



I S C A A C A D E M Y

I N S P I R A T I O N F O R L I F E

AUTUMN 2019

KNOWLEDGE BOOKLET

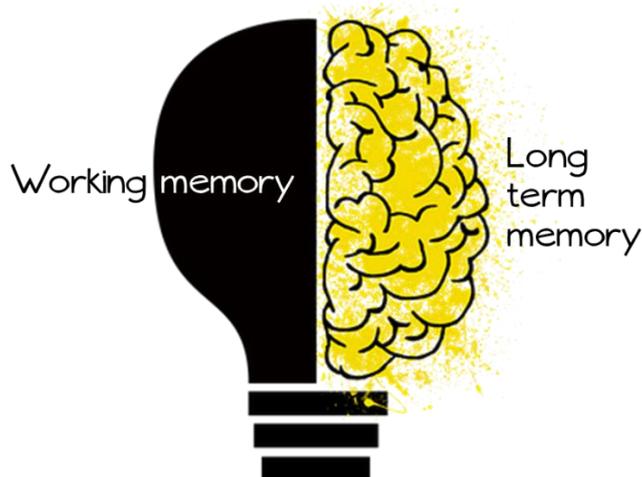
YEAR 11

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WHAT IS A KNOWLEDGE ORGANISER?

Your mind is split into two parts: the working-memory and the long-term memory. Everybody's working-memory is limited, and can very easily become overwhelmed and this is known as overload. Your long-term memory, on the other hand, is effectively a limitless storehouse for information.



You can support your working memory by storing key facts and processes in your long-term memory. These facts and processes can then be retrieved to stop your working memory becoming overloaded:

Let's look at an example, the basic number fact: $7 \times 8 = 56$

If you can instantly recall that $7 \times 8 = 56$, your working memory has more space to think about a more difficult problem, like 37×8 . The answer of 56 comes effortlessly, and you can focus on 30×8 , then add the product to the 56 in your head.

If you do not know that $7 \times 8 = 56$ straight away, you are more likely to become confused and frustrated. Being able to very quickly recall key facts is a way of hacking your working memory, making thinking about difficult stuff much easier.

This booklet contains knowledge organisers for all of your subjects for the Autumn term. Each knowledge organiser has the key information, which needs to be memorised to top up your long-term memory in order to help you master your subject and be successful in lessons. You will be expected to follow the homework schedule on page 4.

HOW TO USE YOUR KNOWLEDGE ORGANISER

Challenge yourself

Which will you choose?



Look Cover Write Check

Look at your knowledge organiser, Cover a section of it, Write out the content you have just covered from memory and Check you have recalled it correctly



Mindmaps

Place the key word/concept in the middle. Go wild with colourful, flowing shapes that link the key definitions and concepts.



Revision Clock

Draw a clock and add the topic in the middle. Then, break it down into 10 minute sections. Add notes in each segment. Cover the clock and recite all the information out loud.



Mnemonics

Creating mnemonics is a great way for remembering groups or lists of words. For example, to remember the order of planets in the solar system:

My **V**ery **E**xcited **M**other **J**ust **S**erved **U**S
Nachos



Flash Cards

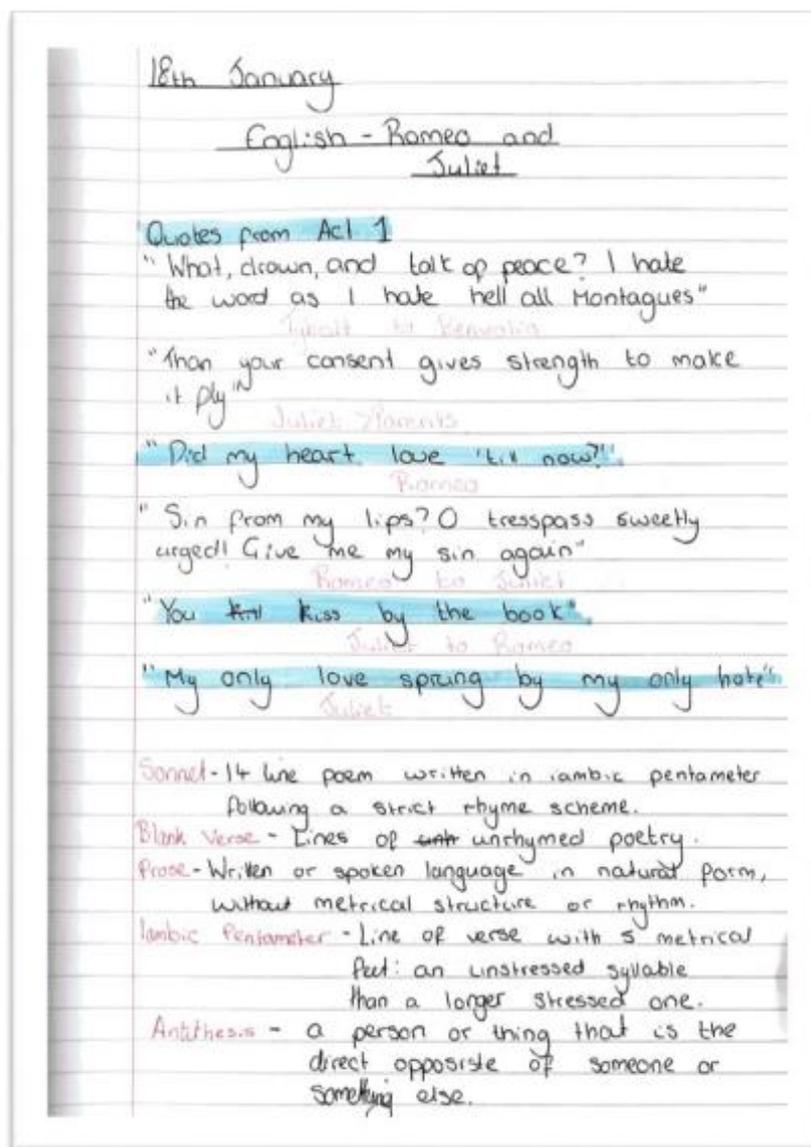
Write down the word/term on one side and a definition/explanation on the other side. Once you have notes written in your own words and summarised – move onto testing yourself quickly.

EXPECTATIONS OF YOU

1. Check the schedule on the next page to see which knowledge organisers you should use each day for your homework
2. Complete **one full page for each subject** on the schedule in your knowledge book **every day**
3. Use your knowledge organiser after you have finished to **mark and correct** your own work
4. **Sign your self-check sheet at the end of each week** after you have finished your full page each day
5. Get your self-check sheet **signed by your tutor** during your knowledge organiser tutor time session

T	on Time
A	Accurate
N	Neat
C	Complete

Homework should be **TANC**. Below is an example of homework that would meet the expected standard. If it does, your tutor will sign your log on the morning you are working in silence on your knowledge organiser.



YOUR SCHEDULE

Day	Subject	Subject
Monday	Numeracy – online	Literacy - online
Tuesday	Science	Option A
Wednesday	Option B	Option C
Thursday	Maths	Science
Friday	English	

Every Monday you will have Numeracy and Literacy homework. This will not be using your knowledge organiser, numeracy will be using SPARX and literacy will be using Doodle, both of which are online. Your English and Maths teachers will set these tasks.

Below are the option subjects you are currently studying:

Option A	Option B	Option C
Music Spanish Geography History Drama Resistant Materials	Art Catering Geography History Drama French	PE History Futsal Art Computer Science Textiles

Week commencing	Self Check	Tutor Sign	Week commencing	Self Check	Tutor Sign	Week commencing	Self Check	Tutor Sign
9/9/2019			14/10/2019			2/12/2019		
16/9/2019			4/11/2019			9/12/2019		
23/9/2019			11/11/2019			16/12/2019		
30/9/2019			18/11/2019					
7/10/2019			25/11/2019					

You will notice on each knowledge organiser that there are green and blue edged boxes with text in. Text in a green edged box is key vocabulary you need to learn and writing in a blue edged box are the key concepts/knowledge you will need to learn.

Key Vocabulary will be written in a green edged box like this.

Key concepts/ideas will be written in a blue edged box like this

Contextual Timeline

- 19th century = Industrial Revolution
- 1834 – Poor Law was introduced
- 1843 – The novel was written



The Isca Way: use these sentences, in whichever order, as a *guide* to help organise your thinking in the exam:

The writer establishes / uses / creates _____ to ...

This suggests / conveys / portrays...

The word / image / phrase "----" has connotations of...

At a deeper level...

Perhaps...Possibly...Metaphorically...

----becomes a symbol

for...Symbolically...

Priestley is challenging...Advocating...

...Is trying to change...

The audience thinks...Feels...Is made to understand...Wonders whether...Is left questioning...

'A Christmas Carol' – Charles Dickens

Characters:

Scrooge – A selfish business man who transforms into a charitable philanthropist.

Fred – Scrooge's nephew whose party invitation he declines

Jacob Marley – Scrooge's dead partner who returns as a ghost to warn Scrooge to change his ways.

Bob Cratchitt – Scrooge's clerk who doesn't have much money. He loves his family and is shown to be happy and morally upright.

Tiny Tim – Bob's ill son whose story plays a part in inspiring Scrooge's transformation.

Mrs Cratchitt – Bob's wife

The Ghost of Christmas Past – A strange combination of young and old, wearing white robes and looking like a candle.

The Ghost of Christmas Present – A portly, jovial gentleman surrounded by a warm glow. He brings joy to the neediest.

The Ghost of Christmas Yet To Come – A robed and hooded spirit who confronts Scrooge with his own tombstone.

Fezziwig – Scrooge's ex-employer

Belle – A woman who Scrooge was in love with; she left him due to his greed.

Fan – Scrooge's sister



Important Quotations:

"Hard and sharp as flint"

"As solitary as an oyster"

"I wear the chain I forged in life"

"He could not hide the light"

"Are there no prisons...are there no workhouses..."

"I'm not the man I was. I'm not the man I must have been"

"Beneath a ragged sheet, there lay a something covered up"

"Glowing"

"Ogre of the family"

"As good as gold"

"It is not my business"

"Mankind was my business"

"I don't know anything. I'm quite a baby."

"Another idol has displaced me... a golden one"

"Show me no more!"

"The mention of his name cast a dark shadow"

"They are Man's. This boy is Ignorance. This girl is Want. Beware for I see that written which is Doom."

"Yellow... wolfish"

The story:

Ebenezer Scrooge lives a cold and selfish life. He is visited by ghosts, who show him why he needs to change his ways. By the end of the novella – he redeems himself.

Themes:

- Social responsibility
- Social Class
- Society
- Wealth
- Family
- Love
- Redemption
- Supernatural
- Ignorance and Want
- Christmas
- Education

Dickens

Society

Enlightenment

Redemption

Parsimonious

Misanthropic

Benevolent

Victorian

Cyclical

Solitary

Apparition



GCSE English Language: Paper 1

Explorations in creative reading and writing

Question 1

List 4 things...in a given section. Write in full sentences.

X4

Question 2 = LANGUAGE

The writer presents ____ as ____ by using _____.
 "Evidence"
 The connotations of the word/image/phrase "-----" are...
 At a deeper level
 This makes the reader understand/ think/feel...
 This links to...

X3

Question 3 = STRUCTURE

- In the beginning the writer focuses on...
- The first lines establishes...
- The paragraph/sentence foreshadows...
- The writer establishes...
- The viewpoint/ perspective...
- The focus shifts to/focus narrows to...
- In the second half...
- The idea is further emphasised when...
- The tone changes when...
- Concludes with...
- The last line interests the reader because...
- The juxtaposition of...

X3

Question 5 = WRITING

Creative writing based on an image or title

- ✓ PLAN
- ✓ Use powerful and ambitious vocabulary
- ✓ Use a range of language techniques
- ✓ Use a range of punctuation ; ! ?
- ✓ Vary your sentences: long, short and ly, ing and ed sentence starters
- ✓ Structure: paragraphing, one line paragraphs, cyclical structure
- ✓ Drop, zoom, flash, end



Question 4 = LANGUAGE and STRUCTURE

Agree/disagree with the statement

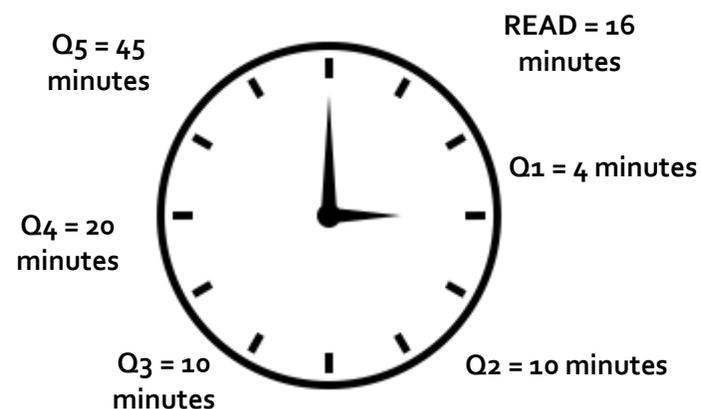
I agree / disagree that...
 The writer uses / establishes / creates...
 "Evidence"
 The connotations of the word / phrase / image "----"
 At a deeper level / possibly...
 This makes the reader understand/think/feel
 Therefore / consequently / subsequently I agree / disagree...

X3

Writer's methods:

Simile – comparison using like or as
 Metaphor – comparison saying one thing is another
 Personification – giving inanimate objects human qualities
 Juxtaposition – two things with contrasting effects placed close to each other
 Cyclical – a repeated idea / word (at the beginning and end of a text/extract)
 Imagery – created a picture in the reader's head
 Foreshadowing – a hint or indication of something to come
 Focus shift – the focus of the writing changes
 Adjectives – describing words
 Verbs – action or state
 Adverbs – describes how the verb is done

1 hour 45 minutes



Tone
 Connotations
 Establishes
 Suggests
 Conveys
 Portrays
 Evokes
 Shifts
 Viewpoint
 Perspective
 Furthermore
 Emphasised
 Additionally

GCSE English Language: Paper 2

Writers' viewpoints and perspectives

Question 1

TRUE or FALSE

X4

Question 2 = SUMMARISE the differences

Identify a difference: **In Source A...**

Evidence: **For example...**

Effect: **This suggests / this conveys / this demonstrates...**

Compare: **Whereas in Source B...**

X3

Question 3 = LANGUAGE

X3

The writer presents ____ as ____ by using _____.

"Evidence"

The connotations of the word/image/phrase "-----" are...

At a deeper level

This makes the reader understand/ think/feel...

This links to...

Question 5 = WRITING

Non-fiction writing from a statement

- ✓ PLAN
- ✓ Use powerful and ambitious vocabulary
- ✓ Use a range of language techniques
- ✓ Use a range of punctuation ; ! ?
- ✓ Vary your sentences: long, short and ly, ing and ed sentence starters
- ✓ Structure: paragraphing, one line paragraphs, cyclical structure
- ✓ Drop, zoom, flash, end



Question 4 = COMPARE the writers viewpoints

In Source A, the writer presents ____ as ____ by using _____.

"Evidence"

The connotations of the word/image/phrase "-----" are...

At a deeper level

This makes the reader understand/ think/feel...

This links to / is different to Source B which presents ____ as ____ by using _____.

"Evidence"

The connotations of the word/image/phrase "-----" are...

At a deeper level

This makes the reader understand/ think/feel...

X3

Writer's methods:

- Simile – comparison using like or as
- Metaphor – comparison saying one thing is another
- Personification – giving inanimate objects human qualities
- Juxtaposition – two things with contrasting effects placed close to each other
- Cyclical – a repeated idea / word (at the beginning and end of a text/extract)
- Imagery – created a picture in the reader's head
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- Focus shift – the focus of the writing changes
- Adjectives – describing words
- Verbs – action or state
- Adverbs – describes how the verb is done

1 hour 45 minutes

Q5 = 45 minutes

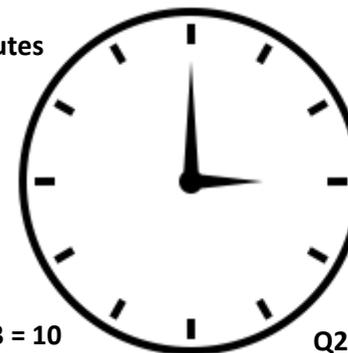
READ = 16 minutes

Q4 = 20 minutes

Q1 = 4 minutes

Q3 = 10 minutes

Q2 = 10 minutes



Tone
Connotations
Establishes
Suggests
Conveys
Portrays
Evokes
Shifts
Viewpoint
Perspective
Furthermore
Emphasised
Additionally

YEAR 11 F

MY SPIDEY SENSE TELLS ME I SHOULD USE THE WORK OF MY SPIRITUAL GURU PYTHAGORAS TO CALCULATE THE DISTANCE TO THE TOP OF THE BUILDING

REMEMBER MY SON, YOUR WEB IS THE HYPOTENUSE. IF YOU KNOW THE HEIGHT OF THE BUILDING AND YOUR DISTANCE FROM IT YOU CAN WORK OUT HOW MUCH WEB YOU WILL NEED.

$$35^2 + 12^2 = x^2$$

$$x = \sqrt{35^2 + 12^2}$$

$$x = 37m$$



THE HEIGHT OF THE BUILDING WAS 35M AND I WAS 15M FROM IT. MY FRIEND MR P TOLD ME TO SQAARE BOTH SIDES, ADD THEM THEN SQAARE ROOT.

I WOULD HAVE USED **TRIGONOMETRY!**

37M....SMASHED IT!

WHAT THE WEB MAN HADN'T REALISED, IS I KNEW THE ANGLE TO THE BUILDING

IF AN ANGLE IS INVOLVED USE **SOH CAH TOA**

ROBIN...WE'RE CAUGHT IN A CIRCLE OF LIGHT OF DIAMETER OF 4M!

MEANWHILE.....

THAT'S RIGHT BATMAN! OUR ONLY CHANCE IS TO CALCULATE ITS CIRCUMFERENCE AND AREA!

$$C = \pi \times D$$

$$A = \pi \times r^2$$

CURSES...OLD BAT EARS KNOWS ALL OF HIS AREA FORMULAE

THAT'S RIGHT MY HUMOROUS HOAXTER

TRIANGLE = $\frac{\text{BASE} \times \text{HEIGHT}}{2}$

PARALLELOGRAM = $B \times H$

TRAPEZIUM = $\frac{(A + B) \times H}{2}$

LET ME BE OF ASSISTANCE

THIS MASSIVE CALCULATOR IS ONLY GIVING ANSWERS IN **STANDARD FORM...** I NEED HELP!

SO 5.63×10^7 WOULD BE 56 300 000 SO WE TIMES BY 10 SEVEN TIMES

I'VE GOT THE POWERS

$$a^6 \times a^7 = a^{13}$$

$$a^8 + a^5 = a^3$$

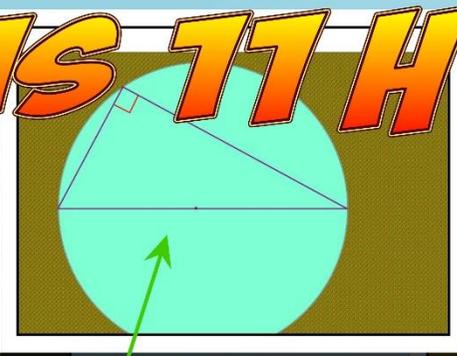
$$(a^3)^7 = a^{21}$$

$$(2a^5)^3 = 8a^{15}$$

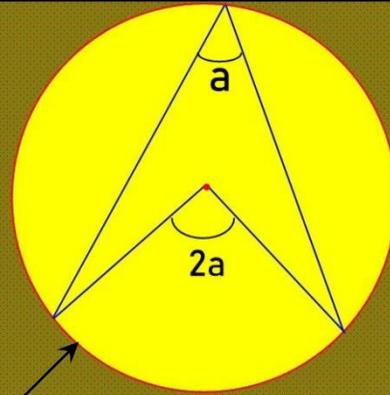
MATHS 11 H



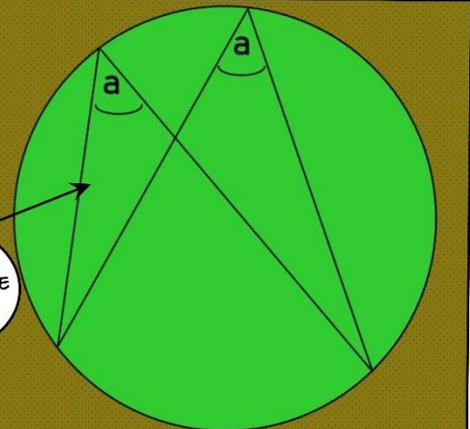
DR STRANGE THROWS OUT SOME CIRCLE THEOREMS



THE ANGLE AT THE CIRCUMFERENCE IN A SEMI CIRCLE IS ALWAYS A RIGHT ANGLE



DON'T FORGET THE BOW TIE RULE!



9 MATHS



IT'S LOGICAL JIM....THE STAR TREK RULE...



THE ANGLE AT THE CENTRE IS TWICE THE ANGLE AT THE CIRCUMFERENCE!



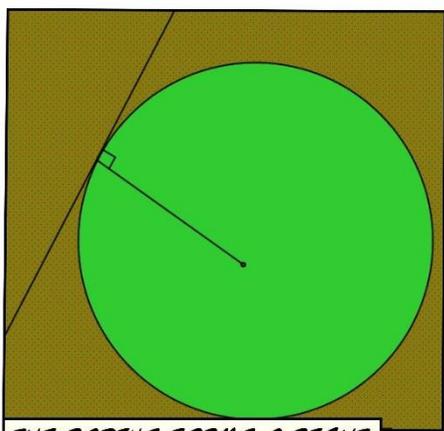
SPOCK KNOWS.....IT'S ALL ABOUT THE DOUBLES



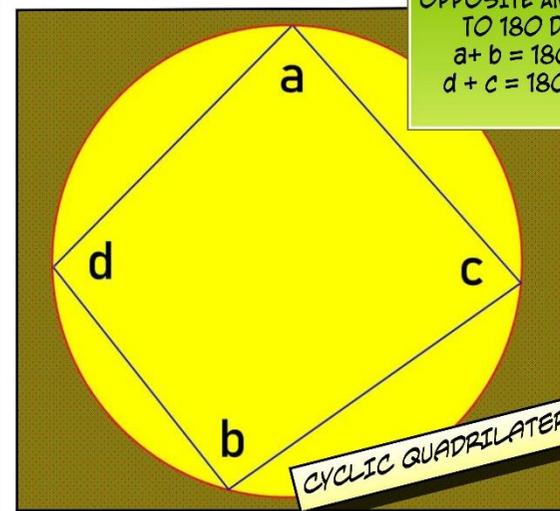
HANG ON TREVOR.....BEFORE WE EXTERMINATE...HE'S GOT A POINT!

EXTERMINATE!!

ANGLES IN THE SAME SEGMENT ARE EQUAL...THE TWO POINTY BITS ARE THE SAME! NOW.....EXTERMINATE!



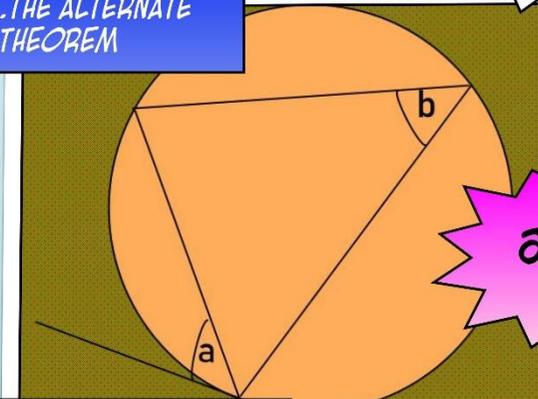
THE RADIUS FORMS A RIGHT ANGLE WITH THE TANGENT



OPPOSITE ANGLES ADD UP TO 180 DEGREES
 $a + b = 180$ DEGREES
 $d + c = 180$ DEGREES

CYCLIC QUADRILATERAL

AND NOW.....THE ONE TO GET YOUR HEAD ROUND.....THE ALTERNATE SEGMENT THEOREM

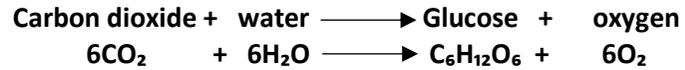


$a = b$

THE ANGLE BETWEEN A CHORD AND A TANGENT IS EQUAL TO THE ANGLE IN THE ALTERNATE SEGMENT

Photosynthetic organisms (plants and algae) are the main producers of food and therefore biomass

Photosynthesis: A chemical reaction which takes place in the chloroplasts of plant leaves which creates glucose for the plant. It is an endothermic reaction because it uses energy

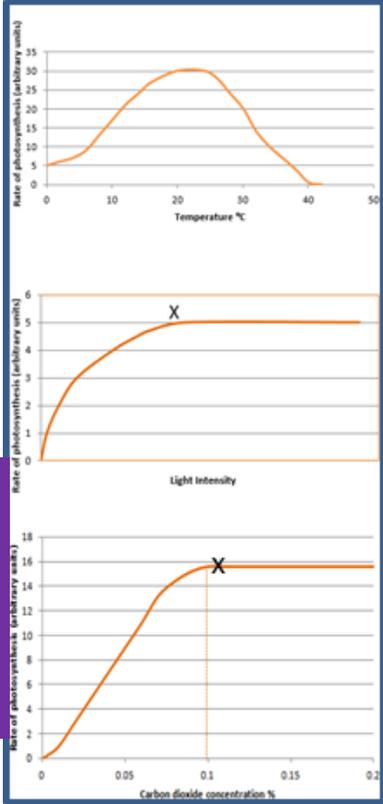


A limiting factor is one which will affect the rate of a reaction; in this case photosynthesis.

Temperature can limit the rate of photosynthesis as high temperatures can cause the enzymes in the chlorophyll to denature so the reaction cannot take place. At low temperatures; the reacts and enzymes may not have enough energy to collide

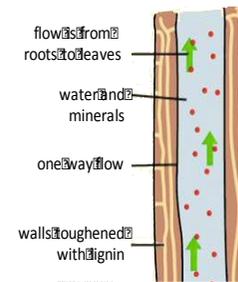
Light intensity can limit the rate of photosynthesis as the light brings energy to the reaction. After a certain light intensity, the rate of reaction plateaus off and the rate of photosynthesis remains constant.

Carbon dioxide concentrations can limit the rate of photosynthesis. Carbon dioxide is a reactant of photosynthesis and therefore the more it has, the faster the reaction can take place. After certain concentrations, the increased amount of carbon dioxide will no longer affect the reaction and the rate of photosynthesis will remain constant.



Transpiration: The flow of water into the **roots** (by **osmosis**), up through the stem through the **xylem** vessel and out of the stomata (as water vapour) in the leaves.

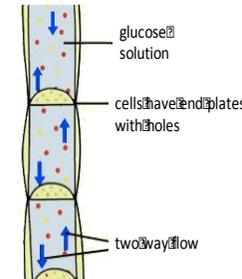
Adaptions of xylem vessels



Companion cells pump sucrose from the leaf into the phloem by **active transport**. Because the companion cells require energy they contain many mitochondria

Translocation: The glucose that is created in photosynthesis can be moved around the plant in the form of sucrose. The phloem vessels in the stem help transport sucrose.

Adaptions of phloem vessels



Factors that increase the rate of transpiration:

- Increased wind speed
- High temperatures
- Increased light intensity

To increase the rate of photosynthesis after it has levelled off (point X on light intensity graph) , we need to manipulate another condition, e.g. temperature

Required practical method

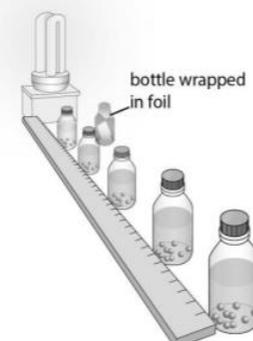
Independent variable: Light intensity. Dependent variable: change in pH

Required practical conclusion

The rate of photosynthesis is;

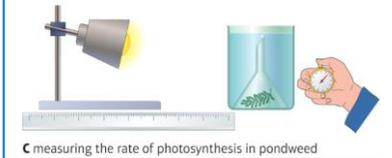
- directly proportional to light intensity
- inversely proportional to the distance from a light source (if you half the distance from the light source the light intensity is 4x greater, if you double the distance from the light source light intensity is ¼ of the original.

Required practical method



Alternative practical method

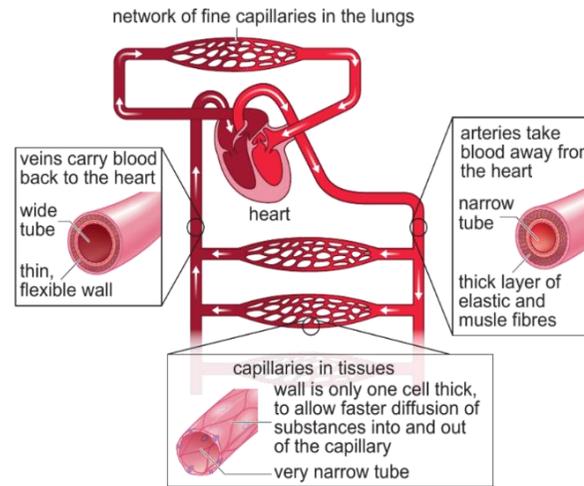
Independent variable: Light intensity
Dependent variable: Number of bubbles of oxygen/minute



CB8

Unicellular organisms have a large surface area: volume ratio so they can rely on diffusion to transport substances in and out of the cell. However, multicellular organisms need transport systems, e.g. a circulatory system, due to a small surface area: volume ratio.

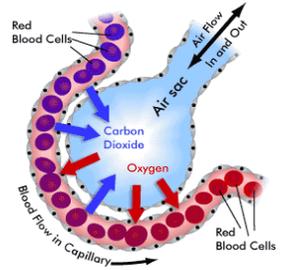
Plasma	Liquid carrying dissolved substances such as glucose, urea and carbon dioxide
Erythrocytes	Red blood cells; these contain haemoglobin to bind with oxygen so it can be carried to cells
Phagocytes	White blood cells; these engulf pathogens to reduce harm
Lymphocytes	White blood cells; these produce antibodies to match the pathogens antigen and destroy it
Platelets	These cell fragments have no nuclei and are responsible for clotting blood



Gaseous exchange between the alveoli and the blood.

Adaptions

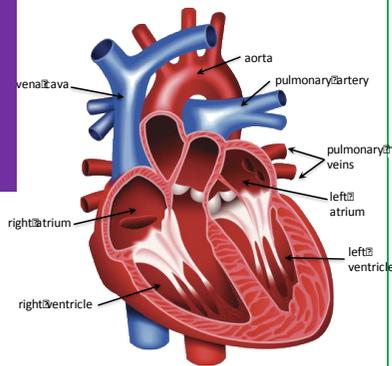
- Dense capillary network - maintains the concentration gradient
- Capillary walls are only one cell thick - shorter diffusion path
- Larger surface area - increases the rate of gas exchange



Respiration is an exothermic chemical reaction which releases energy.

Aerobic	Anaerobic
Occurs continuously in all living cells to release energy for metabolic processes	Occurs during strenuous exercise when not enough oxygen is not available
Takes place in the mitochondria	Takes place in the cytoplasm
Glucose + oxygen → water + carbon dioxide	Glucose → Lactic acid

11 SCIENCE



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 wall (large force)
Coronary arteries	Carry oxygenated blood to the cardiac muscle.
Heart valves	Prevent back flow of blood

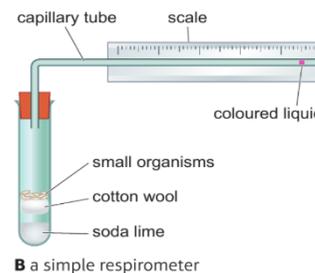
Moving in (raw materials)	Moving out (waste)
Glucose – for respiration	Carbon dioxide – from aerobic respiration
Oxygen – for aerobic respiration	
Amino acids – building blocks of proteins	Urea – broken down proteins
Mineral ions	

Cardiac output = stroke volume x heart rate

Heart rate = number of beats per minute

Stroke volume = volume of blood pumped per beat

Cardiac output = volume of blood pumped per minute



Core practical: Respirometer

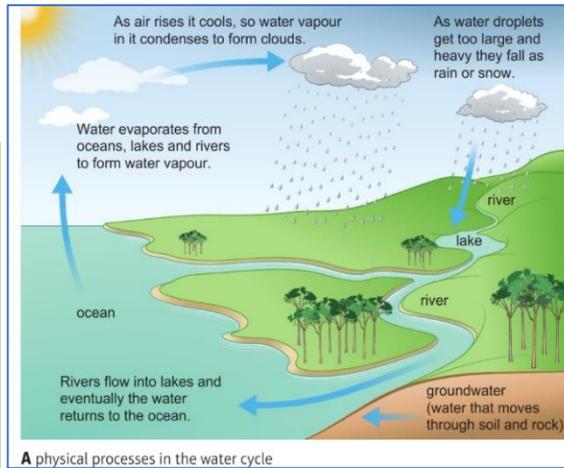
Independent variable: temperature.

Dependant variable: distance travelled by the coloured liquid over time

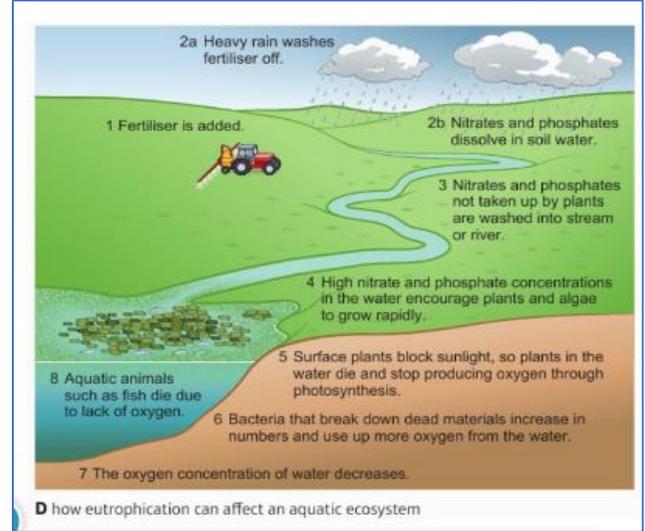
Conclusion: As the temperature increases rate of respiration until it reaches an optimum, after which the rate decreases due to denaturing of the enzymes.

Interdependence is the interaction between organisms, and the effect of population sizes on a food web

Environment	The conditions surrounding a habitat; biotic or abiotic
Abiotic factor	Non-living factors that affect the distribution of organisms, e.g. light intensity, pH, pollution levels
Biotic factor	Living factors that affect the distribution of organisms, e.g. predators, food availability
Habitat	Place where organisms live, e.g. lake or woodland
Population	Individual species living in a habitat
Community	Populations of species living in a different habitat
Ecosystem	A community or habitat in which all the different populations of organisms live
Biodiversity	The variety of plant and animal species in an ecosystem
Parasitism	A relationship between a host and a parasite where only the parasite benefits, e.g. head lice and humans
Mutualism	A relationship where both organisms benefit from the relationship, e.g. oxpeckers and rhinos

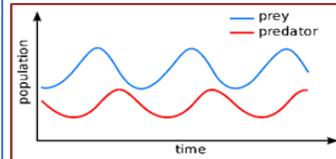


$$\text{population size} = \frac{\text{number of organisms in all quadrats}}{\text{total area of quadrats}} \times \frac{\text{total size of area where organism lives}}{\text{total area of quadrats}}$$



Core Practical: Belt transect

- Peg out a tape measure
- Place quadrat at regular intervals
- Count species
- Measure abiotic factor e.g. light intensity



Population of prey increases so predators have more food and reproduce/raise young therefore predator population increases. Then predators eat more prey and prey population decreases

Fish farming: A large number of fish are farmed in a small area for human consumption

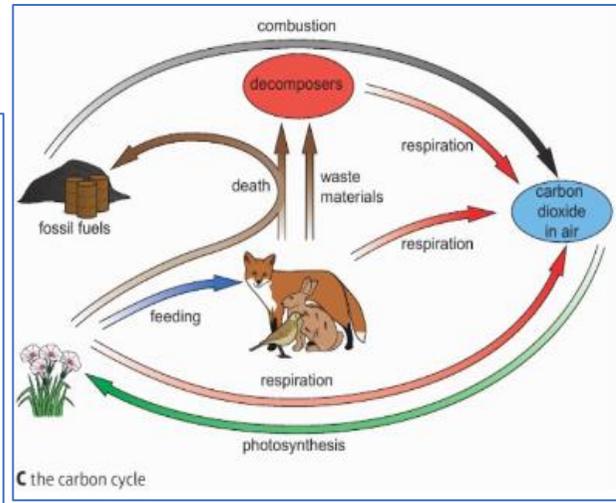
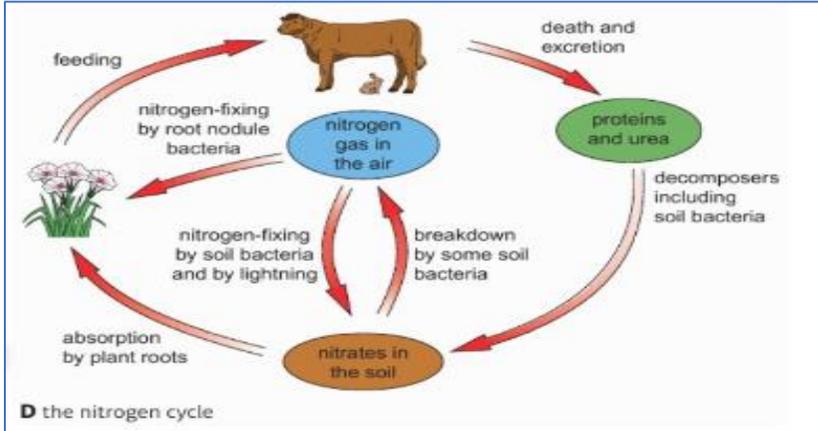
Introduction of non-indigenous species: Species not native to the area can affect food webs

Eutrophication: The addition of more nutrients (usually by fertiliser run-off) to an ecosystem than it normally has

Factors affecting biodiversity

Preserving biodiversity: We can try and maintain biodiversity by:

- Reforestation
- Conserving endangered species



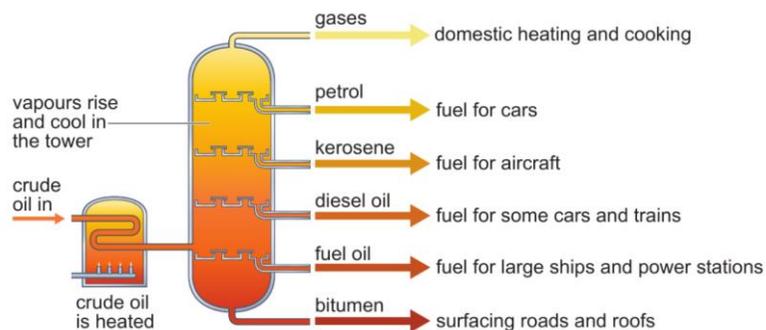
CC16-17

Hydrocarbons: contain hydrogen and carbon atoms only

Crude oil: Complex mixture of hydrocarbons in chains and rings, a source of useful substances, a finite resource, can be separated into its more useful fractions using **fractional distillation**.

Fractional Distillation:

- The column is hottest at the top, coolest at the bottom.
- The vapours rise through the column and cool down.
- The vapours **condense** when they reach a part of the column that is cool enough, the liquid falls into a tray and is piped away.
- The vapours with the lowest boiling points do not condense at all and leave at the top as a mixture of gases.



Fraction	Number of atoms in molecules	Boiling point	Ease of ignition	Viscosity
gases	smallest (1-4 carbon atoms) 	lowest (<0 °C) 	easy to ignite 	lowest (flows most easily)
petrol				
kerosene				
diesel oil				
fuel oil				
bitumen				

↑ trends in the properties of the fractions leaving an oil fractionating column

As you go down the fractionating column, the number of carbon atoms in the chain increase, the boiling point and viscosity increase and the ease of ignition decreases.

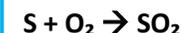
Complete combustion – sufficient amount of oxygen, produces carbon dioxide, water and energy.



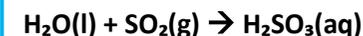
Incomplete combustion - insufficient amount of oxygen, sooty flame, produces less heat, carbon monoxide, carbon and water.



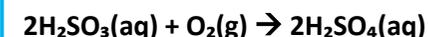
Sulfur dioxide: When hydrocarbon fuels are burnt they may contain impurities such as sulfur. This reacts with oxygen to form sulfur dioxide:



Sulfur dioxide dissolves in the water in clouds producing sulfurous acid:



The sulfurous acid is then oxidised to form sulfuric acid:



Oxides of nitrogen: High temperatures needed to cause oxygen and nitrogen to react to form nitrous oxide (NO₂).

Breaking down hydrocarbons: Cracking breaks down long chain (saturated/alkane) hydrocarbons into shorter chains (some of which will be unsaturated/alkenes) to meet demand. 650°C heat aluminium oxide catalyst.

13 SCIENCE

The hydrocarbon fractions are from the **alkane homologous series** – meaning they all have the same general formula (**C_nH_{2n+2}**), they differ by an increasing methyl group (CH₂). Alkanes have similar chemical properties and gradual variations in boiling points.

Acid rain – rain with a pH < 5.2, contains SO₂ and NO₂

Carbon monoxide is toxic. It combines with **haemoglobin** in red blood cells which means there is less oxygen in the blood = suffocation.

Saturated/alkane: Contain single C-C bonds only.

Unsaturated/alkene: Contains double carbon carbon bond C=C

Testing for oxygen: a glowing splint will relight

The greenhouse effect - the earth to get warmer because gases (methane, water vapour and CO₂) absorb heat energy radiated from the earth and release it = keeping the earth warm. **It is argued that human activity has caused climate change**

The early atmosphere:

- little or no oxygen
- lots of CO₂
- water vapour
- small amounts of other gas. Then.....
- Water vapour condensed to form oceans (reduced the amount of CO₂ in the atmosphere as some dissolved in the oceans)
- Primitive plants grew, using up CO₂ (reducing levels further) and increasing the amount of oxygen



CP1

Potential difference (voltage) is the energy transferred per unit charge passed and therefore the volt is a joule per coulomb

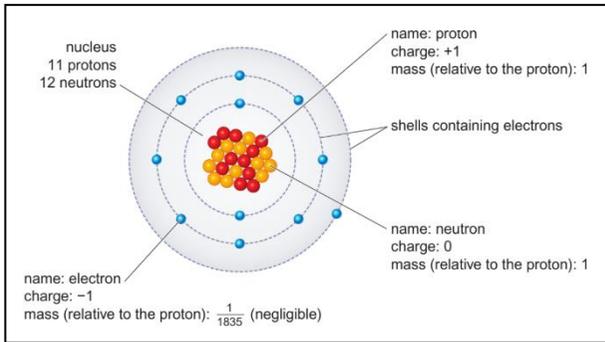
Electric current is the rate of flow of charge. The current in metals is a flow of electrons

In parallel circuits:

- the total current supplied is split between the components on different loops
- potential difference is the same across each loop
- the total resistance of the circuit is reduced as the current can follow multiple paths

In series circuits:

- current is the same through each component
- the total potential difference of the power supply is shared between the components
- the total resistance of the circuit is the sum of individual resistors

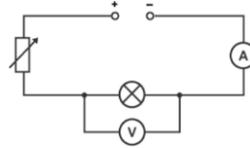


Ammeters measure **current** in **amps** and are connected in **series**

Direct current (d.c.) is the movement of charge in one direction only e.g. in batteries

Voltmeters measure **potential difference** in **volts** and are connected in **parallel**.

Alternating current (a.c.) the movement of charge changes direction e.g. mains electricity



earth wire – connects the metal parts of the appliance to a large metal spike or metal tubing that is pushed into the ground. It is for safety and is at 0V if the circuit is correctly connected.

neutral wire – the return path to the power station. If the circuit is correctly connected it is at a voltage of 0V.



fuse – a safety device marked with the current it can carry. Usually 3A, 5A or 13A.

live wire – connects the appliance to the generators at the power station. The voltage on this wire is 230V.

energy transferred (J) = charge moved (C) × potential difference (V)

$$E = Q \times V$$

charge (C) = current (A) × time (s)

$$Q = I \times t$$

potential difference (V) = current (A) × resistance (Ω)

$$V = I \times R$$

power (W) = energy transferred (J) ÷ time taken (s)

$$P = E/t$$

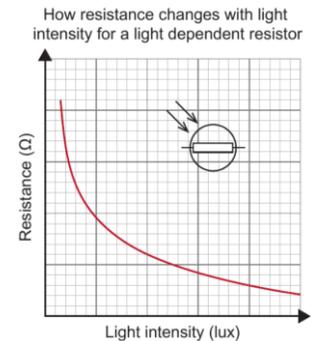
electrical power (W) = current (A) × potential difference (V)

$$P = I \times V$$

electrical power (W) = current² (A²) × resistance (Ω)

$$P = I^2 \times R$$

As the light intensity increases the resistance of the LDR decreases

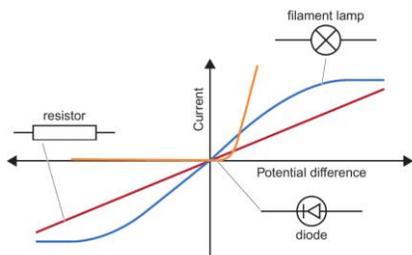


When there is an electric current flowing, there is an energy transfer which has a heating effect. It is the result of collisions between electrons and the ions in the lattice.

This can be reduced by using wires made of metals with low resistance e.g. copper, using thicker wires or by cooling the wires.

For a **fixed resistor** the current and potential difference are **directly proportional** so the resistance stays the same.

Filament lamps and **diodes** have **resistances** that **change** when potential difference changes.



UK domestic supply is a.c. 50 Hz and 230 V

Length and thickness of a wire will effect resistance



Low resistance



High resistance

Figure 1



Low resistance

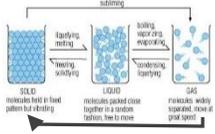


High resistance

Solid: fixed shape, fixed volume, particles vibrating, strong forces between particles. High density (apart from water ice)

Liquid: fixed volume, no fixed shape, move around, weak forces between particles. Medium density

Gas: no fixed shape or volume, particles are spread out and moving fast and freely, no forces between particles. Low density



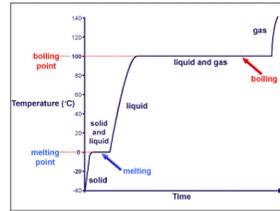
During heating, cooling, and changes of state:

- Mass is conserved.
- The changes are reversible (unlike most chemical changes)

Heating: Energy is transferred into a system.

Particles start vibrating more (solid), or moving around more (liquid/gas). The average kinetic energy increases, so the temperature increases.

Particles with enough energy to break their bonds change state. Temperature doesn't change until all particles have changed state.



Specific heat capacity: The energy required to heat 1 kg of a substance by 1°C. Thermal energy change (J) = mass (kg) x specific heat capacity (J/kg °C) x temperature change (°C)

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

Core Practical: Specific heat capacity of water

Method: Heat water for 5 minutes in an insulated container using an electrical heater. Measure the mass of water, change in temperature, and the energy transferred (joule meter)

Conclusion: Water has a high specific heat capacity. of 4200 J/kg°C, so it is often used to transfer thermal energy



Specific latent heat: The energy required to completely change the state of 1kg of a substance (the temperature doesn't change). The value depends on:

- The type of substance
- Whether it is boiling or melting

Thermal energy change (J) = mass (kg) x specific latent heat (J/kg)

$$\Delta Q = m \times L$$

Core Practical: temperature-time graph for melting ice

Method: Place crushed ice in a boiling tube with a thermometer. Use a beaker of water and Bunsen burner as a water bath to heat the ice and record the temperature at regular intervals

Absolute Zero: The temperature where particles stop moving, and the pressure of a gas becomes zero. It is -273°C, or 0 K (kelvin)

Celsius to kelvin: add 273

e.g. 100°C = 373 K

Kelvin to Celsius:

subtract 273

e.g. 100 K = -173 °C

Insulation: Reduces unwanted energy transfers:

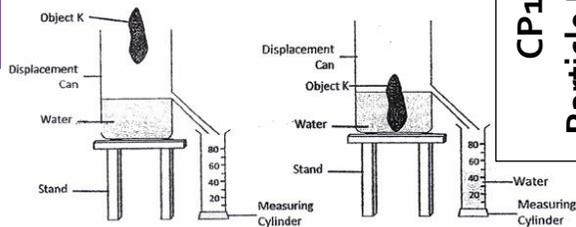
Conduction: Trapped air or a vacuum reduces energy transfer between colliding particles

Convection: Adding a lid, filling spaces with foam, or using a vacuum prevents particles transferring energy as they move

Radiation: Using shiny silver surfaces reduces energy transfer by radiation

$$\text{density} = \frac{\text{mass}}{\text{volume}} \quad \rho = \frac{m}{V}$$

Density: kg/m³ or g/cm³
Mass: kg or g
Volume: m³ or cm³

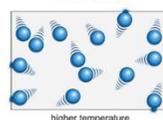
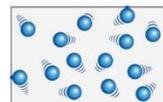
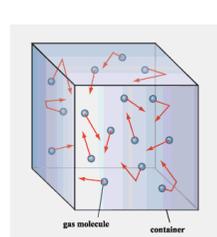


CP12 Particle Model

Gas in a sealed container (constant volume): As the temperature rises, the *average* kinetic energy of particles increases.

1. The temperature increases
2. Particles gain kinetic energy
3. Particles move faster, and collide with the walls more frequently
4. Faster and more frequent collisions cause a larger force to be exerted on the walls
5. The increasing total force over the entire surface of the container causes the pressure to increase too.

$$\text{Pressure (N/m}^2\text{)} = \text{Force (N)} / \text{Area (m}^2\text{)}$$



Core Practical: Density

Method

1. Weight an *irregular* object and record the mass
2. Fill the displacement can to the spout with water
3. Immerse the object in the water
4. Collect the displaced water in a measuring cylinder
5. Volume of displaced water = volume of object

Group 1 (Alkali metals):

- 1 electron in their outer shell,
- form 1⁺ ions,
- reactivity increases as you go down the group (force of attraction between the positive nucleus and the outer electron decreases the further down you go making it easier to remove the outer electron).
- Soft, have relatively low melting points

↓ reactivity	lithium + water	bubbles fiercely on the surface
	sodium + water	melts into a ball and fizzes about the surface
	potassium + water	bursts into flames and flies about the surface

Alkali metals react vigorously with water.

Metal + water → metal hydroxide + hydrogen

Lithium + water → lithium hydroxide + hydrogen

Group 7 (Halogens):

- 7 electrons in their outer shell
- form a 1⁻ ion
- reactivity decreases as you go down the group (the force of attraction between the positive nucleus and the outer electron decreases the further down you go making it harder to attract an additional electron)
- all diatomic (travel in pairs with themselves e.g. Cl₂)
- Can be used as disinfectants and bleaches.

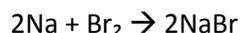
Properties of halogens:

Halogen	Melting point (°C)	Boiling point (°C)	Density (g/cm ³)	Appearance
chlorine	-101	-34	0.0032	green gas
bromine	-7	59	3.12	brown liquid
iodine	114	184	4.95	purple/black solid

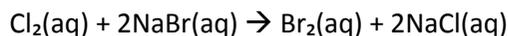
Test for chlorine: bleach litmus paper.

Group 1 + Group 7 → metal halide

Sodium + bromine → sodium bromine



Displacement reactions: when a more reactive element displaces a less reactive element – redox reaction as both oxidation and reduction are taking place at the same time. Chlorine is more reactive so can displace the bromine to react with sodium.



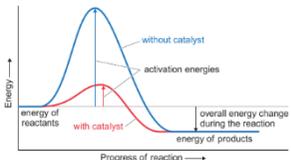
Chlorine + sodium bromide → bromine + sodium chloride

The bromine is reduced as it gains electrons going from its ion to its atom and chlorine is oxidised

Group 0 (Noble gases): Inert (unreactive) because they have a full outer shell, have a low density, colourless, poor conductors of heat and are non-flammable.

Noble gas	Melting point (°C)	Boiling point (°C)	Density (g/cm ³)
helium	-272	-269	0.00018
neon	-249	-246	0.0009
argon	-189	-186	0.0018
krypton	-157	-153	0.0038

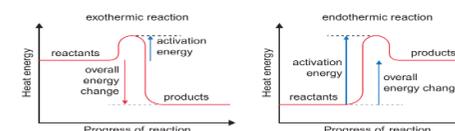
Rates of reaction: Reacting particles collide with the correct orientation and enough energy; then products are made.

Factor	Affect	Result
Increasing surface area: volume ratio	More reacting particles available to collide	Increased frequency of collisions
Increasing temperature	Reacting particles have more kinetic energy and move faster	Increased frequency of successful collisions
Increasing concentration	More reacting particles per unit volume	Increased frequency of collisions
Increasing pressure (gas reactions)	Reacting particles are closer together	Increased frequency of collisions
Use a catalyst	Lowers activation energy and provides alternate route for reaction	

Exothermic: Heat energy is given out when bonds are made. More heat energy is released in forming bonds in products than is required in breaking bonds e.g.: neutralisation and displacement.

Endothermic: Heat energy is taken in, bonds are broken. Less energy is released in forming bonds in the products than required in breaking bonds in the reaction.

Activation energy: The minimum amount of energy needed by colliding particles for a reaction to happen.



B The activation energy is the difference in energy between the reactants and the top of the 'hump'.

SP8-9 or CP7-

Energy: Something that is needed to be transferred to make things happen or change. It cannot be created or destroyed.

Energy transfers in a closed system – there is no net change to the total energy in the system.

Energy of a system can be changed – through work done by forces, in electrical equipment, in heating.

Work done (J) = force (N) x distance (m)

$$E = F \times d$$

Energy transferred (J) = work done (J)

Change in gravitational potential energy when an object is above the ground:

Gravitational potential energy (J) = mass (kg) x gravitational field strength (N/kg) x height (m)

$$GPE = m \times g \times h$$

Kinetic energy – the energy a moving object has: Kinetic energy (J) = $\frac{1}{2} \times \text{mass (kg)} \times \text{speed}^2$ (m/s)

$$KE = \frac{1}{2} \times m \times v^2$$

Energy can be lost (**dissipated**) meaning it is stored in less useful ways. Often energy is lost to surroundings by heating.

Power: The rate at which energy is transferred, measured in watts (W). 1 watt means 1 joule of work per second.

Power (w) = work done (J) / time (s)

$$P = E/t$$

Efficiency: The proportion of input energy that is transferred to a useful form. A more efficient machine wastes less energy.

Efficiency % = useful energy supplied to device / total energy supplied to device

Contact force: Between objects are touching e.g. Friction

Non-contact force: When objects act on each other at a distance, e.g. magnetism, gravitational potential energy.

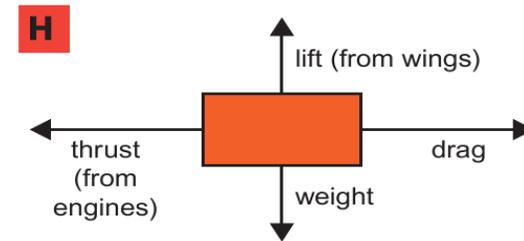
Action- reaction force: Pairs of forces on interacting forces

Vector: A quantity that shows both size and direction e.g. weight

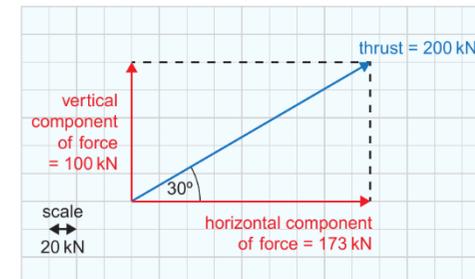
Scalar: A quantity showing size (magnitude) only e.g. mass

Friction: A force between 2 surfaces that resists motion and is always opposite to the direction of the moving object.

Reducing friction: Use a lubricant to reduce unwanted energy transfer.



A A free body force diagram for an aeroplane. The arrows represent force vectors. The direction of the arrow shows the direction of the force and the length of the arrow represents its size. The simplest aeroplane to sketch is a box!



- Draw a force arrow to scale at the correct angle.
- Draw a rectangle with the sides in the directions you are interested in (e.g. horizontal and vertical).
- The resolved forces are the sides of the rectangle.

D A scale diagram can be used to resolve the forces on an aeroplane.

Globalisation:

Globalisation is the process of places around the world becoming more connected.

Globalisation is driven by:

- Trade
- Culture
- Multinational companies
- Communication



Multinational Companies (MNCs):

MNC are companies which operate in multiple countries around the world, such as Nike. They often make their goods in NICs as they have a large, cheap workforce. Company HQ are usually still in HICs.



Advantages

- Lower unemployment rates in NIC
- Cheaper good for Europe and Asia
- Higher profits for MNC
- Improved infrastructure
- Multiplier effect

Disadvantages

- Few workers rights in NICs
- Long hours for workers
- If workers rights are introduced the MNC may move elsewhere

Newly Industrialised Countries (NICs):

NIC economies have rapidly grown, usually in part to having large populations at working age. NICs have policies to encourage investment in factories/ industry. Labour is much cheaper in NICs. Wages in Bangladesh were 95% lower than in Europe in 2015.



Development indicators:



Development indicators are economic and social statistics that are used to judge a country's level of development. They link as wealthier countries tend to have better health care and education.

- GNI (Gross National Income) and PPP (Purchasing Power Parity) are economic indicators. They give an idea of how much money people have on average in a country. There is a general divide between the rich north and the poorer south.
- Doctors per 1,000, percentage who read and write are social indicators. They are used to see if the wealth is being invested in a way which benefits others. They give an idea of what life is actually like.
- HDI (Human Development Index) is a mix of economic and social indicators including measures of wealth, education and health. It is expressed as a number between 0 and 1. The closer to one the number, the more developed the country.

Development Issues



Trade:

Trade can reinforce inequality. LICs often export raw materials which only have small profit margins. The global market means they must keep their prices low to stay competitive. HICs hold the power and can add taxes to certain products to deter LICs making them. This means LICs are stuck with low profit margins. Raw materials are very vulnerable to the weather- e.g. not enough rain may mean crops don't grow.



Fairtrade:

Fairtrade can help by ensuring fair, stable pay which is not affected by global market changes. They encourage long-term partnerships and have a community premium to support local projects e.g. schools.



AID:

Short term/ emergency aid is used to help after natural disasters and medical outbreaks. Can come from governments or by individuals through charities such as Oxfam. E.g. The Ebola outbreak in West Africa, received aid in the form of medical help and education about the disease.
Long term/ developmental aid regular payments to a country for development/ improve life. E.g. Japan → Middleshire, Malawi, COVAMS. Aiming to prevent soil erosion through afforestation. This improves relations between countries.



Key terms:

GNI: The average income in a country.

Manufacturing: making something

Multiplier effect: how one good thing in an area can have wider benefits

Outsourcing: when a company pay a factory they don't own to produce their goods

PPP: A way of comparing the average wealth of a country by taking the cost of living in those countries into account

Raw materials: materials that have not been changed

Subsidy: a payment to produce something to enable it to be sold more cheaply

Tariff: a tax put on certain products to make them more expensive

Elizabeth took the throne, aged 25, in **1558**. She ruled by the **divine right** (the belief that a monarch's right to rule came from God)

Elizabethan Government

Court	The monarchs key servants, advisors and friends.
Privy Council	A council of around 19 leading courtiers, advisors and government officials that met at least three times a week.
Parliament	Made up of the House of Lords and the House of Commons. Could only be called and dismissed by the monarch.

Secretary of State

The most important member of the Privy Council was the Secretary of State. They were Elizabeth's closest advisor. Elizabeth's most notable secretary of state was **Sir William Cecil, who held the position until 1573.**

Queen, Government and Religion 1558 - 69

Elizabeth's problems;

- **Legitimacy** - Committed Catholics did not accept Henry VIII's divorce as the Pope did not agree to it. They therefore **did not accept Elizabeth as an heir to the throne**, as according to them she was born out of wedlock.
- **Gender and Marriage** - Christianity taught that women should be under the rule of men, so a queen ruling in her own right (as **Queen Regnant**) was unusual. Elizabeth turned down a number of potential husbands including **Philip II of Spain (Her brother in law), King Eric of Sweden** and the French heir to the throne, the **Duke of Alencon**.
- **Money** - When Elizabeth took the throne in 1558 the Crown was **£300,000** in debt. Elizabeth knew that **taxes would be unpopular with the people**. She also knew that parliament would have to agree to taxes and might **make demands on her in return**.
- **Foreign relations** - **France and Scotland** were enemies of England. However they were friends with each other, known as the **Auld Alliance**. This friendship made them an even bigger threat to Elizabeth. As **Spain and France** were both **Catholic** (and England under Elizabeth was officially Protestant) Elizabeth was worried they would unite against her.

Key Terms:

Monarch	A King or Queen.
Extraordinary Taxation	Occasional, additional taxation to pay for unexpected expenses, especially war.
Crown	Crown with a capital 'C' refers to the monarch and their government.
Divine Right	Belief that the monarchs right to rule came from God.
Succession	The issue of who was going to be passed the throne after the existing monarch.
Catholic (or Roman Catholic)	The form on Christianity followed through Western Europe until the 16th C. The pope was the head of the Catholic Church.
Protestant	Believed there should be no pope.
Puritan	An extreme type of Protestant.
Ecclesiastical	Things to do with the Church.
Clergy	Religious leaders (Bishops/Priests)

20 Key Words – Global Issues

1. la campagne - campaign
2. le centre de recyclage – *recycling centre*
3. le chômage – *unemployment*
4. le déboisement - *deforestation*
5. les déchets - *rubbish*
6. l'effet de serre - *greenhouse effect*
7. l'énergie - *energy*
8. l'environnement – *environment*
9. la guerre - *war*
10. l'inondation – *flood*
11. le monde - *world*
12. mondial - *worldwide*
13. le niveau - *level*
14. la paix - *peace*
15. la pauvreté – *poverty*
16. la piste cyclable – *cycle path*
17. le réchauffement - *warming*
18. le sans-abri - *homeless*
19. le souci - *worry, concern*
20. la Terre – *Earth*



**French
Year 11 Autumn**

Si + present tense + future tense

'If' phrases to talk about possibilities in the future:
Si tu prends une douche, tu économiseras de l'eau – *If you shower, you will save water.*
Si je réussis à mes examens, **je vais aller** à la fac – *If I pass my exams, I'm going to go to university.*

Perfect tense: single completed actions in the past

verbs with AVOIR	verbs with ETRE
j'ai recyclé	je suis allé(e)
tu as recyclé	tu es allé(e)
il/elle a recyclé	il est allé/elle est allée
nous avons recyclé	nous sommes allé(e)s
vous avez recyclé	vous êtes allé(e)s
ils ont recyclé	ils sont allés/elles sont allées

* ER verbs → é, IR verbs → i, RE verbs → u*



20 Key Words – Education

1. bien équipé - *well-equipped*
2. le collège – *(secondary) school*
3. le cours – *lesson*
4. les devoirs – *homework*
5. le directeur – *head teacher*
6. le droit - *right*
7. l'école - *school*
8. l'élève – *pupil*
9. l'emploi de temps - *timetable*
10. l'EPS – *PE*
11. facile - *easy*
11. le français – *French*
13. la journée scolaire - *school day*
14. la langue – *language*
15. la matière - *subject*
16. la note - *mark*
17. la pression - *pressure*
18. la règle - *rule*
19. le résultat - *result*
20. la salle de classe - *classroom*



10 Key Verbs – Global Issues

- | | |
|--------------------------------------|---------------------------------|
| 1. augmenter – <i>to increase</i> | 6. ramasser – <i>to pick up</i> |
| 2. disparaître – <i>to disappear</i> | 7. recycler – <i>to recycle</i> |
| 3. gaspiller – <i>to waste</i> | 8. sauver - <i>to save</i> |
| 4. jeter – <i>to throw (away)</i> | 9. tuer – <i>to kill</i> |
| 5. protéger – <i>to protect</i> | 10. utiliser – <i>to use</i> |

Pluperfect Tense: what **had** happened or someone **had** done:

Imperfect of avoir/être + past participle

I	j' avais / j' étais	joué / allé(e)
You	tu av ais	fini / sorti(e)
He/she	il/elle av ait	+ vendu
We	nous av ions	etc.
You	vous av iez	
They	ils/elles av aient	

e.g. J'avais recyclé = *I had recycled* J'étais allé au centre de recyclage = *I had gone to the recycling centre*

10 Key Verbs – Education

- | | |
|--------------------------------|------------------------------------|
| 1. apprendre – <i>to learn</i> | 6. oublier - <i>to forget</i> |
| 2. demander - <i>to ask</i> | 7. passer - <i>to sit (exam)</i> |
| 3. échouer - <i>to fail</i> | 8. porter - <i>to wear</i> |
| 4. enseigner– <i>to teach</i> | 9. réussir – <i>to pass (exam)</i> |
| 5. lire – <i>to read</i> | 10. savoir - <i>to know</i> |

Common phrases + que + subjunctive

avant que - *before*
 bien que - *although*
 pour que - *so that*
 il faut que - *you must / it's necessary that*
 il est possible que - *it's possible that*
 e.g. **Il faut qu'on fasse** un effort **pour qu'on puisse** aborder le problème - **It's necessary that we make an effort so that we can tackle the problem.**

Vouloir, pouvoir, devoir, il est possible de (+ infinitive)

What you want, can or must happen, or is possible e.g.

Il est possible de réduire la pollution – **It's possible to reduce** pollution

On peut aider les SDF – **You can help** the homeless

Il doit voir le directeur – **He must see** the head

Je veux travailler dure - **I want to work hard**

Expressing opinions

Je pense que - *I think that*

Je crois que - *I believe that*

Il me paraît que - *It seems to me that*

À mon avis - *In my opinion*

Dans mon opinion - *In my opinion*



20 Key Words – Global Issues

1. la basura – *rubbish*
2. el cambio climático – *climate change*
3. la culpa – *blame, fault, guilt*
4. los derechos – *rights*
5. el desarrollo – *development*
6. el extranjero – *foreigner*
7. la falta – *lack*
8. el fuego – *fire*
9. el gobierno – *government*
10. grave – *serious*
11. la ley – *law*
12. la libertad – *liberty, freedom*
13. el medio ambiente – *the environment*
14. mundial – *global, world-wide*
15. el mundo – *world*
16. la naturaleza – *nature*
17. los necesitados – *needy people*
18. pobre – *poor*
19. la Tierra – *Earth*
20. la ventaja – *advantage*



Spanish Year 11 Autumn

Si + present tense + future tense

'If' phrases to talk about possibilities in the future:

Si te duchas, ahorrarás agua – **If you shower, you will save** water.
Si apruebo mis exámenes, **voy a ir** a la universidad – **If I pass** my exams, **I'm going to go** to university.

Preterite

Single completed actions in the past:

-AR verbs	-ER + -IR verbs
<u>AYUDAR</u>	<u>PROTEGER</u>
ayud é	proteg í
ayud aste	proteg iste
ayud ó	proteg ió
ayud amos	proteg imos
ayud asteis	proteg isteis
ayud aron	proteg ieron



20 Key Words – Education

1. el alemán – *German*
2. el alumno – *pupil*
3. el arte dramático – *Drama*
4. el campo de deportes – *sports field*
5. el comportamiento – *behaviour*
6. las ciencias – *Sciences*
7. el director – *head teacher*
8. duro – *hard*
9. la escuela – *school*
10. el español – *Spanish*
11. el éxito – *success*
12. fácil – *easy*
13. el francés – *French*
14. el idioma – *language*
15. el inglés – *English*
16. la lengua – *language*
17. el nivel – *level*
18. la nota – *mark*
19. la prueba – *test, proof*
20. un viaje escolar – *a school trip*



10 Key Verbs – Global Issues

- | | |
|--------------------------------------|---------------------------------|
| 1. aumentar – <i>to increase</i> | 6. recoger – <i>to collect</i> |
| 2. desaparecer – <i>to disappear</i> | 7. reutilizar – <i>to reuse</i> |
| 3. faltar – <i>to be missing</i> | 8. salvar – <i>to save</i> |
| 4. matar – <i>to kill</i> | 9. tirar – <i>to throw away</i> |
| 5. proteger – <i>to protect</i> | 10. utilizar – <i>to use</i> |

Verb of emotion + que + subjunctive

me encanta - *I love*
 me preocupa - *It worries me*
 me molesta - *It bothers me*
 me irrita - *It annoys me*
 me fastidia - *It annoys me*



e.g Me preocupa que haya mucha contaminación - *It worries me that there is a lot of pollution.*

Pluperfect Tense

What **had** happened or someone **had** done:

Imperfect of haber + past participle

I	hab ía		
You	hab ías		hab lado
He/she	hab ía	+	com ido
We	hab íamos		viv ido
You	hab íais		
They	hab ían		

e.g. Paco **había decidido** usar su bicicleta = Paco **had decided** to use his bike.

Se debe, se puede, hay que, tener que (+ infinitive)

What you must, can or have to do e.g.

Se debe ahorrar energía – **You must** save energy
Se puede reciclar plástico – **You can** recycle plastic
Hay que llevar uniforme – **You have to** wear uniform
Tengo que hacer mis deberes - *I have to do* my homework

10 Key Verbs – Education

- | | |
|------------------------------------|------------------------------------|
| 1. apoyar - <i>to support</i> | 6. entender – <i>to understand</i> |
| 2. aprender – <i>to learn</i> | 7. enseñar – <i>to teach</i> |
| 3. aprobar – <i>to pass (exam)</i> | 8. faltar - <i>to be absent</i> |
| 4. ayudar – <i>to help</i> | 9. olvidar – <i>to forget</i> |
| 5. contestar – <i>to answer</i> | 10. repasar – <i>to revise</i> |

Expressing opinions

Pienso que - *I think that*
 Creo que - *I believe that*
 Me parece que - *It seems to me that*
 En mi opinión - *In my opinion*
 A mi modo de ver - *In my opinion*

Theme F- Religion, Human rights and Social justice (Society treating people fairly)

1. Key Christian beliefs

You cannot love both God and money

We're all made in the image of God (So we shouldn't pre-judge people- prejudice)



Only God can take life (Life is sacred- sanctity)

Love your neighbour (Mark 12:31)

We're all one in Christ

Follow the example of Jesus

2. Key Buddhist beliefs

"Give even if you only have a little" (The Buddha)



Keep the 5 Moral Precepts eg do not harm life

Show karuna (compassion)

Produce good karma

Avoid Greed, Hatred and Ignorance (the)

Show Metta (loving kindness)

22 RE

Evidence of possible sexism in religion

Buddhist male monks seen as superior to Buddhist female monks.



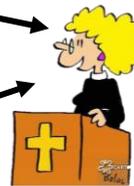
God is portrayed as male in the Bible. Catholic and Orthodox churches do not allow female leadership.

Bible verse "Women should be silent in church".

4. Defence against accusation of sexism in religion

Jesus promoted women's rights

The Church of England employ women bishops



The Buddha ordained nuns (made them leaders/ministers) even though he was reluctant to begin with

Bible verses "We're all one in Christ, there is neither male or female".

Evidence of possible homophobia in religion



→ Many Christians think that God intended heterosexual relationships that lead to having children (Genesis 1).

→ Many Christians believe homosexual relationships are sinful.

Defence against accusations of homophobia in religion



→ Many Christians think we should love our gay neighbour, and some think homosexual relationships are acceptable.

→ Buddhists want to show metta to everyone, regardless of sexual orientation.

6. Support of religious freedom



→ Our government gives freedom of religious expression.

→ "Everyone has the right to freedom of thought, conscience and religion" (U.N.)

→ "Live at peace with everyone" (Romans 12)

→ Buddhist don't try to convert others.

Evidence of lack of religious freedom

→ Catholics fighting protestants in the past in Northern Ireland.

→ Christians in particular are persecuted for their faith.

→ Some Christians would see other religions as 'idols' (false gods).

→ Muslims have been persecuted by Buddhists in Myanmar and many have been killed or become refugees



7. Key Human rights- Right to... Life; freedom from torture; freedom from slavery; equality; free movement; peaceful assembly; education; rest and leisure; shelter; free speech.
Human responsibilities- (To respect the rights of others)

8. Racism

Religion the Solution

- MLK- Civil rights movement
- Bishop Desmond Tutu (fight against apartheid in S.Africa)
- Jesus- parable of the good Samaritan

Religion part of the problem

- Few black leaders in Church of England
- Racist churches in 20th century South Africa
- Racist Buddhists in Myanmar

Negative discrimination- Acting against someone because they are different eg black.

Positive discrimination- Acting for someone because they are different eg disabled parking spaces.

9. Religion and money

Rich people should:

- Be a good steward
- Go the middle way
- Avoid greed (3 poisons)
- Avoid attachment to money
- Love their poor neighbour
- Not exploit the poor

Poor people should:

- Not be exploited (eg not have to pay huge loan interests)
- Be responsible eg look for work, not gamble
- 'Give even if you can only give a little'
- Not be jealous of others



10. Key words

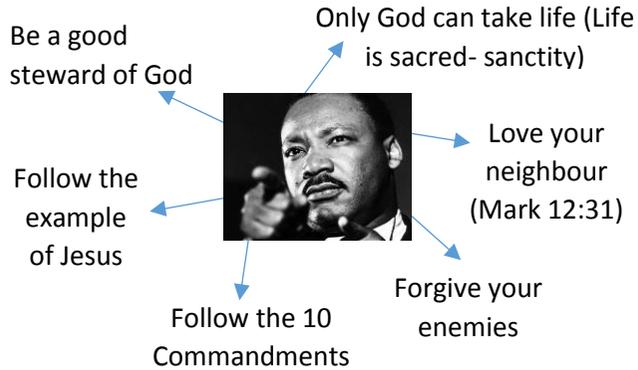
What do the following mean?

Sanctity; Prejudice; Karuna; Metta; Ordained; Heterosexual; Homosexual; Orientation; Persecuted; Refugee; Negative/Positive Discrimination; Stewardship; Exploit; Equality; Social Justice.

11. Key Questions

- Explain why Christians should be against all kinds of prejudice/discrimination eg against disabled people.
- Explain why Buddhists should also be against all kinds of prejudice/ discrimination.
- Religious people always support women; gay people; other religious people; black people. Do you agree?
- People should be able to do what they like with their money? Do you agree? (Give 2 detailed points of view)

2. Key Christian beliefs



Aims of Punishment

RETRIBUTION- Vengeance (revenge) for wrong doing. Justice for the victim (fairness). 

DETERRENCE- Sending out a warning to others. Deterring them from committing crime. Protecting the public.

REFORMATION- Reforming the criminal. Helping them change for good. 

REPARATION- Repairing the damage you have done for example through community service.

5. Types of punishment

Arguments **FOR** prison...

- It protects the public from danger
- It teaches criminals a lesson
- It gives offenders counselling
- It gives education opportunities
- Prisoners can find faith

Arguments **AGAINST** prison...

- Bullying in prison leads to suicide
- Offenders learn to become even worse than before they went in
- Criminals become addicted to drugs
- It doesn't work, 70% reoffend
- Prisons are overcrowded
- The prisoner's family suffers
- Each prisoner costs the tax payer 40k plus
- Many prisons are very old

8. Arguments **FOR** corporal punishment *(Giving prisoners physical pain)*

- ❖ It provides retribution to violent offenders and justice for the victim
- ❖ It acts as a deterrent (a warning)
- ❖ It may help prisoners to reform
- ❖ It can be used instead of expensive prison time

Arguments **AGAINST** corporal punishment

- ❖ It is inhumane to use violence/torture
- ❖ It makes society as bad as the criminal
- ❖ It might leave criminals wanting revenge



9. Arguments **FOR** capital punishment *(The death penalty)*

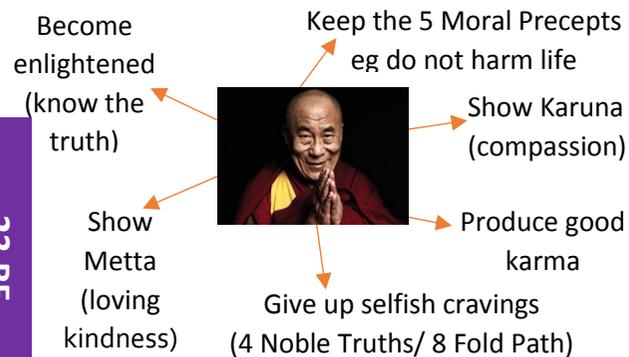
- It provides retribution and justice for the victims
- The murderer will be dead, so the public is safe
- It can save prisons a life time of expense
- Utilitarian argument. Capital punishment may provide the maximum happiness for the greatest number of people

Arguments **AGAINST** the Death Penalty

- It is inhumane to kill someone
- The executioners become the murderer
- Innocent people are sometimes executed
- There is little evidence that it is a deterrent



3. Key Buddhist beliefs



3. Bad reasons for breaking the law

Greed	Hatred	Jealousy	Apathy (boredom)	Insecurity
Upbringing	Lust	Revenge	Vanity	Selfishness
Intolerance	Ignorance	Peer Pressure	Addiction	?

Other reasons for breaking the law...

- Fighting for justice
- Obeying God 'A higher law'
- Extreme poverty
- Mercy killing
- The effects of mental illness



11. Key words *What do the following mean?*

Sanctity; Steward; Karuna; Metta; Enlightenment; Apathy; Retribution; Vengeance; Justice; Deterrence; Reformation; Reparation; Corporal Punishment; Capital punishment; Inhumane; Utilitarian.

12. Key Questions

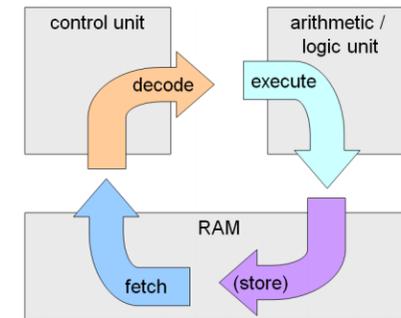
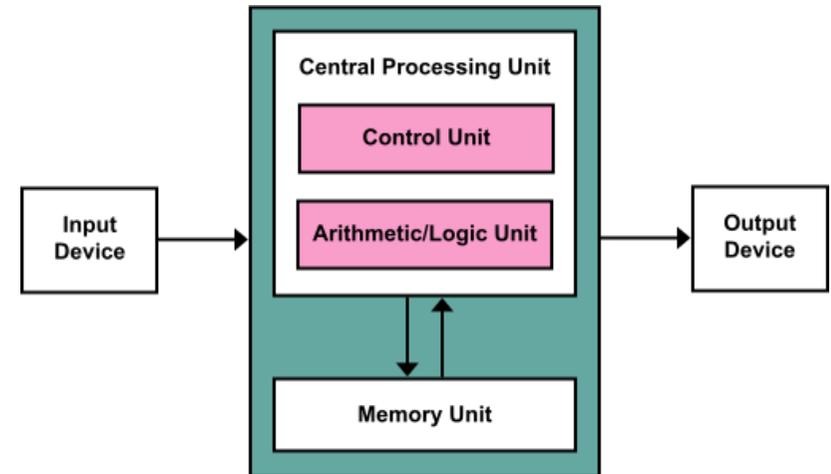
- e) Name 5 key Christian and 5 key Buddhist beliefs
- f) Using the Christian beliefs, what do you think Christian views might be on: breaking the law; prisons; corporal punishment and capital punishment?
- g) Using the Buddhist beliefs, what do you think Buddhist views might be on: breaking the law; prisons; corporal punishment and capital punishment?
- h) What are the 4 aims of punishment?
- i) Give 3 arguments for and against prison.
- j) Give 3 arguments for and against corporal punishment.
- k) Give 3 arguments for and against capital punishment.

GCSE OCR Computer Science 1.1 System Architecture

Key Vocabulary

CPU	Central Processing Unit
MAR	Memory Address Register: which holds memory addresses (locations) for data and instructions which the CPU needs
MDR	Memory Data Register
Program Counter	The address (location) of the instruction
Accumulator	Holds values for the ALU
ALU	Arithmetic Logic Unit: It is the part of the CPU which does all the calculations
CU	Control Unit: Controls the flow of data within the CPU
Cache	Stores frequently used instructions & data, that can be accessed faster than RAM.
Clock Speed	The number of processes a second the CPU can perform
Number of Cores	The number of processors in a CPU
Embedded System	A computer system with a dedicated function
General Purpose Computer	A computer system which is not embedded system. I.e A laptop

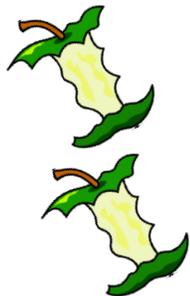
24 COMPUTING



More than one core?

When describing the cores of a Computer System; you need to talk about

1. The notion of the processors acting **at the same time**
2. More Cores means more **parallel processing**
3. **State exactly how many cores** are there, i.e. a dual core has 2 cores a quad core has 4 cores
4. Each core can **work independently** of each other



Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks.

Example: Is a Smart watch an embedded system? **2 Marks**
 Yes it is because it is not a general purpose computer and it has a dedicated function which is **to tell the time.**

GCSE OCR Computer Science 1.2 Memory

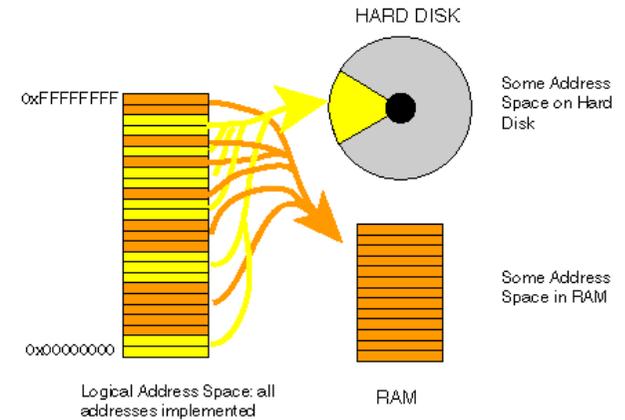
Key Vocabulary

Volatile	Data is lost when there is no power to the storage
RAM	Random Access Memory—It stores currently running programs and a small piece of the operating system. Can store data
ROM	Read only memory— Holds the BIOS which allows the computer to boot up. It cannot be edited. Can store data.
BIOS	Basic input output system—Another name for the boot up sequence program.
Virtual Memory	Memory which is used when RAM is full. This is taken from secondary storage.
Disk Thrashing	Overusing the hard drive with virtual memory—which over time damages the disk.
Flash Memory (non-volatile)	Memory which retains data in the absence of power. USB drive.

25 COMPUTING



The CPU will first search for data in the Cache memory and then move further away until it finds what it is looking for. The further away from the CPU, the longer data will take to transfer.



Ram VS Rom	
RAM	ROM
Volatile memory	Non-volatile memory
Stores data	Stores data
Stores running programs & part of the operating system	Used to store the BIOS and bootstrap
Memory can be written to or read from	Memory can only be read from and not written to



Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks.

Example: How can John increase the performance of his computer? (3)
 Answer: They could increase the number of cores, as this will increase parallel processing. He could also increase the RAM as this will allow more temporary storage for running programs and allow the processor more time to process data, and will reduce disk thrashing.



Flash Memory

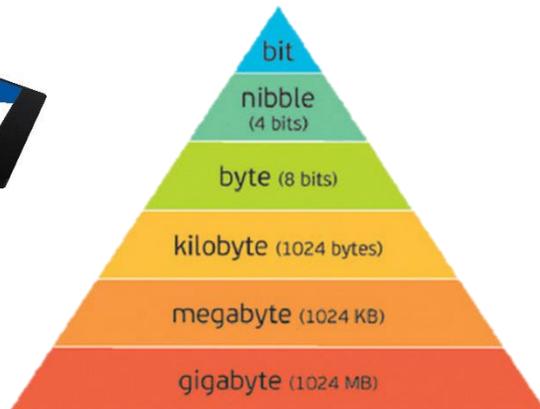
USB is not accepted—it has to be USB drive; USB pen drive; Flash drive.

GCSE OCR Computer Science 1.3 Storage

Key Vocabulary	
Secondary Storage	Storage which is not directly connected to the motherboard. Non—volatile. Needed to store persistent data.
Primary Storage	Storage which is connected to the motherboard.
Magnetic Storage	Storage which is cheap per MB; not very durable as it has moving parts, not very portable. A hard drive.
Optical Storage	Storage which is cheap per MB, not very durable as it can be damaged by scratches, is portable. A CD
Solid State Storage	Storage which is expensive per MB, very durable as they are shock resistant and have no moving parts, very portable. A USB drive, or a solid state drive.

26 COMPUTING

Device	Capacity	Speed	Portability	Durability	Reliability	Cost
Magnetic	High > 1TB	Medium data access	Not very; it is not easy to move a hard drive	Not very durable, it has moving parts and is easy to break	Mid reliability due to moving parts being easy to break.	Cheap per MB
Optical	Low <1GB	Slow data access	Very portable. It's a disk	Not very, it is easy to scratch and snap	Mid reliability as it is fairly robust but can be damaged and prevents reading data	Very cheap per MB
Solid State	Medium <1TB	Fast data access	Very, solid state drives have no moving parts and are fairly small	Very durable, as they are just microchips on a board.	High—although they do have a limited number of read and writes	Very expensive per MB
Cloud Storage	Within reason unlimited	Dependant on network access speed	Very portable, as long as you have internet access	Very durable, can be accessed on any device with internet access	It is not possible to break cloud storage	Mid range expensive. Depends on how much space you have.



Have you applied?

Definitions **must** be applied to the scenario otherwise you will receive 0 marks. **Here the photos have been mentioned.**

Example: John is transferring camera files from one computer to another. Discuss the advantages and disadvantages of using a flash drive.
 Answer: A flash drive has high transfer speeds, and is very robust however has limited storage when compared to a hard drive, or cloud storage. So to move the photos I would recommend cloud storage.

Venues

- Small and medium sized venues
- Large multi-use venues
- Health and safety
 - Risk assessment – the process you go through to ensure an event is safe.
 - Capacity – maximum number of audience members
 - Fire precautions
 - Policies and procedures – that all venues should have
- Performance roles

Production and Promotion:

- Record labels
 - Major – sponsored and more money.
 - Independent – going it alone and on a budget.
- Music Publishing – anything involving the distribution of music to an audience.
- Promoting (marketing)
- Broadcasting – TV, Radio, Internet
- Marketing and distribution

Commonly Confused Job Roles:

Producer – have artistic overview of a project

Promoter – is responsible for advertising of a product.

Mastering Engineer – Puts the finishing touches to a recording once it is all finished.

Manager – NEVER write this without clarifying the type of manager (tour manager, venue manager, band manager etc.)

Music Unit 1

Unions

- Musicians Union (MU) – for performers, instrumental teachers and composers.
- Equity – For actors, dancers, and choreographers.
- BECTU (Broadcasting Entertainment Cinematograph and Theatre Union). – for media and production roles.
- Monitor employment conditions
- Give advice on employment and contracts
- Support in relation to fair working conditions
- Handling of disputes

Employment:

Freelance – working for yourself.

Contracted – Having a boss, a monthly salary, and terms to work to.

Short Term – a short amount of time (one gig or one day)

Long Term – months or years.

Tax / National Insurance – the amounts you have to pay to the government regardless of whether you are freelance or contracted.

Services, Companies, and Agencies

- Royalty Collection Agencies
 - Performing Rights Society (PRS) – collects for composers
 - Phonographic Performance Limited (PPL) – collects for performers
- Artist Representation
 - Management – deals with finances, bookings, organisation.
 - Agent – books gigs.
 - Public Relations (PR) – marketing.
 - Stylist
- Hire companies – for equipment.

Relationships within the industry:

- How promoters match acts to venue, e.g. location and type of venue, size and scale of performance area, facilities, technical equipment/support available, audience capacity, type and intention of performance, timing and availability, financial considerations
- The importance of effective communication between those working in the industry
- How promoters and musicians evaluate the advantages and disadvantages of hiring and buying equipment
- How promoters and musicians find and select suppliers and installers of equipment
- How trade bodies such as the Music Producers Guild (MPG), the Association of Professional Recording Services (APRS), PRS for Music and PLASA support their members and their industries
- How promoters and musicians find and select transport companies for touring
- How promoters secure funding for and market events.

Instrumental and Vocal Techniques

- Accuracy of pitch/intonation (*that you are playing in tune*)
- Rhythm and timing (*that you can play the correct patterns of notes in time with others*)
- Technical exercises to improve technique relevant to the voice type or instrument in question, e.g. scales and arpeggios, lip slurs and paradiddles (*these can be easily searched for on Youtube*).
- Expression (*musically expressing a story*) and dynamics (*volumes*)
- Phrasing (*like musical sentences and how well you express them*)
- Range (*from lowest to highest note*)
- Sight reading/singing
- Improvisation (*making a part up on the spot*)
- Breath control
- Vibrato (*when a note wobbles*)
- Confidence
- Tuning (*of your instrument*)
- Following an accompaniment (*following a backing track of the rest of the band*)
- Learning repertoire (*how well you learn the piece you are working on*)
- Musical interaction (*looking at and responding to others*)
- Stage presence (*performing bit!*)

Music Unit 5



Personal management skills

- Independent practice (*this is the practice you do outside of the lesson*)
- Attendance
- Time management (*adhering to rehearsal schedules*)
- Readiness to work (*including bringing correct equipment, if necessary*)
- Listening to instruction/direction
- Observing safe working practices
- Willingness to try things out
- Concentration and focus within the tasks
- Appropriate interaction with others – trust and cooperation
- Rehearsal discipline
- Showing sensitivity towards others

Interpretive skills

- Emphasis (*stressing a particular part*)
- Accurate interpretation and reproduction of style
- Awareness and appreciation of accompaniment
- Physical expression
- Communication in performance – with other musicians and the audience
- Use of timing and rhythm
- Intonation (*this is overall tuning*)
- Projection (*this is as much about noise as projecting an image on stage*)
- Focus (*commitment to the performance*)
- Musicality/sensitivity
- Stage presence.

Rehearsal skills

- Warm-ups
- Physical preparation, e.g. relaxation and breathing techniques and technical exercises (as appropriate)
- Learning repertoire
- Rehearsing with accompanist/band (as appropriate)
- Musical interaction with other performers (as appropriate)
- Receiving and giving constructive and positive feedback.



Music Unit 7

Equipment

- Computer
- Mixing desk
- Microphones suitable for a range of instruments and voices
- Auxiliary equipment, e.g. cables, stands, DI boxes
- Audio interfaces (*A piece of hardware that connects multiple microphones and instruments to a computer. They convert audio waves into digital files that can be recorded in a various qualities and bit rates electronically.*)
- Monitors and amplifiers (*the speakers and things that make it louder*)
- Headphones
- The recording environment. (*studio*)
- Phantom Power (A power source for condenser microphones, it's voltage is 48v. Phantom Power can be applied to mics through XLR cables and the option to add it is normally found on a respective channel on mixers, interfaces and DI boxes.)

Session considerations

- Scheduling
- Availability of equipment that may need to be hired
- Availability of musicians who may need to be hired (session musicians)
- Technical resources, cables, mics and stands
- Space
- Line of sight if a conductor is being used
- Headphones and monitoring
- Noise, both in and outside the studio
- Health and safety considerations
 - Setting up a health and safety routine/checklist
 - Briefing session musicians and guests as to the rules and regulations
 - Being aware of fire and access/exit procedures
 - Setting up
 - Monitoring levels
 - Manual handling, electrical safety

Mixing the Multi-track

- Audio editing, e.g. trimming, take selection
- Levels
- Stereo field - in regards to speakers or monitors means more than one from one source. In regards to electronic instruments, a stereo feed means the devices output has two channels of audio which represent the sound of the real instrument it's in the stereo field more effectively. In mixing it could be how you pan each channel to balance them and to place them in a realistic position.
- EQ (*used in the mixing stage to add or take away frequencies, it is used to balance mixes*)
- Effects, e.g. reverb, compression
- Bouncing down to stereo.
- Phasing (*Phasing is the result of two or more signals being out of time with each other. The resultant sound is often flat or dull due to frequencies being eliminated.*)

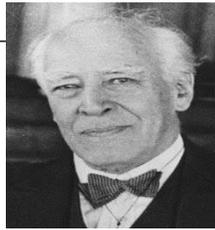
Audio Recording

- Audio capture
 - Microphone types, qualities and uses, e.g. condenser, dynamic, mics for specific uses such as bass drum mic, vocal mics, use of phantom power etc
 - Condenser mic - Requires power from a battery or an external source (phantom power) to turn acoustic energy into an electronic signal, the results is more detailed. Condensers are normally more delicate.
 - Dynamic mic - Dynamic Microphones do not need external power, they generate an electronic signal with an internal electromagnet. Dynamic microphones are normally a lot more robust and are typically used for close micing and/or live performances.
 - Microphone placement
 - DI (*DI stands for Direct Injection and it is used to connect instruments **not** microphones to a mixing console. Instruments have varying signal strengths and a DI box is used to balance the level.)*)
 - Line and mic levels
- Auxiliary equipment
 - Mic stands and leads
 - Pop shields
 - Audio interface
- Equipment storage and handling
- Safe procedures
- Computer operation
- Audio capture process and procedures
- Record level, distortion, noise
 - Routing
 - Monitoring
 - Troubleshooting
 - Project management, e.g. file management, backing up, takes
 - Session management, e.g. time management, organisation

Konstantin Stanislavski

1863-1938

Theatre Practitioner



Co-founder of the Moscow Art Theatre.

Created a **system** of preparation and rehearsal that allowed actors to perform in a **naturalistic** style.

He was interested in creating emotion on stage that seemed real.

Components of the system

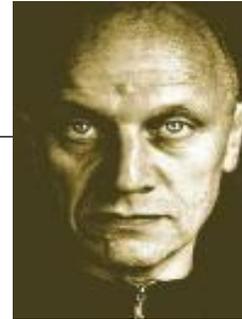
- Emotion memory: When an actor tries to remember a moment in their life when they felt something and recreate this moment as their character.
- Units and objectives. Exploring a character through their various motivations.
- Super objective: The main thing a character hopes to achieve.
- Given circumstances: All the things we know about the character and their situation from the text
- Tempo-rhythm: The inner emotion of a character represented by a rhythm.
- Through line of action: Always knowing what your character was doing before they enter the stage.
- Famous for directing Chekov's plays such as: *The Cherry Orchard*, *Uncle Vanya* and *Three Sisters*.
- Wrote three books: *Building a Character*, *An Actor prepares* and *my Life in Art*

Btec: Performing Arts – Acting
Component 1 - Exploring the Performing Arts

Steven Berkoff

Born in London in 1937

Playwright, Director, Actor



- Theatrical style: Total Theatre, Physical theatre. Berkoff's style of performance is grotesque and vulgar but at the same time poetic.
- It has the intention of disturbing its audience and making them feel uncomfortable.
- Every line must have a choreographed movement that adds to the mood of the performance.
- He mixes exaggerated mime and exaggerated facial expressions with heightened language.
- He regularly uses repetition of Physical Motifs to show the essence of a character.
- Performances regularly use an ensemble cast and actors can be used as part of the set or performing movements in the background.
- Characters regularly directly address the audience, breaking the fourth wall.
- Mixes 'Shakespearean' style rhyming couplets with Cockney slang and swearing.
- Famous productions: *Metamorphosis*, *The Trial*, *East, West*, *Sink the Belgrano* and *Decadence*.
- Has also been a Bond villain!

John Godber

Born in Yorkshire in 1956

Playwright



His theatrical style non-naturalistic and influenced by Bertold Brecht and Shakespeare.

- Fast-paced action, short scenes, minimal props and staging.
- John Godber has an eclectic dramatic style as he combines influences from his own experiences as a teacher and from popular TV entertainment.
- Easily identifiable and familiar working-class perspective of characters, locations and situations.
- His works often explore the conflict between aspirations and the limited opportunities for the characters.
- Each play is based around performers who multi-role.
- He uses a wide range of social stereotypes who have typical language and a set physical manner.
- Famous Plays: *Bouncers*, *Shakers*, *Teachers* and *Up 'n' Under*

Common Drama Devising Techniques:

Improvisation – where you devise drama on the spot based upon a stimulus.

Still Image – a frozen portrait.

Thought Tracking – Characters speak aloud from a still image.

Hot seating – Questioning an actor who is improvising answers in character.

Marking the moment – Using a particular style or difference to make a significant moment stand out.

Cross-cutting – 2 or more scenes that are scheduled for the same time happening on stage at once but alternating which one is 'alive'.

Flash back / Flash forward – A moment in which you show what happened in the past or the future.

Montage – A sequence of images, or short sections, showing progression over time. Usually to music.

Movement sequence – a pattern of movements repeated with no speech.

Mime – Acting without speaking in an exaggerated way.

Soundscape – Using your mouths and bodies to create a wall of sound to represent a setting or atmosphere.

Story telling – using various states of narration, direct address, tones of voice, volumes, pacing etc. to tell a story.

BTEC Performing Arts - Drama

Component 3

Performance Skills:

Facial expressions – using your face to convey emotion.

Gesture – using your body to help emphasise speech and emotion.

Posture – the way you hold your body to convey character.

Levels – the different heights you use to show emotion, power, or authority.

Proxemics – the spacing between characters to show the relationship between them.

Positioning – the placing of characters on stage to show relationships, power, and emotion.

Projection – how well you project your character to the audience. OR. How loudly you speak.

Volume – the loudness of your voice.

Pace – How quickly you move when conveying a character.

Tone – The way you use your voice to convey emotion. For example, angry or happy.

Pitch – how high or low you use your voice.

Pause – the use of pauses in speech and movement.

Types of Structure:

Linear/Chronological Structure – this is a structure that follows events in the order that they happen.

Non-linear – This is a structure that chops and changes between times, locations, and sometimes stories.

Useful vocabulary and tips:

You only have 600 words to write each section of your log so you need to be succinct. Try using these phrases:

'about' – instead of 'in terms of'.

'because/since' – instead of 'the fact that'

'to' – instead of 'in order to'

'importantly' – instead of 'it is important that'

- Don't go into detail about your plot.
- Keep it about how you have met the brief.
- Try to keep adjectives to an essential minimum.
- Remember to discuss ideas you rejected as well as ones you went with.
- Remember your target audience and purpose.
- Prepare your notes well before you enter the assessment.

Btec: Performing Arts – Acting

Component 2 - Developing Skills and Techniques in the Performing Arts

Acting Skills Physical:

- **Gesture:** Using your body (usually arms and hands) to communicate.
- **Posture:** the position of your upper body
- **Stance:** how you stand
- **Gait:** The way in which your character walks
- **Facial Expression:** Showing your character's emotions and thoughts using your face.
- **Body Language:** Using your body to communicate subtext to an audience
- **Proxemics:** spacing on stage. Where you are can communicate a lot to your audience

Mobile Phone Show by Jim Cartwright is a play that explores our relationship with mobile phones through the stories of a number of different characters.

KEY FEATURES:

- It uses an **Ensemble** cast, with no stars of the show every actor contributes.
- **Multirole acting** means that all actors will have to switch quickly from one role to another.
- **Gestus:** A way of acting that immediately shows the essence of the character including their attitude and position in society.
- The play is **Episodic** this means the scenes are only linked together by theme rather than following the same characters through a story.
- The play makes a comment on society and encourages the audience to think about something that they may take for granted.

General Rehearsal and development process:

- **Casting:** Deciding who has what lines
- **Read Through:** Familiarise yourself with the script and your lines
- **Blocking:** Deciding where are positioned on stage and when they move
- **Line learning:** It is important to learn lines early on to focus on the physical and vocal skills

Many of the key features of this play are similar to Brecht's Epic Theatre so you need to be aware of some of Brecht's rehearsal techniques that can help you develop the style of the performance.

- Putting the text into third person. As you act out a scene, describe what is happening including saying 'he said' or 'she said' after every line.
- Rehearsing a scene in silence: once you have blocked a scene and practiced it with the lines, act out the same scene with no words, focusing on refining your physical skills.
- Reporting the story, imagine you had just witnessed the scene you are rehearsing. How would you explain it to someone who had never seen it?
- Developing the Gestus for a character: Think of how your physical skills can be used to show your character's position in society and function in the story.

Acting Skills: Vocal

Tone: The emotional quality of your voice

Pitch: Whether your voice is high or low

Pace: The speed and rhythm that you talk at.

Pause: Deliberate gap in speech.

Volume: How loudly or quietly you speak.

Projection: Making sure your voice can be heard without straining it.

Emphasis: Making certain words stand out from the others.

Accent: A pattern of speech that can determine where your character is from and their social class.

Clarity: Ensuring you are clear and your audience can understand you.

Unit 2 Nutrition, Menu Planning, Cooking Dishes

Nutrients – Natural chemical in food that are essential for body growth, function and health

Macro nutrients – nutrients needed in larger amount (protein, carbohydrates, fat)

Micro nutrients – required in smaller amounts (vitamins, minerals)

- Protein (HBV/LBV)
- Fat (saturated/unsaturated etc)
- Carbohydrate (starching/sugary)
- Vitamins (A,B,C,D,E,K)
- Minerals (iron, calcium, Potassium, sodium, fluoride, iodine, phosphorus)
- Water
- Dietary fibre (NSP)

Sources: what food nutrients are found in

Balanced Diet: a diet that provides a person with the right amount of nutrients for their needs. Wide variety of foods that un processed and plenty of water



Diet : the food people eat every day

Nutritional needs of specific groups

- Different life stages
- Childhood
- Adulthood
- Later adulthood
- Special diets
- Medical conditions
- Activity levels



Characteristics of unsatisfactory nutritional intake

- Visible (eg overweight/obese)
- Non-visible (depression, constipation, cancer etc)
- Unsatisfactory (not enough nutrients)**
- Nutritional deficiencies:** lack of nutrients
- Nutritional excesses:** too much of nutrient

Anemia: iron deficiency – pale skin, weak and split nails, tiredness, weakness

Osteoporosis: calcium deficiency – weak/brittle bones

Ricketts: lack of vitamin D, bones weaken and bend (children)

Scurvy: lack of vitamin C – bleeding of skin, loose teeth, wounds not healing

Constipation: lack of fibre blocks up intestines



- ✓ Food Miles
- ✓ Packaging
- ✓ Food waste
- ✓ **Sustainability:** producing food in a way that can be maintained and protects the environment



Menu planning Factors:

- ❖ Customer – needs/wants, age, culture, budget,
- ❖ Menu items – quality, variety, colour, texture, flavour, consistency, seasonality
- ❖ Business – equipment, service, location, size, standards, profitability
- ❖ Preparation and menu items – skilled staff, space, time, food safety, environmental concerns

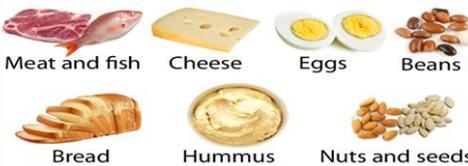
Environmental Issues

Climate Change: changes in the earth temperature that can lead to unusual and extreme weather conditions.

Carbon footprint: a measure of how much food production contributes to production of greenhouse gases that effect the ozone layer

Fossil fuels: fuels such as coal, oil,,and gas created millions of year ago by plants and animals.

Foods High in Protein



Cooking methods – nutritional value

- Steaming – conserved vitamin C 15% lost.
- Baking – overcook protein, damage vitamin c, b
- Grilling - high heat 40% of vitamin B is lost
- Stir-fry – increase vitamin A, damage minimal to vitamin A and C short cooking time
- Roasting - Destroy most vitamin C and some B vitamins
- Poaching – b1,2,3 dissolved in water
- Boiling – up to 50% lost of vitamin C, b1,2,3 dissolve in water

COMPLEX CARBS



SIMPLE CARBS



Foods High in Fat



Y11 Design & Technology GCSE Project – Contextual Challenge 2019/20

AQA: Unit 2 – Non Examination Assessment (50%)

Section A: Identifying and investigating design possibilities (10 marks)

By analysing the contextual challenge you will identify design possibilities, investigate client needs and wants and factors including economic and social challenges. You should also use the work of others (past and/or present) to help form ideas. Research should be concise and relate to your contextual challenge. You are also advised to use a range of research techniques (primary/secondary) in order to draw accurate conclusions. You will be encouraged to investigate throughout this project to help inform decisions.

Contextual Challenge – simply copy up the syllabus' contextual challenge. Alongside the text show some relevant imagery to support the text.

Chosen task – here you detail how you intend to interpret your chosen task; explaining the general area you are looking at and the focus that your project will have. Try to avoid writing out a design brief (see Section B), simply detail what aspect of the brief you intend to study. Again, show some imagery to support the text.

Users – write a bullet pointed list of the user groups, (considering gender, age, background etc.) This can be referred to as your target audience.

Market – write a bullet pointed list of both the sales methods (shops, internet, mail order etc.) and the types of retailers who will sell this product.

Analysis of tasks– this should simply be a brainstorm or a list of 'design criteria' to consider now that the brief can be established. Some (generic) design criteria might include:

Purpose, performance, the design, aesthetic appeal, colour, styling, market research, fashion, target audience and market, image, innovation, ergonomics, ease of use, user interface, switches & controls, labelling, materials, durability, safety, product life, manufacturing processes, scale of production, assembly, quality control, production logistics, storage, packaging, transportation, price, value for money, green issues, recycling, waste, after sales service etc. Further (specific) issues (depending on your product) also need to be considered.



Section B: Producing a Design Brief and Specification (10 marks)

Based on conclusions from your investigations you should now outline design possibilities by producing a design brief and design specification. You should also review both throughout the project.

Design Brief – this should be a statement detailing exactly what you intend to do, for example: I intend to design and manufacture a coffee table for the first time buyer. I aim to design a product that has a number of specific innovative features suitable for the domestic environment such as.....

Design Specification

This vital page states the key requirements of your product by specifying all aspects of its design in detail. Start by writing a list of the design specification titles.

- | | | |
|---------------------------|-----|-------------------------|
| 1) Function | 13) | Technical Detail |
| 2) Performance | 14) | Storage |
| 3) Design | 15) | Logistics |
| 4) Aesthetics | 16) | Packaging |
| 5) Ergonomics | 17) | Target Audience |
| 6) Size | 18) | Advertising & Marketing |
| 7) Ease of Use | 19) | Product Life |
| 8) Safety | 20) | Environment |
| 9) Materials | 21) | Sustainability |
| 10) Manufacturing Process | 22) | Cost |
| 11) Scale of Production | 23) | Finish |

This GCSE is about **presenting visual and written evidence** of my personal investigation on this topic. I don't need to memorise or revise, I just need to **produce, make and connect** my ideas using the visual language.

- No evidence = no marks
- A little evidence = a few marks
- I do what teacher says= grade 4
- I lead, I know what I want to do and I get on with it producing lots of evidence= top marks



Independent tasks and HW

Year 11 Art & Design. REFINE AND BOOST Portfolio Topics 2+3

Life Events Close-Up

-All visual investigations started in year 10 must be completed. -Add a new artist to each topic.

-**Rhythm**: the placement of repeated elements to cause a tempo or beat.

-**Balance**: combining elements to add a feeling of equilibrium or stability.

-**Emphasis**: combining elements to stress the differences between them.

-**Proportion**: the relationship of certain elements to the whole and to each other.



Grayson Perry - Narrative

-*I see **I think ***I wonder

-**Creative investigation**: my project.

-**Critical understanding**: I can explain the ideas carried by a work of art.

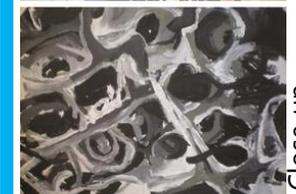
-**Contextual links**: I can explain the historical, political and cultural circumstances in which a work of art is created or used.

-**To refine**: to change something in order to improve it.

-**To speculate**: to explain something without being 100% sure.

-**My personal response to a work of art**: I use the artist's visual language, but using my own images as starting point.

-**To convey meaning**: to communicate.



Kathryn Garner- Close-up

1 I do research to know the work of artists, world cultures and styles. My chosen artists have worked on a theme similar to mine. I use this knowledge to inspire my creative work. I have proof of my **critical understanding** in my book.

Artists pages, including:

- Copies of artists' work
- **Description of work- ***
- **Explanation of how it's put together and what it means ****
- **My research making contextual links*****

2 I prove that I can make visual work. I prove that I can also **refine** my work to make it more meaningful to the theme. I show off what I do well. I can also experiment and take risks trying new ways of mixing **techniques** and **processes**.

Test pieces:

- My personal response to artists' work
 - My mixing of two artists' styles
- Refined test pieces:
- two solutions for each test piece using techniques learnt since yr 7

3 I can spot how things could link to my project. I **record** them using cameras and drawing. Nobody else sees and feels like I do. As an artist I pick what I focus on and my ideas allow me to link these items together with new meaning.

- photo shoots
- drawings
- notes: my links, descriptions and ideas

4 I can produce and **present** a visual solution to the "Theme". This is my **final piece** for the project. It conveys my ideas, my connections and my investigations.

- my final piece
- my whole investigation is well presented and easy to follow in my book
- my final piece /project evaluation

Must have techniques and processes: photography, experimental drawing, sgraffito, printing, card construction, photomontage, acrylic painting, collage, chiaroscuro.

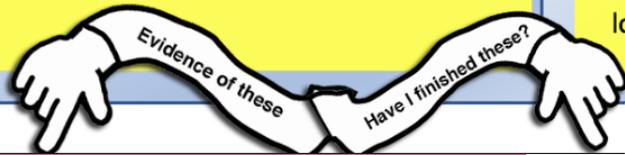
35 ART

The Natural World Close-Up

-All visual investigations started in year 10 must be completed.
-Add a new artist to each topic.

This GCSE is about **presenting visual and written evidence** of my personal investigation on this topic. I don't need to memorise or revise, I just need to **produce, make and connect** my ideas using the visual language.

- No evidence = no marks
- A little evidence = a few marks
- I do what teacher says= grade 4
- I lead, I know what I want to do and I get on with it producing lots of evidence= top marks



Independent tasks and HW

1 I do research to know the work of artists, world cultures and styles. My chosen artists have worked on a theme similar to mine. I use this knowledge to inspire my creative work. I have proof of my **critical understanding** in my book.

Artists pages, including:

- Copies of artists' work
- **Description of work- ***
- **Explanation of how it's put together and what it means ****
- **My research making contextual links*****

2 I prove that I can make visual work. I prove that I can also **refine** my work to make it more meaningful to the theme. I show off what I do well. I can also experiment and take risks trying new ways of mixing **techniques** and **processes**.

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- photo shoots
- drawings
- notes: my links, descriptions and ideas

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- my final piece
- my whole investigation is well presented and easy to follow in my book
- my final piece /project evaluation

Techniques and processes: Applique, reverse applique, screen printing, mono-printing, fabric slashing, Batik/wax resist, quilting, free-machining, thread drawing, mixed media, flour resist, trapunto, fabric painting, needle felting, wet felting, embroidery, couching, image transfers, construction

-**Rhythm**: the placement of repeated elements to cause a tempo or beat.

-**Balance**: combining elements to add a feeling of equilibrium or stability.

-**Emphasis**: combining elements to stress the differences between them.

-**Proportion**: the relationship of certain elements to the whole and to each other.



Cas Holmes



Healy and Burke

-**I see **I think ***I wonder**

-**Creative investigation**: my project.

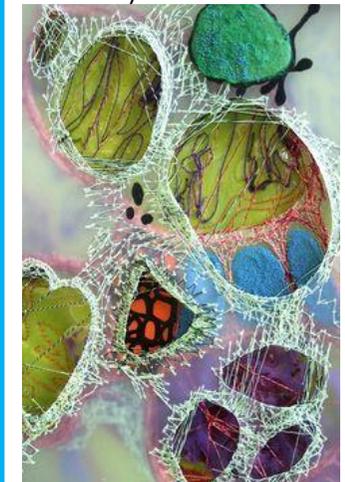
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-**To refine**: to change something in order to improve it.

-**To speculate**: to explain something without being 100% sure.

-**My personal response to a work of art**: I use the artist's visual language, but using my own images as starting point.



Leisa Rich

36 TEXTILES

Engagement Patterns of Different Social Groups

The social groups to which an individual belongs will influence their level of engagement in sport and physical activity and also the types of sport and physical activity in which they are involved. The major social groups and the influences of a number of factors have been provided below.



	Gender	Religion/race/culture	Age	Family	Disability
Attitudes	The activities that men and women take part in can be affected by how they view those activities, e.g. women might be less likely to take part in rugby if they view it as masculine.	Racial discrimination in some sports still exists which may be an inhibiting factor to some races' involvement in that sport.	Some elderly people do not consider it appropriate to take part in physical activity.	People are influenced by others' attitudes. If a parent has a negative attitude towards sport, it is likely to be an attitude that a child holds when they grow up.	Some disabled people may not feel that they are capable of being physically active.
Role models	The lack of female role models has a negative impact on participation.	Sport has seen an increase in role models from diverse backgrounds, which increases participation in those sports. However, some sports have fewer role models, e.g. there are few black swimmers.	Most role models are young which can have a negative impact on elderly participation.	Members of your family can be seen as role models and encourage certain behaviours such as participation in sport.	Some sports have a lack of disabled role models; however, recent Paralympic Games have increased the number of disabled role models which has driven up participation rates.
Accessibility	There may be a lack of opportunity for some females to access certain sports, such as female rugby teams.	Restrictions, such as not being allowed to drive on the Jewish Sabbath, can impact on participation in sport on religious days.	It can be harder for elderly people to access facilities if they are unable to walk / take public transport.	Family members can provide transport for each other in order to increase the accessibility to training and matches.	Some facilities do not have the provisions required by disabled individuals.
Media coverage	Female sport receives less media coverage, which negatively impacts on participation.	Sports that do not receive media coverage will be disadvantaged and may impact participation rates of all groups.	Most media coverage focuses on young professional athletes which may discourage older individuals from participating.		Disabled sport receives less media coverage which negatively impacts on participation.
Stereotyping	Gender stereotyping still exists with some sports, such as boxing, considered masculine. However, with an increase in female role models and media coverage in these sports, this is continuing to improve.	The stereotypical idea that some races are suited to certain sports can prevent people from trying different sports.	Stereotypes about activities which are appropriate for elderly people may prevent them from being active.		Stereotypes about what sports are appropriate for disabled athletes may prevent them from taking part in physical activity.
Culture		Traditional views, such as women having to wear certain clothing, can restrict participation in some sports.		Families create a culture which either encourages or discourages other family members from being physically active.	
Family commitments	In modern times, the family dynamic has changed and as a result women have more opportunities to be physically active, beyond their role as mothers.	Some cultures value spending time with the family very highly. As a result, there is likely less time available to be physically active.	Older individuals may have more commitments, such as looking after children, which restricts participation.	Parents may not have enough time to be physically active due to the need to look after their children. Additionally, other family commitments may stop parents being able to take their children to training.	Some disabled individuals may require assistance from their family in order to allow them to participate in physical activities.
Leisure time	In the past, women generally had less free time due to family commitments, but this has now changed and women are able to participate as much as men.	Some individuals may have less leisure time to take part in physical activity due to religious commitments, such as attending services and prayer.	The young and old are likely to have more free time than middle-aged working adults.	Different members of the family will have different amounts of leisure time which will influence their engagement. Working parents will have less time.	A disabled athlete's leisure time may depend on their family, especially if they require full support to participate.
Familiarity			If people have participated in physical activity throughout their lives, they are more likely to take part when they're older.	If people participate regularly with their friends/family, they are more likely to keep doing so.	Individuals who acquire a disability may be unfamiliar with the opportunities available for disabled participation in sport.
Education	The compulsory inclusion of Physical Education in the National Curriculum in schools means both genders are exposed to physical activity.			Families can educate each other about the benefits of physical activity, which increases participation.	If people are educated about disabled sport, they will be more likely to take part.
Disposable income	The wage gap between men and women is no longer as prominent, providing women with greater opportunities to take part in physical activity.		Young people may not have enough money to pay membership fees for gyms or registration fees for teams.	Different members of the family will have different amounts of disposable income which will influence their engagement.	If a disabled person is unable to work, they may not have the disposable income to participate in sport.
Adaptability		Some sports make rule changes to accommodate religious practices, such as Muslim women being allowed to cover their heads when playing football.	Sports can be adapted in order to make them suitable for young and elderly athletes.		Sports can be adapted in order to make them suitable for disabled athletes.

Reasons For Fitness Testing

- ✳ You are able to identify any progress
- ✳ It can be used as part of a training session in order to make the session more fun
- ✳ Goals can be based on the outcomes of tests
- ✳ Comparisons can be made between athletes
- ✳ It can help to adapt training programmes to an athlete's needs
- ✳ You can identify an athlete's fitness level in order to make future comparisons
- ✳ You are able to identify the strengths and weaknesses of an athlete/ programme

Fitness Testing

There is a range of different fitness tests which can be used to evaluate the different components of fitness.

These are outlined below and the advantages and limitations of fitness testing are provided to the side.



Reasons Against Fitness Testing

- ✳ An experienced tester is needed in order to produce valid results
- ✳ The tests often don't use movements which are used within the sport that the athlete plays
- ✳ If a test is not sport-specific, it is not very useful
- ✳ Performance within testing conditions may be different to an athlete's performance in a competitive environment
- ✳ Many tests use indirect methods

Agility → Illinois agility test

A multi-directional course which must be completed in the quickest time possible. The participant's time is compared to the national average.



Balance → Stork Balance

Requires the participant to stand on the ball of one foot for as long as possible. The time that they manage is compared to the national average.



Power → Vertical Jump Test

Requires the participant to reach as high as they can on a wall and then perform a standing vertical jump. The distance (cm) between their jump height and standing reach is measured and compared to the national average.

Coordination → Wall Toss Test

The participant must throw a ball against a wall and catch it in their opposite hand as many times as possible in 30 seconds. The number of completed catches is compared to the national average.



Flexibility → Sit and Reach Test

Requires the participant to sit with their legs outstretched against a box and attempt to reach as far forward as possible. The distance (cm) onto the box that they reach is compared to the national average.



Maximal Strength → One Rep Max Test

Requires the participant to perform one repetition at the heaviest weight (kg) possible.



Strength → Handgrip Dynamometer

Requires the participant to grip a dynamometer as hard as possible in their hand. The best score (kg) from three attempts is compared to the national average.



Cardiovascular Endurance → Multistage Fitness Test

Requires the participant to run for as long as possible between two cones in time with the 'bleeps' of a recording. The time between the bleeps is reduced at each stage and the stage at which the athlete drops out is compared to the national average.

Reaction Time → Ruler Drop Test

Requires a tester to place a ruler between the fingers of the participant. The ruler is then dropped and the participant should grab the ruler as quickly as possible by closing their fingers. The distance (cm) the ruler travels is compared to the national average.



Fitness Data Collection

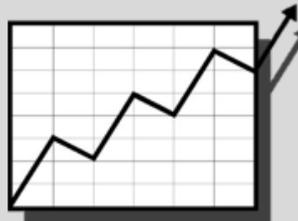
There are two types of data that can be collected from fitness testing: 'qualitative' and 'quantitative'. These terms are explained below.



Qualitative data can be collected by an athlete making notes about how tired they feel during training sessions and competition.

- ✳ Quantitative data is a measurement that involves numerical data
- ✳ Qualitative data is a measurement based on observational data

Due to the nature of the two types of measurement, quantitative can be compared to national averages whereas qualitative cannot.



Quantitative data can be collected when a player wears a heart rate monitor to track their heart rate during training and competitions.

Muscular Endurance → Sit-up Bleep Test

Requires the participant to perform sit-ups in time with recorded 'bleeps' which get progressively faster. The stage the participant reaches is compared to the national average.



We would always encourage you to speak to the people you live with or someone in school if you have a worry or a problem. If you can't, or you want to read more about an issue affecting you or someone you know, here are some useful websites and phone numbers. They offer free, confidential advice and support.



General
Childline—www.childline.org
0800 1111

Offers information and advice, 1-2-1 confidential chat (text, email, phone) and support from message boards on a wide range of issues.

This website is one of the most useful you will find and can direct you to help or information about all the other topics mentioned here, and

Safety, bullying and abuse

Child Exploitation and Online Protection (CEOP) - www.ceop.police.uk

Report inappropriate online contact, any unlawful misuse of social media, or a child protection concern to a trained police officer. You can also click this button on your platform:



NSPCC—www.nspcc.org.uk 0800 1111

Information and help about on- and offline abuse

National Bullying Helpline—www.nationalbullyinghelpline.co.uk 0845 22 55 787

Advice and help about bullying on- and offline



Health
School nurse—07520 631722

Text only for confidential advice

National Health Service—www.nhs.uk

Research and useful information on health issues

Walk-In Centre, RD&E Hospital—01392 411611

Non-urgent and sexual health needs

Walk-In Centre, 31 Sidwell Street—01392 276892



Healthy relationships

Thinkuknow—www.thinkuknow.co.uk

Age-related help and advice about on- and offline relationships and consent.



Drugs and alcohol

YSmart—ysmart.org.uk 01271 388162

Information about substance misuse, advice, recovery and treatment

Homeless, skills, advice, getting your voice heard

Young Devon—www.youngdevon.org 01392 331 666



Mental Health and well-being

Samaritans—www.samaritans.org

Call 116 123 for emergency help

Email jo@samaritans.org (response within 24 hours)

Papyrus—papyrus-uk.org 0800 068 41 41

Urgent help for you or someone you know

YoungMinds—youngminds.org.uk

Text YM to 85258 for urgent help

Happy Maps—www.happymaps.co.uk

Advice on everything from sleep problems to anxiety, bullying, self-harm, coping with divorce, autism, ADHD, gender dysphoria and more



LGBT

X-PLORE—www.lgbtqyouthdevon.org.uk

Local support and groups for LGBTQ young people

If someone's life is at risk, you should always dial

999