Knowledge Bank

THINKING SCHOOLS ACADEMY TRUST

Spring Term 2025

Year 10

PAIGNTON ACADEMY

Name: _____ **Form:** _____

CONTENTS

How to use your Knowledge Organiser for Home Learning

- Knowledge Banks contain core knowledge that you must know
- It will help you retrieve what you learn in lessons so that you remember it in the long term
- You will use your Knowledge Bank to aid your home learning

For homework:

- You will need to create a home learning timetable so you can organise which subject you do on which days
- You will be asked to use a specific section of your Knowledge Bank to aid home learning
- Your home learning will involve retrieval (prior learning) and flipped learning (research-based task for topics not yet learnt)
- The length of home learning will be different depending on your subject, this information is in a different document
- You must write the subject and date in your homework book - if using
- You need to underline the subject and title as per lessons
- There will be rewards for excellent work and sanctions for work not complete
- your home learning will be set every Monday on ClassCharts
- Your homework will be set **every Monday** on Class Charts
- Completing your home learning is **YOUR** responsibility

ENGLISH

A Christmas Carol – Charles Dickens - 1843

Plot Summary:

Stave 1 – We are introduce to the cold-hearted Scrooge who is uncharitable and cruel. He is in his counting house when Fred and charity workers appear – he treats them appallingly. At home, the ghost of Jacob Marley appears to him to warn him he must change.

Stave 2 – The Ghost of Christmas Past appears. We see that Scrooge was neglected as a child at boarding school. We see his kind-hearted boss, Fezziwig. We also see how his relationship with his fiancée, Belle ended.

Stave 3 – The Ghost of Christmas Present appears and shows Scrooge how other people celebrate Christmas. We see the poverty-stricken Cratchit family and how happy they are.

Stave 4 – We meet the Ghost of Christmas Yet to Come and see how Scrooge fears it. The ghost shows him reactions to his death. We see how the Cratchit's mourn the death of Tiny Tim. Scrooge is shown his own grave and begs for forgiveness.

Stave 5 – Scrooge wakes in his bed on Christmas Day. He is elated and sends a boy to buy a prize turkey for the Cratchit family. He walks about London, donates a large amount to charity, goes to church and visits his nephew, Fred. He is changed – redemption.

Themes

Characters

Scrooge

Bob Cratchit

Fred

Jacob Marley

Ghost of Christmas Past

Ghost of Christmas Present

Ghost of Christmas Yet to Come

You can access good marks with a really solid knowledge of the plot, the characters and how the characters are presented

The Knowledge: A Christmas Carol, by Charles Dickens

Scrooge

1. Scrooge begins the novel as 'hard and sharp as flint, 'as solitary as an Oyster, and ends 'as merry as a school-boy'.
2. Scrooge's reply to Merry Christmas is 'Bah! Humbug!' and when told about the poor, Scrooge asks 'are there no prisons?'
3. Scrooge is visited by the ghost of Jacob Marley covered in chains. Marley warns Scrooge that he also has a 'ponderous chain'
4. Marley warns Scrooge that 'You will be haunted'…'by Three Spirits.'
5. The first ghost, the Ghost of Christmas past, shows Scrooge as 'a lonely boy…reading near a feeble fire'
6. Scrooge sees his old boss Fezziwig, who spoke in a 'comfortable, oily, rich, fat, jovial voice' & Belle, displaced by a 'golden' idol.
7. The Ghost of Christmas Present shows Scrooge Bob Cratchit, who calls Scrooge the 'founder of the feast' and Fred, who says that Scrooge's 'offences carry their own punishment'.
8. The Ghost of Christmas Future shows people arguing about 'a wicked old screw' and the possessions stolen from his death-bed
9. After seeing his own grave Scrooge repents, saying he will 'honour Christmas in my heart, and try to keep it all the year.'
10. 'Scrooge was better than his word. He did it all, and infinitely more; and to Tiny Tim, who did not die, he was a second father.'

Cold	Ruthless	Callous	Remorseful	Joyful
Miserly	Isolated	Redeemable	Reformed	Generous

The Cratchits

1. Scrooge treats his clerk Bob Cratchit poorly; the office is a 'dismal little cell' with a fire that 'looked like one coal'
2. When Bob asks Scrooge for the day off for Christmas, Scrooge says it is 'picking a man's pocket every twenty-fifth of December!'
3. Mrs Cratchit, Cratchit's wife, is 'dressed out but poorly in a twice-turned gown, but brave in ribbons'
4. Tiny Tim, the youngest Cratchit, suffers with ill health but is still 'as good as gold' and says 'God bless us everyone!'
5. None of the Cratchits remark on the small size of their Christmas dinner or Pudding, 'It would have been flat heresy to do so.'
6. The Cratchits make a proud display of what little they have; 'Two tumblers, and a custard-cup without a handle'
7. Mrs. Cratchit does not share in Bob's praise of Scrooge, calling him a 'stingy, hard, unfeeling man'
8. The Ghost of Christmas Present warns of Tiny Tim that 'If these shadows remain unaltered by the Future, the child will die.'
9. The Ghost of Christmas Future shows the consequences of this, as 'the noisy little Cratchits were as still as statues'
10. Scrooge ends up saving the Cratchits as he tells Bob 'I'll raise your salary, and endeavour to assist your struggling family'

Working class	Dignified	Thoughtful	Humble	Determined
Loyal	Loving	Optimistic	Dedicated	United

The Ghosts

1. Marley's ghost explains 'I wear the chain I forged in life…The chain was made up of cash boxes…ledgers…heavy purses'
2. Scrooge looks out of his window & sees 'the air was filled with phantoms'
3. The Ghost of Christmas Past is 'like a child: yet not so like a child as like an old man' and from 'crown of its head there sprung a bright clear jet of light'
4. The Ghost of Christmas Past asks Scrooge to 'Bear but a touch of my hand'
5. The Ghost of Christmas Present is 'a jolly Giant, glorious to see:, who bore a glowing torch'
6. The Ghost of Christmas Present explains the 'yellow, meagre, ragged, scowling, wolfish' figures of Ignorance and Want.
7. The Ghost of Christmas Future is a 'Phantom' who 'slowly, gravely, silently approached'
8. The Ghost will is not troubled by Scrooge's outbursts; 'The Spirit was immovable as ever.'

Supernatural	Prophetic	Apparition	Powerful	Truthful
Superstition	Moral	Unsettling	Symbolic	Revelatory

Power and Conflict Poems: Kamikaze, My Last Duchess, Remains, Storm on the Island, Tissue

Poem	Context & Subject Matter	Key Quotations
Kamikaze 	During the Second World War, the term 'kamikaze' was used for Japanese fighter pilots who were sent on suicide missions. They were expected to crash their warplanes into enemy warships. The word 'kamikaze' literally translates as 'divine wind'. Pilots were revered for their heroism and remembered as martyrs. This poem perhaps prompts us to think about the consequences of suicide missions for families in the modern world as well as in past conflicts.	'a shaven head full of powerful incantations' 'little fishing boats strung out like bunting on a green-blue translucent sea' 'dark shoals of fishes flashing silver' 'arcing in swathes like a huge flag waved first one way then the other in a figure of eight,' 'they treated him as though he no longer existed' 'only we children still chattered and laughed till gradually we too learned to be silent'
My Last Duchess 	Browning was heavily influenced as a youngster by his father's extensive collection of books and art. This poem reflects Browning's love of history and European culture as the story is based on real historical figures. The narrator is Duke Alfonso II who ruled in Ferrara between 1559 and 1597. The Duchess of whom he speaks was his first wife, Lucrezia de' Medici, who died aged 17 in suspicious circumstances and might have been poisoned.	'Looking as if she were alive' 'The depth and passion of its earnest glance' 'spot of joy' 'A heart—how shall I say?— too soon made glad' 'My gift of a nine-hundred- years-old name' 'stooping'/'stoop' 'I gave commands; Then all smiles stopped together' 'Notice Neptune, though, Taming a sea-horse'
Remains 	Armitage made a film for Channel 4 in 2007 called *The Not Dead* and wrote a collection of poems of the same name. In preparation for this work, he interviewed veteran soldiers of different wars. The reference to 'desert sand' in this poem suggests that it is written about the Gulf War. The poem presents a dark and disturbing image of a soldier suffering post-traumatic stress disorder after conflict.	'probably armed, possibly not' 'I see every round as it rips through his life' 'sort of inside out, pain itself, the image of agony' 'tosses his guts' 'End of story, except not really.' 'blood-shadow stays on the street' 'but near to the knuckle, here and now, his bloody life in my bloody hands'
Storm on the Island 	Heaney was born in Northern Ireland to a farming family- much of his poetry is centred on the countryside and farm life that he knew as a child. In the late 60s, right up until the 90s, there was conflict in Northern Ireland between the Unionists (a group who wanted to remain in UK) and the Nationalists (a group who wanted to keep Ireland separate). This poem considers the power of nature.	'The wizened earth had never troubled us' 'build our houses squat, Sink walls in rock and roof them' 'Exploding comfortably' 'salvo'/'strafe'/'bombarded' 'The very windows, spits like a tame cat Turned savage' 'Strange, it is a huge nothing that we fear'
Tissue 	Dharker was born in Pakistan and grew up in Scotland. She has written numerous poems that deal with themes of identity, the role of women in society and the search for meaning. She draws on her multi-cultural experience in her work. The poet addresses some of the larger issues in society; greed, pride etc. and how we have built our world around them, at odds with our own existence.	'Paper that lets the light shine through, this is what could alter things' 'If buildings were paper, I might feel their drift, see how easily they fall away on a sigh' 'The sun shines through their borderlines' 'what was paid by credit card might fly our lives like paper kites' 'let the daylight break through capitals and monoliths, through the shapes that pride can make' 'of paper smoothed and stroked and thinned to be transparent, turned into your skin'

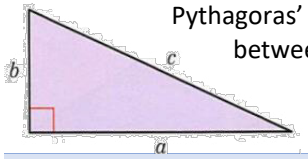
Key themes and Ideas: conflict, war, identity, culture, power, duty, patriotism

Comparative Words & Phrases: similarly, likewise, also : On the other hand, however

Maths Year 10
Spring - Foundation

Right angled triangles

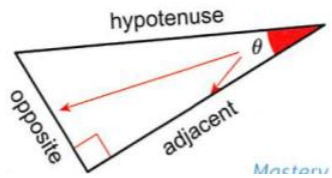
in a right-angled triangle the **hypotenue** is the longest side and is opposite the right angle



Pythagoras' theorem shows the relationship between lengths of the three sides of a right-angled triangle

A triangle with sides a, b, and c, where c is the longest side is right-angled only if $a^2 + b^2 = c^2$

in a right-angled triangle the side opposite the angle Ø is called the **opposite.** The side next to the angle Ø is called the **adjacent**.



The **sine** of an angle Ø is the ratio of the opposite side to the hypotenuse. The sine of angle is written as sin Ø

The **cosine** of an angle Ø is the ratio of the adjacent side to the hypotenuse. The cosine of angle is written as cos Ø

The **tangent** of an angle Ø is the ratio of the opposite side to the adjacent side. The tangent of angle is written as tan Ø

You can use $sin^{-1}, cos^{-1}, tan^{-1}$ on your calculator to find an angle when you know its sin, cos or tan

The **angle of elevation** is the angle measured upwards from the horizontal. The **angle of depression** is the angle measured downwards from the horizontal.

The sine, cosine and tangent of some angles may be written exactly

	30°	45°	60°	90°
sin	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	

Probability

The **probability** of an event happening is a number between 0 and 1. If an event is **certain**, the **probability** is 1 (P = 1). If an event is **impossible**, **probability** is 0, (P = 0)

Events are **mutually exclusive** when they cannot happen at the same time. Events are **exhaustive** if they include all possible outcomes. The probabilities of an **exhaustive set** of **mutually exclusive** events sum to 1

Equally likely outcomes have the same probability of happening. The probability that an **equally likely** event will happen is $\boldsymbol{P = \frac{number\ of\ successful\ outcomes}{total\ number\ of\ possible\ outcomes}}$

If the probability of an event happening is P, the probability of it not happening is 1 - P

A **sample space diagram** shows all the possible outcomes for one or more events. You can use it to find a **theoretical probability**.

Estimated probability is also called **experimental probability**. You can estimate the probability of an event from the results of an experiment or survey:

$$\boldsymbol{relative\ frequency = \frac{number\ of\ successful\ trials}{total\ number\ of\ trials}}$$

A larger number of trials gives a more accurate estimate of probability.

$$\boldsymbol{Predicted\ number\ of\ outcomes = probability \times number\ of\ trials}.$$

Two events are **independent** when the results of one do not affect the results of the other. When the outcome of one event changes the possible outcomes of the next event, the two events are **not independent**.

A set is a list of thinks that share certain characteristics

The elements of two (or more0 sets can be shown together in a Venn diagram. Curly brackets {} show a set of values.

$A \cap B$ Means A intersection B. This is all the elements that are in A *and* in B

$A \cup B$ Means A union B. This is all the elements that are in A or B. A' means the elements *not* in A

Multiplicative reasoning

The original amount is always 100%. If the amount is **increased** the new amount will be more than 100%. If the amount is **decreased** the new amount will be less than 100%.

You can calculate a **percentage change** using the formula.

$$\boldsymbol{percentage\ change = \frac{actual\ change}{original\ amount} \times 100}$$

Density is a **compound measure**. It is the **mass** of substance contained in a certain **volume**. It is usually measured in grams per cubic **centimetre** (g/cm^3)

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

Pressure is a **compound measure**. It is the **force** applied over an area. It is usually measured in newtons (N) per square metre (N/m^2)

$$pressure = \frac{force}{area}$$

Banks and building societies pay **compound interest**. At the end of the first tear, interest is paid on the money in the account. The interest is added to the amount in the account. At the end of the second year, interest is paid on the original amount in the account *and* on the interest earned in the first year, and so on….

$y \propto x$ means 'y' is proportional to x. When $y \propto x$ then $y = kx$, where *k* is the constant of proportionality

$X \propto \frac{1}{Y}$ means X and Y are in inverse proportion. This means XY = k (constant)

You can make the numbers in a ratio as small as possible by **simplifying**. You **simplify** a ratio by dividing the numbers in the ratio by the **highest common factor** (HCF)

You can compare **proportions** using **percentages**

Write the proportion as a fraction.

$$\frac{9}{10} = \frac{\square}{100} = \square\%$$

Convert the fraction to a percentage.

Maths Year 10
Spring - Higher

Similarity and Congruence

Congruent triangles have exactly the same size and shape. Their angles are the same and **corresponding sides** are the same length

Two triangles are **congruent** when one of these conditions of congruence is true:
SSS: all three sides are equal
SAS: Two sides and the included angle are equal
AAS: Two angles and a corresponding side are equal
RHS: Right angle, hypotenuse and one other side are equal

Shapes are **similar** when one shape is an **enlargement** of the other. **Corresponding angles** are equal and **corresponding sides** are all in the same **ratio**

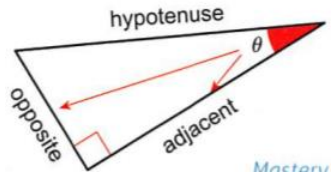
When a shape is **enlarged** by **linear scale factor** *k*, the area of the shape is enlarged by scale factor k^2

When a shape is **enlarged** by **linear scale factor** *k*, the volume is enlarged by scale factor k^3

More trigonometry

in a right-angled triangle the **hypotenue** is the longest side and is opposite the right angle

in a right-angled triangle the side opposite the angle Ø is called the **opposite.** The side next to the angle Ø is called the **adjacent**.



The **sine** of an angle Ø is the ratio of the opposite side to the hypotenuse. The sine of angle is written as sin Ø

The **cosine** of an angle Ø is the ratio of the adjacent side to the hypotenuse. The cosine of angle is written as cos Ø

The **tangent** of an angle Ø is the ratio of the opposite side to the adjacent side. The tangent of angle is written as tan Ø

You can use $\boldsymbol{sin^{-1}}, \boldsymbol{cos^{-1}}, \boldsymbol{tan^{-1}}$ on your calculator to find an angle when you know its sin, cos or tan

The **angle of elevation** is the angle measured upwards from the horizontal. The **angle of depression** is the angle measured downwards from the horizontal.

The sine, cosine and tangent of some angles may be written exactly

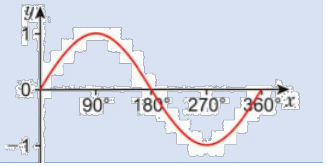
	30°	45°	60°	90°
sin	$\frac{1}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{\sqrt{3}}{2}$	1
cos	$\frac{\sqrt{3}}{2}$	$\frac{1}{\sqrt{2}}$	$\frac{1}{2}$	0
tan	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	

The **sine rule** can be used in any triangle to calculate a missing side:

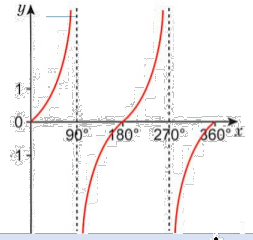
$$\frac{\boldsymbol{a}}{\boldsymbol{\sin a}} = \frac{\boldsymbol{b}}{\boldsymbol{\sin b}} = \frac{\boldsymbol{c}}{\boldsymbol{\sin c}}$$

The **cosine rule** can be used in any triangle to calculate an unknown side: $\boldsymbol{a^2 = b^2 + c^2 - 2bc\cos A}$

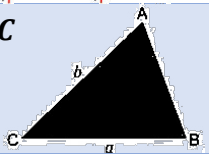
The **sine** graph repeats every 360 degrees in both directions



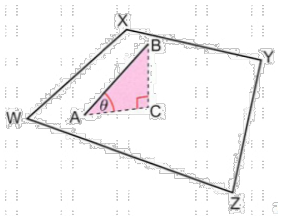
The **tangent** graph repeats every 180 degrees in both directions



The area if this triangle is $\frac{1}{2}\boldsymbol{ab\sin C}$



A **place** is a flat surface. In the diagram**.** BC is perpendicular to the plane WXYZ**. T**riangle ABC is in a plane perpendicular to the plane WXYZ



Ø is the angle between the line AB and the plane WXYZ

The graph of $y = -f(-x)$ is a reflection of the graph of $y = f(x)$ in the x-axis and then the y-axis, or vice versa. These two reflections are equivalent to a rotation of 180° about origin

Further Statistics

A **population** is the set of items that you are interested in. A **census** is a **survey** of the whole **population**. A **sample** is a smaller number of items from the **population**. A **sample** of at least 10% is considered good. In order to reduce **bias**, the **sample** must represent the whole **population**

A **population** may divide into groups such as age range or gender. These groups are called **strata (stratum**). In a **stratified sample**, the number of people taken from each group is **proportional** to the group size.

A **cumulative frequency table** shows how many data values are less than or equal to the **upper class boundary** of each **data class**. **A cumulative frequency diagram** has data values on the x-axis and **cumulative frequency** on the y-axis

The **median** and **quartiles** can be estimated from the **cumulative frequency diagram**. For a set of n data values:
the estimate from the **median** is the $\frac{n}{2}$ value.
The estimate for the **lower quartile (LQ)** is the $\frac{n}{4}$ value
The estimate for the **upper quartile (UP)** is the $\frac{n3}{4}$ value
The **interquartile range (IQR)** is UQ - LQ

A **box plot** (sometimes called a box – and – whisker diagram, displays a data set to show the **median** and **quartiles**. **Comparative box plots** are **box plots** for two different sets of data drawn on the same scale.

The interquartile range measures the spread of the middle 50% of the data. To describe a data set (or population) give a measure of average and a measure of spread. To compare data sets, compare a measure of average and a measure of of spread.

The median and interquartile range are not affected by extreme values of **outliers**. When there are extreme values, the median and interquartile range should be used rather than the mean and range.

Maths Homework

All maths homework will be set on Sparx. Students can login by pressing “login with google” when they are on their school logins.

The homework will contain the following components:

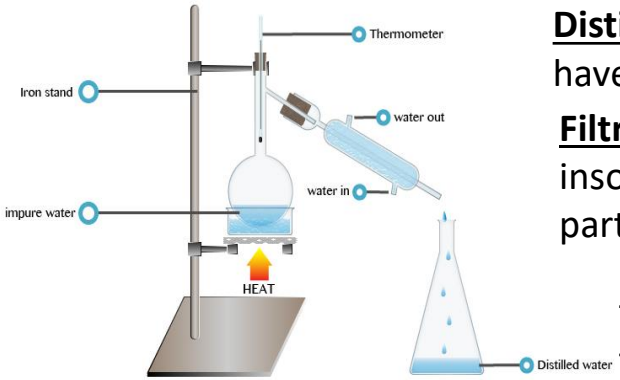
- **consolidation** of the learning completed in the week;
- ‘**flipped learning**’, where student will investigate work to be completed in class later;
- **retrieval** of previous learning, to practise bringing previously learned skill back into working memory;
- and **revision** for in-class tests.

We will use Sparx for revision for termly tests and support at home (using the curriculum maps on the maths section of the website).

Homework is every week. We offer homework help once a week at lunch on a Tuesday. Students can, of course, talk to their teachers any time they like to ensure they complete homework to 100%.

If a student completes all their homework in a year, they will have done the equivalent of 10 weeks of extra maths lessons every year.

Year 10 - Science Knowledge Bank - Spring Term (Chemistry)

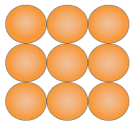


Distillation – Used to separate liquids that have different boiling points.

Filtration - used to separate particles of insoluble solids from a solvent (liquid). The particles get stuck in the filter paper.

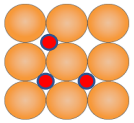
Crystalisation – Used to produce solid crystals from a solution. When the solution is warmed, the solvent evaporates leaving behind a more **concentrated solution**

Pure and Impure Substances – Something 'pure' as a chemical that is natural. This is a substance that is made up on one type of atom. If there is more than one type of atom, then that substance is called 'impure'.

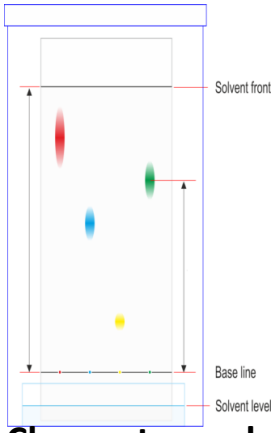


This particle diagrams shows a pure substance.

This particle diagram shows an impure substance.



Substances can be tested to find out if they are pure. You can test melting points, boiling points or density. The more impurities that are added to the substance, the more the above will change.



Chromatography – A separation technique used to separate mixtures of soluble substances.
Relies on two phases
Mobile phase – solvent in the liquid phase
Stationary phase – the chromatography paper which is absorbent

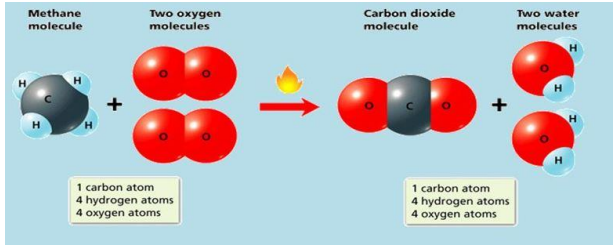
Chromatography – Rf Values

Rf = Distance Travelled by Substance
Distance Travelled by Solvent

Remember there is no units for Rf, and the figure you calculate should not be over 1.

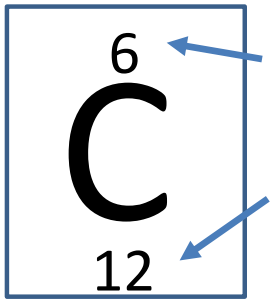
Conservation of mass

Law of conservation of mass - No atoms are lost or made in a chemical reaction. Instead , the atoms join together in different ways for form products, this is why, in a balanced symbol equation , the number of atoms of each element is the same on both sides.



Year 10 - Science Knowledge Bank - Spring Term (Chemistry)

Relative formula mass (RFM)

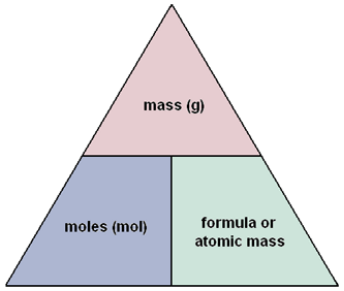


This is the atomic number (number of protons)

This is the atomic mass (number of protons and neutrons)

The relative formula mass is the **total mass of the all the atoms in a molecule**.

Avagadros constant and the mole - The number of units ir one mole of any substance is called Avogadro's number or Avogadro's constant. It is equal to **6.02×10^{23}**



Mole Calculations

There is a relationship between the **relative formula mass** (M_r), and the **mass** of one **mole** of a substance:

The mass of 1 mol of a substance is its *RFM* in grams (g).

Moles and Concentration

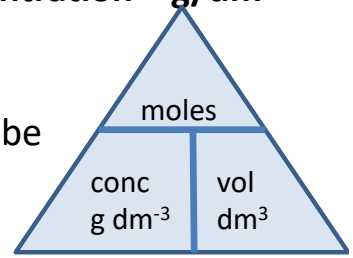
Concentration

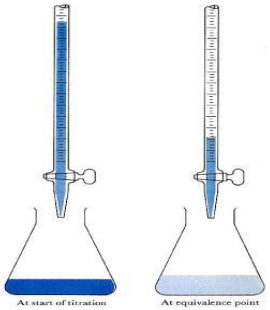
"The relative amount of a particular substance contained within a solution or mixture or in a particular volume of space."

Concentration = $\frac{\text{Mass of solute}}{\text{Mass of solvent}}$

Concentration = g/dm³

Concentration in moles/dm³ (molarity, M) can be calculated using the following triangle:





Titration

A titration is a laboratory technique used to determine the concentration of a solution by gradually adding a known concentration of another solution until a reaction is complete. You calculate concentration using the equations above.

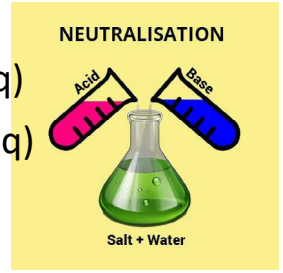
Neutralisation

H+ ions formed when acids dissolved in water (aq)

OH- ions formed when alkali dissolved in water (aq)

$$H^+ (aq) + OH^- (aq) \rightarrow H_2O(l)$$

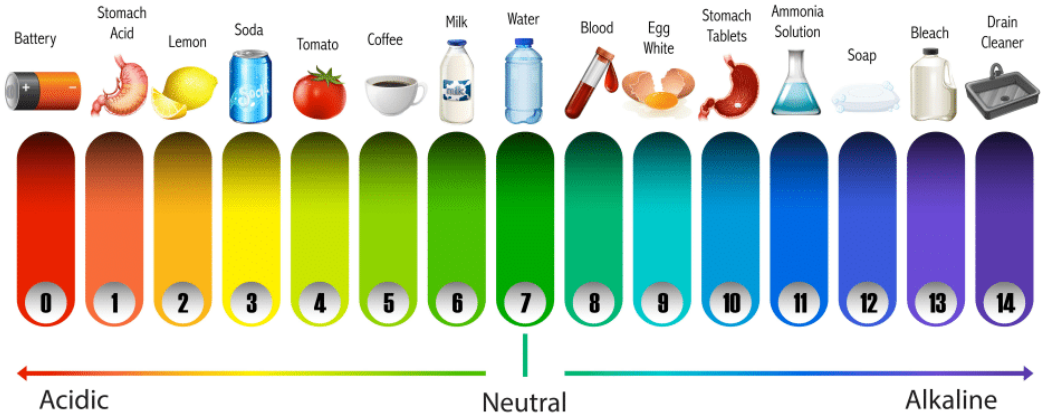
Acid + Alkali Salt + Water



Year 10 - Science Knowledge Bank - Spring Term (Chemistry)

pH Scale

A scale which shows you how acidic or alkaline something is. You can test this with a pH meter, Universal indicator or Litmus. This is a logarithmic scale and each value below pH7 is 10 times more concentrated.

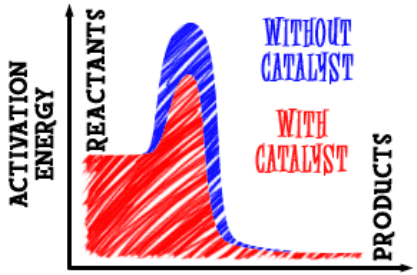


Acid strength and concentration

Strong acids **dissociate completely** in water producing **higher** concentrations of **H+** ions **Weak** acids **do not dissociate completely** producing lower concentrations **of H+** ions.

Factors affecting Rates of Reaction

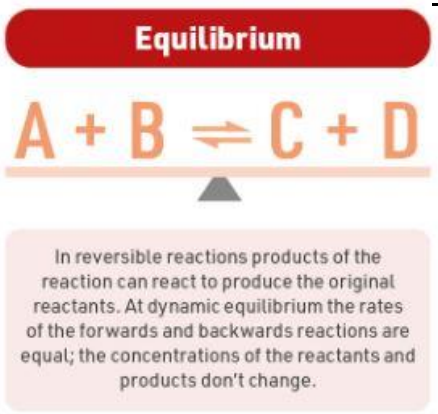
The rate of reaction tells you how fast reactants turn into products.

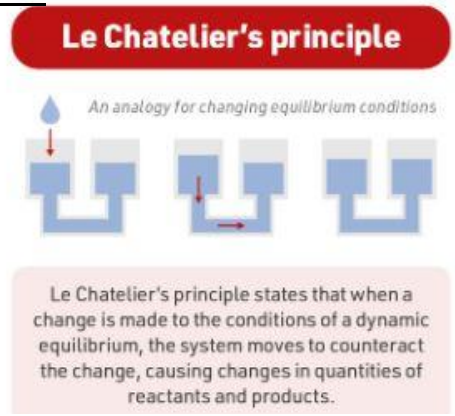


Four main factors affecting rates of reaction, **Temperature, Pressure, Surface area and Concentration**

Catalysts also affect rate of reaction by providing an alternative reaction pathway lowering activation energy, they speed up rates of reaction without being used up. Catalysts can be chemical (Potassium Iodide) or biological (enzymes).

Equilibrium





COMPUTER SCIENCE Knowledge Organiser 3 : Data Storage

1. Data units	
Bit (b)	The smallest unit of data. 0 or 1
Nibble (N)	4 bits
Byte (B)	8 bits (note the difference between b and B)
Kilobyte (KB)	1000 bytes. Note KB is different from Kb
Megabyte (MB)	1000 KB
Gigabyte (GB)	1000 MB
Terabyte (TB)	1000 GB
Petabyte (PB)	1000 TB

2. Conversions
Binary to Denary
Denary to Binary
Hexadecimal to Denary
Denary to Hexadecimal
Binary to Hexadecimal
Hexadecimal to Binary
Left Binary Shift
Right Binary Shift

3. Operations	
Binary addition	You should arrange the two binary numbers above each other so that the columns line up. Start on the rightmost digit and add them. If there are any carries, write them down next to the next left column.
Overflow	If the answer to the left column results in a carry, this is known as an overflow and it causes an overflow error. This can cause problems if a computer program hasn't been written to handle overflows.
Left Binary Shift	Make the number longer, and therefore bigger. Each place it shifts will double the value. A binary left shift of one place (<<1) will double the value, a binary left shift of two places (<<2) with quadruple.
Right Binary Shift	Make the number shorter, and smaller. The right most digit is "lost", so we forget about it. A binary right shift of one place (written as >>1) halves the number, and a binary right shift of two places (>>2) will quarter it.

4. Characters	
Individual Characters	Each character is assigned an individual binary code to represent it. The number of bits depends on the 'encoding' used
Character Set	The name given to a collection of characters matching to binary codes. There are many examples.
Choice of Character Set	A character set encoded with more bits allows more characters. This is useful for accents, symbols, emojis, other languages (e.g. Chinese)

5. Examples of Character Sets	
ASCII	7-bits to represent characters allowing 127 characters to be represented
Unicode	16 / 24 / 32 bits. Covers many modern and historic languages, as well as lots of symbols which are used in maths and other specialist areas

6. Images	
Pixel	The smallest element of a bitmap image. Pixels desk
Vector vs Bitmap	A vector image describes the lines and shapes. A bitmap image consists of rows of coloured dots.
Colour Depth	The number of bits used to represent each pixel in a bitmap image. An 8 bit image can show 2^8 or 256 colours.
Resolution	In a bitmap image resolution is measured in DPI (dots per inch). The higher the resolution the better the picture quality
Metadata	Data that is saved before and after the image to tell the computer how to decode the image. It includes the size in pixels (width x height), the colour depth, the resolution, the GPS location of where the image was taken, etc.
Image size	The size of an image is width x height x colour depth (+10% for metadata)
Factors	Greater colour depth and/or greater resolution will make the file size bigger, and improve the quality of the image; and vice versa

7. Sound	
Analogue / Digital	Analogue sound waves must be converted into digital sound waves by taking a sample of the sound at set intervals. This is because computers can only work with digital 'numbers', and not analogue 'sound'
Sample rate	Number of times analogue signal is sampled per second. Measured in Hertz
Bit depth	Number of bits used per sample. Sometimes known as sample resolution
File size	Sample rate x sample resolution x seconds
Factors	Larger sample rate and/or bit depth will make the file size bigger and improve the playback quality; and vice versa. Also, making the duration of the recording longer will make the file size bigger, and vice versa

8. Compression	
Compression	Compression is when a file is encoded so it uses fewer bits than the original file format
Lossless compression	Gets rid of unnecessary data to re-present data without losing any information. This process is reversible
Lossy compression	Gets rid of the least essential data. This is an irreversible process: once data is lost it can't be recovered

ETHICS Component 3 Islam – Practices

Key words

Ibadah – acts of worship; any permissible action performed with the intention to obey God.
Shahadah – declaration of faith
Salah – prayer five times a day
Zakah – charity, giving money to the poor.
Sawm – fasting during Ramadan
Hajj – pilgrimage to Mecca
Niyyah (intention) – having the right intention to worship God.
Sadaqah – additional giving, separate from Zakah.
Qibla – the direction to face during prayer (towards Mecca)

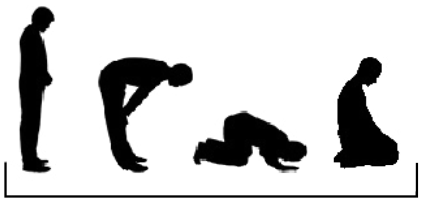
Du'a prayers – personal prayers which may be said at any time of the day.
Ramadan – ninth month of Islamic year in lunar calendar. 11 days shorter than solar calendar so Ramadan moves every year.
Jihad ('to strive') - There are two forms of jihad.
Greater Jihad- the daily struggle and inner spiritual striving to live as a Muslim.
Lesser Jihad – the physical struggle or holy war in defence of Islam.
Id-ul-Adha – Festival of sacrifice – commemorate the sacrifice of a sheep by Ibrahim instead of his son, Ishma'il.
Id –ul Fitr – Festival of fast-breaking – end of Ramadan.
Ashura – day of sorrow & inspiration. Falls on the 10th day of month of Muharram. V Important day for Shia – commemorate death of Husayn.
Ten Obligatory Acts (Furu ad-Din) – most important practices in Shia Islam.

1. The Shahadah

The declaration of faith which says 'There is no god but God and Muhammad is his prophet.' The other four pillars are outward expressions of this deeply held belief. 'God witnesses there is no deity except Him.' Q 3 Shahadah is repeated in Salah daily and also in call to prayer. Furthermore, these are first words whispered into new born baby's ear. Testament to monotheism (belief in one God). 1st pillar said to become a Muslim or revert; all born Muslims and so return to faith.

2. Salah

Prayer is most important way to worship God. Expected 5 times a day. Give thanks and submit to Allah. 'Prayer prohibits immorality and wrongdoing.' (Q 29). Preparation for prayer includes being respectful and showing reverence and concentration. Part of this is **Wudu** – ceremonial washing of body – hands, mouth, nose face, arms, head and feet. Sign of inner cleanliness. Sunnah indicates Muslims should pray 5X from dawn to dusk. Prayer involves **prostration** in **ra'kah** – movements of prayer. Facing Mecca.



Second Rak'ah

Types of prayer

Jumu'ah are **congregational prayers** which happen on a Friday at midday. Men are expected to attend the mosque.
Du'a is personal prayer which takes place after prayers of duty.
If Muslims miss a prayer they should make it up – 'If one of you sleeps or misses a prayer…let him offer the prayer when he remembers.' Hadith.

When Muhammad went on night journey he received the instruction from Allah through negotiation of Musa to pray 5X a day.

3. Zakah

All Muslims are expected to perform Zakah as a regular duty by giving 2.5 %. Qur'an commands to give to those in need. It is an obligation and a form of worship. Zakah is a sign of **cleansing** and purity. Wealth can cause **greed** which is evil, Zakah is a way of purifying wealth. Our wealth is not ours but given by God and must be shared with other humans for benefit of all. Humans have a role as **khalifahs** (**stewards**) – God's representatives on earth. That means that humans are looking after this world and possessions to pass on to the next generation. Therefore Muslims should view possessions as their own. The Prophet Muhammad practiced zakah as a practice when he became ruler in Medina. Those that can receive Zakah include the poor, needy and travellers. There are also Muslim charities such as Islamic Relief and Muslim Aid which focus on healthcare and education projects in developing countries. **Sadaqah** is giving from the heart out of generosity and compassion

4. Sawm

Fasting should take place during **Ramadan** and is considered the holiest month of the year because it is the month when Prophet Muhammad first received revelation of the Qur'an. Fasting is a way of practicing **self-control** by refraining from eating, drinking, smoking and sex from dawn til dusk for 30 days. It is a time of purity and worship. Starts with new moon and ends with **Id-ul-Fitr** (celebration). Fasting is broken each day after the sun has set with the **iftar** meal. These meals are often very social with friends, family and neighbours. Muslims recite the whole Qur'an over Ramadan during special night prayers. On 27th day, Muslims celebrate **Laylat-ul-Qadr** – Night of Power – revelation of Qur'an. Why do Muslims Fast? Commanded in Quran. Follows example of Prophet. Brings Muslims closer to each other. Worship Allah. Reminds Muslims of hungry and poor. Promotes self-control.
Who should fast? All except those young, ill, travelling.

5. Hajj

Only pillar that is not compulsory. Compulsory for those who are able to make it physically and financially. Hajj is often the ambition of a lifetime. **Haji** (male) and **Hajjah** (female) are special titles for those who complete Hajj – great honour.
Importance – Ibrahim threw stones at devil to drive him away when he was being tempted not to follow God's order to sacrifice Isma'il. Ibrahim's wife, Hajar, searched frantically for water in desert. Miraculously shown Zamzam well. Ibrahim built Ka'ba. Mecca was where Prophet was born, received revelations, returned to reclaim city. Hajj takes believers to sacred sites around Mecca, Saudi Arabia. Muslim men will wear two white sheets. Women must wear plain long garment. State of Ihram – purity during Hajj. Key events – **Tawaf** – circling Kaba. Walk 7 times between **Mawah** and **Safa** like Hajar. Drink from **Zamzam** well. **Wukuf** –standing on plain of Arafat remembering God's forgiveness. **Mina** – throwing stones pillars (representing devil.)

Greater Jihad

Duty to remove evil from society, Muslims must fight for justice in the world when you have removed evil from your own life. Greater Jihad is struggle within oneself. It is **non-violent** and **spiritual**. Jihad (struggle) is required to perform five pillars, follow **Sunnah**, seek justice and avoid temptation. The battle against laziness. Jihad is a commitment to be a better person to get up for prayers and to follow the **Shari'a**. Muslims should 'encourage what is right and forbid what is wrong' (Q.3) as part of greater jihad to make the world a better place. Muslims should be respectful of other faiths 'To you be your religion, and to me mine.' (Q 109. Part of greater jihad is tolerance. On his return from a battle, the Prophet said:

> "We are finished with the lesser jihad; now we are starting the greater jihad."

Lesser Jihad

Lesser Jihad is military struggle or holy war. In certain circumstances force should be used. Lesser jihad is struggle to remove evil from society.

Origins

When Prophet Muhammad and early Muslims were being attacked and oppressed by the Meccans, no choice but to engage.

> "Fight in the way of God those who fight against you but do not transgress." (Quran 2)

Conditions

Not aggressive but **self-defence**.
It should be **proportionate**.
Must have a **legitimate authority** or state behind it.
Civilans must not be harmed.

Islamic Extremism

Some terrorists claim to be using lesser jihad in their terror attacks such as 9/11. However, moderate Muslims reject this idea since it doesn't meet the conditions for jihad. These attacks injure civilians and are not from a legitimate authority. Islamic State is another example of a group using violence to create a state with Shariah law using barbaric methods. Muslims reject that this is 'Islamic'.

10 Obligatory Acts (Shi'a)

1st 4 obligatory acts are found in Sunni 5 pillars. Excludes Shahadah.

1	Salah	Praying 5 times a day at 3 different points.
2	Sawm	Fasting during Ramadan. Fast is broken once the sun has fully set.
3	Hajj	Pilgrimage to Mecca & **Karbala** (Husayn) & **Najaf** (Ali).
4	Zakah	Alms given 2.5%
5	*Khums*	Tax set at 20% for causes decided by Shia leaders
6	*Jihad*	Striving in the way of Allah
7	*Amrbil ma'roof*	Encouraging good actions
8	*Nahi anil munkar*	Discouraging evil actions
9	*Tawalla*	Association with good people eg those who follow the ahl al -bayt
10	*Tabarra*	Dissociation with evil people

Other Festivals

Mawlid an-Nabi – Birth of the prophet. It is a public holiday in many Muslim countries. Muslim Britons celebrate this day with joyful processions.

Laylat-ul-Qadr – Night of Power. Celebrated during Ramadan because it was first revelation of the Qur'an.

Laylat-ul-Miraj – Night journey. Celebrate time when Prophet Muhammad travelled to Jerusalem and then to heaven to the presence of Allah. Muslims tell the story to children and recite special prayers. Events at mosque.

Laylat ul-Bara'at – Night of the full moon before Ramadan. The night Muhammad would begin his preparations for Ramadan. Some Muslims stay up all night reciting the Qur'an.

Muharram

1st month of Muslim calendar, same month as **Hijrah**. More significant for **Shi'a** then Sunnis. Refrain from joyous events as **Husayn** was martyred.

Ids

Id-ul-Adha – festival of **sacrifice**.
Marks end of annual **Hajj** pilgrimage.
Chance for whole Ummah to celebrate, special for all Muslims not just those on Hajj.

Origins

Ibrahim's commitment to God in being willing to sacrifice his son, Ishmael.
God was testing Ibrahim and provided a sheep for him to sacrifice instead.

Key events

Gifts bought, new clothes, food prepared, arrangements made for sacrifice.
Visit mosque to pray, visit friends/relatives.
Not official holiday in UK. Sacrifice an animal. People ask a butcher to slaughter a sheep for them and share the meat with the community. Giving this meat to the poor is a sacred duty.
This Id should be a day of true sacrifice not in terms of animals or meat but in terms of a sacrifice within the heart of each Muslim.

Id-ul-Fitr – Festival of fast-breaking

At end of Ramadan. Public holiday in Muslim majority countries, not in UK.

Key events

Decorate homes with colourful light, banners, flags. Dress in best new clothes. Gather in mosques. Say 'Id Mubarak'. Visit family and friends. Give gifts /money to children. Eat a delicious meal. Give to poor. Cultural celebrations India- women apply Henna. Turkish children given sweets.
Zakah ul-Fitr – donation to the poor so that everyone can eat a generous meal at end of Ramadan. In addition to 2

Ashura

Sunni celebration

Many fast on this day which was established by Prophet Muhammad as a day of fasting based on Jewish day of atonement. Time to thank God for saving Israelites from Egypt.

Shia mourning – Martyrdom of Husayn

Husayn was murdered and beheaded at the Battle of Karbala in 680CE. Husayn is 3rd Imam and rightful successor of Prophet. Remember his betrayal and death with deep sense of injustice.

Practices

Processions, Plays, public displays of grief on the streets. Blood often spilled and people cry and wail.
Day of great sorrow and self-mutilation with public grief. Often Shia will make pilgrimage to Karbala. Wear black, slap chests, chant, processions, re-enactments of martyrdom, men beat themselves with chains and cut heads with swords.

Ashura in Britain

Not a public holiday but Shia Muslims may be given permission to have day off school. Public marches in London and Manchester. Not often bloodletting but instead may give blood.

French - KNOWLEDGE ORGANISER YEAR 10

Les Vacances - Holidays

la chambre d'hôte	guest room, B&B
l'auberge de jeunesse	youth hostel
le gîte	holiday cottage
le propriétaire	the owner
la colonie de vacances	holiday camp
une station balnéaire	a seaside resort
un sac de couchage	a sleeping bag

louer	to rent
loger	to stay
compter (sur)	to count (upon)
le séjour	the stay, visit
le porte-monnaie	purse, wallet
aimer mieux	to prefer

Le temps	The Time		
hier	yesterday	plus tard	later
aujourd'hui	today	puis	then
demain	tomorrow	puisque	since
le lendemain	the next day	une fois	once
depuis un jour	for (since) one day	le matin	(in) the morning
une quinzaine de jours	a fortnight	le soir	(in) the evening
d'abord	firstly	l'après-midi	(in) the afternoon
d'habitude	usually	en été	in summer
enfin	finally	en hiver	in winter
ensuite	next		

La météo	Weather Forecast
le temps	the weather; time
il y a des nuages	***it's*** cloudy
du brouillard	foggy
des orages	stormy
du soleil	sunny
du vent	windy
il neige	it's snowing
il pleut	it's raining
il fait beau	it's nice / sunny weather
au printemps	in springtime
au bord de la mer	at the seaside
à la campagne	in the countryside
il y a trop de bruit	it's too noisy
la pêche	fishing
un rendez-vous	a meet-up
se reposer	to relax
rester au lit	to stay in bed

si j'étais riche	- if I was rich
j'achèterais	- I would buy
je préférerais + infinitive	- I would prefer to...
après m'être levé(e)	- after having got up
après avoir mangé	- after having eaten
je mangerai	- I will eat

Les activités	Activities
lire un roman	to read a novel
faire	to do (or to make)
un stage de surf	a surfing course
faire de l'escalade	to do (go) climbing
la planche à voile	sailing
du VTT	Mountain Biking
faire des achats	to do the shopping
se bronzer	to get a tan, sunbathe

nager	to swim
la piste cyclable	cycle path/lane
Il faut	you must
trouver	to find
Il vaut mieux + inf	it would be better to...
plein de	lots of
en plein air	in the open air
découvrir	to discover

voyager	to travel
se déplacer	to get around
à pied	on foot
à vélo	by bike
en voiture	by car
en bateau	by boat
en avion	by plane
la station de ski	ski resort

Les pays		Countries	
je suis allé(e)	I went	au Pays-Bas	in/to the Netherlands
nous sommes allé(e)s	we went	aux Pays de Galles	in/to Wales
j'irai	I will go	en Suisse	in/to Switzerland
nous allons visiter	we are going to visit	en Écosse	in/to Scotland
en Allemagne	in/to Germany	à l'étranger	abroad
en Angleterre	in/to England		

Les bâtiments	Buildings
l'église	church
la bibliothèque	library
le château	castle
la gare	train station
la gare routière	bus station
l'hôtel de ville	Town Hall
la mairie	Town Hall
le magasin	shop
l'arrêt d'autobus	bus stop
là-bas	over there

minable	pathetic
obliger	to force
sauf	except
déçu(e)	disappointed
complet	full
essayer	to try
sale	dirty
propre	clean
en panne	out of order

La nourriture		Food	
un repas	a meal	goûter	to taste
j'ai soif	I'm thirsty	plutôt	rather
j'ai faim	I'm hungry	salé	salty (sale = dirty)
le plat du jour	meal/dish of the day		

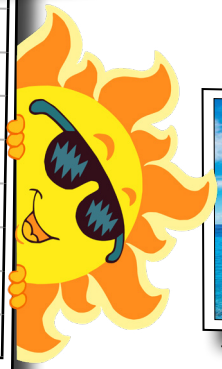
les opinions	opinions
à mon avis	in my opinion
selon moi	according to me
je pense que	I think that
je crois que	I believe that
j'aime	I like
je n'aime pas	I don't like
j'adore	I love
je déteste	I hate
je préférerais	I would prefer
j'aimerais	I would like
je voudrais	I would like
si j'avais le choix	if I had the choice
si j'étais riche	if I was rich
j'ai toujours voulu	I've always wanted

KEY PHRASES & COMPLEX STRUCTURES

j'espère + infinitive	I hope to
j'ai l'intention de + infinitive	I intend to
avant de + infinitive	before …ing
j'ai décidé de + infinitive	I decided to
Je viens de + infinitive	I have just
bien que + subjunctive	although
j'aurai seize ans en janvier	I will be 16 in January
je suis né(e) à	I was born in
après avoir mangé	after having eaten
après être allé(e)	after having been
j'ai toujours voulu	I have always wanted
je trouve ça	I find that
je pense que	I think that
à mon avis	in my opinion

je me suis couché(e) à	I went to bed at
je me suis levé(e) à	I got up at
cependant	however
d'habitude	usually
à l'avenir	in the future
aussi	also
mais	but
normalement	normally
Pour + infinitive – Pour garder la forme	to keep fit
puis	then
si	if
je voudrais + infinitive	I would like
je veux + infinitive	I want
je préférerais + infinitive	I would prefer to…

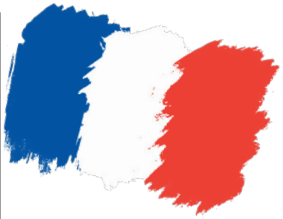
Qu'est-ce qu'il y a sur la photo?	What is in the photo?
sur la photo, il y a…	in the photo, there is…
je peux voir	I can see
(deux) personnes	(2) people
un homme	a man
un garçon	a boy
une femme	a lady / a wife
une fille	a girl / daughter
il a les cheveux bruns	he has brown hair
elle a les yeux verts	she has green eyes
il porte un t-shirt rouge	he's wearing a red t-shirt
elle porte un jean bleu	she's wearing blue jeans
ils portent des vêtements	they are wearing clothes
ils s'amusent	they are having fun
il fait beau	it's sunny
il pleut	it's raining



KEY FREQUENCY WORDS/TIME EXPRESSIONS & VERBS (PAST, PRESENT & FUTURE)

PAST	
hier	yesterday
le weekend dernier	last weekend
la semaine dernière	last week
l'été dernier	last summer
l'année dernière	last year

FUTURE	
demain	tomorrow
le lendemain	the day after tomorrow
le weekend prochain	next weekend
la semaine prochaine	next week
l'été prochain	next summer
l'année prochaine	next year



PRESENT	
aujourd'hui	today
quelquefois	sometimes
d'habitude	usually
normalement	normally
généralement	generally
souvent	often
toujours	always
tous les jours	every day
tous les soirs	every evening
tous les weekends	every weekend
une fois par semaine	once a week
deux fois par semaine	twice a week
une fois par mois	once a month
chaque année	every year
le lundi	on Mondays/every Monday
le mardi	on Tuesdays/every Tuesday

INFINITIVE	PAST	PRESENT	FUTURE
manger – to eat	j'ai mangé nous avons mangé	je mange nous mangeons	je vais manger nous allons manger
visiter – to visit	j'ai visité nous avons visité	je visite nous visitons	je vais visiter nous allons visiter
regarder – to watch	j'ai regardé nous avons regardé	je regarde nous regardons	je vais regarder nous allons regarder
aller – to go	je suis allé(e) nous sommes allé(e)s	je vais nous allons	je vais aller nous allons aller
boire – to drink	j'ai bu nous avons bu	je bois nous buvons	je vais boire nous allons boire
jouer – to play	J'ai joué Nous avons joué	je joue nous jouons	je vais jouer nous allons jouer
faire – to do	j'ai fait nous avons fait	je fais nous faisons	je vais faire nous allons faire
être – to be	j'étais – i was c'était – it was nous étions – we were	je suis – i am il/elle est – he/she is nous sommes – we are	je vais être il/elle/on va être nous allons être

GEOGRAPHY

Unit 2a

Urban Issues & Challenges

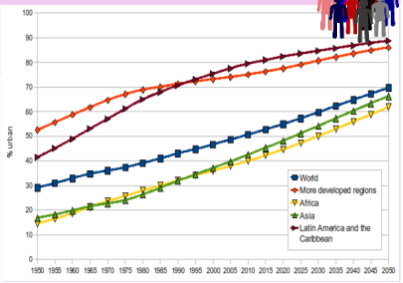
AQA

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

- Natural disasters
- War and Conflict
- Mechanisation
- Drought
- Lack of employment

Pull

- 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)

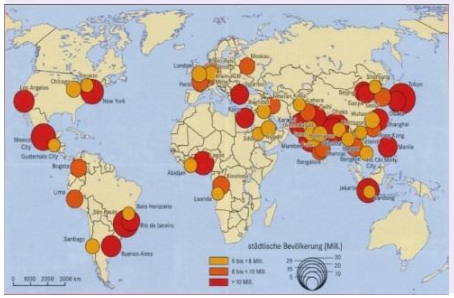
- High percentage of population are child-bearing age which leads to high fertility rate.
- Lack of contraception or education about family planning.

Lower death rate (DR)

- 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.

Sustainable Urban Living Example: Malmo, Sweden

Background & Location	Sustainable Strategies
Located in south west **Sweden**. Since 2000, has been linked by the **Øresund Bridge** across the Øresund to **Copenhagen**, **Denmark**.	Malmo is known as one of the most sustainable cities in the world. - Malmo has over 500km of cycle tracks. 1 in every 4 journeys in Malmo is by bike. People in the city collect their organic waste to make biogas to power the city's busses. By 2030, Malmo wants to be powered entirely by renewable energy sources. At the moment, wind turbines around the city power 60,000 homes. All new houses in Malmo are low energy.

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 modes 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 lose 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: London

Oyster Cards allows people to travel on London's integrated transport network.
Boris Bike scheme- people can hire a bike for journeys across London.
Congestion Charging to limit the number of cars in the city centre.

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 Case Study

Location and Background

London can be found in the South East of England, located on the River Thames which has been influential in its growth, and in the centre of the densest population of the UK. It also hosts the parliament of the UK.

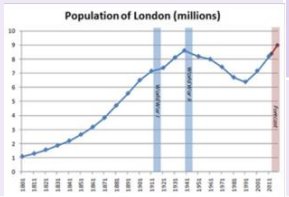
City's Importance

- Within Europe, London is part of Europe's economic core, the area producing the majority of the GDP or wealth of Europe.
- London is one of the most visited cities in the world.
- London has several major airports including Heathrow, Gatwick, City and London Stansted.
- 65% of London's land is either gardens, public green space or water.

Migration to London

There are 3 main reasons for migration to London:

1. **Internal** (within the UK) migration has been negative; that is the numbers of people moving out of London has been greater than the number of UK residents moving in. This balance has got smaller over time.
2. **International** net migration is positive, so there have always been more foreign born people moving into London than out of it
3. **Natural Change** has been positive, so births have been above deaths and this has boosted the population size.



City's Opportunities

Social: cultural mix or multiculturalism basically refers to a country or place that has more than one culture living together in close proximity. Multiculturalism is an issue in many HICs and can be viewed in both a positive light and as something that can pose problems that need careful management.

Economic: London is a major world financial centre and a range of businesses which attract a highly skilled workforce.
• London residents (aged 16 to 64 and working) are more likely to be employed in managerial, professional or associate professional and technical occupations.
• The unemployment rate was one of the highest (10%)

Environmental: Urban greening means to increase the amount and proportion of green spaces within a city. These green spaces are essential for people's quality of life. London has made attempts to offer lots of green spaces

City Challenges

Social: House price increase along with greater house shortages. Inequalities in education. Increased crime rates.

Economic: INEQUALITIES exist in London between the rich and the poor – income, education, housing.

Environmental: Urban sprawl has led to increased pressure and decline of greenfield sites around the city. London suffers from air pollution due to a dense road network and high buildings. This means that central London tends to be one of the most polluted places in the UK.

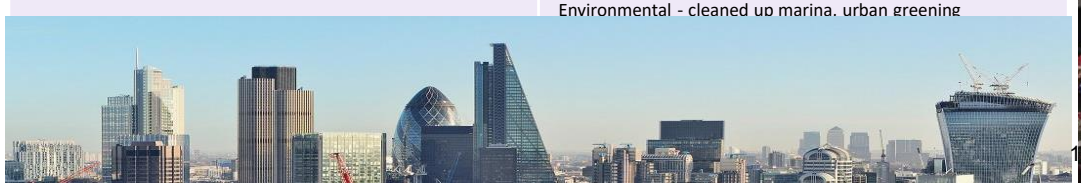
Plymouth Regeneration:Drake Circus & Mill Bay

Two focuses:

Drake Circus and Drake Leisure
Drake Circus was an old shopping centre and Drake Lesiure was the old Coach station.

Drake Circus and Drake Leisure
Social - encourage people into the city centre
Economic - People spending money in the area

Mill Bay:
Social - range of new housing
Economic - range of construction jobs, new school
Environmental - cleaned up marina, urban greening



Urban Change in a Major NEE City: LAGOS Case Study

Location and Background

Located in South West Nigeria. Africa's most populated city. Nigeria's largest city.

City's Importance

The city was originally a small fishing village. In the early twentieth century it became the capital city of Nigeria until 1991 when the government moved to Abuja.
The population of Lagos increases by approximately 600,000 each year. The Lagos State Government estimates the population of Lagos to be 17.5 million. Urban growth occurred along the line of the railway. A population boom occurred during the 1970s as the result of the growth of the oil industry. Many thousands of people moved to the city seeking jobs in this industry. 80% of Nigeria's industry is located within Lagos. It remains the main financial centre of West Africa. The city has an international airport and an important sea port.

Migration to Lagos

The main reason for migration to Lagos over the past 50 years has been rural– urban migration. People are encouraged to leave the countryside by push factors such as the lack of job opportunities and low wages. They are brought to the city by pull factors such as the prospect of well-paid work and the attraction of an urban lifestyle.
Another reason for Lagos' population growth is the high rate of natural increase in the city's population. This is due to the city's youthful population, since most migrants to the city are young. Nigeria is becoming an increasingly urbanised country. By 2015, just over half the population was still living in rural areas, but as rural– urban migration continues, the majority will be urban within the next few years.

Reasons for rural to urban migration

Education and health services are poor in rural areas. Changing climate is making the weather less predictable. Droughts and floods occur more often, now.
Farming pays low wages but requires a lot of hard work. Few job opportunities exist other than farming. There is a land shortage due to population growth.
Despite urbanisation, rural population continues to grow. Land is degraded due to farming and other activities. Land in the Niger Delta region is polluted by the oil industry. Political unrest creates insecurity. The terrorist group, Boko Haram, is active in the north of Nigeria.

City Challenges

Social: There is a severe shortage of housing, schools and healthcare centres available. Large scale social inequality, is creating tensions between the rich and poor.

Economic: The rise of informal jobs with low pay and no tax contributions.

Environmental: Shanty towns are established around the city, typically on unfavourable land, such as low lying flat land vulnerable to flooding.

Self-help schemes – Floating School

Makoko is one of the world's largest waterside slums, much of it built on stilts above the waters of the Lagos Lagoon, on the eastern fringes of the city of Lagos in Nigeria. With an estimated 2,000 people migrating to Lagos every day, many end up in informal settlements like Makoko and people started building over the water.
One of the main requirements was for more school space. The existing school is built on reclaimed land, but does not have room to expand and is also subject to periodic flooding. Adeyemi volunteered to design and help build a floating school for the area. Adeyemi designed a 3-storey A-frame multipurpose structure that could serve as a school as well as a venue for local community meetings and other activities. The whole structure floats on a matrix of 256 plastic 200-litre drums. Some of the outer drums can be used to store rainwater, a solar panel is used to supply electricity, and there are composting toilets aboard. In June 2016, however, the project was dealt a blow it collapsed during a heavy thunderstorm in Lagos.

HISTORY KNOWLEDGE ORGANISER – Weimar & Nazi Germany

Legacy: Pre 1919

Kaiser	Kaiser Wilhelm I
Chancellor	Kaiser Wilhelm II
Unification	Otto Von Bismarck
1st Reich (962-1806)	Phillip Scheidemann
2nd Reich (1871-1918)	Friedrich Ebert
Armistice	Matthias Erzberger
Demonstrations	Paul Von Hindenburg
Abdicate	Industrialisation
German Revolution	Militarism
Republic	Nationalism

Weimar Republic: 1918-32

Weimar Government	Sparticists Revolt	1919
Putsch	Kapp Putsch	1920
Guilt Clause	Reparations missed	1922
Civil Servant	French Occupy Ruhr	1923
Constitution	Passive Resistance	
Electorate	Hyperinflation	1923
Proportional representation	League of Nations	1919
Hyperinflation	Dawes Plan	1924
Rentenmark	The Locarno Pact	1925
Economy	Kellogg-Briand Pact	1928
November Criminals	Young Plan	1929
Stock Market	Wall Street	1929
American Loans	Great Depression	1929-39

Left Wing – Sparticists/Communists
Right Wing – Freikorps brigade/Kapp Putsch

Rise of Hitler: 1919-32

National Socialist German Workers Party (NSDAP)

Democracy	**WWI ended**	**1918**
Orator	**Hitler joins the NSDAP**	**1919**
Constitution	**Hitler leader the NSDAP**	**1921**
Reichstag	**The SA formed**	**1921**
Elections	**Munich Putsch**	**1923**
Paramilitary Force	**Re-launch of Nazi Party**	**1925**
Nationalism	**Hitler forms the SS**	**1925**
Socialism	**Bamberg Conference**	**1926**
Totalitarianism	**German Election**	**1933**

Key People

Rudolph Hess	**Joseph Goebbels**	**Ernst Rohm**
Heinrich Himmler	**Hermann Goring**	**Wilhelm Frick**
Reinhard Heydrich	**Martin Niemoller**	**Cardinal Galen**
Edelweiss Pirates	**White Rose Group**	**Swing Kids**
Gertrud Scholtz-Klink	**Sofie Scholl**	**Adolf Hitler**

Dictatorship: 1932-9

Establishing	**Chancellor**	**1933**
Dictatorship	**Reichstag Fire**	**1933**
Trade Unions	**Enabling Act**	**1933**
Political Parties	**Religious Persecution**	**1933**
Decree	**Gestapo**	**1933**
Opposition	**Concordat**	**1933**
Nationalism	**Nuremberg Rally**	**1933**
Influential	**The Peoples Court**	**1934**
Patriotism	**Night of the Long Knives**	**1934**
Denunciation	**Fuhrer**	**1934**
Interrogation	**Total Power**	**1934**
Terror	**Machinery of Terror**	**1933-9**
Enlightenment		

Propaganda ('weapon on the wall')

Life in Germany: 1933-9

Unemployment	Women's leader of DFW	1934
Blood and Soil	Lebensborn Programme	1935
Autobahns	Strength through joy	1935
Mother's Cross	Beauty of labour	1935
Bronze Medal (4)	Reich Labour Service	1935
Silver Medal (5-7)	Volkswagen Scheme	1935
Gold Medal (8+)	Rearmament	1935

DAF (Deutsche Arbeitsfront) German Labour Front
BDM (The league of German Maidens)
DFW (German Women's Enterprise) 193

'Kinder', 'Kirche', 'Kuche'. (children, church, kitchen)

Racial Policy

Anti-Semitism
Eugenics
Racial hygiene
Kristallnacht
Ubermenschen
Untermenschen
Social-Darwinism
Concentration Camps

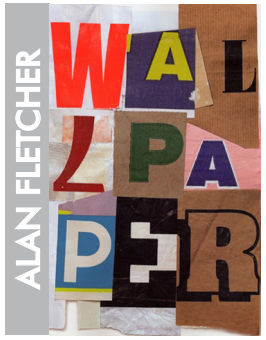
Jews
Gypsies
Slavs (Eastern Europe)
Black people
Homosexuals
Disabled
Tramps
Non-Aryan people

Art Component 1: Creative Practice in Art & Design

Fragments of Our World

Key Words investigation, visual language, approaches, skilful, comparisons, risk-taking, communication, insightful, practitioners, two-dimensions, manipulate, traditional, contemporary, disciplines, constraints, line, tone, shape, colour, pattern, texture, composition, space, depth, light, shadow, harmony, contrast, symmetry, asymmetry.

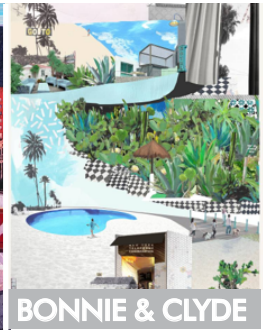
Materials, Techniques and Processes: pencils, graphite, ink, pen and wash, drawing pens, chalk, pastels, hand-made tools, print-making, painting, acrylic, watercolour, ink, digital drawing, manipulation, textiles, print, embellish, collage, photography and digital manipulation.



Learning Aims:

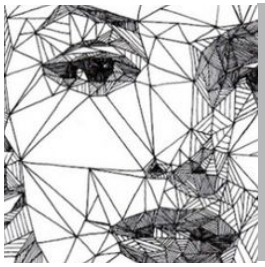
A. Use investigation and experimentation processes in art and design practice.
B. Generate and communicate art and design ideas.
C. Develop practical skills through application and review.
D. Record and communicate skills development.

Fragments of Our World:
(a small part broken off or separated from something, break or cause to break into fragments)
Artists, designers and crafts people need 2D skills and knowledge to communicate their ideas effectively. Working in 2D requires skills in handling 2D materials and techniques. In Component 1 you will experiment with a range of 2D mark-making activities whilst exploring and being inspired by *Fragments of Our World*. You will focus on either **people, architecture or natural forms.**



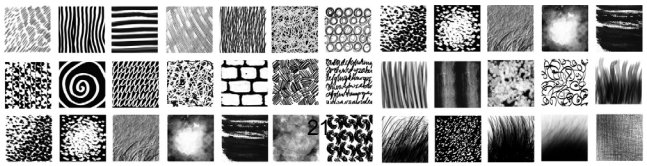
Tips for Success

- Investigate historical and contemporary practitioners.
- Consider your audience needs.
- Research primary and secondary sources.
- Respond to the work of others practically.
- Solve creative problems.
- Reflect on your ideas.
- Support visual ideas with diagrams, annotations and explanations.
- Consider health and safety practice.
- Learn from mistakes through trial and error.
- Stay organised.
- Consider presentation.



Useful Websites

- *www.artjournal.co.uk*
- *www.creative-choices.co.uk/industry-insight/inside/design*
- *www.culture24.org.uk/*
- *www.fashion-era.com/C20th_costume_history*
- *www.graphicdesign.about.com/arts/graphicdesign*
- *www.masters-of-photography.com*

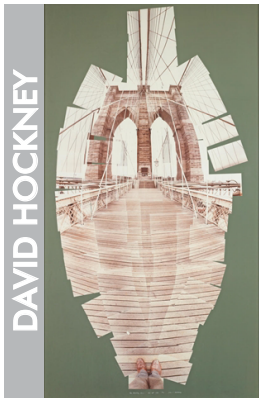


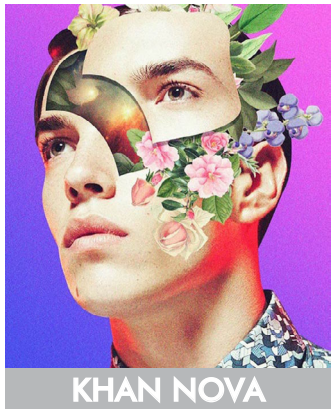
Use investigation and experimentation processes in art and design practice - research a range of practitioners, using primary and secondary sources. Develop understanding of art and design practice through investigation and experimentation, exploring how practitioners use materials, techniques and processes to find creative solutions and communicate with audiences.

Generate and communicate art and design ideas - explore and develop a range of experimental and imaginative ideas, applying research and practical investigation to visually communicate ideas.

Develop practical skills through application and review - develop practical skills through exploration of materials, techniques and processes. Practise and review skills relevant to creative intentions in order to develop and improve work.

Record and communicate skills development - use methods of recording to document and communicate development of skills and creative work.





Artists to Investigate:
Erik Jones, Josh Bryan, Nick Gentry, David Hockney, Khan Nova, Ed Fairburn, David Mack, Faig Ahmed, Fernand Léger, Daniel Clark, Alan Fletcher, Charles Sheeler, Jon Measures, Rebecca Vincent, John Piper, Sey Fedulor, David Schnell, Sophie Layton, Bonnie and Clyde, Florian Nicolle, Ray Van Nes, Irene Imfeld, Matthieu Paley, Ian Murphy, Edward Weston and Amiria Gale, Sophie Layton and Bonnie & Clyde.

1.3 Putting a Business Idea into Practice

1.3.1 Aims & Objectives

Aims – a long term, strategic goal eg grow the business

Objective- a short term specific target eg increase market share by 5% this year

Financial Objective – one that involves money eg improve sales, profit, market share, survival etc

Non Financial Objectives – one that does not involve money : personal satisfaction, challenge, control, independence, social benefit

1.3.2 Revenue, Costs and Profit

Formulas needed

Revenue = Selling Price x Quantity

Profit = Revenue – Total Cost

Total Cost = Fixed Cost + Variable Cost

Total Variable Cost = Variable Cost per unit x Quantity

Breakeven = Fixed Cost/(Selling Price-Variable Cost)

Margin of Safety = Actual Sales – Breakeven Level

Interest = (Total Repayment – Borrowed Amount)/Borrowed Amount

1.3.2 Revenue, Costs and Profit

Key Terms

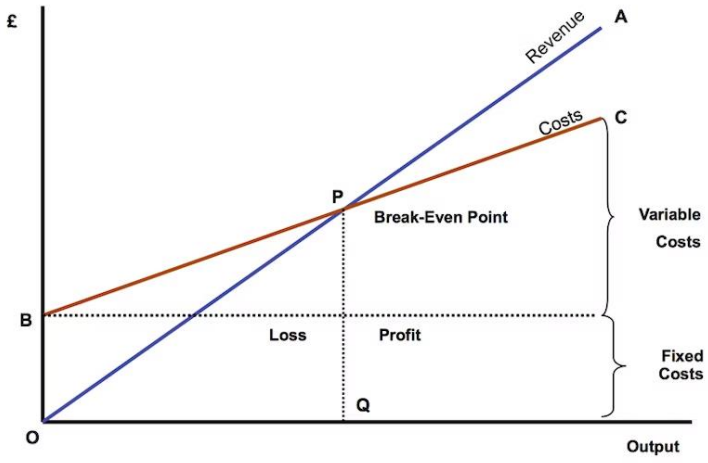
Variable Costs – costs that change with the level of output eg raw materials

Fixed Costs – costs that do not change with the level of output eg rent

Interest – cost of borrowing money from the bank or other financial institution

Breakeven – the minimum level of output needed to cover all costs, so no profit or loss is made

Margin of Safety – the amount of sales the business can afford to lose without making a loss



1.4 Putting a Business Idea into Practice

1.4.1 Business Start ups

Franchise – when one business (the franchisor) sells the right to use their brand and sell their product to an individual or other business (the franchisee).

Sole Trader - a business owned by only one person, who can employ others if they like. A sole trader has unlimited liability.

Partnership – business owned by between 2-20 partners who all own part of the business and normally are involved running the business. Partners have unlimited liability.

Private Limited Company – Tend to be family run businesses. They can sell shares to family and friends but not to the general public. Shareholders have limited liability.

Liability – the amount of financial loss or criminal/civil damage you are responsible for.

Unlimited Liability – The owners are responsible for all the debt of the business and could lose their personal possessions like home and car because of it.

Limited Liabiliity – any financial loss is limited to the financial investment made into the company, any personal assets are safe.

1.4.2 Business Location

Factors influencing business location

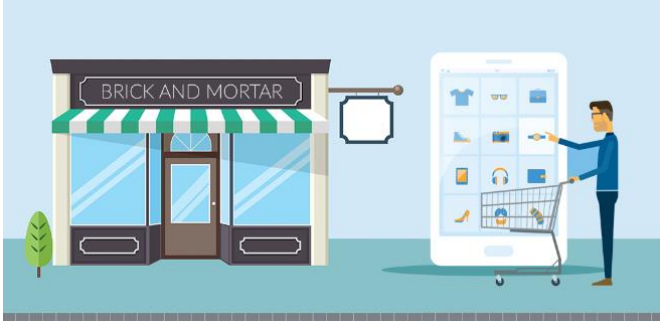
Proximity (closeness) to: customers, staff, materials and competitors

The nature of the business activity

The impact of the internet on location decisions

e-commerce vs bricks and mortar shops

e-commerce saves on need for expensive high st location next to customers saving money but many enjoy trying goods before they buy.



Cash Flow Forecasts

Opening Balance – money in the bank at the beginning of the month

Cash in – all money into the business including revenue, investment, loans etc

Cash out – all money out of the business including purchases and expenses

Net Cash Flow – How much the money in the business has changed

Closing Balance – money in the bank at the end of the month

AMERICAN EXPRESS

CASH FLOW FORECAST

£	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9
Opening Balance	**0**	**(4,850)**	**(9,950)**	**(14,300)**	**(8,650)**	**(13,700)**	**(18,500)**	**(21,900)**	**(26,400)**
CASH INFLOW									
Online Shopping Revenues	2,000	2,250	2,500	3,000	3,250	3,500	4,000	4,250	4,500
Government Grant				10,000					
Total Inflows	**2,000**	**2,250**	**2,500**	**13,000**	**3,250**	**3,500**	**4,000**	**4,250**	**4,500**
CASH OUTFLOW									
Office rental	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)	(1,000)
Employee Salaries	(5,000)	(5,000)	(5,000)	(5,000)	(6,000)	(6,000)	(6,000)	(6,000)	(6,000)
Utilities (energy, water and broadband)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)	(300)
Travel	(450)	(450)	(450)	(450)	0	0	0	(450)	(450)
Digital Marketing	0	(500)	0	(500)	(500)	(500)	0	(500)	(500)
Shipping	(100)	(100)	(100)	(100)	(500)	(500)	(100)	(500)	(500)
Total Outflows	**(6,850)**	**(7,350)**	**(6,850)**	**(7,350)**	**(8,300)**	**(8,300)**	**(7,400)**	**(8,750)**	**(8,750)**
NET CASHFLOW									
Closing balance	**(4,850)**	**(5,100)**	**(4,350)**	**5,650**	**(5,050)**	**(4,800)**	**(3,400)**	**(4,500)**	**(4,250)**

Parentheses denote negative numbers

Sources of Finance for Business

Short Term

Overdraft – having a negative balance in the bank account

Trade Credit – buy now pay later given by suppliers

Long Term

Personal Savings – business owners putting in their own money

Venture Capital – (Dragon Den) experienced business people invest for a share of the business and lend their expertise and experience to help business succeed

Share Capital – selling shares in the ownership of the business to others

Loans – borrowing money from a bank and repaying with interest

Retained Profit – using profit made previously to reinvest in the business

Crowd Funding – using online platforms to raise money from a range of investors/donors in exchange for a loan, shares, discounts/privileges etc

1.4.3 The Marketing Mix

Key Terms

Marketing Mix – 4Ps – Price Product, Place and Promotion

Adjusting the marketing mix based on the levels of competition. Eg lowering prices if a new competitor starts to steal customers

How changing customer needs impact the marketing mix eg with more people working and more living alone the need for convenience in food is leading to increase in ready meals and deliveries

Impact of technology on the marketing mix, especially e-commerce impacting place and digital communications influencing Promotions.

deliveroo

1.4.4 Business Plans

Business Plans tend to include:

The business idea; aims and objectives; target market (market research); location, marketing mix; forecast revenue, costs and profit; and sources of finance.

Business Plans are used to attract finance from banks (loans) or investors as they show why the business needs the money and by when they will be able to pay it back.

They also help to minimise risk as they aide entrepreneurs to consider different aspects of the business and get prepared. Eg arrange overdraft if a shortage of funds identified for a short period of time.

Year: 10 Child Development	Unit Title: Developmental Norms for Children	Term: 2
The Powerful Question: What are the expected development norms for a child aged between 3 to 5 years		**You should be able to explain:** Explain, using examples, the expected physical, intellectual and social developmental norms for a child aged 3 to 5 years.

Physical Development – Advancements of motor and fine skills

Intellectual Development – Growth of a child's ability to think

Social Development – Building relationships and interacting with others

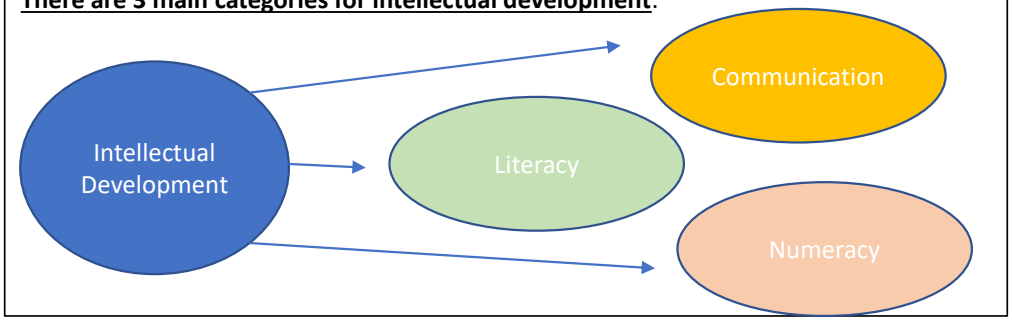
Physical Development Norms		
Age	**Gross Motor Skills**	**Fine Motor Skills**
3 Years	Start to run and walk on tip toes as balance develops Can kick moving balls as hand/ eye coordination improves.	Can use a tripod grip in order to hold a pencil. Can control their pincer grip to do up zips.
4 Years	Able to change direction when running. Are able to catch balls and throw more easily.	Can use safety scissors to cut out basic shapes. Build a 10 block tower.
5 Years	Can ride bike with stabilizers/ walk on stepping stones as balance continues to improve.	Have greater control over pencils, colouring pens in order to draw and colour.

Powerful Language	Synonyms	Definition and sentence to contextualise
Developmental Norms	**Normal Growth**	The standards at which a child's development can be measured Eg. By the age of 6 months a baby should be able to turn over from their front to their back.
Physical Development	**Body Growrh**	How children obtain physical control of the movements they make with their body eg. Fine motor skills, gross motor skills and reflexes.
Reflexes	**Unthinking Movements**	The physical reactions a new-born baby is expected to display eg. Grasp reflex
Fine Motor Skills	**Small Skills**	The small movements made with your fingers which links with the development of your vision (hand-eye co-ordination) eg. Drawing and writing
Gross Motor Skills	**Large Skills**	The large movements that the body produces eg. Kicking a ball or crawling.

Year: 10 Child Development	Unit Title: Developmental Norms for Children	Term: 2
The Powerful Question: What are the expected development norms for a child aged between 3 to 5 years		**You should be able to explain:** Explain, using examples, the expected physical, intellectual and social developmental norms for a child aged 3 to 5 years.

Intellectual Development – Growth of a child's ability to think

There are 3 main categories for intellectual development.



Powerful Language	Synonyms	Definition and sentence to contextualise
Intellectual Development	**Brain Development**	Known as cognitive development, including language, reading and writing, communication and number skills.
Communication	**Social messages**	Listening and understanding what to say in order for a child to get what they want. The ability to use their thinking skills to get their message across.
Literacy	**Reading and Writing**	The skill used to read and write.
Numeracy	**Maths**	The skill to recognise, understand and use numbers.

Numeracy Skills

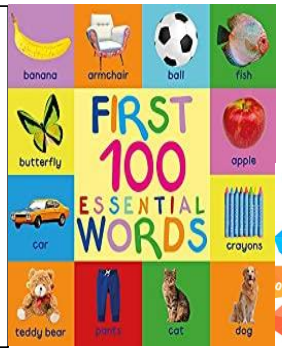
This is linked to problem solving and reasoning and is known as number skills. These include:
Speaking and using numbers e.g. there are 2 apples
Counting – including mathematical number squares
Recognising numbers e.g. 1,2,3 etc
Using mathematical ideas e.g. size, shapes, mass
Recognising and drawing shapes e.g. triangles
Recognising and making patterns e.g. odd and even numbers, sequencing
Using the correct vocabulary e.g. adding and taking away
Simple calculations e.g. 2+2
Using appropriate language e.g. Daisy has less apples now

Communication

Children use communication through observing and copying what they hear/see:
Body language – expressing feelings through the position of their body
Listening - being able to hear and understand what is being said
Verbal – building on the vocabulary that they hear
Gestures – pointing to things that children want
Sign language – children with hearing impairments may use sign language
Reading and writing – using the written form to communicate

Literacy Skills

Reading and writing are known as literacy skills. Developing a love of books with a child will help with this skill. This can be developed from an early age and can be encouraged through reading books to a child from birth.



Language is used to communicate as children listen and understand what they want to say. They use their thinking skills in order to get their message across.

Year: 10 Child Development	Unit Title: Developmental Norms for Children	Term: 2
The Powerful Question: What are the expected development norms for a child aged between 3 to 5 years		**You should be able to explain:** Explain, using examples, the expected physical, intellectual and social developmental norms for a child aged 3 to 5 years.

Social Development – Building relationships and interacting with others

Powerful Language	Synonyms	Definition and sentence to contextualise
Social Development	**Growth in interactions**	Known as cognitive development, including language, reading and writing, communication and number skills
Communication	**Social Messages**	This is closely linked with intellectual development of language and communication
Acceptable Behaviour	**Good behaviour**	How they handle emotions and the development of manners and behaving in socially acceptable ways.
Self Esteem/ Independence	**Confidence**	This is when a child has a sense of self worth or personal value.
Sharing	**Giving to others**	Sharing toys, objects and people. Also things like waiting their turn. This takes time to master
Self Confidence	**Confidence**	This is when a child has a feeling of belief and trust in their own ability

Independence/ Self Esteem

Children gradually become more able to do things independently as they develop. Children are likely to feel proud and clever each time they do something by themselves. Children will feel even more proud if they are praised by others. This has a positive effect on their self esteem, which in turn gives them self confidence. Every day routines that promote independence are extremely valuable to children. Learning the routines of self care eg. Bathing, washing and cleaning teeth. Being encouraged to try to dress themselves is important for independence and prepares children for when their parents/ carers are not around eg. Going to nursery or school. Praise should be given to emphasise independence when a child tidies away after themselves eg. Toys or taking plates and cups into the kitchen.

3 Years – Shows concern and affection for others/ Copies adults and friends/ Takes turns in games/ Separates easily from parents/ Shows a wide range of feelings/ Dresses and undresses self/ Maybe toilet trained during the day.

4 Years – Plays co operatively with other children/ Prefers playing with other children rather than alone/ Enjoys doing new things/ Becomes more creative in make-believe play/ Seeks new experiences/ Expresses likes and dislikes

5 Years – Wants to please friends/ Wants to be like friends/ Agrees to rules more easily/ Likes to sing, dance and act/ Knows who is a girl and a boy/ Knows the difference between fantasy and reality.

Year: 10 Child Development	Unit Title: Developmental Norms for Children	Term: 2
The Powerful Question: What is the importance of play?		**You should be able to explain:** To know and understand the different types of play and the relevant stages of play. .

Stages of Play

Powerful Language	Synonyms	Definition and sentence to contextualise
Solitary Play	Playing alone	Solitary play, also known as independent play, is one of the earliest stages of play where children play alone because they have not developed socially to be able to play with others yet or because they choose alone time.
Parallel Play	Playing along side others	Parallel play is a description of children playing side by side, but not interacting with each other to continue their play.
Associative play	Some playing with each other	Associative Play is one of the categories used to describe the development of social play by preschoolers. It is generally the first stage where social interaction is required in children's play as they engage in a mutual activity, though not working toward a common goal
Co-operative play	Playing with someone else	Cooperative play focuses on children working together to achieve a common goal, such as building a play structure, putting together a puzzle, or engaging in dramatic play. It has been described as the stage where children play in a group.

Types of Play

Type	What is it	Examples of manipulative play
Manipulative Play 	This involves children using their hands, (fine motor skills) for example to move, turn or screw things to make them fit.	· Puzzles · Mark making (drawing/ painting/ writing) · Shape sorters · Threading beads · Craft activities · Construction toys
Co-operative play: 	Play which takes account of others actions within their play together; sharing, group play e.g. shop keepers and customers, or games that have rules to follow.	Board games · Circle games (here we go round the mulberry bush/ the farmers in his den) · Playground games (what's the time Mr Wolf?) · Imaginary role play (dressing up/ toys/ teddies/ tea sets) · Imaginary play with small world toys (cars/ farm set/ dolls house)
Solitary play: 	Where the child plays alone, in their own space, exploring and experimenting with objects.	· Imaginary play (role play/ small world play) · Puzzles · Books · Video/ computer games
Physical play: 	Play that involves gross motor skills, the muscles and moving around, such as football or a climbing frame	· Ball games · Running/ jumping/skipping/ hopping/ crawling etc. · Playground equipment (slides/ swings) · Ride– on– toys and bikes · Push and pull toys · Dancing
Creative play: 	Where children experiment with materials, collage, painting, music, imagination.	· Music and dance · Mark making (painting/ drawing/ writing) · Making models · Sand and water play · Stories · Imaginary play

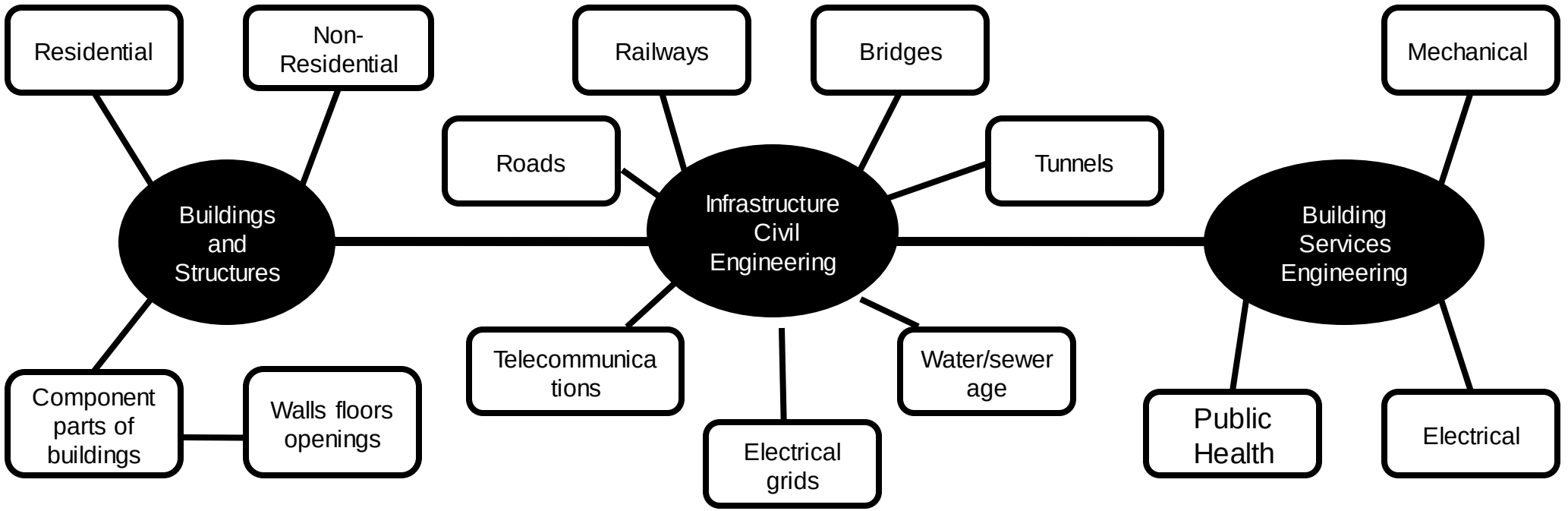
CONSTRUCTION

WJEC Level 1 / 2 Vocational Award in Construction and the Built Environment (Technical Award)

WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the built environment

1.1 The Sector



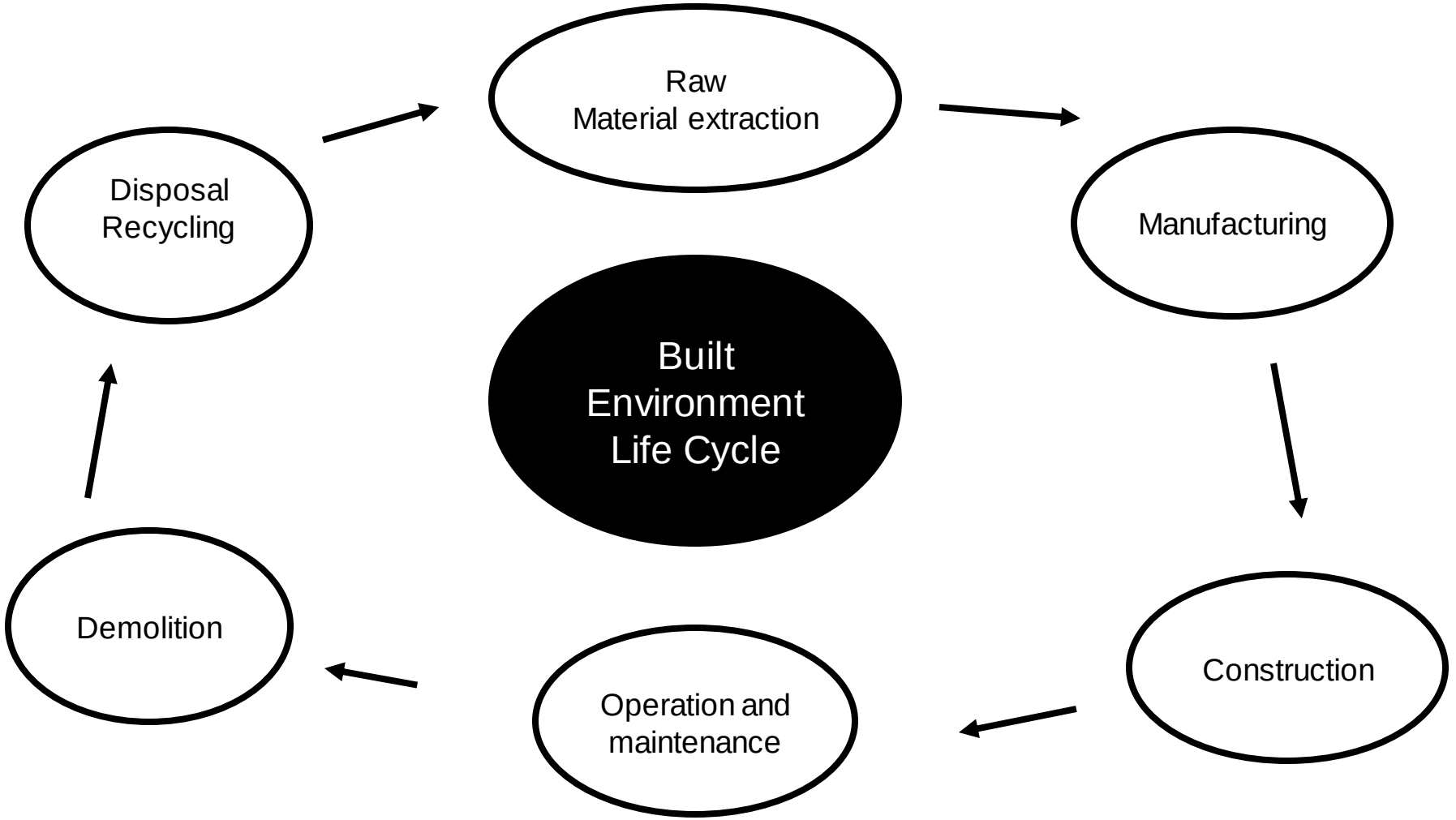
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.1 The Sector
1.1.4 Professional and managerial roles

Professional and managerial role	Description of job
Designer/ Architect	Produces detailed drawings. Creates new buildings/renovations. Designs to meet Client requirements. Post design stages of project for client.
Civil /Structural Engineer	Designs, plans and manages construction projects. Solves problems. Structural solutions, design codes, building regulations. Risk assessment
Contracts Manager and site manager	Responsible for coordinating construction site activities. Progress, meetings, resources, activities, health and safety
Surveyor	Surveys land. Sets out construction works. Produces data and drawings for Architects and structural engineers.
Quantity Surveyor	Financial management. Payments to subcontractors. Final accounts. Budgets and Costs
Professional associations	CIOB, RICS RIBA

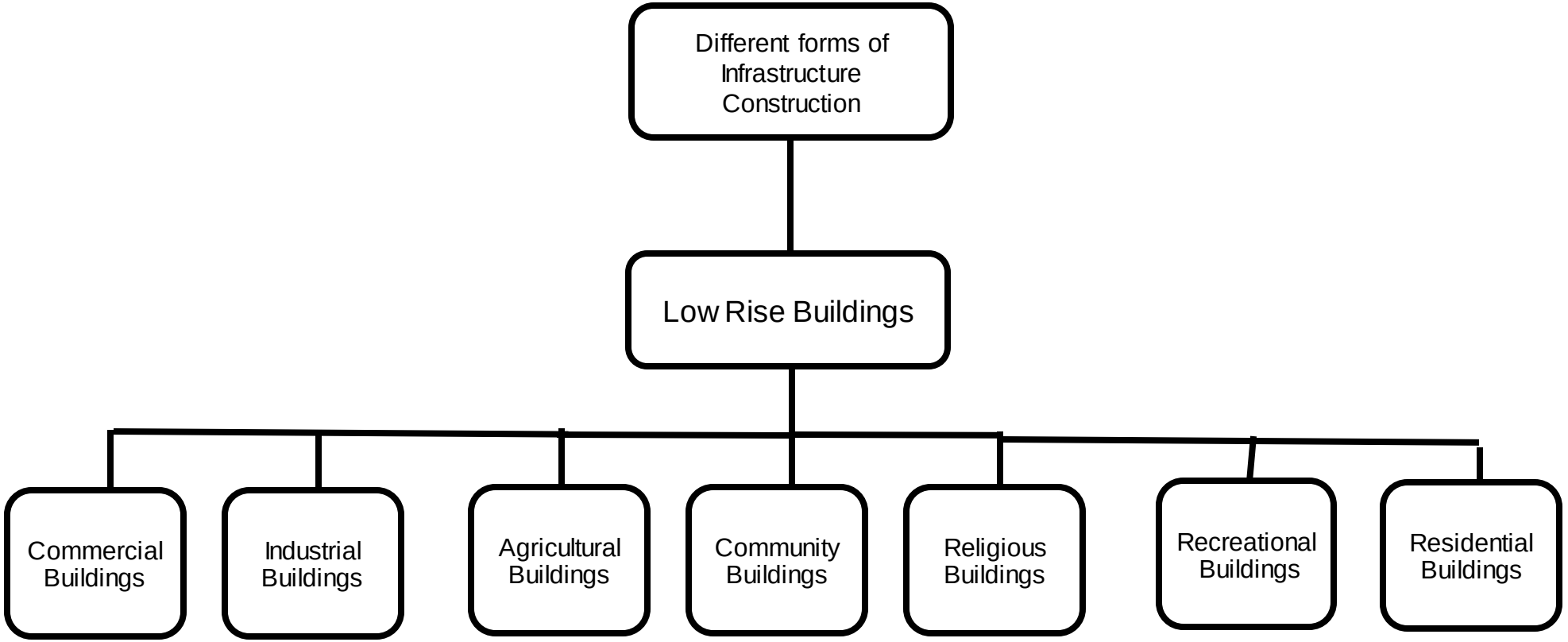
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.2 The Built Environment Life Cycle



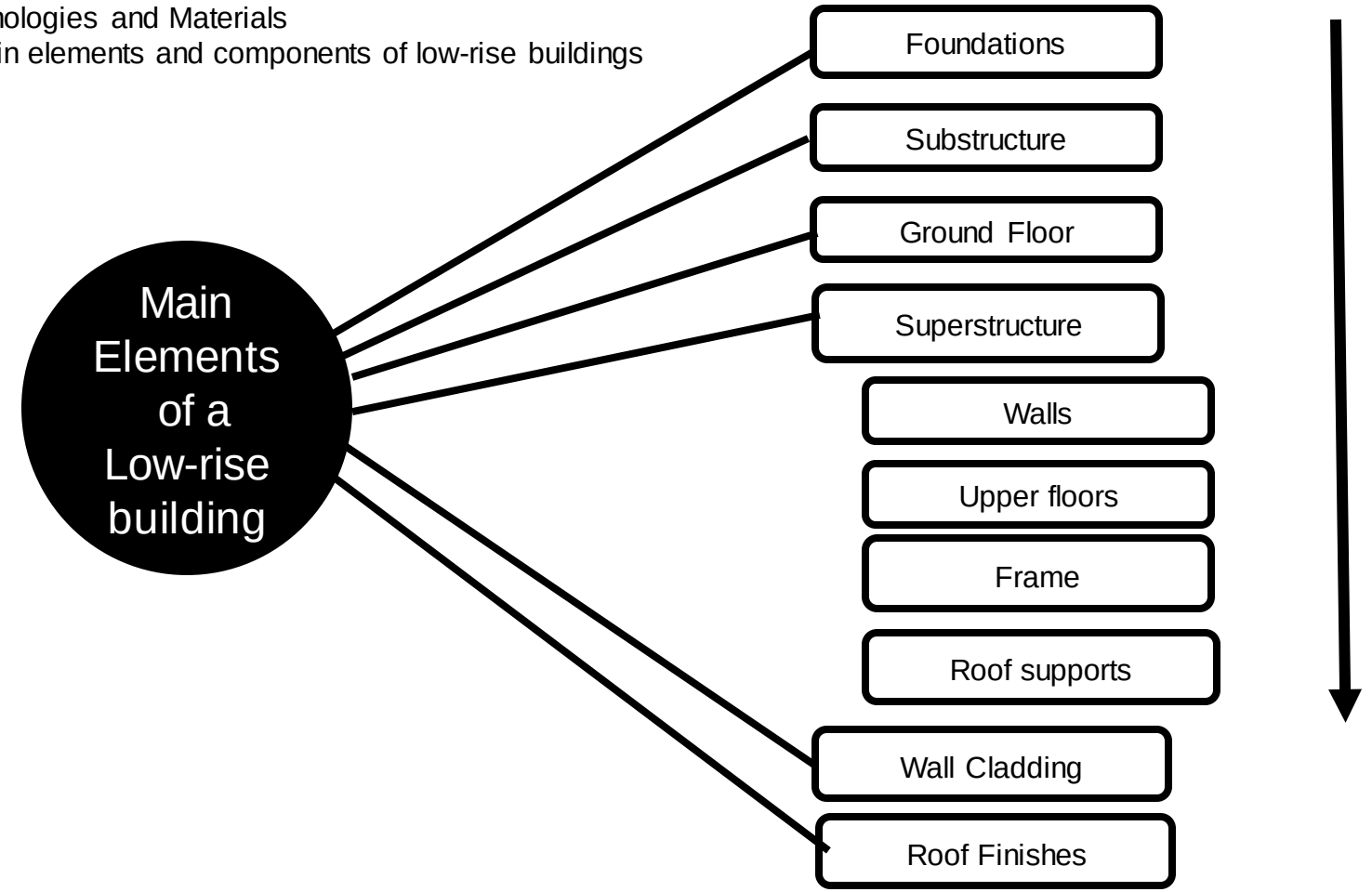
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the built environment
1.3 Types of Buildings and Structures



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.4 Technologies and Materials
1.4.1 Main elements and components of low-rise buildings



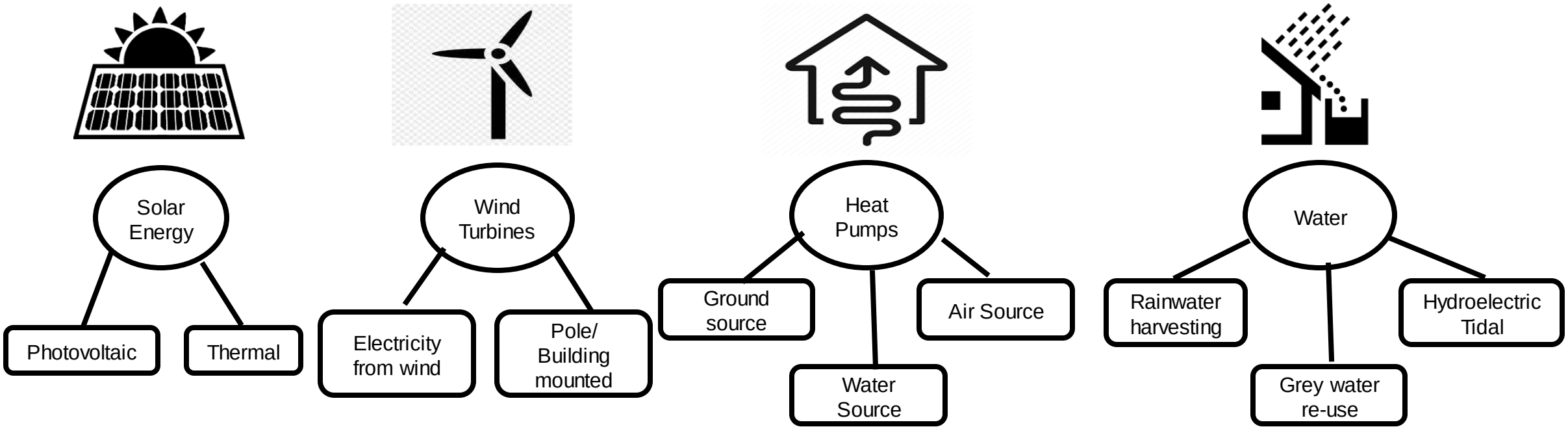
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.4 Technologies and materials – Main Materials

Main Materials involved in constructing walls, installing building services, fitting roofs and finishing interiors	Materials and components
Exterior walls	Structural element, load bearing masonry (insulating blockwork)structural frame (steel or timber)structural insulated panels Insulation, mineral fiber rolls, sprayed foam, rigid foam slabs. Exterior cladding, brick and rendered blockwork, steel sheeting, aluminum faced insulated panels, curtain walling
Internal walls and floors	Block or stud (timber or steel) partitions Timber, concrete or steel floor joists
Secondary structures	Steel lintels, joists and timber trussed rafters for masonry walls. Sheeting rails and purlins for steel frames
Roof finishes	Slate or concrete tiles for timber trussed roofs Steel sheeting over insulated lining trays for steel frames structures Rubber based sheeting or fibreglass for flat roofs
Internal finishes	Floor screeds and boards Plasterboard for walls and ceilings Wall and plaster decorations
Building services	Incoming services run through sub structure. Internal drainage run through external walls for connection
Building services materials	Plastic and copper pipework for plumbing and heating systems. Plastic rainwater goods and drainage systems Copper cable for electricity and communication systems.

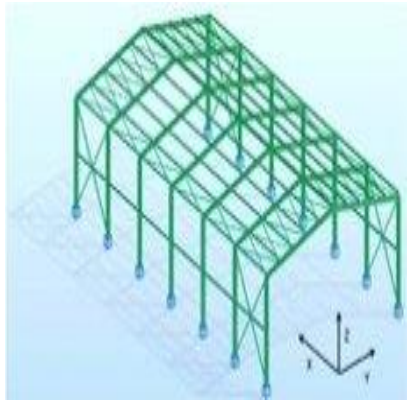
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.4 Technologies and Materials
1.4.3 Renewable Technologies



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

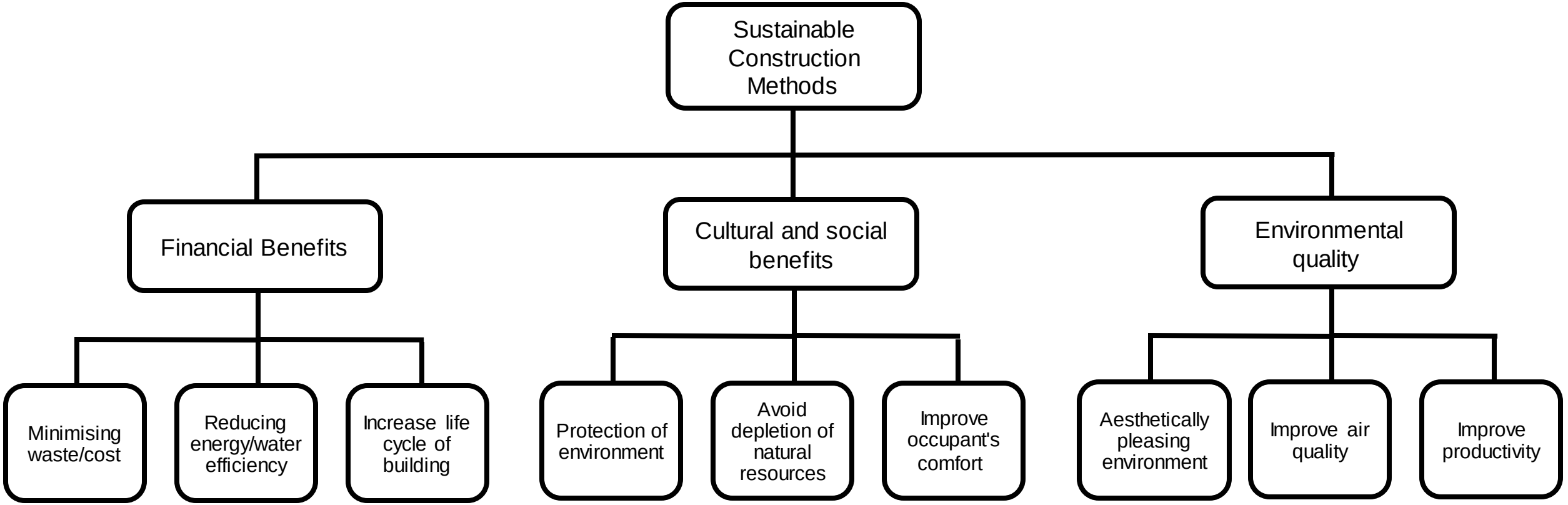
Unit 1 Introduction to the Built Environment
1.5 Building Structures and Forms



Building Structure	Form
Cellular Constructions	Load bearing walls provide the main vertical support and lateral stability for floors. External wall panels. Lift shafts used to provide stability. Bridging components supported by load bearing walls. Prefabricated modular construction.
Rectangular Frame Constructions	Weight is carried by a skeleton or framework of columns, rather than being supported by walls. Lightweight timber frame common. Steel and reinforced concrete on larger structures. Metal or glass can replace external walls.
Portal Frame Constructions	Beams or rafters are supported either end by columns. Columns are secured to pad foundations. The joints between the beams and columns are rigid so the roof can span large distances.
Heritage and Traditional Methods	Maintain the history and character of a building. Comply with planning regulations within conservation areas. Preserve our heritage for the benefit of present and future generations

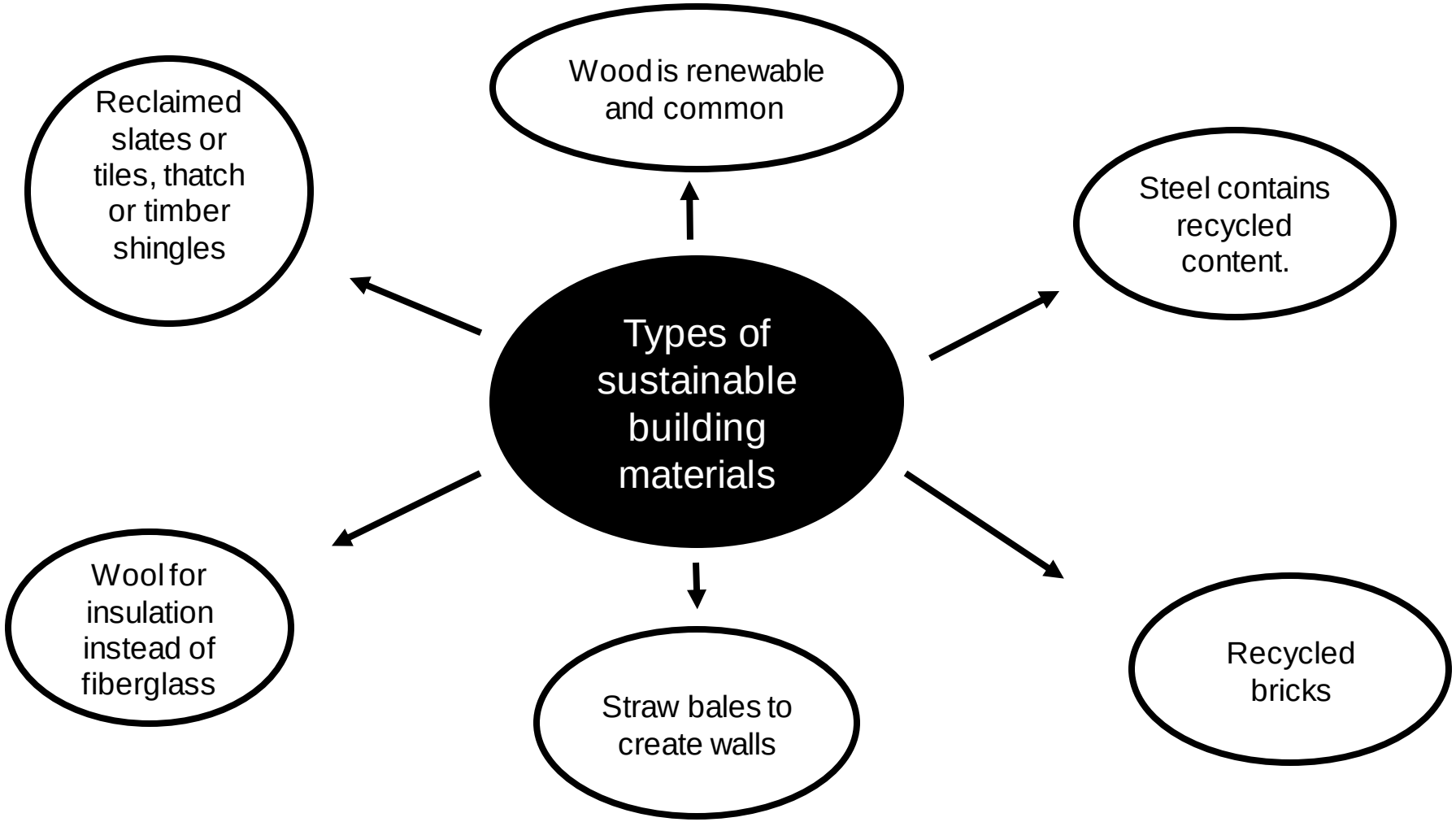
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the built environment
1.6 Sustainable Construction methods - Benefits



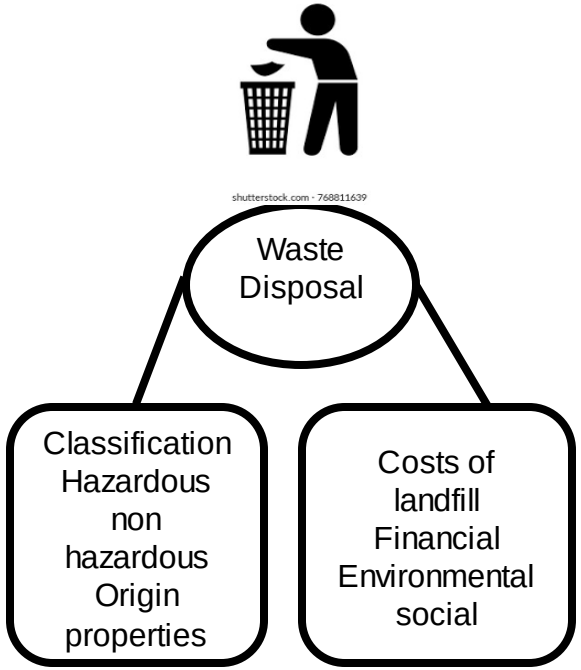
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

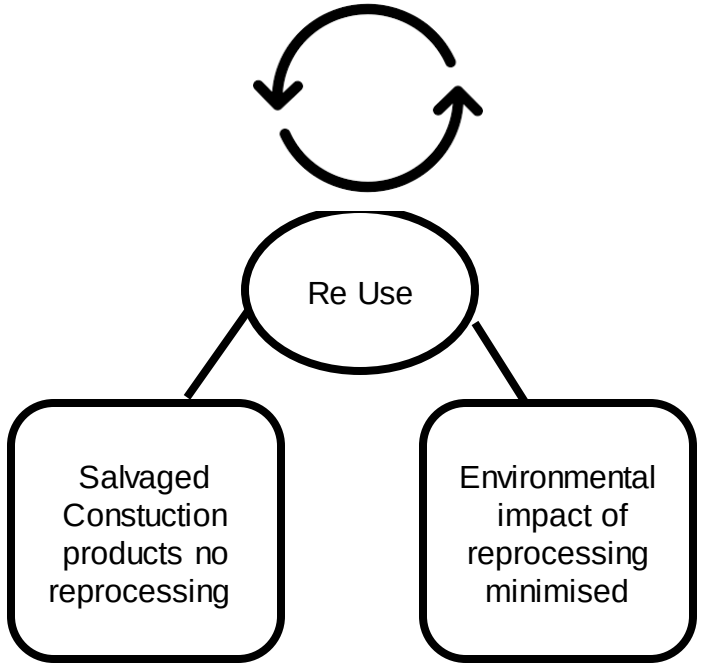
Unit 1 Introduction to the Built Environment
1.6.3 Sustainable Materials used to create building frames walls and roofs

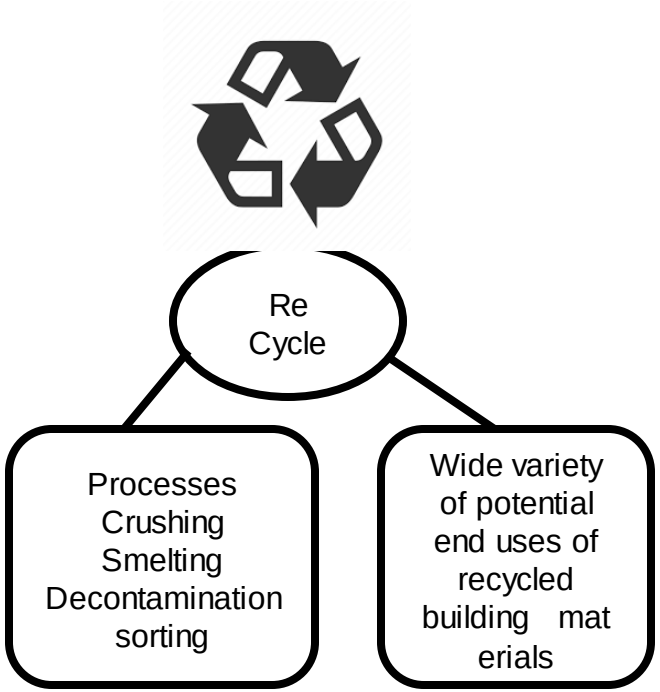


WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.6.4 Waste Disposal, re-use and recycling

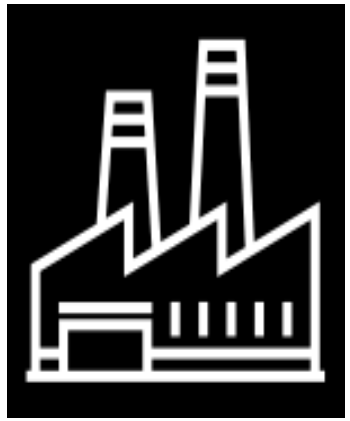






WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.6.5 Planning Permission, Brownfield and Greenfield



Type	Definition	Benefits/Drawbacks
Planning Permission	Local planning Authorities control the development of the built environment in the area.	Legal requirement/ Cost
Brownfield sites	Land used before, disused or derelict	Existing buildings may have to be demolished with clean-up costs for decontamination. Can clean up eyesores. Access to roads and drainage may already be there
Greenfield sites	Land that has not been built on before.	Tend to be cheaper to develop. Legal and planning constraints. New roads and utilities need to be taken into account

WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.7 Trades Employment and Careers

Bricklaying	Works from plans, lays mortar places bricks, checking alignment, traditional bonding methods.
Stonemasonry	Dresses, carves and lays traditional stonework, dry- stone walling. Repairs existing stone Mouldings
Plastering	Applies wet finishes and protection on external walls. Applies plaster to internal walls, dry lines, ornamental plasterwork.
Carpentry and Joinery	Joiner joins wood in a workshop which a carpenter fixes on site, installs floor joists, floorboards, staircases, doors
Electrical Instillation	Installs, inspects and tests electrical services and equipment following safety regulations
Plumbing instillation	Installs cold and hot water, toilets, boilers, central heating, safety regulation, Gas Safe,
Painting and Decorating	Prepares and applies paint, wallpaper, and other finishes to internal and external surfaces. Follows safety regulations
Flooring and Tiling	Prepares and applies levelling compound, carpets, vinyl floor. Installs ceramic wall and floor tiles.

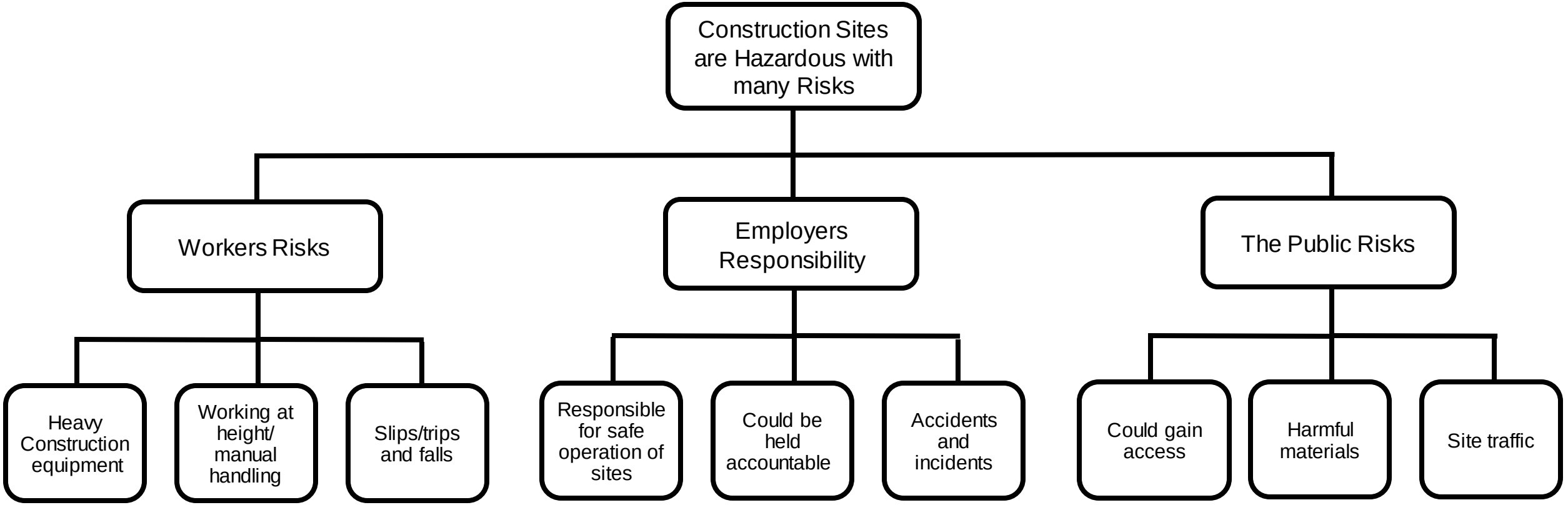
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the Built Environment
1.8 Health and Safety
Working Safely

Type of Work	Health and Safety Considerations
Using Personal protective equipment (PPE)	Assessing the use of PPE as a control measure. Preventing exposure to dangerous environments such as heat. Cold, chemicals, biological risk by the selection of the correct PPE. Training workers in use of PPE
Safely working with gas, water and electric	Competent person only to work with gas electric, qualified and Gas Safe. Follow work practices and safety procedures. Know how to cut of the supply of Gas Water or Electricity for isolation prior to caring out work.
Working at Height	Must be planned and use appropriate method of access eg Scaffold. Take into account the weather. Use equipment that has been appropriately inspected. Control risk from fragile surfaces and falling objects
Working in enclosed spaces	Exposure to fumes, reduced oxygen levels, flooding/drowning, the risk of fire and explosive atmospheres, entrapment in machinery.

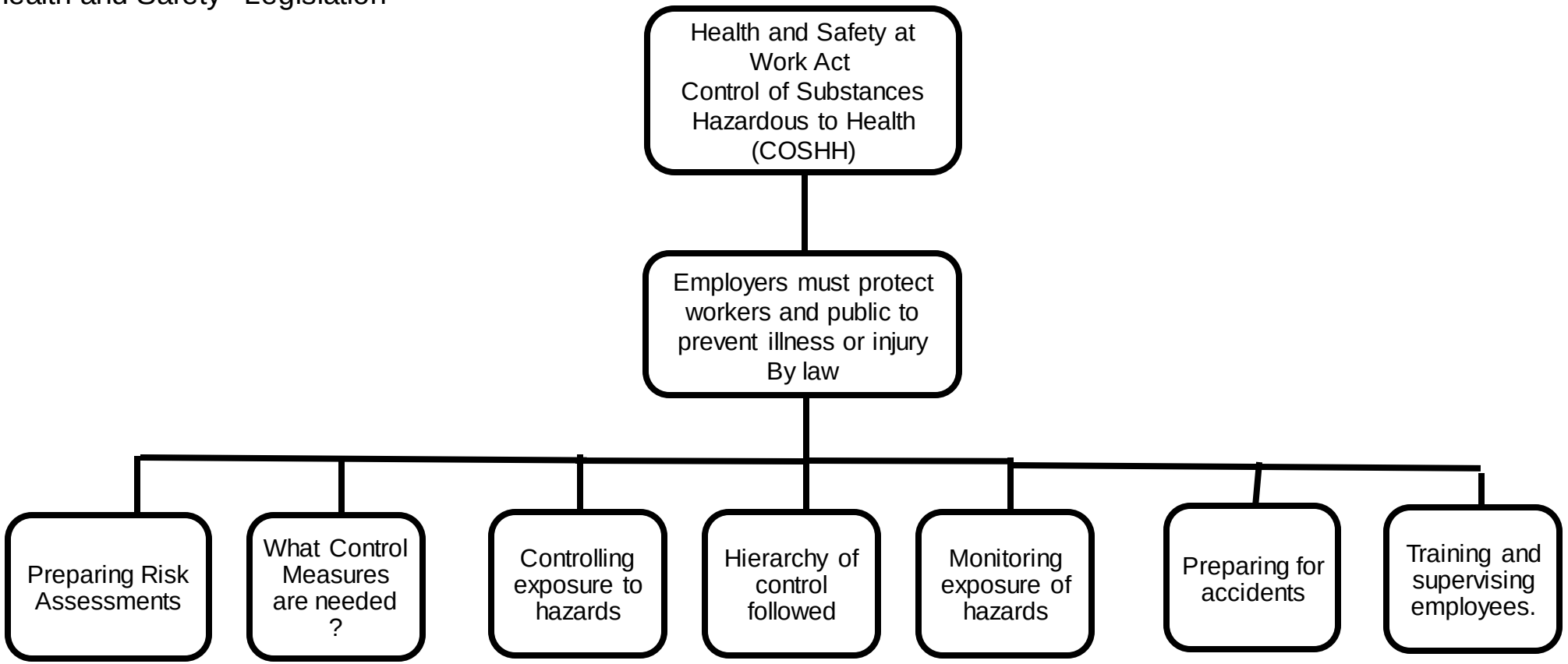
WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the built environment
1.8 Health and Safety - Risk



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

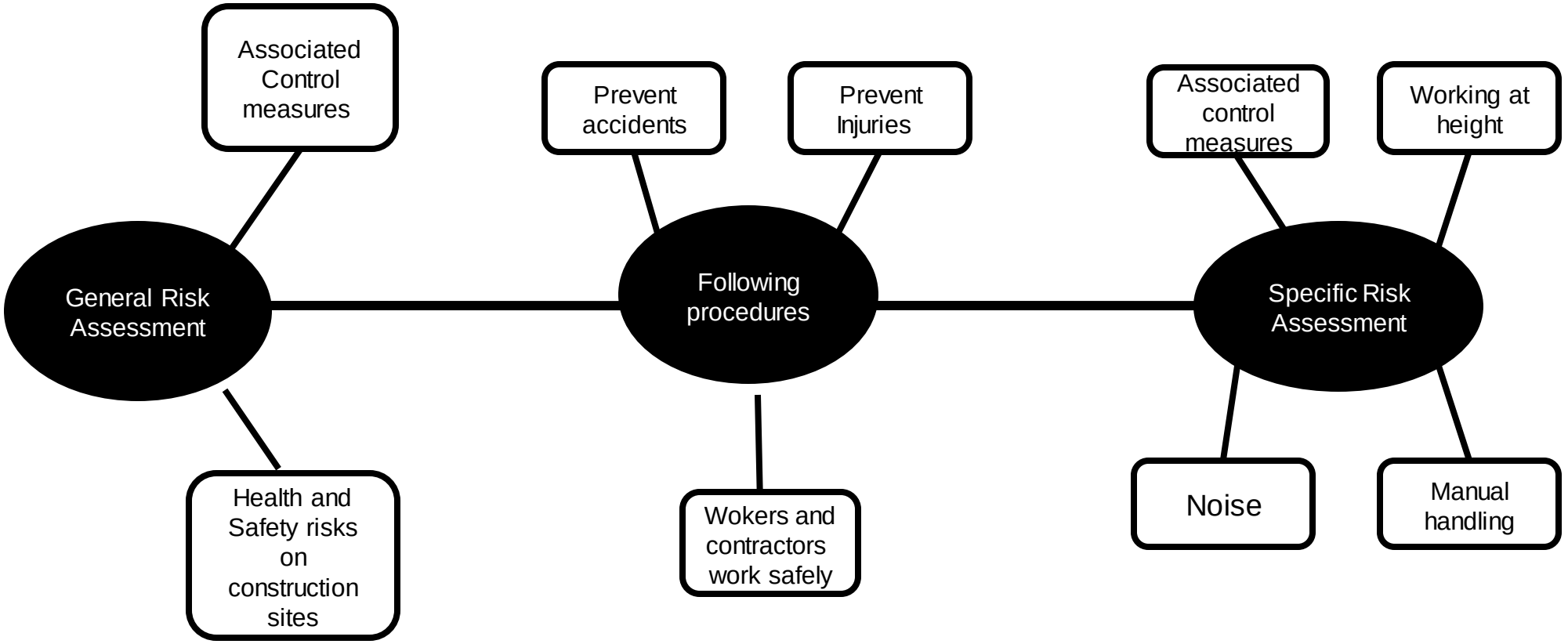
Unit 1 Introduction to the built environment
1.8 Health and Safety - Legislation



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 1 Introduction to the built environment

1.8 Health and Safety – Risk Assessments



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

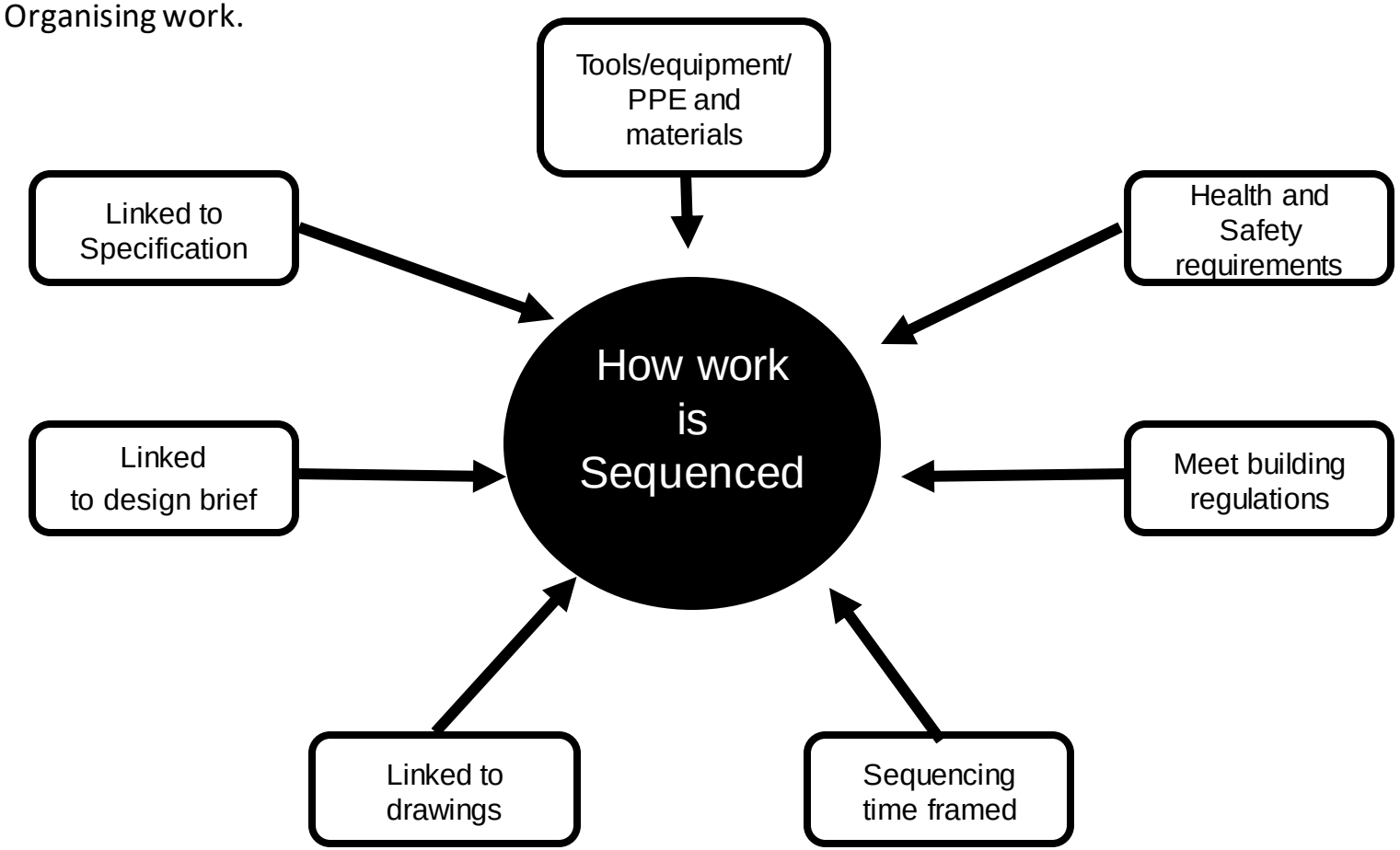
3.1 Interpreting Technical Sources of Information.

Technical Source of Information	Amplification
Specifications	These are precise details of requirements, presented in text or diagram, using standard symbols and terminology. Must be used before construction begins. Includes, materials, scope of work, instillation process, quality
Building Regulations	Cover the construction and extension of buildings. Promotes sustainable development. Protect people's health, safety and security in and around buildings
Drawings	Drawings produced to recognised British Standards, 1;1 1;10 for construction details 1;50 and 1;100 for layout and site plans. May be 2D or 3D
Design Briefs	Is developed by the project designer, outlines deliverables and the scope of the project.

WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

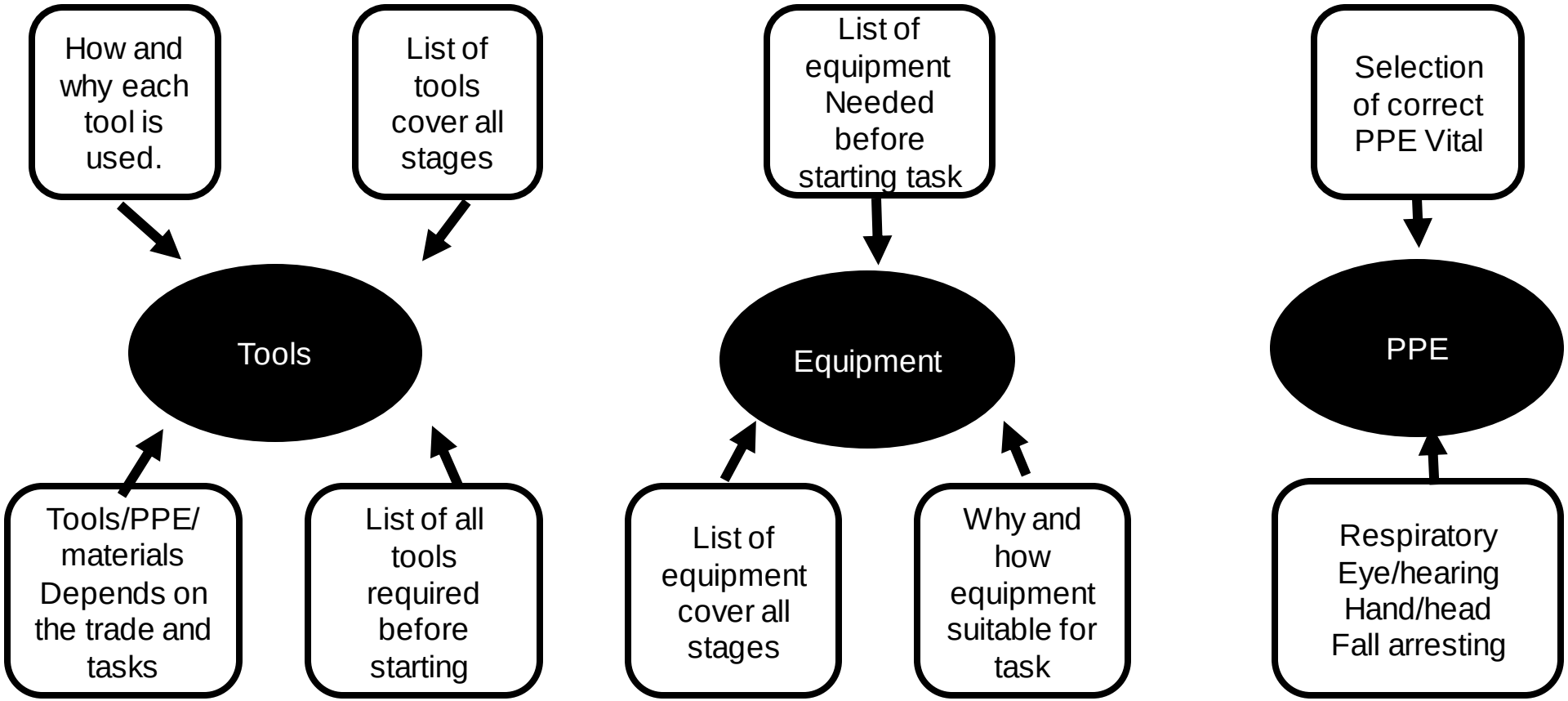
3.2 Planning and Organising work.



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

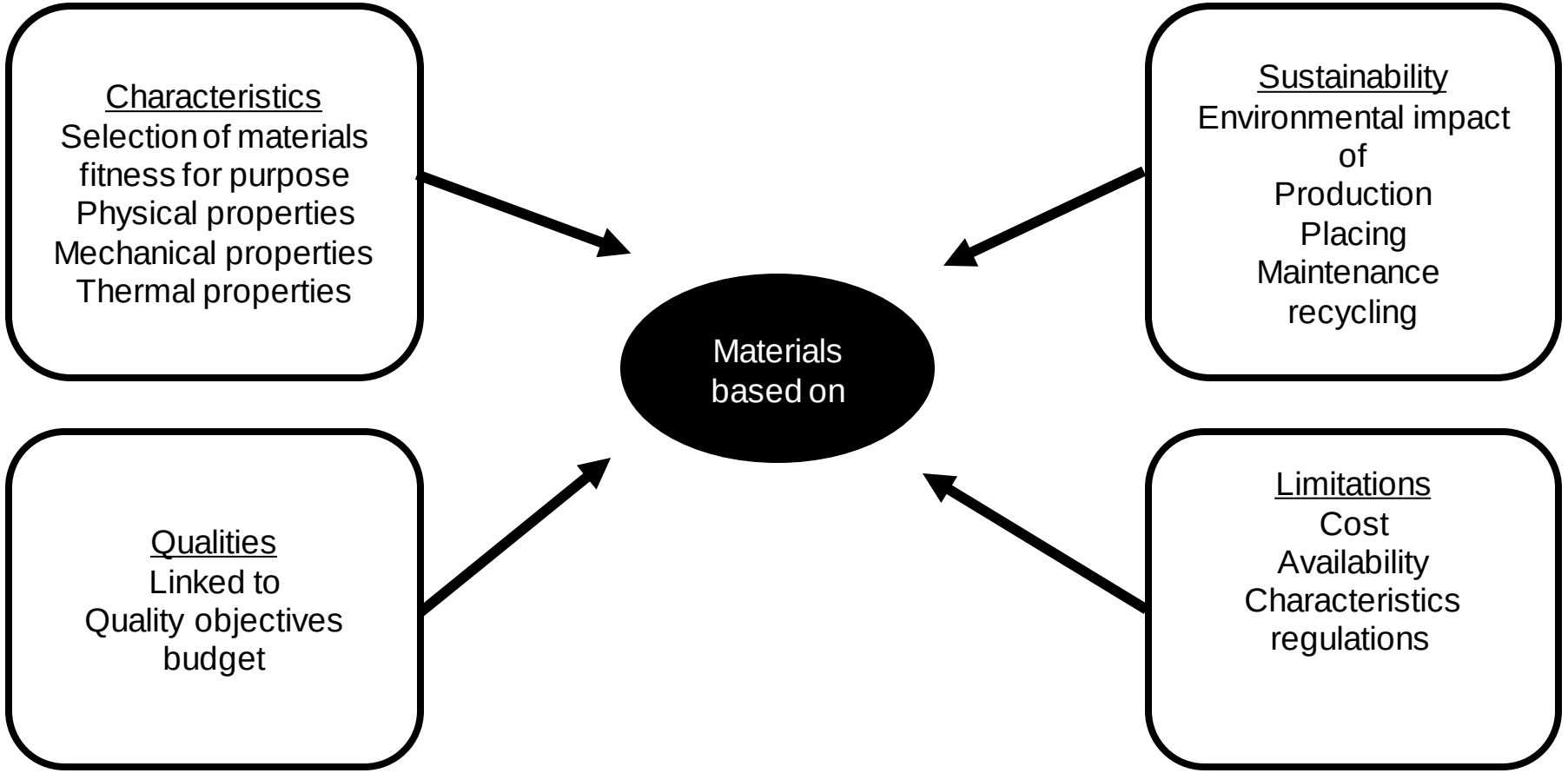
3.3 Identifying Resource Requirements. Tools, Equipment and PPE



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

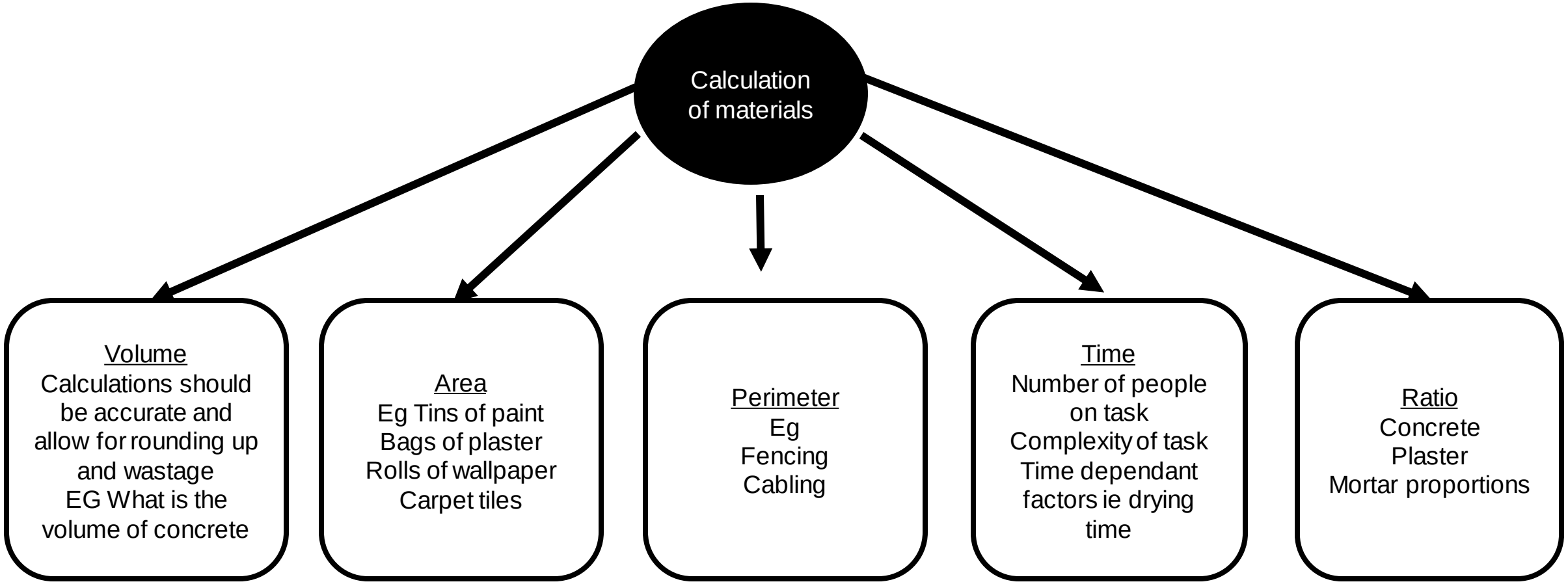
3.3 Identifying Resource Requirements. Materials



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

3.4 Calculating the Materials Required.



WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

3.5 Writing and setting Success Criteria

Success Criteria	Amplification
Levels of tolerance	Increase or decrease from planned cost or time. Deviations from quality and scope. Allowable variations of dimensions, strength, stability mix and performance.
Timescales	Critical success factor for a project is the deadline. Set realistic timescales, Gantt charts, Critical path analysis, resource allocation, millstones, contingencies
Quality	Balance between cost time and quality. Quality defined by, reference to standards, specification of attributes, nominating suppliers.

WJEC Vocational Award in Construction and the Built Environment (Technical Award)

Unit 3 Constructing the Built Environment

Prepare for construction tasks	Carry out techniques	Removing and disposing of materials	Health and Safety	Evaluating Construction tasks
Undertake preparatory work	Measuring	Aim to minimise waste	Ensure cleanliness and safety of work area	Requirements of the brief
Select and organise materials	marking	Waste reused or recycled	Correct PPE	Improvements?
Check for quality	cutting	No reusable waste handled stored and disposed of properly	Free of hazards	Challenging parts Of project
Check for defects	joining	Shelf life considered	First aid ?	Personally - set success criteria
Measuring/marking out	shaping		Area safe ?	Timescale? Quality?
cutting	assembling			Needs of end user including their safety
Setting out	Mixing/finishing applying surface treatments			

Drama

Component 1
Live Theatre Evaluation

Key Terms

Describe - to write what you saw and heard - how actors use theatrical skills.

Analyse - to examine in detail by looking at the different elements and to explain it.

Evaluate - to judge or form an opinion, e.g. explaining what effect was created and how successful it was for the audience.

Knowledge and Understanding of the Play

- Context of the play.
- Features of the style and genre of the play.
- The plot
- Characters
- Reviews of the play and production.
- Drama devices used.
- How relationships with other characters on stage were communicated by the actor.
- Stage Design and how the actors used it.

Writing About Drama

What is a specific example?
WHAT did the actor do?
WHEN did the actor do it?
HOW did the actor do it?
WHY did the actor do it?

Interaction between the actor and other characters?

The outcome for the audience.

THEATRICAL SKILLS?

PHYSICAL SKILLS	VOCAL SKILLS
BODY LANGUAGE	PITCH
POSTURE	PACE
GESTURE	VOLUME
MOVEMENT	TONE
SPATIAL AWARENESS	PROJECTION
USE OF LEVELS	ACCENT
FACIAL EXPRESSION	INTONATION
EYE CONTACT	TIMING
PROXEMICS	EMOTIONAL RANGE
	DELIVERY OF LINES

Component 2
Devised Theatre

STYLE AND PRACTITIONERS

Naturalistic, Epic Theatre, Semi-naturalistic, Abstract, Stanislavski, Brecht, Frantic assembly

GROUP SKILLS

Choral Speech, Choral movement, Counterpoint, Repetition and Echo, Synchronised, movement/ Unison, Canon, Banners, Characterisation, Multi-role

DRAMA DEVICES

STILL IMAGE
MONOLOGUE
CROSS-CUTTING
PHYSICAL THEATRE
FLASH FORWARD
SLOW MOTION
MARKING THE MOMENT
THOUGHT-TRACK
SPLIT STAGE
MIME
NARRATION
FLASHBACK

What type of group member are you?

LEADER: you have ideas and are happy to express them. You enjoy being in charge. You may sometimes be frustrated if others aren't following you or disagree with you.

HELPER: you don't usually lead, but you are happy to put forward your ideas and work with others. You may assist Leaders to see their ideas through or encourage others to take part.

PASSENGER: you don't want to lead and you aren't confident about putting your ideas forward. However, you will go along with what the group wants to do.

BLOCKER: you find group work frustrating and you don't positively help the group. You might tend to argue with others, refuse to co-operate or become distracted.

REHEARSAL TECHNIQUES

Character Objectives, hot-seating, Emotional Memory, Improvisation, Character Modelling, Back-story, Research, Internal Dramatic Dialogue

Students must develop their ability to:

- ☺ carry out research
- ☺ develop their own ideas
- ☺ collaborate with others
- ☺ rehearse, refine and amend their work in progress
- ☺ analyse and evaluate their own process of creating devised drama
- ☺ realise artistic intention in devised drama

DRAMA

COMPONENT 2 - DEVISED THEATRE

RESPONDING TO A STIMULUS

Frantic Assembly

Physical Theatre Company

Combines music, movement and text - inter-disciplinary

Chair Duets

Devised Origins

- What ideas generally come to mind?
- What does this make you think of?
- How does the stimulus make you feel?
- What themes do you associate with your stimulus?
- Which characters do you associate with your stimulus?
- Which settings do you associate with your stimulus?

- What research will you undertake?
- What did you find out once you had completed research?
- What do you want to show through your character? What do you want the audience to see about them?
- What was the initial purpose of your piece overall? What message do you want to show? How do you want your audience to feel?

Movement	Expression	Gesture	Interaction	Voice	Audience
Gait - the way you walk. Posture - the position you hold you body when standing or sitting. Stance - the way you stand. Body Language - how you express your emotions through your body.	Facial Expression - showing your character's emotion by using your face. *When describing, focus on the eyes, eyebrows and mouth.*	A movement, using the hand, that expresses an idea or communicates meaning. *When describing, describe in detail, e.g. "I used a gesture where I outstretched my hand to show I wanted to ignore the other character."*	Eye contact (or lack of). Proxemics - the distance between the characters that communicates their relationship/situation.	Pitch - how high or low your voice is. Pace - how quickly you speak. Volume - how loud you speak. Use of pause - pausing before a line of speech. Tone - showing your character's emotions through your voice.	What effect does this have on the audience? What do you want the audience to see/feel? How do you know your performance was successful? How did the audience react?

CONSTANTIN STANISLAVSKI

NATURALISTIC

The magic 'If'	Stanislavski said that the character should answer the question, 'What would I do if I was in this situation?@. Also known as the 'magic if', this technique means that the actor puts themselves into the character's situation. This then stimulates the motivation to enable the actor to play the role.
Emotional memory	Emotional memory is when the actor finds a real past experience where they felt a similar emotion to that demanded by the role they are playing. They then 'borrow' those feelings to bring the role to life.
Subtext	The subtext is the actual meaning and motivation behind the lines that are spoken and the actions taken.
Objectives and super-objectives	An objective is the reason for our actions. What are we trying to achieve? The super-objective is an over-reaching objective, probably linked to the overall outcome in the play.
Given circumstances	The information about the character that you start off with and the play as a whole. How old is the character? What's their situation in the play and in relation to the other characters?
Method of physical actions	Imagine a simple activity like cleaning your teeth and then imagine a husband cleaning his teeth whilst deliberating on how to tell his wife about his mistress. This is a simple illustration of how a physical action can release the necessary emotions.
Realistic settings and characters	The objective of naturalism is to create a performance that is as close to real life as possible. Therefore, settings and characters should realistic.

BERTOLT BRECHT

NON-NATURALISTIC

Verfremdungseffekt (The V effect OR the alienation effect)	Distancing the audience from becoming attached emotionally to the characters/the narrative by reminding them constantly they are watching a play. This enables the audience to think about the subject(s) and themes of the play and possibly take action rather than just being entertained.
Breaking the fourth wall	Addressing or acknowledging the audience directly in order to remind them they are watching a piece of theatre.
Gestus	Gestus is a clear character gesture or movement used by the actor that captures a moment or attitude rather than delving into emotion,
Narration	Narration is used to remind the audience that what they're watching is a presentation of a story. Sometimes the narrator will tell us what happens in the story before it has happened. This is a good way of making sure that we don't become emotionally involved in the action to come as we already know the outcome.
Placards	A placard is a sign or additional piece of written information presented on stage. Using placards might be as simple as holding up a card or banner. What;s important is that the information doesn't just comment upon the action but deepens our understanding of it.
Non-linear structure	Scenes are episodic, which means they stand alone and are constructed in small chunks, rather than creating a lengthy and slow build of tension. Epic theatre often has a fractured narrative that is non-linear and mumps about in time, including flashbacks/ flash-forwards.
Spass	Making jokes/including comedy to stop the audience from connecting emotionally to the characters. The audience will laugh and then question why they laughed.

GCSE Design and Technology - Year 10 - Knowledge Organiser (Term 3-4)

W/B 6th Jan – Smart Materials

While smart materials are modern materials, modern materials are not necessarily smart. To be classed as a 'smart material' they need to exhibit a physical change in response to some external stimuli. In other words, they change when you do something to them, and when you remove what is causing that change they return to their original form. You must also know about quantum tunnelling composites, hydrochromic pigments and polymorph.

SHAPE MEMORY ALLOY (SMA)

SMA wire also called 'Nitinol', as it is a composed of nickel and titanium. Looks like ordinary wire and has many of the same properties.
SMA has a memory - for example, if it is folded to form a shape and then heated above 90 degrees (centigrade) it returns to its original shape.

TWISTED SMA WIRE HEATED TO 90 DEGREES

RETURNS TO ORIGINAL SHAPE

SMART MATERIALS THERMOCHROMIC INKS

Thermochromic inks change colour in response to changes in temperature. These inks have serious applications such as in the food industry. They can be used to indicate when a packaged food has reached the correct temperature in an oven. They are also used in forehead thermometers.

SMART MATERIALS - PHOTOCHROMIC INKS

Photochromic ink darkens, as the light level increases. Some photochromic inks change colour. In fact, it is UV light that causes the darkening of the ink, which means the ink works best in natural light. This special ink has two main applications; sunglasses and spectacles.

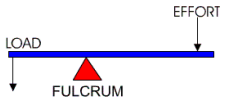
MEDIUM UV LIGHT LEVEL

W/B 13th Jan – Mechanisms

Linear	Rotary	Reciprocating	Oscillating
→	↻	↔	↻↺

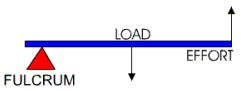
Levers move and lift loads by rotating about a stationary point called a fixed pivot (or fulcrum). There are three main types:

CLASS ONE



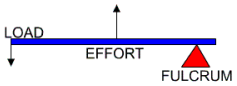
The workman uses a trolley to move the large packing case. The fulcrum

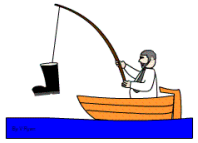
CLASS TWO



The gardener uses a wheel barrow to lift tools and garden waste. The load is in the centre of the barrow

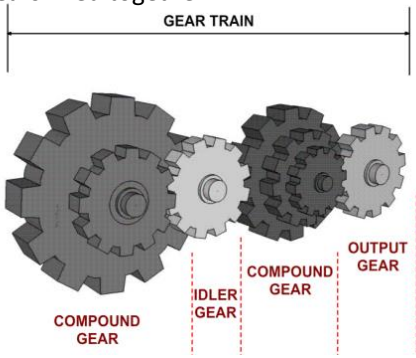
CLASS THREE





The fisherman catches the 'fish' which becomes the load at the end of the lever.

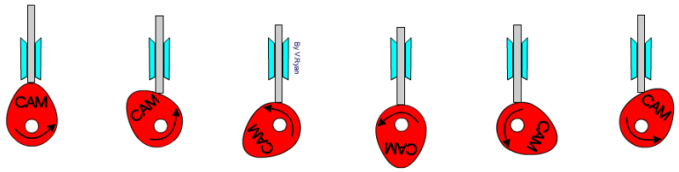
A compound gear is a number of gears fixed together.



They rotate at the same speed. The gears that make up a compound gear usually differ in size and have a different number of teeth. This is useful if there is a need to speed up or slow down the final output.

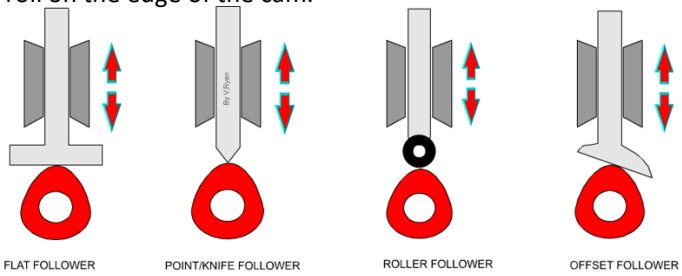
W/B 20th Jan- Mechanisms

A CAM changes the input motion, which is usually rotary motion (a rotating motion), to a reciprocating motion of the follower. They are found in many machines and toys. A CAM has two parts, the FOLLOWER and the CAM PROFILE. Diagrams one to six show a rotating cam pushing a follower up and then allowing it to slowly fall back down.

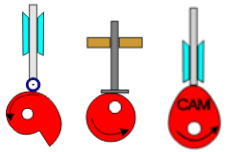


KEY PHRASES	
ONE CYCLE	One rotation/revolution of the cam.
DWELL	When the cam rotates but the follower does not rise or fall.
THE RISE	That part of the cam that causes the follower to rise.

There are different types of follower but they all slide or roll on the edge of the cam.



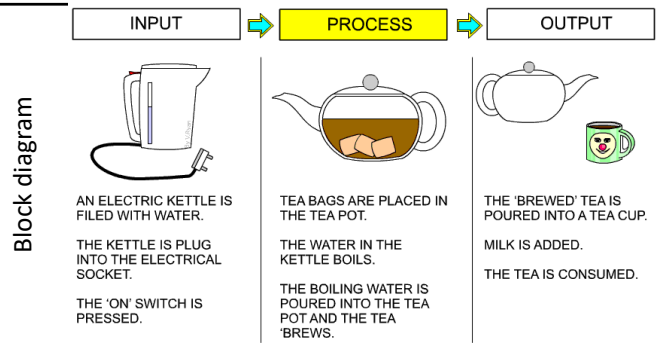
Cams can also come in different shapes to cause different types of movement. Such as a snail, pear and eccentric…



You also need to know about pulley systems and can find out more information about this at: http://www.technologystudent.com/gears1/pulley1.htm

GCSE Design and Technology - Year 10 - Knowledge Organiser (Term 3-4)

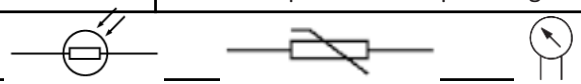
W/B 27th Jan – Electronics



Inputs: these are switches or sensors

Switch	Uses
PTM/PTB switch	Console controller buttons, e.g. fire or jump
Reed (magnetic) switch	Window sensors on alarms, eg window opens and switch contacts open
Toggle switch	Power switches
Rocker switch	Light switches
Tilt switch	To detect if something is no longer level

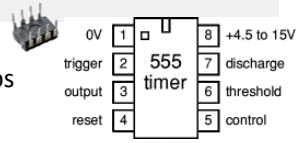
Sensors	Uses
Light dependent resistor (LDR)	Resistance changes depending on the amount of light allowing electricity to flow and turn on a circuit
Thermistor	Same as an LDR, resistance changes depending on the temperature.
Pressure Sensor	Detect the pressure of liquids or gasses



W/B 3rd Feb – Electronics

Process: these make decisions in the circuit

A microcontroller is an example of a SBC (single board computer) and is manufactured as an integrated circuit (IC). It can be programmed to perform different processing functions.



Examples include: 555 timer, Op Amp (Sensor circuit) and PIC chips

Advantages

The size of a circuit can be significantly reduced. This is because programming replaces physical components. They can be reprogrammed many times. This allows changes to be made without replacing actual components. They have pins for connecting several input and output devices, adding to flexibility.

Disadvantages

They often cost more than traditional integrated circuits. They are therefore not always the best option for simple systems. Programming software and hardware is required. This can be expensive to buy. The language of the system must be learned and this adds to training costs.

Outputs: is the response to the input signal and could be light, movement or sound.

Output	Symbol	Use
Lamp/ Bulb		Used to create heat or light
LED		Used as warning lights and standby
Buzzer		Make simple sound
Loud speaker		Make more complex, higher quality sound
Motor		Creates movement (fan or vibrate)

W/B 10th Feb- Composites

Composite materials are made up of different materials which are combined to improve their properties. They can be a combination of natural and synthetic materials but fall into three main categories:

- fibre-based composites
- particle-based composites
- sheet-based composites

Fibre-based composites are reinforced with fibres. By mixing resin or concrete with fibres of glass or carbon we get the ability to mould complex shapes, but reinforcing them with the fibres makes them very strong.

Composite	Materials	Uses
Glass-reinforced plastic (GRP)	Glass fibres and resin	Boats, instrument cases
Carbon-reinforced plastic (CRP)	Carbon fibre and resin	Formula 1 car bodies, crash helmets, sports equipment
Glass-reinforced concrete (GRC)	Glass fibre and concrete	Street furniture, urban features

Particle-based composites are made with small particles of material. By mixing smaller particles of sand with larger particles of cement and aggregate, such as stones, we get a very strong and dense material suitable for building large structures.

Composite	Materials	Uses
Concrete	Cement, sand and aggregate	Buildings, street furniture
Cermet	Ceramic (cer) and metal (met)	Electronic components that need to operate under very hot temperatures

GCSE Design and Technology - Year 10 - Knowledge Organiser (Term 3-4)

W/B 24th Feb – Scales of Production

One off production -one product is made often a prototype using highly skilled workers and expensive materials

Architecture, bespoke machinery and wedding dresses are made this way

Batch production -A small quantity of the product is made two or more up to one hundred.

Seasonal goods, food, newspapers and magazines are examples of this

Mass production - A large number of the product is made on a production line. Many hundreds of the product could be made. This is often called repetitive flow production.

Examples include: cars, electronic goods and most clothing and shoes

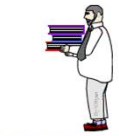
Continuous production - Many thousands of the product are made. The difference between this and mass manufacturing is that continuous production is on 24 hours a day.

Very simple products that are only made using robots/ machines are made this way such as: nuts/bolts, screws, Lego, packaging and toiletries

Just in time production - The arrival of parts at just the exact time that they are required in the factory.

Construction materials and large furniture is made using this method

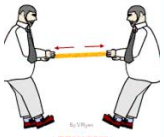
W/B 3rd Mar – Forces and stresses



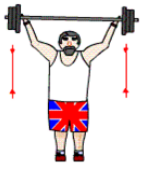
A **Static Load** : A good example of this is holding a stack of books on his back but he is not moving. The force downwards is STATIC.

A **Dynamic Load** : A good example of a dynamic load is carrying a weight of books but walking. The force is moving or DYNAMIC.

Internal Resistance : The person in the diagram sat on the mono-bicycle and the air filled tyre is under great pressure. The air pressure inside it pushes back against his/her weight.

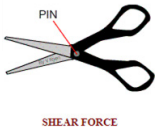


Tension : The rope is in "tension" as the two people pull on it. This stretching puts the rope in tension.

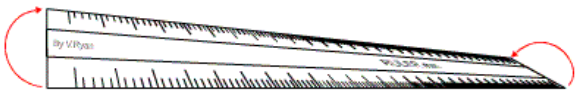


Compression : The weight lifter finds that his body is compressed by the weights he is holding above his head.

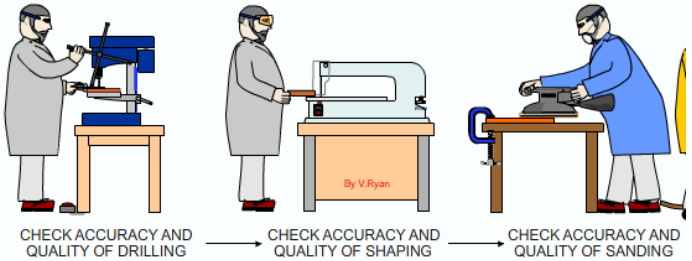
Shear Force : A good example of shear force is seen with a simple scissors. The two handles put force in different directions on the pin that holds the two parts together. The force applied to the pin is called shear force.

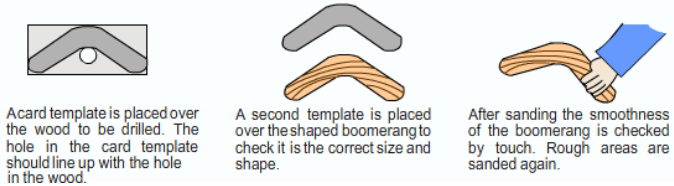


Torsion : The plastic ruler is twisted between both hands. The ruler is said to be in a state of torsion.



W/B 10th Mar- Quality Control





Regulations: There are numerous organisations which take care of the public and the consumers interests. Most of these are set up by manufacturing bodies to make sure that all their members follow their voluntary code of practice. These groups give valuable direction to designers and manufacturers. The government also provides regulations by acts of parliament. One example is for Designers who need to protect their new design ideas from being copied. Copyright, patents and registered design ideas are some examples of how the designer can be protected.

Legislation - You are not normally required to remember all the details of all legislations but the following are worth bearing in mind when designing.

The Consumer Protection Act - Tries to prevent the sale of harmful or defective products.

The Consumer Safety Act - This allows the government to ban the sale of dangerous products.

The Trade Description Act - This makes it illegal to make false claims about a product.

The Weights and Measures Act - This makes it illegal to sell products which are underweight or short measures.

GCSE Design and Technology - Year 10 - Knowledge Organiser (Term 3-4)

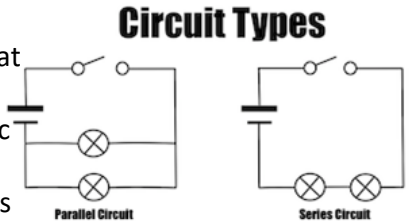
W/B 17th Mar – 2D drawings

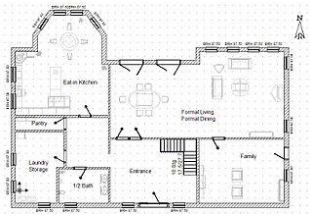
Block diagram

Input	Process	Output
LDR (light sensor)	Op Amp	LED

Schematic diagram

These both show what is needed inside a circuit. The schematic diagram shows more detail on components and where to put them.





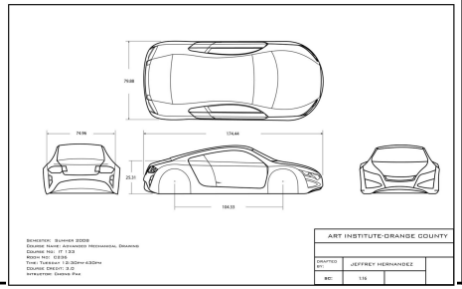
Floor plan

This shows the layout of a room or building from the plan view. It shows key information such as: windows, doors and large furniture. It is used by an architect and any builders

Orthographic projection drawing

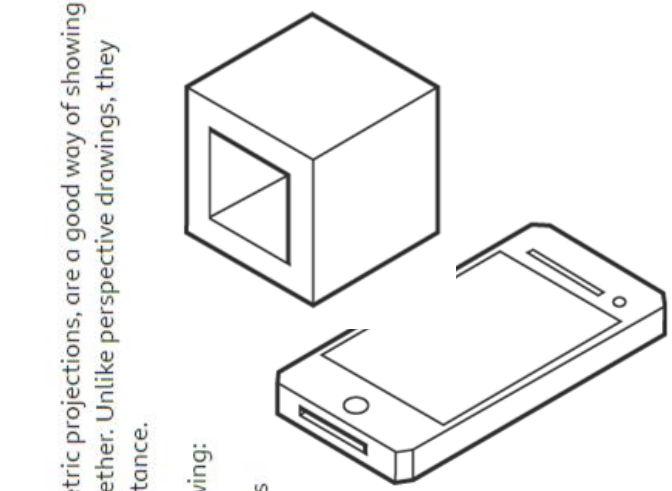
This shows a product in 2D from all sides. They are lined up with construction lines and hidden views are shown with a dashed line. These drawings are always done to scale and show dimensions in mm. It is used by engineers, designers and manufacturers.

An **orthographic projection drawing** always has at least 3 views:
Plan view (top)
Front view
Side view



W/B 24th Mar – 3D drawings

Isometric drawings are used to show a graphical representation of a 3D object. They are used by architects and engineers to communicate their ideas to the client and manufacturer, showing the product or design **to scale**.

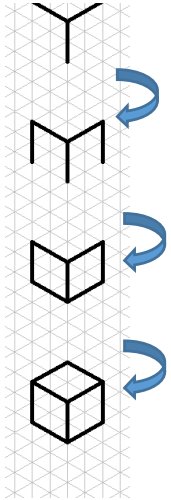


Isometric

Isometric drawings, sometimes called isometric projections, are a good way of showing measurements and how components fit together. Unlike perspective drawings, they don't get smaller as the lines go into the distance.

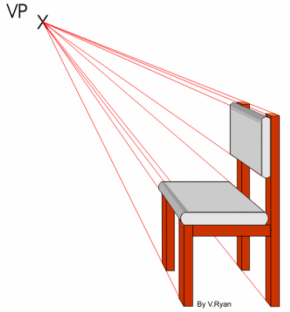
There are three main rules to isometric drawing:

- **horizontal** edges are drawn at 30 degrees
- **vertical** edges are drawn as vertical lines
- **parallel** edges appear as parallel lines

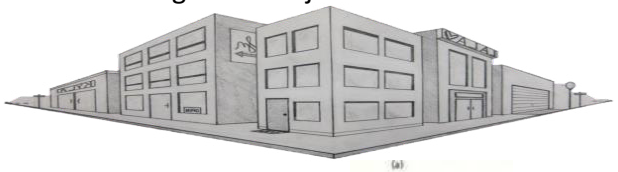


W/B 31st Mar- 3D drawings

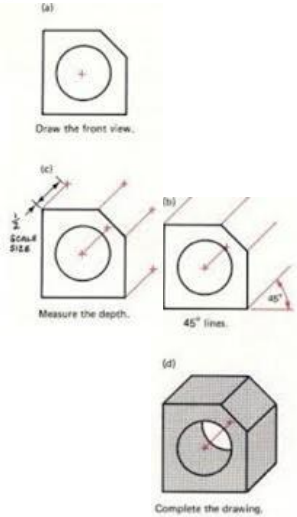
Single-point perspective - This shows an object from the front in a realistic way as it gets smaller going into the distance. The front view goes back towards a vanishing point, which is a point on the horizon line that all lines meet at.



Two-point perspective - This shows an object from the side with two vanishing points. It gives the most realistic view of a product as it shows the item edge on, as we would see it. It is often used to produce realistic drawings of an object.



Oblique projection is a simple type of technical drawing of graphical projection used for producing two-dimensional images of three-dimensional objects. The objects are not in perspective, so they do not correspond to any view of an object that can be obtained in practice, but the technique does yield somewhat convincing and useful images.



Knowledge Organiser

NCFE CACHE: Level 1-2 Technical Award Health and Social Care

Content Area 3: Legislation, policies and procedures in health and social care

Legislation: A law, or set of laws that have been passed by parliament.

Policy: An action adopted by an organisation.

Procedure: An established way of carrying out a policy.

Act	Policy	Procedure
The Health and Safety at Work Act 1974 – defines responsibilities for maintaining health and safety at work	• Health and safety policy	• risk assessment • hand washing • use and disposal of personal protective equipment (PPE) • disposal of waste and body fluids • security checks: identity and the environment • correct moving and handling techniques • reporting and recording
Health and Social Care Act (2012): defines the planning, delivering and monitoring of healthcare services	• Partnership working	• Report abuse (record keeping/reporting) • Provide play • Adapt activities
Equality Act 2010 – ensures an individual's characteristics are protected age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation	• Equality and diversity • equality and inclusion policy	inclusive practice which promotes: • a person-centred approach • dignity • respect **Equal access which ensures:** • non-discriminatory practice • barriers to access faced by the individual are overcome • adaptations to environment are put in place to meet the individual's needs and preferences • aids and equipment are secured to meet the individual's needs and preferences • valuing diversity – which celebrates individual differences: values, beliefs, traditions
Data Protection/General Data Protection Regulation 2018 (GDPR) – data protection and privacy on how personal data is used and stored	• Data protection policy • Confidentiality policy	• Share information with consent • Store information safely • Share information on a 'need to know' basis • Store information in a locked filling cabinet. Enusre files are password protected o reporting and recording: -timely -factual -legible
Care Act (2014): Local Authority have a duty to promote an individuals well-being (physical, emotional, social and economic) Continuity of care must be provided Individuals to be safeguarded	• Safeguarding • Duty of Care	• Reporting and recording

Regulatory and inspection bodies:
o **Care Quality Commission (CQC):**
- regulates health and adult social care services
o **Office for Standards in Education, Children's Services and Skills (Ofsted):** regulates education, children's services and schools
o **The Health and Care Professions Council (HCPC):** register of health and care professionals
o **Nursing and Midwifery Council (NMC):** register of those who can practise nursing and midwifery
o **Social Work England:** register of those who can practise social work

Key role of regulatory bodies:
o uphold standards
o ensure public confidence
o register services
o monitor, rate, and inspect services
o protect the individual

Roles and responsibilities of the practitioner :
• understand the related legislation, policies and procedures
• adhere to the underpinning policies and procedures
• work within own professional boundaries
• understand how to escalate any concerns
• allow for access to quality health and social care services

Key words: Legislation, Policy, Procedure, Governance, Eligibility

Content Area 4: Human development across the life span

Life Stages:
Infancy (0–2 years)
Childhood (3–10 years)
Adolescence (11–17 years)
Early adulthood (18–29 years)
Middle adulthood (30–60 years)
Late adulthood (60 years+)

Physical development: the advancement and control of the individual's bodily movements and functions

Infancy:
▪ can sit
▪ can roll over
▪ can walk
Childhood:
▪ can stand on one leg
▪ can ride a tricycle
▪ cut along a line
▪ legible handwriting
▪ confident at handling large equipment during sports
▪ greater coordination and speed when carrying out fine and gross motor skills
Adolescence:
▪ puberty and sexual maturity reached
▪ muscle mass increase
▪ changes in body shape and height
Early Adulthood:
▪ full height is reached
▪ body strength at maximum
Middle Adulthood:
▪ menopause occurs
▪ loss and greying of hair
▪ muscles start to lose strength
Late adulthood:
▪ decline in mobility
▪ visual and hearing degeneration
▪ loss of bone density

Intellectual (Cognitive): – the individual's ability to recognise, remember, form concepts and problem solve

Infancy:
▪ learns and responds through senses
▪ points to body parts
▪ language develops (for example, babbling, single words, range of 200 words)
▪ responds to simple commands
Childhood:
▪ develops pre-reading then reading skills
▪ problem solves
▪ gives reasons for actions
▪ talks with increasing fluency and confidence
Adolescence:
▪ develops complex thinking skills
▪ memory functions efficiently
▪ has ability to think, reason and make choices
Early adulthood:
▪ application of analytical skills to work environment or home
▪ becomes more established in the workplace
Middle adulthood:
▪ cognitive thinking begins to decrease
▪ has a range of life experiences which may affect their future
Late adulthood:
▪ short-term memory loss
▪ decline in attention span

Emotional: the individual's ability to develop, manage and express feelings and show empathy for others

Infancy:
▪ attachments form with main carer
▪ may develop temper tantrums
Childhood:
▪ shows affection for younger children
▪ develops fairness and sympathy for others
Adolescence:
▪ mood swings are common
▪ development of more intimate relationships
▪ can become self-conscious
▪ influenced by views, opinions and behaviours of friends (peer pressure)
Early adulthood:
▪ stress due to work, finances and relationship problems
▪ emotional bonds may form with partners and own children
Middle adulthood:
▪ changes in relationships
▪ feelings of loss when children leave home
▪ period of self-doubt and mid-life crisis
Late adulthood:
▪ loneliness due to isolation
▪ less anxiety in life due to no work pressure
▪ self-esteem and confidence may decrease
▪ anxiety over reduced income and care costs

Social: the individual's ability to build relationships and interact with others

Infancy:
▪ waves 'bye-bye'
▪ communicates by smiling
▪ can become wary of strangers
Childhood:
▪ willing to share toys
▪ can enjoy team games
▪ often has a 'best friend'
Adolescence:
▪ increasing independence from parents
▪ friendships become very important
Early adulthood:
▪ relationships form with people from work
▪ friends and social relationships often change
Middle adulthood:
▪ relationships with grandchildren are important
▪ friendships continue from school, through work and outside activities
Late adulthood:
▪ can develop new relationships through new interests
▪ isolation due to lack of social contact in the workplace

Knowledge Organiser

NCFE CACHE: Level 1-2 Technical Award Health and Social Care

Content Area 4: Human development across the life span

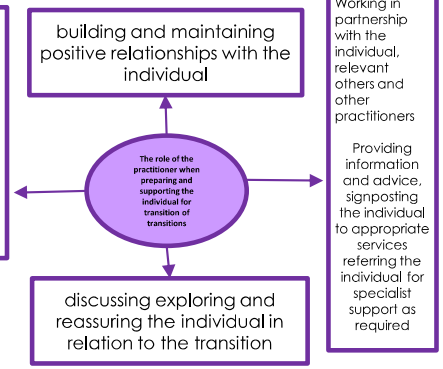
Nature: Biological. **Nurture: Environmental**

Biological Factors	Example	Environmental factor	Example
Physical traits – some are linked to genetic inheritance.	Height, physical strength, face shape, eye colour.	**Lifestyle**	▪ Rest ▪ physical activity ▪ diet ▪ drugs and alcohol
Medical conditions - most are linked to genetic inheritance.	Diabetes, asthma, sickle cell anaemia.	**Socio-economic**	▪ education ▪ employment ▪ income
Learning difficulties – are most likely as a result of genetic inheritance.	Autistic spectrum conditions, dyslexia.	**Relationships:**	▪ family ▪ partners ▪ friendships
Disabilities – some are linked to genetic inheritance, whilst others may occur during pregnancy and birth	Deafness, sight problems, cerebral palsy, spina bifida.	**Culture:**	▪ values ▪ traditions and expectations
Personal characteristics	Shyness, curiosity, outgoing	**Physical environment**	▪ urban ▪ rural

Transition: A the change from one stage or state to another in the individual's life, a transition can be expected or unexpected.

Common Transitions:
Infancy – starting nursery
Childhood – arrival of new siblings
Adolescence: onset of puberty, sitting examinations, leaving home
Early, middle, late adulthood: employment, marriage/civil-partnerships, parenthood, divorce, bereavement, retirement, diagnosis of medical conditions

Impacts of transitions on biological and environmental factors
Health and wellbeing:
o physical
o mental
Relationships:
o belonging
o loneliness
Life chances:
o expectations
o opportunities
Independence:
o self-care
o dependency



Key words: Biological, Environmental, Transition, Diagnosis. Nature, Nurture

Content Area 5. The care needs of the individual

Conditions and disabilities that require health and social care support:
Chronic condition – a physical or mental condition that is long-lasting in its effects (lasts at least 3 months but usually lasts a year and is often lifelong)
Acute condition – a physical or mental condition which is of short duration, intense, develops quickly but generally has no lasting effects
Disability – physical or mental condition that has a substantial* and long-term+ impact or effect on an individual's lifestyle (Equality Act 2010) (*substantial is more than minor or trivial) (+ long term is longer than 12 months):
o types of disability include: ▪ cognitive ▪ physical ▪ mental ▪ sensory

Care Values in Practice:	
Mealtimes	Offer choice of mealtimes and preferences to meet the individual's requirements ensure the individual's dietary and cultural needs and preferences are met Agree with the individual the level of assistance required
Personal care and toileting:	Meet preferences in choice of care and dressing Provide aids and adaptations to promote independence
Activities.	Overcome potential barriers to communication through tailored approaches Find out the individual's interests and preferences

Physiological and biological requirements for human survival	
Food and drink:	▪ ability to prepare food and drink ▪ ability to meet own nutritional requirements ▪ ability to eat and drink unaided
Rest and sleep: Toileting: Personal care:	• disruption to sleep pattern incontinence because of a health condition • incontinence because of mobility ▪ ability to care for skin, hair and teeth ▪ ability to dress/undress ▪ ability to select clothing for the season
Safety, security and control in the individual's life:	
Environment: Healthcare: Emotional security: Financial security:	▪ ability to maintain own safety ▪ ability to maintain own security ▪ ability to access services and treatment ▪ ability to manage own medication ▪ ability to cope with anxiety and stress ▪ level of resilience ▪ employment status ▪ available funds to maintain lifestyle and meet need
Love and belonging and need for positive relationships:	
maintain active relationships:	▪ with family, partners, friends and community ▪ level of involvement with others ▪ level of isolation and loneliness
Esteem, dignity and respect from others:	
Self-confidence: Independence:	▪ level of self-confidence ▪ level of dependency: • ability to self-care:
Self-actualisation and realisation of the individual's full potential:	
Personal growth: Self-fulfilment:	ability to achieve own potential desire to achieve own potential

Key words: Communication, Safeguarding, Person-centered care, Dignity, Independence, Respect, Duty of Care

Level 1/2 Hospitality and Catering: Unit 1-1.1.1 - Standards and ratings

Standards and ratings: You will need to be able to know the importance of standards and ratings within the hospitality and catering industry, they are hotel and guest house standards, and restaurant standards.

Hotel and guest house standards

Hotels and guest houses standards are awarded and given star ratings. You should know what criteria is needed to be met for an establishment to receive each star rating.

Star rating 1 = Basic and acceptable accommodation and facilities. Simple rooms with no room service offered.

Star rating 2 = Average accommodation and facilities, a small establishment, and would not offer room service or have a restaurant.

Star rating 3 = Good accommodation and facilities. One restaurant in the establishment, room service available between certain hours, and Wi-Fi in selected areas are provided. The establishment could have a pool and gym.

Star rating 4 = Very good accommodation and facilities. Large hotel & reception area of a very good standard. Certain hours of room service, with a swimming pool and valet parking offered.

Star rating 5 = Excellent standard of accommodation, facilities, and cuisine. Offer valet parking, 24 hr room service, spa, swimming pool, gym, and concierge service.

Restaurant standards

Restaurant standards have three main possible awards or ratings that you should know. They are listed below:

AA Rosette award

Ratings between one and five rosettes could be awarded based on the following:

- different types and variety of foods offered
- quality of the ingredients used
- where the ingredients are sourced
- how the food is cooked, presented and tastes
- skill level and techniques used as well as the creativity of the chef.

https://www.stirkhouse.co.uk/about-us/awards/attachment/award-rosette

Michelin star

A rating between one and three Michelin stars could be awarded based on the following:

- quality of ingredients used
- cooking and presentation techniques
- taste of the dishes
- standard of the cuisine
- value for money.

https://guide.michelin.com/us/en/california/to-the-stars-and-beyond

Good food guide

A rating between one and 10 could be awarded based on the following:

- cooking skills
- quality of ingredients
- techninques and cooking skills shown.

Level 1/2 Hospitality and Catering Knowledge Organiser: Unit 1: 1.1.1 -
Types of Hospitality and catering provisions

Hospitality and catering providers
You must understand, be able to name, and explain the two different provisions in hospitality and catering.
Commercial: the business aims to **make profit** from the hospitality and catering provision that they provide.
Non-commercial: the service provider **doesn't aim** to make a profit from the service they provide.

Commercial (residential)

Commercial (residential): meaning the hospitality and catering provision aims to create a profit from the service they provide, but also offers accommodation.

For example:
- hotels, motels & hostels
- B&B, guest houses and Airbnb
- holiday parks, lodges, pods, and cabins
- campsites and caravan parks.

Non-commercial (residential)

Non-commercial (residential): the hospitality and catering provision offers accommodation but does not aim to make a profit from the service they provide.

For example:
- hospitals, hospices, and care homes
- armed forces
- prisons
- boarding schools, colleges, and university residences.

Commercial (non-residential)

Commercial (non-residential): catering establishments that aim to make a profit from their service, but no accommodation is provided.

For example:
- restaurants and bistros
- cafes, tea rooms and coffee shops
- takeaways
- fast food outlets
- public houses and bars
- airlines, cruise ships, long distance trains
- pop up restaurants
- food and drink provided by stadiums, concert halls and tourist attractions
- mobile food vans and street food trucks
- vending machines.

Non-commercial (non-residential)

Non-commercial (non-residential): catering establishments with no accommodation provided and don't aim to make a profit from their service.

For example:
- schools, colleges, and universities
- meals on wheels
- canteen in working establishments (subsidised)
- charity run food providers.

Level 1/2 Hospitality and Catering: Unit 1-1.1.1 -
Types of service in commercial and non-commercial provisions

Types of service in commercial and non-commercial provision
You need to be able to understand and know the different types of service within commercial and non-commercial provision. They are split into two main categories of food service and residential service.

Food service

The different types of food services in the catering sector are listed below. You should know the meaning of each one and be able to provide examples. For instance;

Table service
- Plate: the food is put on plates in the kitchen and served by waiting staff. Good portion control and food presentation consistent.
- Silver: a waiter will transfer food from a serving dish to the customer's plate using a silver spoon and fork at their table.
- Banquet: a range of foods suitable for large catered events such as weddings, parties, or award ceremonies.
- Family style: the food is placed on serving bowls on the customer's table for customers to share between them.
- Gueridon: is served from a trolley to the customer's table, the food is then cooked and/or finished and presented in front of the customer. Creates an atmosphere of sophistication and entertainment.

Counter service
- Cafeteria: all types of food and drink are shown on a long counter for customers to move along with a tray for them to choose what they want to eat.
- Fast food: the food and drink is displayed on a menu behind the counter, often with pictures. Quick, simple, and usually served with disposable packaging.
- Buffet: a range of foods served on a big serving table where customers walk up to collect their plate and help themselves to food and drink. The food can be hot or cold, and some items could be served by waiting staff.

Personal service
- Tray or trolley: the meals are served on trays from a trolley and customers sometimes order items in advance.
- Home delivery: the customer's order is made over the phone or online, and is then delivered by the business to their address.
- Takeaway: food that's cooked by the business onsite and then eaten elsewhere.

Residential service

Listed below are the different types of residential types of service in the hospitality and catering sector. You should know the different types of service offered in various hospitality provisions.

Rooms:
- single/ double/ king/ family
- suite (en-suite bath/ shower room, shared facilities).

Refreshments:
- breakfast/ lunch/ evening meal
- 24-hour room service/ restaurant available.

Leisure facilities:
- spa
- gym
- swimming pool.

Conference and function facilities:
- large rooms
- overhead projector and computer
- pens and paper provided
- refreshments available.

Level 1/2 Hospitality and Catering: Unit 1-1.1.2 -
Types of employment roles and responsibilities within the industry

Types of employment roles and responsibilities within the industry
There are four main areas within the industry that you should know the roles and responsibilities within. They are listed below:

Front of house

- Front of house manager: oversees all staff at the restaurant, provides training, hiring of staff, and ensures good customer service.
- Head waiter: oversees the waiting staff of the restaurant in high-end eating establishments.
- Waiting staff: greets customers, shows them their table, takes food and drink orders from customers, and serves them their order. Makes sure customers' needs are met, and that the food order is made correctly.
- Concierge: advises and helps customers with trips and tourist attractions. Books taxis for customers and parks customer cars.
- Receptionist: takes bookings, deals with questions and complaints from customers, checks-in customers, takes payment, and provides room keys.
- Maître d'hôte: oversees the service of food and drinks to customers. They greet customers, check bookings, reservations, and supervise waiting staff.

Kitchen brigade

- Executive chef: in charge or the whole kitchen, developing menus and overlooking the rest of the staff.
- Sous-Chef: the deputy in the kitchen and is in charge when the executive chef isn't available.
- Chef de partie: in charge of a specific area in the kitchen.
- Commis chef: learning different skills in all areas of the kitchen. Helps every chef in the kitchen.
- Pastry chef: prepares all desserts, pastry dishes and bakes.
- Kitchen assistant: helps with the peeling, chopping, washing, cutting of ingredients, and helps washing dishes and stored correctly.
- Apprentice: an individual in training in the kitchen and helps a chef prepare and cook dishes.
- Kitchen porter/ plongeur: washes the dishes and other cleaning duties.

Housekeeping

- Chambermaid: cleans guests' rooms when they leave, and restocks products that have been used, they also provide new bedding and towels.
- Cleaner: cleans hallways and the public areas of the establishment.
- Maintenance: repairs and maintains the establishment's machines and equipment, such as heating and air conditioning. These responsibilities could also include painting, flooring repair or electrical repair.
- Caretaker: carries out the day to day maintenance of the establishment.

Management

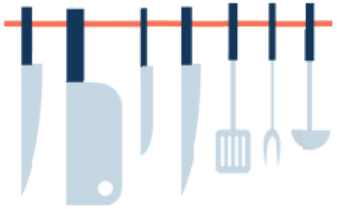
- Food and beverage: responsible for the provision of food and drink in the establishment which will include breakfast, lunch, dinner, and conferences.
- Housekeeping: ensuring laundering of bed linen & towels, ordering of cleaning products and overseeing housekeeping staff duties.
- Marketing: promotes events and offers to increase custom at the establishment, and is responsible for the revenue of the business.

Level 1/2 Hospitality and Catering: Unit 1-1.1.3 -
Working conditions in the hospitality and catering industry

Types of employment contracts and working hours

You need to know the following types of employment contacts and working hours.

- **Casual:** this type of contact could be provided through an agency and used to cover employees that are absent from work due to illness. There is no sick pay or holiday entitlement with this type of employment.
- **Full time (permanent):** working hours including start and finishing times are fixed and stated in this type of contract. A contact of this nature allows the employee to have sick pay and holiday entitlement.
- **Part-time (permanent):** working hours mean that the employee works on certain days of the week. Work times are stated in the contract, including the starting and finishing times that are fixed in this type of contract. The employee has sick pay and holiday entitlement in this type of contact.
- **Seasonal:** this type of contract is used when a business needs more staff due to busy times throughout the year, such as the Christmas period. The contract will state for the employee to work for a specific time frame only. Also, the contract would not expect further or regular work after the contact is complete.
- **Zero hours contract:** this type of contact is chosen between the employer and the employee. This means that the employee can sign an agreement to be available for work when the employer needs staff. No number of days or hours is stated in the contract and the employer doesn't require to ask the employee to work, and neither does the employee have to accept the work offered. No sick pay or holiday entitlement is offered for this type of contract.



Pay and benefits in the industry

The following pay and benefits are what you should be aware of in the industry.

- **A salary:** this type of pay is a fixed amount of money paid by the employer monthly, but is often shown as an annual sum on the contract.
- **Holiday entitlement:** employees are entitled to 28 days paid a year. Part-time contracts are entitled less depending to their contract hours.
- **Pension:** on retirement age, an employee qualifies for a pension contribution by the employer and the government.
- **Sickness pay:** money paid to the employee with certain contracts when they are unable to go to work due to illness.
- **Rates of pay:** national minimum wage should lawfully be offered to all employees over 18 years of age. This rate is per hour and is reviewed each year by the government.
- **Tips:** money given to an employee as a 'thank you' reward for good service from the customer.
- **Bonus and rewards:** given from an employer to the employee as a way of rewarding all the hard work shown from the employee throughout the year, and helping make the business a success. Also known as remuneration.

Working hours

The working hours directive in the UK states that employees on average cannot work more than 48 hours which is worked out over a period of 17 weeks. Employees can choose not to follow this and work more hours if they want to.

People under the age of 18 cannot work more than eight hours a day and 40 hours a week.

Employees that work six hours or more a day must have a break of 20 minutes, and have the right to have at least one day off every week.

Level 1/2 Hospitality and Catering: Unit 1:
Food related causes of ill health (AC4.1)

Food related causes of ill health

Ill health could be caused by any of the following:

- **bacteria**
- **allergies**
- **intolerances**
- **chemicals** such as:
  - detergent and bleach
  - pesticides and fertilisers.

Intolerances

Some people feel unwell when they eat certain foods. Common foods that cause intolerance include:

- milk (lactose)
- cereals (gluten)
- artificial sweeteners (Aspartame)
- flavour enhancers (MSG).

Food poisoning bacteria

The main causes of food poisoning bacteria are:

- **Bacillus cereus:** found in reheated rice and other starchy foods.
- **Campylobacter:** found in raw and undercooked poultry and meat and unpasteurised milk.
- **Clostridium perfringens:** found in human and animal intestines and raw poultry and meat.
- **E-coli:** found in raw meat, especially mince.
- **Listeria:** found in polluted water and unwashed fruit and vegetables.
- **Salmonella:** found in raw meat, poultry and eggs.
- **Staphylococcus aureus:** found in human nose and mouth.

Food and the law

Food can cause ill-health if it is stored, prepared and/or cooked incorrectly or if a person unknowingly eats a food that they are allergic or intolerant to. All hospitality and catering provision need to follow laws that ensure food is safe to eat. They are:

- **Food Labelling Regulations (2006):** A label must show all ingredients including allergens, how to store and prepare the food, where it came from, the weight of the food and a use-by or best-before date.
- **Food Safety (General Food Hygiene Regulations) 1995:** This law makes sure that anyone who handles food - from field to plate – does so in a safe and hygienic way. The **HACCP** system is used throughout the hospitality and catering sector.
- **Food Safety Act 1990:** This law makes sure that the food people it is safe to eat, contains ingredients fit for human consumption and is labelled truthfully.

Food allergies

An allergy is a reaction to something found in food. In the case of a severe allergy, the reaction can lead to death.

Common allergens include:

Cereals	Eggs	Seeds
Soya	Fish and shellfish	Strawberries
Peanuts	Wheat	Milk and dairy
Celery	Tree nuts	Mustard

MUSIC

Baroque Concerto Grosso

A **BAROQUE CONCERTO GROSSO** is an instrumental form involving two groups of performers: the **CONCERTINO** (or Concertante) featuring a small group of soloists accompanied by an orchestral accompaniment called the **RIPIENO.**

1600-1750

Harmony & Tonality

All Baroque Concerto Grossos have a **CONTINUO** part – an accompaniment which "fills in the harmonies and texture" played by the **HARPSICHORD** (or Organ) (playing **CHORDAL HARMONY** from **FIGURED BASS NOTATION**) with the **CELLO** or **BASSOON** doubling the Bass Line. **MODULATIONS** (changes of key) tended to go to the Dominant key or to the Relative minor of the original key. Tonality was mainly **DIATONIC** and in either clear **MAJOR** or **MINOR** tonalities.

Form & Structure

THREE MOVEMENTS – contrasted by **TEMPO** and a single mood or style within each movement. Movements in **RITORNELLO FORM** began with a **TUTTI** section which featured a **THEME**. Between appearances of this Ritornello Theme came **EPISODES** (contrasting sections).

1st Movement	Ritornello or a Fugue	Brisk and purposeful
2nd Movement	Da Capo Aria or Ternary Form	Slow and song-like often dotted rhythms
3rd Movement	Ritornello or a Fugue	Fast and Cheerful

Sometimes feature a short **CADENZA** section towards the end of the first movement (unaccompanied).

Rhythm, Tempo & Metre

The three movements of a Baroque Concerto Grosso were contrasted in **TEMPO** – Fast-Slow-Fast – with a consistent tempo within each movement. Dotted Rhythms were often a feature of the slower/second movements.

Texture

Mainly **POLYPHONIC** or **CONTRAPUNTAL** textures – complex and interweaving of parts, though some **HOMOPHONIC MELODY & ACCOMPANIMENT** sections for musical contrast.

Dynamics

TERRACED DYNAMICS – clear dynamic contrasts achieved by the whole orchestra changing the volume suddenly (rather than Crescendos or Diminuendos). No building up or fading down of volume in Baroque Concerto Grossos.

Melody

Melodies are decorated and embellished with **ORNAMENTS** (often by performers) *e.g. trills, turns, mordents and grace notes such as acciaccaturas,* which make melodies sound "busy". Melodies often long and flowing and use **SEQUENCES** (a musical phrase that is repeated at a different pitch either going up or down) and **IMITATION** (where one instrumental part is copied (imitated) by other instruments.

Soloists

The Baroque Concerto Grosso is a work for two or more soloists. The soloists (**CONCERTINO** –meaning "little ensemble") were the "stars of the show" and performed demanding and technically difficult parts.

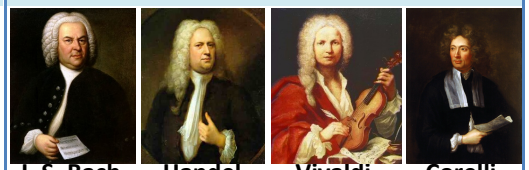
Soloists vs. Orchestral Accompaniment

The soloists were always "in the spotlight" but sometimes performed with the accompanying orchestra in **TUTTI** sections. Musical contrast between sections is important.

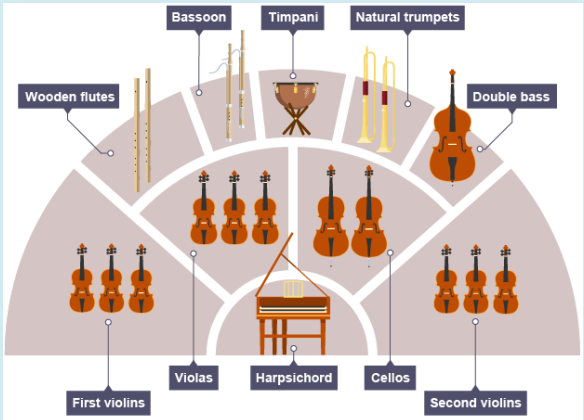
Venue

Baroque Concerto Grossos were performed either in churches, opera houses or small salons (rooms) or courts of wealthy individuals.

Baroque Concerto Grosso Composers



J. S. Bach | Handel | Vivaldi | Corelli



Instrumentation – Typical Instruments, Timbres and Sonorities

The orchestra used for a Baroque Concerto Grosso was split into two sections: the **RIPIENO** (the main orchestra who provided the accompaniment and less technically-demanding parts) and the **CONCERTINO** (or Concertante) who were the Soloists/Solo Section. The instruments used within the **CONCERTINO** of a Baroque Concerto Grosso can include: Violin, Cello, Recorder, Flute, Oboe, Bassoon, Trumpet and Lute.

The **BAROQUE ORCHESTRA** typically numbered between 10-30 players. The main and largest section was the **STRINGS** *(1st and 2nd Violins, Violas, Cellos and Double Basses)* who played most of the 'main melody'. A small **WOODWIND** section could consist of 2 Wooden Flutes, 2 Oboes and 2 Bassoons. The **BRASS** section may feature 2 "Natural" Trumpets and 2 Horns and the **PERCUSSION SECTION** featured only **TIMPANI** which were used only for dramatic effects. The **CONTINUO** player led and directed the Baroque Orchestra from the Harpsichord (no conductor).

Baroque Solo Concerto

The **BAROQUE SOLO CONCERTO** grew out of the **BAROQUE CONCERTO GROSSO** in which a **single solo instrument** is accompanied by an orchestra.

1600-1750

Harmony & Tonality

All Baroque Solo Concertos have a **CONTINUO** part – an accompaniment which "fills in the harmonies and texture" played by the **HARPSICHORD** (or Organ) (playing **CHORDAL HARMONY** from **FIGURED BASS NOTATION**) with the **CELLO** or **BASSOON** doubling the Bass Line. **MODULATIONS** (changes of key) tended to go to the Dominant key or to the Relative minor of the original key. Tonality was mainly **DIATONIC** and in either clear **MAJOR** or **MINOR** tonalities.

Form & Structure

THREE MOVEMENTS – contrasted by **TEMPO** and a single mood or style within each movement. Movements in **RITORNELLO FORM** began with a **TUTTI** section which featured a **THEME**. Between appearances of this Ritornello Theme came **EPISODES** (contrasting sections)

1st Movement	Ritornello or a Fugue	Brisk and purposeful
2nd Movement	Da Capo Aria or Ternary Form	Slow and song-like often dotted rhythms
3rd Movement	Ritornello or a Fugue	Fast and Cheerful

Sometimes feature a short **CADENZA** section towards the end of the first movement (unaccompanied).

Rhythm, Tempo & Metre

The three movements of a Baroque Solo Concerto were contrasted in **TEMPO** – Fast-Slow-Fast – with a consistent tempo within each movement. Dotted Rhythms were often a feature of the slower/second movements.

Texture

Mainly **POLYPHONIC** or **CONTRAPUNTAL** textures – complex and interweaving of parts, though some **HOMOPHONIC MELODY & ACCOMPANIMENT** sections for musical contrast.

Dynamics

TERRACED DYNAMICS – clear dynamic contrasts achieved by the whole orchestra changing the volume suddenly (rather than Crescendos or Diminuendos). No building up or fading down of volume in Baroque Solo Concertos.

Melody

Melodies are decorated and embellished with **ORNAMENTS** (often by the soloist) *e.g. trills, turns, mordents and grace notes such as acciaccaturas,* which make melodies sound "busy". Melodies often long and flowing and use **SEQUENCES** (a musical phrase that is repeated at a different pitch either going up or down) and **IMITATION** (where one instrumental part is copied (imitated) by other instruments.

Soloists

The Baroque Solo Concerto is a work for a single solo instrument. The soloist's parts were often very technically difficult with a chance for the solo performer to "show off" their technical ability and skill.

Soloist vs. Orchestral Accompaniment

The soloist was always "in the spotlight" but sometimes performed with the accompanying orchestra in **TUTTI** sections. Musical contrast between sections became more important than in Concerto Grossos.

Venue

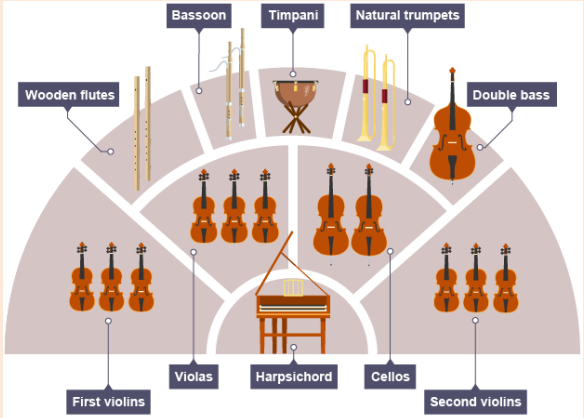
Baroque Solo Concertos were performed either in churches, opera houses or small salons (rooms) or courts of wealthy individuals.

Baroque Solo Concerto Composers

J. S. Bach

Handel

Vivaldi



Instrumentation – Typical Instruments, Timbres and Sonorities

The orchestra used to accompany Baroque Solo Concertos was slightly larger than the Baroque Concerto Grosso but typically numbered between 10-30 players. The main and largest section was the **STRINGS** *(1st and 2nd Violins, Violas, Cellos and Double Basses)* who played most of the 'main melody'. A small **WOODWIND** section could consist of 2 Wooden Flutes, 2 Oboes and 2 Bassoons. The **BRASS** section may feature 2 "Natural" Trumpets and 2 Horns and the **PERCUSSION SECTION** featured only **TIMPANI** which were used only for dramatic effects. The **CONTINUO** player led and directed the Baroque Orchestra from the Harpsichord (no conductor). The instruments used as soloists within Baroque Solo Concertos included the Violin, Cello, Recorder, Flute, Oboe, Bassoon, Trumpet and Lute.






Classical Solo Concerto

During the **CLASSICAL PERIOD**, the Baroque Concerto Grosso went "out of fashion" and Classical composers continued to write **SOLO CONCERTOS** for a single solo instrument with more difficult and technically demanding solo parts (**VIRTUOSIC**), accompanied by a now, much larger and more developed, orchestra.

1750-1820

Harmony & Tonality

SIMPLE HARMONY making use of mainly **PRIMARY CHORDS – I, IV** and **V**. **DIATONIC** harmony in either clear **MAJOR** or **MINOR** tonalities. **MODULATIONS** to **RELATED KEYS** (relative major/minor, subdominant major and minor and dominant major/minor).

Venue

Performance spaces were becoming larger than in the Baroque period due to size of orchestras. Recital and Concert Halls and Opera Houses were popular venues for performing Concertos.

Form & Structure

THREE MOVEMENTS – contrasted by **TEMPO** and style/mood. **RONDO** form now popular (ABACADA...) where A is the recurring **THEME** between contrasting **EPISODES** (B, C, D..) and **SONATA FORM** (**EXPOSITION, DEVELOPMENT, RECAPITULATION, CODA)** now popular. Classical Solo Concertos often have long orchestral sections before the soloist enters – "delayed entry of the soloist". Movements longer than Baroque.

1st Movement	Sonata Form	Brisk and purposeful
2nd Movement	Ternary or Variation Form	Slow, lyrical and song-like
3rd Movement	Rondo, Variation Form or Sonata Form	Fast and Cheerful

Rhythm, Tempo & Metre

The three movements of a Classical Solo Concerto were contrasted in **TEMPO** – Fast-Slow-Fast and style/mood. Some changes of **TEMPO** for effect/expression.

Texture

Busy Baroque Polyphonic Textures now replaced with clearer **HOMOPHONIC (MELODY AND ACCOMPANIMENT)** textures.

Dynamics

Wider range of Dynamics – ***pp, ff, mp, mf*** **CRESCENDOS** and **DECRESCENDOS** or **DIMINUENDOS** now used showing an increasing range of dynamics and more emphasis on expression in the music.

Melody

The melodies in Classical Solo Concertos were **LIGHT, SIMPLE** and **ELEGANT** and continue to use **SEQUENCES** and **ORNAMENTS** (although not as much as in the Baroque period). Musical phrases are **BALANCED** and **EVEN** (e.g. 4 or 8 bars) maybe with some **QUESTION AND ANSWER** phrases.

Soloist

CADENZA – became integral to the end of the 1st movement (and sometimes last movement) – very difficult and **VIRTUOSIC** unaccompanied sections allowing the soloist to show off their technical skill often containing lots of fast scale passages, broken chords and decorated and ornamented melodies. Often cadenza sections end with a long, held **TRILL** to signal to the orchestra to enter again for the final **CODA** section. Cadenzas were improvised by the soloists during performance, however, composers such as Beethoven wrote cadenzas out on the score. The soloist's part was more technically demanding and **VIRTUOSIC** than in Baroque Concertos.

Soloist vs. Orchestral Accompaniment

Sometimes the soloist and orchestra perform sections in **DIALOGUE** with each other. **The conductor follows the soloist and the orchestra follow the conductor** depending on the soloist's **INTERPRETATION** of the piece (which requires rehearsal).

Classical Solo Concerto Composers

Haydn

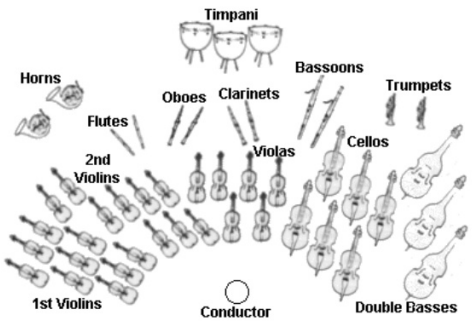
Solo Trumpet, Flute, Oboe, Bassoon, Violin, Cello and Piano Concertos

Mozart

27 Solo Piano Concertos and Concertos for Solo Violin, Clarinet, Horn and Flute.

Beethoven

Solo Concertos for Piano and Violin. Early style was "Classical".



Instrumentation – Typical Instruments, Timbres and Sonorities

As the Harpsichord declined in popularity, Classical composers no longer added **CONTINUO** parts to the orchestral accompaniment and a **CONDUCTOR** was now established to lead the orchestra. The **CLASSICAL ORCHESTRA** grew in size and new instruments such as the Clarinet were added. The **CLASSICAL ORCHESTRA** typically numbered between 30-60 players. The **STRINGS** *(1st and 2nd Violins, Violas, Cellos and Double Basses)* continued to be the 'main section' playing most of the 'main melody' and contained more players than in Baroque orchestras. The **WOODWIND** now typically featured 2 x **METAL** Flues, 2 x Oboes, 2 x Bassoons, and 2 x **(newly invented)** Clarinets. **BRASS** continued to consist of 2 x Horns and 2 **(now valved)** Trumpets and the **PERCUSSION** continued to feature only the **TIMPANI**. Classical composers wrote Solo Concertos for instruments including the **PIANO** (newly invented and replacing the Baroque Harpsichord), **VIOLIN, CELLO, FLUTE, OBOE, CLARINET** (also newly invented), **BASSOON** and **FRENCH HORN**.

Romantic Solo Concerto

ROMANTIC SOLO CONCERTOS continued to be instrumental works for a **single solo instrument** with orchestral accompaniment but became much more **DRAMATIC** sounding and emotive. Sometimes **DOUBLE CONCERTOS** were written for2 solo instruments.

1820-1900

Harmony & Tonality

Harmony continued to be mainly **DIATONIC** but much more use of **CHROMATIC HARMONY, DISSONANCE** *(clashing notes and chords)* and **ADDED NOTE CHORDS** *e.g. 9ths* to create dramatic effects.

Form & Structure

1st Movement	Sonata Form	Allegro – soloist plays virtually throughout
2nd Movement	Ternary or Variation Form	Slow, lyrical and song-like, often short and acting mainly as an introduction to the very fast and virtuosic finales. Sometimes linked to final movement with a pause.
3rd Movement	Rondo, Variation or Sonata Form	Fast and Cheerful

THREE MOVEMENTS – *(sometimes "linked" (Mendelssohn) or even in just one movement (Liszt)*

Rhythm, Tempo & Metre

Frequent changes of time signature and tempo.

Texture

HOMOPHONIC (MELODY AND ACCOMPANIMENT) but more complex than in Classical Concertos.

Dynamics

Extremes of dynamics common (***ppp, fff***) and specific **EXPRESSION MARKINGS** *e.g. espressivo, dolce, appassionato*

Melody

The regular and balanced phrases of the Classical Concerto were less important with composers giving more freedom to expression within their melodies which were now often long and dramatic, loud and powerful or warm and emotional.

Soloists (and Articulation)

The soloist's part became even more difficult, **VIRTUOSIC** and technically difficult to play. **CADENZA** sections continued to allow the soloist to "show off" becoming more complex and difficult with lots of **MELODIC DECORATION**, **ORNAMENTATION** and **FAST SCALE PASSAGE** and demanding playing techniques particular to the solo instrument *e.g. glissandi on the piano, double stopping and harmonics on the violin*. Cadenzas were now written out and not improvised by the performer. Soloist often enters immediately (**NO ORCHESTRAL INTRODUCTIONS**) at the start of the 1st movement sharing themes with the orchestra.

Soloists vs. Orchestral Accompaniment

In the Romantic period, the soloist stepped forward as a "heroic figure" with the orchestra slipping back into a more "subordinate" role, but these changing roles also added to excitement and drama and more "competition" between soloist and orchestra. The conductor continues to follow the soloist and the orchestra follows the conductor. The soloist's interpretation of the music is now more important due to the music being more dramatic and powerful.

Venue

Many Romantic Solo Concerto composers were also **VIRTUOSO PERFORMERS** *e.g. Franz Liszt, Chopin, Clara Schumann* and *Niccolo Paganini (Violin Virtuoso)* who wrote and performed in large-scale public concerts, subscription concerts and festivals. Larger concert halls had to be built due to the rise of the "middle class" concert goer.

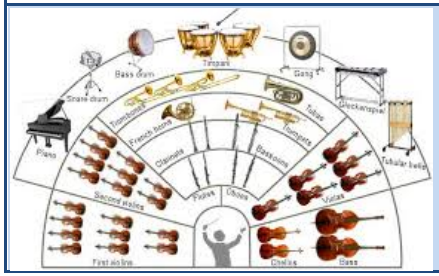
Romantic Solo Concerto Composers

Beethoven
Late Concertos

Brahms
Violin and Piano Concertos

Liszt
Piano Concertos

Mendelssohn
Solo Violin Concerto



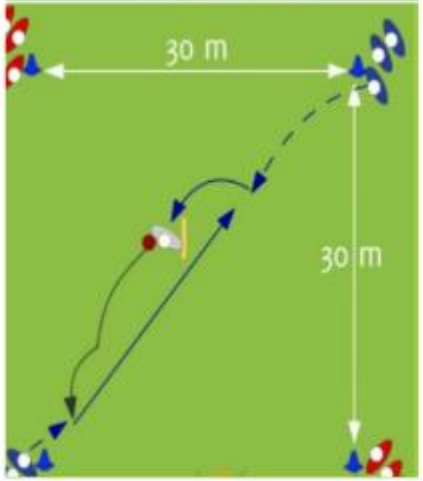
Instrumentation – Typical Instruments, Timbres and Sonorities

The Romantic orchestra was large and often contrasted dramatically with the soloist. With the growth of the Romantic orchestra, new **TIMBRES** and **SONORITIES** became available to composers who explored rich and colourful orchestration. The **STRINGS** section was enlarged again, often with the addition of Harps. New instruments were added to the **WOODWIND** section such as the Double Bassoon, Cor Anglais, Bass Clarinet and Piccolo. The **BRASS** section saw Trombones and a Tuba added along with an extra Trumpet and two further French Horns and the **PERCUSSION** section now featured a vast array of Drums, Cymbals, Pitched Percussion and other instruments which could be hit, struck, banged or plucked! There could be between 90-100 players in a Romantic orchestra. Romantic composers wrote Solo Concertos for almost any orchestral instrument, but the **PIANO** and **VIOLIN** continued to be popular choices as solo instruments.

OCR
Oxford Cambridge and RSA

YEAR 10 SPORTS STUDIES – SPRING TERM KNOWLEDGE BANK

Cambridge National in Sport Studies



Key components of Individual Performance

- Skills and techniques
- Creativity
- Tactics and strategies or compositional ideas
- Decision making
- Management/maintenance of own performance

Methods to improve Performance

- Progressive practice
- Drills
- Fixed Whole practice
- Part practice
- Variable practice
- Altering context

Key components of Team Performance

- Skills and techniques
- Creativity
- Tactics and Strategies Decision making
- Awareness of role within the team
- Contribution to the team

Performance Improvement Measures

- Video analysis
- Quantitative activity trackers
- Monitoring competition results
- Proficiency awards
- Logs of performance
- Video diaries
- Peer observation

mind Devon

01752 512 280

shout 85258

kooth

YOUNGMiNDS
fighting for young people's mental health

HELP AND SUPPORT

ChildLine 0800 1111

mind for better mental health

THE MIX

Provides support for anyone under the age of 25
www.themix.org.uk | 0808 808 4994

CAMPAIGN AGAINST LIVING MISERABLY CALM

Confidential support to people experiencing difficulties
ww.thecalmzone.net
0800 58 58 58
Everyday, 5pm-midnight

Free 24/7 call service for all ages to talk about your issues
www.samaritans.org | 116 123

stem4
supporting teenage mental health

Free service & apps supporting mental health for ages 11-19
www.stem4.org.uk

PAIGNTON ACADEMY

In School

Speak to your Tutor

Find a member of staff with an Orange Lanyard

Speak to any member of staff

Use the 'Safeguarding Concern Form'
on your school desktop page

Speak to your Head of House
or Pastoral Manager