Hartford
Church of England
High School

CARITAS ET VERITAS

# Year 11

# Knowledge Organiser

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# Maths

# Maths - Foundation - Formula and Facts

You are given this in the exam

## Foundation Tier Formulae Sheet

### Perimeter, Area and Volume

Where $a$ and $b$ are the lengths of the parallel sides and $h$ is their perpendicular separation:

Area of a trapezium $= \frac{1}{2}(a+b)h$

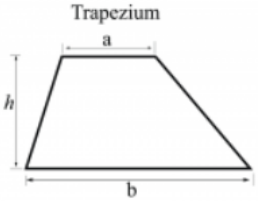
Diagrams not given

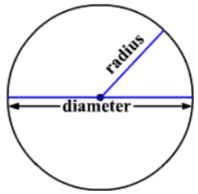
Volume of a prism = area of cross section × length

Where $r$ is the radius and $d$ is the diameter:

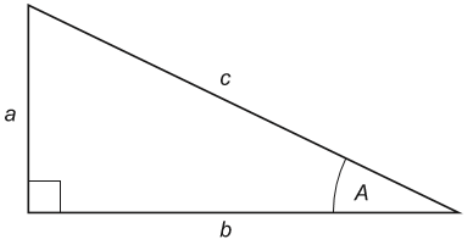
Circumference of a circle = $2\pi r = \pi d$

Area of a circle = $\pi r^2$




### Pythagoras' Theorem and Trigonometry




In any right-angled triangle where $a$, $b$ and $c$ are the length of the sides and $c$ is the hypotenuse:

$a^2 + b^2 = c^2$

In any right-angled triangle $ABC$ where $a$, $b$ and $c$ are the length of the sides and $c$ is the hypotenuse:

$\sin A = \frac{a}{c}$ $\cos A = \frac{b}{c}$ $\tan A = \frac{a}{b}$

### Compound Interest

Where $P$ is the principal amount, $r$ is the interest rate over a given period and $n$ is the number of times that the interest is compounded:

Total accrued $= P\left(1 + \frac{r}{100}\right)^n$

### Probability

Where $P(A)$ is the probability of outcome $A$ and $P(B)$ is the probability of outcome $B$:

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

You need to learn these

### Laws of indices

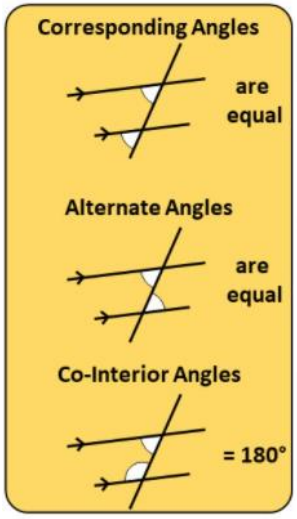
Know and apply:

$a^m \times a^n = a^{m+n}$

$a^m \div a^n = a^{m-n}$

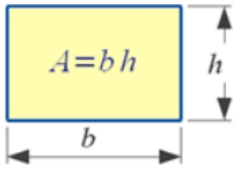
$(a^m)^n = a^{mn}$

### Angle Facts

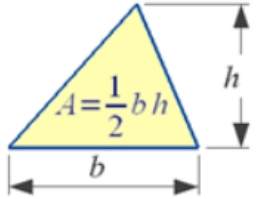



### Area of 2D Shapes Formula

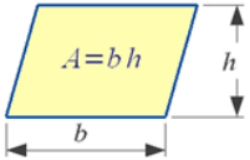
**Rectangle**

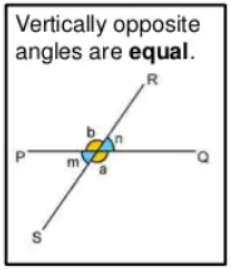


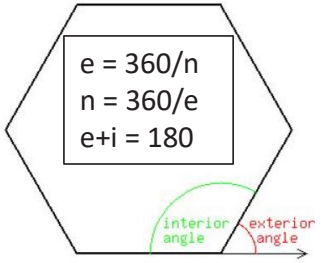

**Triangle**



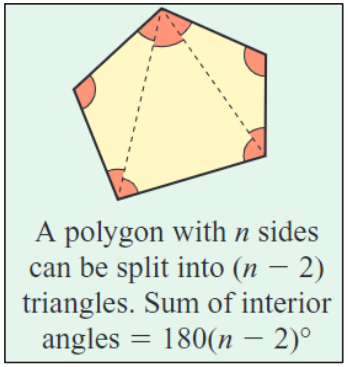

**Parallelogram**




e = exterior angle
i = interior angle
n = number of sides



# Maths - Foundation - Formula and Facts

## Compound measures

**Speed**

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

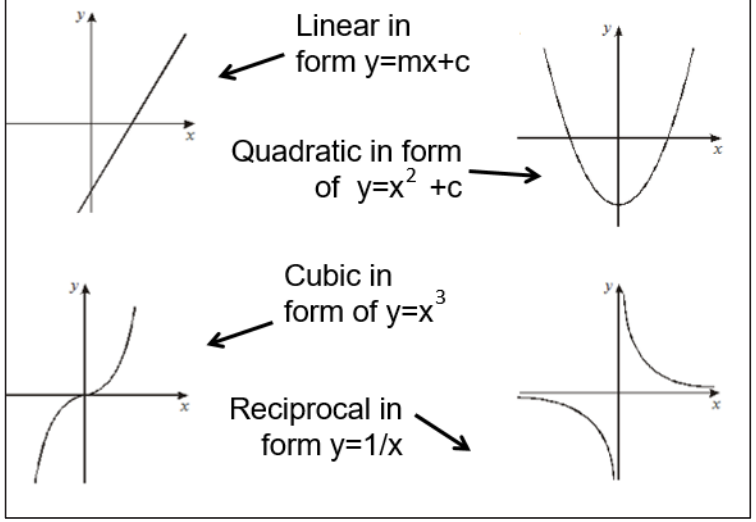

**Density**

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

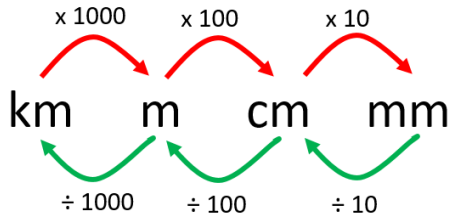

**Pressure**

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

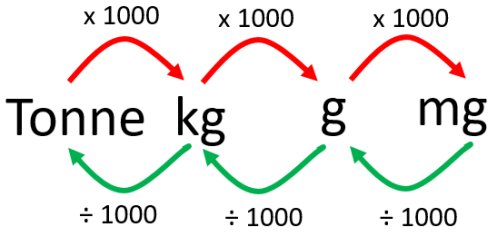

## Types of Graphs



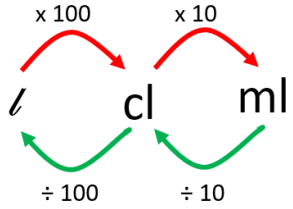

## Metric Conversions - LENGTH




## Metric Conversions - MASS




## Metric Conversions - CAPACITY




| Length | Mass | Capacity |
|---|---|---|
| 1 cm = 10 mm | 1 g = 1000 mg | 1 cl = 10 ml |
| 1 m = 100 cm | 1 kg = 1000 g | 1 $cm^3$ = 1 ml |
| 1 km = 1000 m | 1 tonne = 1000 kg | 1 litre = 1000 ml |
| | | 1 litre = 1000 $cm^3$ |

5miles = 8km

## Extras

# Maths - Higher - Formula and Facts

You are given this in the exam

## Higher Tier Formulae Sheet

### Perimeter, Area and Volume

Where $a$ and $b$ are the lengths of the parallel sides and $h$ is their perpendicular separation:

Area of a trapezium $= \frac{1}{2}(a+b)h$

Volume of a prism = area of cross section × length

Where $r$ is the radius and $d$ is the diameter:

Circumference of a circle $= 2\pi r = \pi d$

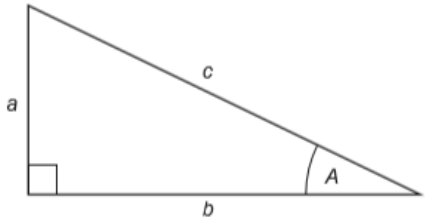
Area of a circle $= \pi r^2$

### The Quadratic Formula

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

### Pythagoras' Theorem and Trigonometry

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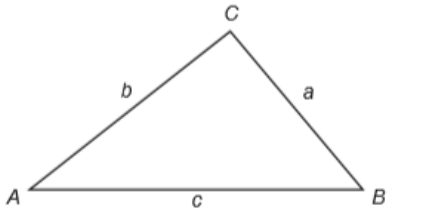



In any triangle $ABC$ where $a$, $b$ and $c$ are the length of the sides:

sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

cosine rule: $a^2 = b^2 + c^2 - 2bc\cos A$

Area of triangle $= \frac{1}{2}ab\sin C$

### Compound Interest

Where $P$ is the principal amount, $r$ is the interest rate over a given period and $n$ is the number of times that the interest is compounded:

Total accrued $= P\left(1 + \frac{r}{100}\right)^n$

### Probability

Where $P(A)$ is the probability of outcome $A$ and $P(B)$ is the probability of outcome $B$:

$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$

$P(A \text{ and } B) = P(A \text{ given } B)P(B)$

## You need to learn these

Laws of indices

$a^m \times a^n = a^{m+n}$

$\frac{a^m}{a^n} = a^{m-n}$

$(a^m)^n = a^{m \times n}$

$a^0 = 1$

$a^{-n} = \frac{1}{a^n}$

$\left(\frac{a}{b}\right)^n = \frac{a^n}{b^n}$

$a^{\frac{m}{n}} = \left(a^{\frac{1}{n}}\right)^m$

The power $\frac{1}{2}$ means square root

The power $\frac{1}{3}$ means cube root

The power $\frac{1}{4}$ means Fourth root etc.

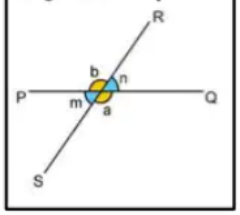
## Angle Facts

**Corresponding Angles** are equal

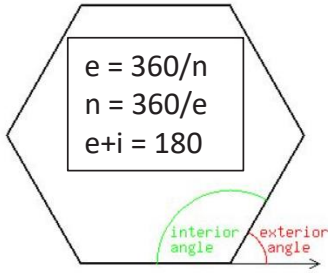
**Alternate Angles** are equal

**Co-Interior Angles** = 180°

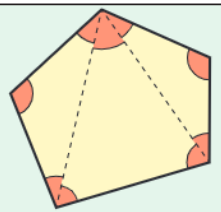
Vertically opposite angles are **equal**.




e = 360/n
n = 360/e
e+i = 180




e = exterior angle
i = interior angle
n = number of sides



A polygon with $n$ sides can be split into $(n-2)$ triangles. Sum of interior angles $= 180(n-2)°$

# Maths - Higher - Formula and Facts

## Compound measures

**Speed**

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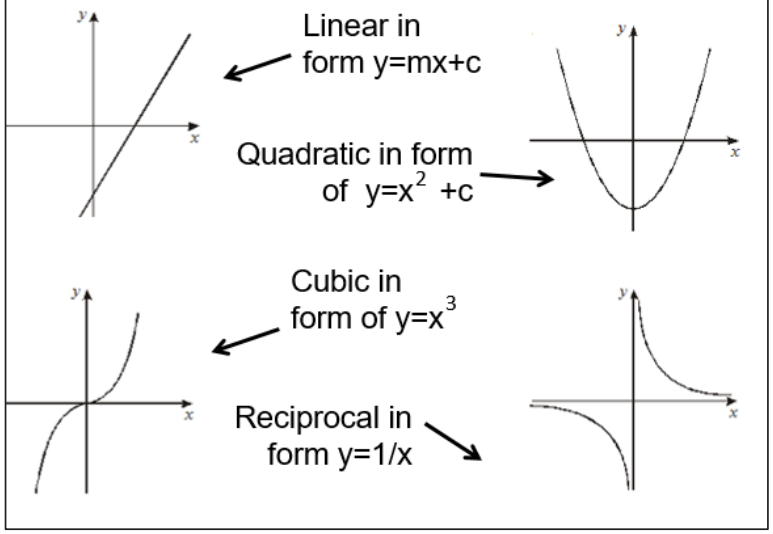
## Types of Graphs




| | 0° | 30° | 45° | 60° | 90° |
|---|---|---|---|---|---|
| $\sin\theta$ | 0 | $\frac{1}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{\sqrt{3}}{2}$ | 1 |
| $\cos\theta$ | 1 | $\frac{\sqrt{3}}{2}$ | $\frac{\sqrt{2}}{2}$ | $\frac{1}{2}$ | 0 |
| $\tan\theta$ | 0 | $\frac{\sqrt{3}}{3}$ | 1 | $\sqrt{3}$ | $\pm\infty$ |

## Extras

# English

Hartford Church of England High School

# English Language Paper 2: Reading

Language Paper 2: Reading

| Q3/ 4 Word class | Definition | Example |
|---|---|---|
| Verb | A **verb** is a word or set of words that shows action (*runs, is going, has been painting*); feeling (*loves, envies*); or state of being (*am, are, is, have been, was, seem*).. | The curfew simply perpetuated the idea that young people were not to be trusted. |
| Adverb | An adverb labels how, when or where something happens (and they often end in '–ly'). | I apologised profusely for my error. |
| Noun | Nouns are names, places and things; they also signify imagined things like 'a ghost'; and ideas or concepts, such as 'love', 'guilt' or 'fate'. | You ought to feel a sense of regret for your actions. |
| Pronoun | Words used instead of a noun i.e. 'he', 'she', 'they', 'it'. | I cannot tackle this alone; we need to unite to make a change. |
| Adjective | An adjective is a describing word or phrase that adds qualities to a noun. It normally comes before a noun, or after verbs like 'am', 'is', 'was', 'appears' or 'seems'. | Your attitude is defeatist and, quite frankly, disappointing. |
| Preposition | Prepositions are words and phrases that give information about place, time and manner | We must stand beside one another and fight against these corporations. |

| Sentence types | Examples |
|---|---|
| Imperative<br>(giving a command) | Accept that there is nothing to be done.<br>Change the way you think. |
| Declarative<br>(stating information) | She was contrite when she apologised.<br>As a group, they seemed despondent. |
| Interrogative<br>(asking a question. They end with a question mark) | Was it everything you wished for?<br>Why not go against the status quo and dare to be different? |
| Exclamatory<br>(expressing a heightened emotion. They end with an exclamation mark) | They were obnoxious!<br>I may be many things but defeatist is simply not one of them! |

| Q3/ 4 Non-Fiction Writers' Methods | Definition | Example |
|---|---|---|
| **Rhetorical question** | A question asked in order to prompt further thought or to make a point rather than to get an answer. | If not me, then who? If not now, then when? |
| **Allusion** | A reference to another literary, artistic, historical, or musical work. | We must act as our own 'Inspector' in Priestley's famous play, and demand honesty, integrity and truth from those around us. |
| **Simile** | A descriptive technique that compares one thing with another, usually using 'as' or 'like'. | He is as determinedly dishonest as a politician attempting to cover his latest immoral decision. |
| **Emotive language** | Words/ phrases deliberately used to evoke a powerful feeling from the reader i.e. sympathy, anger. | I find the notion that I am not worthy of voting for my country's next leader because of my age, both demeaning and deeply insulting. |
| **Statistic** | A fact that is supported by numerical data. | The Trussell Trust's foodbank network distributed 1,332,952 three day emergency food supplies to people in crisis, a 13% increase on the previous year. 484,026 of these went to children. |
| **Flattery** | Deliberately complimenting the reader. | The very fact that you are reading this article suggests that you are compassionate and understanding of the plight of your fellow man. |
| **Hyperbole** | Deliberately exaggerated language. | He was so obnoxious; I was hoping he would be arrested on the spot and given a very long prison sentence purely for not saying please or thank you. |
| **Humour** | Describing a surprising or unexpected reaction to an event/ person/ object to create amusement | My brother may look angelic but do not be fooled by his toddler aesthetic: he is a tiny-but very real-psychopath. |
| **Irony/ sarcasm** | When the literal meaning and the intended meaning are the opposite, typically for humorous or emphatic effect. | There is nothing I enjoy more than being chastised by a group of people who have |
| **Listing** | When the writer includes several words/ phrases/ ideas, one after the other. | We ought be challenging the status quo, demanding more and not settling for easy answers. |
| **Personification** | Describing an inanimate object as having human feelings. | If we are not careful, prejudice will become our leader and it will dictate our actions and thoughts. |
| **Eye-witness quotation/ expert quotation** | Direct speech from a person who witnessed an event/ direct speech from someone who has an in-depth understanding of the topic. | The British Nursing Association said the move was "hugely concerning" and a stark example of the "extreme workforce pressure" at NHS emergency services, which are facing rising demand while recruitment and retention of nurses gets harder. |

| Methods Continued | Definition | Example |
|---|---|---|
| **Colloquialism** | Informal /spoken language. | To lol or not to lol: that is the question. |
| **Repetition** | When a word/ phrase is noticeably repeated throughout a sentence/ paragraph/ whole text. | One child, one teacher, one pen and one book can change the world. |
| **Tone** | The feeling/ attitude displayed at different points in the text. | The text begins by establishing a humorous tone but the tone quickly becomes more serious as the writer outlines their argument. |
| **Intensifier** | A word, especially an adverb or adjective, that has little meaning itself but is used to add emphasis to another adjective, verb, or adverb | They were very despondent. |
| **Minimiser** | A word that is used to make another adjective, verb or adverb sound lesser. | Admittedly, her response was slightly perturbing. |

Paper Overview (Section A):

1. Multiple choice- 4 marks
2. Summarising and comparing the writers' ideas- 8 marks
3. Analysing the writers' use of language- 12 marks
4. Comparing the writers' use of language/ structure- 16 marks

# English Language Paper 2: Writing

| Paper 2 Language Techniques | Definition | Example |
|---|---|---|
| **Rhetorical question** | A question asked in order to prompt further thought or to make a point rather than to get an answer. | If not me, then who? If not now, then when? |
| **Allusion** | A reference to another literary, artistic, historical, or musical work. | We must act as our own 'Inspector' in Priestley's famous play, and demand honesty, integrity and truth from those around us. |
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| Q5 Text Types | |
|---|---|
| Letter | ❑the use of addresses & date<br>❑a formal mode of address e.g. Dear Sir/Madam or a named recipient<br>❑effectively/fluently sequenced paragraphs<br>❑an appropriate mode of signing off: Yours sincerely/faithfully. |
| Article | ❑Broadsheet = formal/Local or tabloid = informal<br>❑a clear/apt/original title<br>❑a strapline & subheadings<br>❑an introductory (overview) paragraph<br>❑effectively/fluently sequenced paragraphs. |
| Leaflet (text only) | ❑a clear/apt/original title<br>❑organisational devices such as inventive subheadings or boxes<br>❑bullet points<br>❑effectively/fluently sequenced paragraphs. |
| Speech (text only) | ❑a clear address to an audience<br>❑effective/fluently linked sections to indicate sequence<br>❑rhetorical indicators that an audience is being addressed |
| Essay | ❑an effective introduction and convincing conclusion<br>❑effectively/fluently linked paragraphs to sequence a range of ideas. |

## Structuring your response

1. Drop
2. Anecdote
3. Research paragraph
4. Counter argument
5. Rhetorical Challenge

# Science

# Science: SB9 - Ecology - Part 1

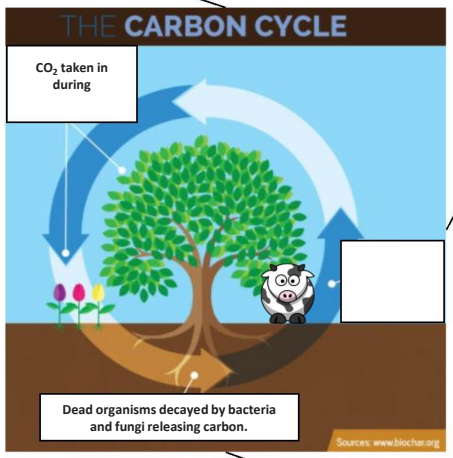
| Ecosystem | |
|---|---|
| *Environment* | The conditions surrounding an organism; abiotic and biotic. |
| *Habitat* | Place where organisms live e.g. woodland, lake. |
| *Population* | Individuals of a species living in a habitat. |
| *Community* | Populations of different species living in a habitat. |

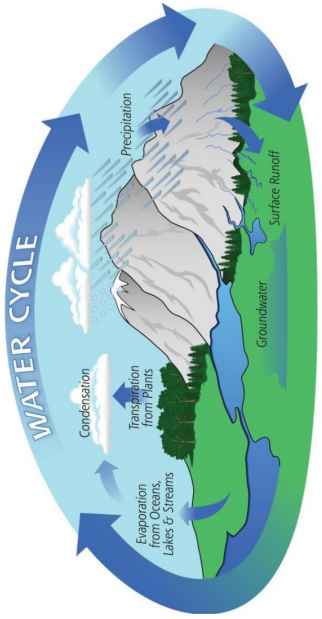
Organisms require a supply of materials from their surroundings and from the other living organisms.

| Surviving and reproducing | |
|---|---|
| *Competition* | Plants in a community or habitat compete with each other for light, space, water and mineral ions. |
| | Animals compete with each other for food, mates and territory. |
| *Interdependence* | Species depend on each other for food, shelter, pollination, seed dispersal etc. Removing a species can affect the whole community |

In times of drought desalination plants can be used to produce potable water.

Bacteria respire when breaking down dead organisms releasing $CO_2$.




**Decomposition and material cycling in abiotic an biotic systems**

**Interdependence and competition**

**EDEXCEL GCSE Ecosystems and material cycles PART 1**

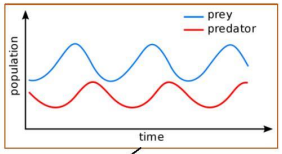
| Parasitism and mutualism | |
|---|---|
| *Parasites* | Parasites feed off a host causing harm to the host e.g. tape worm living inside digestive system. |
| *Mutualistic relationships* | e.g. insects and flowers in pollination. Plant ovum are successfully fertilised, insect species receive food (nectar) |

**Abiotic and biotic factors.**

| Abiotic | Biotic |
|---|---|
| *Non-living factors that affect a community* | *Living factors that affect a community* |
| Living intensity. | Availability of food. |
| Temperature. | |
| Moisture levels. | |
| Soil pH, mineral content. | New predators arriving. |
| Wind intensity and direction. | New pathogens. |
| Carbon dioxide levels for a plant. | One species outcompeting so numbers are no longer sufficient to breed |
| Oxygen levels for aquatic organisms. | |

**Levels of organisation**

**Photosynthetic organisms are the producers of biomass for life on Earth**



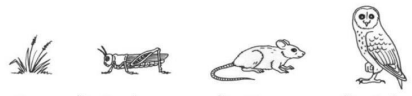

In a stable community the numbers of predators and prey rise and fall in cycles.

**Materials are recycled to provide the building blocks for future organisms**

**Food chains**

*Feeding relationships in a community*

| Producer | Primary consumer | Secondary consumer | Tertiary consumer |
|---|---|---|---|




All food chains begin with a producer e.g. grass that is usually a green plant or photosynthetic algae.

Consumers that kill and eat other animals are predators and those eaten are prey.

**Rate of decomposition (biology only)**

$$= \frac{mass\ lost}{number\ of\ days}$$

**Factors affecting rate of decay and food preservation (biology only)**

*Temperature, water, oxygen*

Increase the rate of decay when increased. In enzyme controlled reactions raising the temperature too high will denature the enzymes.

# Science: SB9 - Ecology - Part 2

## EDEXCEL GCSE Ecosystems and material cycles PART 2

### Food production (biology only)

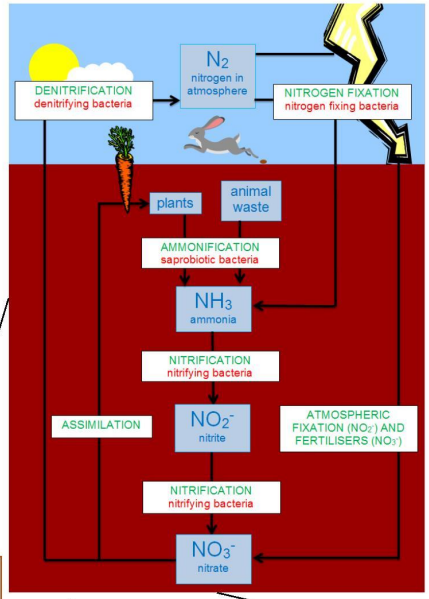
| | | |
|---|---|---|
| Factors affecting food security | *Enough food is needed to feed a changing population* | Increasing human population |
| | | Increased meat and fish consumption. |
| | | New pests and pathogens affecting farming. |
| | | Environmental changes caused by human activity. |
| | | Cost of agriculture input. |
| | | Use of land for biofuel production. |

| | | |
|---|---|---|
| Maintaining local and global biodiversity | *Conservation of animal species* | Protecting rare or endangered species by protecting habitats and use of breeding programmes. |
| | *Impact of reforestation* | Increasing range of habitats so that an area can support a greater range of species. |

| | | |
|---|---|---|
| Indictor species | *Assessing levels of pollution* | Polluted water – blood worm, sludgeworm. |
| | | Clean water – freshwater shrimps, stonefly. |
| | | Air quality – lichen species, blackspot fungus |

### Pollution (biology only)

### Nitrates are made available for uptake by plants




Nitrate availability can also be increased by the use of fertilisers and crop rotation.

| Positive and negative human interactions within ecosystems | |
|---|---|
| *Fish farming* | Can be used to reduce over fishing of wild species and increase biodiversity. |
| *Introduction of non-indigenous species* | Can decrease biodiversity by introducing predators where prey do not have time to adapt. |
| *Eutrophication* | Fertilisers on farm land lead to too many nutrients in water act as pollutants reducing biodiversity. |

### Biodiversity

**Biodiversity is the variety of all different species of organisms on Earth, or within an ecosystem**

### Trophic levels and biomass

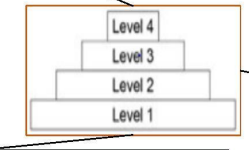
### Nitrogen cycle

Experimental methods are used to determine the distribution and abundance of a species.

| | | |
|---|---|---|
| Sampling techniques | *Quadrats* | Organisms are counted within a randomly placed square |
| | *Transects* | Organisms are counted along a belt (transect) of the ecosystem. |

| Processing data | |
|---|---|
| *Median* | Middle value in a sample. |
| *Mode* | Most occurring value in a sample. |
| *Mean* | The sum of all the value in a sample divided by the sample number. |

Decomposers break down dead plants and animal matter by secreting enzymes. Small soluble food molecules than diffuse into the microorganism.



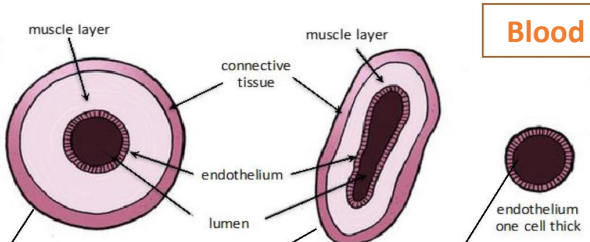

| Transfer of biomass (biology only) | |
|---|---|
| *Biomass is lost between the different trophic levels* | |
| Producers transfer about 1% of the incident energy from light for photosynthesis. | Large amounts of glucose is used in respiration, some material egested as faeces or lost as waste e.g. $CO_2$, water and urea in urine. |
| Approximately 10% of the biomass from each trophic level is transferred to the level above. | |

| Trophic levels can be represented by numbers and biomass in pyramids. | | |
|---|---|---|
| *Trophic levels are numbered sequentially according to how far the organisms is along the food chain.* | | |
| Level 1 | Producers | Plants and algae. |
| Level 2 | Herbivores | Primary consumers. |
| Level 3 | Carnivores | Secondary consumers. |
| Level 4 | Carnivores | Tertiary consumers. |

# Science: Biology SB8 - Respiration & Exchange

**EDEXCEL GCSE**
Exchange and Transport in Animals Part 2.

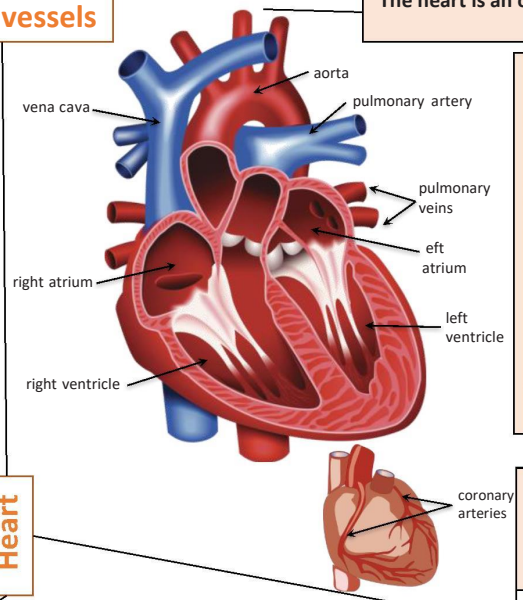
## Blood vessels




| Artery | Vein | Capillary |
|---|---|---|
| *Carry blood away from the heart* | *Carry blood to the heart* | *Connects arteries and veins* |
| Thick muscular walls, small lumen, carry blood under high pressure, carry oxygenated blood (except for the pulmonary artery). | Thin walls, large lumen, carry blood under low pressure, have valves to stop flow in the wrong direction, carry deoxygenated blood (except for the pulmonary vein). | One cell thick to allow diffusion, Carry blood under very low pressure. |

## Heart

**The heart is an organ that pumps blood around the body in a double circulatory system**




| Different structure in the heart have different functions | | |
|---|---|---|
| | *Right ventricle* | Pumps blood to the lungs where gas exchange takes place. |
| | *Left ventricle* | Pumps blood around the rest of the body. Thicker cardiac muscle in the wall. |
| | *Pacemaker (in the right atrium)* | Controls the natural resting heart rate. Artificial electrical pacemakers can be fitted to correct irregularities. |
| | *Coronary arteries* | Carry oxygenated blood to the cardiac muscle. |
| | *Heart valves* | Prevent blood in the heart from flowing in the wrong direction. |

**Calculate heart rate, stroke volume and cardiac output**

Cardiac output =

stroke volume x heart rate

## Blood

**Blood is a tissue consisting of plasma, in which blood cells, white blood cells and platelets are suspended**

| | | |
|---|---|---|
| **Plasma (55%)** | *Pale yellow fluid* | Transports $CO_2$, hormones and waste. |
| **Red blood cells (erythrocytes)(45%)** | *Carries oxygen* | Large surface area, no nucleus, full of haemoglobin. |
| **White blood cells (phagocytes and lymphocytes)(<1%)** | *Part of the immune system* | Some produce antibodies, others surround and engulf pathogens. |
| **Platelets (<1%)** | *Fragments of cells* | Clump together to form blood clots. |

## Respiration

**Cellular respiration is an exothermic reaction which is continuously occurring in all living cells**

**Aerobic respiration**

*Respiration with oxygen. Occurs inside the mitochondria continuously*

Glucose is oxidised by oxygen to transfer the energy the organism needs to perform it's functions.

$C_6H_{12}O_6 + O_2 \longrightarrow CO_2 + H_2O$

glucose + oxygen → carbon dioxide + water

*Aerobic respiration releases a large amount of energy from each glucose molecule*

**Anaerobic respiration**

*Respiration when oxygen is in short supply. Occurs during intensive exercise*

During hard exercise, muscle cells are respiring so fast that blood cannot transport enough oxygen to meet their needs.

Glucose is partially oxidised to produce lactic acid which builds up in muscle tissue causing them to become painful and fatigued.

glucose → lactic acid

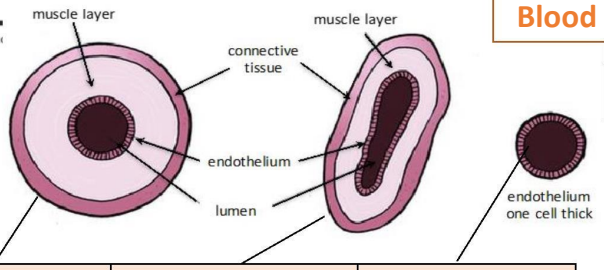
*Anaerobic respiration releases a much smaller amount of energy than aerobic respiration.*

The incomplete oxidation of glucose causes a build up of lactic acid and creates an oxygen debt

# Science: Biology SB8 - Respiration & Exchange

**EDEXCEL GCSE**
Exchange and Transport in Animals Part 2.

## Blood vessels

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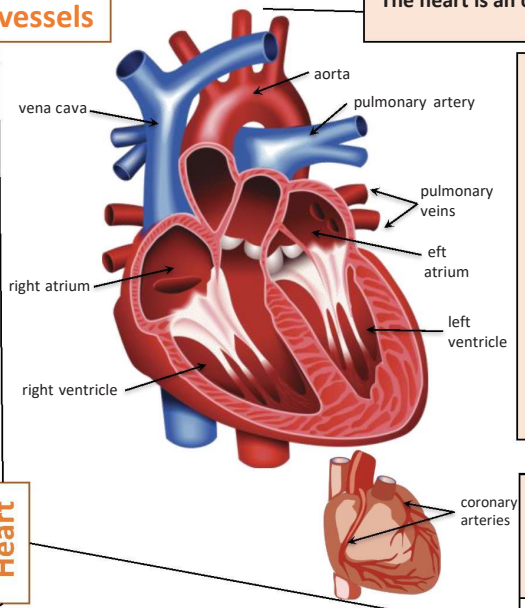


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The incomplete oxidation of glucose causes a build up of lactic acid and creates an oxygen debt

# Science: S20 Fuels

Hartford Church of England High School

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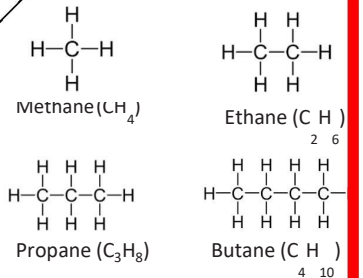
## Crude oil, hydrocarbons and alkanes

| | | |
|---|---|---|
| **Crude oil** | *A finite resource* | Consisting mainly of plankton that was buried in the mud, crude oil is the remains of ancient biomass. |
| **Hydrocarbons** | *These make up the majority of the compounds in crude oil* | These compounds are made up of hydrogen and carbon only. |
| **General formula for alkanes** | $C_nH_{2n+2}$ | For example: $C_2H_6$ $C_6H_{14}$ |

Display formula for first four alkanes




## Carbon compounds as fuels and feedstock

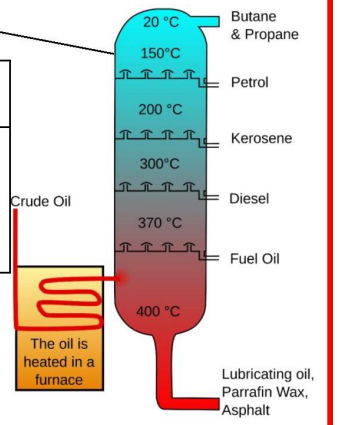
**EDEXCEL TOPIC SC20: Fuels**

## Fractional distillation and petrochemicals

| | | |
|---|---|---|
| **Fractions** | *The hydrocarbons in crude oil can be split into fractions* | Each fraction contains molecules with a similar number of carbon atoms in them. The process used to do this is called fractional distillation. |
| **Using fractions** | *Fractions can be processed to produce fuels and feedstock for petrochemical industry* | We depend on many of these fuels; petrol, diesel and kerosene.<br><br>Many useful materials are made by the petrochemical industry; solvents, lubricants and polymers. |

### Hydrocarbon chains

| | |
|---|---|
| ***In oil*** | Hydrocarbon chains in crude oil come in lots of different lengths. |
| ***Boiling points*** | The boiling point of the chain depends on its length. During fractional distillation, they boil and separate at different temperatures due to this. |




## Cracking

| | |
|---|---|
| *The breaking down of long chain hydrocarbons into smaller, more useful chains* | The smaller chains are more useful. Cracking can be done by various methods including catalytic cracking and steam cracking. |

## Fuels

| | | |
|---|---|---|
| **Sulfur dioxide** | *Released from burning hydrocarbons with sulfur impurities in* | Sulfur dioxide dissolves in rain water to form acid rain. This damages plant life and can make water habitats acidic. Acid rain can also erode limestone and sandstone structures. |
| **Oxides of nitrogen** | *Oxygen and nitrogen react under high temperatures to form these* | As pollutants, oxides of nitrogen can damage the ozone layer and are also classified as greenhouse gases. Can cause respiratory problems. |

| | | |
|---|---|---|
| **Hydrogen fuel** | *Hydrogen reacts with oxygen in the engine to power the vehicle* | **Advantages:**<br>- Water is the product<br>- No greenhouse gases released<br>- Renewable<br>**Disadvantages:**<br>- Expensive to buy<br>- Difficult to re-fuel |
| **Fossil fuels** | *Crude oil, natural gas and coal* | Petrol, kerosene and diesel oil are non-renewable. Methane is found in natural gas and is also non-renewable. |

| | |
|---|---|
| **Incomplete combustion issues** | *Carbon monoxide is an odourless, toxic gas that can kill* | Soot (carbon) is also produced that builds up in the atmosphere and can cause global dimming. This reduces the amount of sunlight that reaches the Earth and can alter rainfall patterns. |

### Combustion

During the complete combustion of hydrocarbons, the carbon and hydrogen in the fuels are oxidised, releasing carbon dioxide, water and energy.

### Incomplete combustion

During the incomplete combustion of hydrocarbons, there is not enough oxygen available for complete combustion. The products of the reaction is carbon monoxide, carbon and water.

Complete combustion of methane:
Methane + oxygen → carbon dioxide + water + energy
$CH_4$ (g) + $2O_2$ (g) → $CO_2$ (g) + 2 $H_2O$ (l)

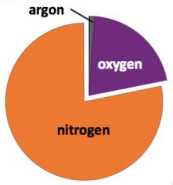
| | |
|---|---|
| **Boiling point (temperature at which liquid boils)** | *As the hydrocarbon chain length increases, boiling point increases.* |
| **Viscosity (how easily it flows)** | *As the hydrocarbon chain length increases, viscosity increases.* |
| **Flammability (how easily it burns)** | *As the hydrocarbon chain length increases, flammability decreases.* |

# Science: SC21 - Earth Science

## EDEXCEL TOPIC SC21: Earth science

### Earth and atmospheric science

#### Proportions of gases in the atmosphere




| Gas | Percentage |
|---|---|
| Nitrogen | ~80% |
| Oxygen | ~20% |
| Argon | 0.93% |
| Carbon dioxide | 0.04% |

#### How oxygen increased

| | | |
|---|---|---|
| Algae and plants | *These produced the oxygen that is now in the atmosphere, through photosynthesis.* | carbon dioxide + water → glucose + oxygen<br>$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$ |
| Oxygen in the atmosphere | *First produced by algae 2.7 billion years ago.* | Over the next billion years plants evolved to gradually produce more oxygen. This gradually increased to a level that enabled animals to evolve. |

#### The Earth's early atmosphere

| | | |
|---|---|---|
| Volcano activity 1st Billion years | *Billions of years ago there was intense volcanic activity* | This released gases (mainly $CO_2$) that formed to early atmosphere and water vapour that condensed to form the oceans. |
| Other gases | *Released from volcanic eruptions* | Nitrogen was also released, gradually building up in the atmosphere. Small proportions of ammonia and methane also produced. |
| Reducing carbon dioxide in the atmosphere | *When the water vapour condensed, the oceans formed and the carbon dioxide dissolved into it* | This formed carbonate precipitates, forming sediments. This reduced the levels of carbon dioxide in the atmosphere. |

#### How carbon dioxide decreased

| | | |
|---|---|---|
| Reducing carbon dioxide in the atmosphere | *Algae and plants* | These gradually reduced the carbon dioxide levels in the atmosphere by absorbing it for photosynthesis. |
| Formation of sedimentary rocks and fossil fuels | *These are made out of the remains of biological matter, formed over millions of years* | Remains of biological matter falls to the bottom of oceans. Over millions of years layers of sediment settled on top of them and the huge pressures turned them into coal, oil, natural gas and sedimentary rocks. The sedimentary rocks contain carbon dioxide from the biological matter. |

#### Greenhouse gases

| | |
|---|---|
| Carbon dioxide, water vapour and methane | *Examples of greenhouse gases that maintain temperatures on Earth in order to support life* |
| The greenhouse effect | *Radiation from the Sun enters the Earth's atmosphere and reflects off of the Earth. Some of this radiation is re-radiated back by the atmosphere (including carbon dioxide, methane and water vapour) to the Earth, warming up the global temperature.* |

#### Human activities and greenhouse gases

| | |
|---|---|
| Carbon dioxide | *Human activities that increase carbon dioxide levels include burning fossil fuels and deforestation.* |
| Methane | *Human activities that increase methane levels include raising livestock (for food) and using landfills (the decay of organic matter released methane).* |
| Climate change | *There is evidence to suggest that human activities will cause the Earth's atmospheric temperature to increase and cause climate change.* |

#### Effects of climate change

- Rising sea levels
- Extreme weather events such as severe storms
- Change in amount and distribution of rainfall
- Changes to distribution of wildlife species with some becoming extinct

The total amount of greenhouse gases emitted over the full life cycle of a product/event. This can be reduced by reducing emissions of carbon dioxide and methane.

#### Testing for oxygen

| | | |
|---|---|---|
| Testing for oxygen | *Glowing splint* | Re-lights the splint in the presence of oxygen. |

#### Carbon dioxide concentration

| | | |
|---|---|---|
| Carbon dioxide concentration | *There is a correlation between atmospheric carbon dioxide levels, fossil fuel usage and global temperature change* | There are errors with these measurements due to the location they were taken and the historical accuracy before scientific methods became more robust. |

# Science: SC22-24 - Alcohols & Polymers

| Nanoparticles | *Between 1 and 100 nanometres (nm) in size* | 1 nanometre (1 nm) = 1 x $10^{-9}$ metres (0.000 000 001m or a billionth of a metre). |
|---|---|---|

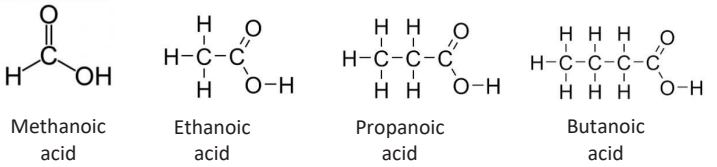
## EDEXCEL TOPIC SC22-24 Organic Chemistry

### Nano particles

| | | |
|---|---|---|
| DNA structure | *Most DNA molecules are two polymer chains made from four different monomers, called nucleotides. They are in the double helix formation.* | *Use of nanoparticles include healthcare, cosmetics, sun cream, catalysts, deodorants, electronics.* |
| Natural polymers | *Other naturally occurring polymers include proteins, starch and cellulose and are all important for life.* | Nanoparticles have a large surface area to volume ratio.<br><br>Nanoparticles may be toxic to people. They may be able to enter the brain from the bloodstream and cause harm. |

### Carboxylic acids

| | | |
|---|---|---|
| Functional group | *-COOH*<br><br>*For example: $CH_3COOH$* | Methanoic acid, ethanoic acid, propanoic acid and butanoic acid are the first four of the homologous series. |
| Carboxylic acid reactions | *Carboxylic acids react with carbonates, water and alcohols.* | Carboxylic acids and carbonates: These acids are neutralised by carbonates. |
| | | Carboxylic acids and water: These acids dissolve in water. |
| | | Carboxylic acids and alcohols: The acids react with alcohols to form esters. |

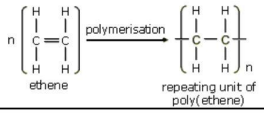



### Polymers

| | | |
|---|---|---|
| Polymer issues | *Raw materials originate from crude oil, a finite resource.* | Polymers are non-biodegradable and add to the growing landfill problem. When combusted, they release harmful gases which can contribute to global warming. |
| Recycling polymers | *Advantages include conserving finite resources, reducing release of harmful gases and reducing landfill.* | Disadvantages of recycling polymers include the cost of the process. |

| Polymer | *Properties and uses* |
|---|---|
| Poly(ethene) | *Flexible, cheap, electrical insulator. Used for plastic bags and bottles and coating on electrical wires.* |
| Poly(propene) | *Flexible and strong. Used for buckets and crates.* |
| Poly (chloroethene) (PVC) | *Tough, cheap and long lasting. Used for window frames.* |
| Poly(tetrafluoroethene) (PTFE) | *Tough and non-stick. Used for non-stick coating on pans.* |

#### Addition polymerisation

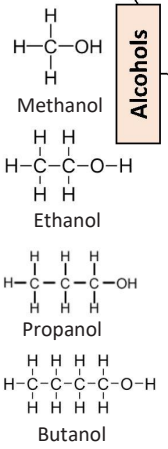
| | | |
|---|---|---|
| Polymers | *Alkenes are used to make polymers by addition polymerisation.* | Many small molecules join together to form polymers (very large molecules). |
| Displaying polymers | *In addition polymers, the repeating unit has the same atoms as the monomer.* | It can be displayed like this:<br>  <br> |

#### Condensation polymerisation (HT only)

| | | |
|---|---|---|
| Condensation polymerisation | *Condensation polymerisation involves monomers with two functional groups* | When these types of monomers react they join together and usually lose small molecules, such as water. This is why they are called condensation reactions. Example: polyester. |

### Alcohols

| | | |
|---|---|---|
| Functional group | *-OH*<br><br>*For example: $CH_3CH_2OH$* | Methanol, ethanol, propanol and butanol are the first four of the homologous series. |
| Alcohol reactions | *Alcohols react with sodium, air and water.* | Alcohols and sodium: bubbling, hydrogen gas given off and salt formed.<br><br>Alcohols and air: alcohols burn in air releasing carbon dioxide and water.<br><br>Alcohols and water: alcohols dissolve in water to form a neutral solution. |
| Fermentation | *Ethanol is produced from fermentation.* | When sugar solutions are fermented using yeast, aqueous solutions of ethanol are produced. The conditions needed for this process include a moderate temperature (25 – 50°C), water (from sugar solution) and an absence of oxygen. |



# Science: SP12 - Magnetism & the Motor Effect

Hartford Church of England High School

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## EDEXCEL TOPIC 12 MAGNETISM AND THE MOTOR EFFECT

### Magnets and magnetic fields

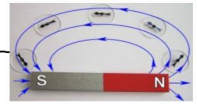
| | | |
|---|---|---|
| Permanent | *A bar magnet that produces its own magnetic field* | Will repel or attract other magnets and magnetic materials. |
| Induced | *A temporary magnet* | Becomes magnet when placed in a magnetic field. |

Magnetic elements are Nickle, Iron and Cobalt.

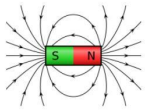
| Earth's magnetic field | *Plotting compass needle is a tiny magnet. It points north. This behaviour is evidence that the Earth has a magnetic field.* | The Earth's magnetic field exists because of electric currents in the molten outer core which is made from a mixture of iron and nickel. |
|---|---|---|

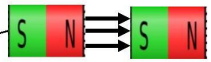
| | | |
|---|---|---|
| Magnetic | *Materials attracted by magnets* | Uses non-contact force to attract magnetic materials. |
| North seeking pole | *End of magnet pointing north* | Compass needle is a bar magnet and points north. |
| South seeking pole | *End of magnet pointing south* | Like poles (N – N) repel, unlike poles (N – S) attract. |
| Magnetic field | *Region of force around magnet* | Strong field, force big. Weak field, force small. Field is strongest at the poles. |

| Plotting compass | *Show the direction of magnetic field lines. Strongest when lines are close together.* |
|---|---|



| Uniform field | *Same strength and direction between two magnets* |
|---|---|
| Ununiformed field | *Direction goes North to South. Filed lines stronger closer to magnet.* |

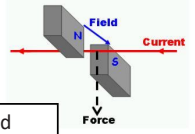




### Magnetic forces

**HIGHER ONLY**

| Magnetic force | *Place a wire carrying current near a magnetic, a force is exerted.* | An equal and opposite force acts on the magnet. |
|---|---|---|




Force on a conductor at right angles to a magnetic field carrying a current = magnetic flux density X current X length.

팽 = 퐵 푙 푠퐢퐧

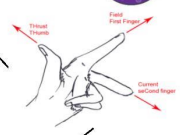
| Electric motor | *Force on a conductor in a magnetic field causes rotation.* | A conductor carrying current produces a magnetic field. Put the conductor into another magnetic field and the two magnetic fields interact. |
|---|---|---|

They exert equal and opposite forces on each other.

Split –ring commutator makes sure current always flows in correct direction to make coil spin.

If current and magnetic field are parallel to each other , no force on wire.

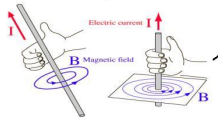
| Fleming's left-hand rule | *To predict the direction a straight conductor moves in a magnetic field.* | Thumb | Direction of movement. |
|---|---|---|---|
| | | First finger | Direction of magnetic field. |
| | | Second finger | Direction of current. |



### Electromagnetism

When current flows through a wire, a concentric magnetic field is created.

| Concentric magnetic field | *Circles which share the same centre, perpendicular to the wire.* | The strength of the field depends on:<br>• The size of current<br>• The distance from the wire |
|---|---|---|



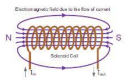

A compass or iron filings placed near the wire, will show the direction of the magnetic field.

| Thumb | Direction of current. |
|---|---|
| Fingers | Direction of magnetic field. |

| Solenoid | *A long coil of wire* | Magnetic field from each loop adds to the next. |
|---|---|---|

Fields from individual coils cancel out to give a weaker field outside the solenoid.

Fields from individual coils add together to form an almost uniform filed along the centre of solenoid.



| Electromagnet | *Lots of turns of wire increase the magnetising effect when current flows* |
|---|---|
| | Turn current off, magnetism lost. |

| Increase strength of magnetic field | *Use larger current* |
|---|---|
| | *Use more turns of wire* |
| | *Put turns of wire closer together* |
| | *Use iron core in middle* |

# Science: SP12 - Magnetism & the Motor Effect

Hartford Church of England High School

PiXL Partners in excellence

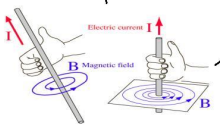
## EDEXCEL TOPIC 12 MAGNETISM AND THE MOTOR EFFECT

### Electromagnetism

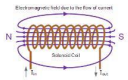
When current flows through a wire, a concentric magnetic field is created.

- ***Circles which share the same centre, perpendicular to the wire.***
- The strength of the field depends on:
  - The size of current
  - The distance from the wire

A compass or iron filings placed near the wire, will show the direction of the magnetic field.




- Direction of current.
- Direction of magnetic field.




Fields from individual coils add together to form an almost uniform filed along the centre of solenoid.

Fields from individual coils cancel out to give a weaker field outside the solenoid.

- ***A long coil of wire*** — Magnetic field from each loop adds to the next.

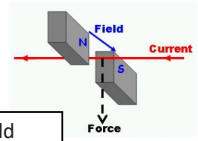
- ***Use larger current***
- ***Use more turns of wire***
- ***Put turns of wire closer together***
- ***Use iron core in middle***

- ***Lots of turns of wire increase the magnetising effect when current flows***
- Turn current off, magnetism lost.

### Magnetic forces

**HIGHER ONLY**

- ***Place a wire carrying current near a magnetic, a force is exerted.*** — An equal and opposite force acts on the magnet.




Force on a conductor at right angles to a magnetic field carrying a current = magnetic flux density X current X length.

팽 = 퐵 퓗 퐥
퓗 퓗

- ***Force on a conductor in a magnetic field causes rotation.*** — A conductor carrying current produces a magnetic field. Put the conductor into another magnetic field and the two magnetic fields interact.

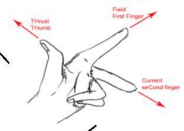
They exert equal and opposite forces on each other.

Split –ring commutator makes sure current always flows in correct direction to make coil spin.

If current and magnetic field are parallel to each other , no force on wire.

- ***To predict the direction a straight conductor moves in a magnetic field.***

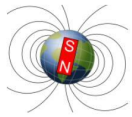
| | |
|---|---|
| Thumb | Direction of movement. |
| First finger | Direction of magnetic field. |
| Second finger | Direction of current. |




### Magnets and magnetic fields

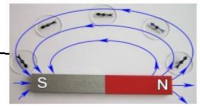
- ***A bar magnet that produces its own magnetic field*** — Will repel or attract other magnets and magnetic materials.
- ***A temporary magnet*** — Becomes magnet when placed in a magnetic field.

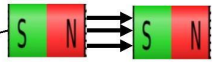
Magnetic elements are Nickle, Iron and Cobalt.



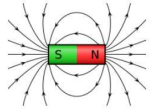

- ***Plotting compass needle is a tiny magnet. It points north. This behaviour is evidence that the Earth has a magnetic field.*** — The Earth's magnetic field exists because of electric currents in the molten outer core which is made from a mixture of iron and nickel.

- ***Show the direction of magnetic field lines. Strongest when lines are close together.***




- ***Same strength and direction between two magnets***
- ***Direction goes North to South. Filed lines stronger closer to magnet.***




| | | |
|---|---|---|
| | ***Materials attracted by magnets*** | Uses non-contact force to attract magnetic materials. |
| | ***End of magnet pointing north*** | Compass needle is a bar magnet and points north. |
| | ***End of magnet pointing south*** | Like poles (N – N) repel, unlike poles (N – S) attract. |
| | ***Region of force around magnet*** | Strong field, force big. Weak field, force small. Field is strongest at the poles. |

# Science: SP14 - Particle Model

## Particles and density

| State | Particle arrangement | Movement | Properties |
|---|---|---|---|
| Solid | *Packed in a regular structure. Strong forces of attraction hold in place so cannot move.* | Particles don't have a lot of energy in KE store and vibrate around a fixed position. | Difficult to change shape. |
| Liquid | *Close together, weak forces of attraction keep contact and form irregular arrangements.* | Particles have more energy in KE store and move in random directions at low speeds. | Can change shape but difficult to compress. |
| Gas | *Almost no forces of attraction so separated by large distances, free to move* | Particles have more energy in KE store and move in random directions at high speeds. | Can expand to fill a space, easy to compress. |

| | | |
|---|---|---|
| Solids | *High density* | Particles very close together – a lot of mass in a given volume. |
| Liquids | *Less dense* | Fewer particles - less mass in a given volume. |
| Gases | *Low density* | Even fewer particles – even less mass in a given volume. |

P = m ÷ V

Density = mass ÷ volume.

Density | *Mass of a substance in a given volume*

| Core Practical | | |
|---|---|---|
| | *Investigate density of solids and liquids* | Regular solid shapes – measure dimensions with a rule and work out volume. |
| | | Irregular solid shapes – use a Eureka can to measure the volume of displaced water. |
| | | Liquids - use a measuring cylinder on a balance and measure the mass of a certain volume. |

## EDEXCEL Topic 14 PARTICLE MODEL

## Temperature, pressure and Volume

**PHYSICS ONLY**

Calculate pressure of volume of gases of a fixed mass at a constant temperature.

$P_1V_1 = P_2V_2$

**PHYSICS HIGHER ONLY**

Doing work on a gas, increases the temperature

*Pump air quickly into a ball, the air gets hot because as the piston in the pump moves the particles bounce off increasing kinetic energy, which causes a temperature rise.*

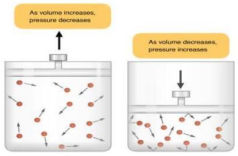
Reducing the volume of a fixed mass of gas increases the pressure.

Halving the volume doubles the pressure.

Reducing the volume of a gas at a fixed temperature, increases pressure. (Less space so particles collisions occur more frequently and with more force).

Decrease pressure, gases are expanded.

Increase pressure, gases are compressed.



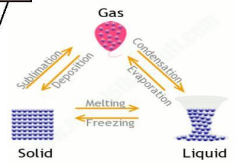

**PHYSICS ONLY**

Pressure is a net force per unit area, when particles collide a pressure is exerted.

When particles collide with a surface, a force is exerted. This is a resultant force at right angles to the surface.

Gas particles are in a constant state of random motion.

## Energy and Changes of state




| | | |
|---|---|---|
| Freezing | Liquid turns to a solid. Internal energy decreases. |
| Melting | Solid turns to a liquid. Internal energy increases. |
| Boiling / Evaporating | Liquid turns to a gas. Internal energy increases. |
| Condensation | Gas turns to a liquid. Internal energy decreases. |
| Sublimation | Solid turns directly into a gas. Internal energy increases. |

| | | |
|---|---|---|
| Absolute zero | *-273K* | Very little energy in kinetic energy store. Particles do not move. |

Convert between kelvin and Celsius +273.

Convert between Celsius and kelvin -273.

| | | |
|---|---|---|
| Internal energy | *Energy stored inside a system by particles* | The more energy particles have in their kinetic energy store, the faster the particles move. |
| | | Particles also have energy in their potential energy store due to their positions. The more energy they have the further the particles are away from each other. |

| | | |
|---|---|---|
| Adding thermal energy | *Heating and, increases the thermal energy store of the system. The more energy in this store, the hotter it is.* | Heating causes a change in state. As particles separate, potential energy stored increases. Heating increases the temperature of a system. Particles move faster so kinetic energy of particles increases. |

To reduce thermal transfer, (make more accurate) use insulation.

$\Delta E = m \times c \times \Delta\theta$

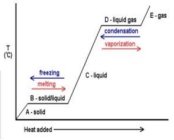
Change in thermal energy = mass **X** specific heat capacity **X** temperature change.

| | | |
|---|---|---|
| Specific Heat Capacity | *Energy needed to raise 1kg of substance by 1°C* | Depends on:<br>• Mass of substance<br>• What the substance is<br>• Energy put into the system. |

| | | |
|---|---|---|
| Core Practical | *Investigate properties of water (SHC)* | Measure mass of water, measure initial temperature of water, turn on power and start stopwatch. After certain temperature rise , stop stopwatch. |

Energy needed = mass **X** specific latent heat.

$\Delta E = m \times L$




| | |
|---|---|
| Specific Latent Heat | *Energy needed to change 1kg of a substance's state* |
| Specific Latent Heat of Fusion | *Energy needed to change 1kg of solid into 1 kg of liquid at the same temperature* |
| Specific Latent Heat of Vaporisation | *Energy needed to change 1kg of liquid into 1 kg of gas at the same temperature* |

| | |
|---|---|
| Conservation of mass | When substances change state, mass is conserved. |
| Physical change | No new substance is made, process can be reversed. |

# Science: SP14 - Particle Model

PiXL
Partners in excellence

## EDEXCEL Topic 14 PARTICLE MODEL

### Particles and density

| | Particle arrangement | Movement | Properties |
|---|---|---|---|
|  | *Packed in a regular structure. Strong forces of attraction hold in place so cannot move.* | Particles don't have a lot of energy in KE store and vibrate around a fixed position. | Difficult to change shape. |
|  | *Close together, weak forces of attraction keep contact and form irregular arrangements.* | Particles have more energy in KE store and move in random directions at low speeds. | Can change shape but difficult to compress. |
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| | | |
|---|---|---|
|  | *High density* | Particles very close together – a lot of mass in a given volume. |
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Density = mass ÷ volume.

*Mass of a substance in a given volume*

| | | |
|---|---|---|
| *Investigate density of solids and liquids* | Regular solid shapes – measure dimensions with a rule and work out volume. | |
| | Irregular solid shapes – use a Eureka can to measure the volume of displaced water. | |
| | Liquids - use a measuring cylinder on a balance and measure the mass of a certain volume. | |

### Temperature, pressure and Volume

**PHYSICS ONLY**

Calculate pressure of volume of gases of a fixed mass at a constant temperature.

$P_1V_1 = P_2V_2$

**PHYSICS HIGHER ONLY**

Reducing the volume of a gas at a fixed temperature, increases pressure. (Less space so particles collisions occur more frequently and with more force).

| | |
|---|---|
| *Pump air quickly into a ball, the air gets hot because as the piston in the pump moves the particles bounce off increasing kinetic energy, which causes a temperature rise.* | |
| Reducing the volume of a fixed mass of gas increases the pressure. | Halving the volume doubles the pressure. |

Decrease pressure, gases are expanded.

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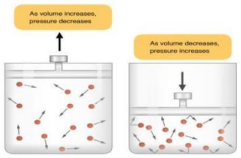


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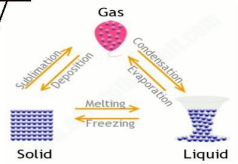
**PHYSICS ONLY**

### Energy and Changes of state




| | |
|---|---|
| Liquid turns to a solid. Internal energy decreases. | |
| Solid turns to a liquid. Internal energy increases. | |
| Liquid turns to a gas. Internal energy increases. | |
| Gas turns to a liquid. Internal energy decreases. | |
| Solid turns directly into a gas. Internal energy increases. | |

| | | |
|---|---|---|
| *-273K* | Very little energy in kinetic energy store. Particles do not move. | |
| Convert between kelvin and Celsius +273. | Convert between Celsius and kelvin -273. | |

| | | |
|---|---|---|
| *Energy stored inside a system by particles* | The more energy particles have in their kinetic energy store, the faster the particles move. | |
| | Particles also have energy in their potential energy store due to their positions. The more energy they have the further the particles are away from each other. | |

| | |
|---|---|
| *Heating and, increases the thermal energy store of the system. The more energy in this store, the hotter it is.* | Heating causes a change in state. As particles separate, potential energy stored increases. Heating increases the temperature of a system. Particles move faster so kinetic energy of particles increases. |

| | |
|---|---|
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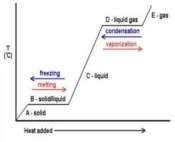
Change in thermal energy = mass **X** specific heat capacity **X** temperature change.

| | | |
|---|---|---|
| *Energy needed to raise 1kg of substance by 1°C* | Depends on:<br>• Mass of substance<br>• What the substance is<br>• Energy put into the system. | |

| | |
|---|---|
| *Investigate properties of water (SHC)* | Measure mass of water, measure initial temperature of water, turn on power and start stopwatch. After certain temperature rise , stop stopwatch. |

Energy needed = mass **X** specific latent heat.

$\Delta E = m \times L$




| | |
|---|---|
| *Energy needed to change 1kg of a substance's state* | |
| *Energy needed to change 1kg of solid into 1 kg of liquid at the same temperature* | |
| *Energy needed to change 1kg of liquid into 1 kg of gas at the same temperature* | |

# History

# History - Germany 1890-1945: Democracy to Dictatorship

## Kaiser Wilhelm II

The leader of Germany in 1890 was Kaiser Wilhelm II. He was an autocrat, which meant that he was in complete charge of Germany. He did have a Chancellor, but only the Kaiser could appoint him (he could dismiss him too). There was a Reichstag or parliament, however, this had very limited to power. It had no say on policy or government actions.

However, there was a growing call for greater democracy, particularly from the Social Democrat Party, who represented the working class. Although the Kaiser had introduced a generous package of welfare laws e.g. Old age pensions and unemployment benefits, many working class people still continued to vote for the SDP who wanted a lessening of the Kaiser's powers.

## Further Problems

Germany had concentrated on building up its industry during the late 19th century, making it the strongest economy in Europe. However, this led to shortages in farming and agriculture. Germany had to import a large proportion of its food. This could be dangerous if a major war broke out.

Kaiser Wilhelm II also wanted Germany to be a great international power and develop an empire. This led to him creating a modern navy. However, this was viewed as a threat by GB and tensions rose between the two countries, culminating in war in 1914

## Impact of WWI

The war cost Germany a huge amount in terms of lives and money. At the end of the war Germany was virtually bankrupt. Its people were also starving due to the Allied blockade. Nearly a million children were orphans, and on top of this a revolution took place at the end of the war, which saw the end of the Kaiser's rule. Germany lost WWI and suffered the humiliation of having to pay reparations to the Allies. Many Germans thought that the final figure of £6.6 billion was too high. They also lost large amounts of their territory and had to reduce their army. The new Weimar Government were forced to sign the Treaty of Versailles, which led to many German people to hate this new government as they thought it had 'stabbed the people in the back'.

# History - Germany 1890-1945: Democracy to Dictatorship

## Causes of revolution in Germany

**WWI** – Germany's failure in WWI had come as a shock to many Germans who had been convinced of success through propaganda. Defeat had shattered ideas that Germany were a global superpower.
**Treaty of Versailles** – German people were outraged at the terms of the ToV. They were forced to accept blame for the whole war, lost colonies and land to European nations, and fined £6.6 billion in reparations.
**Social unrest** – Many working class Germans who had grown to hate the Kaiser were unhappy at the upper classes and gentry who still held most of the power despite loosing the war. Those Germans would also show discontent at the failings, weakness and disorganisation of the Weimar Republic.
**Economy** – Having spent most of their money on total war, Germany faced an economic issue post WWI. Germany had loans to repay, reparations forced upon them, and the loss of jobs from the reduction of their army from 3 million to 100,000.

## Spartacist revolt – January 1919

Communist uprising led by Karl Liebknecht and Rosa Luxemburg. Spartacists wanted to replicate the Bolshevik revolution in Russia and went on strike. Taking to the streets to protest they ended up in violent clashes with the Freikorps – a dangerous group of right wing ex-military servicemen - who eventually put them down.

## Kapp Putsch – March 1920

In crushing the communists the Freikorps had saved the government, but the terms of the Treaty of Versailles meant Germany's army had to be significantly reduced and the Freikorps had to be disbanded. During 13 - 17 March 1920, as a reaction to this, the right-wing nationalist, Dr Wolfgang Kapp led a Freikorps takeover in Berlin. The regular army refused to attack the Freikorps; Kapp was only defeated when the workers of Berlin went on strike and refused to cooperate with him.

## Munich Putsch

**Causes:**
1923 – 55,000 Nazi members
Hyperinflation
Copying Mussolini
Weimar called off strike in Ruhr.

**Events:**
Hitler and SA storm Munich beer hall.
Forced politicians to agree to rebel.
Next day Hitler marched into Munich.
Politicians had called police when Hitler let them go.
Police opened fire and Hitler was arrested 2 days later

**Short term failure:**
Nazi party was banned
Hitler was tried for treason
Hitler sentenced to 5 years in prison.

**Long term success:**
Mass media coverage of Hitler
Hitler served only 8 months
Wrote Mein Kampf
Changed tactics to democratic means.

**Hyperinflation -1923**

Hyperinflation is when money quite literally becomes worthless. This happened in Germany 1923. It started after France and Belgian troops invaded the Ruhr after Germany failed to pay its second reparations instalment. The workers went on strike, which the Weimar Government supported, and in order to pay the striking workers the government printed off money. This caused prices to increase rapidly. The cost of 1 egg was over 6 billion marks!!!Hyperinflation left a legacy of bitterness amongst Germans, especially the Middle Class who had their life's saving wiped out because of the crisis

# History - Germany 1890-1945: Democracy to Dictatorship

## Stresemann Years – Golden Age of Weimar

In 1924 Gustav Stresemann became the new leader of the Weimar Republic. The first problem he tackled was the Hyperinflation crisis. In order to solve this he introduced a new currency called the Rentenmark, which helped to stabilise the currency and build confidence. He also negotiated loans from the USA in a deal known as the Dawes Plan. This was where the USA loaned $800 million to Germany. This allowed Germany to invest in its industry and in the short-term allowed Germany to recover economically. However, in the long-term it created a problem, since Germany's wealth was based on American loans, and if the Americans recalled these loans, Germany's economy would be in tatters.

In foreign affairs Stresemann also signed the Locarno Treaties. This allowed Germany to be part of the international community again, as Germany accepted its new western borders with France and Belgian and promised never to use war as an instrument of foreign policy. It also paved the way for Germany to join the League of Nations, which they had been forbidden to join in 1919. This also allowed Germany to normalise its relations with other countries and trade more easily.

Finally, Stresemann negotiated the Young Plan in 1929. This reduced reparations by two-thirds (£2.2 billion) and gave Germany longer to pay their debts off. However, in the same year America was hit by the Wall Street Crash which led to a Great Depression. As a consequence the USA recalled its loans from Germany, setting off an economic disaster within Germany, where unemployment rose to over 6 million and many banks and businesses became bankrupt.

# History - Germany 1890-1945: Democracy to Dictatorship

| Timeline Of Key Events | |
|---|---|
| **1888** | **Kaiser Wilhelm II becomes the Emperor** of Germany. This is an autocracy. |
| **1898** | **First Naval Law**, this is introduced to make Germany build 7 more battleship over the next 3 years. **Further Naval Laws are introduced up until 1912.** |
| **1912** | The **SPD have become the biggest party in the Reichstag.** |
| **1913** | **Germany are producing as much coal and more iron than Britain.** |
| **1914** | **Outbreak of WWI** and start of the British Blockade. |
| **1917** | **Turnip Winter** - German people are surviving only on turnips and bread. |
| **1918** | **End of WWI** and the Kaiser abdicates. Germany sign the armistice. |
| **1919** | **Spartacist Uprising.** An attempt by the Communists to take power, however it fails and is put down by the army and Freikorps. |
| **1919** | Germany sign the **Treaty of Versailles**. This takes away land, enforces reparations, reduces their army and gives them the blame for WWI. |
| **1919** | The **Weimar Republic are formed**. They are a democracy. |
| **1920** | **The Kapp Putsch.** A right wing group led by Wolfgang Kapp and the Freikorps. They seize Berlin, however they fail as the workers go on strike. |
| **1922** | **Germany declare bankruptcy** and say they cannot pay back their loans. |
| **1923** | **France and Belgium invade the Ruhr**. German workers go on strike. |
| **1923** | **Hyperinflation** occurs as the German currency becomes worthless due to the continued printing of more and more money. |
| **1923** | **The Munich Putsch**. Hitler and the Nazis storm into a beer hall in Munich to try and lead a revolution. It fails due to lack of support. |
| **1924** | **Gustav Stresemann is named foreign minister**. He replaces the old currency with the Rentenmark to end hyperinflation. |
| **1924** | **Dawes Plan** is agreed. The USA lend Germany 800 million gold marks. |
| **1925** | **Locarno Pact** agrees that Germany, Britain, France and Belgium will not invade each other. |
| **1926** | Germany joins the **League of Nations** |
| **1928** | **Kellogg-Briand Pact.** Countries agree to settle disputes peacefully. |
| **1929** | **The Young Plan** lowers the amount of reparations Germany have to pay. |

| Key Words | |
|---|---|
| **Autocracy** | A government in which one person has uncontrolled or unlimited power. |
| **Reichstag** | The German parliament, members are voted for by the people. |
| **Democracy** | A system of government where the citizens exercise power by voting. |
| **Bundesrat** | A council of members from the states of Germany. |
| **SPD** | The Social Democratic Party, a left-wing group popular with workers. |
| **Kaiser** | The King of Germany. |
| **Industrialisation** | The process of developing a countries industry. |
| **Constitution** | Laid out the methods for which Germany would be governed after 1919. |
| **Proportional Representation** | Electoral system where seats are assigned by the percentage of votes gained. |
| **Coalition** | A government that is formed by two (or more) political parties as nobody has a majority. |
| **Treaty of Versailles** | A treaty signed by Germany after WWI which created much anger within the country. |
| **Diktat** | Dictated peace. |
| **Inflation** | Where there is an increase in prices and the amount of money produced, this may lead to hyperinflation. |
| **Golden Age** | A period in the 1920s of Germany where there were developments in music, cinema, the arts, etc |

| Key People/Groups | |
|---|---|
| **Kaiser Wilhelm II** | The emperor of Germany. He was autocratic and nationalistic. |
| **Liebknecht & Luxembourg** | The two leaders of the Spartacist Uprising. |
| **Friedrich Ebert** | Leader of the SPD party and the first President of the Weimar Republic. |
| **Wolfgang Kapp** | Leader of the Kapp Putsch, a right-wing politician. |
| **Freikorps** | Ex-soldiers who were right wing. Kept hold of their weapons after the WWI. |
| **Gustav Stresemann** | Chancellor and then foreign minister. Credited with saving Germany and restoring it onto the world stage. |

# History - Germany 1890-1945: Democracy to Dictatorship

## Research:

How did the Russian revolution impact the outcome of WWI?

Was the Weimar government in Germany 'doomed from the start'?

Which uprising was the biggest threat to Weimar Germany: Spartacist uprising or Kapp Putsch?

How can the Munich Putsch be both a failure and a success?

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# Geography

## Economic and Industrial Change in the UK

**Key causes of change:**
**De-industrialisation** is the decline of traditional industries such as manufacturing. This has happened because: machines and technology have replaced many people. Other countries e.g. china can produce cheap goods because labour is less expensive.
**Globalisation** — is the growth and spread of ideas around the world. Many people now work on global brands in the quaternary sector e.g. in IT. Increased world trade and cheaper imported products have contributed to the decline in UK manufacturing.
**Government policies** — government decisions on investment in new infrastructure and technology and support for businesses (e.g. tax breaks) affect how well the economy grows. Membership in government groups, e.g. World Trade Organisation, make it easier for companies in the UK to operate across the world.

## Moving towards a post-industrial economy:

**A post-industrial economy** is where manufacturing industry declines to be replaced by growth in the service sector and quaternary sector. This happened in the UK from the 1970s.

- By 2015, 78 per cent of UK employment was in the tertiary sector and 10 per cent in the quaternary sector.
- Only 10 per cent of employment was in manufacturing compared to 55 per cent in 1900.

**Development of information technology** the use of IT is a key factor in the UK's move to a post-industrial economy. Internet access allows people to work from home. Over 1.3 million work in the IT sector. And the UK is one of the world's leading digital economies.
**Service industries and finance** the UK service sector has grown rapidly since 1970s, today is contributes over 79% of the UK's GDP. Finance is an important part of the service sector the UK is the world's leading centre of financial services Some, like HSBC, have their global headquarters in the UK. The financial services sector accounts for about 10% of the UK's GDP.
**Research and development** (R&D) is increasing in the UK, making use of the UK's highly skilled university graduates – research employs over 60,000 people. In 2013, nearly £30 billion was spent on R&D in the UK and it is estimated to contribute £3 billion to the UK economy and it one of the UK's economy' main growth areas in the future.

## Environmental impacts of Industry on the physical environment

Large-scale extraction industries such as **mining** and **quarrying** can have an impact on the environment. Quarries have been cut out of the countryside and huge waste tips piled up on the edges of mining settlements. They can destroy natural habitats, pollute water courses and scare the landscape.

Modern **manufacturing industries** have an effect on both the landscape and the environment. Manufacturing plants can look very dull and uninteresting and can have a negative visual effect on the landscape. Industrial processes can cause air and water pollution, as well as degrading the soil. The transport of raw materials and manufacturing products is usually by road, which increases levels of air pollution and damage to the environment when roads are widened or new ones built

## UK Science and Business Parks

A **science park** is a group of scientific and technical knowledge-based businesses located on a single site. Most are associated with universities, enabling them to use research facilities and employ skilled graduates. Science parks may also include support services such as financial services and marketing. Science parks often have: Good transport links – close to motorways/ railway / airports. Excellent links with universities. Attractive location with green areas.

A **business park** is an area of land occupied by a cluster of businesses. Business parks are usually located on the edges of towns because: land tends to be cheaper than in town centres and with more land, it may be possible to extend businesses. Access is also better with less congestion. Businesses can benefit by working together.

# Geography

## How can industrial development be more sustainable?

Today there is a much greater concern about the need for industries to be environmentally sustainable. This can be achieved in a number of ways.

- Technology can be used to reduce harmful emissions from power stations and heavy industry.
- Desulphurisation can remove harmful gases such as sulphur dioxide and nitrogen oxide from power station chimneys.
- Stricter environmental targets put in place for industry on water quality, air pollution and landscape damage.
- Heavy fines imposed when an industrial pollution incident occurs.

**Quarrying** can be made more sustainable with:

- Strict controls on blasting and removal of dust from roads and landscaping
- Recycling is encouraged
- Companies are expected to restore of improve a quarry after it has been used.

## Named Example: Torr Quarry, Somerset

Torr Quarry is an example of how modern industry can be more environmentally sustainable. Torr Quarry is a limestone quarry in the Mendip Hills. It employs over 100 people and contributes more than £15 million towards the local economy each year.

- The quarry is being restored to create wildlife lakes
- 200 acres of the site have already been landscaped
- Regular monitoring of noise, vibration, dust and water quality.
- Rail transport of quarried rock minimises the impact om local roads.

## North-South Divide

**What is the north-south divide?**

It refers to a real of imagined cultural and economic differences between the south of England and the rest of the UK. In general the south enjoys high incomes and longer life expectancy., But the south also has higher house process and more traffic congestion.

## Why is there a north-south divide?

- During the Industrial Revolution, the UK's growth was centred on coalfields, heavy industries and engineering in northern England, Wales and Scotland.
- Since 1970s, many industries have declined, reducing prosperity in those areas.
- London and the South East developed rapidly due to a fast-growing service sector.


## How can regional strategies address the north-south divide?

**Local Enterprise Partnerships (LEPS)**

LEPS are voluntary partnerships between local authorities and businesses. Their aim is to identify business needs and encourage companies to invest in order to boost the local economy and create jobs.

**Lancashire LEP will:** promote new businesses and create 50,000 new jobs by 2023. Improve transport with £20 million investment. Extend superfast broadband across 97% of the region. Create 6,000 high-skilled jobs in Enterprise Zones at Samlesbury and Warton.

**Enterprise zones** will encourage new businesses and jobs. The government supports businesses in Enterprise Zones by: providing business rate discount, ensuring the provision of superfast broadband, creating simpler planning regulations.

**Northern Powerhouse** linking northern cities – Liverpool, Leeds, Manchester, Sheffield, Hull and Newcastle to match, rival and compete with the economic power of London. It includes improving transport links e.g. High Speed 2 railway, Mersey Gateway bridge and the Trans-Pennine train route. As well as investing in science and innovation and to devolve the powers of government away from London's parliament to Northern cities. Cities would get more power and spending decision so that they can invest money directly where it is needed locally and also have elected mayors.

# Geography

| UK Global Links | |
|---|---|
| **Political**   | <u>Commonwealth</u><br>• These are 53 states across the world that were part of our colonial history<br>• Many expats live there (Brits who live abroad)<br>• The Queen is head of state in 16 of these countries<br>• promotes democracy, good governance, human rights and economic development as the UK trades with its previous colonies<br><u>EU</u><br>• We joined the EU in 1979 and opted to leave in 2016.<br>• About 50% of exports and imports are to the EU<br>• It's now a bit confusing as we go through the Brexit process about what will happen to EU laws that we have. |
| **Trade**   | • 49.6% of the UK's exports went to EU countries, and 50.4% went to non-EU countries such as the USA and China, The USA takes the most.<br>• A lot of trade is now finance and communications following deindustrialisation. |
| **Transport**  | • More than 750,000 international flights depart from the UK annually to 400 airports in 114 countries<br>• Heathrow is the 4th busiest airport in the world<br>• Eurotunnel (Channel Tunnel) links our island to Europe as well as sea ferries. |
| **Culture**  | • English Language has helped us set up strong links<br>• Students abroad can sit British exams<br>• UK TV productions have a global audience e.g. Doctor Who<br>• We are a culture of immigration leading to a unique and multicultural society |
| **Technolo**  | • 90% of population has internet – very connected!<br>• We spend more online shopping than anywhere in Europe<br>• 18 million businesses run from home |

| UK Transport Links | | |
|---|---|---|
| **Ports** | **Air** | **Roads** |
| 32 million passengers travel though UK ports. Ports employ 120,000 people. Liverpool2 project will double the ports capacity to over 1.5 million containers a year % create thousands of jobs and boost the regional economy. | Airports create vital global links, provide 1000s of jobs and boost economic growth. Heathrow might have a 3rd runway built to expand its capacity, however people living nearby are concerned about noise and air pollution. | Road Investment Strategy includes: 100 new road schemes, 1300 new miles added to motorways. Extra lanes added to motorways to make them smart motorways. |

| Changing rural landscapes in the UK | |
|---|---|
| **Growth; South Cambridgeshire**<br>The population is increasing due to migration – migrants from Cambridge, other parts of the UK and eastern Europe.<br>**Social Effects:** 80% car ownership leads to increased traffic on narrow roads. Housing developments on the edges of villages can reduce community spirit.<br>**Economic effects:** reducing in agricultural employment, lack of affordable housing, high petrol prices, pressure on services due to growing population. | **Decline, Outer Hebrides**<br>The population has declined by 50% since 1901, people move away due to limited employment opportunities.<br>**Social Effects:** school closures due to too few children. Ageing population has fewer young people to support them.<br>**Economic effects:** services are closing, small farms can only provide work for 2 days a week, there has been an increase in tourism, but the infrastructure can support the scale of tourism needed. |

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## Development Gap and Nigeria

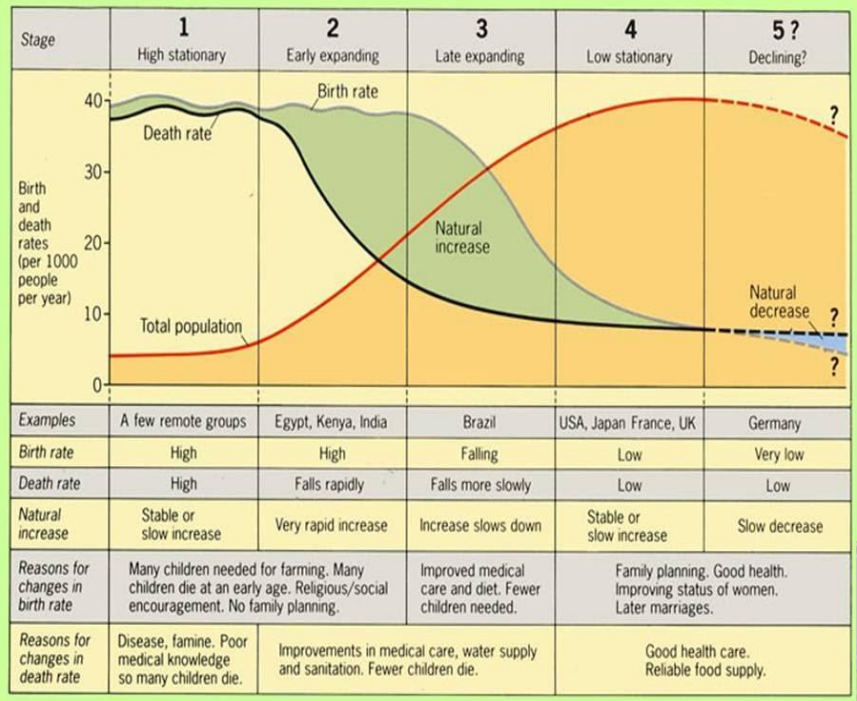
**The human development index (HDI)**

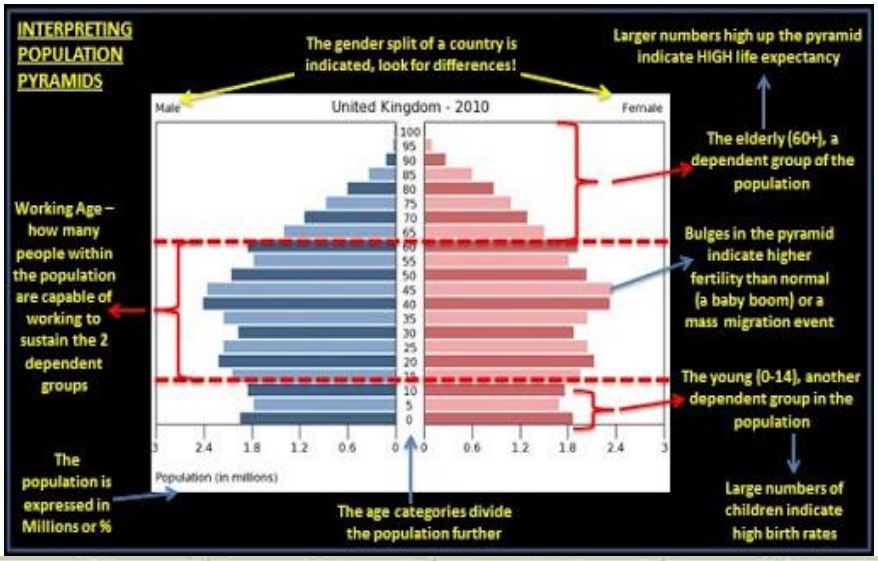
is a better measure as it includes 3 development indicators:

Life expectancy, GDP and adult literacy

**A single measure** of development can give a false picture as it gives an average for the whole country. Data could be out of date and the informal economy is not often included

| Indicator | Description | High or low |
|---|---|---|
| GDP/GNI | Economic indicator. A measure of a countries wealth | High in a developed country |
| Birth rate | Number of births per 1000 per year | Low in a developed country |
| Death rate | Number of deaths per 1000 per year | Low in a developed country |
| Adult literacy | % adults who can read and write | High in a developed country |
| Infant mortality | % babies that die before the age of one | Low in a developed country |




**The demographic transition model** is a guide as to how countries population can change over time. Their populations will go through a series of stages as their birth rates and death rates change. Developments in sanitation and medicine will begin to have an impact on these two indicators.

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**Causes of uneven development**

***Physical:*** The nature of the landscape ( deserts/mountains/tropical rainforests) can make development challenging. Extreme natural events ( tropical storms/earthquakes) can lead to money spent on recovery not development. Some countries are landlocked making trade expensive and politically challenging.

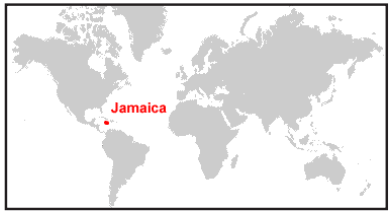
***Historical:*** Many European nations had African countries all colonies. They took their resources and when these countries got Independence it resulted in civil wars hampering development

***Economic:*** Many pooper nations trade primary goods( raw materials) these have a low value and the price fluctuates world trade is dominated by the wealthy countries. Processing which adds value takes place in richer countries.

**Reducing the development gap: Aid**

Aid is when a government or non government organisation ***NGO*** gives help to another country in the form of money, emergency supplies, food or specialist skills. It can help by enabling countries to invest in roads, health care and education. ***Only Aid that is long term and freely given can really help to close the development gap.***

**Jamaica is a small Caribbean Island** chosen **tourism** as a way to close the development gap. There are positives and negatives to this. It has




**Disparities in wealth can affect health** In rich countries there is money to pay for hospital and vaccines. In poorer countries there is less money for health care. In ***LIC's*** death is usually from infections diseases and in childbirth. In ***HIC's*** death is related to old age or lifestyle choices leading to cancers and heart problems.

**Reducing the development gap: Investment**

Countries and TNC's invest money and expertise in LIC's China have invested in a railway in Nigeria and a power station in Zimbabwe. There are some benefits but many think it's a type of exploitation benefitting China

**Reducing the development gap: Intermediate technology.**

Intermediate technology is sustainable and appropriate to the needs, knowledge and wealth of the local people. EG: Adis Nifra In Ethiopia where as small dam was created to help with irrigation

***Economy***

Tourism is 24% of GDP in Jamaica ✓

Some money earned from tourism goes to the HIC travel companies ✗

***Infrastructure***

Investment in roads and airports ✓

Some parts of the island remain isolated ✗

***Quality of life.*** In the popular resorts locals benefit. ✓

In the rural areas life remains very hard

The environment ✗

***Conservation*** has created jobs ✓

Mass tourism creates a lot of waste ✗

**Disparities in wealth can affect migration..**

Migration = people move from place to place.
Internal migration = within a country
International migration = across country borders
Economic migration = moving to earn more money
Refugee = fleeing from a place of danger

***Middle East crisis of 2015***. Civil war in Syria lead to the migration of millions of people into Europe to seek safety. An estimated 1.1 million migrants entered Germany in 2015

**Reducing the development gap: Industrial Development**

Countries invest in manufacturing housing is built and hospitals roads and railways. Population becomes better educated and healthier and industry can expand. This is called the ***POSITIVE MULTIPLIER EFFECT***

**Closing the development gap: Fair Trade**

Fair trade is an international movement that sets standards for trade to ensure that producers in LICs get a fair deal. Fair trade also helps to fund local community projects and all farming is done in environmentally friendly way

Reducing the development gap : Micro finance.
This involves small scale financial support. Itt helps people especially women to start up small businesses. The Garmeen bank is an example

***Up to 2016*** any one from the European Union was free to move to the UK. Most migrants work and pay tax. Migrants can put pressure on services like schools

**Reducing the development gap: Tourism**

Countries with Tropical beaches etc. can attract tourists. Investment in the local area can benefit the local economy and people get jobs. However there can be damage to the natural environment and it is vulnerable to recession

**What is Free trade?.** Free trade is when countries can trade with each other without tariffs ( taxes). This has the potential to benefit the worlds poorest. However subsidies are a barrier to free trade. This is when rich countries give money to their farmers to help them produce goods cheaply. This can steal trade from Lic's.

**What is a trading group?**

Countries can join together to get higher prices for their goods. EG the EU

# Geography

## Exploring Nigeria: CASE STUDY


**Nigeria's Importance**
2014 Nigeria was the 21st largest economy in the world.
It had a population of 195.9 million in 2018
Nigeria contribute the UN peace keeping force.
It has the largest population in Africa.
It has the fastest growing economy in Africa


Semi desert

Tropical grassland and Savannah

High temperatures and high rainfall

Political Links:
OPEC and the United Nations. Also the African Union

**The effect of development on the Environment:**
***Industrial Growth***: Pollution from factories gets in to the water supply. Gases get into the atmosphere. Many forests have been cleared for Industrial development
***Urban Growth:*** Waste from homes is a major issue. Traffic congestion pollutes the air. More deforestation when the new capital ABUJA was built.
***Mining and oil extraction:*** Tin mining leads to soil erosion. Oil spills can harm the coast and cause fires. Very bad spill BODO 2008-9
***Commercial farming:*** Water pollution due to the use of chemicals, Soils erosion due to forest clearnce leads also to the loss of species

**Quality of life** There have been many benefits to development: Higher disposable incomes. Improvements to infrastructure. Better access to safe water. Better quality health care.
***HOWEVER:***
Many people are still very poor. The gap between the rich and poor is wider. Over dependant on oil which could be a problem in the future.
Nigeria's HDI has increased from 0.46 in 2005 to 0.50 in 2013

**Manufacturing in Nigeria**. Today manufacturing accounts for 10% of Nigeria's economy. EG Volkswagen. Regular paid work gives people an income. Industry stimulates growth in other areas of the supply chain. People pay taxes to the Government. ***This is an example of the multiplier effect***

**Problems with AID**
Corruption is a major problem in the loss of AID donations
Donors may have political influence on where the Aid is sent
Nigeria could become dependant on the AID

60% of Nigerians still live in Poverty and there remain real threats to the environment


***Background:*** Nigeria is a multi ethnic country. There was a civil war between 1967 and 1970. Christians to the South Muslims to the North where there is a terrorist group called Boko Haram

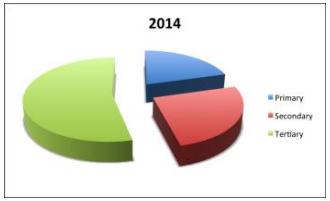
**Trade**: Nigeria ***exports:*** crude and refined petroleum, natural gas, rubber, cocoa and cotton.
***Imports:*** refined petroleum from the EU and the USA cars from Brazil and the USA telephones from China
Today oil accounts for 95% of Nigerias export earnings

**Advantages of TNC's**
Employment and learning new skills ✓
Investment in local infrastructure ✓
**Disadvantages of TNC's**
Poorly paid ✗
Poor working conditions ✗
Profit goes abroad ✗

**Aid in Nigeria** Aid from the USA has helped to prevent the spread of AIDS. The world bank approved AID for loans for business

***Political Context:*** During colonial times Nigeria was ruled by the UK. It got its independence in 1960. Up to 1990 there was Political instability. Since then the Government has been more stable. Today China invest heavily in Nigeria

Nollywood is the second largest film industry in the world




**TNC's in Nigeria** : Two main Trans National companies in Nigeria are: Unilvever and Shell oil

**Unilever.** Anglo-Dutch TNC. Employs 1500 people. Helped to promote health care and education

**Shell** One of the worlds largest oil companies.
Major contributions in taxes ✓
Employs 65000people ✓
Many oils pills have caused environmental damage ✗


Spanish

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# Spanish

## Los Problemas Globales

| Los verbos | |
|---|---|
| Reciclar | To recycle |
| Luchar | To fight |
| Reusar | To reuse |
| Aumentar | To increase |
| Amenazar | To threaten |
| Apagar (la luz) | To switch off (the light) |
| Encender (las luces) | To switch on (the lights) |
| Cerrar el grifo | To turn off the taps |
| Tirar | To throw |
| Dañar | To damage |
| Echar la culpa | To blame |
| Estropear | To spoil/ ruin |
| Malgastar | To waste |
| Separar la basura | T separate the rubbish |
| Ensuciar | To dirty |
| Limpiar | To clean |
| Salvar | To save (lives) |
| Ahorrar | To save (energy) |
| Advertir | To warn |
| Evitar (bañarse) | To avoid |
| Ducharse | To shower |

En vez de

| Sustantivos - Problemas de hoy en día | | | |
|---|---|---|---|
| Me preocupa | I am worried about | El prblema más grave es | The most serious problem |
| El paro/el desempleo | unemployment | El hambre | hunger |
| la pobreza | poverty | La riqueza | wealth |
| la desforestación | deforestation | La drogadicción | Drug addiction |
| La salud | health | La obesidad | obesity |
| La crisis económica | The economic crisis | El medio ambiente | The environment |
| Los sin hogar/ los sin techos | The homeless | Los animales en peligro de extinción | Endangered species |
| El calentamiento global | Global warming | La falta de viviendas | Lack of houses |
| La capa de ozono | Ozone layer | El sobrepeso | Overweight |
| Los gases de escape | Exhaust fumes | El tabaquismo | Smoking |
| La basura | Litter/rubbish | La Guerra | War |
| La marea negra | Oil spill | La inmigración ilegal | Illegal Immigration |
| El atasco | Traffic jams | Los refugiados | The refugees |
| La manifestación | Demonstration | El racismo | Racism |
| La huelga | Strike | Las energias renovables | Renuable energies |
| Los residuos | Waste | El botellón | Drinking in parks |

| Sustantivos - Desastres naturales – natural disasters | | | |
|---|---|---|---|
| La selva | The jungle | Un incendio forestal | A forest fire |
| Un terremoto | An earthquake | Un tornado | A tornado |
| Un malgasto de dinero | A waste of money | Las inundaciones | floods |

| Los Verbos - Soluciones - solutions | |
|---|---|
| Se debe / Se debería | You should/ We should |
| Comprar / Trabajar en una tienda benéfica | To buy / To work in a charity shop |
| Donar dinero a las organizaciones beneficas | To donate money to charities |

| Los adjetivos | |
|---|---|
| Sano/a | Healthy |
| Malsano/a | Unhealthy |
| Peligroso/a | Dangerous |
| Renovable | Renewable |
| Recargable | Rechargeable |
| Sucio/a | dirty |
| Limpio/a | Clean |
| Nocivo/a Dañino/a | Harmful |
| Asqueroso/a | Disgusting |
| Borracho/a | Drunk |
| Muerto/a | Dead |

| Los Verbos - Soluciones - solutions | |
|---|---|
| Cuidar del planeta | To look after the planet |
| Comprar productos verdes | To buy green products |
| Crear oportunidades de trabajo | To create work opportunities |
| Constuir más casas | To build more homes |
| Reciclar la basura más amenudo | To recycle rubbish more often |
| Ser voluntario | To be a volunteer |
| Ayudar en un comedor social | To help in a soup kitchen |
| Participar el comercio justo | To take part in fair trade |
| Ahorrar agua | To save water |
| Consumir menos | To consume less |


Religious
Studies

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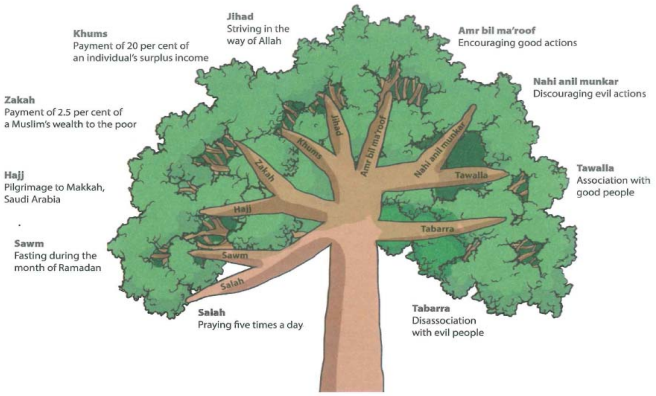
# Religious Studies - Muslim

# Living the Muslim Life

## TEN OBLIGATORY ACTS—Shi'a Islam

**Essential information**: The Ten Obligatory Acts are the most important duties for Shi'a Muslims. Most of these acts are also carried out by Sunni Muslims. They teach Shi'a Muslims that beliefs are not enough, that actions are essential too.




For Shia Muslims, the Ten Obligatory Acts are like the branches of a tree that flourish and grow from strong roots (5 roots of Usul ad-Din). These acts enable Shia Muslims to connect with Allah, purify their hearts, ease the suffering of the poor, and promote a better society. Additionally, they improve their chances of getting into paradise in the next life. Sunni Muslims also perform all except Khums, but officially recognize only five acts as the Five Pillars

**The 10 obligatory Acts are based on the Qur'an, the Hadith and the work of early Shi'a scholars.**

"*The believers, both men and women, support each other; they order what is right and forbid what is wrong.*" (Surah 9:21)

## THE FIVE PILLARS


## SHAHADAH—declaration of faith

Shahadah the first of the Five Pillars of Islam. It is the declaration of faith for all Muslims, including Sunni and Shi'a. The Shahadah sums up the core beliefs of Islam.

**What is Shahadah?**

It is based on the teaching:

*"God bears witness that there is no god but Him, as do the angels and those who have knowledge."*

The Shahadah has two parts that all Muslims recite:

***1. I Bear witness that there is none worthy of worship except Allah alone and He has no partner.***

***2. And I bear witness that Muhammad is His servant and His Messenger.***

A number of Shi'a Muslims will also add a third phrase:

***And I bear witness that Ali is the friend of God.***

**The importance of the Shahadah for Muslims today:**

- Shahadah sums up the core Muslim beliefs, which are Tawhid (oneness of God) and Risalah (prophethood).
- Anyone who wants to become a Muslim is required to repeat the words.
- It reminds a Muslim of the important commitment they have made, making them more likely to honour it.
- Rewards are promised to those who put Allah and the Prophet Muhammad before everything else.
- The Shahadah is the first thing recited into the ears of a newborn child, and is also repeated during burial.

## SAWM—fasting

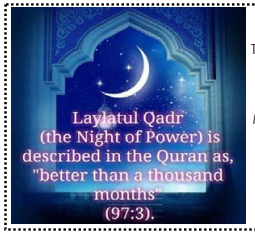
**Essential Information**: one of the five pillars and obligatory acts. It means 'to abstain', and is used to refer to fasting, which is particularly important during the month of Ramadan. Muslims hope to experience a special feeling of closeness to Allah during Ramadan.

**What is Sawm?**

- Fasting
- Only required by healthy and mature Muslims (not required to fast if old, sick, travelling, pregnant, or young children. Adults must make up missed days at another time, or pay money towards feeding poor families.)
- Fasting starts from the first lights of dawn and ends with sunset.

**The importance of the Sawm for Muslims today:**

- Helps them to appreciate the suffering og the poor and be more grateful for what they have
- Brings them closer to God
- Brings community closer
- Prophet Muhammad taught that fasting is pointless if Muslims do not become better people as a result
- Fasting makes Muslims spiritually purer




**The Night of Power (Laylat al-Qadr)**

There is a close link between Ramadan and Laylat al-Qadr, which is when the Prophet Muhammad received his first revelation from Allah.

Muslims hope to experience their own special feeling of being close to Allah in the last days of Ramadan, as a sign of Allah's acceptance of their prayers. During the final nights of Ramadan, Muslims hold extra prayers.

## SALAH—prayer

**Essential Information**: Salah is the second Pillar of Islam for Sunni Muslims, and the first of the Ten Obligatory Acts for Shi'a Muslims. Salah means 'prayer and connects Muslims to Allah. Muslims must pray five times a day, mainly in the mosque or at home.

**What is Salah?**

- Salah is a physical, spiritual, and mental act of worship following prescribed words and actions
- Salah is offered at fixed times during the day.
- Salah is performed today in the same way it was performed by the Prophet Muhammad.
- Salah aims to purify the mind and soul and helps Muslims develop a closeness to Allah.

*"keep up the prayer: prayer restrains outrageous and unacceptable behaviour."* (Surah 29:45)

*"Celebrate the glory of your Lord and be among those who bow down to Him: worship your Lord until what is certain comes to you."* (Surah 29:45)

**Features of Salah:**

**ABLUTION (WUDU)**

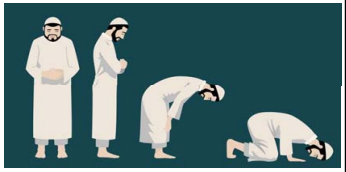
- It is important to be clean for prayer. Muslims must wash parts of the face and body including hands, mouth, elbows and feet. Sunni Muslims wipe their whole head and wash their feet; Shi'a Muslims wipe the front of the head and the top of their feet.

**TIMINGS**

- There are 5 daily prayers (fajr, zuhr, asr, maghrib, isha). Sunni Muslims pray at these 5 set times; Shi'a Muslims combine some of the prayers and pray three times a day.

**RECITATIONS**

- Words recited during salah are taken mainly from the Qur'an and the Hadith.



**MOVEMENTS**

- Each salah is made up of a sequence of actions and prayers known as rak'ah, including standing, kneeling, bowing and prostrating.

**DIRECTION (QIBLAH)**

- Muslims face Maakah, there the Ka'bah is located

**Salah in the lives of Muslims today**

- Salah can be offered anywhere but Muslims aim to go to the mosque
- Muslims can also offer Salah at home, where a clean space may be allocated to pray with other relatives.
- The most important day of the week for Muslims is Friday. This is when the Jummah prayer takes place in mosques, the main part being a sermon by the imam (prayer leader). (Do not confuse this type of imam with, for example, the 12 Imams whom Twelver Shia Muslims believe have been chosen by Allah.)

# Religious Studies - Muslim

## Zakah and Khums

**Essential information:** Zakah is one of the Five Pillars of Islam for Sunni Muslims and one of the Ten Obligatory Acts for Shia Muslims. It is an act of charity that involves sharing one's wealth with the poor. Khums is an additional tax paid by Shi'a Muslims to be spent by their leaders on various causes.


### Zakah

Muslims believe that wealth is a gift from Allah, and should be shared with those that are less fortunate.

- 2.5% of the value of savings or wealth
- Means 'purification' so is a way for Muslims to become purified from greed and become closer to God
- Only given by Muslis who have an income above a certain value, called the nisab
- Goes to the less fortunate, those in debt, widows and orphans, and to other beneficial causes in the community.


### Khums

Shi'a slims also believe in khums, which means 'fifth'. It began as a contribution of 20% of the value of 'battle gains' (Surah 8:41), given by Muslim armies to religious causes. Today shi'a Muslims contribute 20% of all of their wealth. In the Shi'a tradition this is normally given to Imams, but, as there is no imam present today, they give this to their leader, the Grand Ayatollah, who spends it on charitable causes including:

- The poor
- Orphans
- Schools
- Mosques and religious scholars

*"Alms [food or money given to the poor) are meant only for the poor, the needy [...] to free slaves and help those in debt, for God's cause, and for travellers in need."* (Surah 9: 60)

## Hajj

**Essential information:** Hajj is the pilgrimage made to Makkah in Saudi Arabia. It is one of the five pillars and the 10 Obligatory Acts. It is believed that by performing Hajj all of their sins can be forgiven.

### What is Hajj?

- Hajj is commanded in the Qur'an: '*Proclaim the Pilgrimage to all people*' (Surah 22:27).

***We commanded Abraham and Ishmael: 'Purify My House for those who walk round it, those who stay there, and those who bow and prostrate themselves in worship.' (Surah 2: 125)***

- Makkah is the holiest place for Muslims. The Ka'bah is believed to be the first place in dedicated to the worship of Allah. It was rebuilt by Ibrahim and Isma'il around 4000 years ago:
- Hajj is important for Muslims because they are following in the footsteps of Ibrahim, Ismail, and Muhammad.

### How Hajj is performed:

To perform Hajj, Muslims must:

1. be physically able
2. be able to afford all the expenses
3. pass through a safe route.

Pilgrims wear ihram to symbolize unity and equality. For men this is two sheets of white cloth wrapped around the body, while women dress in simple clothes that are usually white.

**BENEFITS**: stronger relationship with God, unites all Muslims, inspires pilgrims to become better people.

| | |
|---|---|
| **Tawaf** | Walking 7 times anti-clockwise around the ka'bah, and often trying to touch the Black Stone. This was the practice Muhammad. |
| **Sa'ee** | Waking between two hills in memory of Ibrahim's wife Hagar, who was left in the desert with their son Isma'il, searching for water. |
| **Standing at Arafat** | A day of repentance and prayer, the place where Muhammad gave his final sermon. |
| **Ramy al-jimar** | Stoning of pillars that represent Satan. In memory of Ibrahim's confrontation with the devil. |
| **Sacrifice** | Animals sacrificed to remember Ibrahim's son Isma'il's readiness to give his life to God. The meat is distributed to the poor. |
| **Hair cutting** | Men shave their head and women cut a few hairs to symbolise a new beginning. |

## Jihad

**Essential information:** means to 'strive' or 'struggle', particularly against evil. There are two kinds: greater (spiritual) and lesser (physical). The large majority of Muslims reject extremist interpretations of Jihad.

Muslims recognise that life is full of challenges and struggles, but that they should try and be better for Allah. This striving to be better is known as 'jihad'.

| Greater Jihad | Lesser Jihad |
|---|---|
| Striving to resist evil, to be a better person.<br>• jihad of the soul: improving your character<br>• Of the tongue: telling others about Islam<br>• Of the pen: writing about your beliefs | Physically resisting evil in the world. It is allowed if:<br>• There is persecution<br>• Religious freedoms are taken away<br>• Islam has to be defended from attack<br>• It is authorised by a religious leader<br>*"Fight in God's cause against those who fight you, but do not overstep the limits."* (Surah 2:190) |

**Jihad today**:

- Both types were practiced by Muhammad, and Muslims are required to follow his example
- Allah is pleased with those who improve themselves, it brings them closer to Him.
- The majority of Muslims do not agree with the way in which extremist groups interpret lesser jihad. For example, the Qur'an teaches that lesser jihad cannot be used to convert people to Islam, but this is how it is being used by some groups like IS.
- Lesser jihad is only permitted when certain conditions are met: for example when religious freedom is taken away. Religious freedom is protected by law in the UK and many other countries around the world. This makes jihad less relevant to Muslims today.

## Celebrations and Festivals


**Essential information:** All Muslims celebrate 2 main festivals: Id-ul-Adha and Id-ul-Fitr. Shi'as have 2 additional: Id-ul-Ghadeer and Ashura. Special occasions are a way for Muslims to unite, honour people and events in the past, and

| Celebration | Why is it important? | What happens? |
|---|---|---|
| **Id-Ul-Adha**—remembers the devotion of Ibrahim and Isma'il, and marks the end of Hajj | Remembers when Ibrahim and Isma'il's faith was tested by God. Ibrahim had a dream where he was sacrificing Isma'il and interpreted it to mean that he must do this. God stopped him, but praised him for his dedication. It reminds Muslims to show devotion to God. | •Animals are sacrificed and meat is shared with the poor.<br>•New clothes are worn and people greet each other saying "Id Mubarak" (blessed Eid).<br>•Families go to the mosque for special prayers and a sermon by the imam. |
| **Id-ul-Fitr**—festival at the end of Ramadan<br>(Sunni and Shi'a) | Festival at the end of Ramadan—Muslims express joy and gratitude for being able to complete a month of fasting for Allah. By fasting they strengthen their relationship with Allah, improve themselves, and appreciate what they have. | •New clothes are worn and people greet each other saying "Id Mubarak" (blessed Eid).<br>•Gifts are exchanged<br>•Money given to the poor<br>•Families go to the mosque for special prayers and a sermon by the imam. |
| **Id-ul-Ghadeer**—remembers the appointment of Ali | Celebrates the day Shi'a Muslims believe that Muhammad appointed Ali as his successor. This happened at a pond called Ghadir Khumm during Muhammad's last Hajj. | •Fasting is encouraged<br>•Gathering held in mosques where poetry is recited and scholars give speeches. |
| **Ashura**—a day of solemn remembrance<br>(Shi'a) | Commemorates the say when Imam Husayn was martyred (killed for his beliefs), along with his family and companions in Karbala, Iraq. This was because he refused to swear allegiance to the oppressive and corrupt ruler Yazid. It is a reminder to Muslims to stand up against injustice. | •Gathering in mosques<br>•Often wear black to showing mourning<br>•Many make pilgrimage to Karbala<br>•Some perform acts of self flagellation to express grief<br>•Many fast for two days; Ashura also coincides with the day Musa and his followers were freed from Egypt. Muhammad observed 2 days of fasting to remember this. |


Food
Technology

# Food Technology

## 4.3.6 Marking criteria: Task 2 Food preparation assessment

The 'Food preparation assessment' is assessed in five sections as shown below:

| Section | Criteria | Maximum mark |
|---|---|---|
| A | Researching the task | 6 |
| B | Demonstrating technical skills | 18 |
| C | Planning for the final menu | 8 |
| D | Making the final dishes | 30 |
| E | Analyse and evaluate | 8 |
| Total | | 70 |

# Y11 GCSE Food
# KO HT3
# NEA 2 Section A&B

How it's assessed: Section A & B
Students will produce a concise portfolio including:
- evidence of research and analysis of the chosen task
- evidence of making 3-4 dishes outside of the single 3 hour period to demonstrate technical skills. These dishes will be used to justify the choices of dishes for the final menu. There is an expectation that candidates will not simply re-make the same dishes.

### Section A: Researching the task (6 marks)

Students will research and analyse the: life stage/dietary group or culinary tradition related to the task.

Students should:

- analyse the task by explaining the research requirements
- carry out relevant research and analysis related to the: life stage, dietary group or culinary tradition
- identify a range of dishes eg by mind-mapping, or using annotated images
- select and justify a range of technical skills to be used in the making of different dishes.

| Mark | Description |
|---|---|
| 5–6 | • Relevant, concise and accurate research that shows discrimination when selecting and acquiring information to answer the task.<br>• Detailed understanding and analysis of the dietary group, life stage or culinary tradition.<br>• Selected a varied range of relevant dishes closely reflecting the research and chosen task. |
| 3–4 | • Relevant research carried out related to the task.<br>• Includes analysis of the dietary group, life stage or culinary tradition.<br>• Selected a range of relevant dishes reflecting the research and chosen task. |
| 1–2 | • Limited research carried out.<br>• Limited analysis of the dietary group, life stage or culinary tradition.<br>• Selected some trial dishes reflecting the research and chosen task. |
| 0 | Nothing worthy of credit. |

### Section B: Demonstrating technical skills (18 marks)

Students will make 3–4 dishes to showcase their technical skills.

Students should:

- demonstrate technical skills in the preparation and cooking of three to four dishes. Refer to the Food preparation skills (page 9) section of the specification.
- select and use equipment for different technical skills in the preparation and cooking of selected dishes. Food safety principles should be demonstrated when storing, preparing and cooking.
- identify the technical skills within each dish. Photographic evidence will be needed to authenticate the technical skills.
- students will select three dishes to make which allow them to showcase their technical skills to make for their final menu. The final dishes will relate to the task and research and be dishes that have not been made previously.

For example, a student could make the following initial dishes to demonstrate technical skills:

**1.** Fish pie (**technical skills shown:** filleting fish, making a sauce, vegetable preparation, piping potato).

**2.** Beef lasagne (**technical skills shown:** pasta making, sauce making, vegetable preparation).

**3.** Traditional quiche (**technical skills shown:** shortcrust pastry, lining a flan ring).

**4.** Flavoured bread rolls (**technical skills shown:** bread making: kneading, shaping).

For the final menu, they could choose to produce:

**1.** Fish cakes with parsley sauce.

**2.** Cannelloni with homemade pasta and tomato ragu sauce.

**3.** Roasted vegetable flan with reduced fat ingredients to improve the nutritional properties.

Students will be rewarded for the use of a range of technical skills and the quality of outcomes achieved. The complexity and challenge of the dishes produced is linked to the complexity of the skills involved in producing the dish. To achieve the top bands, students must attempt complex skills. Selecting unchallenging skills prevents candidates from reaching the top mark band. As a guide, please see the examples in Food preparation assessment (page 41).

| Mark | Description |
|---|---|
| 15–18 | • Competently executes a wide range of complex technical skills/processes(eg filleting fish or cutting vegetables with precision and accuracy eg julienne) to produce excellent quality dishes.<br>• Selects and uses appropriate equipment confidently and accurately.<br>• Extensive review of technical skills that leads to appropriate and justified final dishes. |
| 10–14 | • Executes technical skills/processes with accuracy, including some complex technical skills (eg filleting fish or cutting vegetables with precision and accuracy eg julienne) to produce very good quality dishes.<br>• Selects and uses appropriate equipment accurately.<br>• Very good review of technical skills leads to appropriate final dishes. |
| 5–9 | • Demonstrates technical skills/processes with some accuracy to produce good quality dishes.<br>• Selects and uses equipment with some accuracy.<br>• Good review of technical skills leads to appropriate final dishes. |
| 1–4 | • Basic technical skills/processes (eg slicing raw meat, peeling fruits and vegetables) used to produce adequate quality dishes.<br>• Difficulty in using some equipment.<br>• Some review of the technical skills leads to the final dishes. |
| 0 | Nothing worthy of credit. |


IT

# IT - Coursework support

*COURSEWORK MARK CRITERIA – Refer to these to check you have it all completed*

| | MB1: 1 to 3 marks | MB2: 4 to 6 marks | MB3: 7 to 10 marks |
|---|---|---|---|
| **Use of IT Tools and Techniques**<br><br>**1a**<br><br>**To initiate/plan** | Limited use of tools and features results in potential of technology being under-utilised for the intended purpose. May use only one application but where more than one is being used they are used in isolation. **[1 2 3]** | Adequate use of tools and features results in potential of technology being utilised for the intended purpose. There are aspects of integration across two or more applications that are used. **[4 5 6]** | Effective use of tools and features results in potential of technology being fully utilised and clearly aligned to the intended purpose. Applications used are fully integrated. **[7 8 9 10]** |
| | **MB1: 1 to 4 marks** | **MB2: 5 to 8 marks** | **MB3: 9 to 13 marks** |
| **Project Life Cycle Processes and Methods**<br><br>**2a**<br><br>**Analysis of brief and planning approach**<br><br>**(Initiation/ planning)** | Objectives and requirements are stated and there is a list of tasks. Consideration of dependencies can be assumed but there is no evidence of it. Success criteria are described.<br><br>Constraints, risks, resources and milestones have been identified although some obvious ones have been missed and no links are made between them.<br>Although there are obvious gaps in planning activities, the plan is feasible. **[1 2 3 4]** | Objectives and requirements are stated. There are logical dependencies shown for some tasks and sub-tasks although it is not presented as a critical path. There is an explanation behind the choice of success criteria.<br><br>Links between constraints, risks and resources have been identified although some links are missed or not made clear. Ways to mitigate are stated but the consequences of actions are not evidenced. **[5 6 7 8]** | Objectives and requirements are stated. A critical path is defined, with logical dependencies shown between key milestones and sub-tasks. There is a justification of the success criteria chosen.<br><br>Links between constraints, risks and resources are clearly defined and contingencies identified. Mitigation for the plan is explained. **[9 10 11 12 13]** |

# IT - Coursework support

*COURSEWORK MARK CRITERIA – Refer to these to check you have it all completed*

| | MB1: 1 to 3 marks | MB2: 4 to 6 marks | MB3: 7 to 10 marks |
|---|---|---|---|
| ***Use of IT Tools and Techniques***<br><br>**1b**<br>**To import and manipulate data**<br><br>**(Execution 1)** | **Limited** use of tools and features results in potential of technology being under-utilised for the intended purpose. May use only one application but where more than one is being used they are used in isolation. **[1 2 3]** | **Adequate** use of tools and features results in potential of technology being utilised for the intended purpose. There are aspects of integration across two or more applications that are used. **[4 5 6]** | **Effective** use of tools and features results in potential of technology being fully utilised and clearly aligned to the intended purpose. Applications used are fully integrated. **[7 8 9 10]** |
| | **MB1: 1 to 4 marks** | **MB2: 5 to 8 marks** | **MB3: 9 to 13 marks** |
| ***Project Life Cycle Processes and Methods***<br><br>**2b**<br>**Importing and manipulating data**<br><br>**(Execution 1)** | The solution allows for data to be imported and manipulated. There will be inefficiencies and inaccuracies that will impact on the quality of the data and the objectives of the solution.<br><br>The solution is open to security and legal risks. **[1 2 3 4]** | The solution allows for data to be imported and manipulated so that most of the requirements of the project can be met. There are some inefficiencies but they will not impact on meeting the requirements.<br><br>The security and legal risks identified in the planning phase have been carried forward into the solution and evidenced although only one or two tools and techniques are used to preserve data integrity by protecting the data from malicious intent and/or unauthorised access. Some opportunities for safe, secure and responsible practices have been missed. **[5 6 7 8]** | The solution allows for data to be imported and manipulated efficiently and effectively so that all requirements of the project can be met. The security and legal risks identified in the planning phase have been carried forward into the solution and evidenced by a range of tools and techniques used to preserve data integrity by protecting the data from malicious intent and/or unauthorised access. This takes into account both how the data will be processed and how the information will be presented. **[9 10 11 12 13]** |

# IT - Coursework support

*COURSEWORK MARK CRITERIA – Refer to these to check you have it all completed*

| | MB1: 1 to 3 marks | MB2: 4 to 6 marks | MB3: 7 to 10 marks |
|---|---|---|---|
| ***Use of IT Tools and Techniques***<br><br>**1c**<br>**To select and present integrated information**<br><br>**(Execution 2)** | **Limited** use of tools and features results in potential of technology being under-utilised for the intended purpose. May use only one application but where more than one is being used they are used in isolation.**[1 2 3]** | **Adequate** use of tools and features results in potential of technology being utilised for the intended purpose. There are aspects of integration across two or more applications that are used.**[4 5 6]** | **Effective** use of tools and features results in potential of technology being fully utilised and clearly aligned to the intended purpose. Applications used are fully integrated. **[7 8 9 10]** |
| | **MB1: 1 to 4 marks** | **MB2: 5 to 8 marks** | **MB3: 9 to 13 marks** |
| ***Project Life Cycle Processes and Methods***<br><br>**2c**<br>**Selecting and presenting information**<br><br>**(Execution 2)** | The data created has only been used in a minimal way to support the information being presented.<br><br>Nonetheless information has been communicated to address some of the requirements of the project. How the data has been structured will affect the clarity of the information communicated. The same method and the same distribution channel have been used to communicate information to all audiences. There will be no integration of the data with the selected communication method. **[1 2 3 4]** | The data is suitably used to support the information being presented which addresses some of the project requirements.<br><br>Different methods have been selected for different audiences but what is used is passable for the type of information and its audience. There is some integration between processed data and the communication methods. The quality and quantity of information provided meets the requirements of each audience, but there will be some instances of misinformation. Only one distribution channel has been selected to communicate the information to all audiences.<br><br>Security and legal actions taken are aligned with at least one distribution channel to minimise risks from cyber-security attacks. **[5 6 7 8]** | The data is suitably used to support the information being presented which addresses all of the project requirements.<br><br>They have utilised suitable opportunities to integrate processed data with communication methods and each distribution channel to communicate the information to each intended audience. The quality, quantity and accessibility of the information provided clearly meets the requirements of each audience. Security and legal actions taken are directly aligned with the selected distribution channels to minimise risks from cyber-security attacks. **[9 10 11 12 13]** |

# IT - Coursework support

*COURSEWORK MARK CRITERIA – Refer to these to check you have it all completed*

| | MB1: 1 to 3 marks | MB2: 4 to 7 marks | MB3: 8 to 11 marks |
|---|---|---|---|
| ***Evaluation***<br><br>**3a**<br><br>**Iterative review and final evaluation**<br><br>(Evaluation) | There is an attempt to carry out an iterative review at the end of one or more phases of the project life cycle that states what went well and/or what did not go well, but without reasons for why that was.<br><br>Carries out a final evaluation at the end of the project that states what went well and/or what did not go well, there will be limited recognition of what changes were made, if any, during the project.<br><br>**[1 2 3]** | Iterative reviews have been carried out for one or more phases of the project life cycle, showing consideration of both positive and negative aspects to inform the immediate next stage.<br>The review will lack detail about what went well and what did not with reasons for why that was. Resolutions and adaptations are **described** and some are **explained** although they are not justified.<br><br>Carries out a final evaluation against their success criteria, identifying if the objectives were met.<br><br>Evidence of a reflection on the planning phase outputs, project objectives and success criteria. Identifies any gaps or issues that emerged in a later phase and/or those that they would like to consider if they were repeating the project (lessons learnt).<br><br>**[4 5 6 7]** | Iterative reviews have been carried out for all phases of the project life cycle, showing consideration of both positive and negative aspects of the current phase and any phases that preceded it to inform direction and decisions for all phases to follow.<br>Resolutions and adaptations are **explained** and some are **justified**.<br><br>Carries out a final evaluation that measures the success of the project against their success criteria.<br><br>Evaluation includes an analysis of the original planning documentation compared to the final product and the effects of constraints on the project such as processes and resources are evaluated and lessons learnt recorded.<br><br>**[8 9 10 11]** |


Computer
Science

# Computer Science - Systems Software and Security

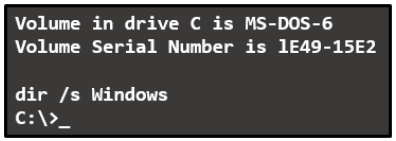
## Operating Systems

The purpose and functionality of operating systems:

- ❑ User interface
- ❑ Memory management and multitasking
- ❑ Peripheral management and drivers
- ❑ User management
- ❑ File management

**OPERATING SYSTEMS** act as an interface between the user and the computer hardware.

Operating systems have two types of interface; **COMMAND LINE INTERFACE** (which uses text based commands) **GRAPHICAL USER INTERFACE** (which uses icons and pointers)




| | COMMAND LINE INTERFACE | GUI |
|---|---|---|
| Ease of Use | ✗ | ✓ |
| Flexibility | ✓ | ✗ |
| Heavy use of system resources | ✗ | ✓ |

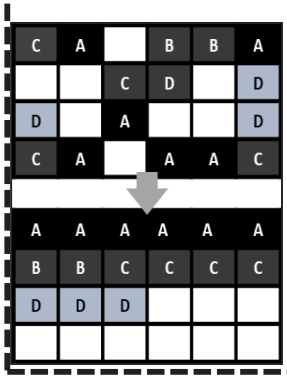
**USER MANAGEMENT** means that multiple user accounts can be added to one machine. Users will have different access rights.

In order for a computer to make use of additional hardware (such as mice, keyboards and printers)

**PERIPHERAL MANGEMENT** is needed. The OS will manage these devices, which require small programs called DRIVERS in order to function.

**FILE MANAGEMENT** allows users to search for, create, delete and organise files and folders. It also allows access rights to files and folders to be changed (i.e. to read only)

One of the most important roles of the OS is **MEMORY MANAGEMENT** and **MULTITASKING**. Multitasking allows multiple files and programs to be resident in memory at one time. This allows users to switch rapidly between different programs.



Files and programs are stored in “blocks” on a hard drive. Drives become fragmented as files and programs are removed and added over time. **DEFRAGMENTATION** groups files/programs and free space together – this decreases the time that the disk has to spend load/saving.

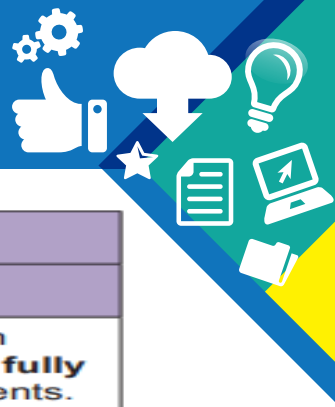
**UTILITY SOFTWARE** is software used to keep a computer running with optimum efficiency. Many OS contain built-in utility programs and these can also be purchased as third- party software.

**DATA COMPRESSION** utilities can be used to reduce the size of a file. This is useful when sending files electronically. Files compressed with this type of software need to have their contents extracted (using the same utility) before they can be used again.


**ENCRYPTION SOFTWARE** Uses **ALGORITHMS** to turn **PLAINTEXT** files into **CIPHERTEXT.** This means that the contents of an encrypted file cannot be read without the use of the **KEY** that was used to encrypt it.


Creative
iMedia

| LO1: Understand the purpose and properties of digital graphics | | |
|---|---|---|
| **MB1: 1–3 marks** | **MB2: 4–6 marks** | **MB3: 7–9 marks** |
| Produces a summary of how and why digital graphics are used, demonstrating a **limited** understanding of the purpose of digital graphics.<br><br>Identifies a **limited range** of file types and formats, only **some** of which are appropriate to digital graphics. | Produces a summary of how and why digital graphics are used, demonstrating a **sound** understanding of the purpose of digital graphics.<br><br>Identifies a **range** of file types and formats, **most** of which are appropriate to digital graphics. | Produces a summary of how and why digital graphics are used, demonstrating a **thorough** understanding of the purpose of digital graphics.<br><br>Identifies a **wide range** of file types and formats, which are **consistently** appropriate to digital graphics. |
| **MB1: 1–4 marks** | **MB2: 5–7 marks** | **MB3: 8–9 marks** |
| Demonstrates a **limited** understanding of the connection between the properties of digital graphics and their suitability for use.<br><br>Demonstrates a **limited** understanding of how different purposes and audiences influence the design and layout of digital graphics. | Demonstrates a **sound** understanding of the connection between the properties of digital graphics and their suitability for use.<br><br>Demonstrates a **sound** understanding of how different purposes and audiences influence the design and layout of digital graphics. | Demonstrates a **thorough** understanding of the connection between the properties of digital graphics and their suitability for use.<br><br>Demonstrates a **thorough** understanding of how different purposes and audiences influence the design and layout of digital graphics. |



| LO2: Be able to plan the creation of a digital graphic | | |
|---|---|---|
| **MB1: 1–2 marks** | **MB2: 3–4 marks** | **MB3: 5–6 marks** |
| Produces an interpretation from the client brief which meets **few** of the client requirements.<br><br>Produces a **limited** identification of target audience requirements.<br><br>Draws upon **limited** skills/ knowledge/understanding from other units in the specification. | Produces an interpretation from the client brief which meets **most** of the client requirements.<br><br>Produces a **clear** identification of target audience requirements.<br><br>Draws upon **some relevant** skills/knowledge/understanding from other units in the specification. | Produces an interpretation from the client brief which **fully** meets the client requirements.<br><br>Produces a **clear** and **detailed** identification of target audience requirements.<br><br>**Clearly** draws upon **relevant** skills/knowledge/understanding from other units in the specification. |
| **MB1: 1–5 marks** | **MB2: 6–9 marks** | **MB3: 10–12 marks** |
| Produces a work plan for the creation of the digital graphic, which has **some** capability in producing the intended final product.<br><br>Produces a **simple** visualisation diagram for the intended final product.<br><br>Identifies **a few** assets needed to create a digital graphic, demonstrating a **limited** understanding of their potential use.<br><br>Identifies **a few** of the resources needed to create a digital graphic, demonstrating a **limited** understanding of their purpose.<br><br>Demonstrates a **limited** understanding of legislation in relation to the use of images in digital graphics. | Produces a work plan for the creation of the digital graphic, which is **mostly** capable of producing the intended final product.<br><br>Produces a **sound** visualisation diagram for the intended final product.<br><br>Identifies **many** assets needed to create a digital graphic, demonstrating a **sound** understanding of their potential use.<br><br>Identifies **many** of the resources needed to create a digital graphic, demonstrating a **sound** understanding of their purpose.<br><br>Demonstrates a **sound** understanding of legislation in relation to the use of images in digital graphics. | Produces a **clear** and **detailed** work plan for the creation of the digital graphic, which is **fully** capable of producing the intended final product.<br><br>Produces a **clear** and **detailed** visualisation diagram for the intended final product.<br><br>Identifies **most** assets needed to create a digital graphic, demonstrating a **thorough** understanding of their potential use.<br><br>Identifies **most** of the resources needed to create a digital graphic, demonstrating a **thorough** understanding of their purpose.<br><br>Demonstrates a **thorough** understanding of legislation in relation to the use of images in digital graphics. |

| LO3: Be able to create and save a digital graphic | | |
|---|---|---|
| **MB1: 1–4 marks** | **MB2: 5–7 marks** | **MB3: 8–9 marks** |
| Sources or creates a **limited range** of assets for use in the digital graphic.<br><br>Prepares the assets for use in the digital graphic, **some** of which are technically **appropriate or compatible**. | Sources and creates a **range** of assets for use in the digital graphic.<br><br>Prepares the assets for use in the digital graphic, **most** of which are **technically appropriate and compatible**. | Sources and creates a **wide range** of assets for use in the digital graphic.<br><br>Prepares the assets for use in the digital graphic, **all** of which are **technically appropriate and compatible**. |
| **MB1: 1–4 marks** | **MB2: 5–7 marks** | **MB3: 8–9 marks** |
| Use of standard tools and techniques to create the digital graphic is **limited** and therefore creates a **simple** digital graphic which is appropriate to **some** aspects of the client brief.<br><br>**Occasionally** saves and exports the digital graphic in formats which are **appropriate**.<br><br>**Occasionally** saves electronic files using appropriate file and folder names and structures. | Use of standard tools and techniques to create the digital graphic is **effective** and therefore creates a digital graphic which shows **some** detail which is appropriate to **most** aspects of the client brief.<br><br>**Mostly** saves and exports the digital graphic in formats and properties which are **appropriate**.<br><br>**Mostly** saves electronic files using file and folder names and structures which are **consistent** and **appropriate**. | Use of a range of advanced tools and techniques to create the digital graphic is **effective** and therefore creates a **complex** digital graphic which is appropriate for the client brief.<br><br>**Consistently** saves and exports the digital graphic in formats and properties, which are **appropriate**.<br><br>**Consistently** saves electronic files using file and folder names and structures which are **consistent** and **appropriate**. |

| LO4: Be able to review the digital graphic | | |
|---|---|---|
| **MB1: 1–2 marks** | **MB2: 3–4 marks** | **MB3: 5–6 marks** |
| Produces a review of the finished graphic which demonstrates a **limited** understanding of what worked and what did not, making **few** references back to the brief.<br><br>Review identifies areas for improvement and further development of the final digital graphic, **some** of which are **appropriate** and sometimes **explained**. | Produces a review of the finished graphic which demonstrates a **reasonable** understanding of what worked and what did not, **mostly** referencing back to the brief.<br><br>Review identifies areas for improvement and further development of the final digital graphic, which are **mostly appropriate** and **explained well**. | Produces a review of the finished graphic which demonstrates a **thorough** understanding of what worked and what did not, **fully** referencing back to the brief.<br><br>Review identifies areas for improvement and further development of the final digital graphic, which are **wholly appropriate** and **justified**. |

# Art

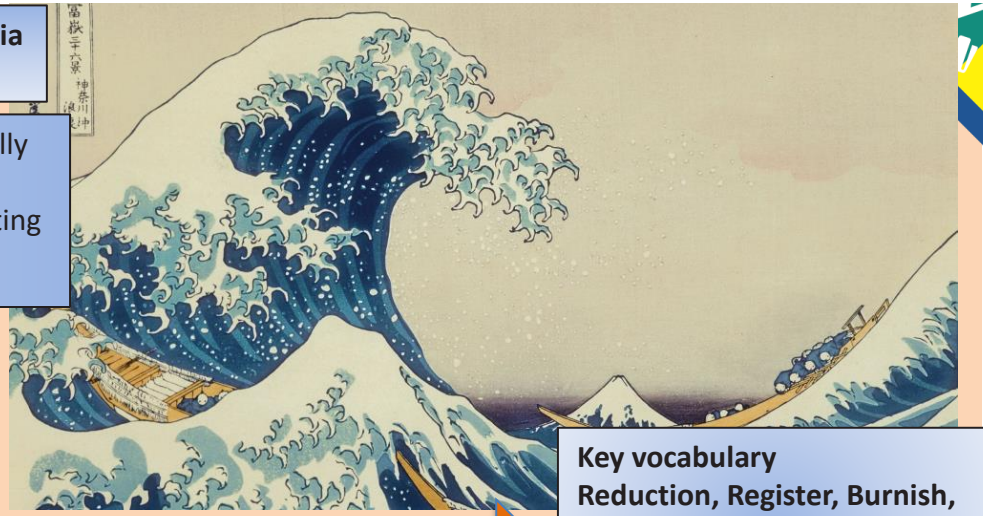
Hartford Church of England High School

Art

# Printmaking

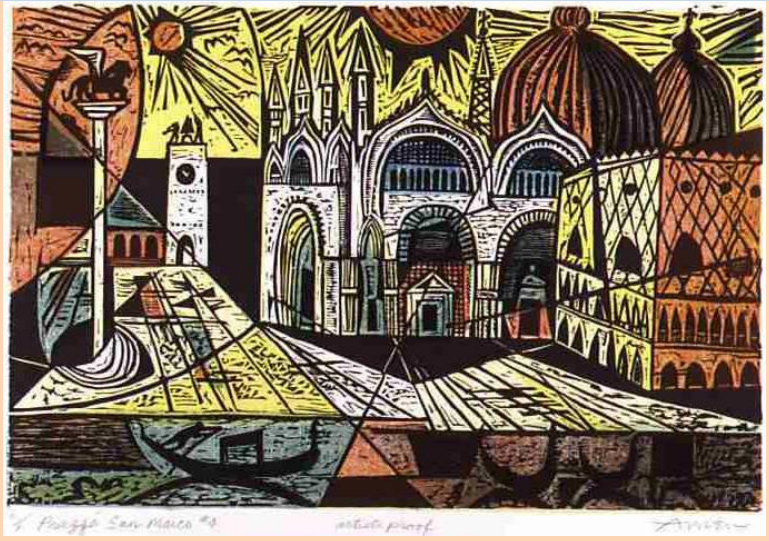
**During Half term 3 you will be extending your knowledge of media through the development of a final print.**

**Printmaking** is the process of creating artworks by printing, normally on paper, but also on fabric, wood, metal, and other surfaces. "Traditional printmaking" normally covers only the process of creating prints using a hand processed technique.



**Design and Media AO2**
You will plan and prepare a reduction print sample to understand the process. You will then plan your own 3-4 colour reduction print based on your personal project.

**Key Question:**
How have printmaking techniques evolved in Art? Compare Scmidt Rottluff with the work of Andy Warhol and more modern digital processes.

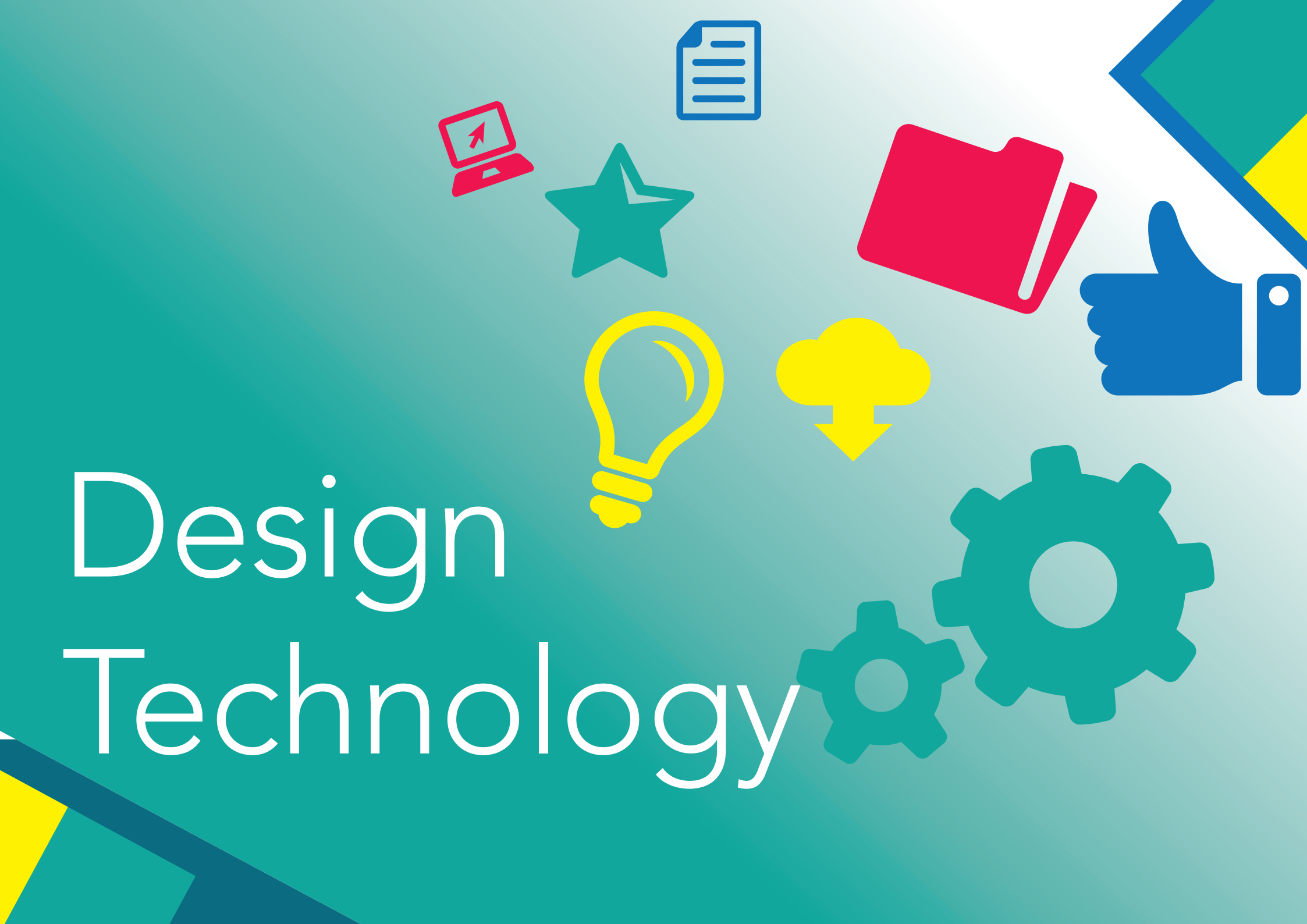


**Artist Research AO1**
**Explore** the work of artists who have produced printmaking. Creatively present your research and annotations in your sketchbook.

**Artists to consider**
Karl Scmidt Rottluff
Picasso
Angie Lewin
Hokusai
Kathe Kollwitz
Irving Amen
Janice Earley

**Art styles to consider**
German Expressionism
Traditional Japanese Art
Pop Art

**Key vocabulary**
**Reduction, Register, Burnish, Layering, Overlap, Scratch, indent, Drypoint, Engrave, Etch, process, press.**


Design
Technology

Hartford Church of England High School

# D&T

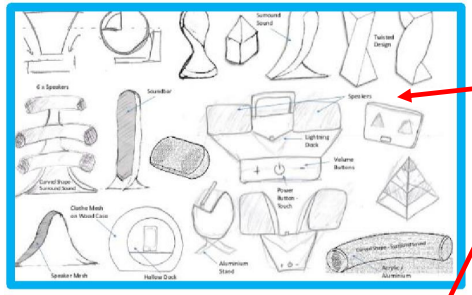
### 4.4.4.3 Section C: Generating design ideas (20 marks)

Students should explore a range of possible ideas linking to the contextual challenge selected. These design ideas should demonstrate flair and originality and students are encouraged to take risks with their designs. Students may wish to use a variety of techniques to communicate.

Students will not be awarded for the quantity of design ideas but how well their ideas address the contextual challenge selected. Students are encouraged to be imaginative in their approach by experimenting with different ideas and possibilities that avoid design fixation.

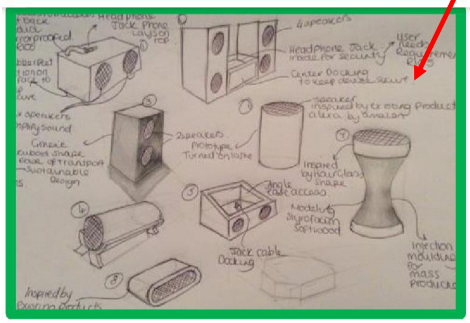
In the highest band students are expected to show some innovation by generating ideas that are different to the work of the majority of their peers or demonstrate new ways of improving existing solutions.

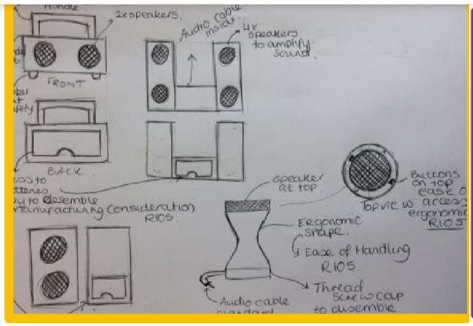
| Mark band | Description |
|---|---|
| 16–20 | Imaginative, creative and innovative ideas have been generated, fully avoiding design fixation and with full consideration of functionality, aesthetics and innovation.<br>Ideas have been generated, that take full account of on-going investigation that is both fully relevant and focused.<br>Extensive experimentation and excellent communication is evident, using a wide range of techniques.<br>Imaginative use of different design strategies for different purposes and as part of a fully integrated approach to designing. |
| 11–15 | Imaginative and creative ideas have been generated which mainly avoid design fixation and have adequate consideration of functionality, aesthetics and innovation.<br>Ideas have been generated, taking into account on-going investigation that is relevant and focused.<br>Good experimentation and communication is evident, using a wide range of techniques.<br>Effective use of different design strategies for different purposes as an approach to designing. |
| 6–10 | Imaginative ideas have been generated with a degree of design fixation and having some consideration of functionality, aesthetics and innovation.<br>Ideas have been generated that take some account of investigations carried out but may lack relevance and/or focus.<br>Experimentation is sufficient to generate a range of ideas. Communication is evident, using a range of techniques.<br>Different design strategies explored but only at a superficial level with the |

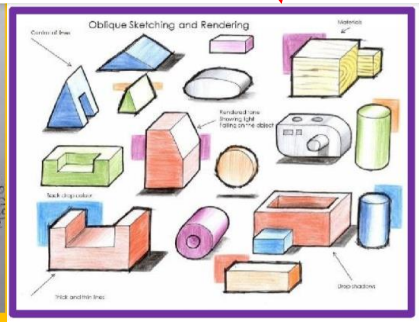


## Initial Ideas

Quick 2D & 3D freehand sketches (aim for 7-10)
Use colourwash rather than fully rendered
Label & Annotate to explain your ideas
IDEAS must be imaginative, creative and innovative

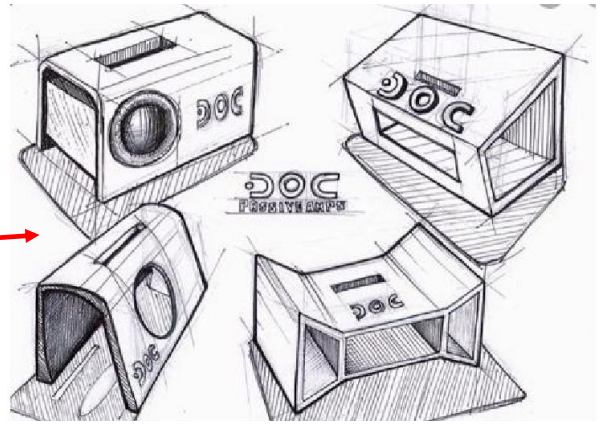


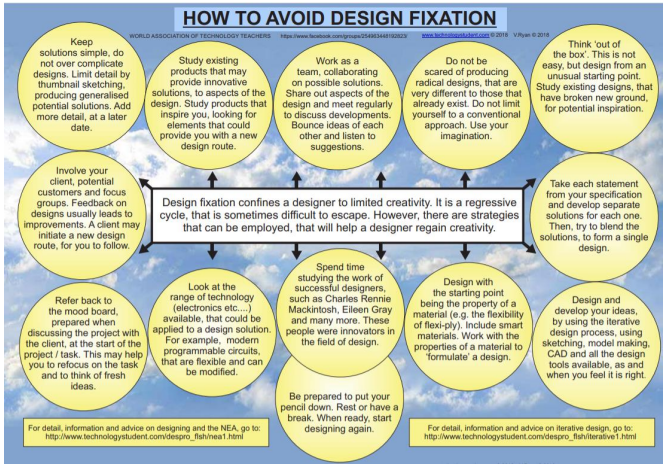


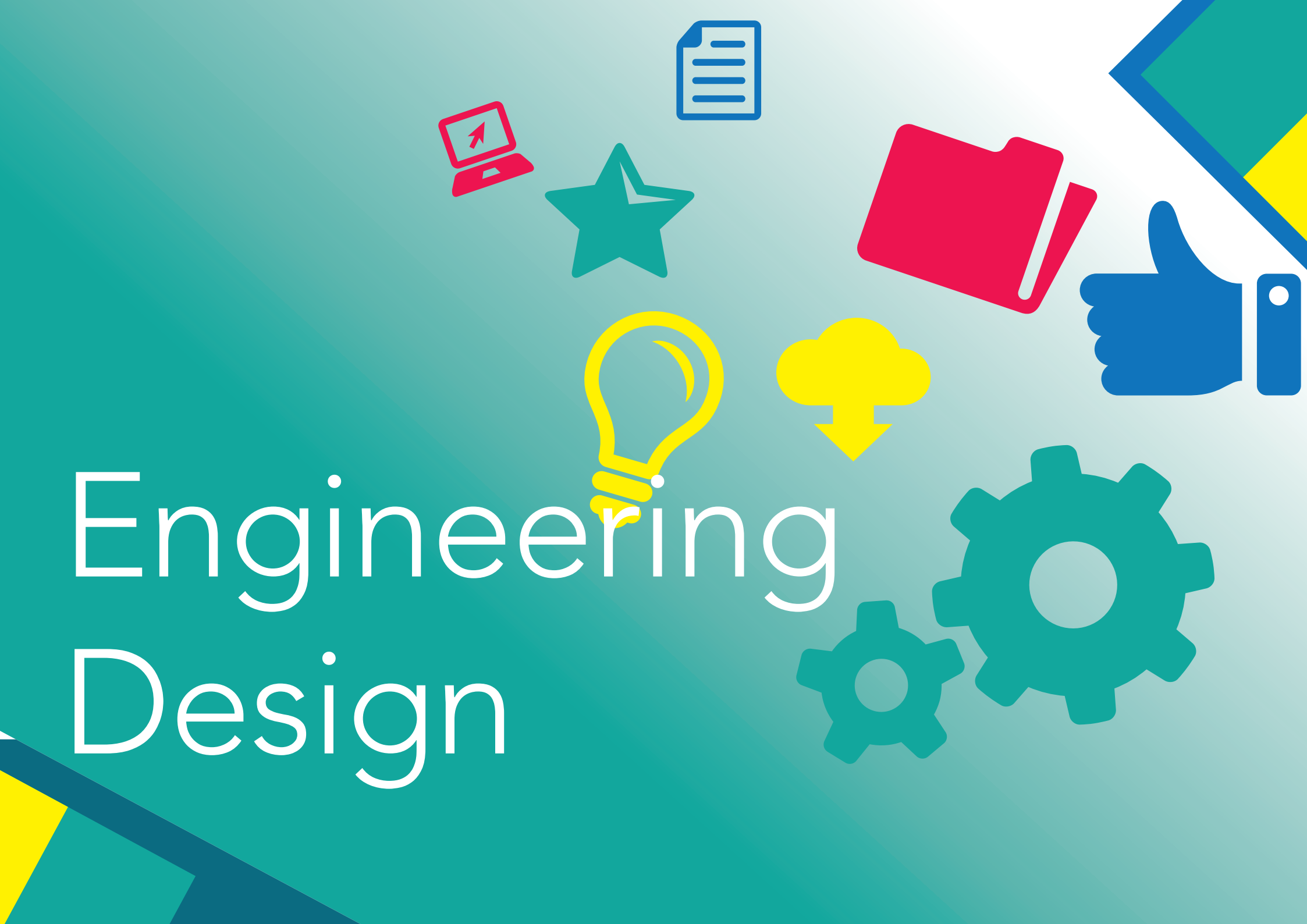



## Developing Ideas

Get feedback from others to help you select your best 4 or five ideas.
Draw these using isometric or perspective.
Add tone shade and texture
Annotate






Engineering
Design

# Engineering Design - R038

## Lo1 The Design Cycle

The design cycle is a recognised way to create an Engineered Product. It enables checking at every stage of the process

**I – IDENTIFY**
Checking what has been asked of you, what the client has asked for and researching around the problem to better understand the situation
Brief / Research / Process planning

**D – DESIGN**
The design phase involves creating a set of design rules based on the IDENTIFY section then creating designs (drawing or cad, 2d or 3d) and planning how it would be made
Specification / Design / Manufacturing Plans

**O – OPTIMISE**
The optimise stage is making models to ensure the plans and designs will work in making. Usually this involves prototyping a one off model and testing the making process you have come up with
Prototype / Error Proofing

**V – VALIDATE**
The validate phase is your evaluation stage, you have to test the product then comment on how effective it was
Test / Evaluate

## Clients & Customers

**NEEDS OF THE CLIENT**
There will be some non-negotiables that the client needs to see involved in the design
Corporate Branding – e.g. what colours or logos do they use
Target Audience – who are the company focused on already

**DISCUSSION BETWEEN CLIENT AND DESIGNER**
The discussion meeting is the engineers chance to explore the brief and work out what the client requires.
What is possible – in terms of cost or technologies
What can be done within budget
Essential features – what the product MUST do/ have
Desirable Features - what the product COULD do/ have
Timeframes – how long is available to design and develop

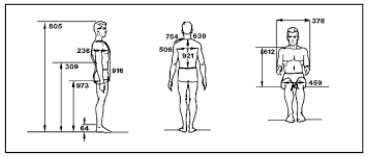
## Investigating the design context

There are areas that can be researched to find out more about the product requirements:
-Focus groups – talking to the likely customer
-Surveys – getting general information from the pubic
- Needs of target market – a product that fills a gap
-Changing consumer trends – a "must have" item

## Lo2 Specification Requirements

– aesthetics – how they might require it to look


– ergonomics – suitability for human sizes e.g. hand size, height, weight, finger length
– anthropometrics – Physical sizes/ measurements recorded and used to deign ergonomic products



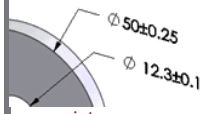
-Function – the purpose of a product e.g. a television displays programmes
-Features – the additions that make the product unique e.g. remote, controls,etc.

**Engineering CAMNAT**

# R038; Unit on a page...

## Lo2 Manufacturing


**REQUIREMENTS**
- Materials availability/supply chain -
– Ease of manufacture – Processes that are easy to do and quickly produce accurate repeatable results in a very few stages e.g. Injection moulding, c
– scale of production,:
Mass: expensive set up, cheap in high volume
Batch: Allows regular changes in features, colour etc.
One off: Costly, allows total cutomisation


– Tolerances – how accurate it must be:
High: can be innacurate, less wasted products, less accurate mchines
Low: Lot of wasted products, expensive machinery, very accurate

– maintenance – how easy it is to maintain/repair

**EASE OF MANUFACTURE**
Specification points covering how easy it needs to be to make and assemble:
Standard components – using pre made components e.g. screws
pre-manufactured components- using premade parts e.g. speakers
design for manufacturing assembly (DFMA) – Less stages, less parts, standard components
design for disassembly –to repair or if it must be recycled or reused
manufacturing processes – If a certain process must be used; injection moulding is a popular choice as it is repeatable, acc

## Regulations

**REGULATIONS**
- Copyright – Protecting a piece of creative work, eg a drawing by LAW
– patents – a protected design IDEA by LAW
– registered designs &
– trademarks – images/logos associated with the company protected BY LAW

**SAFEGUARDS**
– British Standards – Are guides to ensure QUALITY
– European Conformity (EC) – are guides to ensure SAFETY

Vs

## Iconic Products

**INSPIRATIONAL / ICONIC PRODUCTS**
Some products are so popular they set an expectation. E.g. the minimalist design and easy use of the Ipod influenced the design of many other electronic gadgets.


## Lo2 Sustainability

**SUSTAINABLE DESIGN**
Environmental considerations about the products effect on the environment. There is also pressure to be ethical and socially responsible
Renewable energy sources – made products cost resources, energy and pollution
Materials that are replaceable – materials that are plentiful/materials that regrow or replenish
Recycled- Using materials from reclaimed sources
Recyclable – Enabling a product to be recyclable – through material choice or disassembly

**LIFE CYCLE ANALYSIS**
Product life cycle affects how well a product is designed and how long it is required to work.
Lifespan – how long a product is intended to be used
Lifecycle – including what happens to it afterwards
Planned Obsolescence – A product designed on purpose to become outdated or unusable after time

## New Technologies

Market Pull – a need or gap needs filling – the customer wants something new e.g. longer battery life on mobile phones
Technological Push – new technologies allow new ways of doing something – e.g. facial recognition or AR

**IMPROVEMENTS IN MATERIALS**
Engineering often creates new materials that create opportunities for better products. E.g. Recently carbon fibre has offered better products in some areas.

**NEW PRODUCTION PROCESSES**
Engineering often creates new ways of making that allow a product to be better or made cheaper. E.g. Recently 3D printing has created new opportunities.

# Engineering Design - R038

Hartford Church of England High School

## Lo1 The Design Cycle

The design cycle is a recognised way to create an Engineered Product. It enables checking at every stage of the process

**I** _____

Checking what has been asked of you, what the client has asked for and researching around the problem to better understand the situation

Brief / Research / Process planning

**D** _____

The d_____ phase involves creating a set of d_____ rules based on the IDENTIFY section then creating d_____s (drawing or cad, 2d or 3d) and planning how it would be made

Sp_____ / D_____ / M_____ P_____

**O** _____

The optimise stage is making models to ensure the plans and designs will work in making. Usually this involves prototyping a one off model and testing the making process you have come up with

Pr_____pe / E___r_____

**V** _____

The v_____ phase is your evaluation stage, you have to test the product then comment on how effective it was

T__t / E_____e

## Clients & Customers

**NEEDS OF THE CLIENT**

There will be some non-negotiables that the client needs to see involved in the design

Corporate Branding _____

Target Audience – _____

**DISCUSSION BETWEEN CLIENT AND DESIGNER**

The discussion meeting is the engineers chance to explore the brief and work out what the client requires.

## Investigating the design context

There are areas that can be researched to find out more about the product requirements:

- _____
- _____
- _____
- _____

## Lo2 Specification Requirements

– aesthetics – _____

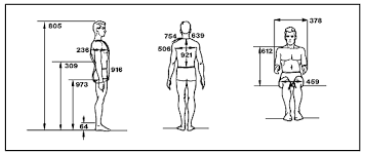
Playstation 2 | Gamecube | X-Box Old | X-Box New | X-Box 360 | Wii Mote

– ergonomics – _____

– anthropometrics – _____

-Function _____

-Features _____



# R038; Unit on a page...

## Lo2 Sustainability

**SUSTAINABLE DESIGN**

Environmental considerations about the products effect on the environment. There is also pressure to be ethical and socially responsible

Renewable energy sources – _____

Materials that are replaceable _____

Recycled- _____

Recyclable _____

**LIFE CYCLE ANALYSIS**

Product life cycle affects how well a product is designed and how long it is required to work.

Lifespan _____

Lifecycle _____

Planned Obsolescence _____

## Lo2 Manufacturing

MANUFACTURING

**REQUIREMENTS**

- Materials availability/supply chain -
– Ease of manufacture – _____
– scale of production,:

Mass _____

Batch: _____

One off: _____

mass | batch | one off

Ø50±0.25 | Ø12.3±0.1

– Tolerances – _____

High: _____

Low: _____

**EASE OF MANUFACTURE**

Specification points covering how easy it needs to be to make and assemble:

Standard components – _____

pre-manufactured components- _____

design for manufacturing assembly (DFMA) – _____

design for disassembly – _____

manufacturing processes – _____

## Regulations

**REGULATIONS**

- Copyright – _____
– patents – _____
– registered designs &
– trademarks _____

**SAFEGUARDS**

– British Standards _____

– European Conformity (EC) _____

Vs

## Iconic Products

**INSPIRATIONAL / ICONIC PRODUCTS**

_____

_____

_____

_____

## New Technologies

Market Pull – _____

Technological Push – _____

**IMPROVEMENTS IN MATERIALS**

_____

_____

**NEW PRODUCTION PROCESSES**

_____

_____


Child
Development

Hartford Church of England High School

# Child Develoment Tech Award

## LAA – Investigate individual circumstances that may impact on learning and development

## Component 3: Supporting children to play, learn and develop

### Physical circumstances that may impact learning/development

Sensory impairment
If a child has a sensory impairment this means that they have difficulty in seeing (visual impairment) or hearing (hearing impairment).

Restricted gross motor skills
A child is unable to control the large muscles in their bodies as well as other children of the same age

Restricted fine motor skills
A child is unable to control the small muscles in their hands and fingers as well as other children of the same age

Delayed gross motor skills
The large movements of a child's body are not progressing as quickly as other children of the same age.

Delayed fine motor skills
The small movements of a child's hands and fingers are not progressing as quickly as other children of the same age

### Intellectual circumstances that may impact learning/development

Poor concentration levels
When children find it difficult to focus on what they are doing and/or

Delayed literacy skills
When a child's reading and writing skills are not progressing as quickly as other children of the same age.

### Communication/language circumstances that may impact learning/development

English as an additional language
When English is not the first language of a child and the first language is the language to which the child has been exposed to since birth

### Social and emotional circumstances that may impact learning/development

Limited interaction with adults?

Poor awareness of social norms and values?

Difficulty forming bonds with adults ?

Limited experience of play?

### Friendships

What is expected across the age ranges?
0-18 months: Children will look at other children and play along side them
18 months- 3 years: Children usually start to form friendships at the end of this period
3-5 years: Children have usually developed one or two close friendships and may have a best friend

### Disruptive behaviour

Types of disruptive behavior

- Challenging the authority of adults
- Trying to get attention
- Temper tantrums
- Hurting others
- Breaking toys

### A child experiencing transition

Starting school
Moving between educational providers
Birth of a new sibling
Death of a family member
Moving house

### Individual circumstances

What does not meeting expected milestones mean?

What does not initiating play mean?

What does unable to access learning activities at varying levels mean?

What does unable to grasp small objects mean?
What does difficulty understanding the rules of play mean?

What does difficulty communicating preferences and choices mean?

# Child Develoment Tech Award

## Component 3: Supporting children to play, learn and develop

### Physical circumstance that may impact learning and development

**Restricted gross motor skills**
A child is unable to control the large muscles in their bodies as well as other of the same age

**Restricted fine motor skills**
A child is unable to control the small muscles in their hands and fingers as well as other children of the same age

**Delayed gross motor skills**
The large movements of a child's body are not progressing as quickly as other children of the same age

**Delayed fine motor skills**
The small movements of a child's hands and fingers are not progressing as quickly as other children of the same age

**Sensory impairment**
If a child has a sensory impairment this means that they have difficulty in seeing (hearing impairment) or hearing (hearing impairment).

**Q How could visual impairment affect learning?**

### Intellectual circumstances that may impact development

**Poor concentration levels**
Some children have a short attention span and find it difficult to focus on what they are doing. This can lead to disruptive behaviour.

**Delayed Literacy skills**
When a child's reading and writing skills are not progressing as quickly as other children of the same age.

**Q Can you remember when you learnt to ready and write? How old were you?**

### Social and emotional circumstances that may impact development

**Limited interaction with adults**
Not much communication and contact with adults.

**Bond**
An emotional ties between two people

**Social norms and values**
Attitudes and behaviours that are considered normal in society

**Negative role model**
Someone who does not set a good example

**Q How does interaction with adults support children's learning and development?**

**What are individual circumstances?**

**Give an example of a child that may have individual circumstances?**

**How are children with individual circumstances supported in our school to help them to learn and develop?**

### Communication and language circumstances that may impact learning

**English as an additional language**

When English is not the first language of the child and the first language is the language to which the child has been exposed to from birth.

**Q Give a benefit of being a child learning English as an additional language**

**Friendships – what are they?**

**Disruptive behaviour – what is this?**

**What is a transition?**

**What is an expected milestone?**

**What are the different areas of development**

# Music

# Music - BTEC Unit 5 - Introducing Music Performance

## Learning Aim A: Develop your music performance skills and review your own practice
## Learning Aim B: Use your music performance skills within rehearsal and performance

| |
|---|
| **Finger positions -** What are they? Are they accurate? How can you improve? |
| **Accuracy –** Are there inaccuracies in pitch, finger positions, articulation, tuning. What is the accurate version? How can you improve? |
| **Tempo –** What is the tempo? Is the tempo consistent. Could the tempo get faster? How can you improve? |
| **Fluency –** Are there any hesitations? How can they be improved? |
| **Time management** Was your time used productively? |
| **Resonance** Mainly on string instruments; are the strings muted or do they resonate? How can you improve? |

| **Method of Rehearsal** |
|---|
| **Assessment Guided Rehearsal** whether it is teacher, peer or self, listen to constructive feedback and act upon it. |
| **Chunking** taking a small section and rehearsing it |
| **Independent practice** Working on your own to learn your musical part. |
| **Group rehearsal** Working with a friend/peer using different rehearsal techniques |
| **Modelling** watching an educational video clip and learning from their technique |
| **Repetition** repeating until accurate |
| **Slow it down** slow the tempo, when confident, build up speed to original tempo |
| **Teaching Notes** Education is key. Once you have had a teacher guide you write everything down to remind you of lesson content. |

| **Areas of focus** |
|---|
| **Accuracy (rhythmic/melodic)** The right notes, the right timing and the right technique. |
| **Awareness of/Following an accompaniment** Ensuring that you are aware of the importance of the accompaniment to the melody and how the two need to work together to make an effective performance. |
| **Breath control** Using your diaphragm to fill your lungs with air and then gradually release it. |
| **Confidence** The feeling or belief that one can have faith in or rely on someone or something. |
| **Dynamics** Rehearsing dynamic contrast |
| **Emphasis** Special importance, value, or prominence given to something. This could be on a note or on a word. |
| **Expression** The art of playing or singing with a personal response to the music. At a practical level, this means making appropriate use of dynamics, phrasing, timbre and articulation to bring the music to life. |
| **Intonation** Accuracy of pitch in playing or singing. |
| **Learning repertoire** The process of learning different styles and genres of music to develop your performance skills. |
| **Musical interaction/Stage presence** Ensuring you communicate with your audience by engaging with them in your performance, as well as other musicians you are playing with. |
| **Phrasing** The manner in which a musician shapes a sequence of notes in a passage of music, in order to express an emotion or impression. |
| **Projection** A great tool in assisting in bringing greater dynamics to the performance. Being able to successfully increase and decrease volume whilst performing can help enhance your performance and highlight the emotion in the song |
| **Technical control (instrument specific)** Ensuring you have the correct technique to enable you to perform accurately. |

# Sport

Hartford Church of England High School

# Btec Sport

## Knowledge Organiser

Pearson BTEC

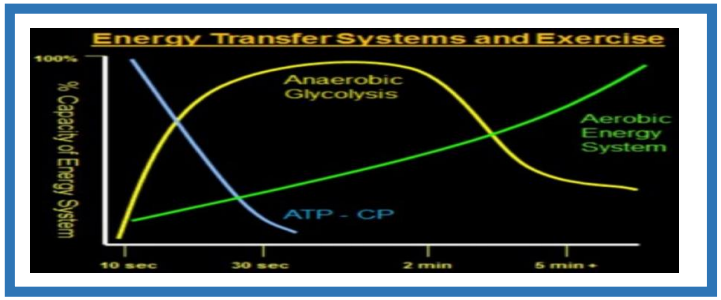
### Unit 5 BTEC Sport Level 2

## P3 - Short-term effects of exercise

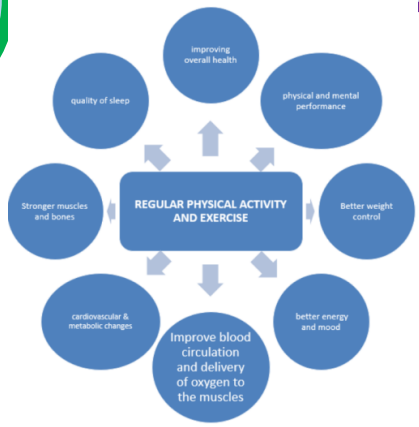
This part of the assignment requires you to explain the short-term effects that your training programme will have on your body!

You need to explain:

| Short-term effects on the MUSCULOSKELETAL system | Short-term effects on the CARDIORESPIRATORY system |
|---|---|
| Increased joint range of movement  | Increased heart rate and breathing rate  |
| Micro tears in muscle fibres  | Increased build-up of lactic acid  |




## The Sports Performer in Action


## Summary of Energy Systems

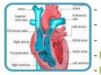
- High Intensity Energy Demands are met –ATP-PC system (10s)
- - Lactic Acid System ( 10-3minutes)
- Lower Intensity Exercise (3 minutes and above)- Aerobic Glycolysis
- Energy systems overlap- any intensity lasting more than 10 minutes is fueled increasingly by the aerobic energy system (aeroboic glycolysis).

### Long term effects of exercise

**Muscular system**

- Muscular hypertrophy occurs (Increase in size)
- Muscular trength increases
- Muscular endurance increases
- Muscular resistance to fatigue increases
- Strength of tendons increases
- Increase in capillarisation at the muscles

**Cardiovascular system**



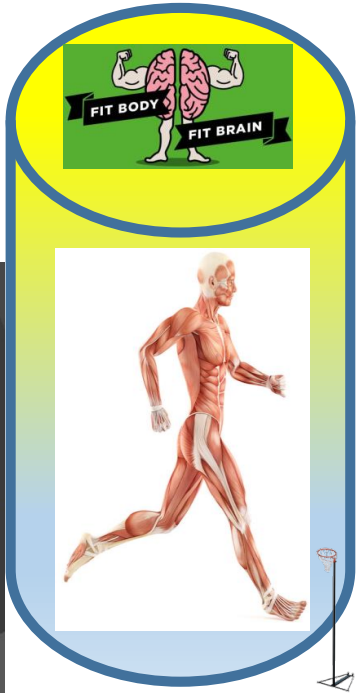
- Cardiovascular hypertrophy occurs (increase in size)
- Heart srength increases
- Increase in resting stroke volume
- Increase in resting Cardiac output
- Decrease in resting heart rate
- Increase in rate of recovery from exercise
- Bradycardia occurs (Heart rate below 60 bpm)
- Reduced risk of heart attacks / CHD

**Respiratory system**

- Increase in aerobic capacity
- Increase in strength of respiratory muscles (Intercostals)
- Increase in tidal volume during exercise
- Increase in minute volume during exercise
- Increase in capillarisation around the alveoli

**Skeletal system**

- Increase in bone density



# Dance

# Tech Award DANCE Component 3 - Responding to a brief

## Getting started with your choreography — Task 1: Ideas Log

**Stage 1**

**What is the theme? Stimulus? What ideas spring to mind straight away?**
**How many are in your group? What advantages do you think this will have (to compliment the theme, create group shapes, to organise solos, duos, trios, group sections).**
**Have a team meeting to discuss the stimulus and explore ideas -** Think about what research you would like to do.

**Stage 2**

**Things to think about as you start getting ideas together:**

Will you use props? If so how will you use them and how do they relate to the stimulus?

What music have you thought of using? How will you use it and how does it relate to the stimulus?

What style or styles of dance would you like to use? How would this relate to the stimulus?

How many sections would you like the piece to have and why?

Have you thought about WHO you are making the piece for? Who is your **Target Audience**? What has influenced this decision?

**Stage 3**

**MEETINGS and DISCUSSIONS in your group.**

When did you meet? (what day, before, during or after the rehearsal).

What points or items did you discuss?

How well did you get across ideas in a team?

What may have changed because of the meeting/discussion?

**Stage 4**

**Setting choreographic tasks or creating your movements.**

What THREE ideas related to the stimulus would you all as a group like to try out first?

## Organisation Top Tips

Listen to a variety of music, with different dynamics. You will need contrast and a climax to make your dance interesting

Research the stimulus! Create a mind map full of your ideas

Write a story with a clear start, middle and end. Where is the climax (the most exciting part?)

Keep a log of your choreography journey

Plan your rehearsal schedules and rehearsals

Keep a record of your strengths and targets

## Group work top tips

Set clear goals

Avoid negativity

Ensure everyone contributes

## What is a target audience?

Finding a target audience means discovering what kind of people are most likely to be interested in your service or product. A particular group at which a product such as a film or performance is aimed.

# Tech Award DANCE Component 3 - Responding to a brief

## Getting started with your choreography
## Task 1: Ideas Log

**Stage 5 – Ideas log questions**

**What is the concept behind your performance? What is the story or idea?**

**If you were to try and 'sell' your idea to a theatre what would the title of the piece be? Also what would the short description be? Or maybe you have a 'tag line'.**

**How do these ideas above relate to the stimulus on the 'Brief'?**

**What were your initial ideas?**

**How did you explore these ideas in your group?**

**Did you look at any other pieces of art or dance that related to the theme?**

**How did you use this ideas, or movements or words?**

**How did these develop in the first rehearsals?**

**How did you get your ideas across to your group? Meetings etc.**

**How well are your group working so far? Are you putting ideas forward? Or making suggestions? What has been effective?**

**Have you created a rehearsal schedule? Where and when?**

**Did you plan a meeting schedule? Where and when?**

**What resources do you need to make your piece? Research? Music? Props? Costume? Other sound? Other works or art (paintings/poems/dance works).**

**How has these other works influenced your piece? Is it the style? Structure? Theme?**

**What style of styles of dance or dance theatre are you using?**

**Give a quick description of a moment in the piece so far?**

**Who is your target audience?**

**How did you get to this audience from the stimulus? Or group meetings?**

**How are you managing these? Have a quick discussion with your teacher and note down answers on the back of this page.**

## Use Inspiration from our three choreographers

### BINTLEY

- His work is guided by a strong sense of morality that results from his own spiritual belief.
- Strong sense of theatre and explores a theme
- Tackles contentious issues
- Often finds inspiration in music
- Blends classical and contemporary techniques

### BRUCE

- Pieces have emotional or dramatic content, make an impact on the audience
- He said ballets are not basically about movement but about ideas

Shown awareness, idealism and sensitivity in dance

- Created works directly concerned with social, political and ecological issues.
- Range of stimuli extensive – literature, art and music
- Combines all aspects of his training – classical ballet, Graham-based technique and popular dance forms
- Blends classical and contemporary techniques - Folk dance in "Ghost Dances"

Tap in "Swansong"

### FAGAN

- Style is a mix of ballet and modern dance, spiced up with his Afro-Caribbean roots.
- He developed the Fagan Technique
- - a unique and evolving vocabulary, which fuses the weight of modern dance, the vitality of Afro-Caribbean movement, and the speed and precision of ballet with the risk-taking experimentation of post modernism.

# Tech Award DANCE Component 3 - Responding to a brief

## Getting started with your choreography — Task 1: Ideas Log

| Key Term | Definition | Explanation | How to write about this in the exam |
|---|---|---|---|
| Concept of Performance | The key ideas for the piece this could incorporate the style and purpose of the piece | What is the piece about and how is this going to be portrayed to the target audience | You will need to explain what the piece is about and how this specifically relates to the brief set and the target audience. It is important the you DO NOT give a lengthy description of the narrative of the piece. |
| Style of Performance<br>Purpose | The style of performance can include the dance style but also the presentation and structure and form | This could include Jazz, Ballet, Contemporary, Musical Theatre but may also be narrative (linear/non-linear), post-modern, theatrical, abstract, rondo, episodic etc | You will need to explain what Dance style and performance you have chosen and why this is relevant to the brief and the target audience. You will also want to identify the structure and form of the piece and why this is relevant to the brief. |
| Purpose of the performance | Why the piece is being created | The purpose will fall into 1 or more of the following categories to educate, to inform, to entertain, to celebrate, to challenge viewpoints, to provoke, to raise awareness | You will need to identify the purpose of the performance piece and how this purpose is relevant and appropriate to the brief set. You will also want to explain how you are making the purpose of the piece clear to the audience – what features are you going to include to do this. |
| Target Audience | The people you are creating your performance piece for | The target audience maybe defined by their age, interest or groups they fit into | You will need to identify a specific target audience (be specific) that are appropriate to the brief set. You will need to explain why they are appropriate to the brief and how you have tailored your ideas for the piece to this audience's needs |

# Tech Award DANCE Component 3 - Responding to a brief

## Getting started with your choreography — Task 1: Ideas Log

| Key Term | Definition | Explanation | How to write about this in the exam |
|---|---|---|---|
| Performance Space | The performance space maybe a stage space e.g. proscenium arch, trust, in the round, traverse, studio theatre, site specific | The performance space maybe a stage space e.g. proscenium arch, trust, in the round, traverse, studio theatre, site specific | You will need to identify your intended performance location and type of performance space and explain how your choice is relevant to the brief set and the target audience. You will also want to explain why the choice is relevant to the selected style of the performance |
| Planning and Managing resources | This could include anything you need to create or perform your piece such as music, projections, props, rehearsal space, costume, rehearsal schedule | This could include anything you need to create or perform your piece such as music, projections, props, rehearsal space, costume, rehearsal schedule | You will need to explain what resources you require, why needed/why relevant to the brief and target audience and how you intend to manage their use. For example, the music you are going to use, who is in charge of editing it, bringing it to rehearsals, having it ready for performance. Cost of resources should be considered in relation to the brief<br>Exploration |
| Exploration of ideas | This could include mind mapping, researching, structured improvisation such as picture postcards (Kate Prince), top and tail (Matthew Bourne), story boarding, character exploration<br>You | This could include mind mapping, researching, structured improvisation such as picture postcards (Kate Prince), top and tail (Matthew Bourne), story boarding, character exploration | You will need to explain how to you have worked to explore your ideas your initial response, research and how these connected to the brief set. You will want to explain how you explored these ideas practically in the studio and the movement ideas these generated and how these connected to the brief. Try to identify your specific role within the group |

Influence from Professional practitioner; You may want to look at professional work that has a similar theme/topic/narrative to your own work and use this to inspire you. You could be improved by the movement material, the set , the costumes, the use of props, the music choice, the relationship between dancers. In your written work you will need to talk about how this work influenced and informed your own creative ideas and why this was relevant to your piece and the brief set

You may also want to look at the creative processes used by choreographers e.g. merce Cunningham chance dance


Health &
Social Care

Hartford Church of England High School

# BTEC Heath and Social Care - Component 3

**Knowledge Organiser** | **A1. Factors affecting Health & Wellbeing** | **Social, emotional, cultural, economical & environmental factors** | **Health & Social Care BTEC Technical Award - Component 3**

## Social interaction

Between family–friends–work colleagues–school friends.

Reacting to people through communication & relationships

*Integration* – when people feel they belong to a group
*Isolation* - when people do not have contact with others.
Due to: staying in, physical illness, reduced mobility or unemployment, mental illness, a condition such as autism

| | Positive relationships | Negative relationships |
|---|---|---|
| P | Day to day care & practical assistance | Peer pressure/Poor lifestyle choices (drinking) |
| I | Shared experiences, supported learning & thinking | Less support with learning, conversation |
| E | Unconditional love, security, contentment , self concept, independence & confidence | Loneliness,, insecurity, anxiety, depression, |
| S | Companionship, social interactions | Relationship difficulties |

**Relationship breakdown**
**Can lead to:**
Anxiety, stress, depression insecurity, loss of confidence, poor lifestyle choices, more pressure on finances, new home etc

**Topics**
-Social interaction
-Stress
-Economic/financial
-Life events
-Environment & Living Conditions
- Willingness to seek help or access services

## Stress

Feelings of mental & emotional tension.

Occurs when the body responds to demand
The hormone adrenaline is released
Trigger 'fight or flight' response
– *so you respond instantly in life or death situations*
BUT an overreact ion to non life threatening situation can cause negative stress.

**Causes of stress**
Pressures at work
Exams
Financial difficulties
Life events
*(illness, relationship changes, moving home, bereavement)*

### Effect on health & wellbeing

**Physical**
Short Term:
-Tense muscles
-Fast breathing
-Dry mouth
-Faster heartbeat
-Butterflies
-Urge to pass water (urine)
-Diarrhoea
-Sweaty hands

**Physical:**
Long term:
-Sleeplessness
-High blood pressure
-Irritability
-Loss of appetite
-Heart disease
-Headaches
-Poor sex life
-Anxiety
-Mood swings

**Emotional**
Difficulty controlling emotions – crying, angry
Feeling insecure
Negative self concept
Feeling anxious


**Social**
Difficulty making friends/building relationships
Breakdown of close relationships
Loss of confidence
Social isolation

**Intellectual**
Forgetfulness
Poor concentration
Difficulty in making decisions

## Willingness to seek help or access services

**Asking for help**
People need to seek help from health & social services at various stages. Being reluctant can lead to negative effects

**Barrier 1: Gender**
Men are less likely to access as they are often less open & avoid looking vulnerable

**Barrier 2: Education**
More educated are more likely to seek help
They are more likely to:
Research symptoms and know when help is needed
Understand importance of early diagnosis & treatment
Know how and where to access services

**Barrier 3: Culture**
Social behaviour, value, transition, customs and beliefs of communities. E.g.
- discriminated against when accessing services
- not speaking English well enough to discuss issues
- some cultures require women to see women
- Some cultures use 'alternative therapy'
- stigma (feel ashamed)of conditions e.g., depression

## Environmental & Living conditions

Air – water – noise – light – housing - area

**Environmental** – Air, water and land around us.
**Pollution** - Contamination of the environment & living organisms by harmful chemicals.

**Examples**
Outdoor air – Chemicals from factories, exhausts
Indoor air – Aerosols, mould, cigarette smoke, carbon monoxide from heating
Water– Farm fertilisers/pesticides, waste, sewage
Food pollutants – chemicals in food production
Noise – Machinery and traffic music, loud neighbours
Light – Excess lighting, street lights

**Impact of pollutants**
• Lung problems *(Bronchitis, asthma, lung cancer)*
• Heart damage *(disease, stroke)*
• Reduction of brain function *(thinking and memory)*
• Low birth weight or premature births

**Housing**
Good living conditions
Less polluted areas, quiet, safe, spacious, warm, dry, safe outdoor space
Poor living conditions
- Overcrowding – anxiety & depression, sleeplessness, difficulty concentrating & studying
- Lack of open space – less exercise & physical play
- Pests - Rats carry disease, bugs carry disease
- Damp & mould - Respiratory problems (asthma)
- Poor heating – poor health (cold, flu) heart disease

**City**
Better transport links
Close to facilities i.e. Shops, gym, entertainment, health services
Easy assess to social events
BUT pollution problems

**Rural**
Sense of community
Access to outdoors & less polluted
BUT commute, difficult to access services, isolation

## Economic

Relate to a persons employment situation & financial resources. Effects lifestyle, health & wellbeing

**Factors**

**2) Occupation** - Job role & status (i.e. level of responsibility, salary)

**3) Employment/ unemployment**
- Part time
- Self employed
- Not being able to find work (due to being disabled, made redundant, or being reliant on state benefits)

**1) Wealth**
-Level of income
- Amount of personal wealth, including non-essential, valuable material possessions (jewellery, cars & property)

**Adequate income:**
Pay for rent/mortgage – Pay bills (heating etc.)
- Afford luxuries, clothing, holidays, car, house with a garden – Eat a balanced diet – Socialise with friends - Afford travel to leisure/health services – Live in suburbs /countryside


**Relative Poverty** - Can only afford the essentials. (reduced financial resources) Life choices will be limited -more likely to:
- suffer ill health
- lack personal development *(i.e. school trips, warm clothes, doing well at school)*

**Absolute Poverty** -Not enough money to meet basic needs (food, clothing, housing) even with benefits.

| | Positive | Negative |
|---|---|---|
| P | Good housing conditions<br>Healthy diet<br>Manual jobs can improve muscle tone & stamina | Poor housing conditions<br>Poor diet<br>Manual jobs - muscular/skeletal problems<br>Desk jobs - less activity and weight gain |
| I | Opportunity to access intellectual activities<br>Work, education & training helps to develop problem-solving & thinking skills | Long hours -less leisure time & reduced learning opportunities<br>Being unemployed can result in poor mental health |
| E | A well paid job gives a feeling of security and less stress/worry over housing etc.<br>Affording to socialise =positive self concept | Financial worries - stress & breakdown of relationships<br>Not affording to go out and socialise =depression<br>Unemployment of a low status job =low self concept |
| S | Better financial resources =opportunities to socialise<br>Socialise with colleagues | ask of financial resources reduces opportunities for socialising<br>Reduced opportunities for relationships = social isolation<br>Financial worries = stress & breakdown of relationships |

## Life events

Events can change life circumstances in positive & negative ways

**Expected**
These can be predicted. They are easier to plan for & manage the effects
-Leaving school
-Starting school
-Moving house
-Starting work
-Living with a partner
-Marriage/civil partnership
-Retirement

**Effects on health & wellbeing:**
Positives:
New friends, learning, skills, independence, excitement, confidence
Negatives:
Anxiety, insecurity, stress, unhappiness about loss of 'old' life, change in lifestyle

**Unexpected**
Cannot be predicted and cannot prepare.– has a greater impact
e.g. Redundancy, imprisonment, exclusion, sudden death of someone close (bereavement) and ill health, accident or injury

**Effects on health & wellbeing:**
P – High blood pressure
I – Depression, difficulty thinking & decision making, memory
E – Difficulty sleeping, grief, insecurity, stress and anxiety
S – Isolation, loss of friends
Some positives – catalyst for change of behaviours, opportunities for new study or training, support for emotional, diet etc


## Key Words

**Health & Wellbeing** – how physically fit and mentally stable a person is (not just absence of disease) Linked to PIES.
**Social integration** – When people feel they belong to a group
**Social Isolation** - When people do not have contact with others.
**Social interaction** Acting/reacting to people through communication & relationships
**Stress** - Feelings of mental & emotional tension.
**Adrenaline** – a hormone released when the body responds to a demand which can lead to stress.
**Economic** - Relate to a persons employment situation & financial resources
**Income** – money people receive from work, savings pensions or benefits.
**Expected life events** – can be predicted e.g. Leaving school
**Unexpected life event** – cannot be predicted i.e. Bereavement
**Environmental** – The air, water and land around us.
**Pollution** - contamination of environment & living organisms by harmful chemicals.

# BTEC Heath and Social Care - Component 3

**Knowledge Organiser** | **A1. Factors affecting Health & Wellbeing** | **Physical & Lifestyle factors**

**Health & Social Care**
**BTEC Technical Award - Component 3**

## Health & wellbeing

***What you need to know: - definition, factors***

Not just the absence of disease but a holistic attitude/the whole person:
Physical (healthy body, regular exercise, a healthy diet, sleep, shelter & warmth, personal hygiene)
Intellectual (keeping the brain healthy, concentrate, learn new knowledge/skills, communicate & solve problems)
Emotional (feeling safe & secure, express emotions, deal with negative emotions, self-concept)
Social (friendships, relationships with friends and family)

## Genetic inheritance

***What you need to know:***
***- inherited conditions - predispositions***

Genetic inheritance is a physical factor that can have positive and negative effects
Genes are inherited from both birth parents

**Inherited characteristics**
- height, eye colour, hair colour
- This can effect self image (how you see yourself) & self esteem, (how you feel about yourself)

**Inherited conditions**
Different versions of genes are called alleles.
Some alleles can be faulty and pass on conditions
Dominant condition
(one parent passes faulty allele on)
i.e. Huntington's – involuntary movements and loss of intellectual ability
Recessive condition
(both parents pass faulty allele on)
i.e. Cystic fibrosis – sticky mucus on the lungs

**Genetic predisposition**
Some people are predisposed (more likely) to develop a condition due to genetic makeup
*i.e. heart disease, cancer, diabetes.*
Whether they end up developing the conditions depends on their lifestyle & environmental factors
(.e. Diet, exercise)

## Ill Health

Ill health -a physical factor which can have a negative effect on health & wellbeing

***What you need to know:***
***- Effects on a persons PIES, difference between acute & chronic***

**Chronic**
Comes on more slowly, lasts a long time
Usually treated, not cured
i.e. diabetes, arthritis, asthma, heart disease

Management:
Address the negative impacts on the person and try to control the symptoms (i.e. use of medication, counselling, schooling in hospital, support groups)

Effect on PIES –
P – growth rates, restricted movements
I – disrupted learning, difficulties in thinking./problem solving, memory problems
E – negative self-concept, stress
S – isolation, loss of independence, difficulties forming relationships

**Acute**
Starts quickly, lasts for a short period of time. Usually cured
i.e. bacterial/viral infection, flu, broken bones, pneumonia
Management - Usually with medication

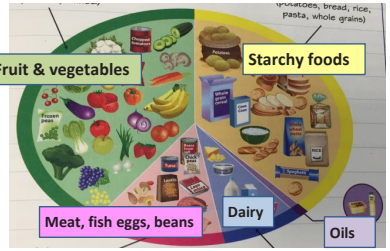
## Diet

***What you need to know: - amounts, quality, effects of poor diet***
Diet - lifestyle choice. Diet = The balance of foods a person eats (diet doesn't mean weight loss!)

**Foods to avoid**
*Salt* – raises blood pressure –> heart disease

*Saturated fat* – raises blood cholesterol –> heart disease
*found in animal fats such as meat, butter

*Sugar* – rots teeth, high in kcals (energy) -> tooth decay & weight gain




| Section | Nutrient | Needed for |
|---|---|---|
| Starchy | Carbohydrates (& fibre if wholemeal) | Carbohydrates - Provides energy<br>Fibre – Digestive system/prevents constipation |
| Fruit & vegetables | Vitamins<br>Fibre | Vitamins - Keep the body healthy<br>Fibre – Digestive system/prevents constipation |
| Meat, fish, eggs, beans | Protein | Growth and repair of cells and muscles |
| Dairy | Calcium | Strong bones and teeth |
| Oils | Unsaturated fats | Reduces cholesterol, Keeps the body warm, Protects organs |

**Other points:**
Water is important to stay hydrated
Control calorie intake to manage weight.
More energy in (food) than expended in exercise causes weight gain
Less energy in (food) than expended in exercise causes weight loss

## Physical activity

***What you need to know:***
***- recommendations***
***– benefits at each life stage***

Exercise is a lifestyle choice
- gentle – walking, housework
- moderate – light jog, steady swim
- vigorous – spinning, football

**How much?**
Changes depending on age. Adult: approx. 150 mins moderate per week

**Lack of exercise:**
Stiff joints
Poor stamina/strength
Obesity
Stroke
Heart disease
Osteoporosis
Poorly formed muscle

**Why?**
P – lower BMI, energy, stamina, strengthen bones & muscle
I – links to better memory and thinking skills
E – increases confidence, Relieve stress, concentrate, relax
S – social interaction, communication, teamwork

## Substance misuse

**Alcohol** - a lifestyle choice
Men & women should drink <14 units/week
1 unit = 1 single spirit
1.5 units = 1 pint, 1 small glass of wine
Avoid saving units for 'binge'
Can increase risk of addiction & cancers.

**Effect on PIES**
P – dependence (alcoholism) damage to organs (mouth, liver, breast), infertility, weight gain
I – difficulty in decision making, depression, anxiety, stroke & brain damage
E – poor judgement leading to risky behaviour
S – relationship breakdown, domestic violence

**Smoking & Nicotine** – a lifestyle choice.
Nicotine is an addictive drug found in tobacco products.
Cigarette smoke contains nicotine, tar, carbon dioxide & soot which are all harmful.
People smoke to relieve stress, peer pressure, or are unable to quit. Passive smoking also carries risk to others

**Effect on PIES**
P – increases risk of disease (cancer, stroke, coronary heart disease and others)
I – addiction leads to irritation, distraction & stress when unable to smoke. Increase chance of anxiety and depression.
E – poor self concept. May worry about negative impacts on health and costs.
S – may feel socially excluded when smoking, people may avoid smokers due to smell.

**Drugs** – including legal and illegal.
Prescription misuse - when people take for non medical (recreational use), become addicted to them, take excess, or take someone else's.
Stimulants - alertness, excitability (i.e. Cocaine, nicotine)
Depressants –calm, relax (i.e. cannabis, alcohol, heroine)
Hallucinogens – cause hallucinations i.e. LSD, ketamine)

**Effect of drug misuses**
Addictive drugs are taken to change the mental state, to give an immediate feeling of wellbeing or happiness but they have long term effects. i.e. Paranoia,, sleep problems, anxiety, depression, suicidal feelings,

## Personal hygiene

**Good personal hygiene**
Prevents spread of infection
Improves self concept
-Hand washing
- Washing
- Nails clean
-Tissue for cough/sneeze
-Brushing and washing hair
-Brushing teeth
-Clean clothes
-Flushing the toilet

The cleanliness of a persons body. Essential for health & wellbeing

**Effect on PIES of poor personal hygiene**
P - Catching & spreading disease
Poor body odour, bad breath & tooth decay
Illness such as food poisoning, sore throat, athletes foot.
I – may reduce chance of job
E – poor self – concept, bullied
S – social isolation, loss of friendship.

## Key Words

**Health & Wellbeing** – how physically fit and mentally stable a person is (not just absence of disease)
**Genetic Predisposition** – more likely to inherit a condition based on genes
**Chronic illness** – gradual, long term illness, treated not cured. i.e. asthma
**Acute illness** – illness comes on quickly, short term & curable i.e. cold
**Balanced diet** - variety of different types of food and providing adequate amounts of the nutrients necessary for good health.
**Substance misuse** - continued misuse of any mind-altering substance that affects a person's health & wellbeing (drugs, alcohol, smoking)
**Hygiene** - cleanliness of body and clothing to maintain health & wellbeing.

# 1. Health & wellbeing

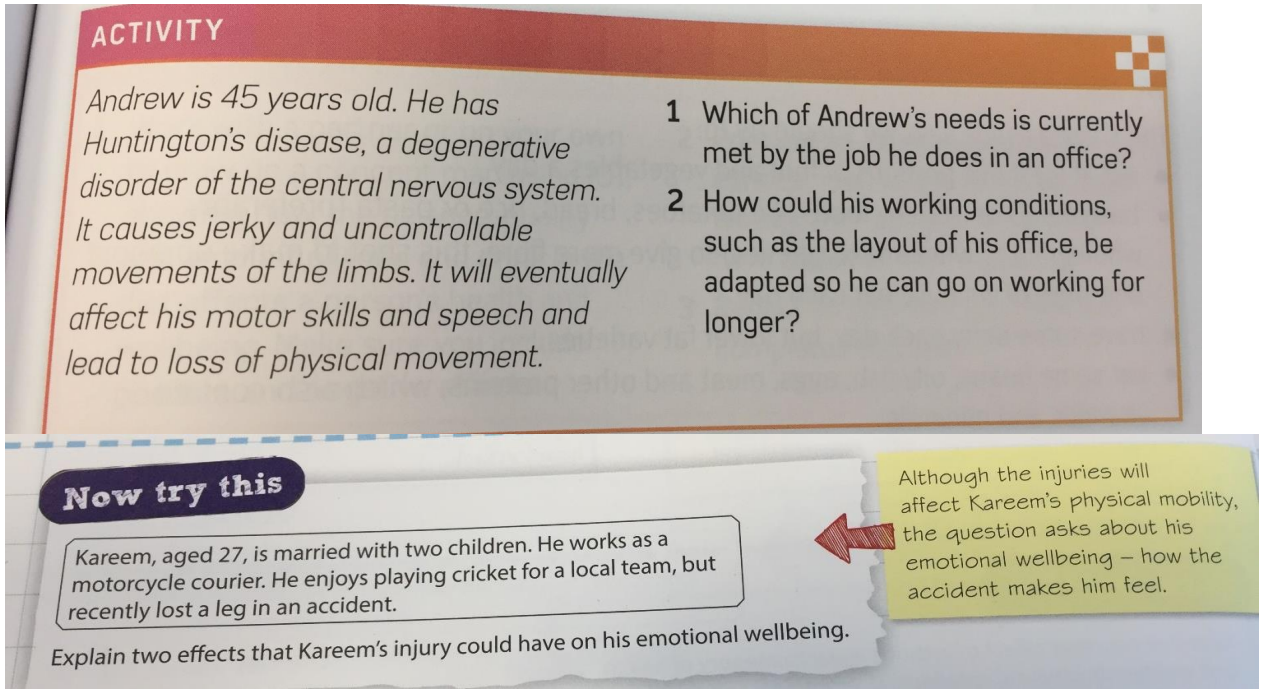
- Explain what is meant by a holistic approach to health and wellbeing
- Identify physical aspects of health
- Identify social & emotional aspects of wellbeing
- Identify any physical and lifestyle factors that could have a effect on health and wellbeing (positive and negative)

# 2. Genetic inheritance

- Research real-life examples of predisposition to certain conditions. What are the positive and negative effects on their health and wellbeing? i.e. Women who have a mastectomy due to having a predisposition to breast cancer.
- Research Huntington's disease and how it affects health and wellbeing (PIES!)
- Gemma, aged 14, has the inherited condition cystic fibrosis. She has regular physiotherapy to help clear her lungs of mucus and frequently spends time in the hospital. Describe the possible effects on her wellbeing (PIES) – consider not just physical effects but the impacts of missing school and how she feels about herself

# 3. Ill health

- What is arthritis? Is it acute or chronic? Give one negative effect of arthritis in each category of health and wellbeing (PIES)



ACTIVITY

*Andrew is 45 years old. He has Huntington's disease, a degenerative disorder of the central nervous system. It causes jerky and uncontrollable movements of the limbs. It will eventually affect his motor skills and speech and lead to loss of physical movement.*

1 Which of Andrew's needs is currently met by the job he does in an office?

2 How could his working conditions, such as the layout of his office, be adapted so he can go on working for longer?

**Now try this**

*Kareem, aged 27, is married with two children. He works as a motorcycle courier. He enjoys playing cricket for a local team, but recently lost a leg in an accident.*

*Explain two effects that Kareem's injury could have on his emotional wellbeing.*

Although the injuries will affect Kareem's physical mobility, the question asks about his emotional wellbeing – how the accident makes him feel.

# 4. Balanced diet

- Produce a days diet plan of a healthy, balanced diet containing all nutrients, in line with the Eatwell Guide
- Explain two risks to health of not following government guidance on eating sufficient fruit and vegetables
- Bob is obese and eats more calories than the recommended daily amount. What changes should Bob make to his diet?

# 5. Physical activity

- Suggest possible exercise for each life stage.

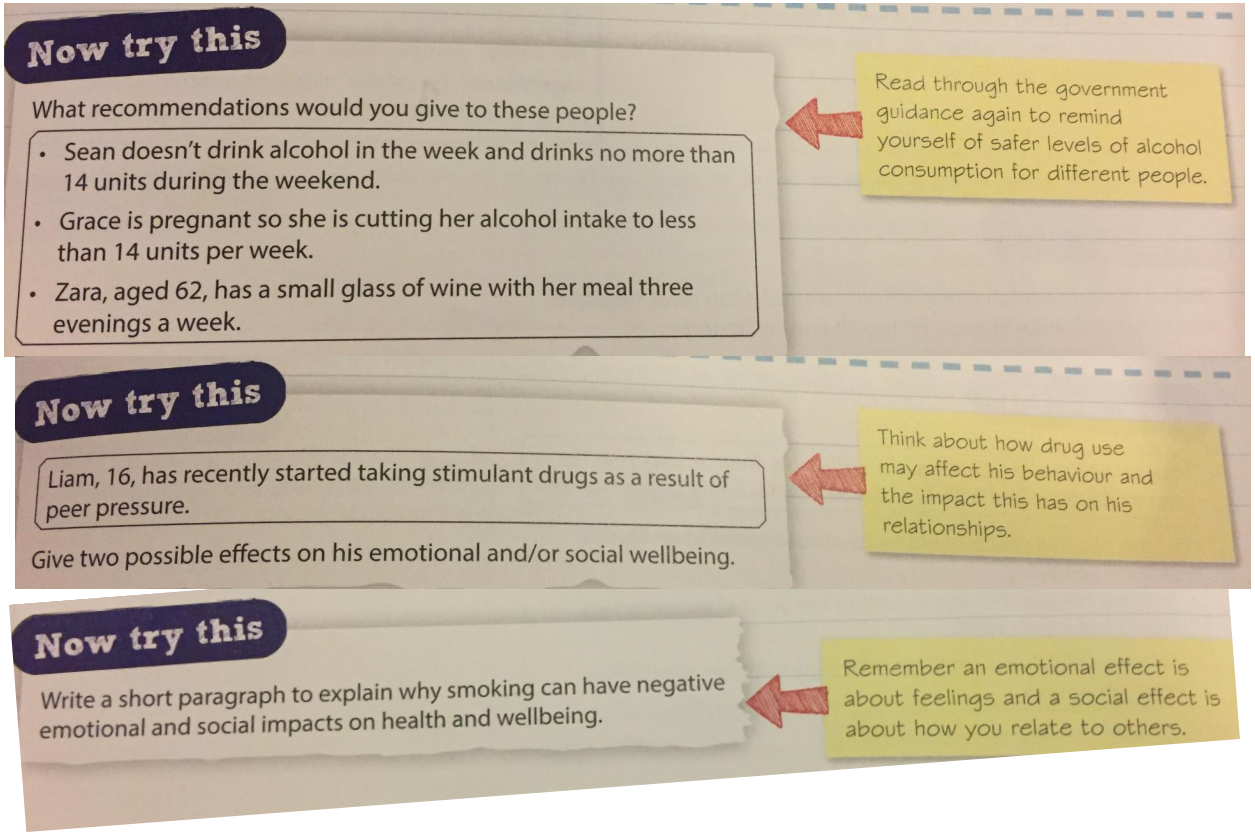
i.e. Baby bouncer and rattle for infancy – development of fine and gross motor skills

- Research a moderate and a vigorous exercise and what the benefits are.
- Give one example to show how lack of exercise might affect health and wellbeing (1 for P, 1 for I, 1 for E, 1 for S)

# 6. Substance abuse

- Produce a table of different substances:

| Substance | Examples | Short term effects | Long term effects |
|---|---|---|---|
| Alcohol | | | |
| Nicotine | | | |
| Illegal drugs | | | |



# 7. Personal hygiene

- Rank which aspect you think personal hyg has the greatest impact (P, I, E or S) give reasons for your choice.
- Write a short paragraph to explain why personal hygiene is important for health a wellbeing

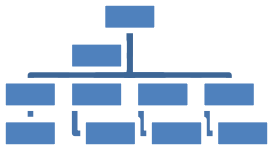
# Business

# Business

## Training and Development

- Training- Introducing employees to new concepts/ideas
- Development- Pushing employees further/giving further knowledge on an existing concept
- Training can either be:
- Formal- In a learning environment/setting by professionals brought in to deliver
- Informal- training that is on the job and usually delivered by regular employees
- Self learning- giving employee the responsibility to learn outside of the work setting.
- Targets are then set and these are often reflected on in performance reviews

## Organisational Structure



Hierarchical Structure
An organisation with many layers of management. There is lots of scope for promotion but issues with communication

Flat Structure
An organisation with few layers of management. There is less scope for promotion but efficient communication

Centralised structure- where decisions are made at the top level of management and passed down
Decentralised structure- where decisions are made by regional/functional managers lower down the business.

Communication- where messages are passed between two or more people. This can be problematic if it is insufficient of excessive. Barriers- refer to factors that could prevent effective communication. These include noise, language barriers and technology.

Ways of working
- Full time- where an employee works 37 or more hours per week
- Part time- where you work less than 36 hours per week
- Flexible- this is where the employees works different hours each week
- Remote Working- working from home through the use of computers/technology.

Types of contract
- Permanent- when an employee has a job for the foreseeable future, with no end date.
- Temporary- when an employee has a job for a given time period (eg 3 months)
- Freelance- when an employee is hired to complete a job, once the job is completed, they leave.

## Motivation

**Motivation is the will/desire to want to work**, this can lead to:

Attract employees- more employees will apply to vacancies due to good reputation
Retain employees- employees will not leave
Higher productivity- increase in the amount of work each employee completes.

| Financial- | Non-financial |
|---|---|
| Remuneration- a basic salary/wage<br>Bonus- money paid of top of salary/wage when targets are met.<br>Promotion- an increase in pay due to better position in management.<br>Commission- a percentage paid on top of wages based on sales made<br>Fringe benefits- small extras on top of wages such as company car, discount schemes etc | Job rotation- giving employees the opportunity to perform different jobs to avoid repetition and boredom.<br>Job enrichment- allowing employees to have more responsibility, taking on more important work.<br>Autonomy- giving employees the power to be involved in decision making. |

## Recruitment

**Recruitment** is the process of obtaining employees into a vacant job role/position. This can be done either through the use of internal or external recruitment. Internal

Recruitment is the filling of a position with someone who already works within the business, External recruitment is the filling of a position with someone completely new from outside of the business.

The business will provide the following documents when recruiting;
**Person specification-** this outlines the type of person that would be ideal for the job role
**Job description-** this details all of the roles and responsibilities of the job role being filled
** The applicant will provide a completed application form and their personal CV

Key job roles and their responsibilities:
- Directors
- Senior managers
- Supervisors
- Operational staff
- Support staff

# Drama

# Drama

| COMPONENT 3 – Responding to a Brief |
|---|
| BTEC Tech Award in Performing Arts (Acting) |
| **Devise a performance in response to a stimulus provided by the exam board. Both parts of the task (written and performance) will be completed under supervision. There is a 12 week window for all parts to be completed. The component is marked out of 60.** |

| Assessment Objectives | Key Vocabulary |
|---|---|
| **AO1 - Understand how to respond to a brief.**<br>• Discuss and practically EXPLORE the stimulus considering: target audience, performance space, planning and managing resources, running time and style of work.<br>• Develop ideas considering: structure of work, style and genre used, skills required, creative intentions.<br>• Work effectively as a member of the group making an individual contribution and responding to the contribution of others. | **Target audience** – who you will perform to and why<br>**Performance space** – choosing where the performance will take place if not on the stage and why<br>**Running time** – length of the performance<br>**Style of work** – genre or practitioner who will influence your work<br>**Vocal skills** – ability to adapt voice to suit a character<br>**Physical skills** – movement, gestures, body language, facial expressions<br>**Interpretative skills** – presenting yourself to the audience and creating emotion<br>**Commitment** –how much effort you put in individually and as a group<br>**Rehearsal** – practicing the performance<br>**Blocking** – deciding where an actor should stand<br>**Performance** – Showing of the piece of work to the target audience<br>**Evaluate** – identify strengths and areas for improvement of both the rehearsal and performance<br>**Characterisation** - creating a character through your movement and dynamic choices |
| **AO2 - Select and develop skills and techniques in response to a brief.**<br>• Demonstrate HOW to select and develop skills and techniques that are needed for the performer and whole group and take part in the rehearsal process. | |
| **AO3 – Apply skills and techniques in a workshop performance in response to a brief**<br>• Contribute to a workshop performance using: vocal, physical and interpretative skills. (18 marks) | |
| **AO4 – Evaluate the development process and outcome in response to a brief**<br>• Evaluate the process and performance, considering: the brief, stimulus and contribution from other group members.<br>• Reflect on: selection of skills used, individual strengths/areas for improvement, overall and individual contribution to the group, impact of the groups work. | |

Hartford Church of England High School

# Drama

| COMPONENT 3 – Responding to a Brief | | | |
|---|---|---|---|
| **BTEC Tech Award in Performing Arts (Acting)** | | | |
| This is a summary of the key terms used to define the requirements in the BTEC components. | | | |
| **Term** | **Definition** | | |
| **Accurate** | Produce work competently, fit for purpose without significant error. | **Detailed** | Having additional facts or information beyond a simple response. |
| **Adequate** | Acceptable in quality or quantity. | **Discuss** | Consider different aspects of a topic and how they interrelate and the extent to which they are important. |
| **Analyse** | Examine methodically and in detail, typically in order to interpret. | **Effective** | Show control over techniques, equipment and processes to meet the details and broad aims of a requirement efficiently. |
| **Apply** | Put knowledge, understanding or skills into action in a particular context. | **Evaluate** | Bring together all information and review it to form a conclusion, drawing on evidence, including strengths, weaknesses, alternative actions, relevant data or information. |
| **Appropriate** | Select and use skills in ways that reflect the aim. | **Explain** | Provide details and give reasons and/or evidence to support an argument. |
| **Assess** | Present a careful consideration of varied factors or events that apply to a specific situation or identify those that are the most important or relevant and arrive at a conclusion. | **Explore** | Try out the qualities of materials, techniques or processes through practical investigation, with some record of results. |
| **Coherent** | Logically consistent. | **Identify** | Indicate the main features or purpose of something. Independent Capable of carrying out tasks from given information. |
| **Collaborate** | Work jointly with others to produce defined outcomes. | **Investigate** | Carry out research or trial activities to increase understanding of the application of factual information. |
| **Communicate** | To convey ideas or information to others. | **Justify** | Give reasons or evidence to support an opinion. |
| **Compare** | Identify the main factors relating to two or more items/situations, explain the similarities and differences, and in some cases say which is best and why. | **Outline** | Summarise or indicate the principal features of something or a brief description or explanation with main points. |
| **Competent** | Having the necessary knowledge or skill to do something suitably or sufficiently in amount or extent. | **Refine** | Improve initial work, taking feedback into account. |
| **Comprehensive** | Full, covering a range of factors. | **Reflect** | Think carefully and review information and/or performance, includes articulating ideas, concepts, activities, findings or features. |
| **Confident** | Demonstrate secure application of skills or processes, with no need for prompting. | **Review** | Assess formally based on appropriate evidence or information with the intention of instituting change if necessary. |
| **Consistent** | Able to repeat reliably an action that progresses towards achieving an aim. | **Secure** | Well practised, confident in own ability and skills. |
| **Creative** | Using techniques, equipment and processes to express ideas or feelings in new ways. | **Select** | Choose the best or most suitable option related to specific criteria or outcomes. |
| **Define** | State or describe exactly the nature, scope or meaning of something. | **Show** | Present using practical skills. |
| **Demonstrate** | Carry out and apply knowledge, understanding and/or skills in a practical situation. | **Simple** | Well defined, routine, frequently occurring. |
| **Describe** | Give a clear, objective account in their own words, showing recall, and in some cases application, of relevant features and information. Normally requires breadth of content coverage. | **State** | Express something definitely or clearly. |
| **Support** | Guidance and instruction. | **Summarise** | Gathers together all of the main aspects of a given situation or experience in a condensed format. |