve strength.	**Mining**	used to gather finite materials Surface and underground mining!
Interfacing	to stiffen a fabric	**Drilling**	getting oil and gas
Farming	A huge proportion of the earths crust is used as farmland. 11% - agriculture. 36% - growing crops		

Equipment

Large

- **Blast Chiller**- reduce temp of hot food to 5c in 90mins, reduces time in the danger zone

- **Walk in fridge**- holds a lot of stock, can see what you have BUT expensive and takes up a lot of space

- **Free standing mixer (Hobart)**- Can make large consistent batches BUT needs space and training

- **Deep fat Fryer –** Cook large amounts and efficient more consistent product.
- *All large equipment needs servicing and training for use*
- *Expensive initial outlay*
- *The menu needs to benefit. A sandwich shop won't use a deep fat fryer as much as a kebab shop*

Small

Hand blender
Electric whisk
Mincer
Pasta machine
Advantages
- Makes tasks more efficient
- Results are more consistent
- Equipment is inexpensive
- No training required
- No servicing needed
- Do need to be PAT tested

Stock Control 2.2
- **Stock controller for each section of the business to prevent**
- **Over ordering**
- **Ensure needs of business are met during busy times**
- **No stock is unnecessarily purchased**

TECHNICAL VOCABULARY

Kitchen Brigade	The people who work in the kitchen, jobs based on hierarchy
FIFO	First in first out, rule of stock control
Dress code	A set of rules outlining the clothing worn by the workforce
Stock	All materials, ingredients and equipment used. Tables, chairs, decorations
High risk food	Foods in which bacteria grow quickly
Work flow	It's essential for designing a kitchen for efficiency, food safety and health and safety
Stock ledger	A detailed list of all stock, usually kept on a computer
Delivery note	A list of quantity and price of goods delivered (A receipt)
Invoice	A bill for goods ordered, often have up to 30days to pay
Food safety documentation	Temperature charts and records of fridge and freezer temperatures, checked regularly
EPOS	Electronic point of sale
Accident book	Record all accidents and how they were resolved and prevented

U1 LO2 – 2.1/2.2

Chefs clothing / uniform

Health and Safety/ hygiene/ food safety

- Long sleeved to protect arms
- White to show up the dirt
- Double breasted to protect upper body from spillages, easy to remove
- Baggy trousers to protect legs and keep cool
- Safety shoes with steel toe caps to avoid damage when dropping something
- Non slip shoes to avoid slipping on wet floors
- Hat to show hierarchy
- Hair net to prevent physical contamination
- Clean hands and short clean nails to prevent bacterial contamination
- Apron protection from spillages, easy to remove quickly
- Neck tie to absorb sweat
- Rubber fastenings so they don't get hot
- Blue plasters on cuts so they can be seen if they fall off
- Gloves to be worn if hands have cuts
- Waiters wear uniform so they can be recognised in a busy restaurant

Work flow (incorporating HACCP)

Receipt of goods **From a reputable supplier** **Food in date** **Correct order**	**Check quality and quantity** **Packaging is appropriate and intact, visual and aroma check**	**Correct storage fridge /freezer** **Temp 5c or below fridge** **-18- -20c for frozen**
Serving food **Plates are clean** **Food is at the correct temperature out of danger zone 5-63c**	**Cooking in separate areas** **Frying/ steaming** **Ensure food is cooked thoroughly 75c** **Hot holding 63c**	**Preparation of foods raw, cooked/ vegetables/ sauces/ desserts** **Keep foods stored correctly until required**
Washing up area **Use hot soapy water and rinse to remove chemical contaminants**	**Benefits of good work flow** • Good work flow reduces movement and backtracking • Effective use of the space • Effective use of equipment • Reduces accidents	

Brick dimensions

What is the length of a brick?
What is the width of a brick?
What is the depth of a brick?
How thick is a mortar joint?

Block dimensions

What is the length of a block?
What is the width of a block?
What is the depth of a block?
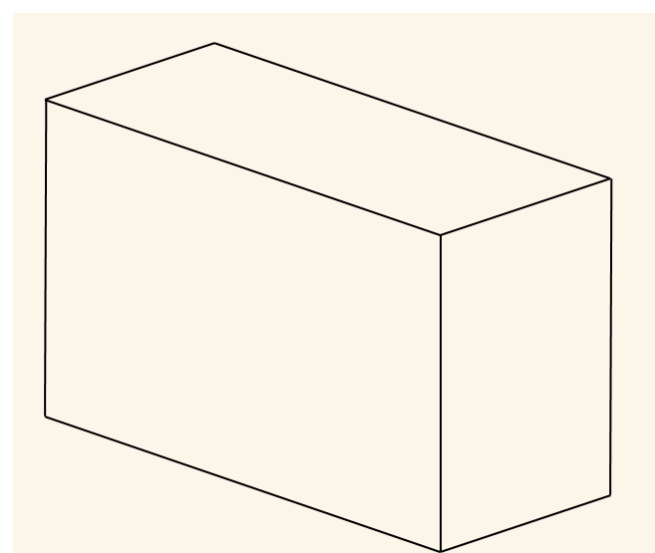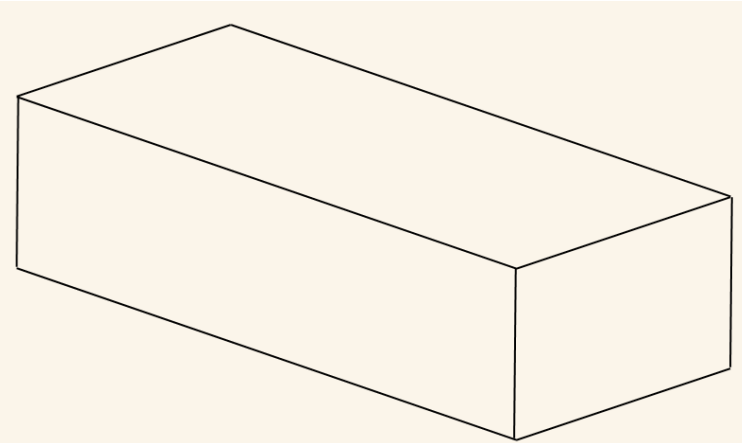
There are different methods of holding in place a string line so you can build to it.

Line wrapped around block two or three times

Fixing the line to corner block

Line pulled through the corner block

Line to other end of wall
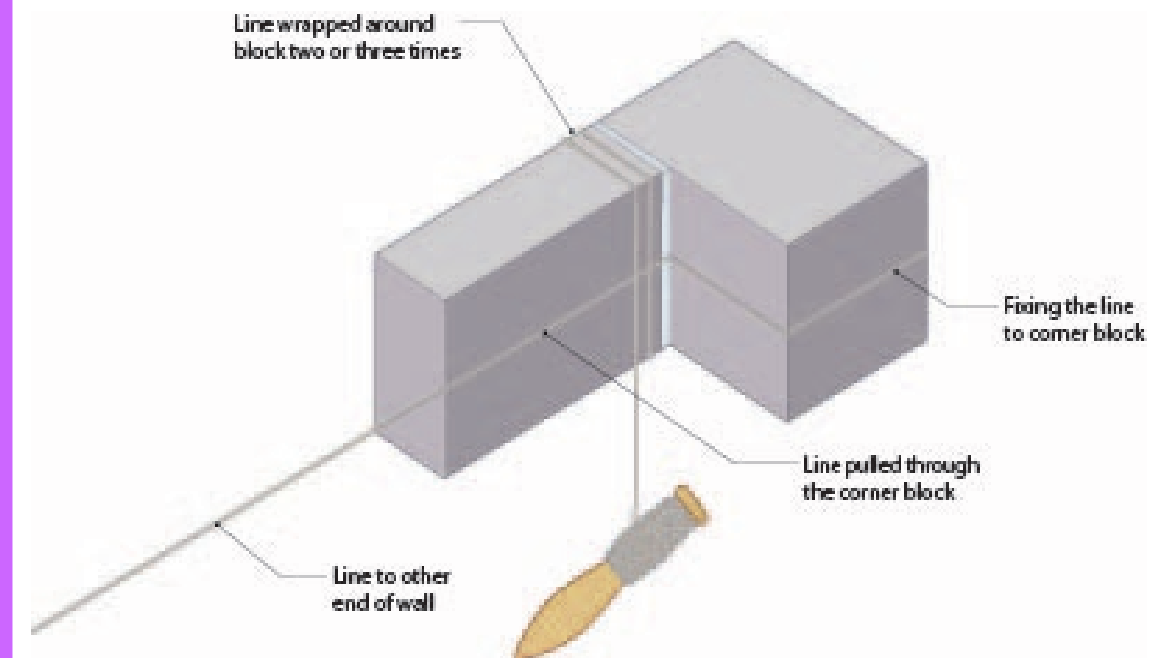
- How does the tingle plate work?
- Why is it required?
- When would you use it?

Line pin

Tingle plate

Corner block

Brick holding tingle

String line

Brick laid level and in line with quoin
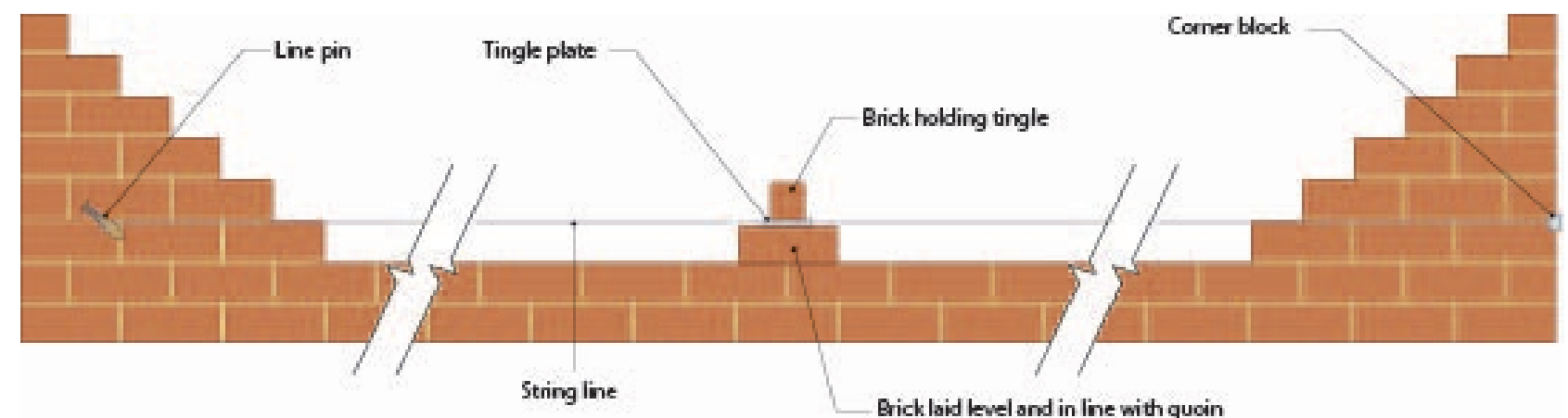
Subject **Child Development: Growth and Development Y10a.**

Growth

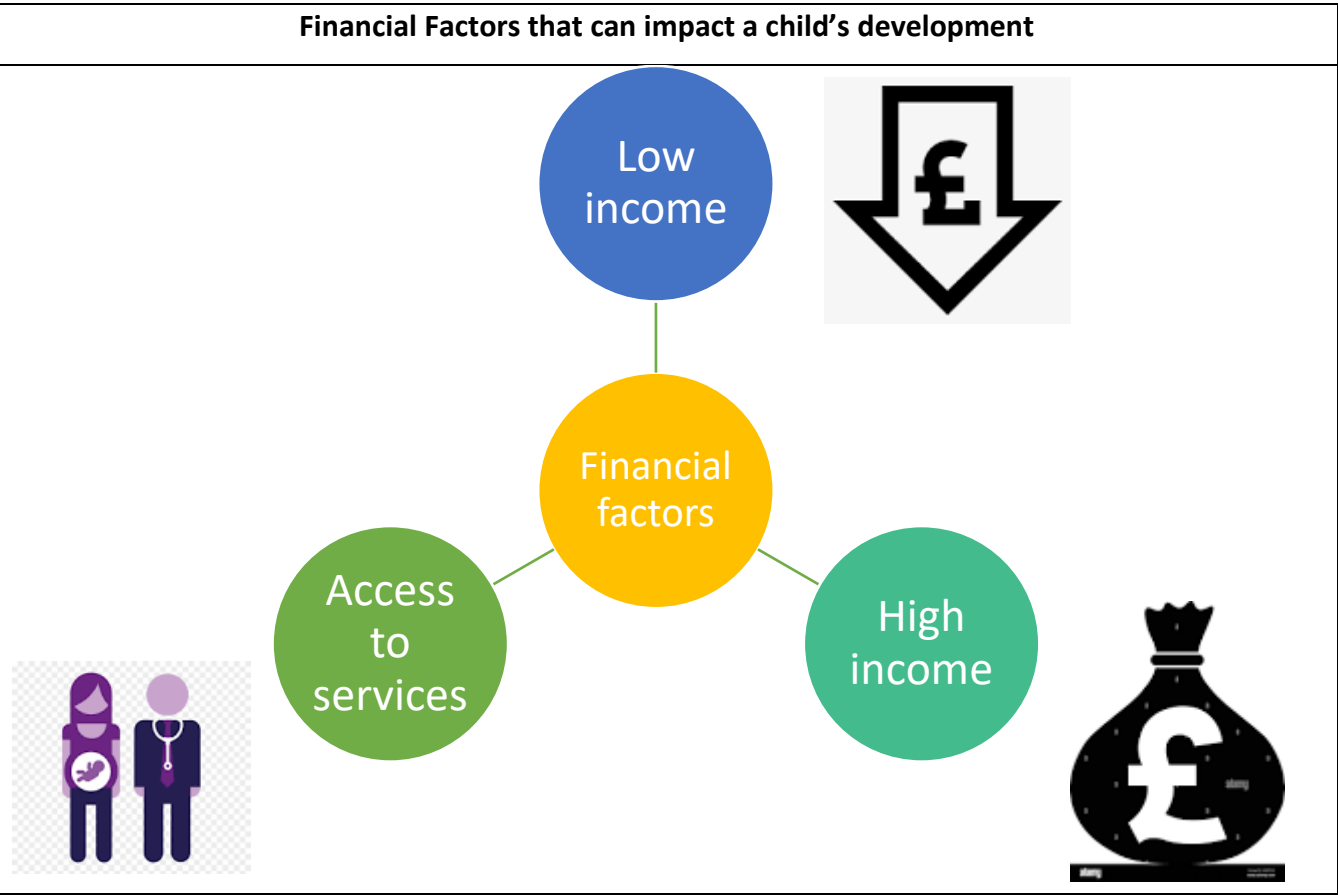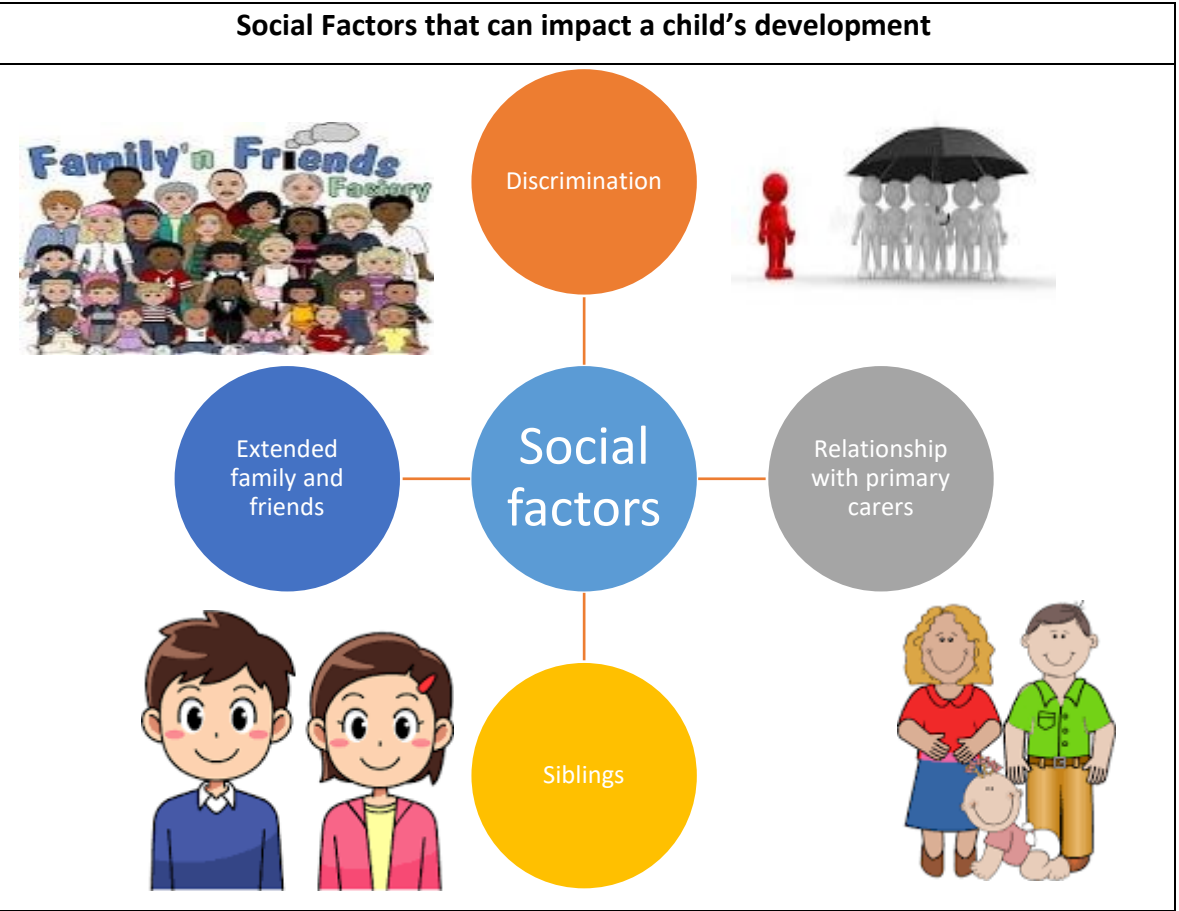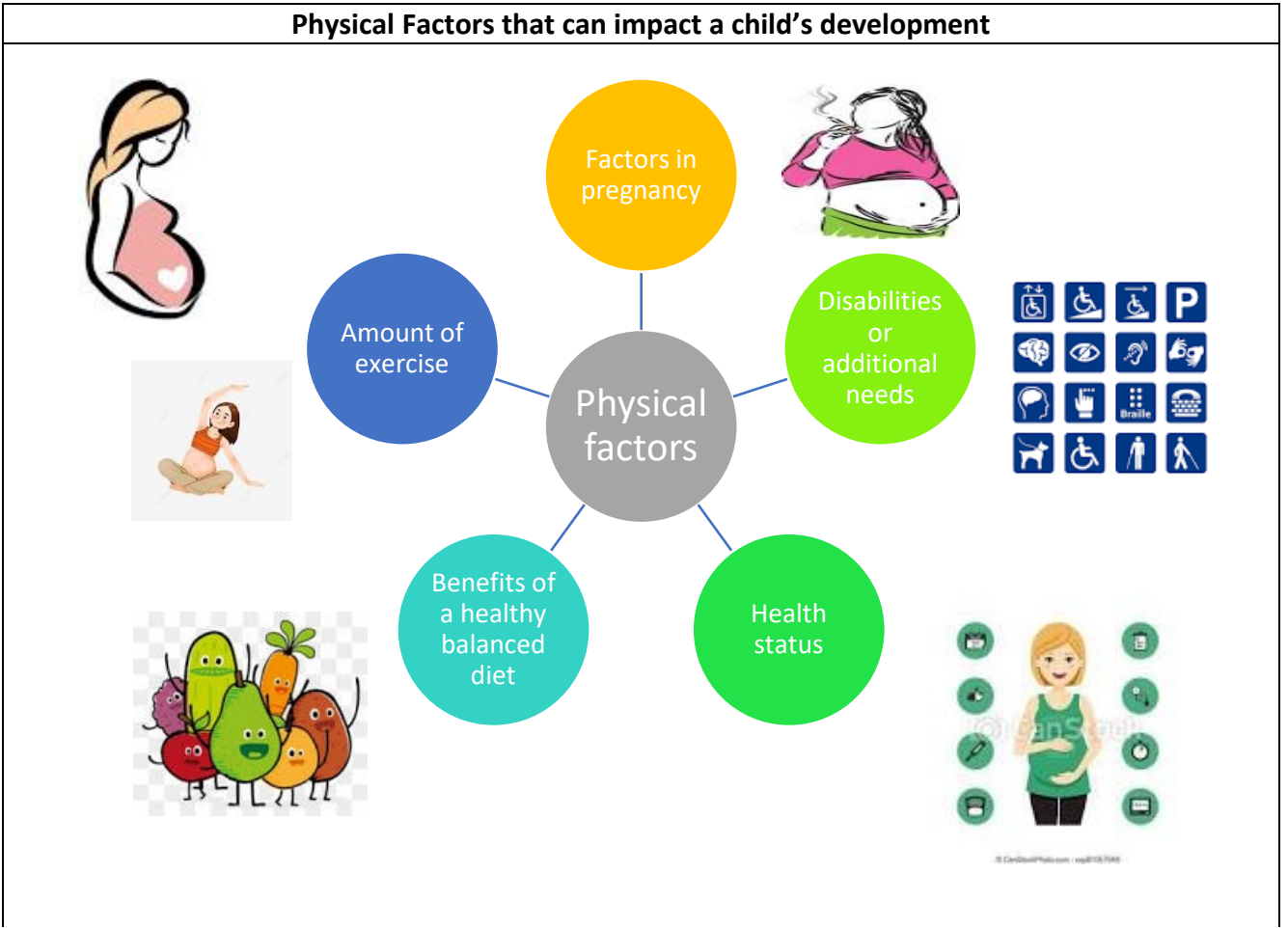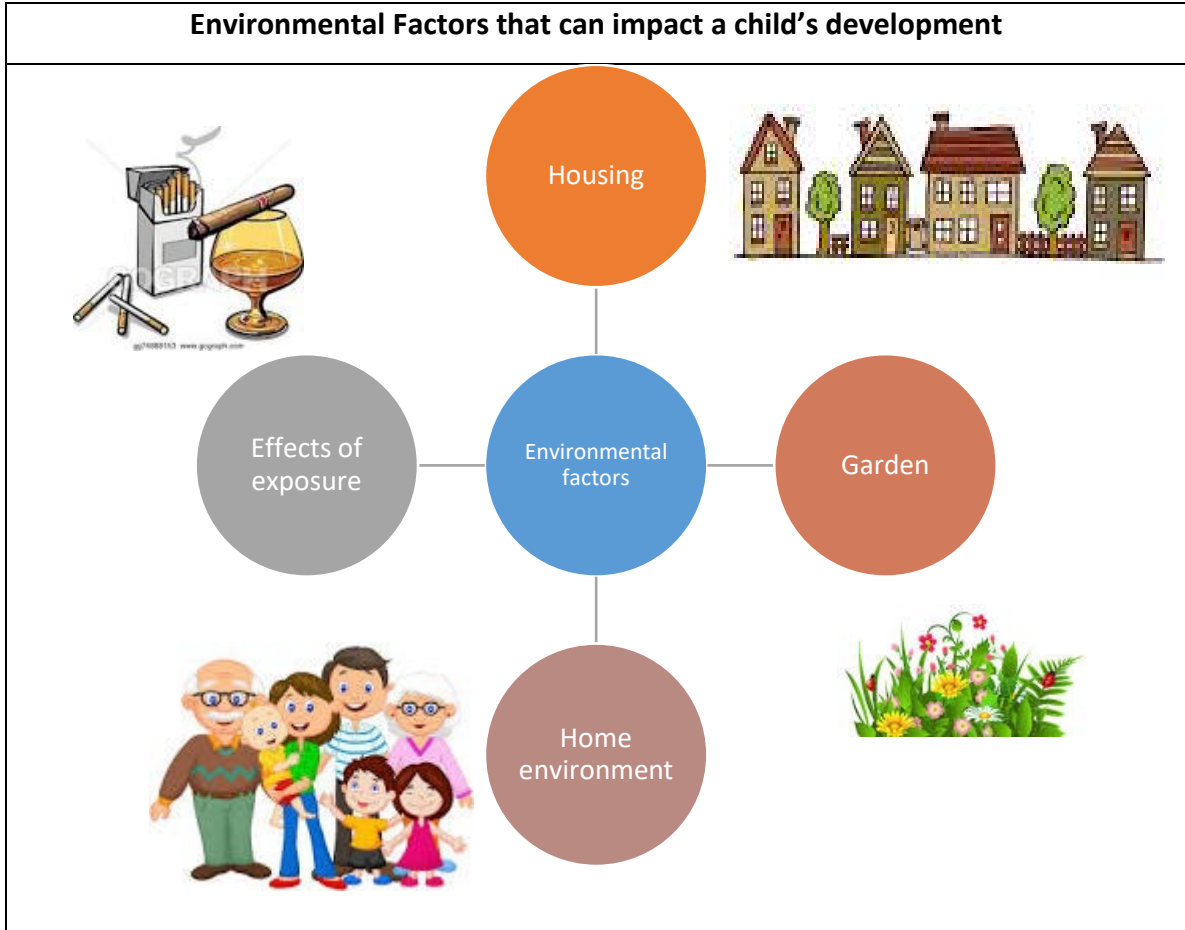|	
What is growth a major feature of?	Childhood.
Why does growth take place?	Certain cells in the body keep dividing.
What does a division in cells in children mean?	Increases in height and weight, bones become longer and skeleton changes, development of muscles as well.
Who measures children?	Health visitors.
What measurements are plotted on a centile chart?	Height, weight and head circumference.
If children are not growing as expected what can this be a sign of?	Possible medical problems or a sign that the child is not eating the right quantity or type of food.
How can heredity affect growth?	Some medical conditions affecting growth can be inherited.
Why do bodies need nutrients?	Bodies need these in order for muscles, bones and organs to keep healthy and grow.
How much sleep do children need?	Babies need between 12-14 hours a day, young children need 10-12 hours.
How can emotional influences affect child's	If children have long periods of unhappiness, they are less likely to sleep or eat well- more likely to be ill.

Development

What is development?	The skills and knowledge we gain over time.
Do children develop at an even pace across all areas?	No some may have good language skills but not be able to kick a ball.
Why is it important to know the milestones for the different ages?	Can help you plan activities and spot any child that may need more support.
What are the 5 key development areas?	Physical, Cognitive, Communication and Language, Emotional and Behavioural and Social.
What's the difference between gross and fine motor movements?	Gross are large movements of the arms and legs, fine are small movements usually of the hands.
What are fine manipulative movements?	Complex or intricate movements of the hands- turning the lid of a bottle, tripod grasp.
What is perception?	The ability to become aware of something using the senses.
Which development area and skills are used in reading a	Communication and language- reading it. Physical- turning the page.
Which development area and skills are used in playing	Physical- drawing the noughts or crosses. Cognitive- deciding where to play.
Why are role models important?	Children copy skills and attitudes from them.

Development of different ages across the development areas

	0- 18 months	18 months – 3 years	3 years -5 years
Physical	**3m** reflexes disappear; lift head + shoulders; watches fingers. **6m** rolls + turns; sits with support; holds a toy. **9m** sits; crawls; stands; passes toys; drinks cup. **12m** walks with handheld; pincer grasp; finger feeds. **15m** walks alone, grasps crayons and scribbles.	**18m** walks steadily; stops safely; climbs stairs; rides a balance bike and sit + ride toys. **2y** runs; throws a ball; walks up and down stairs; holds chunky pencils; draws circles and lines. **2y 6m** jumps from a small step; kicks a large ball and copies lines.	**3y** walks on tip toe; balances; rides a trike; catches and kicks a large ball; tripod grasp; cuts paper with scissors. **4y** runs and avoids obstacles; good balance; copies letters; draws a person. **5y** runs, climbs, skips, hops; likes ball games; good pencil control.
Cognitive	**3m**– attention span increase; recognises routines. **6m** recognise familiar objects/people. Respond to carers voice; explores objects; weaning. **9m** smiles at own face (mirror); looks for dropped toys; likes peekaboo, songs+ rhymes. **12m** knows own name; imitates actions.	**18m** knows name; can point to body parts; curious; knows where things belong. **2y** recognises pictures in a book; enjoys simple make-believe play. **2y 6m** knows full name; asks the names of people and objects.	**3y** matches + names colours; sorts objects; understands time passing; can 'write' (mark make on paper). **4y** counts to 10; repeats songs + rhyme; simple problem solving. **5y** concentrates longer; writes own name; recognises own name; simple sums; interested in reading + writing.
Communication and Language	**6 weeks** smiles **3m** stops crying when picked up **6m** babbles; laughs; vocalises. **9m** tuneful; joins in pat a cake; dada, mama. **12m** first words; pointing; copies; understands.	**18m** says words; gestures; understands more; repeats. **2y** says over 50 words; 2 words joined; enjoys books. **2y 6m** says 200 words; learns new words quickly; simple sentences.	**3y** clear speech; asks why? Uses personal pronouns and plurals; listens to stories; understands most instructions. **4y** talks about past and future; tells stories; likes jokes; asks questions; listens. **5y** fluent speech; grammatically correct; wide vocabulary; understand complex instructions.
Social	**3m** likes attention + cuddles. **6m** familiar people + strangers **9m** cries without their carers **12m** likes games peekaboo **15m** watches others playing.	**18m** understands 'you' 'me' 'mine'. Imitates household tasks. **2y** undress and dress with help; toilet training; more independent. **2y 6m** eats with a spoon; plays with others; does not share.	**3y** plays with others; starting to share and take turns. **4y** shows sensitivity; independent; good sense of humour. **5y** choses friends; understands rules; enjoys team games.
Emotional	**3m** like care routines **6m** recognises emotions **9m** specific attachment **12m** curious; explores **15m** some independence; jealousy.	**18m** mood swings dependent-independent **2y** cannot wait, wants demands met asap; can be distracted from tantrums. **2y 6m** self-identity; coping with emotions; tests boundaries from adults.	**3y** can wait; more co-operative; uses language to express feelings; makes requests. **4y** confident; self-assured; personal care; turns to adult for comfort when hurt or ill. **5y** close friendships; copes with emotions; resilient; adults need to sort conflicts.

Subject **Child Development: Factors that can impact development Y10b.**

Environmental Factors that can impact a child's development

Housing — Environmental factors — Garden — Home environment — Effects of exposure

Physical Factors that can impact a child's development

Factors in pregnancy — Disabilities or additional needs — Amount of exercise — Physical factors — Health status — Benefits of a healthy balanced diet

Social Factors that can impact a child's development

Discrimination — Extended family and friends — Social factors — Relationship with primary carers — Siblings

Financial Factors that can impact a child's development

Low income — Financial factors — Access to services — High income

The Marxist perspective of education

Marxists believe that at school students learn how to fulfil their future roles in the capitalist world of work. They do not see this as benefiting the whole of society, or individuals themselves, but only the capitalist class (bourgeoisie).

We learn to do this through The Hidden Curriculum:

1. Hierarchy: The hierarchy in school can be seen to reflect the structure of society and in the workplace.
2. Competition: School encourages competition between students e.g. sports, exam results.
3. Social Control: Rules, regulations, obedience and respect for authority.
4. Gender role allocation: teacher expectations and subject choice
5. Lack of satisfaction: Preparing students for boring, meaningless and repetitive jobs is a similar experience to employees at work

The functionalist perspective of education

- Schools prepare children for the same universalistic standards, the opposite of the particularistic standards from homelife.
- Schools promote a value consensus: encouraging students to achieve highly and providing rewards to encourage them to maximize their potential. Students are also competing on equal terms in the classroom.
- Meritocracy: student's achievements are based on their abilities and efforts, not on social class, gender or ethnicity.
- Role allocation: students are matched to the correct job based on their skills and knowledge.

The feminist perspective of education

- There are inequalities in the education system between boys and girls.
- Education reinforces patriarchal views. For example, girls may be encouraged to study subjects like Health and Social Care and Home Economics; reinforcing the idea that a woman's role is in the family or in a caring capacity.
- Teachers may expect certain behaviours from boys but not tolerate them from girls, such as 'rowdy' or 'boisterous' behaviour; again encouraging girls to behave in certain ways because of traditional gendered expectations.
- The structure of the school also highlights patriarchal inequalities in society. Many of the top positions in schools are taken by men, whilst most of the serving and cleaning staff are women. This sends out a message that men should be in more powerful positions than women.

SUBJECT TERMINOLOGY: types of education

Home education	teaching children at home using parents or tutors.
Vocational education	work-related qualifications and training.
Specialist schools	Raise standards of achievement based on their strengths e.g.
Faith Schools	Schools that are run with a religious ethos
Academies	Taken out of local authority control. Private sponsors can help to raise achievement.
Free Schools	Schools that can be set up and run by groups of parents, teachers, businesses etc.
Independent schools	Public and private schools (fee paying)
State schools	Free schools for all students regardless of ability
Grammar school	Selective schools with an entry test (usually the 11+)
Comprehensive school	Mixed ability schools, non-selective

SUBJECT TERMINOLOGY: key terms

Material deprivation	The lack of material resources due to lack of money. For example lack of equipment, uniform, money for trips, etc
Cultural deprivation	The incorrect values and attitude to succeed in education.
Cultural capital	The correct values and attitude to succeed in education.
Labelling	When a teacher applies a definition to a student based on their class, gender or ethnicity, not on factual information.
The self-fulfilling prophecy	When a student internalises the label applied to them by a teacher and 'lives up' to it.
Banding/setting	the way schools categorise students by ability for their learning
Subcultures	Groups of students who share the same values. These are often anti-school or pro-school.
Hidden curriculum	Lessons taught in school which aren't directly on the curriculum, such as punctuality.
Secondary socialisation	The process of learning which runs throughout our lives. Schools are an agent of secondary socialisation.
Meritocracy	The functionalist view that education provides opportunities for all students to succeed, regardless of their background.

Influences on educational attainment	Major points	Sociologists
Cultural factors	Working-class groups may not have the appropriate values, language codes and parental encouragement needed to succeed at school. They may be used to blame working-class groups and the way they are socialised. Some, such as Marxists, argue that the working class do not possess the cultural capital to succeed at school. This refers to economic and cultural factors such as language skills and interests, and knowledge of art, theatre and literature. Others argue that some working-class groups may not possess social capital. This refers to the ability to navigate the education system and to achieve success.	Hyman (1960s-70s) Bourdieu Becky Francis
Material factors	Some theories refer to money and the things that can be bought, which might help children to succeed, such as equipment, tuition and internet access. They also refer to the living conditions of the children such as housing, space to complete homework, heating, and adequate food and clothing. They affect where children can afford to live and the school they can attend; children who are without these necessities are said to be in material deprivation.	Noble Ball
School	The school children attend, the way it is organised, and resources they have access to may also affect achievement. Schools may have a middle-class ethos or irrelevant curriculum which may cause children to disengage from school. Teachers may attach labels to children which are often associated with social class, gender and ethnicity. Middle-class pupils are more likely to be labelled as ideal. Children may see themselves in the context of their labels and live up to them. Children may disengage from school and form anti-school subcultures. Some schools may have a patriarchal or racist culture.	Diane Reay Hargreaves Willis

1944 Education Act
- Equal chance to develop talents, free state run education
- Introduction of a meritocratic system in which children received an education based on their academic ability rather than the ability of their parents to pay.
- Introduction of the 11+ exam and the Tripartite System:
  - Secondary Modern
  - Secondary Technical
  - Grammar

1965: The Comprehensive System
- One school for everyone- all abilities and social classes.
- No labelling as a failure, seen as fairer.
- Each school has a specific 'catchment'

1988 Education Act
- Introduction of the marketisation of education- consumer choice and competition. Focus on parental choice, funding based on student numbers and more freedom for schools.
- The introduction of the National Curriculum- core subjects for ages 5-16.
- Introduction of testing- GCSE examination.

1997 New Labour Educational Policy
- Raising Standards: providing nursery places for 3-4 year olds, reducing class sizes, national literacy & numeracy schemes, 'special measures', 'value-added' feature on league tables.
- Reducing inequality: introduction of Educational Maintenance Allowance (EMA), Aim Higher Programme, The Sure Start programme and Connexions.
- Promoting Diversity & Choice- Introduction of specialist and faith schools.

Since 2010 policies
- New style academies
- Free Schools
- Pupil Premium

Arguments **for** vocational education	Arguments **against** vocational education
• It will lead to a more skilled, better-qualified workforce that will make Britain more competitive • Functionalists believe it shows the importance the education system has to provide skills and expertise needed by industry & the economy.	• The emphasis on skills training disguises the fact that the problem is not that young people lack necessary skills for work it's that there is no work for skilled young people. • Marxists argue it is viewed as lower status compared to purely academic qualifications. • Seen as replicating the Tripartite system

Pre-school (3-5 yrs). Private or through local authority. → Primary (5-11). Infant and junior schools. → Secondary (11-16). Provided by the state in secondary schools. → Further and Higher education (16 - 19). Sixth forms, colleges and apprenticeships.
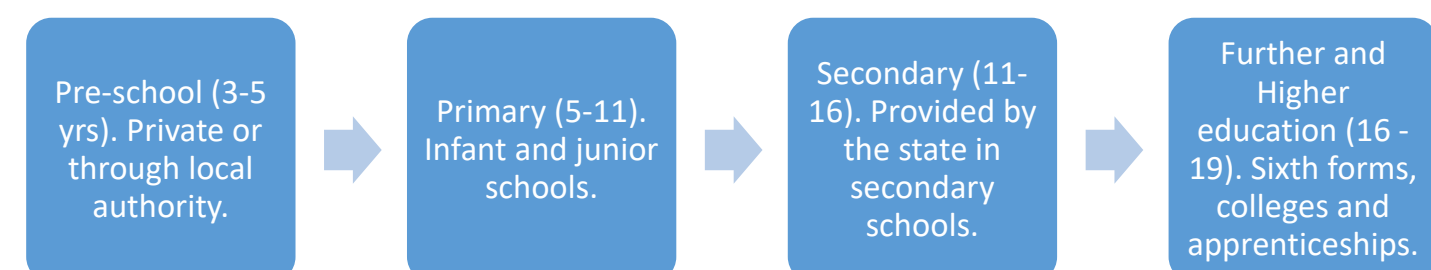
Evidence to support a belief in life after death

	Why might this support a belief in life after death?
Near Death Experiences	These are first hand accounts from those who have been near to death, providing information about what happens after life earth ends. Accounts often share similarities i.e. bright lights or seeing loved ones.
Past Life Memories	People have provided details of a previous life which when researched have been proven to be accurate, with other possible way to know this information.
Ghost Sightings	Ghosts are believed to be the spirits of the dead which appear in visible from to the living. A reliable witness may claim to have seen someone who is known to have died. Some believe these have unfinished business on earth which prevents them passing over completely.
Receiving a message from medium	People have received messages from mediums containing information that links directly to deceased loved one. Often there is no other way could have gathered that information.

Beliefs about heaven
1. **Heaven is a spiritual existence of peace and happiness in the eternal presence of God.**
2. **It is often depicted as above the earth, a place where good people go after death for eternity.**
3. **Heaven is only for Christians as you have to believe in God to guarantee a place in heaven.**
4. **You have to believe in Jesus and live a good life to go to heaven.**
5. **Believers in God, not just Christians, will go to heaven.**
6. **It is a place of reward for both faith and good actions in life.**

Beliefs about hell
1. **Some Christians understand it to be a state of existence without God.**
2. **Traditional paintings depict it as a fiery place of eternal torment, suffering, torture and terror ruled by the Devil (Satan). It is usually depicted as below the earth.**
3. **Hell is the place where those who don't believe in God or Jesus go for eternity after death.**
4. **If you live an immoral life then you will go to hell.**
5. **Hell is an eternal state cut off from God. Any person not acknowledging God or follow God's teachings in their lifetime would face that eternity.**

SUBJECT TERMINOLOGY

Afterlife	The belief in continued existence in some form after physiological death. The belief that some aspect of an individual survives after death—usually, the individual's soul—is common to the great majority of the world's religions.
Eternity	Endless life after death.
Funeral	A ceremony or service held shortly after a person's death, usually including the person's burial or cremation.
Heaven	a place regarded in various religions as the place where God and the angels reside, and of the good after death.
Hell	a place regarded in various religions as a spiritual realm of evil and suffering, often traditionally depicted as a place of perpetual fire beneath the earth where the wicked are punished after death.
Judgement	The belief that a person will be judged by God to decide their destiny in the afterlife.
Medium	A person who claims to be able to communicate with dead people in the spirit world.
Nibbana	A Buddhist word meaning 'quenching' of the activities of the world and its suffering.
Near death experience	An occurrence in which a person comes very close to dying and has memories of a spiritual experience (such as meeting dead friends and family members or seeing a white light) during the time
Paranormal activity	Events or phenomena such as telekinesis or clairvoyance that are beyond the scope of normal scientific understanding.
Rebirth	The process of being reincarnated or born again.
Reincarnation	The belief that an individual does not live just one life, but that they live multiple lives, one after the other..
Revelation	The divine or supernatural disclosure to humans of something relating to human existence.
Spiritualism	A system of belief or religious practice based on supposed communication with the spirits of the dead, especially through mediums.

Tibetan Wheel of Life

1. To Buddhists, existence is a cycle of life, death, rebirth and suffering that they seek to escape altogether, and the Tibetan Wheel of ife shows this.
2. The Tibetan Wheel of Life illustrates the process of dependent arising (the idea that all things change and all things are interconnected) in relation to human life, death and rebirth.
3. The Wheel is divided into five or six realms, or states, into which a soul can be reborn. It is held by a demon. Around the rim are depicted the twelve stages of dependent origination.
4. The frightening figure holding the wheel is Yama, the Lord of Death or Monster of Impermanence. He has three eyes and wears a crown of skulls. Yama symbolises the impermanence of everything. The beings he holds are trapped in eternal suffering by their ignorance of the nature of the universe. Buddhism teaches that death is not the end and is not to be feared.
5. The outer circle is 12 links or stages of a human's life (nidanas); the 12th link (old age and death) leads to the first link (ignorance). This shows the Buddhist teaching of rebirth; the wheel shows the cycle of birth, death, then rebirth this cycle is called **samsara**.
6. Depicted in the spokes of the wheel are the six (originally, five) realms of rebirth (*gatis*): the god realm, the realm of the *asuras* (originally included in the god realm), the realm of the hungry ghosts (*pretas*), the hell realm, the animal realm, and the realm of human beings.

Cash Flow Forecast	
Cash inflows	A list of all sales and income individually written.
Total inflows	All sales added together
Cash outflows	A list of business out floes including wages, cost of sales, maintenance, rent and advertising.
Total outflows	All cash outflows added together
Net Cash Flow	= Total Inflows – Total Outflows
Opening Balance	= Closing balance of the previous period
Closing Balance	= Opening balance + Net cash flow

TECHNICAL VOCABULARY	
Insolvent	A business that is unable to pay its debts and/or owes more money that it is owed.
Consumables	Items that get 'used up', such as pens, paper, staples and other items that a business had to replace regularly.
Trade Credit	A credit arrangement that is offered only to a business by suppliers
Overdraft	A facility offered by a bank that allowed an account holder to borrow money at short notice.
Cheque	A written order to a bank to pay an amount of money from an account holders account to a specified person.
Venture Capital	Money to invest in a business is sourced from individuals, or groups of people who wish to invest their own money into a new business.
Return on investment	The amount of money that an investor gets back in return from investing in a business.
Shareholders	Investors who are part owners of a company
Asset	Any item of value that a business owns, such as it machinery or premises
Limited Liability	The level of risk is limited to the amount of money that has been invested in a business or promised as an investment.

Topic Formula

Revenue	Number of Sales x Price
Total costs	Total Fixed Costs + Total Variable Costs
Gross Profit	Sales revenue – Cost of sales
Net profit	Gross profit – Other expenses
Interest	$\frac{\text{Total repayment} - \text{borrowed amount}}{\text{Borrowed amount}} \times 100$
Break-even Point in units	$\frac{\text{Fixed Costs}}{(\text{Sales price} - \text{variable cost})}$

Type of ownership	Ownership	Control of business
Sole Trader	By one owner	By one owner
Partnership	2 or more owners	By partners, although senior partners may have more decision making power
Private limited company (LTD)	Shareholders – usually friends and family	By directors and paid managers. Some will have more control than others
Public limited company (PLC)	Shareholders	By directors and paid managers. Some will have more control than others
Franchise	Franchisee hold a licenced but only for a given period	Franchisee must operate in a framework set out by the franchisor

Worship	
What is Liturgical worship?	More likely to be seen in Roman Catholic and Anglican services. There is a liturgy (a set order) of things including set prayers and readings from the Bible.
What is non-Liturgical worship?	This is usually in non-conformist churches and tends to be Bible based. There is a pattern, but the service leader has free choice, the prayers are usually in the person's own words and style - extemporary prayer.
What is charismatic worship?	This contains elements of the other forms of worship but is free flowing. It focuses on the gifts of the Holy Spirit including speaking in tongues and the worship is often lively.
What is Quaker worship?	There is no leader or structure; people sit in a circle around a table on which there is the Bible and Quaker writings. If someone wants to speak they can, otherwise people sit in silence.
What is private worship?	It can be liturgical – an Anglican saying Morning Prayer or a Roman Catholic the Rosary. It can be non-liturgical – meditating on a Bible passage.
Why is worship important?	It brings a sense of togetherness as a community; makes people feel close to God; it is an external expression of faith and it is peaceful allowing time for prayer and meditation.
What is prayer?	Prayer is talking to and listening to God and the guidance of the Holy Spirit, it should be humble and persistent. You can pray for yourself; others; thank God; confess and praise.

TECHNICAL VOCABULARY	
Worship	Acts of religious praise, honour or devotion.
Liturgical worship	A church service that follows a set structure or ritual.
Non-liturgical worship	A service that does not follow a set text or ritual.
Informal worship	A type of non-liturgical worship, sometimes 'spontaneous' or 'charismatic' in nature.
Private worship	When a believer praises or honours God on his or her own.
Nonconformist	An English Protestant who does not conform to the doctrines or practices of the established Church of England.
Sacraments	Rites and rituals through which the believer receives a special gift of grace; for Catholics, Anglicans and many Protestants, sacraments are 'outward signs' of 'inward grace.'
Holy Communion	A service of thanksgiving in which the death and resurrection are celebrated using bread and wine – Eucharist, Mass, Lord's Supper, Breaking of Bread, Divine Liturgy.
agape	A word used in the Bible that describes selfless, sacrificial, unconditional love.
Mission	The vocation or calling of a religious organisation or individual to go out into the world and spread their faith.

Christian Festivals	
What are the two most important festivals?	Christmas and Easter.
When and why do we celebrate Christmas?	We celebrate Christmas on the 25th December and we remember the events around Jesus' birth.
Where do we find information about Christmas?	The main accounts are in the Gospels of Matthew and Luke.
How is Christmas celebrated?	The most important parts are Christmas Eve and the Midnight Mass – the service starts in darkness and when the Gospel is read the lights come on (Jesus = the light of the world). There are carols, Christingles services and the giving of gifts (Jesus = God's gift to the world).
Why is Christmas important?	Christians thank God for the Incarnation, presents represent love shared, it's a time to remember families in difficult circumstances.
When and why do we celebrate Easter?	Easter follows Holy Week remembering the passion and death of Jesus. It remembers his arrival, teaching, betrayal, the Last Supper, arrest, crucifixion and resurrection. It is celebrated in April.
How is Easter celebrated?	Giving out of Palm Crosses; the Monarch gives out maundy money to represent the money paid to Judas; on Good Friday all colour is removed from churches and there are procession. On Easter Sunday there are vigils and Christians may be baptised.

Eucharist	
What is the Last Supper?	This was the meal that Jesus had with his disciples celebrating Passover. Jesus gave new meaning to breaking the bread and drinking the wine. The bread became his body and the wine his blood.
Do all Christians celebrate the Eucharist?	All Christians apart from Quakers and members of the Salvation Army.
What are the main parts of the service?	The blessing of the bread and wine (consecration); Repeating Jesus' words from the Last Supper; The bread and wine are shared with the people (congregation).
How is the Eucharist understood?	Roman Catholics – the bread and wine actually become the body and blood of Jesus (transubstantiation); Many Protestants see it as an act of remembrance.
What are the variations of the Eucharist?	The Orthodox Church calls it the Divine Liturgy and the bread and wine are consecrated behind the iconostasis and brought through the Royal Doors. This emphasises the mystery of what is happening. Roman Catholics believe the bread and wine actually become the body and blood.
What is the significance of the Eucharist for Christians?	All denominations who practise it see it as important, either enough to do it every week or every month so it doesn't lose its significance. Orthodox Christians don't describe what is happening spiritually as it is a mystery.

A1: Components of physical fitness	
Aerobic endurance	The ability of the cardiorespiratory system to supply oxygen and nutrients to the muscles to sustain low to medium intensity work to delay fatigue.
Muscular endurance	The ability of the muscular system to continue to contract at a light to moderate intensity to allow repetitive movements throughout a long event or game.
Muscular strength	The maximum force that can be generated by a muscle or muscle group to improve forceful movements within an activity.
Speed	Distance divided by time to reduce time taken to move the body or a body part in an event or game.
Flexibility	The range of motion possible at a joint to allow improvements in technique.
Body composition	The relative ratio of fat mass to fat-free mass in the body allowing variation in body composition dependent on the sport.
A2: Components of skill-related fitness	
Power	The product of speed and strength to allow for explosive movements in sport.
Agility	The ability to change direction quickly to allow performers to outmanoeuvre an opponent.
Reaction time	The time taken between a stimulus and the start of a response, useful in fast-paced sports to make quick decisions about what to do.
Balance	The ability to maintain centre of mass over a base of support, useful to maintain positions in performance sports (static balance) or when on the move in any other sporting situation (dynamic balance).
Coordination	The ability to move two or more body parts at the same time smoothly and efficiently, to allow effective application of technique.

B1: Techniques, strategies and fitness required for different sports	
Skills	e.g. passing, scoring, travelling, intercepting.
Strategies	e.g. tactics and decision making.
Isolated practice	Practices that focus on one skill at a time.
Competitive situation	The number of players, area of play and presence of an official to represent competition standard of play.

B2: Officials in sport	
Key officials and their roles in sports competitions:	Referee/umpire, Assistant referee/line umpire, Scorers/judges, Timekeepers, Video review officials.
Responsibilities of the officials:	Appearance, Equipment, Fitness requirements, Effective communication, Control of players, Health and safety.

B3: Rules and regulations in sports	
Key rules and regulations as stated by the National Governing Body for the sport:	
Number of players	Number of players allowed to participate at any one time – substitutions – rolling or set number – variations in playing numbers due to different formats of the game.
Length of time for play	Number of periods of play – length of each period – length of play determined by time or score – additional time or extra periods of play in particular situations.
Scoring system:	Methods of scoring – differing award of points for particular methods of scoring – how a winner is determined – what happens in the event of a tie.
Playing area:	Dimensions of overall playing area – purpose and dimensions of specific areas within the overall playing area.
Equipment	Sizes and weights of playing equipment as specified by NGB – required protective equipment – optional protective equipment.
Starting and restarting play	How the game begins – how play is restarted after scoring – fouls or infringements – how and when the game ends.
Non-adherence to the rules	Playing rules specific to each sport, e.g. hitting the ball twice in tennis, passing the ball forward in rugby – out of play area/offside – intentionally harming another player – incorrect travel, e.g. double dribble in basketball.
Application of rules and regulations by officials	Use of signals – communication of decisions to players and other officials – positioning.