



ASH MANOR SCHOOL  
Aspire & Achieve

# Year 11 Autumn Term Knowledge organiser

Name:

Tutor group:

Tutor:

Tutor room:

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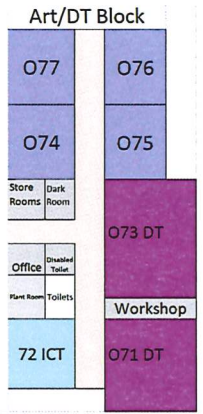
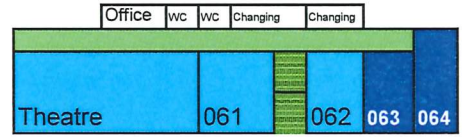
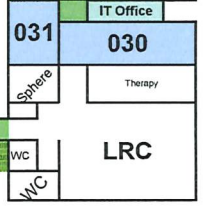
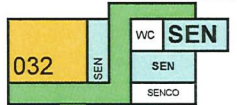
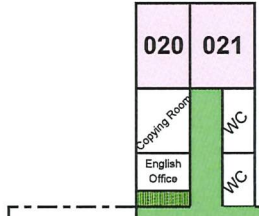
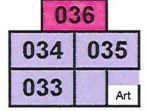
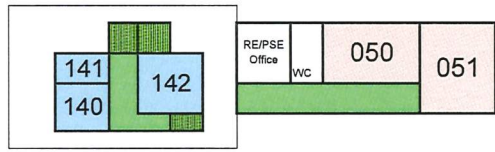
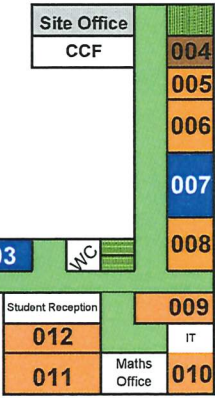
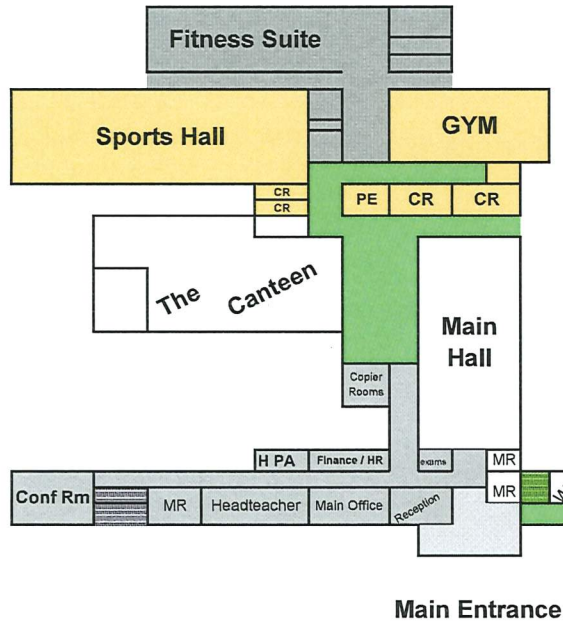
## Key School information

<b>Times of the school day</b>	
<b>8.00am – 8.30am</b>	Breakfast in canteen
<b>8.35am</b>	Pre-lesson 1 bell
<b>8.40am-9.30am</b>	Lesson 1
<b>9.30am-10.20am</b>	Lesson 2
<b>10.20am-10.40am</b>	Morning break
<b>10.40am-11.30am</b>	Lesson 3
<b>11.30am-12.20pm</b>	Lesson 4
<b>12.20pm-1.00pm</b>	Lunch
<b>1.00pm-1.20pm</b>	Tutor time / Assembly
<b>1.20pm-2.10pm</b>	Lesson 5
<b>2.10pm-3.00pm</b>	Lesson 6
<b>3.00pm-4.00pm</b>	Extended learning and extra-curricular clubs

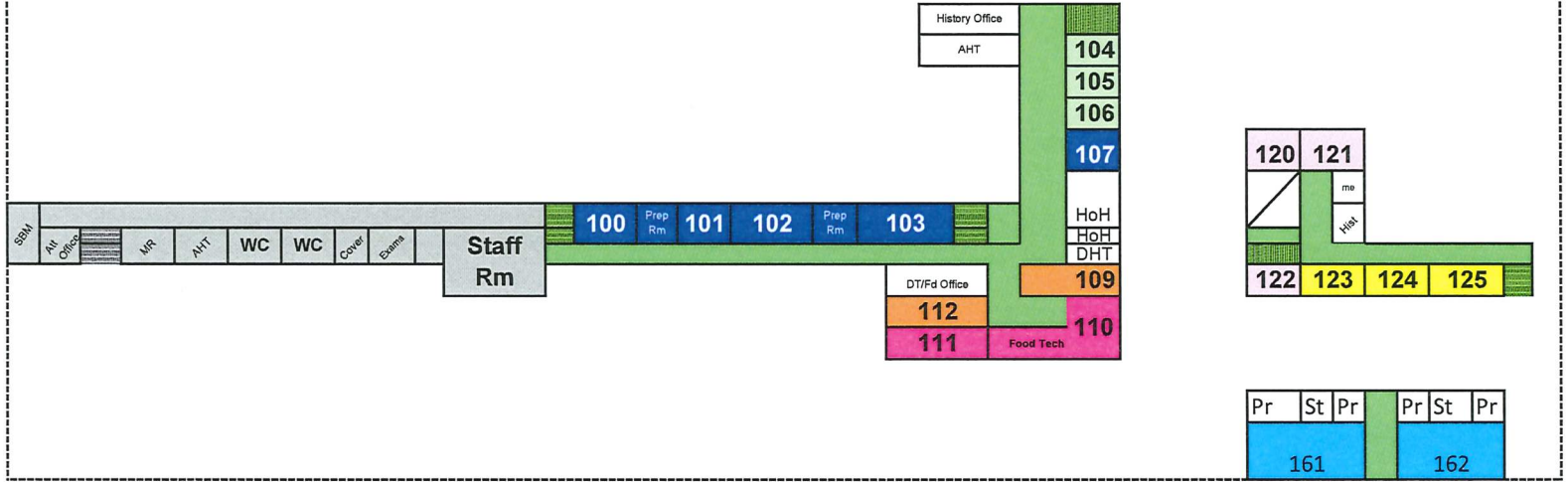
<b>Term dates</b>	
<b>Autumn term</b>	<b>Y7:</b> 04/09/23 to 15/12/23 <b>Y8-11:</b> 05/09/23 to 15/12/23
Half term	23/10/23 to 27/10/23
<b>Spring term</b>	03/01/24 to 28/03/24
Half term	12/02/24 to 16/02/24
<b>Summer term</b>	15/04/24 to 19/07/24
Half term	27/05/24 to 31/05/24

<b>Important IT details</b>	
<b>Username</b>	
<b>Password reminder</b>	

School Site Map



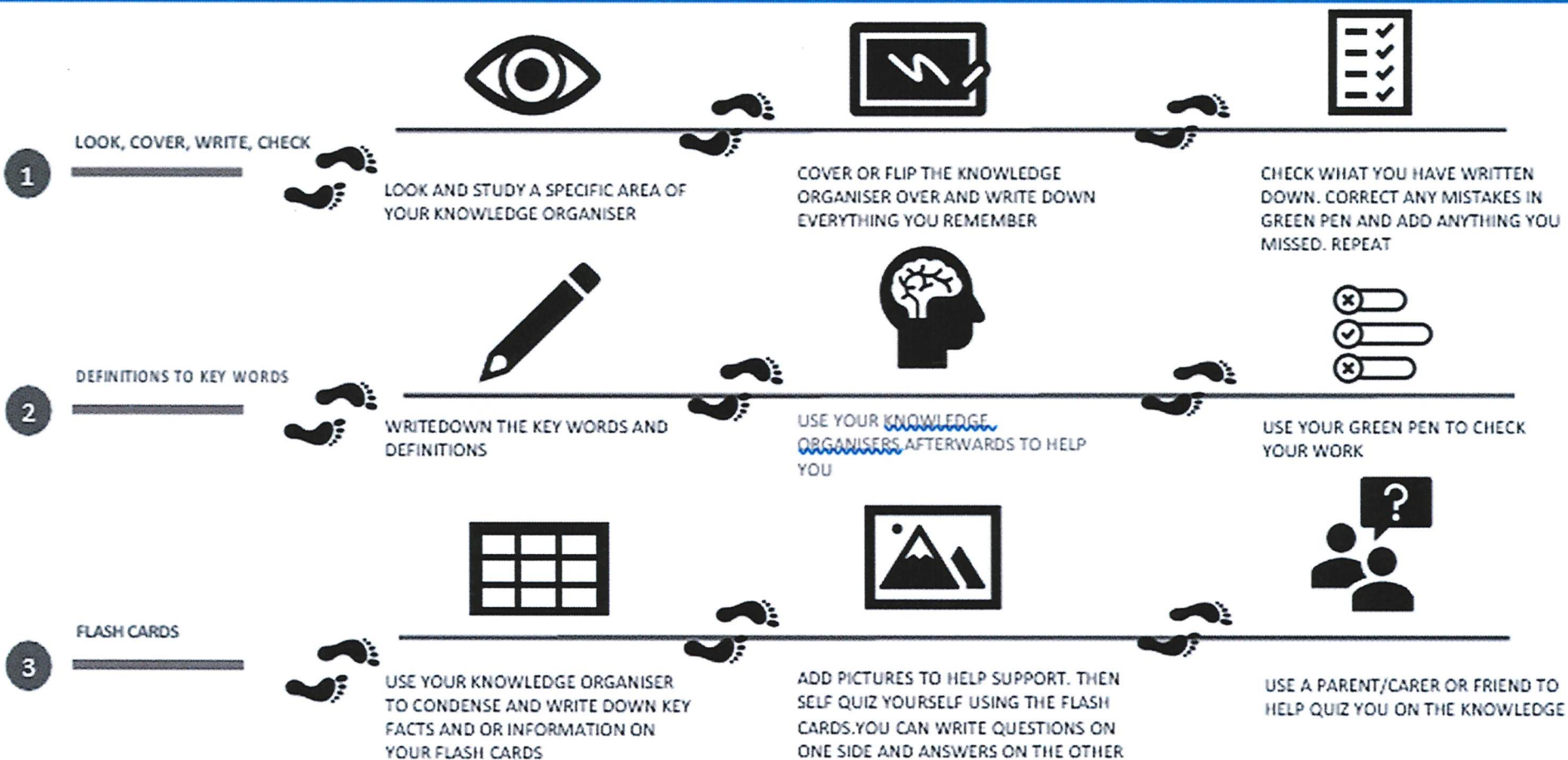
First Floor



- Science
- Maths
- English
- Art
- Computing Studies
- MFL
- History / Classics
- Geography
- Performing Arts
- PE
- SEND
- RE
- DT/Food
- Business studies
- non student areas

# How to use Knowledge Organisers – a step by step guide

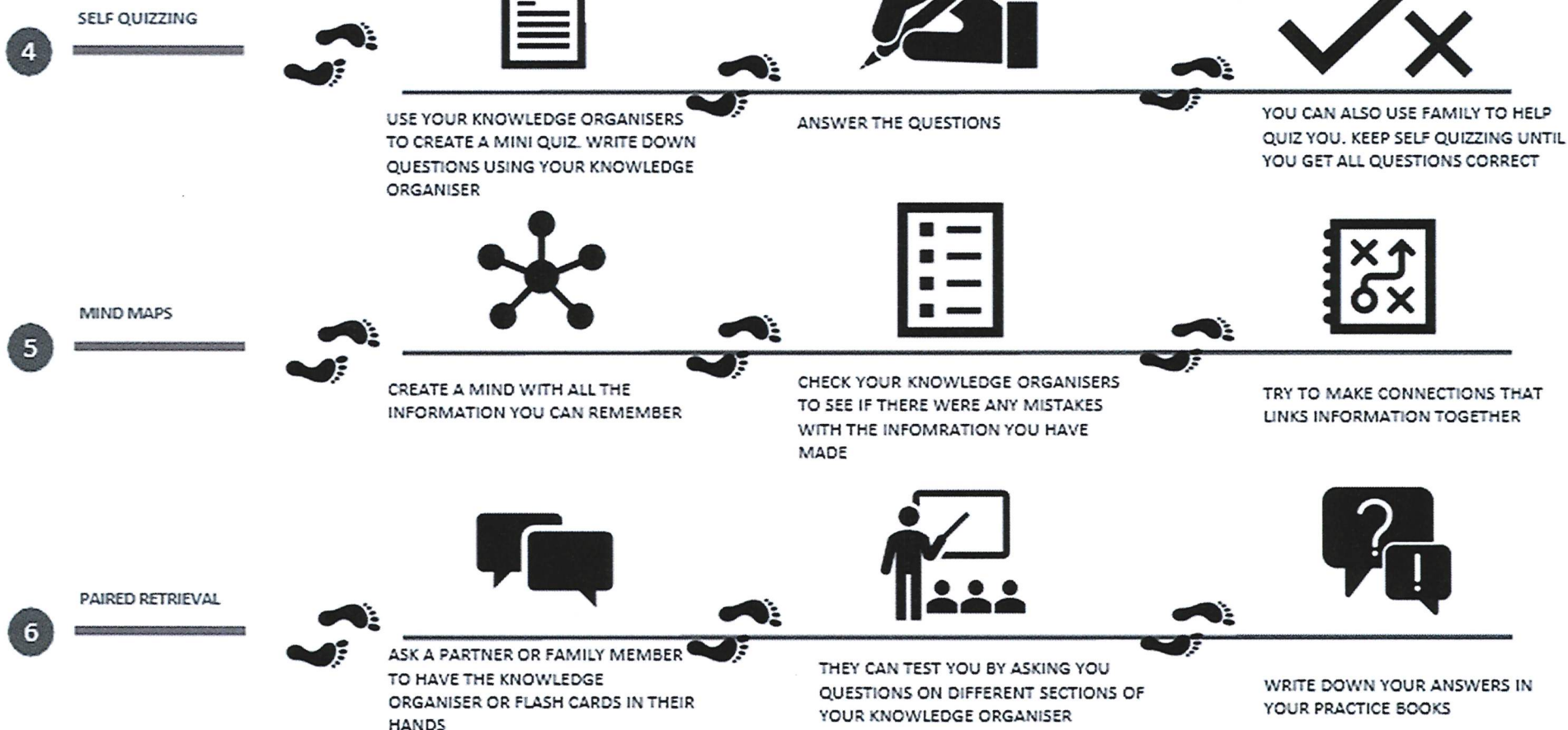
Knowledge organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long term. You must have this for every lesson – it is part of your equipment.



KNOWLEDGE ORGANISERS ARE ALSO AVAILABLE ON THE SCHOOL'S WEBSITE:  
<https://www.ashmanorschool.com/>

# How to use Knowledge Organisers – a step by step guide

Knowledge organisers contain critical knowledge you must know. This will help you recap, revisit and revise what you have learnt in lessons in order to remember this knowledge for the long term. You must have this for every lesson – it is part of your equipment.



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## Year 11 Ancient History: Term 1

### The Second Punic War / Periclean Athens

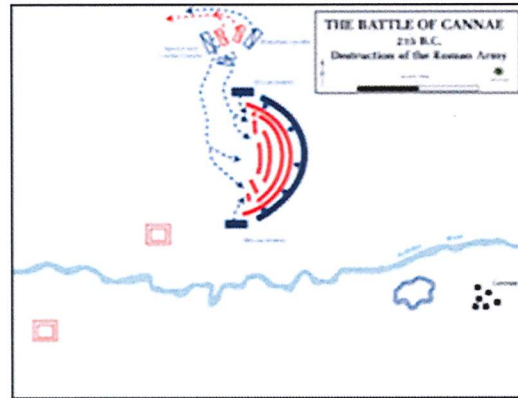
#### Fabian Strategy

**Dictator** – A Roman who was elected to hold all power over the army for 6 months in times of national crisis.

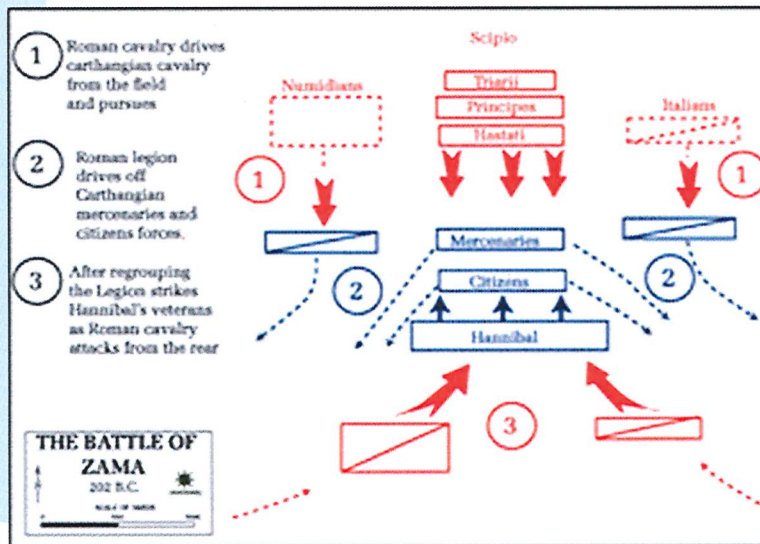
**Fabius Maximus' dictatorship** – Fabius was elected dictator after the disaster for the Romans at Trasimene. Fabius followed Hannibal's army wherever he went, without directly engaging him in battle; instead, he attacked Hannibal's raiding parties and cut off Hannibal's supply lines. This was unpopular with the Romans who eventually removed his power.

**Consequences of Fabian Strategy** – Fabius' time as dictator had allowed Rome time to rebuild after the disaster at Trasimene. Enough men for eight legions were assembled (around 40,000 troops), and together it was the largest army Rome had ever seen.

**Plutarch, Parallel Lives: Life of Fabius Maximus** - Plutarch was a Roman biographer (someone that tells the story of people's lives) who lived c. AD 46-120. His aim was not to be historically accurate but to examine what the actions of historical individuals revealed about their character and personality. His focus was Fabian strategy and portraying Fabius as the 'saviour of Rome'.



**Battle of Cannae** – A battle fought between Hannibal troops and the Roman army led by consuls Varro (who was keen to engage Hannibal in battle) and Paullus (who thought it was a bad idea). At Cannae, Hannibal used a 'crescent moon formation' to surround the Roman troops. Livy describes a massacre.



**Roman strategy after Cannae** – The Romans returned to Fabian Strategy. This gradually wore Hannibal and his army down over the next decade.

**Scipio 'Africanus'** – The son of Publius Cornelius Scipio. He volunteered to take over his father's command in Spain (Iberia) and defeated Hannibal at Zama.

**Hannibal's mistake** – According to Livy, Hannibal's biggest mistake was failing to march on Rome after the Battle of Cannae, which would eventually lose him the war.

**Battle of Zama (202)** – Rome had a superior cavalry (6,000, including Numidians) and an experienced infantry (29,000). Hannibal had more men in his army (36,000), but most were new and lacked experience.

When the Carthaginian elephants charged, the Romans moved into columns and attacked the elephants from the side while blowing their horns to scare the elephants.

The Numidians chased off Hannibal's veteran cavalry, before returning and surrounding the Carthaginian army.

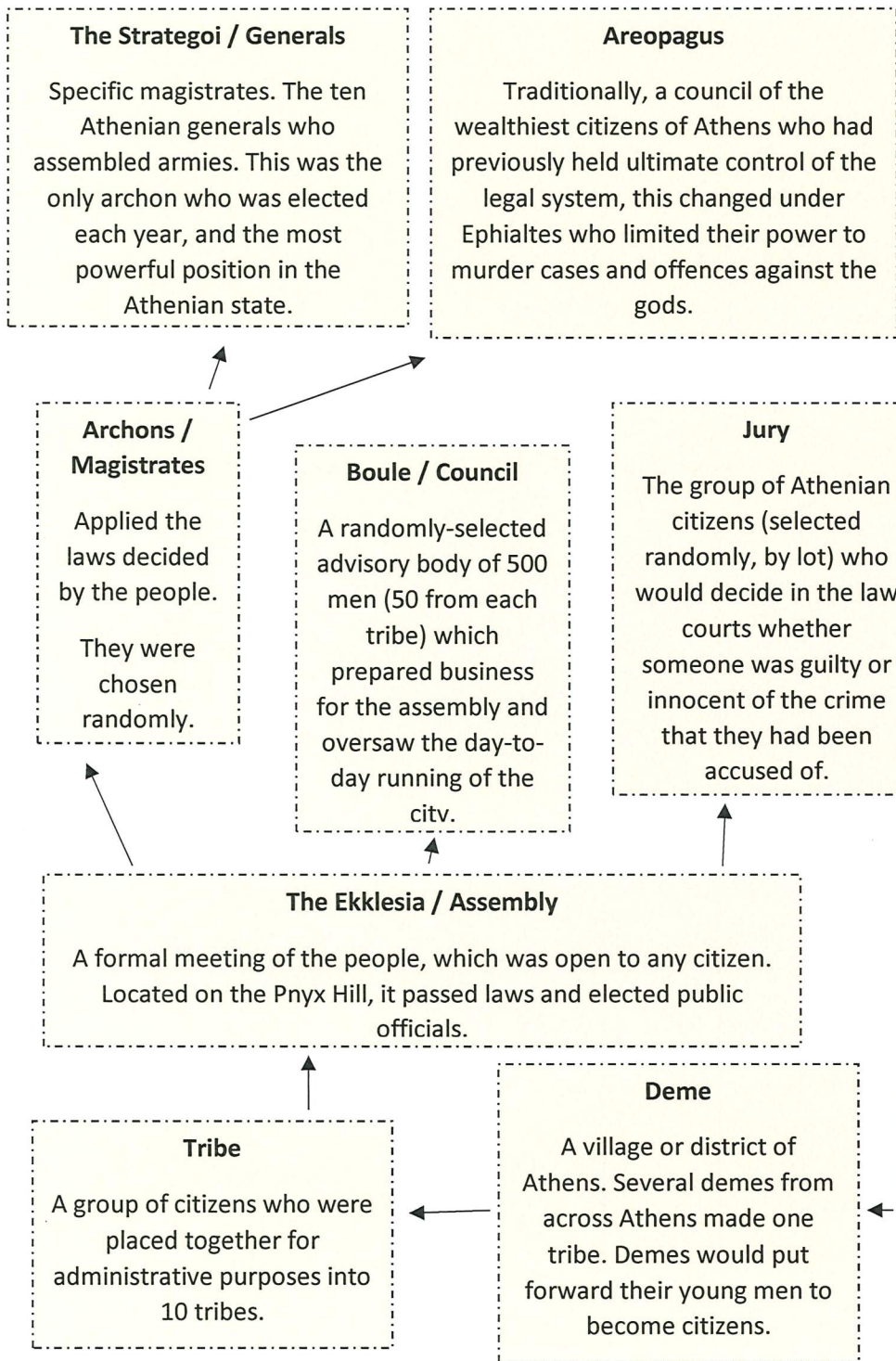
**Capture of New Carthage (Carthago Nova)** – By using the type of tactics which he had previously observed Hannibal using, Scipio used local knowledge of the area to realise that when the tide was low, he could cross the seabed to surround New Carthage from behind. Carthage lost their Spanish stronghold.

**Why Hannibal lost the Second Punic War**

**Alliance with the Numidians** – On his way back to Rome, Scipio met with the Numidian princes Syphax and Masinissa in Africa. Masinissa, seeing that Rome was likely to win the second Punic War,

#### Peace Terms for Carthage:

- 10,000 talents to Rome
- 10 warships
- No elephants
- Permission needed from Rome to go to war



**The Strategoi / Generals**

Specific magistrates. The ten Athenian generals who assembled armies. This was the only archon who was elected each year, and the most powerful position in the Athenian state.

**Areopagus**

Traditionally, a council of the wealthiest citizens of Athens who had previously held ultimate control of the legal system, this changed under Ephialtes who limited their power to murder cases and offences against the gods.

**Archons / Magistrates**

Applied the laws decided by the people. They were chosen randomly.

**Boule / Council**

A randomly-selected advisory body of 500 men (50 from each tribe) which prepared business for the assembly and oversaw the day-to-day running of the city.

**Jury**

The group of Athenian citizens (selected randomly, by lot) who would decide in the law courts whether someone was guilty or innocent of the crime that they had been accused of.

**The Ekklesia / Assembly**

A formal meeting of the people, which was open to any citizen. Located on the Pnyx Hill, it passed laws and elected public officials.

**Tribe**

A group of citizens who were placed together for administrative purposes into 10 tribes.

**Deme**

A village or district of Athens. Several demes from across Athens made one tribe. Demes would put forward their young men to become citizens.

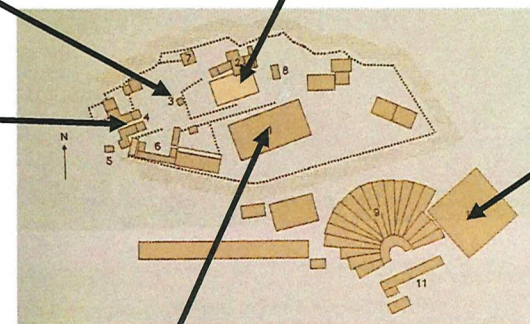
**Ostracism** – An annual vote to banish one important citizen for ten years. It was meant to stop any individuals from becoming too powerful. Cimon and Thucydides of Alopece (both enemies of Pericles), were ostracised.

**Periclean building programme** – Pericles’ plan to beautify Athens with new buildings, using the money of the Delian League to do so. His friend, Pheidias played a large role in the design of these buildings and sculptures.

**Sculpture of Athena Promachos** – Built before the building programme began by the sculptor Pheidias. Pausanias said that the statue was so large that the tip of its spear and the top of the helmet could be seen miles away from the tip of Attica.

**Erechtheion** – Temple of Athena and Poseidon which housed the olive-wood statue of Athena Polias (‘defender of the city’). Work on it did not end until after Pericles’ death. This was the most famous statue of Athena in Attica.

**Propylaea** – It was a monumental gateway to the Acropolis which took five years to build. It was made of marble and had a dark blue ceiling which was studded with golden stars.



**Odeon** – A large concert hall built next to the theatre of Dionysus.

**The Parthenon (‘Athena the maiden’)** – A huge temple dedicated to the goddess Athena. It was an extremely large temple by normal Greek standards and was designed to house Pheidias’ new sculpture of **Athena Parthenos**. Importantly, it served as the treasury of Athens and Pericles later moved the Delian Treasury (money collected from member of the Delian League) there.

**Citizenship Law** – Pericles’ reform said that Athenian citizens had to have an Athenian mother and father whose parentage could be traced back. Anyone who falsely claimed they were a citizen was sold into slavery.

**Criticisms of the Programme** – The main criticism of the programme was that it used funds from the Delian League which was meant to be for the protection of the city states against another Persian invasion. It was seen as an example of **Athenian Imperialism** (wanting an empire).



# Art

Words to help you critique artwork:

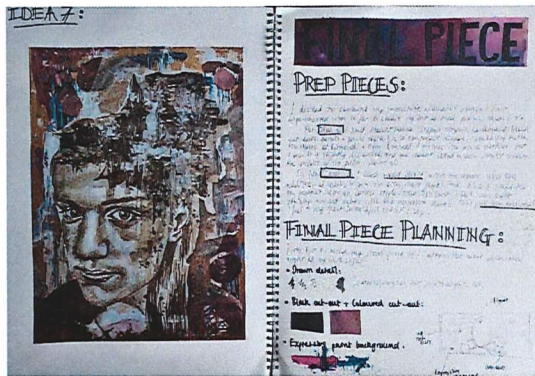
**Tone:**  
subtle  
contrasting  
muted  
flat  
light  
dark  
dramatic  
depth  
shadowy

**Line:**  
delicate  
simple  
bold  
thick  
thin  
fine  
vertical  
horizontal  
flowing

**Movement:**  
swirling  
flowing  
gentle  
rippling  
sudden  
stillness  
rhythm  
dynamic

**Colour:**  
bold  
vibrant  
vivid  
cool  
warm  
subtle  
pale  
earthy

**Shape:**  
organic  
curvaceous  
circular  
geometric  
angular  
irregular



## Final piece planning

I have done the following:

- ✓ Sketched what my final piece will look like
- ✓ Experimented with the techniques
- ✓ Added labels to show different techniques
- ✓ Included colour where appropriate
- ✓ Annotated with a statement of intent to show where my idea has come from

GCSE Assessment objectives - you will be marked on each for your coursework

AO1	AO2	AO3	AO4
Develop your ideas through investigating artists, designers and other appropriate sources. Demonstrate critical understanding of sources.	Refine your work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.	Record your ideas, observations and insights that are relevant to your project intentions as work progresses. Annotate work and include drawings within your sketchbook.	Present a personal and meaningful response that realises your project intentions and demonstrates understanding of visual language.

## Statement of intent

- What are you planning to do?
- Why are you planning to this? - where has the idea come from?
- What techniques are you going to use?
- What have you been influenced by?
- How does the idea link to artists and designers that you've researched?

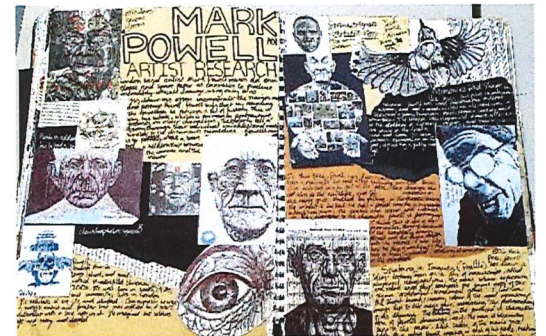
## Annotation checklist

- What have you done?
- How have you done it?
- What inspired you?
- What else did you try?
- Why was it successful?
- Is there anything you would change/need to do now?

## Sketchbook presentation

I have done the following:

- ✓ Used appropriate colours in the background, title and writing.
- ✓ Used appropriate font for the title.
- ✓ Considered the layout of my page before sticking it down.
- ✓ Creatively laid out my work on the page - e.g. used flaps, layered work, used a window, mounted the work



## GCSE Business – Theme 1 / Paper 1 Building a business

<p><b>Why new business ideas come about:</b></p> <ul style="list-style-type: none"> <li>• <b>Changes in technology.</b> New technology can often improve products and make them more desirable.</li> <li>• <b>Changes in consumer needs.</b> Fashions and tastes are always changing. This affects clothes, cars etc. but also peoples lifestyles, and trends such as healthy eating and fitness. Businesses must adapt to meet these trends.</li> <li>• <b>Products becoming obsolete.</b> Products become outdated overtime and new products are introduced. For example, DVD rental became obsolete as a result of streaming services.</li> </ul>	<p style="text-align: center;"><u>Types of business ownership</u></p> <p><b>Sole trader</b> - an individual owning the business on their own.          + Sole trader keeps all the profit          + Sole trader makes all of the decisions          - Sole trader has unlimited liability          - Making all the decisions can be stressful</p> <p><b>Partnership</b> - Started and owned by <b>more than one person</b>          Partnerships can have limited or unlimited liability.          + Owners may have wider expertise and can share ideas and decision-making.          + Owners share the risk          - Profits have to be shared          - Partners may disagree and decision-making can take longer as a result</p> <p><b>Private limited company</b> – a company is formed when a business is set up to have a separate legal identity from its owners. Owners are now known as shareholders. Private limited companies have Ltd. after their name.          + Has limited liability          + It is easier for a Ltd. company to get a loan than it is a sole trader          - More complex to set up than a sole trader and more expensive because of all the legal paperwork.          - Accounts have to be published every year</p>	<p style="text-align: center;"><u>Competition</u></p> <p>Competition affects how businesses make decisions. To stand out in a competitive environment, businesses need to make decisions that will persuade customers to buy from them, rather than their competitors. When making these decisions, the business might look at the strengths and weaknesses of its competitors.</p> <div style="text-align: center; margin-top: 20px;"> </div>		
<p><b>How do new ideas come about?</b></p> <ul style="list-style-type: none"> <li>• <b>Original ideas</b> - Entrepreneurs need to be creative to come up with new completely new ideas. Many new ideas are not successful but successful ones can completely change the market. E.g. I pads, Tesla cars, Dyson Vacuums</li> <li>• <b>Adapting existing products</b> - Easier than a completely new idea (80% of new products fail!). This can involve small changes (think of all the different design fidget spinners) or new versions of an existing brand – Coke Zero Cherry, Dairy Milk Bubbly, Giant Crumpets, newest James Bond film.</li> </ul>	<p><b>Franchising</b> – a franchise is like buying a ready-made business in a box. An entrepreneur can set up their own business using the name, equipment and products of the franchise.          + Brand image and reputation is already established.          + May have an established customer base.          + The franchisee benefits from national advertising campaigns.          - The franchisee will have to pay a fee or a percentage of sales revenue to the franchisor.          - The franchisee has little freedom to make decisions.</p>	<p style="text-align: center;"><u>The Business plan</u></p> <p><u>The purpose of planning business</u></p> <p><b>1. Minimising risk</b> Setting up a business involves risk, such as the potential loss of invested money and time. A business plan can help to minimise risk, but it will not eliminate risk. Risk can be reduced by:</p> <ul style="list-style-type: none"> <li>• very detailed planning that makes the entrepreneur think through the issues that may arise</li> <li>• setting clear objectives and aims to help provide direction when making business decisions</li> <li>• conducting market research to help inform decision-making</li> <li>• making financial forecasts so that the entrepreneur can set budgets and monitor spending</li> <li>• using a cash flow forecast to identify times when there may be a negative cash balance and to plan for this in advance (e.g. an overdraft).</li> </ul> <p><b>2. Obtaining finance</b> If an entrepreneur is trying to raise finance from a bank, such as a bank loan, the bank manager would review their business plan before granting the loan in order to see how the entrepreneur intends to repay the money.</p>		
<p style="text-align: center;"><u>Sources of finance</u></p> <p><b>Short-term</b></p> <ul style="list-style-type: none"> <li>• Trade credit (an agreement with suppliers to pay later)</li> <li>• Overdraft</li> </ul> <p><b>Long-term</b></p> <ul style="list-style-type: none"> <li>• Bank loan (must be paid back to the bank with interest)</li> <li>• Personal savings</li> <li>• Share capital</li> <li>• Venture capital</li> <li>• Retained profit (profit the owner(s) decide to re-invest in the business)</li> <li>• Crowd funding</li> </ul>	<p style="text-align: center;"><u>Market Segmentation</u></p> <p>Market segmentation involves dividing a market into parts that reflect different customer needs and wants.</p> <p>Market segments that businesses use to help them market effectively to their target customers include:</p> <ul style="list-style-type: none"> <li style="width: 50%;">* location</li> <li style="width: 50%;">* demographics</li> <li style="width: 50%;">* behaviour</li> <li style="width: 50%;">* lifestyle</li> <li style="width: 50%;">* income</li> <li style="width: 50%;">* age.</li> </ul> <div style="text-align: center; margin-top: 10px;"> </div>	<p style="text-align: center;"><u>Risks and rewards of starting a business</u></p> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p><b>Rewards</b></p> <ul style="list-style-type: none"> <li>* Business success</li> <li>* Profit</li> <li>* Independence</li> </ul> </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> <p><b>Risks</b></p> <ul style="list-style-type: none"> <li>* Business failure</li> <li>* Financial loss</li> <li>* Lack of security</li> </ul> </td> </tr> </table>	<p><b>Rewards</b></p> <ul style="list-style-type: none"> <li>* Business success</li> <li>* Profit</li> <li>* Independence</li> </ul>	<p><b>Risks</b></p> <ul style="list-style-type: none"> <li>* Business failure</li> <li>* Financial loss</li> <li>* Lack of security</li> </ul>
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## GCSE Business – Theme 2 / Paper 2 Growing a business

### Business growth

A business grows when it sells more output over a period of time. Business growth is often an important objective because it may:

- Help to increase market share
- Lead to lower costs
- Result in more profit

There are 2 different approaches to growth:

#### 1. Internal (organic) growth

Internal growth occurs when a business expands by itself, by bringing out new products or by entering new markets.

#### 2. External (inorganic) growth

A faster way for a business to grow is for it to join forces with another.

- Merger – where two or more businesses voluntarily agree to join up and work as one business.
- Takeover – where one business buys another.

### Financing growth – External sources of finance

#### Loan capital

A long-term bank loan can be secured against the business's assets, but interest will be charged and the business will have to make fixed repayments to repay the debt.

#### Share capital

A PLC can raise considerable capital by selling shares. However, selling shares puts PLCs at risk of being taken over and all shareholders are also entitled to a share of the profits through dividends.

### Public limited company (PLC)

'Public' means that shares in the company are traded on a stock market, and can be bought and sold by anyone.

#### Advantages

- ✓ Much more capital can be raised than any other kind of business.
- ✓ This helps the business to expand and diversify.
- ✓ PLCs have limited liability so if things go wrong, the owners only lose the amount of money they've invested.

#### Disadvantages

- ✗ It can be hard to get lots of shareholders to agree on how the business is run.
- ✗ Someone could buy enough shares to take over the company – if they can convince shareholders to sell.
- ✗ The accounts have to be made public – so everyone (including competitors) can see if a business is struggling.
- ✗ PLCs can have hundreds or even thousands of shareholders so there are lots of people wanting a share of the profits.

**Average rate of return (ARR):**  $\frac{\text{average yearly profit}}{\text{sum invested}} \times 100$

(Sum invested: the cash put at risk when investing in new equipment or a new product.)

**Gross profit margin:**  $\frac{\text{Gross profit}}{\text{Revenue}} \times 100$       **Net profit margin:**  $\frac{\text{Net profit}}{\text{Revenue}} \times 100$

### Business and globalisation



Globalisation is where businesses operate internationally and gain a lot of influence or power.

Globalisation affects businesses in three main ways:

#### ❖ Imports

Globalisation allows businesses to import products and raw materials at lower prices than they would be able to produce them for in the UK. However, importing increases competition from foreign businesses that are able to sell directly to UK customers.

#### ❖ Exports

Exporting opens up new international markets for businesses and gives them the potential to grow. However, operating in international markets can be very different to operating in the UK and businesses may face problems if they lack the necessary expertise or knowledge.

#### ❖ Location

Globalisation brings with it the opportunity for businesses to relocate operations to other countries. This may be to benefit from lower labour costs, to be closer to raw materials or to be closer to the markets to which they sell their products.

### Calculate Gross profit and Net profit

$$\begin{array}{r} \text{Revenue} \\ - \text{Cost of sales} \\ \hline = \text{Gross profit} \end{array}$$

$$\begin{array}{r} \text{Gross profit} \\ - (\text{Other operating expenses and interest}) \\ \hline = \text{Net profit} \end{array}$$

Sales revenue	£625 000
Cost of sales	£145 000
Other operating expenses and interest	£200 000

Gross profit = £625 000 – £145 000  
Gross profit = £480 000

Net profit = £480 000 – £200 000  
Net profit = £280 000

## COMPUTING YEAR 11 AUTUMN 2

### 1.4 NETWORK SECURITY

FORMS OF ATTACK	
Malware	Software written in order to infect computers and commit crimes e.g. fraud or identify theft. Malware exploits vulnerabilities in software
Types of Malware	Malware is term that covers (among other things) viruses, trojans, worms, ransomware, spyware and adware
Phishing	Online fraud technique used by criminals. It is designed to get you to give away personal information such as usernames, passwords, bank details, credit card details... Achieved by disguising as a trustworthy source in an electronic communication, e.g. an email or fake website.
Brute Force Attack	A trial and error method used to decode encrypted data (such as passwords). Uses every combination until it hits upon the correct one.
DOS Attack	Denial of Service attack. Floods a server with useless traffic causing the server to become overloaded and unavailable
DDOS Attack	Distributed Denial of Service Attack. Using multiple computers (zombies) in a Botnet to undertake a DOS attack
Data Interception and Theft	Stealing information from an unknowing victim's computer in order to get confidential information, or to compromise their privacy. E.g. to sniff usernames and passwords
SQL Injection	A technique used to view or change data in a database by inserting additional code into a text input box, creating a different SQL command

THREATS POSED TO NETWORKS	
Malware	Files are deleted, become corrupt or are encrypted. Computers crash, reboot spontaneously and slow down. Internet connections become slow. Keyboard inputs are logged and sent to hackers.
Phishing	Accessing a victim's account to withdraw money, or purchase merchandise and services. Open bank accounts, credit cards, cashing illegitimate cheques. Gain access to high value corporate data. Financial services can blacklist the company
Brute Force Attack	Theft of data. Access to corporate systems.
(D)DOS Attack	Loss of access to a service for customers Lost revenue Lower productivity Damage to reputation
Data Interception and Theft	Usernames and passwords compromised Disclosure / theft of corporate data
People	Most are caused by people being careless

IDENTIFYING AND PREVENTING VULNERABILITIES	
Malware	Security software (Spam filter, Anti-virus, Anti-spyware, Anti-spam) Enabling OS and security software updates. Staff training Backup files regularly onto removable media.
Phishing	Strong security software. Staff training: awareness of spotting fake emails and websites. Staff training: not disclosing personal or corporate information. Staff training: disabling browser pop-ups.
Brute Force Attack	Network lockout policy, Using progressive delays. Staff training
(D)DOS Attack	Strong firewall and packet filtering Properly configuring servers and auditing and monitoring systems

## COMPUTING YEAR 11 AUTUMN 2

### 1.5 SYSTEM SOFTWARE

#### DEFINITIONS

Systems Software	Systems Software is the software used to control the hardware of the computer. It is contrasted to application software which is used to enable the user to perform tasks and create content and products
Operating System	An operating system is a piece of system software that communicates with the hardware of the computer and allows other programs to run. It is comprised of system software, or the fundamental files your computer needs to boot up and function
Peripherals	Peripherals are controlled by software called device drivers. Standard drivers (mouse and keyboard) are included in the operating system, however more specialist peripherals may need drivers programmed by the manufacturer which convert signals into machine code and are installed separately
Utility Software	Utilities are programs that are installed to perform a specific function, usually to improve the efficiency or security of a computer system

#### TYPES OF INTERFACE

GUI	A Graphical User Interface provides windows, icons, menus, (mouse or other) pointer... Sometimes calls WIMP. It is visual, interactive, and intuitive. Optimised for mouse/touch input
CMD	A Command Line Interface is text based. It uses less resources than a GUI. It is more efficient but harder to learn. Often repetitive processes can be automated with scripts
Menu	A Menu Interface presents successive menus to the user with options to choose at each stage. Often used with buttons on a keypad. (Think calculator when you press the 'MENU' button)

#### FUNCTION OF THE OPERATING SYSTEM

What does an Operating system do?	An operating system manages all of the software and hardware on the computer. Most of the time, there are several different computer programs running at the same time, and they all need to access your computer's central processing unit (CPU), memory, and storage. The OS co-ordinates this activity
Interaction	A user interacts with the computer by means of an interface provided by the operating system

#### FEATURES OFTEN PROVIDED BY AN OPERATING SYSTEM

Multitasking	Running multiple applications at the same time by giving each application a small time-slice of processor time. This allows more than one program to be held in memory at a time, and data shared between them such as copy and paste. It also enables you to listen to music on your PC at the same time as word processing for example
Memory Management	When programs are loaded, the operating system decides where they are held in memory. Over time the memory becomes fragmented as programs are loaded and closed because they use different amounts of memory. The operating system must keep track of different program fragments. When the memory is full, the operating system uses virtual memory
Device Drivers	Translates operating system instructions into commands that the hardware will understand. Each peripheral will need a device driver and many common ones are built into the Operating System
User Management	Providing for different users to log into a computer. The operating system will retain settings for each user, such as icons, desktop backgrounds etc. Each user may have difference access rights to files and programs. A client server network may impose a fixed or roaming profile for a user, and manage login requests to the network.
File Management	Data is stored in files. An extension to the filename tells the operating system which application to load the file into. Files can also be placed in folders for ease of organising

### EXAMPLES OF UTILITY SOFTWARE

Encryption	Encryption utilities use an algorithm to scramble plain text into cipher text. It can be decrypted and read again with a Key
Defragmentation	Defragmentation utilities reorganise files on a hard disk, putting fragments of files back together, and it collects together free space. This reduces the movement of a read/write head across the surface of the disk, which speeds up file access. Solid state drives should not be defragmented (it is unnecessary as they have no moving parts. It also reduces their lifespan)
Compression	Compression utilities reduce the size of a file so that it takes up less space, and is quicker to download/upload. Compressed files must be extracted before they can be read. Compression is lossy or lossless
Backup	Backup utilities take a copy of the data and place it elsewhere (disks, tapes, cloud, etc.). Backups can be either full (backup everything) or incremental (back up changes since the last backup).

# Dance Component Two: Section A Knowledge Organiser

## HYPOTHETICAL CHOREOGRAPHY

THE QUESTIONS WILL BE STRUCTURED LIKE THIS

Section A – Knowledge and understanding of choreographic processes and performing skills

You must answer all questions in this section.

37.5% (30 marks) – you should spend about 30 minutes on this section.

You are choreographing a group dance for two dancers using the image below as a stimulus.

All answers in questions 1-7 must relate to this stimulus.



### What will the question ask?

The question will give you a stimulus. This could be an image, text, an object, and idea.

You will be asked for a dance idea/choreographic intent based on this stimulus.

You will then be asked a range of questions about how you might choreograph a dance based on the dance idea

### How do I need to answer?

Short and to the point.

No extended writing in this section.

1-4 mark questions.

Don't waste time on being over creative.

Motif writing can be just two sentences.

**TIP!** Always link back to the dance idea

Outline a dance idea or theme that you could consider from this stimulus. [1 mark]

Describe a motif you could choreograph for this dance. Your answer should refer to actions, space and dynamics. [3 marks] **TIP!** Describe this step by step

Give three ways you could develop the motif you have described. [3 marks]

Describe the climax of your dance. Your answer should refer to action, space and dynamics. [3 marks] **TIP!** Show the build up as well as the climax itself.

Give one way in which this climax communicates your choreographic intent. [1 mark]

Identify the type of structure that could be appropriate for your dance. [1 mark]

Give two ways in which this structure links to your chosen dance idea. [1 mark]

### ACTION

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

### DYNAMICS

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

### SPACE

Pathways  
Levels  
Directions  
Size of movement  
Patterns  
Spatial design

### RELATIONSHIPS

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

### CHOREOGRAPHIC DEVICES

Motif and development  
Repetition  
Contrast  
Highlights  
Climax  
Manipulation of numbers  
Unison and canon

### STRUCTURE

Binary  
Ternary  
Rondo  
Narrative  
Episodic  
Beginning/middle/end  
Unity  
Logical sequence  
Transitions

### AURAL SETTINGS

Song  
Instrumental  
Orchestral  
Spoken word  
Silence  
Natural sound  
Found sound  
Body percussion

### PERFORMANCE ENVIRONMENTS

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

## PERFORMANCE SKILLS

THE QUESTIONS WILL BE STRUCTURED LIKE THIS

The following questions refer to your knowledge and understanding of performing skills.

### What will the question ask?

A range of questions about performance skills.

These could include:

Definitions

Exercises

Rehearsal methods

Advice to dancers

Phrase description

Safe practice

### How do I need to answer?

Short and to the point.

No extended writing in this section.

1-4 mark questions.

Phrase descriptions can be just two sentences.

### PHYSICAL SKILLS

Posture  
Alignment  
Balance  
Coordination  
Control  
Flexibility  
Mobility  
Strength  
Stamina  
Isolation  
Extension

### EXPRESSIVE SKILLS

Projection  
Focus  
Spatial awareness  
Facial expression  
Phrasing  
Musicality  
Sensitivity to other dancers  
Communication of choreographic intent

### TECHNICAL SKILLS

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

### MENTAL SKILLS

#### DURING PERFORMANCE

Movement memory  
Commitment  
Concentration  
Confidence

### MENTAL SKILLS

#### PREP FOR PERFORMANCE

Systematic repetition  
Mental rehearsal  
Rehearsal discipline  
Planning for rehearsal  
Response to feedback  
Capacity to improve

### SAFE PRACTICE

#### DURING PERFORMANCE

Safe execution  
Appropriate dancewear, including:  
Footwear  
Hairstyle  
Absence of jewellery

### SAFE PRACTICE

#### PREP FOR PERFORMANCE

Warming up  
Cooling down  
Nutrition  
Hydration

Which of the words below is a physical skill? [1 mark]

Alignment                      Turn                      Mobility

Define the physical skill you identified [1 mark]

Describe a short movement phrase that includes the physical skill identified. Your answer should refer to action, space and dynamics. [3 mark]

What advice would you give to a dancer that needs to improve their musicality. [1 marks]

Place a tick in the box next to the correct definition of projection in performance [1 mark]

The overall shape and structure of the dance.

The energy the dancers uses to connect with and draw in the audience.

The use of eyes to enhance performance.

Dance that tells a story.

Outline one rehearsal method that would improve projection. [1 mark]

# Dance Component Two: Section C Knowledge Organiser



A Linha Curva



Artificial Things



Emancipation of Expressionism



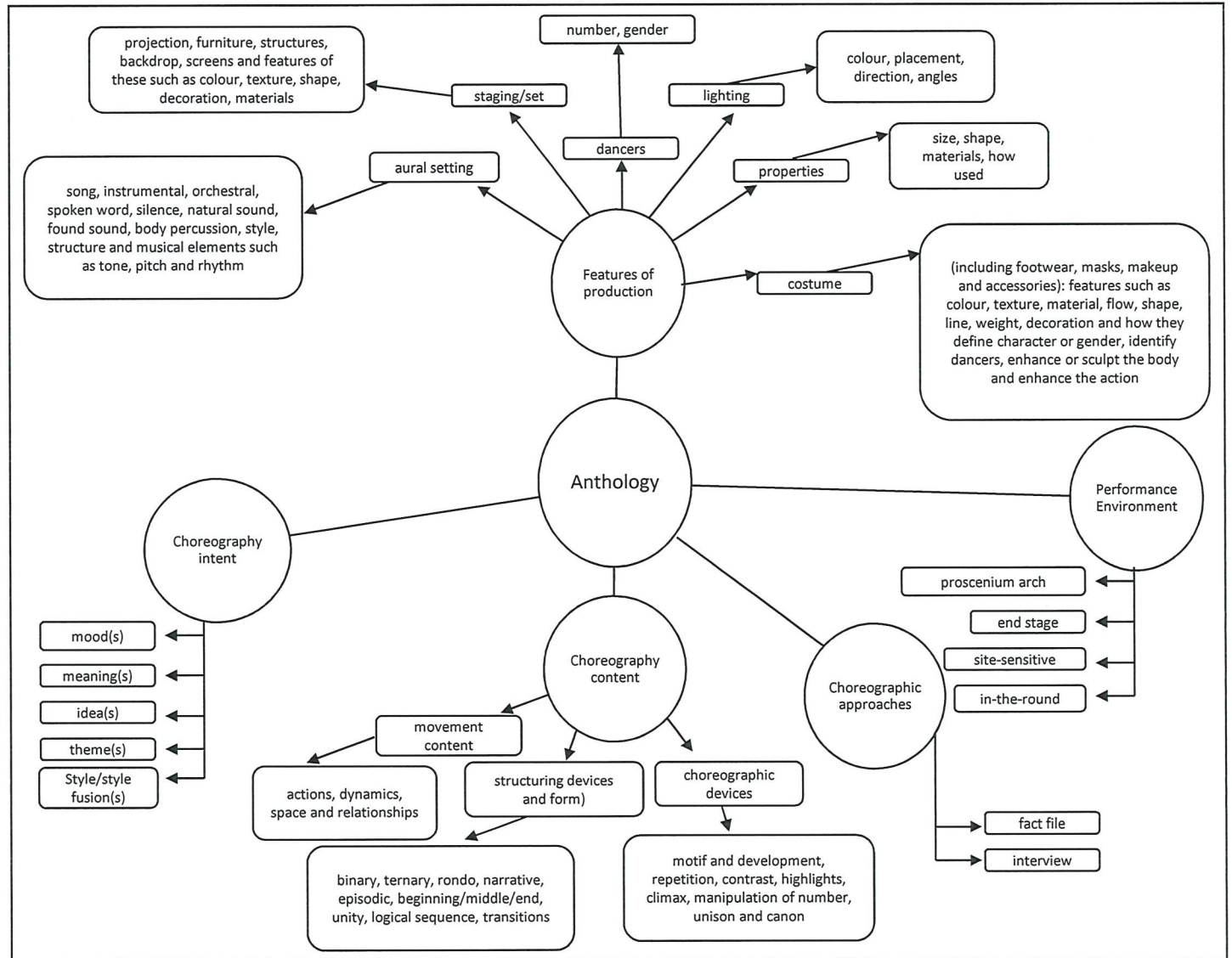
Infra



Shadows



Within Her Eyes





# Drama: Performing from a Text Knowledge Organiser

## Stimulus



### Context:

- J.B. Priestley
- 1914-18: WW1, Aged 20, Priestley serves on the front line in France and is wounded.
  - 1919: awarded place at Trinity Hall, Cambridge to study Literature, History and Politics.
  - 1922: begins to work as a journalist in London.
  - 1934: writes 'English Journey' about the poorer parts on Britain.
  - 1939-45: makes regular wartime radio broadcasts called 'Britain Speaks'.
  - 1945: writes *An Inspector Calls*.

- 1912 England
- Work strikes
  - Workers' rights
  - Pre WW1
  - Suffragette movement
  - Class system

- 1945 England
- Post WW1 and WW2
  - Social levelling
  - Women's rights
  - Workers' rights
  - Trade unions
  - National Insurance
  - Welfare system
  - NHS



## Style

The style of 'An Inspector Calls' is based on old **Morality Plays**. It is a bit like a detective story or a whodunnit. Morality plays were religious plays written in the late middle ages. They tended to involve the seven deadly sins and tried to teach people how they should behave.

### Use of language in *An Inspector Calls*

The language in *An Inspector Calls* includes dialogue and stage directions. Priestley has tried to make the dialogue realistic so there is less emphasis on imagery and more **focus on plain, at times emotive, expression**.

It is important to consider how the dialogue adds to the drama of the play. The dramatic features of the dialogue include:

- dramatic pauses
- repetition
- gasps and interruptions
- fluency and length

The stage directions also add to the drama of the play. Early in the play, Sheila says to Gerald 'so you be careful'. This line could be delivered in a number of ways, each would change its meaning. Priestley specifies that the line is said 'half playful, half serious'. This stage direction gives a very early hint to observant audience members that all is not well between Sheila and Gerald. Without it, Priestley's dramatic intentions might be lost.

When analysing the language Priestley uses, you could use this structure:

- What are the ideas Priestley is trying to get across?
- How has he chosen particular words to reflect this?
- What effect does this have on the audience?

## Skills

Performer	Designer	
<p><u>Vocal skills</u></p> <ul style="list-style-type: none"> <li>pitch</li> <li>tone</li> <li>pace/tempo</li> <li>pause</li> <li>accent</li> <li>volume</li> <li>clarity</li> </ul> <p><u>Physical skills</u></p> <ul style="list-style-type: none"> <li>gesture</li> <li>stillness</li> <li>fluency</li> <li>expression</li> <li>posture</li> <li>facial expressions</li> <li>eye contact</li> <li>movement</li> </ul> <p><u>Space</u></p> <ul style="list-style-type: none"> <li>proxemics</li> <li>relationships</li> <li>positioned</li> <li>blocking</li> <li>interaction (set / audience)</li> </ul>	<p><u>Sound Design</u></p> <ul style="list-style-type: none"> <li>• music</li> <li>• sound effects</li> <li>• live sounds</li> <li>• recorded sounds</li> <li>• volume</li> <li>• reverb/echo</li> <li>• sound sources</li> <li>• amplification including use of microphones</li> </ul>	<p><u>Lighting Design</u></p> <ul style="list-style-type: none"> <li>• intensity</li> <li>• focus</li> <li>• angle</li> <li>• special effects</li> <li>• colour</li> <li>• gobos</li> <li>• types of lantern</li> </ul>
	<p><u>Costume Design (including hair and makeup)</u></p> <ul style="list-style-type: none"> <li>• choice and use of materials/fabrics</li> <li>• garments</li> <li>• hairstyles</li> <li>• wigs</li> <li>• make-up</li> <li>• accessories</li> <li>• colour/pattern.</li> </ul>	<p><u>Set design (including props)</u></p> <ul style="list-style-type: none"> <li>• choice of stage</li> <li>• backdrop/cyclorama</li> <li>• set dressing</li> <li>• props</li> <li>• furniture</li> <li>• colour</li> <li>• use of space</li> <li>• entrances and exits</li> <li>• sight lines</li> </ul>

# Drama: Performing from a Text Knowledge Organiser

What themes are shown throughout your chosen play?  
 Explain why you chose to perform the sections you did –  
 How did you edit them? Do they represent key moments  
 in the plot or developments of character? (Approximately  
 75 words on this)

## 150 word Artistic Intention

Overall performance intention – Will you  
 use a practitioner? Why? How?  
 Performance style? (*two to three  
 sentences*)

How do you intend to perform your character (main  
 character you play if you multi-role) and why – remember  
 to include as many key drama and performance terms  
 here as possible (Approximately 75 words here)

### Sentence Starters

Noughts and crosses explores the themes of...

Within our chosen extracts, the theme of... is shown when... and...

The extracts we have chosen provides us with the opportunity to show...

This is important because...

### Sentence Starters

We will perform the extracts in the style of...

We will use... when...

Our intention is to highlight...

### Sentence Starters

Performer

Designer

I intend to create a character which  
 ...

In the first extract, my character...

Through the use of... I will  
 demonstrate my character's...

I will show my character's status  
 by...

Vocally, I will demonstrate my  
 character's emotions in this extract  
 by ...

My body language will be ... and  
 this is intended to demonstrate...

In contrast, throughout the second  
 extract, I will perform my role by...

**SOUND DESIGNER**  
*Key Vocabulary: Diegetic,  
 Non-diegetic, Band, Sound  
 effects, Found Sound,  
 Recorded, Live, Silence.*

**SET DESIGNER**  
*Key Vocabulary: Flats.  
 Levels, Location, Symbolic,  
 Realistic, Scene change,  
 Texture, Materials, Props*

Through set/sound design, I  
 intend to create a[n]... mood  
 and atmosphere.

The stage type / music I  
 chose was... because...

Considering semiotics, I  
 have decided to... and this is  
 intended to symbolise...

Section choices	You need to select 3-4 sections from your chosen script and write up a list of pro's and con's for each of the sections. Think about the marking criteria and your ability to showcase performance skills.	Evaluate	Write a 500 word evaluation of your progress in this component. What particular skills have you made improvement on? What do you know now that you did not before? What have you still got to work on? Be fair to yourself and set targets to improve on next year. You MUST analyse and give examples for each point you make. This should be a minimum of 1 side of A4 and you should spend at least an hour on it.
Script	Read the whole of your chosen play script, not just the sections you are working on, in order to understand the whole piece and your character's role within it.	Artistic Intentions	Write a brief account of approximately 150 words (i.e. approximately half a side of A4) outlining your artistic intentions for the piece.
Script	Annotate the section you are performing with key notes on staging and performance. E.g. key movements of characters, how lines are delivered, objectives, subtext, blocking, staging, etc.	Design	Make yourself a mindmap / poster which explains key design elements such as—staging types / lights and lighting techniques / sound / set / props. Ensure that you explain WHAT you chose to do, HOW they are used and WHY you will use them in your performance.
General skills	Create a fact file on the genre of your script. What is it? Which practitioners work in this style? Conventions? Discuss set, costume, props, and the acting style. It should be a whole side of A4 and can include pictures.	Coursework	Ensure that all lines are learnt, you have chosen suitable costume, props, and set pieces and have bought these in. You should be full tech and dress rehearsals.

## YEAR 11 ECONOMICS AUTUMN TERM

### KEY TERMS

**ECONOMIC GROWTH** – Growth in GDP over time

**GDP** – Gross Domestic Product – the total value of goods and services produced by a country in a year

**GDP PER CAPITA** – GDP divided by the population

**BOOM** – A period of high economic activity and high levels of employment

**RECESSION** – a period of time when the country's GDP falls for two (or more) consecutive quarters

**LABOUR FORCE/WORKFORCE** – The number of people who work in the country

### GDP

Is the country's GDP divided by the population. It is the output per head.

The terms Boom and Recession are used when talking about economic growth

### BENEFITS OF ECONOMIC GROWTH

- A rise in material living standards
- A reduction in poverty
- A rise in the welfare of the population
- A rise in employment

### WHAT DETERMINES GROWTH?

- Investment
- Changes in Technology
- Education and Training
- Labour Productivity

### COSTS OF ECONOMIC GROWTH

- Environmental (Global Warming, Pollution, Congestion, Loss of Non – renewable resources)
- Lower Quality of life
- Inequalities of income and wealth
- Inflation

### ECONOMIC GROWTH

Economic growth is one of the main aims of any government.

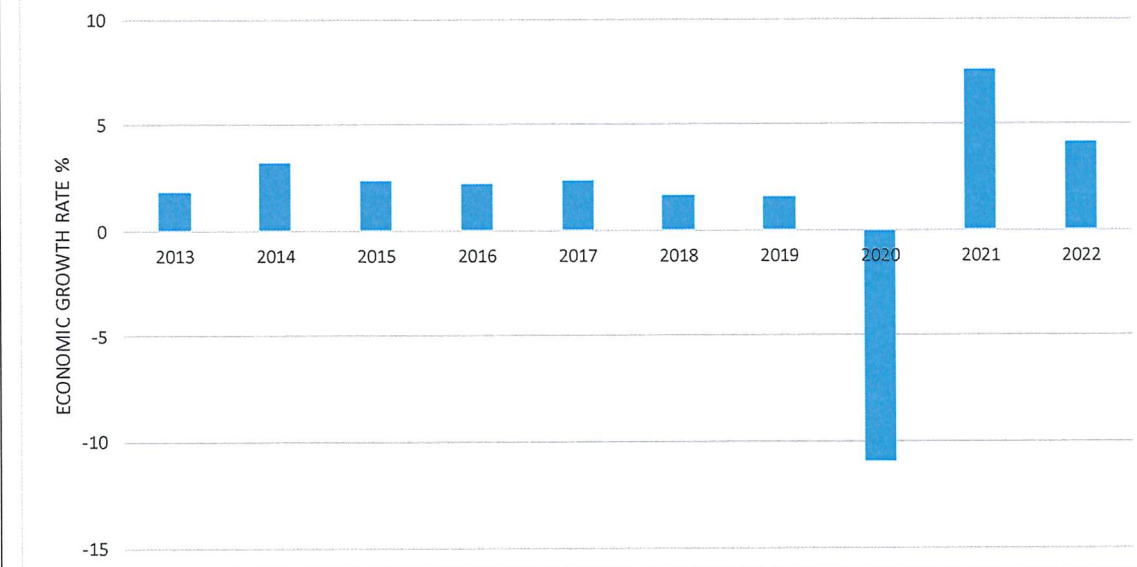
To calculate Economic Growth

$$\text{Rate of Growth} = \frac{\text{Change in GDP}}{\text{Original GDP}} \times 100$$

In essence Economic growth is the increase in value of output of a country. Output for a country is income for the people. So the value of output for a country is equivalent of the total income of the workers.

When there is Economic Growth both Output and incomes are rising

UK ECONOMIC GROWTH LAST 10 YEARS



### KEY TERMS - EMPLOYMENT

**EMPLOYMENT** – The use of labour in the economy to produce goods and services

**UNEMPLOYMENT** – Where workers are unwilling or unable to work at current wage rates or can't find employment

**CLAIMANT COUNT** – The method of measuring unemployment according to the number of people who are claiming unemployment related benefits

**LEVEL OF UNEMPLOYMENT** – The number of people in the working population who are unemployed

**RATE OF UNEMPLOYMENT** – The percentage of a country's workforce that is unemployed

**SEASONAL UNEMPLOYMENT** – Lack of employment caused by a fall in demand during a particular season

**FRICTIONAL UNEMPLOYMENT** – Lack of employment caused by lags when workers move between jobs

**STRUCTURAL UNEMPLOYMENT** – Unemployment caused by a permanent decline of an industry or industries

**CYCLICAL UNEMPLOYMENT** – Lack of employment caused by a lack of demand in the economy

### DIFFERENT TYPES OF INCOME

- Wages
- Rent
- Interest
- Profit
- Benefits

### COSTS OF UNEMPLOYMENT

- Costs to individuals
  - Lower living standards
  - Costs to tax payers
- Costs to Governments
  - Wasted Labour resources
  - Unemployment leads to unemployment
  - A budget Deficit
- Costs to Regions
  - Normally spread unevenly throughout the country
  - Community Decline

### EVALUATING WHY INCOME IS UNEVENLY DISTRIBUTED IN THE UK

- Difference in wages (NMW, NLW)
- Reliance on Benefits
- Age
- Gender
- Inheritance
- Savings
- Property
- Enterprise

### CONSEQUENCES OF DIFFERENCES BETWEEN INCOME AND WEALTH

- Poverty and deprivation
- Poor housing
- Poor health
- Inequality of opportunity

### KEY TERMS – DISTRIBUTION OF INCOME

**DISTRIBUTION OF INCOME** – How incomes are shared out between individuals and households

**INCOME** – the reward for the service provided by a factor of production, including labour

**WEALTH** – The market value of all the assets owned by a person, group or country at a given point in time. Wealth is a stock of assets whereas income is a flow over time.

**GROSS INCOME** – Income received before any taxes are taken or benefits given

**NET INCOME** – Income available after the effect of direct taxes and benefit, often called disposable income

**DISTRIBUTION OF WEALTH** – How wealth is shared out between individuals and households

Richest	Wealth of the country
10th	45%
9th	19%
8th	13%
7th	9%
6th	6%
5th	4%
4th	3%
3rd	1%
poorest 20th	0%

How wealth was shared in the UK by tenths of population 2016 - 2018

# Autumn

# English Literature

# Revision: Poetry

# YEAR 11

**Paper 2 Section B**  
 'Time and Place' Poetry  
 Comparison question  
 (closed book)  
**20 marks**

- ✓ Compares and contrasts the poems
- ✓ Analysis of language, form and structure
- ✓ Explores the effect on the reader
- ✓ Comments on the relationship between the poem and context.

**Comparison:** consider the similarities and differences between two things





**Question style:** 'Question: 'Compare how... is presented in the two poems'

**verb**

exaggerates intensifies amplifies magnifies emphasises hyperbolises accentuates	creates crafts engineers constructs composes establishes portrays	represents exemplifies typifies embodies epitomises exhibits manifests
---	---	--

Shows that you are considering the text as a construct

**Themes**

 Identity	 Nature
 Death/Loss	 Connection

- Terminology:**
1. **Ode** – lyric poem addressed to a particular subject
  2. **Sonnet** – a poem of fourteen lines using any of a number of formal rhyme schemes, in English typically having ten syllables per line.
  3. **Elegy** – a poem of serious reflection, typically a lament for the dead.
  4. **Regular rhyme** – similar sounds at the end of a line, used in a clear pattern across a poem.
  5. **Blank verse** – no regular rhyming pattern, but may have a rhythm.
  6. **Free verse** – no rhyme scheme or rhythmic pattern.
  7. **Enjambment** – the continuation of a sentence without a pause beyond the end of a line, couplet, or stanza.
  8. **Caesura** – a break between words or phrases.
  9. **Repetition** – repeating something that has already been written.
  10. **Stanza** – a group of lines forming the basic recurring metrical unit in a poem; a verse

**Key Quotes:**

"mind forged manacles" – 'London' (1794)	"Earth has not anything to show more fair" – 'Composed' (1802)	" hot, white, inwards turning/anger" – 'Nothing's Changed' (1994)
"Seasons of mists and mellow fruitfulness" – 'To Autumn' (1820)	"I slowly climb/Through winter mire" – 'Where the Picnic Was' (1914)	"fearful and reassuring" – 'Hurricane Hits England' (1996)
"While the chaffinch sings" – 'Home Thoughts' (1845)	'unwontedly', 'hissed', 'bare' – 'Adlestrop' (1917)	"small minded package philistine abroad" – 'Postcard' (1996)
"Presuming Me to be a Mouse" – 'I Started Early' (1862)	"the upper air like sapphire glowed" – 'In Romney Marsh' (1920)	"My costume clung to me" – 'Presents' (2000)
	"The thoughtless birds" – 'Absence' (1958)	
	"it was too cold to swim" – 'Stewart Island' (1971)	
	"I don't like the feel of it" – 'First Flight' (1988)	

# Autumn English Language Year 11

## Paragraphing:

Always start a new paragraph whenever you change:

- Time
- Place
- Topic
- Person

Remember **TiPToP**

## Imaginative Writing: creating an engaging narrative

### Sentence types:

- Declarative** - make statements (most likely to be fact or opinion statements)
- Exclamative** - express emotion (most likely to end with an exclamation mark)
- Imperative** - give commands (include imperative verbs)
- Interrogative** - ask questions (end with a question mark)

## Punctuation

- . **Full stop** – ends a sentence
- , **comma** – separates ideas
- : **Colon** – introduces a list
- ; **semi-colon** – separates clauses
- ! **Exclamation mark** – adds emphasis
- ? **Question mark** - interrogative
- “ **Speech marks** – indicates speech
- **Hyphen** – shows connection
- ... **Ellipsis** – creates mystery/intrigue

## Word bank

### Ways to start sentences

- Start your sentence with an 'ed' word:** Alarmed, Angered, Abandoned, Astonished, Bewildered
- Start your sentence with an 'ing' word:** Hiding Jumping Knowing Riding Praying Thinking Stopping
- Start your sentence with an adverb:** Accidentally, Bravely, Cheerfully, Defiantly, Fortunately, Menacingly
- Adverbial phrase for when something happens:** After running up the hill, Before charging into battle,
- Adverbial phrase for how something happens:** With her feet squelching in the mud, Jane trudged...
- Adverbial phrase for where something happens.** Around Behind Beneath Beside In On Over Past
- Start with a simile.** (A simile compares two things): As dark as... As busy as... As clear as...

**A drop in clause adds in extra information:** The dragon, who had fearsome talons, flew off into the sky.  
The brave knight, who was wearing a coat of armour, strode through the castle doors.

## Word types

- Noun** – Person, place, thing
- Pronoun** – In place of a noun 'you'
- Verb** – an action or state
- Adjective** – describes a noun
- Adverb** – describes a verb
- Preposition** – shows the relationship between objects
- Determiner** – used in front of a noun to show the type 'the' 'a'
- Conjunctions** – joining words

## Top tips

- Remember that all sentences and names start with a **capital letter**.
- Always write in complete sentences.
- Include descriptive detail to set the scene for the reader.
- Use a variety of sentence starters and vocabulary.
- Write with a range of punctuation.

## Writing in timed conditions

1. **Drop** – where are you?

*Describe the setting*



2. **Characters** – who are you with?



3. **Zoom** – what's happening?

*Link to the task focus*

4. **Flashback** – when it happened to you



5. **Ending** – create a cliff-hanger or surprise



## Common Errors

- **There/their/they're** – there= place, their=belongs, they're=they are.
- **Which/witch** – which=choice, witch=supernatural
- **To/too/two** – to=the direction, too=a lot, two=2

# Autumn English Year 11

## Transactional Writing: composing a text for a specific purpose

The purpose of a text can be defined as:

- To persuade
- To argue
- To advise
- To inform
- To explain
- To describe

### Top tips

- Remember that all sentences and names start with a **capital letter**.
- Always write in complete sentences.
- Include descriptive detail to set the scene for the reader.
- Use a variety of sentence starters and vocabulary.
- Write with a range of punctuation.

<b>Upgrade Your Sentence!</b>		<b>Not only but also</b> Not only are holidays too infrequent, but they also are badly timed.	<b>So, so</b> Holidays are so infrequent, so short, that they feel as if they are over before they begun.
<b>Double adjective start</b> Infrequent and expensive, holidays hit the pockets of families across the country.	<b>Less less less</b> The less time spent with the family means the less time that is spent establishing family values, which means the less time a child is able to connect with their parents.	<b>Fortunately/ unfortunately</b> Fortunately, the holiday companies are aware of holiday dates and can adjust the capacity for those periods, unfortunately this comes at a significant financial premium.	<b>Brackets although</b> School holidays are too infrequent (although, some killjoys will love to tell you otherwise) and the impact this has on students can be seen in the high anxiety rates amongst teenagers.
	<b>Whoever/ whenever</b> Whoever dictates holiday dates, and whenever they decide for them to fall, ultimately controls the happiness of millions of families across the country.	<b>Holidays are too infrequent.</b>	
<b>Verb beginning</b> Considering the amount of time spent apart from their families, holidays are clearly too infrequent.	<b>More more more</b> The more dirt that was shifted away, the more of the statue's belly was exposed, and the more indignant the sacred relic became.		
	<b>Adverb beginning</b> Typically, no one consults children on how they feel about holiday dates and the frequency of their breaks.	<b>Triple noun colon</b> Fury, anger, dismay: the statue felt his sadness slip away and was replaced with more damaging emotions.	

### Features of non-fiction texts

Letter:

- Use address
- Include a date
- Use a formal mode of address (Dear Sir or Madam)
- Sequence your paragraphs fluently
- Sign off appropriately.

Article:

- Create a clear and appropriate headline
- Use subheadings
- Include an overview paragraph (introduction)
- Effectively and fluently sequence your paragraphs.

Speech:

- Create a clear address to your audience
- Effectively and fluently sequence your paragraphs
- Use rhetorical indicators to show the audience is being addressed throughout
- A clear sign off at the end (even if it's just 'thank you for listening').

<b>Hook</b> What will you say to get the audience's attention? Use a compelling image or story? Say something challenging or powerful about the issue? Greet people?	<b>Exposition/Setting</b> Give the background - why should your topic matter to people? What is its history? Why is it relevant to this particular audience? This might involve sharing some research data, too.	<b>Rising Action/ Complication</b> Establish the fact that this is a burning issue. What will happen if things don't change? What is at risk? What are the potential challenges which might arise?	<b>Climax</b> What is the single most important argument in your favour? What will draw emotion, engagement and agreement from people?	<b>Falling action/ denouement</b> Begin to paint a vision of what can happen if things begin to change - why should the audience be hopeful? What signs are there that good things are happening?	<b>Satisfying ending</b> What are your solutions to this issue? What practical things would you like to see happening? How can people help by changing their attitudes, behaviours, habits?
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# Food and Nutrition

## NEA 1 Food Investigation Task

### What is a Food Investigation?

A Food Investigation involves **investigating and understanding** how ingredients in food work and why.

It is completed through research, practical experimentation and then evaluating a given task.

Nearly all food that you buy has been through a form of scientific investigation before it hits the supermarket shelves.

### A Food Investigation should...

- Show understanding of the working characteristics, functional and chemical properties of ingredients.
- Include a hypothesis and research into 'how ingredients work & why', documenting practical investigation & drawing conclusions.

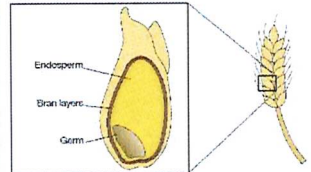
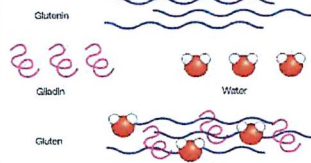
When researching or investigating a task, '**copy and paste**' from the first thing you find on Google doesn't help towards *really* understanding words and definitions. If you don't understand the first answer, keep looking until you get a better understanding.

### Examples of Food Investigation tasks

1. Investigate the ingredients used for bread making.
2. Investigate the use of raising agents in baked products.
3. Investigate the use of ingredients used to thicken sauces and soups.

### Research the task

**Research**  
Two proteins present in flour (gliadin and glutenin) form gluten when mixed with water. Gluten is essential for bread making and influences the mixing, kneading and baking properties of dough. Stirring and kneading increases gluten formation. The gluten catches the carbon dioxide produced by the yeast and stretches, resulting in millions of tiny bubbles.



Strong plain flour creates the best results for bread as it is high in gluten. The gluten content in the flour can hold the carbon dioxide gas which is produced during the dough fermentation. This creates a good crumb texture which is most suitable for bread. The extraction rate of strong plain flour is 70%. Strong white flour contains 70% of the original grain, with most of the bran, germ, fat and minerals removed.

### How the task will be assessed

Breakdown of assessment	
Choose and analyse task	
Section A: Research	6 marks
Section B: Investigation	15 marks
Section C: Analysis and evaluation	9 marks
<b>Total</b>	<b>30 marks</b>

### Key Words

**Analyse** – Examine something to see what it is or how it works

**Research** – Finding things out, collecting information, increasing knowledge

**Hypothesis** – A guess, a prediction, a scientific theory

**Investigation** – Testing a theory using research and hypothesis. Gathering evidence.

**Analysis** – Breaking down your findings. Ask how they relate to each other.

**Evaluation** – Examine your findings. Give a balanced view.

### Carry out an investigation using your research

#### Controls when carrying out practical investigations

When carrying out investigations controlled testing ensures the results are accurate.

#### Examples of controls to ensure a fair test

- Weigh ingredients accurately, if possible, use digital scales.
- Use cutters and templates to ensure a consistent size.
- Cook at the same temperature and for the same amount of time.
- When testing use random codes (e.g. XZY) to avoid any bias.
- Serve samples at the correct and same temperature.
- Make sure testers know how to fill in the charts.

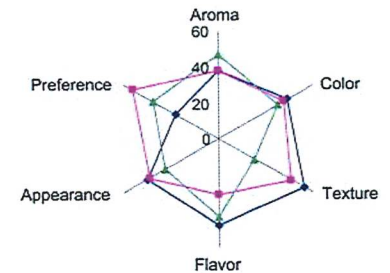


#### When writing up your findings, think about;

- What controls did you use to make it a fair test?
- Do you think the investigation carried out to prove your hypothesis was relevant? Give reasons.
- What else could have been done to improve the investigation and how it was carried out?

#### For your evaluation...

Explain how you could use your findings when cooking food in the future.





# Food and Nutrition

## NEA 2 Food Preparation Task

The NEA 2 is a Food **Preparation** Task. The goal is produce a 20 sided word report. It is the opportunity for you to put into practice **all** that you have learnt throughout the course. The task is mainly **practical based** using a range of food preparation and technical skills. The final assessment will be a **3 hour exam** to cook your chosen dishes.

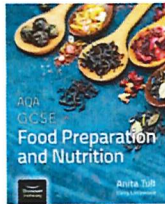
### An online digital book can help you!

Go to: <https://www.illuminate.digital/aqafood/>

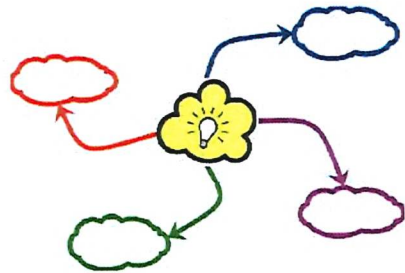
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Password: student3

Pages: 241-243



Note: Unfortunately, the book is not compatible with mobile phones



### Research the task (6 marks)

Choose your task carefully. Think about the following;

- The research you could carry out
- Possible dishes you could make for the task
- The target group for the dishes.

The research is based on either of the following target groups:

- A dietary life stage – Young children, adult, teenager, young children.
- A dietary group – e.g. vegetarians, vegans, high fibre diet etc.

Comment on how well the research findings have been summarised:

- Is the research relevant to the task title?
- How well has the analysis been written?
- How does the analysis focus on the task topic?
- How will the analysis help in the selection of recipes for the practical work?

### Mind mapping

Mind maps are a great way to explore and plan out ideas. They help to brainstorm, structure and form new ideas that you may not have necessarily thought about in your previous ideas. Use them to help during different stages of the task.

### Demonstrating Skills (18 marks)

Now it's time to demonstrate your practical skills. The dishes you make must reflect the research you carried out.

Different dishes have different skill levels. It is up to you to aim high and show off your practical skills.

Skills include;

- Knife skills
- Dough making
- Sauces
- Setting mixtures etc.

One possible approach to recording a dish is shown below:

**Recipe 1: Roasted vegetable lasagne**

Reasons for choice: I chose to make this product because it is possible to showcase my sauce-making skills. The sauce also requires a lot of stirring, and understanding of gelatinisation, in order to prevent lumps forming. This is a typical Mediterranean dish.

**Ingredients:** Filling 400g peppers/aubergine, courgettes and red onion, 75g mushrooms, can tomatoes, 1 pepper, 10g fresh basil. **Pasta** 140g flour, 2 medium eggs. **Sauce** 50g plain flour, 50g soft spread, 500ml milk, 100g cheese.

**Skills:** Making pasta is a complex skill: making the dough, rolling the dough out to the correct thickness, cooking the pasta. For a roux sauce I need to ensure the sauce is at the correct consistency. Vegetable preparation: chopping and slicing.

**Sensory evaluation:**

	Taster 1	Taster 2	Taster 3	Taster 4	Total
Appearance	4	5	4	4	15
Texture	4	4	4	5	17
Taste	4	4	3	5	16
Aroma	3	2	4	3	13

The appearance scored 15/20. The tasting panel liked the crisp golden brown cheese topping and the contrast with the red peppers. The purpose of this skills test was to test how to make pasta as this is something I have not done before. The texture scored 17 out of 20. The tasting panel liked the texture and commented that it was cooked correctly. I hope to use fresh pasta as part of my final menu. The taste scored only 16 out of 20. The panel thought the pasta was a little bland and could have more flavouring such as basil to give a more appetising overall flavour.

### Planning final menu (8 marks)

After demonstrating your cooking skills, you will decide on three dishes for your final assessment. **These dishes WILL NOT have been made by you before.**

You will cook the 3 dishes in a 3 hour assessment exam.

The dishes are showing off cooking skills, presentation skills and showing a understanding of the task.

A time plan will be required to take into the exam and followed.

Example of a time plan for dishes for the Mediterranean task

Dish 1: Minestrone soup with chilli and basil bread rolls

Dish 2: Tortellini with salmon, spinach and ricotta

Dish 3: Caramelised fig and honey tarts

Time	Order of work	Health and safety/special points
	<b>Mise en place:</b> Collected equipment, utensils. Wash all vegetables. Weigh ingredients for pastry, bread and tart filling. Grease the tart tin. <b>Soup:</b> Peel and chop carrot, shred the cabbage, chop garlic, chop parsley, slice the green beans. Chop chilli and basil for the bread. <b>Figs:</b> Cut across halfway down gently squeeze to open the fig out like a flower. Segment an orange.	<b>Personal hygiene:</b> Key personal hygiene rules could be added to the time plan. <b>Food safety:</b> Clean surfaces with antibacterial spray. Check all equipment is clean. Check use by and best before dates. Use a brown chopping board for vegetables. <b>Refrigerate:</b> high risk ingredients (between 0°C and below 5°C). <b>Ovens:</b> Pre heat oven to 200°C/400°C. <b>Cooking temperatures:</b> Temperatures recorded for the cooking of each dish to allow for oven management.
10:00		
10:15	<b>Bread:</b> Mix flour and salt. Measure the warm water, add yeast, sugar and stir until dissolved. Add to the flour and mix to soft dough with a knife. Turn onto a floured table and knead well. Add the chopped chilli and basil.	Use warm water so not to kill the yeast. Cover with oiled cling film and leave to prove in a warm area.
10:20	Wash up and clean work surfaces.	
10:25	<b>Pastry:</b> Place the flour, butter and icing sugar into a food processor and pulse until the mixture resembles breadcrumbs. Add half of the beaten egg and pulse until the mixture forms a dough. Turn out onto floured work surface and knead briefly until smooth.	The food processor is sharp, so care must be taken when handling the blade. Wrap the dough in cling film and chill for 20 minutes until firm.
10:35	<b>Pasta:</b> Add flour to a bowl and make a well. Crack the eggs into the well and gradually mix with a blunt knife, incorporating the flour. Knead until well blended and the dough is soft and flexible. Place the salmon fillet in foil and bake in the oven for 15 minutes.	Use flour dredge to stop the dough sticking. Cover and leave pasta to rest for at least 20 minutes. Oven bake the salmon at 180°C for 15 minutes.
10:40	Wash up and clean work surfaces – care with food processor blade.	
10:50	Remove bread from proving oven and knock back. Divide into six and shape.	Cover with cling film and leave to prove for 10 minutes.
10:55	Roll out chilled pastry onto lightly floured work surface line six loose bottomed tart tins. Line with greaseproof paper and fill with baking beans. Remove salmon fillet from oven.	Bake at 200°C for 15 minutes.

**Bon Travail Good work**

**Future Aspirations, Study, and Work**



**Qu'est-ce que tes parents font comme travail?**

*What do you parents work as?*

*Ma mère est professeur d'anglais et travaille dans une école secondaire. Je pense qu'elle adore son travail. Mon père est ingénieur et il est aussi passionné par le travail qu'il fait. Ils ont de la chance tous les deux !*

**Voudrais-tu travailler dans un bureau ?**

*Would you like to work in an office ?*

*Je suis une personne active et pleine d'énergie. Je pense qu'il serait difficile pour moi de rester assis.e devant l'ordinateur 8 heures par jour. Ce n'est pas pour moi le travail dans un bureau!*

**Dans quel secteur voudrais-tu travailler ?**

*What sector would you like to work in?*

*Mon ambition est de travailler dans l'informatique. Le plus important pour moi est d'être bien payé.e et de faire le métier qui me plaît. Et heureusement, c'est le cas, j'ai beaucoup de chance!*

**Quel est ton emploi idéal?**

*What is your ideal job?*

*Le travail idéal pour moi c'est d'être hôtesse de l'air. C'est un travail très stimulant, mais les choses qui me plaisent le plus c'est le contact avec les clients et la possibilité de voyager autour du monde et d'utiliser ma connaissance des langues vivantes.*

**Quel est le plus important pour toi dans un métier?**

*What is the most important thing for you in a job ?*

*Personnellement ce que je cherche dans un métier c'est le fait de faire quelque chose qui me plaît vraiment et qui aide les autres. Le salaire n'est pas le plus important pour moi dans le choix de la profession.*

**À part le travail, quels sont tes projets pour le futur ?**

*Apart from work, what are your future plans ?*

*Dans le futur, d'abord, je voudrais finir mes A levels. Après avoir réussi à mes examens, j'irai à l'université. Puis, avant de commencer le travail professionnel je voudrais prendre une année sabbatique pour voyager un peu autour du monde.*

**Tu veux te marier un jour ?**

*Do you want to get married one day ?*

*Je crois qu'il est trop tôt pour moi de répondre à cette question aujourd'hui.*

*Dans le futur, je voudrais d'abord finir mes études et voyager un peu autour du monde avant de fonder, peut-être, ma propre famille un jour*

**Parler d'autres langues, c'est important ou non?**

*Is speaking other languages important or not?*

*Savoir parler une langue étrangère est actuellement indispensable pour exercer certaines professions, en plus, on a plus de chances d'obtenir une promotion au travail. Quand on voyage on peut parler avec les gens du pays dans leur langue ce qui est très utile.*

**Quelles sont tes qualités personnelles?**

*What are your personal qualities ?*

*Mes amis me disent que je suis une personne sérieuse et avant tout responsable. Pour gagner un peu d'argent de poche, le week-end, je fais souvent du baby-sitting des enfants de mes voisins. Quant à mes compétences linguistiques, je parle couramment l'anglais et un peu français.*

**Quel travail est-ce que tu voulais faire quand tu étais plus jeune ?**

*What job did you want to do when you were younger?*

*Quand j'étais plus jeune je voulais être pompier car j' étais vraiment passionné par le camion de pompier et l'uniforme rouge. Cela me semble ridicule maintenant.*

**Question you will ask:**

**Fancy Phrases:**

### PERFECT TENSE ("has done/did")

Start with the present tense of *avoir/être*, then add the past participle of the second verb:

-er	-ir	-re
Remove <b>-er</b> Add <b>-é</b>	Remove <b>-r</b>	Remove <b>-re</b> Add <b>-u</b>
jouer → (j'ai) joué	finir → (j'ai) fini	vendre → (j'ai) vendu

#### VERBS USING ÊTRE e.g. je suis allé(e)

*monter entrer sortir venir aller naître  
partir descendre arriver tomber rester  
mourir retourner (and all reflexive verbs)*

The past participle for these verbs must agree with the subject in gender and number:

*je suis allé (m) je suis tombée (f)  
on est entrés (mpl) on est entrées (fpl)*

### IMPERFECT TENSE ("was doing/used to do")

Remove **-ons** from the *nous* form of the present tense, add these endings (*ais/ais/aît/ions/iez/aient*)

	jouer	finir	vendre
je	jouais	finissais	vendais
tu	jouais	finissais	vendais
il/elle/on	jouait	finissait	vendait
nous	jouions	finissions	vendions
vous	jouiez	finissiez	vendiez
ils/elles	jouaient	finissaient	vendaient

### PLUPERFECT TENSE ("had done")

Very similar to the perfect tense, except you start with the *imperfect* tense of auxiliary verbs *avoir/être*:  
e.g. *j'avais joué, il avait fini, nous étions allés, elles s'étaient brossées les dents*

### PRESENT TENSE ("does/is doing")

Remove the **-er/-ir/-re** and add these endings:

	jouer	finir	vendre
je	joue	finis	vends
tu	joues	finis	vends
il/elle/on	joue	finit	vend
nous	jouons	finissons	vendons
vous	jouez	finissez	vendez
ils/elles	jouent	finissent	vendent

#### ÊTRE

*je suis / tu es / il est / nous sommes / vous êtes / ils sont*

#### AVOIR

*j'ai / tu as / il a / nous avons / vous avez / ils ont*

### NEAR FUTURE TENSE ("is going to do")

Use the present tense of *aller* followed by the infinitive:

je	vais	jouer finir vendre être aller vouloir etc.
tu	vas	
il/elle/on	va	
nous	allons	
vous	allez	
ils/elles	vont	

### SIMPLE FUTURE TENSE ("will/shall do")

Add these endings to the infinitive:

	jouer	finir	vendre
je	joueraï	finirai	vendrai
tu	joueras	finiras	vendras
il/elle/on	jouera	finira	vendra
nous	jouerons	finirons	vendrons
vous	jouerez	finirez	vendrez
ils/elles	joueront	finiront	vendront

#### IRREGULAR STEMS

*être (ser-) avoir (aur-) faire (fer-)  
venir (viendr-) savoir (saur-) aller (ir-)  
devoir (devr-) pouvoir (pouurr-) voir (verr-)*

### CONDITIONAL TENSE ("would do")

Begin with the future stem, add imperfect endings:

	jouer	finir	vendre
je	jouerais	finirais	vendrais
tu	jouerais	finirais	vendrais
il/elle/on	jouerait	finirait	vendrait
nous	jouerions	finirions	vendrions
vous	joueriez	finiriez	vendriez
ils/elles	joueraient	finiraient	vendraient

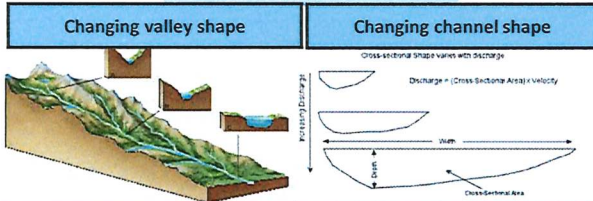
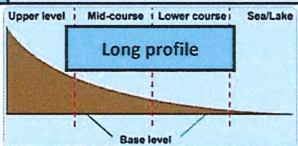
#### IRREGULAR STEMS

*Same as for the simple future*

**EXTRA MARKS: USE WITH THE IMPERFECT TENSE**  
*Si j'avais le temps, j'irais... (If I had time, I'd go to...)*

# Year 11 Geography Autumn Term - Rivers

Water Cycle Key Terms	
Precipitation	Moisture falling from clouds as rain, snow or hail.
Interception	Vegetation prevents water reaching the ground.
Surface Runoff	Water flowing over surface of the land into rivers.
Infiltration	Water absorbed into the soil from the ground.
Transpiration	Water lost through leaves of plants.
River Long Profile & Cross Sections	
Upper Course	Steep gradient, V-shaped valley, steep sides, narrow & shallow channel.
Middle Course	Medium gradient, gently sloping valley sides, wider & deeper channel.
Lower Course	Gentle gradient, very wide almost flat valley. Very wide & deep channel.



River Processes			
As rivers flow, they <b>erode</b> material, <b>transport</b> it & then <b>deposit</b> it further downstream.			
<b>Erosion</b> is the wearing away of the land/sediment. There are 4 types of erosion:		<b>Transportation</b> is the movement of eroded material. How material is moved depends on the size of the particles:	
<b>Attrition</b>	Rocks that bash together to become smooth/smaller.	<b>Traction</b>	Large particles like boulders are pushed/rolled along.
<b>Solution</b>	A chemical reaction that dissolves rocks.	<b>Saltation</b>	Pebble-sized particles are bounced along the river bed.
<b>Abrasion</b>	Eroded rocks picked up by the river and scrape/rub the channel.	<b>Suspension</b>	Small particles like silt and sand are carried along by the water / float.
<b>Hydraulic Action</b>	The sheer force of the water enters cracks in the channel, air compresses, causing the crack to expand and break away.	<b>Solution</b>	Soluble materials e.g. limestone dissolved in the water and carried along.
<b>Deposition</b> is when a river drops eroded material. It occurs when a river loses velocity (speed). This happens mainly in the lower course.			

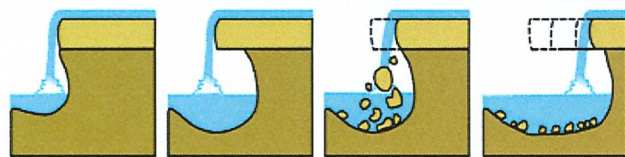
Physical and Human Causes of Flooding.	
There are several factors that <b>shorten lag time</b> so the <b>peak discharge is higher</b> and flooding is more likely to occur. All cause <b>less infiltration</b> and <b>more surface runoff</b> .	
<b>Physical: Prolonged &amp; heavy rainfall</b> Long periods of rain causes soil to become saturated, reducing infiltration and increasing surface run off which increases river discharge.	<b>Physical: Geology</b> Impermeable rocks such as <b>granite</b> causes surface run off as they don't allow infiltration, this leads to increased river discharge.
<b>Physical: Relief</b> Steep-sided valleys discourage infiltration and encourage surface run off, channelling water to flow quickly into rivers causing greater discharge.	<b>Human: Land Use</b> Tarmac and concrete are impermeable. This prevents infiltration & causes surface run off, leading to greater discharge

Hydrographs and River Discharge	
River discharge is the volume of water that passes a certain point in a river per second. Hydrographs show how the discharge of a river changes in relation to rainfall.	
1. <b>Peak discharge</b> is the highest discharge a river reaches.	
2. <b>Peak rainfall</b> is the time when rainfall is highest.	
2. <b>Lag time</b> is the delay between peak rainfall and peak discharge.	
3. <b>Rising &amp; falling limb</b> is the increase & decrease in river discharge.	

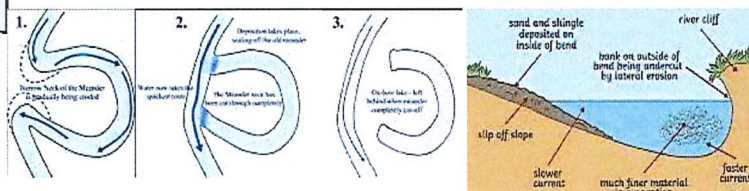
River Management Schemes	
<b>Soft Engineering – reduce flood impacts</b>	<b>Hard Engineering – aim to prevent floods</b>
<b>Afforestation:</b> plant trees to soak up rainwater, reduces flood risk. <b>Flood warnings:</b> The Environment Agency sends out flood warning via media. <b>Flood plain zoning:</b> prevents building where floods are likely. <b>River restoration:</b> making the river more natural e.g. removing man made levees: allow floods to occur.	<b>Straightening channel:</b> increases velocity to remove flood water. <b>Artificial levees:</b> heightens river so flood water is contained. <b>Embankments/levees:</b> raised banks so the river can hold more water <b>Flood relief channel:</b> channels built to divert water around built up areas.

Case Study: Boscastle Flood Defences	
<b>Location and Background:</b> Boscastle in North Cornwall suffered a flood in <b>2004</b> which: <b>destroyed 58 properties, injured 1 person, washed 50 cars to sea</b> and affected the <b>local economy (90% reliant on tourism)</b> .	

Upper Course Landforms	
<b>Waterfall</b>	Form when a river flows over an area of <b>hard rock (e.g granite)</b> followed by an area of <b>soft rock (e.g. clay)</b> . The softer rock is eroded by <b>abrasion</b> and <b>hydraulic action</b> forming a <b>step</b> . A <b>steep drop</b> is eventually created, called a waterfall. Over time the hard rock is <b>undercut</b> , becomes unsupported and collapses. This causes more <b>abrasion</b> leading to the formation of a <b>plunge pool</b> . Overtime this process repeats leaving a steep sided <b>gorge</b> .
<b>Interlocking Spurs</b>	In the upper course most of the erosion occurs <b>vertically (downwards)</b> by <b>hydraulic action</b> and <b>abrasion</b> – this creates steep sided v-shaped valleys. The rivers lack the power to erode <b>laterally (sideways)</b> so they have to wind around steep hillsides that stick out into their paths either side. The hillsides that 'interlock' are called <b>interlocking spurs</b> .



Middle Course Landforms	
<b>Meanders</b>	Rivers develop large bends called <b>meanders</b> . Key features: <ul style="list-style-type: none"> <li>The <b>current is faster on the outside of the bend</b> (as it is <b>deeper</b>) therefore <b>lateral erosion</b> in the form of <b>hydraulic action</b> and <b>abrasion</b> occurs causing a <b>river cliff</b>.</li> <li>The <b>current is slower on the inside of the bend</b> (as it is <b>shallower</b>), therefore <b>deposition</b> happens forming a <b>slip off slope</b>.</li> </ul>
<b>Oxbow Lakes</b>	Meanders can eventually form an <b>oxbow lake</b> . Key steps: <ul style="list-style-type: none"> <li><b>Lateral erosion</b> in the form of <b>hydraulic action</b> and <b>abrasion</b> causes the outside bends to get closer forming a <b>narrow meander neck</b>.</li> <li>The river breaks through the neck usually during a <b>flood</b> and the river flows along the <b>shortest route</b>. <b>Deposition</b> eventually cuts off the meander forming an <b>oxbow lake</b>.</li> </ul>



<b>Flood Management Scheme: Cost £4 million</b> - <b>Soft engineering:</b> a <b>gauge</b> was put in to measure river levels & improve prediction, dead trees & <b>vegetation removed</b> , car park has been raised, <b>flood plain zoning</b> . - <b>Hard engineering:</b> the river <b>channel</b> has been <b>widened and deepened</b> , new <b>embankments built</b> , and <b>old ones strengthened</b> , <b>new bridge constructed</b> .
<b>Social</b> - the scheme will only protect residents from a <b>1 in 75 year flood</b> . <b>Economic</b> - the scheme cost <b>£4million</b> but is not as good as it could be <b>Environmental</b> - <b>biodiversity has increased</b> as the river is now more <b>natural</b> .

Lower Course Landforms	
<b>Flood Plains</b>	<b>Flood plain</b> is the <b>wide valley floor</b> on either side of the river which <b>occasionally floods</b> . When rivers flood the water slows down, loses energy and <b>deposits material (alluvium)</b> .
<b>Levees</b>	<b>Levees</b> are <b>natural embankments (raised banks)</b> along the edges of a river channel. During a <b>flood</b> material is deposited over the whole flood plain, the <b>heaviest material</b> is deposited closest to the river channel, over time the material <b>builds up</b> forming levees.
<b>Estuaries</b>	Estuaries are found at <b>river mouths</b> . The water here is <b>tidal</b> – the river level rises and falls everyday. At <b>high tide</b> , river <b>velocity is slow</b> causing <b>deposition</b> and <b>mud flats</b> to form – these are exposed at <b>low tide</b> .

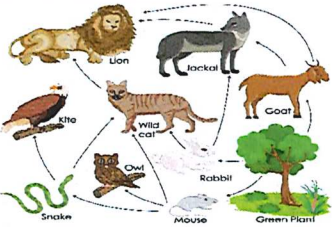
# Year 11 Geography Autumn Term - The Living World

**What is an Ecosystem?** An ecosystem is a system in which organisms interact with each other and with their environment.

## Ecosystem's Components

<b>Abiotic</b>	These are <b>non-living</b> , such as air, water, heat and rock.
<b>Biotic</b>	These are <b>living</b> , such as plants, insects, and animals.

	<b>Flora</b>	Plant life occurring in a particular region or time.
	<b>Fauna</b>	Animal life of any particular region or time.



## Food Web and Chains

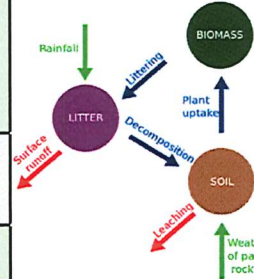
Simple **food chains** are useful in explaining the basic principles behind ecosystems. They show only one species at a particular trophic level. **Food webs** however consists of a network of many food chains interconnected together.

## Nutrient cycle

Plants take in **nutrients** to build into new organic matter. Nutrients are taken up when animals eat plants and then returned to the soil when animals die and the body is broken down by **decomposers**.

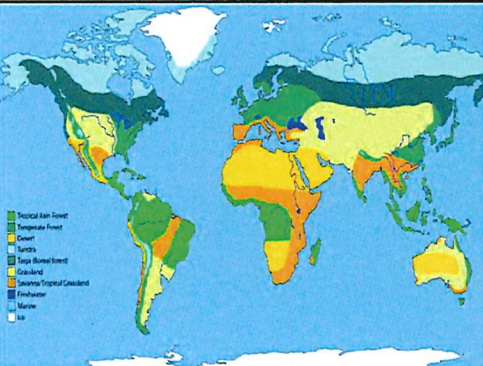
**Litter** This is the surface layer of vegetation, which over time breaks down to become **humus**.

**Biomass** The total mass of **living organisms** per unit area.



## Biomes

A biome is a **large geographical area of distinctive plant and animal groups**, which are adapted to that particular environment. The climate and geography of a region determines what type of biome can exist in that region.



The **most productive biomes** – which have the greatest biomass – grow in climates that are **hot and wet**.

	Coniferous forest
	Deciduous forest
	Tropical rainforests
	Tundra
	Temperate grasslands
	Tropical grasslands
	Hot deserts.

## Biome's climate and plants

Biome	Location	Temperature	Rainfall	Flora	Fauna
<b>Tropical rainforest</b>	Centred along the Equator.	Hot all year (25-30°C)	Very high (over 200mm/year)	Tall trees forming a canopy; wide variety of species.	Greatest range of different animal species. Most live in canopy layer
<b>Tropical grasslands</b>	Between latitudes 5°- 30° north & south of Equator.	Warm all year (20-30°C)	Wet + dry season (500-1500mm/year)	Grasslands with widely spaced trees.	Large hooved herbivores and carnivores dominate.
<b>Hot desert</b>	Found along the tropics of Cancer and Capricorn.	Hot by day (over 30°C) Cold by night	Very low (below 300mm/year)	Lack of plants and few species; adapted to drought.	Many animals are small and nocturnal: except for the camel.
<b>Deciduous &amp; coniferous forest</b>	Between latitudes 40°- 60° north of Equator.	Warm summers + mild winters (5-20°C) 4 seasons	Variable rainfall (500-1500m/year)	Mainly deciduous trees; a variety of species.	Animals adapt to colder and warmer climates. Some migrate.
<b>Tundra</b>	Far Latitudes of 65° north and south of Equator	Cold winter + cool summers (below 10°C)	Low rainfall (below 500mm/year)	Small plants grow close to the ground and only in summer.	Low number of species. Most animals found along coast.
<b>Polar</b>	North/South Poles Arctic/Antarctic	Very low temperatures year round can reach - 50°C	Very low rainfall	Some plants such as mosses and lichens	Very few- polar bears, penguins

## CASE STUDY: Small-Scale Ecosystem- Freshwater Pond

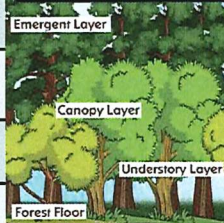
Freshwater ponds provide a variety of habitats for plants and animals.

<b>Pond margin</b>	Plenty of <b>oxygen &amp; light</b> here. <b>Heron &amp; reeds</b> found here.
<b>Pond Surface</b>	Plenty of <b>oxygen &amp; light</b> producers such as <b>algae/waterlily</b> and consumers such as <b>ducks</b> .
<b>Mid water</b>	Animals breathe through gills. Fish ( <b>stickleback</b> ): main predators.
<b>Pond bottom</b>	Little <b>oxygen or light</b> . <b>Decomposers &amp; scavengers</b> like <b>water fleas</b> here.

## Changes to ecosystems

A change to one part of an ecosystem can have an impact on other parts

Perch (predator) added to pond →	Perch will eat smaller fish and frogs →	Reduced food for creatures higher up food chain e.g. herons →	With fewer frogs there will be an increase in frogs lower in food chain
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## Layers of the Rainforest

<b>Emergent</b>	Highest layer with trees reaching <b>50 metres (average)</b> .
<b>Canopy</b>	80% of life is found here as it receives <b>most of the sunlight and rainfall</b> .
<b>U-Canopy/storey</b>	Consists of trees that reach <b>20 metres high (approximately)</b> .
<b>Shrub Layer</b>	Lowest layer with <b>small trees</b> that have adapted to living in the <b>shade</b> .

## Rainforest nutrient cycle

The **hot, damp conditions** on the forest floor allow for the **rapid decomposition** of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots. However, as these nutrients are in high demand from the many fast-growing plants, they do not remain in the soil for long and stay close to the surface. If vegetation is removed, the soils quickly become **infertile**.

## Climate of Tropical Rainforests

- Evening temperatures rarely fall below **22°C**.
- Due to the **presence of clouds**, temperatures rarely rise above **32°C**.
- Most afternoons have heavy showers.
- At night with no clouds insulating, temperature drops.

## Tropical Rainforest Biome

Tropical rainforest cover about **6 per cent** of the Earth's surface yet they are home to **over half of the world's plant and animals**.

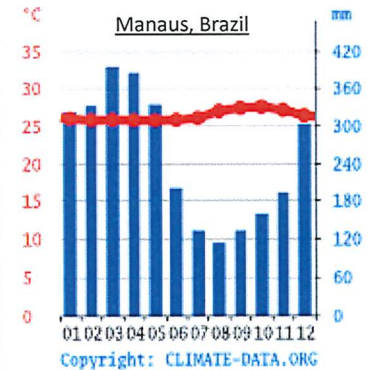
## Interdependence in the rainforest

A rainforest works through **interdependence**. This is where the plants and animals **depend on each other** for survival. If one component changes, there can be **serious knock-up effects** for the entire ecosystem.



## Distribution of Tropical Rainforests

Tropical rainforests are **centred along the Equator** between the Tropic of Cancer and Capricorn. Rainforests can be found in South America, central Africa and South-East Asia. **The Amazon** is the world's largest rainforest and takes up the majority of northern South America, encompassing countries such as Brazil and Peru.












## Tropical Rainforests: Case Study The Amazon

The Amazon is the largest rainforest on earth covering an area of 8million km<sup>2</sup> (the UK is 250,00km<sup>2</sup>) It covers countries such as Brazil, Peru, Colombia, Venezuela, Ecuador, Bolivia, Guyana, Suriname, French Guiana.

Plant Adaptations to the rainforest		Animal Adaptations to the rainforest	
Buttress Roots	Big roots to support 50 metre high trees.	Poison dart frog	Has sucker-like toes to deal with wet / slippery branches
Drip Tips	Allows heavy rain to run off leaves easily.	Toucan	Has a special beak to scoop up fruits of forest
Lianas & Vines	Climbs trees to reach sunlight at canopy.		

Issues related to biodiversity	What are the causes of deforestation in the Amazon?	
Why are there high rates of biodiversity?	Logging- 2-3% of deforestation 	Cattle Ranching- 65-70% 
<ul style="list-style-type: none"> <li>Warm and wet climate encourages a wide range of vegetation to grow.</li> <li>There is rapid recycling of nutrients to speed plant growth.</li> <li>Most of the rainforest is untouched.</li> </ul>	<ul style="list-style-type: none"> <li>Most widely reported cause of destructions to biodiversity.</li> <li>Timber is harvested to create commercial items such as furniture and paper.</li> <li>Violent confrontation between indigenous tribes and logging companies.</li> </ul>	<ul style="list-style-type: none"> <li>Biggest cause of deforestation in the Amazon.</li> <li>Forest is cleared to make space for cattle grazing. Normally by slash and burn.</li> <li>There are around 200 million cattle on 450,000km<sup>2</sup> of pasture.</li> </ul>
Main issues with biodiversity decline	Mineral Extraction < 2% 	Commercial Farming: 5-10% 
<ul style="list-style-type: none"> <li>Keystone species (a species that are important of other species) are extremely important in the rainforest ecosystem. Humans are threatening these vital components.</li> <li>Decline in species could cause tribes being unable to survive.</li> <li>Plants &amp; animals may become extinct.</li> <li>Key medical plants may become extinct.</li> </ul>	<ul style="list-style-type: none"> <li>Precious metals are found in the rainforest.</li> <li>Areas mined can experience soil and water contamination.</li> <li>Indigenous people are becoming displaced from their land due to roads being built to transport products.</li> </ul>	<ul style="list-style-type: none"> <li>Soy is also farmed here- up to 250,000 km<sup>2</sup> of former forest has been used for it's production.</li> <li>Rice, cane and sugar cane are also grown and sold for profit.</li> </ul>

Impacts of deforestation		
Economic development 	Energy Development <2% 	Subsistence Farming- 20-25%
<ul style="list-style-type: none"> <li>In March 2018 Brazil exported \$600 million of beef</li> <li>One mining company in Peru (Buenaventura Mining Company) employs over 8,000 people</li> <li>The loss of biodiversity will reduce tourism and local Brazilian rubber tappers have lost their livelihood.</li> </ul>	<ul style="list-style-type: none"> <li>The high rainfall creates ideal conditions for hydro-electric power (HEP).</li> <li>The Balbina Dam near Manaus is flooded 2,400km<sup>2</sup> of rainforest.</li> <li>New roads are also needed to transport resources causing more deforestation.</li> </ul>	<ul style="list-style-type: none"> <li>Forest is cleared by small-scale farmers who need to grow food for themselves &amp; their families</li> <li>Many indigenous people are subsistence farmers. Many farmers have been settled along the trans-Amazonian Highway by the Brazilian government.</li> </ul>


Soil erosion 	
<ul style="list-style-type: none"> <li>Brazil is losing 100m tonnes of topsoil every year. This may lead to landslides and flooding.</li> <li>Soil fertility reduced as more water reaches soil</li> </ul>	<p>Sustainable Management of Rainforests</p> <p>Uncontrolled and unchecked exploitation can cause irreversible damage such as loss of biodiversity, soil erosion and climate change.</p> <p>Possible strategies include:</p> <ul style="list-style-type: none"> <li>Selective logging &amp; replanting - trees are only felled when they reach a particular height and trees are replaced, (e.g. in Malaysia)</li> <li>Education - ensuring people understand the impacts of deforestation</li> <li>Ecotourism - tourism that promotes the environments &amp; conservation (e.g. Monteverde reserve, Costa Rica)</li> <li>Conservation- setting up national parks &amp; nature reserves</li> <li>Reducing debt- debt can be cancelled by HICs if LICs protect their TRFs (e.g. USA cancelled \$25m of Peru's debt)</li> <li>International Hardwood Agreements- in place to prevent illegal logging.</li> </ul>
Climate Change	
<ul style="list-style-type: none"> <li>Rainforests are carbon sinks- the Amazon stores 140 billion tonnes of carbon, deforestation releases this Co<sub>2</sub> which is a greenhouse gas</li> <li>Up to 75% of Brazils CO<sub>2</sub> emissions come from deforestation.</li> </ul>	

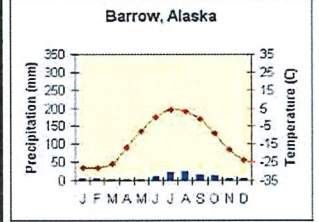


## Cold Environments: Case Study Alaska, USA

Alaska is a cold environment that is part of the USA. Northern Alaska is inside the Arctic Circle. Alaska's state population is one of the smallest in the USA despite being the largest state by area.



Distribution of Cold Environments	Major characteristics of Cold Environments	
<p>Tundra is located at high latitude (above 60° north) in Northern Canada, Northern Europe e.g. Scandinavia and Alaska. Polar environments are found around the north and south poles.</p> 	<ul style="list-style-type: none"> <li>Tundra: Cold winters and brief summers and little rainfall.</li> <li>Polar: Very cold and icy and dry. Very little grows. They remain dark for several months each year.</li> </ul>	

Cold Environment inhabitants	Climate of Cold Environments	Adaptations Cold Environments	
<ul style="list-style-type: none"> <li>Tundra: home to indigenous people and oil &amp; gas workers in larger towns</li> <li>Polar: Mostly uninhabited, some indigenous and scientists.</li> </ul>	<ul style="list-style-type: none"> <li>Tundra: Warm months only reach a max of 10°C while winters can plunge to -50°C. Precipitation is low, less than 380mm</li> <li>Polar: very cold year round, winters tend to drop to -40°C but can reach -90°C. Very little rainfall- less than 100mm a year. Antarctica is a cold desert!</li> </ul>	Plants	Most plants become dormant to survive cold, dark winters. Plants are low-growing to avoid strong winds. Shallow roots because of permafrost. E.g. Bearberry plant.
		Animals	Well insulated, they have thick fur like Polar Bears. Some animals hibernate. White coats for camouflage e.g. Arctic Fox.
		Interdependence	
		Cold climate causes plants to grow slowly & decompose slowly-> so plant cover is low -> soil is low in nutrients -> limiting further plant growth	



Opportunities and challenges for development in Alaska	
Opportunities	Challenges
<ul style="list-style-type: none"> <li>Energy: Over half of Alaska's income comes from the oil &amp; gas industry.</li> <li>Mineral Resources: Gold, silver &amp; iron ore mined. In 2015 \$154million of gold was exported from Alaska.</li> <li>Fishing: 30,000 people are employed in fishing in Alaska (10% of the population)</li> <li>Tourism: tourists are attracted by Alaska's wilderness. 2 million visit yearly bringing in almost \$2.5billion.</li> </ul>	<ul style="list-style-type: none"> <li>Extreme Temperatures: It is very cold Prudhoe Bay's mean annual temperature is -9°C. Making working outside dangerous. Daylight hours are also low.</li> <li>Inaccessibility: Alaska is far from the rest of the US &amp; many areas are mountainous limiting development.</li> <li>Buildings &amp; infrastructure: Providing buildings to cope with either soft or frozen ground is expensive and difficult. Most construction only happens in summer.</li> </ul>

Management of Cold Environments		Valuable Wilderness Areas
Cold Environments are fragile & take a long time to recover. It can take centuries for them to repair.	Plant growth is slow- if damaged regrowth takes time. Species are highly specialised & find it difficult to adapt to change.	<ul style="list-style-type: none"> <li>Wilderness areas are wild natural environments that are mostly undeveloped &amp; uninhabited e.g. Denali Park, Alaska.</li> </ul> <p>It is important to conserve these areas because:</p> <ul style="list-style-type: none"> <li>The provide habitats for species that can't survive elsewhere.</li> <li>Scientists can study these areas unaffected by people. This can help preserve rare species outside protected areas.</li> </ul>
<p>Role of Governments</p> <p>Alaska passed the 1964 Wilderness Act protecting much of Alaska from development.</p>	<p>International Agreements</p> <p>The 1959 Antarctic treaty was signed by 12 nations limiting tourist numbers and ensuring no development.</p>	
<p>Technology</p> <p>Trans-Alaskan Pipeline uses technology to reduce the harm of transporting oil.</p>	<p>Conservation Groups</p> <p>The WWF &amp; Greenpeace put pressure on governments to protect these areas.</p>	

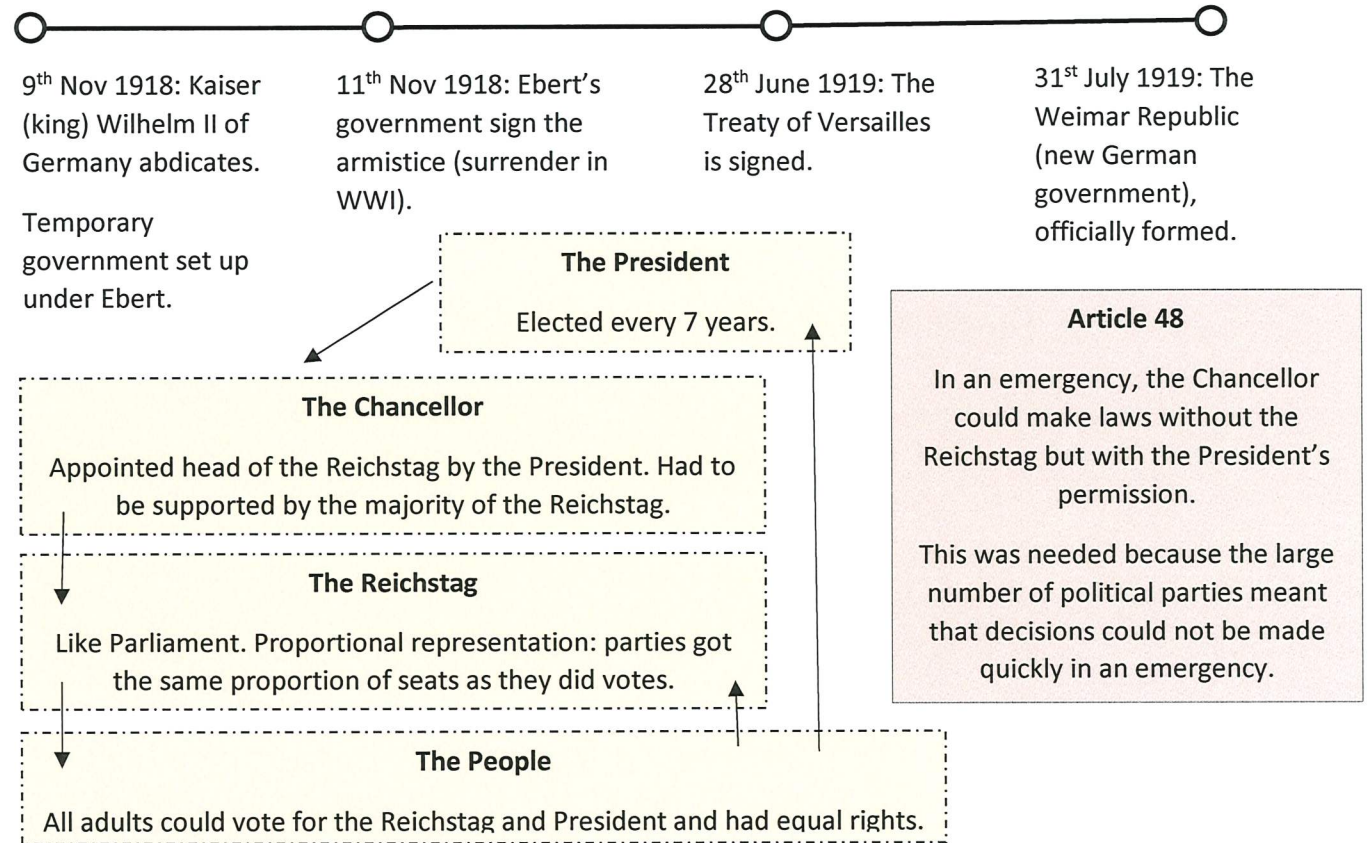
Health and Social Care Knowledge Organiser: Component 2 Health and Social Care Services and Values	
Learning Aim A: Understand the different types of health and social care services and barriers to accessing them	Learning Aim B: Demonstrate care values and review own practice
<p><i>Providing good health and social care services is very important and a set of 'care values' exist to ensure this happens. Care values are important because they enable people who use health and social care services to get the care they need and to be protected from different sorts of harm.</i></p>	
<p><b>A1 Health and social care services</b></p> <ol style="list-style-type: none"> <li><b>Different health care services and how they meet service user needs</b> <ol style="list-style-type: none"> <li><u>Primary care</u>, e.g. dental care, optometry, community health care</li> <li><u>Secondary &amp; tertiary care</u>, e.g. specialist medical care</li> <li><u>Allied health professionals</u>, e.g. physiotherapy, occupational therapy, speech and language therapy, dieticians</li> </ol> </li> <li><b>Different social care services and how they meet service user needs</b> <ol style="list-style-type: none"> <li><u>Services for children and young people</u>, e.g. foster care, residential care, youth work</li> <li><u>Services for adults or children with specific needs</u> (learning disabilities, sensory impairments, long-term health issues) e.g. residential care, respite care, domiciliary care</li> <li><u>Services for older adults</u>, e.g. residential care, domiciliary care</li> <li><u>Role of informal social care provided by relatives</u>, friends and neighbours</li> </ol> </li> </ol>	<p><b>B1 Care values</b></p> <ol style="list-style-type: none"> <li><u>Empowering</u> and promoting independence by involving individuals, where possible, in making choices</li> <li><u>Respect</u> for the individual by respecting service users' need, beliefs and identity</li> <li>Maintaining <u>confidentiality</u></li> <li>Preserving the <u>dignity</u> of individuals to help them maintain privacy and self-respect</li> <li><u>Effective communication</u> that displays empathy and warmth</li> <li><u>Safeguarding</u> and <u>duty of care</u></li> <li><u>Promoting anti-discriminatory practice</u> by being aware of types of unfair discrimination and avoiding discriminatory behaviour</li> </ol> 
<p><b>A2 Barriers to accessing services</b></p> <ol style="list-style-type: none"> <li><b>Types of barriers and how they can be overcome by the service providers and users</b> <ol style="list-style-type: none"> <li><u>Physical barriers</u>, e.g. issues getting into and around the facilities</li> <li><u>Sensory barriers</u>, e.g. hearing and visual difficulties</li> <li><u>Social, cultural and psychological barriers</u>, e.g. lack of awareness, differing cultural beliefs, social stigma, fear of loss of independence</li> <li><u>Language barriers</u>, e.g. differing first language, language impairments</li> <li><u>Geographical barriers</u>, e.g. distance of provider, poor transport links</li> <li><u>Intellectual barriers</u>, e.g. learning difficulties</li> <li><u>Resource barriers for service provider</u>, e.g. staff shortages, lack of local funding, high local demand</li> <li><u>Financial barriers</u>, e.g. charging for services, cost of transport, loss of income while accessing services</li> </ol> </li> </ol>	<p><b>B2 Reviewing own application of care values</b></p> <ol style="list-style-type: none"> <li><b>Key aspects of a review</b> <ol style="list-style-type: none"> <li>Identifying own strengths and areas for improvement against the care values</li> <li>Receiving feedback from teacher or service user about own performance</li> <li>Responding to feedback and identifying ways to improve own performance</li> </ol> </li> </ol> 

## Medicine in WWI

<b>Trenches</b>	The place where soldiers would fight and live while at the front. They included dug outs for sleeping in, and duckboards for standing on.
<b>Battles</b>	Most battles in WWI had little movement from either side and thousands of casualties.
<b>Transport of injured soldiers</b>	Stretcher bearers, motor, horse-drawn, barge, and train ambulances.
<b>Chain of evacuation</b>	The system for dealing with injured soldiers. The Regimental Aid Post was closest to the front line, followed by: dressing stations, casualty clearing stations, then base hospitals.
<b>Trench Foot</b>	Painful swelling of the feet caused by standing in cold water/mud.
<b>Gangrene</b>	Infection caused by lack of blood to an area.
<b>Trench Fever</b>	Spread by lice, with flu-like symptoms.
<b>Shellshock</b>	A mental illness (like PTSD).
<b>Gas</b>	Including chlorine, phosgene, and mustard. It affected the eyes and lungs and could be deadly.
<b>X-Rays</b>	Base hospitals had x-rays, and there were 6 mobile x-rays in a van.
<b>Blood Transfusions</b>	Routinely used by 1918. New solutions for storage and transport.
<b>Thomas Splint</b>	A device to keep the leg still, to prevent the need for amputation.
<b>Brain surgery</b>	20% of wounds to the face / head / neck. Cushing developed new techniques.
<b>Plastic Surgery</b>	First developed by Harold Gillies for injured soldiers.

## Year 11 History: Term 1

### WWI Medicine and Weimar Germany



#### Terms of the Treaty of Versailles:

**Blame** – Article 231 forced Germany to take the blame for World War I.

**Reparations** – Germany was forced to pay the allies £6.6 billion in a series of payments.

**Army** – Germany was forced to reduce their army to only 100,000 men, 6 battleships, no submarines or air force. They also had to demilitarise the Rhineland (area of Germany which bordered France).

**Territory** – Germany lost all colonies it had in Africa and the East, as well giving Alsace Lorraine to France.

**Diktat** – Germany was not allowed to refuse any of the terms of the Treaty.



### Political Problems facing the Weimar Republic (1919-1923):

- The **Treaty of Versailles** was considered 'dolchtooss' (a stab in the back).
- Too many **political parties** (e.g. the KPD, SPD, DVP, NSDAP) meant that no one party had a majority in the Reichstag, making laws difficult to pass.
- The **Spartacist Revolt** (1919): When the popular chief of police in Berlin was sacked by Ebert, the far left thousands of communists (the KPD) protested in the streets. Ebert had to ask the Freikorps (demobilised soldiers) to stop the protests. This included the death of the leaders, Luxemburg and Liebknecht.
- The **Kapp Putsch** (1920): When the Republic lost control of the Freikorps who demanded a new government and the return of the Kaiser. 5,000 Freikorps marched on Berlin. It was stopped by the workers of Berlin going on strike.
- **Political violence** saw 376 political assassinations between 1919-1922. This also wasn't helped by the armed men political parties hired to guard their meetings (such as the SA of the NSDAP/Nazi Party). Judges also undermined the government by not convicting right-wing criminals.
- The **Munich Putsch** (1923): When Hitler and the Nazis (NSDAP) tried to take advantage of the desperate Germans by trying to overthrow the government. They launched their attempt in a Beer Hall in Munich, before marching through the streets with their supporters. After a gun fight with the police, Hitler and other leading Nazis were arrested.

### Financial Problems facing the Weimar Republic (1919-1923):

- The **Treaty of Versailles** ordered Germany to pay billions in reparations to the allies. This put financial pressure on Germany when they were already trying to rebuild after World War I.
- In January 1933, the French army invaded the Ruhr (called the **occupation of the Ruhr**) to seize the coal produced there. The German government ordered the workers there to go on strike, and continued to pay them by printing more money.
- In printing money for the striking workers in the Ruhr, the value of the German mark dropped, leading to the prices of products increasing, and the government having to print more money. This cycle is called **hyperinflation** (with a loaf of bread costing 1 mark in 1919, and 200,000 billion at the height of hyperinflation).

Nov. 1923 – Stresemann set up a new currency (the **Rentenmark**) to stop hyperinflation.

1925 – The **Locarno Pact** was agreed where Germany accepted their borders from the TOV.

1928 – The **Kellogg-Briand Pact** was agreed with 61 other countries and stated they would not use war to achieve foreign policy aims.

During the recovery of Germany between 1923-29, the Nazis struggled to gain support from the German people. These were known as the **Lean Years**.

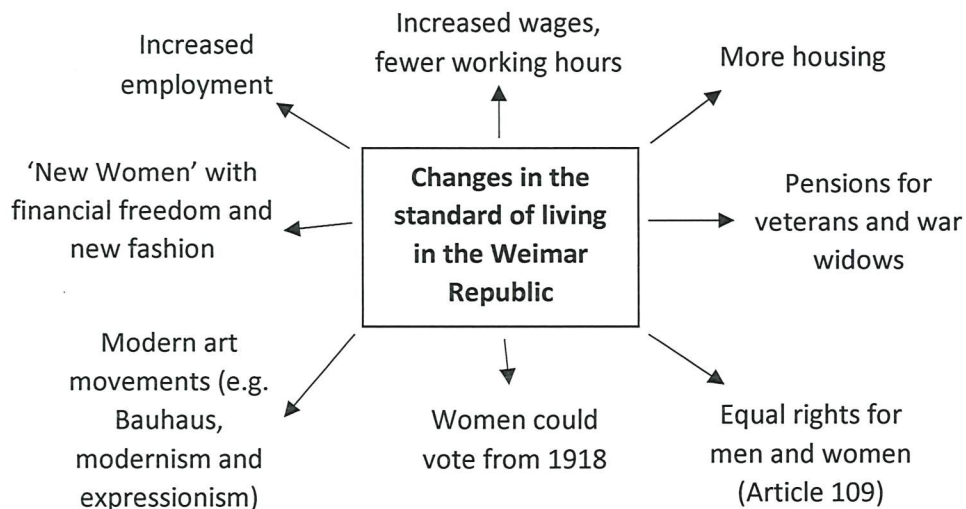
### Stresemann's Solutions

1924 – The **Dawes Plan** was agreed with US banks to give German industry a \$25 billion loan.

1926 – Germany was accepted in the **League of Nations**. This organisation would meet to solve world-wide problems.

1929 – The **Young Plan** was agreed which reduced reparation payments, and gave Germany longer to pay them.

Oct 1929 – The **Wall Street Crash** ended the Weimar Republic's recovery.



## WJEC VOCATIONAL IT

### UNIT 1 – WHAT YOU NEED TO REVISE

- 1.1.1 Functionality of different hardware devices
- 1.1.2 Functionality of different software
- 1.1.3 Services provided by IT
- 1.2.1 Why data must be fit for purpose
- 1.2.2 How input data is checked for errors
- 1.2.3 How data transfers over different types of network
- 1.2.4 Different types of connectivity
- 1.3.1 Risks to information held on computers
- 1.3.2 The impact of data loss, theft or manipulation on individuals and businesses
- 1.3.3 Methods used to protect information
- 1.3.4 How moral and ethical issues affect computer users
- 1.3.5 How legal issues protect computer users
- 1.3.6 The cultural, personal and environmental impact of ICT
- 1.3.7 How a digital footprint can impact computer users

### KEY WORDS

**APPLICATION SOFTWARE** - A program containing a set of instructions to the computer that allows the user to carry out a specific function.

**ARTIFICIAL INTELLIGENCE (AI)** - When computers perform tasks normally requiring human intelligence, such as problem solving, adapting according to previous experience.

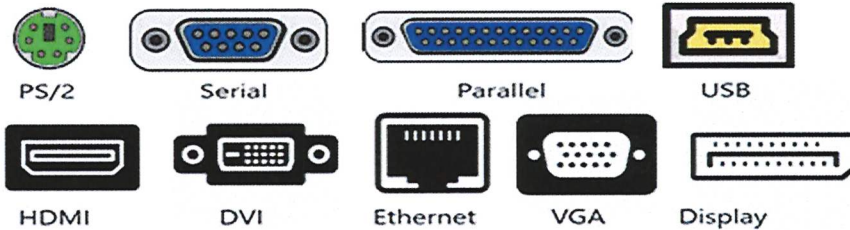
**AUGMENTED REALITY** - The process of superimposing a computer-generated image on a user's view of the real world.

**AUTHENTICATION** - When a user confirms their unique identity on a computer system.

**BIOMETRICS** - Technologies that recognise human body characteristics (e.g., fingerprint) to authenticate a person's identity.

**BIONICS** - The science of constructing artificial systems (e.g., limbs) that have some of the characteristics of biological systems

### 1.1.1 Different ports that connect peripherals



**1.1.2** The two main categories of software are application software and system software. An application is software that fulfils a specific need or performs tasks. System software is designed to run a computer's hardware and provides a platform for applications to run on top of

**1.1.3** IT provides many services including • Smart TV • Gaming • Image Capture And Manipulation • Webcam Services • Social Networking: Information Needed To Create Accounts; Services Available • Music And Sound Including Downloading From The Internet And Related Issues • Mobile Phones • Banking • E-Commerce Systems • Payroll • Modern Mail Handling Methods • Control Processes (Feedback) • Robotics And Bionics • Artificial Intelligence (AI) And Expert Systems • Online Shopping And Searching For Products On Websites • Booking Online • Registration Systems



### DATA

Data is raw, unorganized facts that need to be processed. Data can be something simple and seemingly random and useless until it is organized.



### INFORMATION

When data is processed, organized, structured or presented in a given context so as to make it useful, it is called information.

### 1.2.1 Quality Of Data

**DATA** – Data is raw facts and figures such as 12:00

**INFORMATION** - Information is to add context to the data. For example, the time is 12:00

**KNOWLEDGE** - Knowledge is when it's understood by the user for example, the time at the moment is 12:00 and my lesson started at 11.30 so I'm late.

**ENCODING DATA** – Encoding of data refers to the process of transforming collected data into a set of meaningful, cohesive categories. (e.g. Airport Codes)

**PROS TO ENCODING DATA:** Fewer data errors. Less time spent on data entry. Greater data consistency. Less memory required.

**CONS TO ENCODING DATA:** Data does not always fit into a particular category. Subjective judgements which makes it hard to measure.

### 1.2.2 Main methods of Data Capture

- OCR. Optical character recognition (OCR) is a technique used to read data from images, PDFs, and scanned documents. ...
- ICR. Intelligent character recognition is an advanced OCR used to extract data from different handwritings. ...
- OMR. ...
- Barcodes. ...
- QR Code. ...
- Web scraping. ...
- Voice capture.

### 1.2.3 COMPRESSION

**LOSSY COMPRESSION:** Lossy compression will permanently remove data. This can significantly reduce the size of a file.

The compromise of reducing the file size is that it can have an impact on the quality.

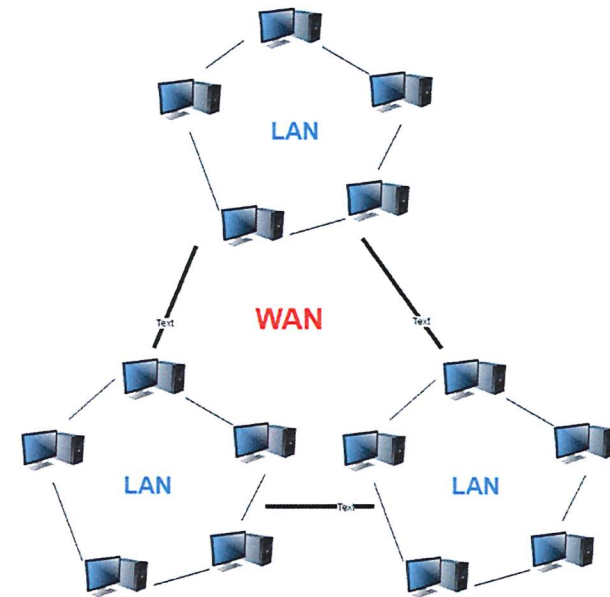
The file also becomes irreversible which means it cannot be changed.

**LOSSLESS COMPRESSION:** Lossless compression uses an algorithm to temporarily group data together so it can be restored into its original form.

This means the quality of the file can be maintained.

The file is reversible which means you can continue to make changes to it.

### 1.2.3 How data transfers over different types of network



### 1.2.3 DATA VALIDATION

Data validation is a check performed by a computer to check that the data entered is reasonable and appropriate. It does not however, check the accuracy of the data – that is what data verification is for.

**FORMAT CHECK:** This checks that data entered has been done using the correct format. For example, the format of national insurance number is LL NN NN NN L.

**LENGTH CHECK:** This checks the length of the characters entered. It's possible to set a minimum or maximum number of characters. This is found on forms where passwords must be at least 8 characters in length for example.

**RANGE CHECK:** This checks the data entered is within a certain set criteria. This could be entering a page on a web form for example.

**PRESENCE CHECK:** This checks that data has been entered in that field. On forms you make a field a 'required field' which doesn't allow the user to go any further until they've completed that field

# GCSE Mathematics Command Words

## PLOT

Mark a point on a graph using a cross

## MEASURE

Find the length or a line or size of an angle using ...

... a ruler or protractor

## CONSTRUCT

Create an accurate drawing using the correct maths equipment

Think ruler and compass

## EXPAND

Remove brackets from and algebraic expression

$$3(x + 4) = 3x + 12$$

## GIVE or JUSTIFY

Use reasons to explain thinking

Think angle facts like 'angles at a point sum to  $360^\circ$ '

## REPRESENT

Display information in a graph or chart

## FIND

Work out an answer to a problem

Think averages - find the mode

## SOLVE

Find the solution to an equation such as

$$4x - 3 = 24$$

## SHOW

Give all working to get the answer

## EVALUATE or CALCULATE or WORK OUT

Find the value (calculate)

Evaluate  $4^3$ :  $4 \times 4 \times 4 = 64$

## CONVERT

Change from one form to another

Think units and fractions, decimals & percentages

## EXPLAIN

Give reasons to support the decision or answer

## SIMPLIFY

Make an algebraic expression simpler by collecting like terms OR make a ratio or fraction simpler by cancelling common factors

## ROUND

Make a number simpler but keep its value close to what it was

$74.26$  rounded to 1dp is  $74.3$

## ORDER

Use a rule to arrange

Think ascending and descending

## DRAW

Create a neat drawing that shows key features

## FACTORISE

Put brackets into an algebraic expression

$$x^2 + 6x + 8 = (x + 2)(x + 4)$$

## ESTIMATE

Give a sensible approximate answer using rounding

## WRITE

Give the answer

## SKETCH

Create a rough drawing that shows key features (no need to use a ruler or compass)

## DESCRIBE

Use correct maths vocabulary to explain key features

Think transformations

## LABEL

Attach the correct name to the diagram

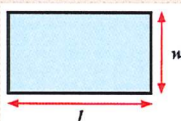
## COMPLETE

Fill in missing values in a table or on a diagram


# Foundation GCSE Mathematics Key Information

**Area of a Rectangle**

$A = l \times w$



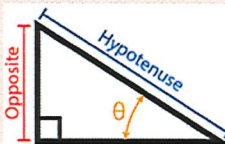
**Speed**



**Percentage Change**

$\frac{\text{actual change}}{\text{original}} \times 100$

**Sinθ**



$\text{Sin}\theta = \frac{\text{Opp}}{\text{Hyp}}$

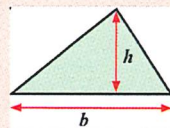
**Prime Number**

A number that has exactly 2 factors

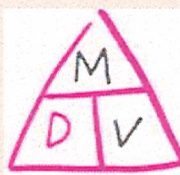
2, 3, 5, 7, 11, 19, ...

**Area of a Triangle**

$A = \frac{1}{2} \times b \times h$

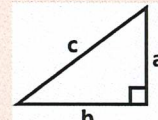


**Density**

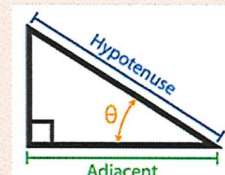


**Pythagoras' Theorem**

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



**Cosθ**



$\text{Cos}\theta = \frac{\text{Adj}}{\text{Hyp}}$

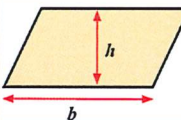
**Square Number**

A number multiplied by itself

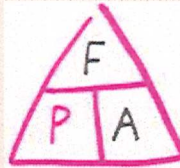
$5^2 = 5 \times 5 = 25$

**Area of a Parallelogram**

$A = b \times h$



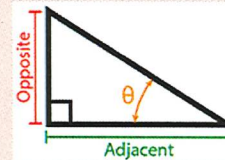
**Pressure**



**Metric Length Conversions**

1km = 1000m  
1m = 100cm  
1cm = 10mm

**Tanθ**



$\text{Tan}\theta = \frac{\text{Opp}}{\text{Adj}}$

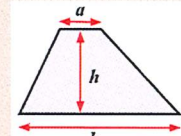
**Cube Number**

A number multiplied by itself and then itself again

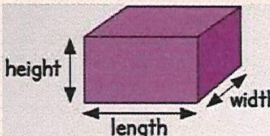
$5^3 = 5 \times 5 \times 5 = 125$

**Area of a Trapezium**

$A = \frac{1}{2} \times (a + b) \times h$



**Volume of a Cuboid**



$V = l \times w \times h$

**Metric Mass Conversions**

1 tonne = 1000kg  
1kg = 1000g  
1g = 1000mg

**Exact Values of Sin**

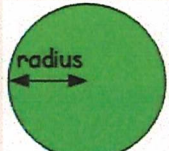
θ	0°	30°	45°	60°	90°
sinθ	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1

**Multiple**

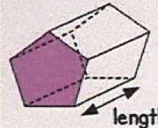
The first 5 multiples of 12 are 12, 24, 36, 48 and 60

**Area of a Circle**

$A = \pi \times r^2$



**Volume of a Prism**



$V = \text{area of cross-section} \times \text{length}$

**Metric Capacity Conversions**

1l = 1000ml  
1l = 100cl  
1cl = 10ml

**Exact Values of Cos**

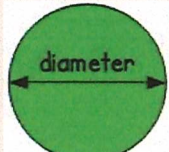
θ	0°	30°	45°	60°	90°
cosθ	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0

**Factor**

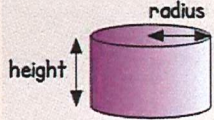
The factors of 12 are 1, 2, 3, 4, 6 and 12

**Circumference of a Circle**

$C = \pi \times d$



**Volume of a Cylinder**



$V = \pi \times r^2 \times h$

**Error Interval**

7.4 rounded to 1dp

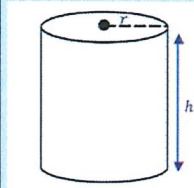
$7.35 \leq x < 7.45$

**Exact Values of Tan**

θ	0°	30°	45°	60°	90°
tanθ	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	

# Higher GCSE Mathematics Key Information

## Cylinder



$$Vol = \pi r^2 h$$

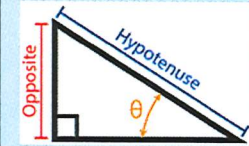
## Speed



## Percentage Change

$$\frac{\text{actual change}}{\text{original}} \times 100$$

## Sinθ



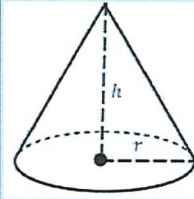
$$\sin \theta = \frac{\text{Opp}}{\text{Hyp}}$$

## Quadratic Formula

$$ax^2 + bx + c = 0$$

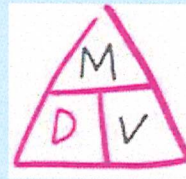
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## Cone



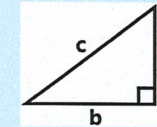
$$Vol = \frac{1}{3} \pi r^2 h$$

## Density

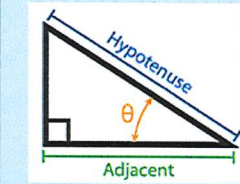


## Pythagoras' Theorem

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



## Cosθ



$$\cos \theta = \frac{\text{Adj}}{\text{Hyp}}$$

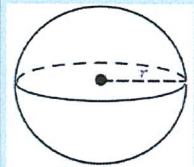
## Surds

$$\sqrt{a} \times \sqrt{a} = a$$

$$\sqrt{a} \times \sqrt{b} = \sqrt{ab}$$

$$\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$$

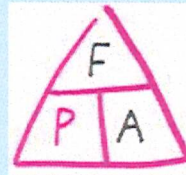
## Sphere



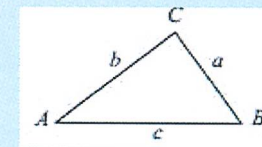
$$Vol = \frac{4}{3} \pi r^3$$

$$S.A. = 4\pi r^2$$

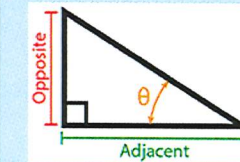
## Pressure



## Trigonometry Non-right angled triangles



## Tanθ



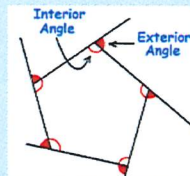
$$\tan \theta = \frac{\text{Opp}}{\text{Adj}}$$

## Error Interval

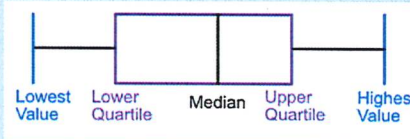
7.4 rounded to 1dp

$$7.35 \leq x < 7.45$$

## Angles in Polygons



## Box Plots



## Sine Rule

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

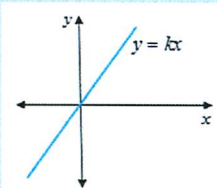
## Exact Values of Sin

θ	0°	30°	45°	60°	90°
sinθ	0	1/2	√2/2	√3/2	1

## Direct Proportion

$$y \propto x$$

$$y = kx$$



sum interior angles =  $(n - 2) \times 180^\circ$

sum exterior angles =  $360^\circ$

interior + exterior =  $180^\circ$

## Histogram

bar chart with unequal bar width and frequency density on vertical axis  
Frequency density = frequency ÷ class width

## Cosine Rule

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

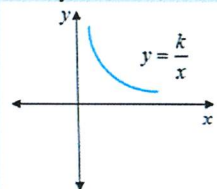
## Exact Values of Cos

θ	0°	30°	45°	60°	90°
cosθ	1	√3/2	√2/2	1/2	0

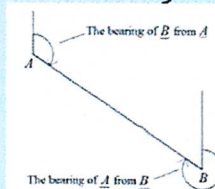
## Inverse Proportion

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

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



## Bearings



## Rules of Indices

Rule 1 $a^0 = 1$	Rule 4 $(a^m)^n = a^m \times n$
Rule 2 $a^m \times a^n = a^{m+n}$	Rule 5 $a^{-m} = \frac{1}{a^m}$
Rule 3 $a^m \div a^n = a^{m-n}$	Rule 6 $a^{n/m} = \sqrt[m]{a^n}$

## Area Triangle

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

## Exact Values of Tan

θ	0°	30°	45°	60°	90°
tanθ	0	1/√3	1	√3	

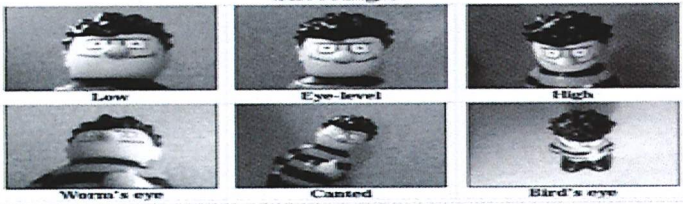


# Media Studies

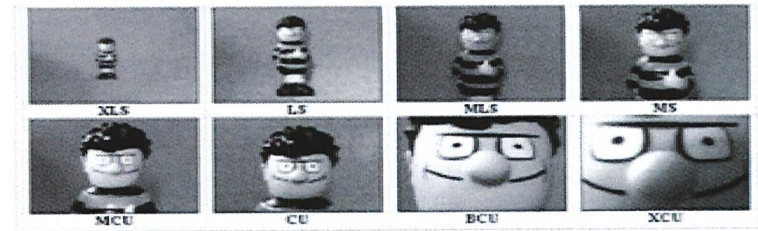
Key Words	
Blockbuster	a Hollywood movie that's made with a large budget and big stars.
Independent Film	An indie film is any feature-length or short film that is made without a major studio or big production company attached.
Marketing	the action or business of promoting and selling products or services, including market research and advertising.
Vertical Integration	Vertical integration refers to the process of acquiring business operations within the same production vertical. A company that opts for vertical integration takes complete control over one or more stages in the production or distribution of a product.
Conglomerate	a large corporation.
Subsidiaries	a company controlled by a holding company.
Horizontal Integration	Horizontal integration and vertical integration are competitive strategies that companies use to consolidate their position among competitors. Horizontal integration is the acquisition of a related business. A company that opts for horizontal integration will take over another company that operates at the same level of the <u>value chain</u> in an industry.
Zeitgeist	the defining spirit or mood of a particular period of history as shown by the ideas and beliefs of the time.
Globalisation	the process by which businesses or other organizations develop international influence or start operating on an international scale.
Public Service Broadcaster	Public broadcasting involves radio, television and other electronic media outlets whose primary mission is public service.
Commercial Broadcaster	Commercial broadcasting is the broadcasting of television programs and radio programming by privately owned corporate media, as opposed to state sponsorship.
Manufactured Artist	artists who don't have any input in their music, have writing camps and have a big team of people working with them to make decisions.
Authentic Artist	Artists that influence their own music and image.
Performance Video	A video that is styled to be like a performance to an audience.
Narrative Video	A video with a story.
Convergence	Technological convergence, also known as digital convergence, is the tendency for technologies that were originally unrelated to become more closely integrated and even unified as they develop and advance.
Freemium Gaming	Freemium, a portmanteau of the words "free" and "premium," is a pricing strategy by which a basic product or service is provided free of charge, but money is charged for additional features, services, or virtual or physical goods that expand the functionality of the free version of the software.
Intrinsic Narrative	Story is written for the player to play.
Extrinsic Narrative	Story can be controlled and changed by the player.
Hyperreality	an inability of consciousness to distinguish reality from a simulation of reality, especially in technologically advanced postmodern societies

Key Theories	
Connell's Theory of Gender	Subordinated Femininity: women are subservient to men and have little power. Emphasised Femininity: the idea that women must conform to the needs and desires of men, through their looks and sexual appeal. Resistant Femininity: women as resisting the stereotypes and presenting themselves as powerful. Hegemonic Masculinity: perpetuates the idea that men are dominant in society/ Stereotypical, manly man. Complicit Masculinity: men who subvert the stereotypes of men, often engaging more with 'feminine' roles such as the stay at home dad. Subordinated Masculinity: LGBTQ+. Considered to lack power in society.
Laura Mulvey's Male Gaze Theory	Laura Mulvey's Male Gaze Theory: Female images in media texts are objectified and viewed through the eyes of a heterosexual man.
Judith Butler's Theory of Gender Stereotypes	Suggests that the existence of stereotypes is due to the fact that they are repeated over and over again in the media.
Propp's Character Theory	Hero, Villain, False Hero, Donor (gives the hero something), Helper, Princess, Father, Dispatcher (sends hero on their way).
Todorov's Theory of Equilibrium	Equilibrium: state of balance. Disequilibrium: state of conflict/chaos. New Equilibrium: resolution.
Binary Opposites	opposition exists in narratives to propel a story forward.
Enigma Codes	questions/mystery exist in media texts to engage the audience.
Active Audience Theories	Suggests that audiences can respond to and interpret media texts in their own ways. Uses and Gratifications Theory: suggests audiences choose to go to media texts to gain: Personal Identity, Information, entertainment, education or social interaction. Dyer's Utopian Theory: suggests audiences go to media texts to gain a sense of escapism from their normal lives.
Passive Audience Theories	Suggests that audiences accept the messages of the media without questioning them. Hypodermic Needle Model: messages are injected into the minds of audiences, without them questioning it. Cultivation Theory: The more an audience is exposed to something, the more likely they are to believe it is true.

Shot Angles



# Media Studies



Codes	Technical, written and symbolic tools used to construct or suggest meaning in media forms and products.
Genre	a style or category of art, music, or literature.
Mise-en-scene	the arrangement of the scenery, props, etc. on the stage of a theatrical production or on the set of a film. The setting or surroundings of an event.
Anchorage	Where the meaning of a media text is fixed or stabilised by a caption, shot type, costume or so on (ie: it anchors the meaning).
Semiotics	the study of signs and symbols and their use or interpretation.
Signifier	a sign's physical form (such as a sound, printed word, or image) as distinct from its meaning.
Signified	the idea or meaning being expressed by that signifier.
Denotation	the literal meaning of a sign.
Connotation	the associated meaning of a sign.
Polysemic	a sign with multiple connotations can be described as polysemic.
Representation	the way a person or social group is presented.
Conform	following the rules or expectations.
Subvert	going against the rules or expectations.
Under-representation	a person or social group who isn't represented often or enough in media.
Misrepresentation	a person or social group is represented inaccurately through media.
Stereotypes	an assumption made about a person or social group.
Direct Mode of Address	visually, looking towards the audience, verbally, addressing them with "you."
Indirect Mode of Address	no reference made to the audience; lack of eye contact or direct speech.
Demographic	socioeconomic factors relating to an audience.
Psychographic	specific interests or attitudes of an audience.
Geographic	the location of a specific audience.

Social Mobility	the movement between social class levels.
Cultural Capital	social assets (education, intellect, style of speech, dress, etc.) The term was coined by 1970s French sociologist Pierre Bourdieu, who developed the idea as a way to explain how power in society was transferred and social classes maintained.
Mass Audience	a large audience, made up of varying demographics, psychographics and geographics.
Niche Audience	a specific audience type with specific interests and socioeconomic factors.
Diegetic Sound	Natural, ambient sound.
Non-Diegetic Sound	Edited or added sound.
Dialogue	Speech in a narrative.
Cross Cut	Transitioning between two lines of action, indicating they are happening at the same time.
Cutting on action	Transitioning from one angle of the action, to the other, to show what has happened.
Continuity editing	Editing that creates a smooth flow to the order of events.
Dissolve	A gradual scene transition, where the end of one shot is overlapped by another.
Montage	Many scenes edited together to create a summary of events.
Jump Cut	A cut that creates a lack of continuity, by leaving out parts of the action.
Smash Cut	An abrupt cut, going from loud to quiet, or quiet to loud.
Invisible Cut	Where the cut is hidden, so the audience are unable to see it.
Shot reverse shot	Cutting between over the shoulder shots, to show a conversation taking place.
Shallow Focus	Where the subject closest to the camera is in focus.
Deep Focus	Where the subject furthest away from the camera is in focus.
Focus Pull	Pulling the focus from shallow to deep, or deep to shallow.
J-Cut	Where the audio begins before the scene in which it appears.
L-Cut	When the audio from the previous scene continues into the next scene.
CGI	Computer Generated Image.
Panning, tracking and tilting	Panning – camera stays put, but pans the scene in front. Tracking – camera moves with the subject moving in the shot, or follows the subject around. Tilting – camera stays still, but tilts up and down.



# Clarinet Concerto in A Major 3rd Movement Rondo

Solo instrument plays main melody

Piece with solo instrument and orchestral accompaniment

Overall key of the piece

We're just learning the final 3rd part of a full concerto which has 2 sections before ours

Form/structure of the piece with A,B,A,C,A sections

## MUSIC

36 (242)

Rondo.  
Allegro.  
SOLO

- Flauti. Flutes
- Fagotti. Bassoons
- Corni in A. Horns
- Clarinetto principale in A. Solo Clarinet
- Violino I. Violin 1
- Violino II. Violin 2
- Viola. Viola
- Violoncello. Cello
- Contrabasso. Double Bass

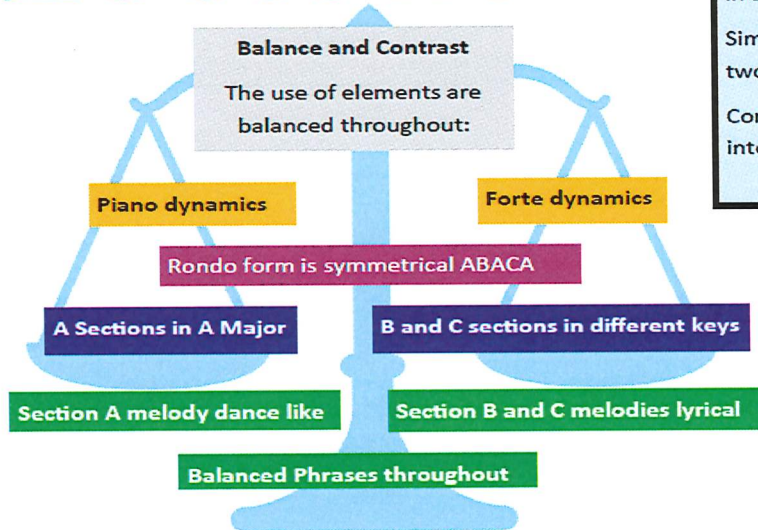
**Horns in A**  
The natural horns can only play limited notes so Mozart uses the horn that is already in the key of A and it doesn't need a key signature. To play more notes, the horn player inserts crooks.



**Diatonic**  
Overall the harmony of the piece is diatonic. This means it follows the rules of key signatures, chords and cadences

**Tempo**  
The tempo is Allegro which means fast

## Mozart Set Work



**Compound Time Signature**  
The piece is in 6/8 which means 6 quaver beats in a bar split into two sets of 3 quavers.  
Simple time split into two quavers:  $\frac{3}{4}$    
Compound time split into three quavers:  $\frac{6}{8}$

**Transposing Instruments**  
Most instruments are in the key of C but the clarinet is a transposing instrument in the key of A. This means it has a different key signature than the other instruments.

**Dynamics**  
The piece mostly uses piano (quiet) and forte (loud) dynamics creating a sense of balance. There are some crescendos (gradual change to loud) and *sfp* sforzando piano is used for sudden loud to quiet

	Section A	Section B	Section A1	Section C			Section A3	
					Section A2	Section B2		Coda
Melody	Conjunct 2 bar phrases Dance-like feel	Conjunct and disjunct 4 bar phrases Lyrical feel	Conjunct 2 bar phrases Dance-like feel	Disjunct 4 bar phrases Lyrical feel	Variation of main theme heard with just part of it	Conjunct and disjunct 4 bar phrases Lyrical feel	Conjunct 2 bar phrases Dance-like feel	
	All themes use chromatic notes							
Tonality	Tonic key– A Major	Starts in Tonic key A Major  Lots of modulations to different major and minor keys	Tonic key– A Major	Starts in relative minor key– F# Minor  Lots of circle of fifths modulations	Changing key to lead back into tonic	Starts in Tonic key A Major  Lots of modulations to different major and minor keys	Tonic key– A Major	
Harmony	Section A melody and whole section ends on <b>perfect cadence</b> to sound finished	Section B ends on <b>dominant</b> after lots of key changes to help lead back into tonic next section	Starts on <b>tonic</b> to re-establish tonic key A Major	Dominant chords used for quick circle of fifths key changes	Ends on dominant after key changes to help lead back into tonic next section	Ends on dominant after key changes to help lead back into tonic next section	Starts on <b>tonic</b> to re-establish tonic key A Major	Whole piece ends with <b>perfect cadence</b> to sound finished
Texture	Some unison and octaves used in accompaniment		Homophonic to end section with all parts moving together			Imitation used creating contrapuntal texture		Homophonic to end section with all parts moving together
	Mostly Melody and Accompaniment texture throughout to bring out the solo clarinet part							
Rhythm	Section A melody has <b>anacrusis</b> to drive melody forward	Section B melody <b>does not have anacrusis</b> to contrast and help with lyrical feel	<b>Hemiola</b> used created by tremolo effect making it feel like a different time signature– builds tension at end of section	Section C melody has <b>anacrusis</b> similar to section A	Section A melody has <b>anacrusis</b> to drive melody forward	Two big <b>pauses</b> interrupt the flow of the pulse	Section A melody has <b>anacrusis</b> to drive melody forward	

# Photography

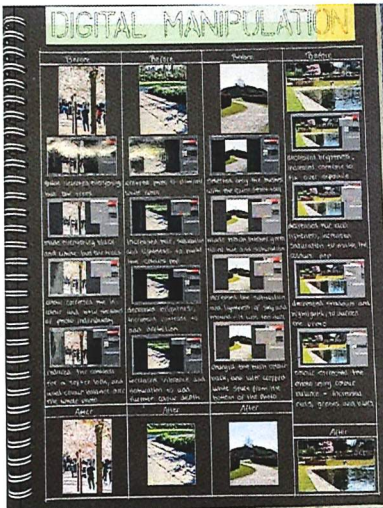
## Statement of intent

- What are you planning to do?
- Why are you planning to this? - where has the idea come from?
- What techniques are you going to use?
- What have you been influenced by?
- How does the idea link to artists and designers that you've researched?

## Sketchbook Presentation Success Criteria

I have:

- ✓ Used appropriate colours in the background, title and writing.
- ✓ Used appropriate font for the title.
- ✓ Considered the layout of my page.
- ✓ Presentation is neat - nothing should be stuck in wonkily.
- ✓ Used a guillotine to trim photographs.



## AO2 Refine

				
f/1.4	f/2.8	f/5.6	f/11	f/22
Very Large Aperture	Large Aperture	Medium Aperture	Small Aperture	Very Small Aperture
Very Small Depth of Field	Small Depth of Field	Medium Depth of Field	Large Depth of Field	Very Large Depth of Field
Almost Nothing In Focus	Little In Focus	Some In Focus	Much In Focus	Almost All In Focus
				
Brightest	Bright	Medium	Dark	Darkest

## Annotation checklist

- What have you done?
- How have you done it?
- What inspired you?
- What else did you try?
- Why was it successful?
- Is there anything you would change/need to do now?

## Sentence starters:

- I have explored... in response to...
- I think that... is successful because...
- I could develop this technique by...
- This technique wasn't successful because...
- I could improve this technique by...

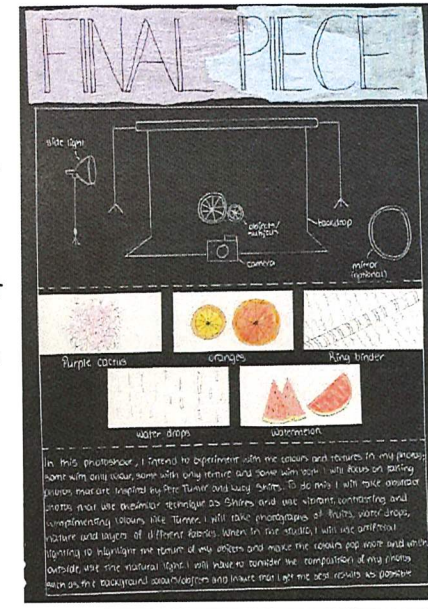
When you edit images you must ensure they...

- **Link to your chosen theme / photographer** - make sure they are **appropriate**
- Edit in three different ways, at least 1 x hand rendered and 1 digital.
- Be **imaginative** within your selection of media and techniques don't just copy or be obvious.
- **Screen shot** your editing process as you go to show your process. Use **labels** of the type of media used for hand rendering
- **Annotations** must be evaluative! If you think something could be improved make sure you apply it or evidence it in your book.

You can also show refinement through; **through photography (no edits) interpret with different styling/makeup/subject matter/composition**

## Planning a final piece:

- ✓ Hand drawn my photoshoot plan,
- ✓ Added labels to show props, lighting, camera angles, location etc.
- ✓ Included colour where appropriate.
- ✓ Annotated with a statement of intent to show where my idea has come from - link to research/project.
- ✓ Drawn thumbnails to show compositions you intend to photograph.



# Health & Fitness

## Energy Use, Diet & Hydration

### Energy Use:

- Energy is measured in Calories (Kcal)
- Average male – **2500Kcal** per day
- Average female – **200kcal** per day

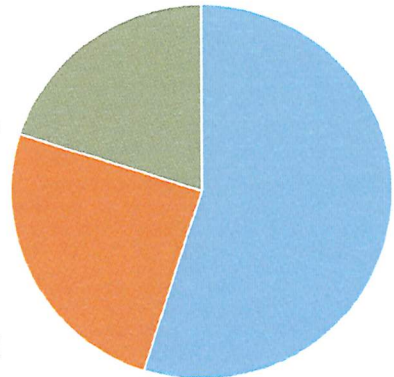
### Factors Effecting Energy Use:

- Age – Younger individuals burn more Kcals than adults
- Gender – Women burn less Kcals than males
- Exercise/intensity level – The higher the exercise intensity the more energy needed
- Height – the taller you are, the more Kcals you burn each day

### Nutrition – Macronutrients:

A balanced diet involves consuming each element in proportion

- Carbohydrates (55-60%) this macronutrient is the '**fuel**' that provide us with energy to sustain performance. Found in **Pasta, Bread and Potatoes**
- Fats – (25-30%) these are also used for energy, but only when stores of carbohydrate run low. Fat provides very slowly released energy. This is important for endurance activities. Found in **Butter, Cheese and Chocolate**
- Protein (15-20%) an essential nutrient that promotes growth and repair of muscles. Found in **Eggs, Meat and Fish**



- Carbohydrates (55-60%)
- Fats (25-30%)
- Protein (15-20%)

### Nutrition – Micronutrients

A balanced diet involves consuming each element in proportion. These are in smaller quantities to Macronutrients

- Minerals - Your body needs minerals to help it function. In particular minerals increase the efficiency of carrying oxygen to muscles. Calcium can be found in **Milk**, Iron can be found in **Meat**
- Vitamins – these generally contribute to general health of an athlete. They resist infection and disease and regulate chemical reactions in the body. Vitamin C can be found in **Citrus Fruits**

### A Balanced Diet:

A balanced diet is needed as –

- Unused energy is stored as fat which can cause obesity
- Energy stores are ready for exercise
- Nutrients are needed for energy, growth and hydration

### Manipulation of Diet:

- Carb Loading - Where an athlete consumes high quantities of Carbohydrates the evening prior to an event to maximise energy stores
- Protein Loading – Where an athlete consumes high quantities of Protein following an event to aid recovery

### Water Balance – Hydration

Water balance prevents dehydration

Dehydration - *Excessive loss of body water interrupting the functions of the body.* Dehydration can cause:

- Blood thickening which slows blood flow around the body
- Increased heart rate/irregular heart rhythm
- Increased body temperature
- Slower reaction time/poor decision making

# 1. Health and wellbeing

**A** Health - State of complete mental, physical and social wellbeing and not merely the absence of disease.

**C** **Fitness:**  
Ability to meet the demands of the environment  
**Improvements in fitness will:**

- Improve your ability to cope with the demands of your daily environment
- Reduce the chances of you suffering injuries
- Make it easier for you to complete physical work
- Make you feel more content / happy

**B**

**Physical Health and well-being**

- Relates to the bodies systems and how well they are working.

Exercising positively affects physical health and well-being as it can:

- Improve your heart function
- Improve the efficiency of cardiorespiratory and musculoskeletal systems
- Reduce the risk of illness e.g. diabetes
- Help to prevent obesity
- Enable you to carry out everyday tasks without getting tired

**Social Health and well-being**

- Relates to basic human needs being met (food, shelter) as well as being able to socially interact with others in society.

Exercise positively affects social health and well-being as it can:

- Provide opportunities to socialise and make friends
- Encourages co-operation and team work

**Mental Health and well-being**

- Relates to a person's emotions and state of mind.

Exercise positively affects mental health and well-being as it can:

- Reduce stress / tension levels.
- Release feel-good hormones in the body such as serotonin.
- Enable a person to control their emotions and work productively.

# 2) Sedentary Lifestyle

**D**

**Sedentary Lifestyle:**  
A person's choice to engage in little or no physical activity.

**Consequences of choosing a sedentary lifestyle are:**

- Weight Gain / become obese
- Suffering from heart disease
- Suffering from diabetes
- Suffering from poor sleep / insomnia
- Suffering from poor self-esteem / confidence
- Feeling tired and lethargic
- Having a lack of friends

# 3) Energy/Calories

**E**

**Calories:**  
Energy is measured in calories. These calories are obtained from the food and drink we consume.  
**Male = 2500 kcal/day Female = 2000 kcal/day**  
**Maintaining Weight:** Calories Taken in = Calories Used  
**Weight Gain:** Calories taken in is more that calories used  
**Weight Loss:** Calories taken in is less that calories used

**F**

**Factors that affect calorie intake:**

- Age** – younger people need more calories to help them grow. After 25 the calorie needs of individuals starts to fall.
- Gender** – Men need more calories than women.
- Height** – The taller an individual the more calories they require.
- Energy Expenditure** – The more exercise an individual does the more calories they need.
- Basal Metabolic Rate** – This is now fast energy being used and varies from individual to individual.

## 4) Obesity

### A **Obesity:**

A term used to describe people with a large fat content, caused by an imbalance of calories consumed to energy expenditure. BMI of over 30.

### B **Effects of obesity on Physical Health:**

- Contributes to cancer
- Causes heart disease / heart attacks
- Causes high blood pressure
- Can cause diabetes
- Causes cholesterol levels to rise

### C **Effects of obesity on Mental Health:**

- Can lead to depression
- Cause a loss of confidence
- Make an individual feel like they cannot contribute to society

### D **Effects of obesity on social Health:**

- Inability to socialise
- Make people feel uncomfortable in social situations.

### E **Effects of obesity on Fitness:**

- Limits a person's cardio-vascular endurance / stamina therefore making it difficult for them to take part in physical activities for a long period of time.
- Limits a person's flexibility making it difficult for performers to use a full range of movement at a joint when performing a skill e.g. lunging forward for the shuttle in badminton.
- Limits a person's agility making it difficult for them to change direction quickly.
- Limits a person's speed / power making it hard to react quickly enough or produce any forceful movement.

F A method of classifying body type.

Body types:

- Ectomorph
- Endomorph
- Mesomorph

## 5) Somatotypes

I **Ectomorph:**

- Very thin, lean and usually tall
- Narrow shoulders, hips and chest
- Not much fat / muscle
- Long arms and legs

Activities that suit ectomorphs:

- High Jump / Pole Vault – lighter so less weight to lift in the air over the bar.
- Marathon runner / Long distance runners – Lighter so less weight to carry + longer stride length so can cover larger distance with each stride.

G **Endomorph:**

- High content of fat
- Fat round middle, thighs and upper arms

Activities that suit endomorphs:

- Sumo-wrestling – large size is difficult to force out of the ring and can be used to create short powerful actions.
- Shot Putter – Extra bulk allows for a more powerful release of shot.

H **Mesomorph:**

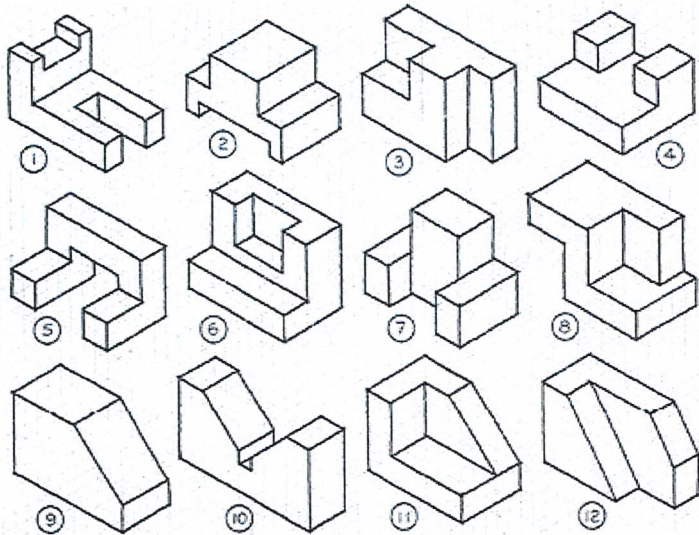
- Broad shoulders and thin waist (narrow hips)
- Large amount of muscle
- Strong arms and thighs
- Little body fat

Activities that suit mesomorphs:

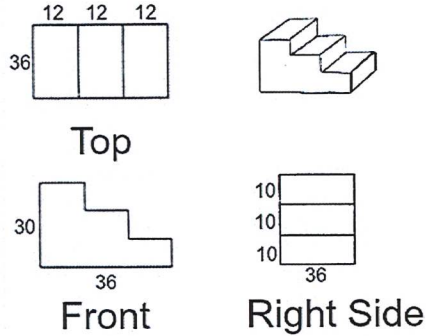
- Sprinting – large arms and legs to help produce more power resulting in them running quicker.
- Weightlifter – Large muscles help provide the force required to lift heavier weights
- Rugby player – Muscle helps generate force required when making contact with opponents.

# Product Design

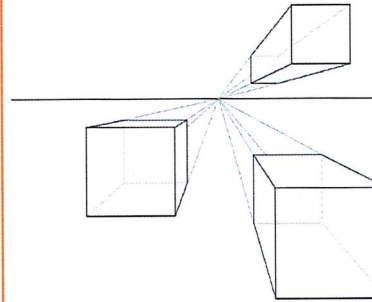
## Isometric Drawing



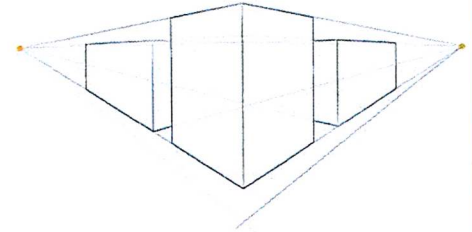
## Orthographic Drawing



## One Point Perspective



## Two Point Perspective



## Research Types:

Location Analysis  
Product Analysis  
Designer  
Design Movements  
Museum

## Freehand Drawing

Light Sketch



Refine



Refine



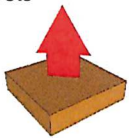
Define



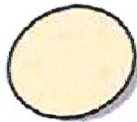
## Google Sketch Up Tools



Rectangle Tool



Push/Pull Tool



Shape Tool



Eraser Tool



Pan Tool



Line Tool



Orbit Tool



Select Tool



Move Tool



Paint Bucket Tool

## Key Words

**Design Specification:** This is a list of criteria that your design ideas should include.

**Quality Control:** The way in which you can ensure a product is good quality.

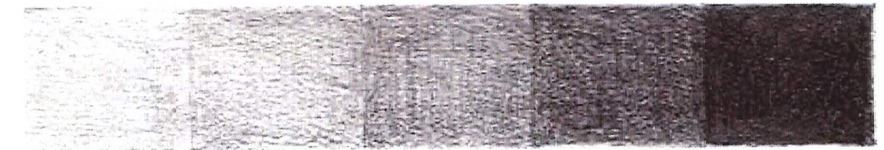
**Hazard:** An object or activity that could cause a risk (harm).

**Risk:** The harm/danger that is caused by the hazard.

**Control:** A way in which you can prevent the risk from happening.

## Tone and Texture

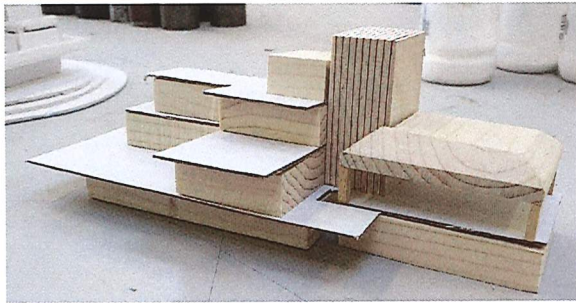
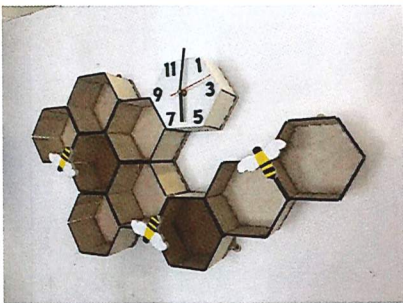
Different marks/tones can be used to render a design idea to make it look 3D.



# Product Design

## Final Idea Modelling:

- Remember to take pictures along the way.
- What materials could you use to model your idea?
- Did it work? Explain your answer.
- Describe the quality of your work.
- What could you do to improve and refine your idea?
- What finishes will you apply to the final product?



## Annotating

All of your work must be accompanied by a brief annotation.

### WHAT

What have you done?  
What was your inspiration?

### HOW

How did you come up with your ideas?  
How did you create the piece?  
How does the piece link to your artist/designer?

### WHY

Why did you make the piece, how does it link to the project?  
Why did you make the piece that way?

### WWW/EBI

What has gone well?  
What can be improved?  
Which is the best one and why?

### NEXT –

Your next steps are...?

When analysing or researching use **ACCESS FM:**

- **Aesthetics** – Shape, appearance, features, colours, design.
- **Cost** – How expensive is it/does it look/would it cost to make?
- **Customer** -How is it an effective product in relation to the user
- **Environment** – How environmentally friendly is it?
- **Safety** – Is it safe to use, was it dangerous to make?
- **Size** – Dimensions, proportions
- **Function** – What will it be used for? Is it suitable for it's intended use?
- **Materials** – What materials are used & are they suitable?

## Writing about the work of other artists/designers:

### Paragraph 1 - Introduction

This should be brief. Look at their work and research key information about them to provide a contextual context.

- Nationality
- Dates - Are they contemporary or from a key historical movement
- Notable pieces of work and or style Avoid referring them by their first name, use a full name or surname.

*Avoid irrelevant or uninteresting information.*

### Paragraph 2 - Form

1. Select one particular pieces to explore in detail.
2. Describe what you see as if explaining it to someone over the telephone.
3. Consider the formal element of line, shape, tone/value, colour, space, etc.

### Paragraph 3 - Context

- What is the piece inspired by?
- How can you tell?
- How does the artist/designer link to your project?

### Paragraph 4 - Opinion

Give your thoughts and feelings about their work.

What is effective about the artwork and would you change anything? Explain why.

### Paragraph 5 - Inspiration

What will you take away as inspiration for your own work? How might you respond?





## AQA Religious Studies A – Buddhism Beliefs


Key Words			
Arhat	A 'perfected person' who has overcome the main sources of suffering	Four Noble Truths	Four truths the Buddha taught about suffering and how to overcome it
Asceticism	A lifestyle of strict self-denial – rejected by Siddhartha for the Middle Way	Four Sights	Four things Siddhartha saw that inspired him to leave his life of luxury
Bodhisattva	An enlightened person who chooses to remain in samsara to teach others	Jakata	A book of popular tales about the life of the Buddha
Dependent Arising	The idea that everything is dependent on everything else	Meditation	The practice of focusing or calming the mind and reflecting on teachings
Dharma	The Buddha's teachings – how to reach the state of enlightenment	Nirvana	A state of complete enlightenment which lies outside the cycle of samsara
Dukkha	Suffering or dissatisfaction – something Buddhists seek to overcome	Samsara	The cycle of life, death and re-birth
Eightfold Path	Eight aspects of life Buddhists live by to try and reach enlightenment	Three Marks of Existence	Three Buddhist beliefs about the truth of existence
Enlightenment	A state of spiritual wisdom which arises from understanding the nature of reality	Three Watches of the night	Three realisations Siddhartha made in order to become enlightened


### Key Ideas


Buddha's Life + Four Sights	<p><b>Buddha</b> was born <b>Siddhartha Gautama</b> around 500BC in southern Nepal.</p> <p>He grew up in a life of <b>luxury</b> as the son of a Queen. He was inspired to leave this life by the <b>Four Sights</b>. After this he lived an <b>ascetic</b> life of self-denial and pain but wasn't able to become enlightened so left it for the Middle Way between pain and luxury.</p>	<p>The <b>Four Sights</b> Siddhartha saw on his trip outside the palace were:</p> <ol style="list-style-type: none"> <li>1. An old man – everyone ages</li> <li>2. An ill man – everyone becomes ill</li> <li>3. A dead man – all things die</li> <li>4. A holy man – the only answer to these problems</li> </ol>
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Enlightenment + 3 Watches	 <p>After the failure of Siddhartha's ascetic life to provide him with enlightenment Siddhartha chose to follow the <b>Middle Way</b>. He meditated under a tree and was tempted by <b>Mara</b> who tried to distract him, but he stayed focused on meditation and reaching enlightenment. Eventually he became enlightened during the <b>Three Watches of the Night</b> where he understood: knowledge of <b>all his previous lives</b>, the cycle of life, death and re-birth (<b>samsara</b>) and that all beings suffer due to <b>desire</b>. After this Siddhartha became enlightened and began to be known as Buddha.</p>
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Three Marks of Existence	 <p>The <b>Three Marks of Existence</b> are the fundamental Buddhist beliefs about the nature of human existence. They present a very different view of the world to Christianity. That <b>suffering</b> is inevitable, that everything is <b>impermanent</b> and that we have no fixed, immortal soul.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #333; color: white;">Dukkha</th> <th style="background-color: #333; color: white;">Anicca</th> <th style="background-color: #333; color: white;">Anatta</th> </tr> </thead> <tbody> <tr> <td><b>Suffering</b> is a part of life that all people must face. Buddhists can try and overcome it.</td> <td>The idea of <b>impermanence</b> – that everything constantly changes and we suffer when we resist it</td> <td>The idea that we <b>don't have a fixed soul</b> – there is no unchanging essence to us</td> </tr> </tbody> </table>	Dukkha	Anicca	Anatta	<b>Suffering</b> is a part of life that all people must face. Buddhists can try and overcome it.	The idea of <b>impermanence</b> – that everything constantly changes and we suffer when we resist it	The idea that we <b>don't have a fixed soul</b> – there is no unchanging essence to us
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Four Noble Truths + Eightfold Path	 <p>The <b>Four Noble Truths</b> are what Buddha taught about suffering</p> <ol style="list-style-type: none"> <li>1. There is suffering &gt;&gt;&gt; 2. Suffering has a cause &gt;&gt;&gt; 3. Suffering can come to an end &gt;&gt;&gt; 4. There is a way to end suffering</li> </ol> <p>One of the main causes of suffering is <b>tanha</b> or craving. Other causes are known as the <b>Three Poisons</b> of greed, hatred and ignorance. Ultimately Buddha teaches that we can and must overcome these causes of suffering in order to become enlightened and reach <b>nirvana</b> – a state of freedom, happiness and peace</p> <p>The <b>Eightfold Path</b> consists of eight aspects that Buddhists practise and live by in order to do this. e.g. Right speech (speaking truthfully and kindly), right mindfulness (developing awareness of the world around you) and right understanding (developing an understanding of Buddha's teachings)</p>
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Types of Buddhism	 <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #333; color: white;">Theravada</th> <th style="background-color: #333; color: white;">Mahayana</th> <th style="background-color: #333; color: white;">Pure Land</th> </tr> </thead> <tbody> <tr> <td>Known as the '<b>lesser vehicle</b>' as only male monks achieve enlightenment. Oldest form of Buddhism, found in southern Asia</td> <td>Known as the '<b>greater vehicle</b>' as anyone can become enlightened. Teaches <b>sunyata</b> or emptiness – nothing as a separate soul or self</td> <td>Mostly found in <b>Japan</b> – a form of Mahayana Buddhism. Based on faith in Amitabha Buddha and his paradise.</td> </tr> </tbody> </table>	Theravada	Mahayana	Pure Land	Known as the ' <b>lesser vehicle</b> ' as only male monks achieve enlightenment. Oldest form of Buddhism, found in southern Asia	Known as the ' <b>greater vehicle</b> ' as anyone can become enlightened. Teaches <b>sunyata</b> or emptiness – nothing as a separate soul or self	Mostly found in <b>Japan</b> – a form of Mahayana Buddhism. Based on faith in Amitabha Buddha and his paradise.
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AQA Religious Studies A – Buddhism Practices

Key Words			
Chanting	A type of worship that involves reciting from Buddhist scriptures	Samatha Meditation	A form of meditation focused on calming the mind and mindfulness
Karma	An ethical principle that explains how actions lead either to happiness or suffering	Shrine	A focal point for Buddhist worship and offerings in temples or at home
Karuna	Compassion – feeling concerned for the suffering of others	Skillful	Actions that lead to good karma, unskillful actions lead to bad karma
Mantra	A short sequence of syllables recited during worship	Stupa	A tiered tower structure that is designed to symbolise elements of Buddhist teaching
Metta	Loving-kindness – a desire for other people to be happy	Temple	The focal point of Buddhist worship – the building where Buddhists gather
Parinirvana Day	A Mahayana festival commemorating Buddha's passing into nirvana	Vihara	A monastery or community where Buddhists gather to meditate
Puja	Worship – it expresses gratitude and respect for Buddha and his teachings	Vipassana Meditation	A form of meditating on a teaching of Buddha to gain greater understanding
Rupa	A statue of Buddha used in worship and meditation	Wesak	A festival celebrating the life and teachings of Buddha

Key Ideas			
Places of Worship + Puja	<p><b>Places of Worship</b></p> <p>Buddhists often worship in a temple where they gather to meditate together and perform puja. A temple or vihara will have <b>rupas</b> (statues of Buddha), <b>stupas</b> (towered structures designed to symbolise Buddhist teaching) and often <b>shrines</b> where offerings can be made.</p>	<p><b>Puja</b></p> <p>Puja is the name for Buddhist worship which is a ceremony that expresses gratitude and respect for Buddha and his teachings. Buddhists perform <b>chanting</b> where sacred texts are remembered and taught orally and with devotion. They also recite <b>mantras</b> which are short sequences of syllables that help concentrate the mind.</p>	
Meditation	<p><b>Samatha Meditation</b></p> <p>This is a type of meditation that involves calming the mind and developing <b>deepened concentration</b>. This can be done through <b>mindfulness</b> of breathing where Buddhists concentrate on the pattern of their breath to relax their mind.</p>	<p><b>Vipassana Meditation</b></p> <p>This type of meditation focuses on developing an <b>understanding of the nature of reality</b>. Buddhists focus on the <b>teachings of Buddha</b>, especially the Three Marks of Existence in order to move them closer to enlightenment.</p>	
Funerals + Festivals	<p><b>Buddhist Funerals</b></p> <p>Buddhists usually try as spend as little money as possible on funerals as they believe the cycle of samsara means their energy moves onto a new body.</p> <p>In a <b>Sky Burial</b> Tibetan Buddhists leave the body on a mountainside as an offering to the vultures. This reflects a belief in <b>anicca</b>, the impermanence of existence.</p>	<p><b>Wesak</b></p> <p>Wesak is a Theravada Buddhist festival which celebrates the Buddha's birth, enlightenment and passing away into nirvana. It is celebrated by lighting up <b>candles</b> and lanterns to represent <b>enlightenment</b> and by <b>attending the local temple</b> to take part in worship or meditation.</p>	<p><b>Parinirvana Day</b></p> <p>Parinirvana Day is a Mahayana festival that commemorates the <b>death</b> and passing into enlightenment of Buddha. It is celebrated by Buddhists reading and <b>studying</b> the last writings of Buddha, <b>meditating</b> at home or in a temple or going on a <b>retreat</b> to reflect and meditate.</p>
Five Moral Precepts + Six Perfections	<p><b>Five Moral Precepts</b></p> <p>These form a Buddhist ethical code. They are five principles that Buddhists try to live their life by.</p> <ol style="list-style-type: none"> <li>1. to abstain from <b>taking life</b></li> <li>2. to abstain from <b>taking what is not given</b></li> <li>3. to abstain from <b>sexual misconduct</b></li> <li>4. to abstain from <b>wrong speech</b></li> <li>5. to abstain from <b>intoxicants</b></li> </ol>	<p><b>The Six Perfections</b></p> <p>These are six qualities that Mahayana Buddhists try to develop to become Bodhisattvas. They require practice and thought in order to develop them. They are: <b>generosity, morality, patience, energy, meditation and wisdom.</b></p>	
Karma, Karuna + Metta	<p><b>Karma</b></p> <p>Karma is the ethical idea that a Buddhist's actions lead either to <b>happiness or suffering</b>. <b>Skillful</b> actions result in good karma and happiness. <b>Unskillful</b> actions result in bad karma and suffering. When a Buddhist is reborn their new life will be affected by their karma from past lives.</p>	<p><b>Karuna</b></p> <p>Karuna is <b>compassion</b>, a feeling of concern for the suffering of others. It is one of the <b>four sublime</b> states that Buddha taught Buddhists should develop. Buddhists aim to recognise the <b>suffering</b> of others and do something to make their lives better.</p>	<p><b>Metta</b></p> <p>Metta is <b>loving-kindness</b>, another of the four sublime states. It means desiring other people to be happy and is an attitude of <b>warmth and kindness</b> that Buddhists try to feel toward other people. It leads to a feeling of peace and contentment.</p>

Bond breaking takes in energy -  
**endothermic**

Bond making releases energy -  
**exothermic**

## YEAR 11 CHEMISTRY HEAT CHEMICAL CHANGES IN CHEMICAL REACTIONS

### Keywords

Exothermic	Transfers chemical energy to the surroundings - usually as heat.
Endothermic	A reaction that takes in energy from the surroundings and transfers it to a chemical store.
Activation Energy - $E_a$	The energy needed to start a reaction.
Bond energy	1. The energy needed to break the bond between two atoms - measured in KJ/mol 2. The energy released when a bond is formed between two atoms - measured in KJ/mol

### Exothermic reactions

Transfers chemical energy to the surroundings - usually as heat.  
The temperature will increase.



Combustion

Respiration

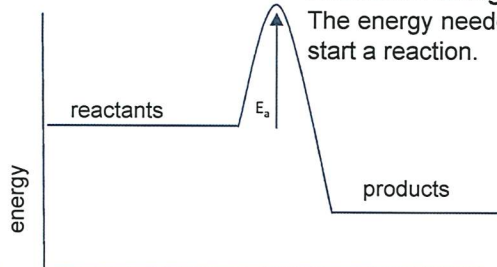
#### Activation energy, $E_a$

The energy needed to start a reaction.

Uses for exothermic reactions

Self heating cans

Handwarmer



Course of reaction

### Bond Energy

Add up the amount of energy required to break all of the bonds in the reactants.

Add up the energy released when the products are formed.

Total energy required - total energy released

-ve = exothermic reaction  
+ve = endothermic reaction

### Endothermic reactions

A reaction that takes in energy from the surroundings and transfers it to a chemical store. The temperature will decrease.



Thermal decomposition



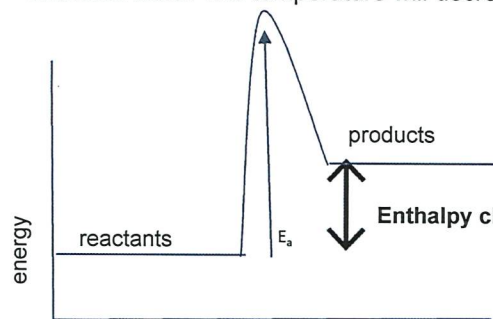
Photosynthesis

products

Enthalpy change

Uses for endothermic reactions

Cool packs, for sports injury



Course of reaction

The **overall heat energy change** for a reaction is:

- **Exothermic** if more heat is released in forming bonds in the products than is required to break bonds in the reactants.
- **Endothermic** if less heat is released in forming the bonds in the products than is required in breaking bonds in the reactants.

### Bond Energy

The overall energy change in a reaction

Step 1: Draw the structural formula of the reactants and products.

Step 2: Look up the energy associated with each bond.

Step 3: Add up the amount of energy required to break all of the bonds in the reactants.

Step 4: Add up the energy released when the products are formed.

Step 5: Subtract the energy released from the energy required.

-ve = exothermic reaction  
+ve = endothermic reaction

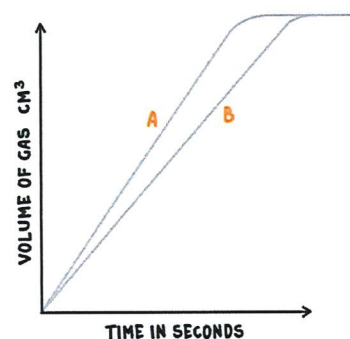
## YEAR 11 CHEMISTRY RATES OF REACTION

The rate of a chemical reaction can be found by measuring the quantity of a reactant used or the quantity of product formed over time.

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

mean rate of reaction =  $\frac{\text{quantity of product formed}}{\text{time taken}}$

The quantity of reactant or product can be measured by the mass in grams or by a volume in  $\text{cm}^3$ .

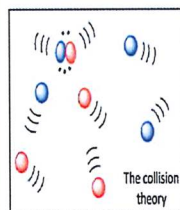


Slope A will have a greater rate of reaction as it is steeper.

Factors which affect the rates of chemical reactions include:

- The **concentrations** of reactants in solution
- The **pressure** of reacting gases
- The **surface area** of solid reactants
- The **temperature**
- The **presence of a catalyst**

**Collision theory** explains how these factors affect rates of reactions. According to this theory, chemical reactions can occur only when reacting particles **collide** with each other **and** with **sufficient energy**. The **minimum** amount of **energy** that particles must have to react is called the **activation energy**.



The units of rate of reaction may be given as  $\text{g/s}$  or  $\text{cm}^3/\text{s}$ .

### \*Collision theory

States that for two particles to react they must:

- Collide with each other
- Collide with enough energy to react

### \*Activation energy

The minimum energy that two particles must have when they collide in order to react.

### \*\*Effect of concentration on rate

Increasing the concentration increases the rate because there are more particles so there are more collisions and more reactions.

### \*\*Effect of surface area on rate

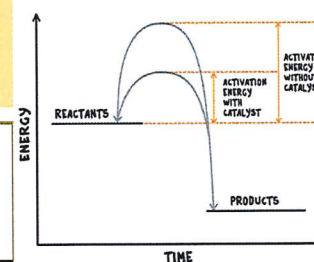
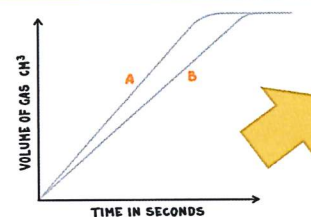
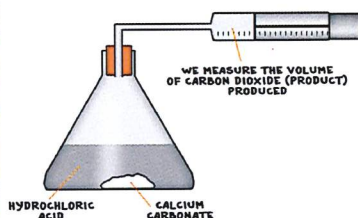
Increasing the surface area (by decreasing particle sizes) increases the rate by exposing more particles to collisions leading to more collisions and more reactions.

### \*\*Effect of pressure on rate

Increasing the pressure increases the rate because particles are pushed closer together so they collide more often.

### \*\*Effect of temperature on rate

Increasing the temperature increases the rate because particles move faster so they collide more, and collide with more energy to a greater proportion of collisions lead to reactions.

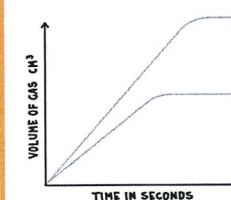


Catalysts increase the rate of reaction by **providing a different pathway** for the reaction that has a **lower activation energy**.

A **reaction profile** for a catalysed reaction can be drawn as shown on the right.

Increasing the **surface area**, **temperature** or using a **catalyst** will increase the rate of reaction so the **gradient of the line increases** from B to A. Finishing at the **same final volume of gas**.

Catalysts **speed up the rate** of chemical reactions **without altering the products** of the reaction, being itself **unchanged chemically and in mass** at the end of the reaction.



Increasing the **concentration** provides more reacting particles therefore more product. So the **gradient of the line increases** and the **final volume of gas increases**.

# TRIPLE SCIENCE CHEMISTRY

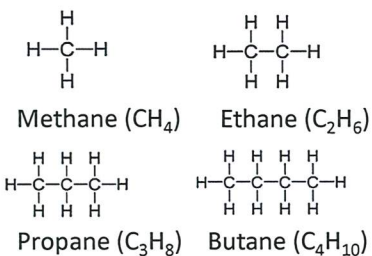
## Fuels and hydrocarbons

Crude oil is a mixture of hydrocarbons. Hydrocarbons are molecules of Hydrogen and Carbon only.

Long chain alkanes can be cracked into more useful short chain alkanes and alkenes

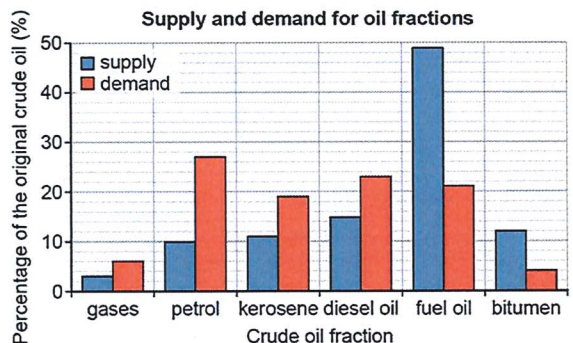
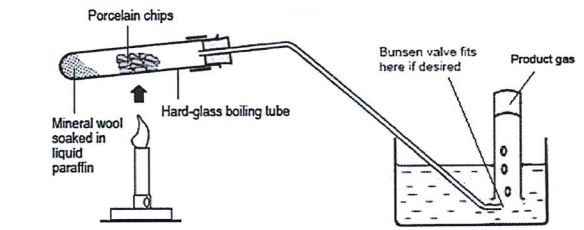
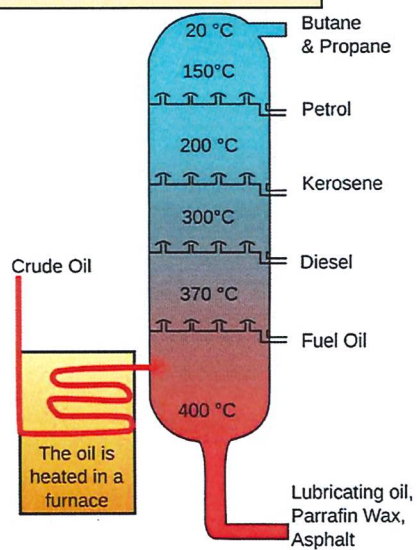
Homologous formula:  $C_nH_{2n+2}$

Display formula for first four alkanes

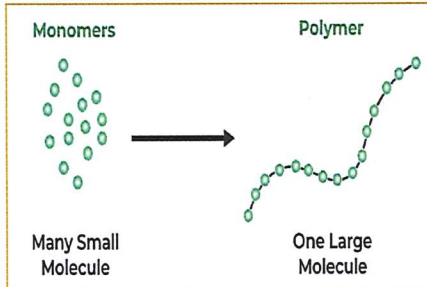


Crude oil, hydrocarbons and alkanes

## Fractional distillation



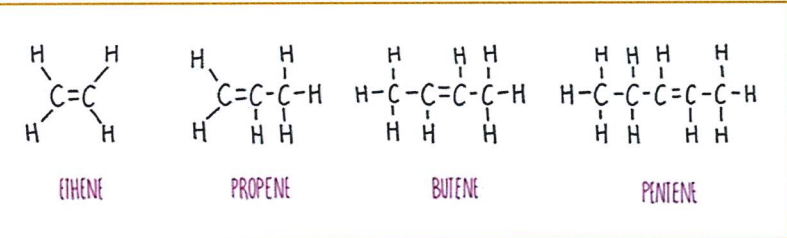
## Polymerisation



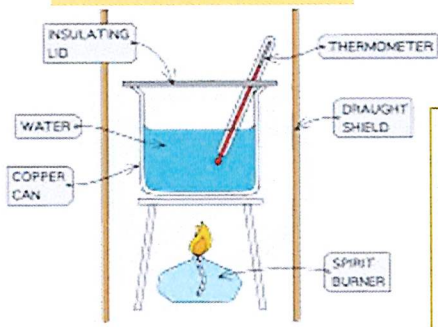
The Basic Difference Between Addition and Condensation Polymerization is that Addition Polymerization involves only one monomer and does not lead to a loss in smaller molecules e.g PVC and Teflon while Condensation Polymerization involves two different kinds of monomers and lead to loss of simple molecules like HCl or H<sub>2</sub>O

A polymer is any of a class of natural or synthetic substances composed of very large molecules, called macromolecules, which are multiples of simpler chemical units called monomers.

## Alkenes

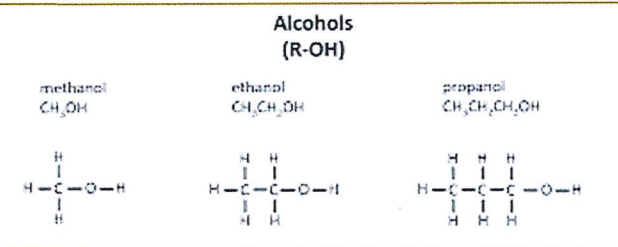


## Burning alcohols core practical

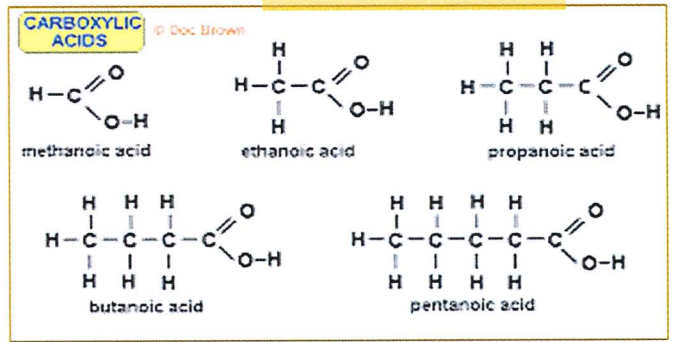


A class of organic compounds in which a carbon (C) atom is bonded to an oxygen (O) atom by a double bond and to a hydroxyl group (-OH) by a single bond.

an alcohol is a type of organic compound that carries at least one hydroxyl (-OH) functional group bound to a saturated carbon atom.



## Carboxylic Acids



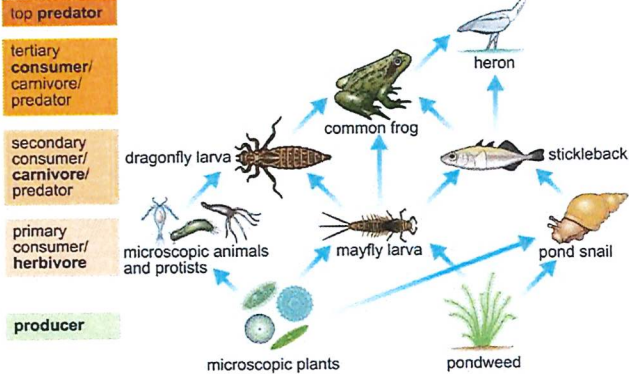
## The periodic table of the elements

1		2												3	4	5	6	7	0				
												1 H hydrogen 1											4 He helium 2
		<b>Key</b> relative atomic mass atomic symbol name atomic (proton) number																					
7 Li lithium 3	9 Be beryllium 4											11 B boron 5	12 C carbon 6	14 N nitrogen 7	16 O oxygen 8	19 F fluorine 9	20 Ne neon 10						
23 Na sodium 11	24 Mg magnesium 12											27 Al aluminium 13	28 Si silicon 14	31 P phosphorus 15	32 S sulfur 16	35.5 Cl chlorine 17	40 Ar argon 18						
39 K potassium 19	40 Ca calcium 20	45 Sc scandium 21	48 Ti titanium 22	51 V vanadium 23	52 Cr chromium 24	55 Mn manganese 25	56 Fe iron 26	59 Co cobalt 27	59 Ni nickel 28	63.5 Cu copper 29	65 Zn zinc 30	70 Ga gallium 31	73 Ge germanium 32	75 As arsenic 33	79 Se selenium 34	80 Br bromine 35	84 Kr krypton 36						
85 Rb rubidium 37	88 Sr strontium 38	89 Y yttrium 39	91 Zr zirconium 40	93 Nb niobium 41	96 Mo molybdenum 42	[98] Tc technetium 43	101 Ru ruthenium 44	103 Rh rhodium 45	106 Pd palladium 46	108 Ag silver 47	112 Cd cadmium 48	115 In indium 49	119 Sn tin 50	122 Sb antimony 51	128 Te tellurium 52	127 I iodine 53	131 Xe xenon 54						
133 Cs caesium 55	137 Ba barium 56	139 La* lanthanum 57	178 Hf hafnium 72	181 Ta tantalum 73	184 W tungsten 74	186 Re rhenium 75	190 Os osmium 76	192 Ir iridium 77	195 Pt platinum 78	197 Au gold 79	201 Hg mercury 80	204 Tl thallium 81	207 Pb lead 82	209 Bi bismuth 83	[209] Po polonium 84	[210] At astatine 85	[222] Rn radon 86						

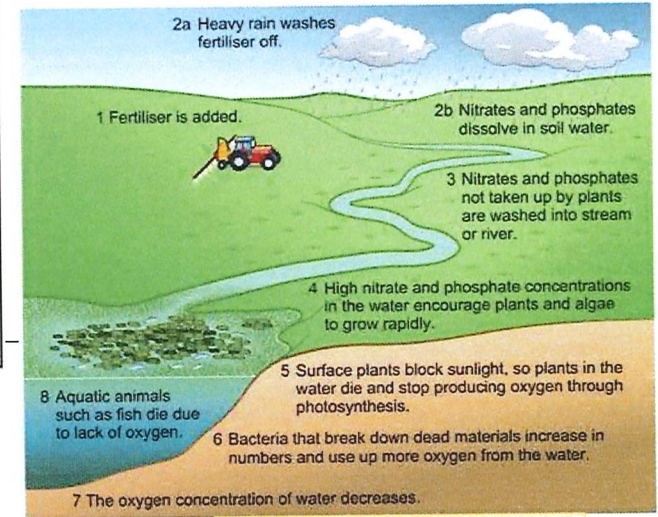
\* The elements with atomic numbers from 58 to 71 are omitted from this part of the periodic table.

The relative atomic masses of copper and chlorine have not been rounded to the nearest whole number.

# Year 11 Biology



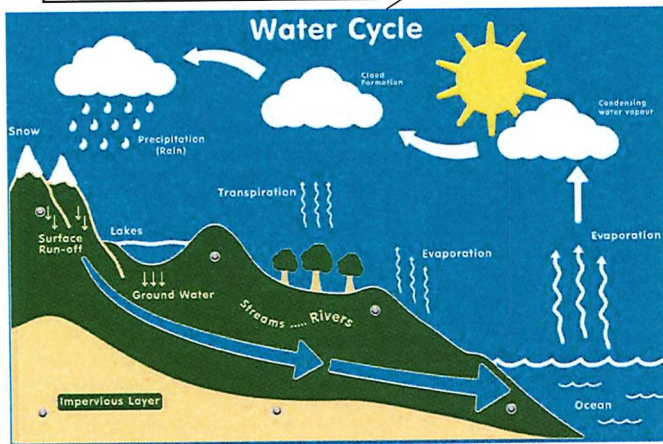
Positive and negative human interactions within ecosystems	
<i>Fish farming</i>	Can be used to reduce over fishing of wild species and increase biodiversity.
<i>Introduction of non-indigenous species</i>	Can decrease biodiversity by introducing predators where prey do not have time to adapt.
<i>Eutrophication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



**Food web:** Made of multiple food chains, represents pathways through which energy and matter flow through an ecosystem

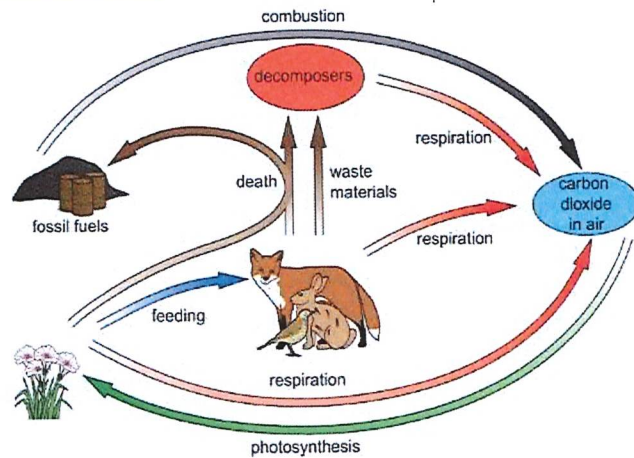
## YEAR 10 ECOSYSTEMS AND MATERIAL CYCLES (BIOLOGY)

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



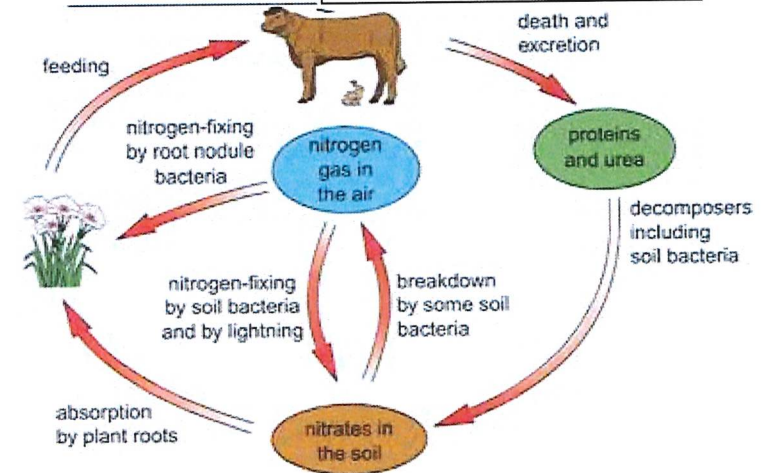
Water cycle

Carbon cycle



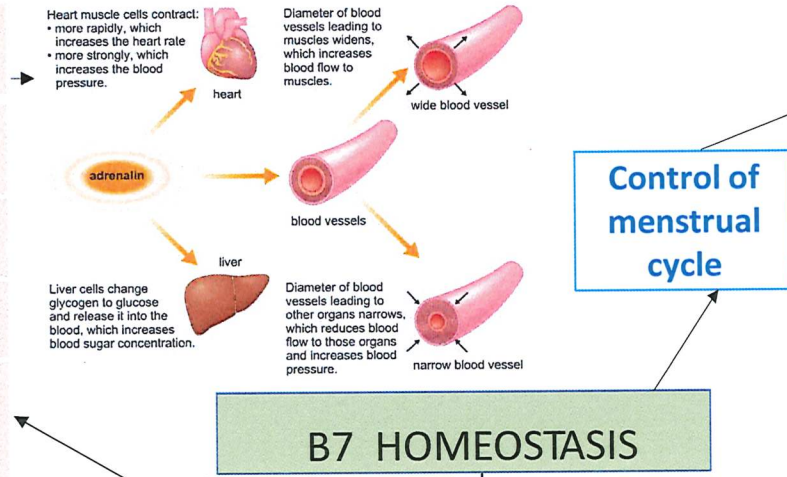
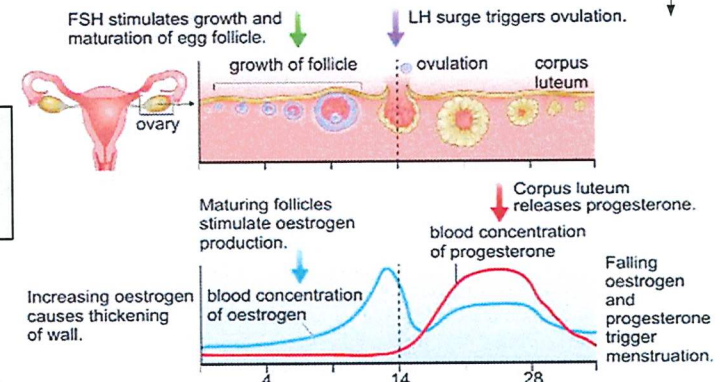
Nitrogen cycle

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



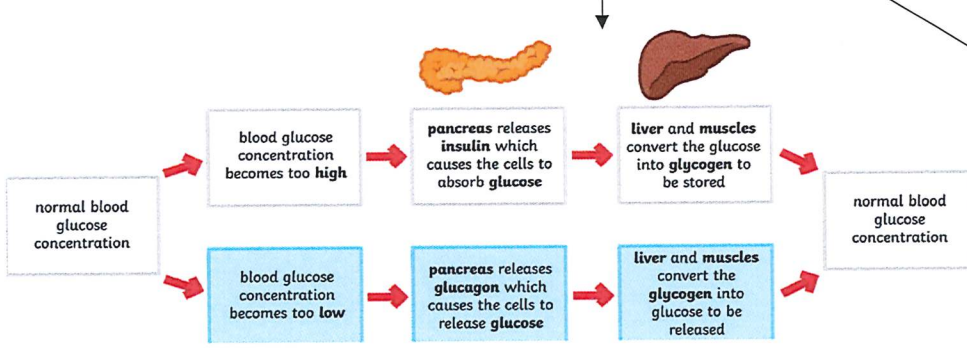
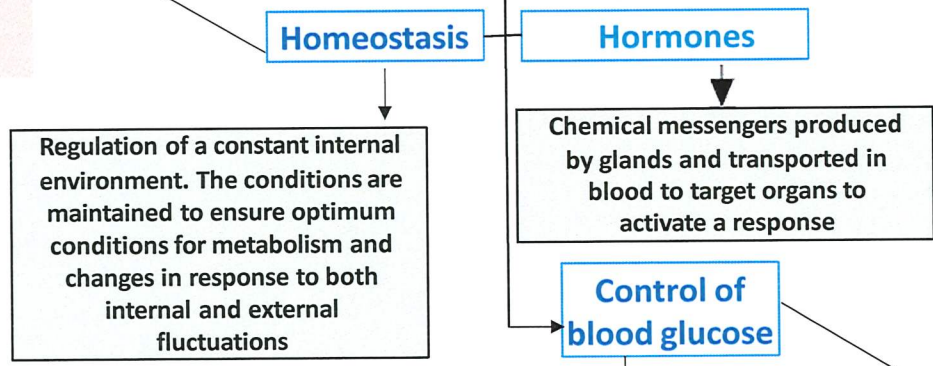
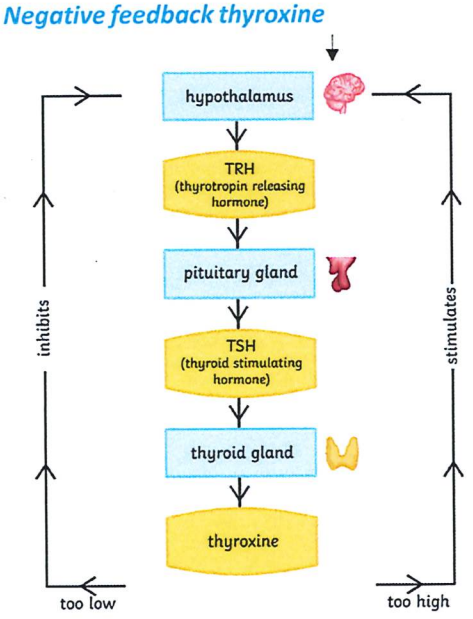
# Year 11 Biology

Hormones	Gland	Role	Interactions with other hormones
FSH	Pituary Gland	Helps to develop egg cell inside follicle	Stimulates the production of oestrogen
oestrogen	Ovaries	Causes initial thickening of uterus lining	Stimulates the production of LH Inhibits the production of FSH
LH	Pituary Gland	Helps to release egg cell from follicle (ovulation)	Stimulates the production of progesterone
progesterone	Corpus Luteum	Maintains the thickening of uterus lining	Inhibits the production of LH and FSH



### Control of metabolic rate

Adrenaline	Thyroxine
Produced by the adrenal glands	Produced by the thyroid gland
Target organs: Heart and lungs	Target organs: Heart, liver, lungs
Increase heart and breathing rate, causing vasodilation in order to supply more oxygen and glucose to the working muscles	Increase the heart, breathing rate and respiration rate



Diabetes type 1	Diabetes type 2
Pancreas produces little or no insulin	Pancreas produces little insulin or person become resistant to insulin
Treatment: Insulin injection and limited intake of sugars	Treatment: Healthy diet and regular exercise



# Year 11 Biology

The renal veins carry blood with wastes removed back to the body.

The renal arteries carry blood from the body to the kidneys.

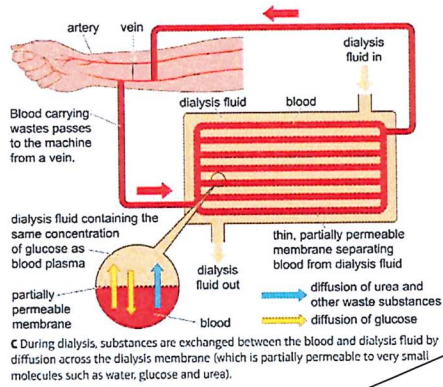
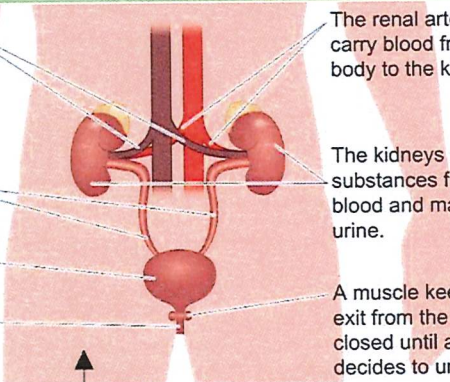
The ureters carry urine from the kidneys to the bladder.

The kidneys remove substances from the blood and make urine.

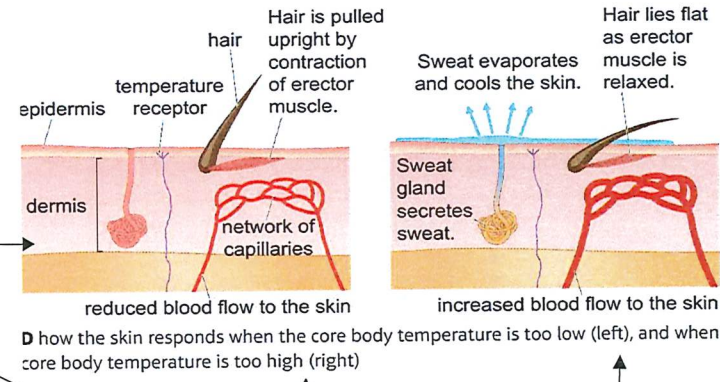
The bladder stores urine.

A muscle keeps the exit from the bladder closed until a person decides to urinate.

Urine flows through the urethra to the outside of the body.



## Thermoregulation



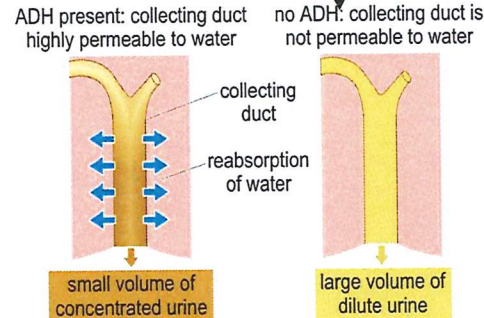
**TOO COLD**

**TOO HOT**

Body temperature is controlled by hypothalamus

## Dialysis

**ADH (Antidiuretic hormone)** secreted by the **pituitary gland** controls the water content in blood



ADH changes the permeability of the collecting duct and so the amount of urine formed.



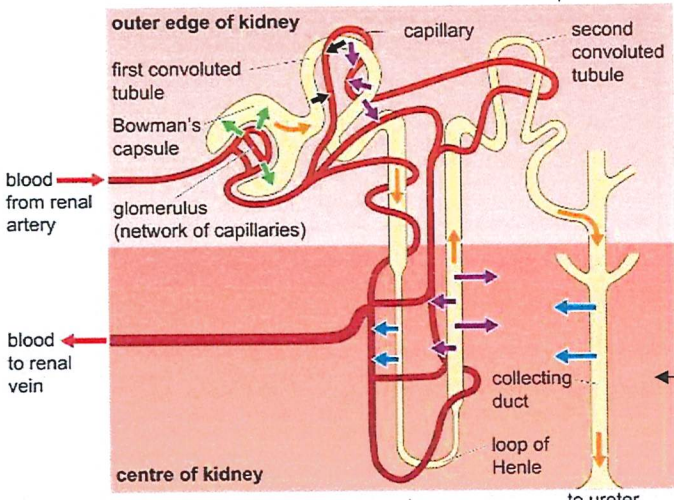
## B7 and B9 TRIPLE (BIOLOGY)

Is the control of the balance of water and mineral salts in the body. If the balance of water and mineral salts is wrong, then the cells might lose or take in too much water by osmosis.

- Bowman's capsule + Glomerulus:** Ultrafiltration
- First convoluted tubule:** Selective reabsorption of glucose and mineral ions through active transport
- Loop of Henle:** Reabsorption of water through osmosis
- Collecting duct:** Reabsorption of water through osmosis

## Urinary system

## OSMORREGULATION

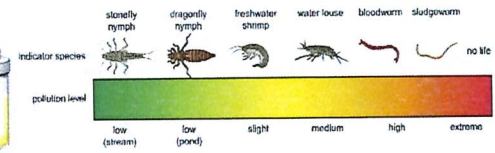


Structure of a nephron

- orange arrow: direction of flow in tubule
- green arrow: filtration
- blue arrow: reabsorption of water
- purple arrow: selective reabsorption of some mineral ions
- black arrow: selective reabsorption of glucose

## Assessing pollution

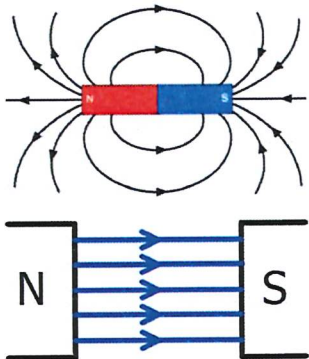
Indicator species	Species used to monitor pollution levels in ecosystems
Lichen	A composite organism consisting of a fungus and an alga living in a mutualistic relationship.
Blackspot fungus	Is a pathogen specific to roses. The fungus cannot grow well where there is a lot of sulfur pollution.
Aquatic invertebrates	Water living animals without a backbone. These can be used as indicator species.



# P10-11: Magnetism and electromagnetic induction

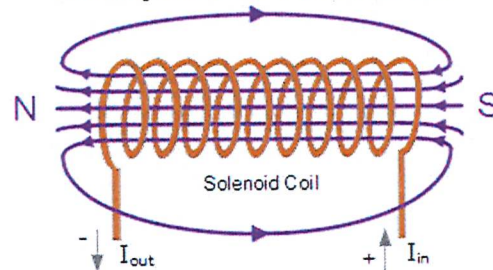
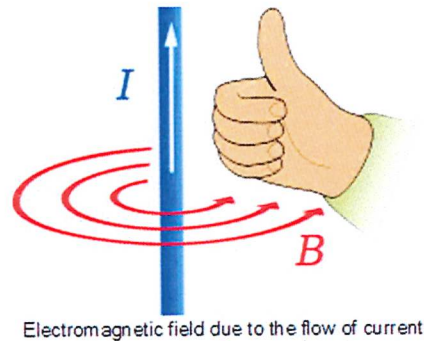
## 1. Magnets and magnetic fields

<b>Permanent magnet</b>	A magnet that is always magnetic.
<b>Temporary magnet</b>	A magnet that is not always magnetic.
<b>Induced magnet</b>	When something becomes temporarily magnetic when close to another magnet.
<b>Uses of magnets</b>	Motors, loud speakers, generators, door locks, knife holders.
<b>Magnetic field</b>	The area of magnetic force around a magnet.
<b>Magnetic field direction</b>	From north to south
<b>Bar magnet field shape</b>	Curved lines going from north to south – see diagram below.
<b>Uniform magnetic field shape</b>	The field between two opposite poles. Straight parallel field lines connect north to south
<b>Plotting a magnetic field</b>	Draw around a magnet. Place a plotting compass on it and draw a small arrow to show needle direction. Move a cm in that direction and repeat. Connect arrows to form lines. Repeat.
<b>Earth's magnetic field</b>	The geographic North Pole is a magnetic south pole (because it attracts the north of bar magnet).



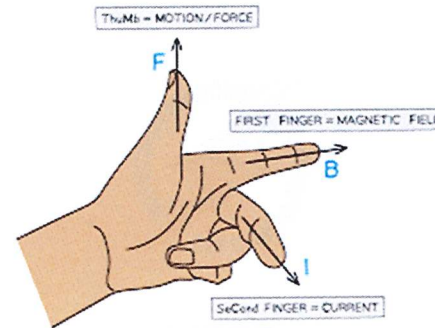
## 2. Electromagnetism

<b>Electromagnetism</b>	Current flowing through a wire creates a magnetic field around it.
<b>Wire magnetic field shape</b>	Concentric circles.
<b>Wire magnetic field strength</b>	Stronger nearer the wire and with higher current.
<b>Wire magnetic field direction</b>	Right hand grip rule – thumb points towards negative, field in same direction as fingers.
<b>Solenoid</b>	A coil of wire with current running through it.
<b>Solenoid magnetic field shape</b>	Outside: similar to bar magnet. Inside: almost uniform
<b>Solenoid magnetic field direction</b>	From negative to positive.
<b>Electromagnet</b>	A temporary magnet made by placing an iron core inside a solenoid.

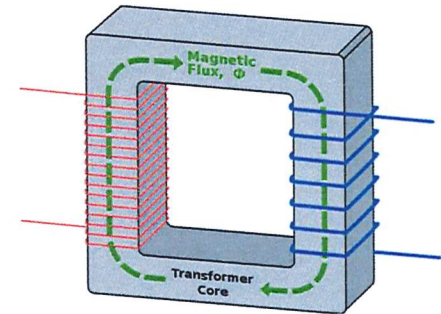


## 3. Magnetic forces (HT)

<b>Motor effect</b>	Force produced when the magnetic field from a permanent magnet pushes a magnetic field from a wire.
<b>Direction of force from motor effect</b>	Fleming's left-hand rule – index finger points in direction of magnetic field, middle finger points from + to – current, thumb points in direction of force.
<b>Force from motor effect ...</b>	Is greatest when the magnetic field and electric field are at right angles, wire is longer, current is greater, magnet is stronger.
<b>Magnetic flux density, B</b>	The strength of a magnetic field. Units are: newtons per amp metre ( <b>N / A m</b> )
<b>Tesla, T</b>	Same as newtons per amp metre.
<b>Calculating force of the motor effect</b>	Force (N) = magnetic flux density (T) x current (A) x length (m) <b>F = B x I x L</b>



<b>How transformers work</b>	Changing current in the primary coil creates a changing magnetic field in the core which induces a current in the secondary coil of higher voltage and lower current (or vice versa). <b>Transformers only work with alternating current.</b>
<b>Conservation of energy in transformers</b>	If the voltage increases, the current decreases, so energy is conserved since: Power = current x voltage
<b>Transformer calculations</b>	Primary current (A) x primary voltage (V) = secondary current (A) x secondary voltage (V) <b>V<sub>p</sub> x I<sub>p</sub> = V<sub>s</sub> x I<sub>s</sub></b>



## 5. Transformers and energy

<b>National grid</b>	The system of cables and transformers that transfers electricity from power stations to homes and businesses.
<b>Voltage in the national grid</b>	Power station = 25 kV Overhead cables = 400 kV Factories = 33 kV Homes = 230 V
<b>Step-up transformer</b>	Increase voltage and decreases current.
<b>Step-down transformer</b>	Decrease voltage and increases current.
<b>Factors affecting the potential difference induced in a transformer</b>	Coils: more coils → higher voltage Frequency: how many times the magnetic field changes or moves past the wire

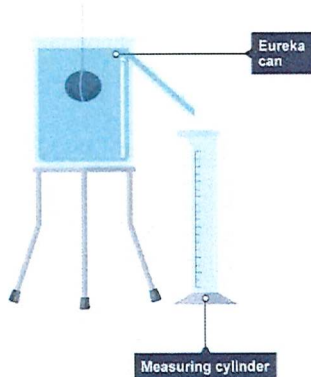
## 4. Transformers

<b>Transformer are devices that change the potential difference of an electricity supply.</b>	
<b>Electromagnetic induction</b>	A wire cutting through a magnetic field causes a voltage in the wire. (can move the wire or the magnetic field)
<b>Transformer structure</b>	Two coils of wire wrapped around an iron core. Current goes in the primary coil and comes out from the secondary coil.

## P12-13: Particle model, forces and matter

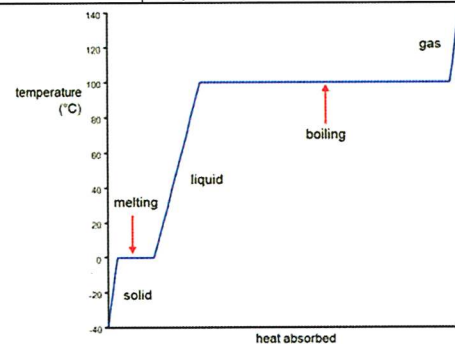
### 1. Particles and density

<b>State of matter:</b> solid, liquid or gas.	
<b>Changes of state</b>	Melting: solid → liquid Freezing: liquid → solid Evaporation: liquid → gas Condensation: gas → liquid Sublimation: solid → gas Deposition: gas → solid
<b>Solid</b>	Particles touching, neatly ordered, vibrating around a fixed point.
<b>Liquid</b>	Particles touching, random order, moving slowly.
<b>Gas</b>	Particles widely spaced, random order, moving fast.
<b>Forces of attraction</b>	Forces holding particles close to each other: strong in solids, weak in liquids, gone in gases.
<b>Changing state</b>	Increasing temperature gives particles more (kinetic) energy, allowing them to break the forces of attraction.
<b>Density</b>	The mass of 1 cm <sup>3</sup> of a substance. Units = kg / m <sup>3</sup>
<b>Density and state</b>	Solid > liquid > gas, due to particles being closer together.
<b>Density calculations</b>	Density (kg/m <sup>3</sup> ) = $\frac{\text{mass (kg)}}{\text{volume (m}^3\text{)}}$ $\rho = m / v$



### 2. Energy and changes of state

<b>Thermal energy and motion</b>	The hotter an object is, the faster its particles are moving.
<b>Temperature</b>	A measure of the average kinetic energy of the particles.
<b>Temperature vs thermal energy</b>	A very small hot object has less thermal energy than a very large cold object, because thermal energy is the energy of all the particles added up.
<b>Thermal energy</b>	Depends on temperature and mass of material.
<b>Specific heat capacity, Q</b>	The amount of energy required to increase the temperature of 1 kg of a substance by 1 °C.
<b>Specific latent heat of evaporation</b>	The amount of energy required to change 1 kg of a substance (at its boiling point) from liquid to gas.
<b>Specific latent heat of melting</b>	The amount of energy required to change 1 kg of a substance (at its melting point) from solid to liquid.
<b>Heating curve</b>	As you heat a substance, the temperature rises steadily, with flat sections on the graph first as it melts, and later as it evaporates.



### 3. Energy calculations

<b>Temperature change calculations</b>	Thermal energy change (J) = mass (kg) x specific heat capacity (J/kg/°C) x temperature change (°C) $\Delta Q = m \times c \times \Delta T$
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<b>State change calculations</b>	Thermal energy (J) = mass (kg) x specific latent heat (J/kg) $Q = m \times L$
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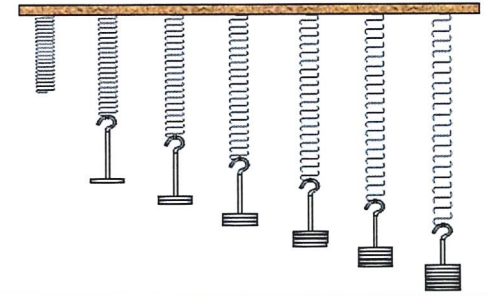
### 4. Gas temperature and pressure

<b>Temperature</b>	A measure of the average kinetic energy of the particles.
<b>Gas pressure</b>	Every time a gas particle hits a surface it pushes with a small force; gas pressure is the sum of these forces.
<b>Increasing gas pressure</b>	Gas pressure increases with temperature and number of particles.
<b>Pascals, Pa</b>	The unit of pressure: 1 Pa = 1 N / m <sup>2</sup>
<b>Absolute zero, 0K</b>	The coldest possible temperature when particles completely stop moving.
<b>Kelvins</b>	Measures temperatures relative to absolute zero: 0 K = absolute zero.
<b>Kelvins and degrees Celsius</b>	A kelvin is the same size as a degree Celsius, but 0 K = -273°C, 273 K = 0°C
<b>Converting K to °C</b>	Subtract 273
<b>Converting °C to K</b>	Add 273
<b>Gas pressure and Kelvins</b>	Gas pressure is directly proportional to temperature in K.
<b>Absolute zero and gas pressure</b>	Pressure is 0 Pa at 0 K because the particles are not moving.

### 5. Bending and stretching

<b>Elastic</b>	When something returns to its original shape after force is applied.
<b>Inelastic</b>	When something doesn't return to its original shape after force is applied.
<b>Elasticity and force size</b>	Some objects are elastic when a small force is applied, but inelastic when a large force is applied.
<b>Extension</b>	The increase in length of a spring when a force is applied.
<b>Direct proportion</b>	Doubling A doubles B, a graph of B vs A goes through the origin.

<b>Metal spring extension</b>	The relationship between force and extension is linear and directly proportional, but becomes non-linear with large forces.
<b>Rubber band extension</b>	The relationship between force and extension is non-linear.



### 6. Extensions and energy transfers

<b>Spring constant</b>	A measure of the strength of a spring: units = N/m
<b>Spring constant and graphs</b>	The spring constant is the gradient of a graph of force vs extension.
<b>Force and extension calculations</b>	Force = spring constant x extension $F = k x$ Force = N Spring constant = N/m Extension = m
<b>Extension is greater when...</b>	Force is higher, spring constant is lower
<b>Work done</b>	The energy transferred by a force.
<b>Spring energy calculations</b>	Energy transferred in stretching = $\frac{1}{2} \times$ spring constant x extension <sup>2</sup> $E = \frac{1}{2} k x^2$ Energy = J Spring constant = N / m Extension = m

¡A Currar! *To work!*

Future Aspirations, Study, and Work



**¿Tienes un trabajo a tiempo parcial?**

*Do you have a part time job?*

*Hago de canguro los fines de semana para mis vecinos. Gano alrededor de veinte libras cada semana, y a veces me dan una propina de cinco libras.*

**¿Qué planes tienes para el futuro?**

*What plans do you have for the future?*

*En el futuro, me gustaría trabajar como obrero con mi padre ya que tiene su propio negocio. Ayuda a mucha gente y cobra barato así que tendremos clientes fieles.*

**¿Qué opinas de ir a la universidad?**

*What do you think about going to university?*

*No quiero ir a la universidad enseguida porque estoy harto de los estudios. Primero haré un año sabático, pero últimamente tendré que ir a la universidad para conseguir mi diploma para ser abogada.*

**¿Cómo ayudas con las tareas domésticas?**

*How do you help with the household chores?*

*Todos los días lavo los platos después del desayuno y de la cena. A veces paso la aspiradora, pero por lo general es la tarea de mi hermanita.*

**¿Dónde hiciste tus prácticas laborales?**

*Where did you do your work experience ?*

*Hace un par de semanas hice mis prácticas laborales en una escuela primaria. Lo pasé genial ya que quiero ser profesor cuando sea mayor.*

**¿En qué te gustaría trabajar?**

**¿Por qué?**

*What would you like to work as? Why ?*

*A veces pienso que me encantaría ser astronauta, pero otras veces tengo que ser realista. Sería guay como trabajo, pero será más probable que trabajaré como artista dado que me mola el dibujo.*

**¿Crees que es importante aprender otras lenguas?**

**¿Por qué (no)?**

*Do you think it is important to learn other languages? Why (not)?*

*Claro que es importante aprender otras lenguas. Hay tantas culturas alrededor del mundo y quiero conocerlas. No todos hablamos el español o el inglés.*

**¿Cómo pasarías un año sabático? ¿Por qué?**

*How would you spend a gap year? Why?*

*Buscaría un trabajo manual o práctico porque estoy harta de los estudios. En mi opinión tener la experiencia de trabajar como camarera o cocinera o hasta como jardinera es muy importante porque aprendes habilidades de la vida real.*

**¿Qué otras ambiciones tienes?**

*What other ambitions do you have ?*

*Bueno, quiero casarme y tener una familia en el futuro. Voy a conseguir un buen trabajo primero, pero después de un par de años buscaré pareja con quien construir nuestra familia.*

**¿Qué cosas te importan más en la vida? ¿Por qué?**

*What are the most important things in life for you? Why?*

*A mí me importa la salud y la felicidad. Si llevas una vida sana y contenta, habrás vivido una vida perfecta.*

**Question you will ask:**

**Fancy Phrases:**

PRESENTE			FUTURO SIMPLE			PRETERITO			
hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>	nadar <i>to swim</i>	beber <i>to drink</i>	abrir <i>to open</i>	preguntar <i>to ask</i>	comer <i>to eat</i>	escribir <i>to write</i>	
habl-o	com-o	viv-o	nadar-é	beber-é	abrir-é	pregunt-é	com-í	escrib-í	
habl-as	com-es	viv-es	nadar-ás	beber-ás	abrir-ás	pregunt-aste	com-iste	escrib-iste	
habl-a	com-e	viv-e	nadar-á	beber-á	abrir-á	pregunt-ó	com-ió	escrib-ió	
habl-amos	com-emos	viv-imos	nadar-emos	beber-emos	abrir-emos	pregunt-amos	com-imos	escrib-imos	
habl-áis	com-éis	viv-ís	nadar-éis	beber-éis	abrir-éis	pregunt-ásteis	com-ísteis	escrib-ísteis	
habl-an	com-en	viv-en	nadar-án	beber-án	abrir-án	pregunt-aron	com-ieron	escrib-ieron	
<p>The present tense is used to describe what you're doing at the present moment in time, e.g. "I am eating breakfast" or what you do routinely, e.g. "I eat breakfast every day".</p>			<p>The future tense is used to say what you will do in the future.</p>			<p>The preterite is sometimes known as the simple past. It's used to talk about events in the past, e.g. I asked, I ate, I wrote.</p>			
PRESENTE CONTINUO			CONDICIONAL			IMPERFECTO			
hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>	nadar <i>to swim</i>	beber <i>to drink</i>	abrir <i>to open</i>	trabajar <i>to work</i>	comer <i>to eat</i>	escribir <i>to write</i>	
estoy hablando	estoy comiendo	estoy viviendo	nadar-ía	beber-ía	abrir-ía	trabaj-aba	com-ía	escrib-ía	
estás hablando	estás comiendo	estás viviendo	nadar-ías	beber-ías	abrir-ías	trabaj-abas	com-ías	escrib-ías	
está hablando	está comiendo	está viviendo	nadar-ía	beber-ía	abrir-ía	trabaj-aba	com-ía	escrib-ía	
estamos hablando	estamos comiendo	estamos viviendo	nadar-íamos	beber-íamos	abrir-íamos	trabaj-ábamos	com-íamos	escrib-íamos	
estáis hablando	estáis comiendo	estáis viviendo	nadar-íais	beber-íais	abrir-íais	trabaj-ábais	com-íais	escrib-íais	
están hablando	están comiendo	están viviendo	nadar-ían	beber-ían	abrir-ían	trabaj-aban	com-ían	escrib-ían	
<p>The present continuous tense is used to indicate what is happening at the time of speaking, or when one action is happening at the same time as another. <i>Estar+past participle</i></p>			<p>The conditional is recognised in English by the use of the word "would" or sometimes "should", e.g. "I would swim"</p>			<p>The imperfect tense is used for things that 'used to happen' or 'were happening' e.g. I worked, I used to work, I was working</p>			
PARTICIPIO PRESENTE		PARTICIPIO PASADO		FUTURO INMEDIATO (I am going to +Verb)			PRESENTE PERFECTO		
-AR	-ando hablando	-AR	-ado hablado	voy	a	trabajar <i>I am going to work</i>	hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>
-ER	-iendo comiendo	-ER	-ido comido	vas	a	estudiar	he hablado	he comido	he vivido
-IR	-iendo viviendo	-IR	-ido vivido	va	a	beber	has hablado	has comido	has vivido
<p>The present participle or gerund is recognised in English by the ending -ing .e.g. talking, eating, living. To find the past participle of a verb in English, just imagine that the words 'I have' are in front of it. E.g. 'to eat' put 'I have' in front of it you would say 'I have eaten' so 'eaten'.</p>				<p>The immediate future tense can be used to express what is going to happen in the future. E.g. I am going to work, I am going to study, I am going to drink, I am going to eat....</p>			<p>The present perfect in English always contains 'has' or 'have' in it. E.g. I have spoken, I have eaten, I have lived.</p>		
<p>There is/are= hay There was/were= había</p> <p>In Spanish the infinitive form of a verb always ends with the letter r and falls into three categories: 1) those which end with -ar (ar verbs) e.g. <i>hablar</i> = to speak 2) those which end with -er (er verbs) e.g. <i>comer</i> = to eat 3) those which end with -ir (ir verbs) e.g. <i>vivir</i> = to live</p> <p>For regular verbs in the present, preterite and imperfect tenses, you must first remove the -ar, -er or -ir endings from the infinitive form of the verb, and then add the correspondent endings.</p>				<p>Most verbs in Spanish have six forms which correspond to their respective pronouns and which will be listed in the following order: 1) yo (I) 2) tú (you-familiar a person you know well, a familiar relationship) 3) él/ella/usted (he/she/you-formal a person you don't know, a formal relationship) 4) nosotros/nosotras (we) 5) vosotros/vosotras (you-plural-familiar [only used in Spain]) 6) ellos/ellas/ustedes (they/you-plural-formal [Spain]/you-plural [L. America])</p> <p>It's essential that you get the correct ending for the person you're talking about in Spanish because pronouns don't tend to be used in Spanish.</p>			<p>PASADO PERFECTO</p>		
hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>	hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>	hablar <i>to speak</i>	comer <i>to eat</i>	vivir <i>to live</i>	
había hablado	había comido	había vivido	había hablado	había comido	había vivido	había hablado	había comido	había vivido	
habías hablado	habías comido	habías vivido	habías hablado	habías comido	habías vivido	habías hablado	habías comido	habías vivido	
había hablado	había comido	había vivido	habíamos hablado	habíamos comido	habíamos vivido	habíamos hablado	habíamos comido	habíamos vivido	
habíamos hablado	habíamos comido	habíamos vivido	habíais hablado	habíais comido	habíais vivido	habíais hablado	habíais comido	habíais vivido	
habíais hablado	habíais comido	habíais vivido	habían hablado	habían comido	habían vivido	habían hablado	habían comido	habían vivido	
habían hablado	habían comido	habían vivido	<p>The past perfect is used to indicate an action that happened and was completed before another action took place in the past. E.g. I had spoken/lived/eaten</p>						

# TEXTILES

## AO4

### Personal response

- Demonstrate what the starting point, theme or brief means to you personally.
  - Establish links between the starting point and your chosen sources?
  - Show links between your sources and your own work?
  - Present ideas or techniques from your sources that support your developed
  - Selected and presented your studies carefully.
  - Made clear links between your work and that of other contextual reference.
  - Collected images to show your inspiration and stimuli?
  - Present evidence of drawing, sketching, techniques, samples, photographs and experiments with different media?
  - Annotate images to explain how they fit into your development process?
  - Demonstrated your understanding through correct use of textiles vocabulary?
  - Shown experimentation and selection of the most successful results for your project?
- Organised your recordings and presented them to show and explain your decisions?
  - Clearly linked all of your work to your starting point?
  - Clearly link your final piece with your preparatory work.
  - Make sure your final piece links to your artist or designer research.
  - Finish all of your preparatory work before you start your final piece -it's worth a lot more marks.
  - Make sure your personal response isn't simply a larger version of your preparatory work.
  - Review and refine your ideas so that you are completely happy with them.
  - Complete your experiments with materials, composition and construction so that you feel in control of what you are doing before you start your final piece.
  - Evaluate.

## AO3

When you complete media experiments they must...

- **Link to your chosen theme / research** - make sure they are **appropriate**.
- Refine – combine techniques together to develop your ideas.
- Be **imaginative** within your selection of media and techniques don't just copy or be obvious.
- **Experiment** with both machine and hand techniques to develop your work.
- **Annotations** must be evaluative! If you think something could be improved make sure you apply it or evidence it in your book.

## AO2

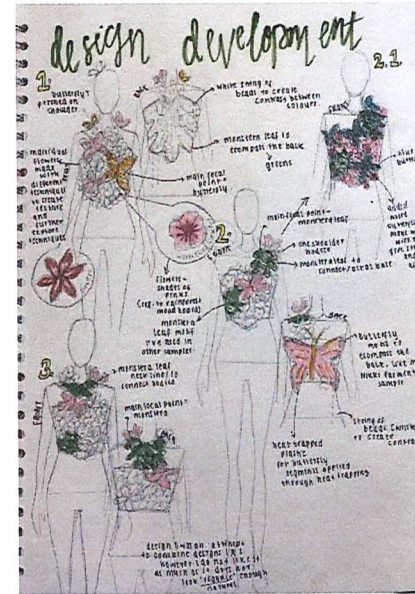
### This includes; Annotations / planning / drawing / photography

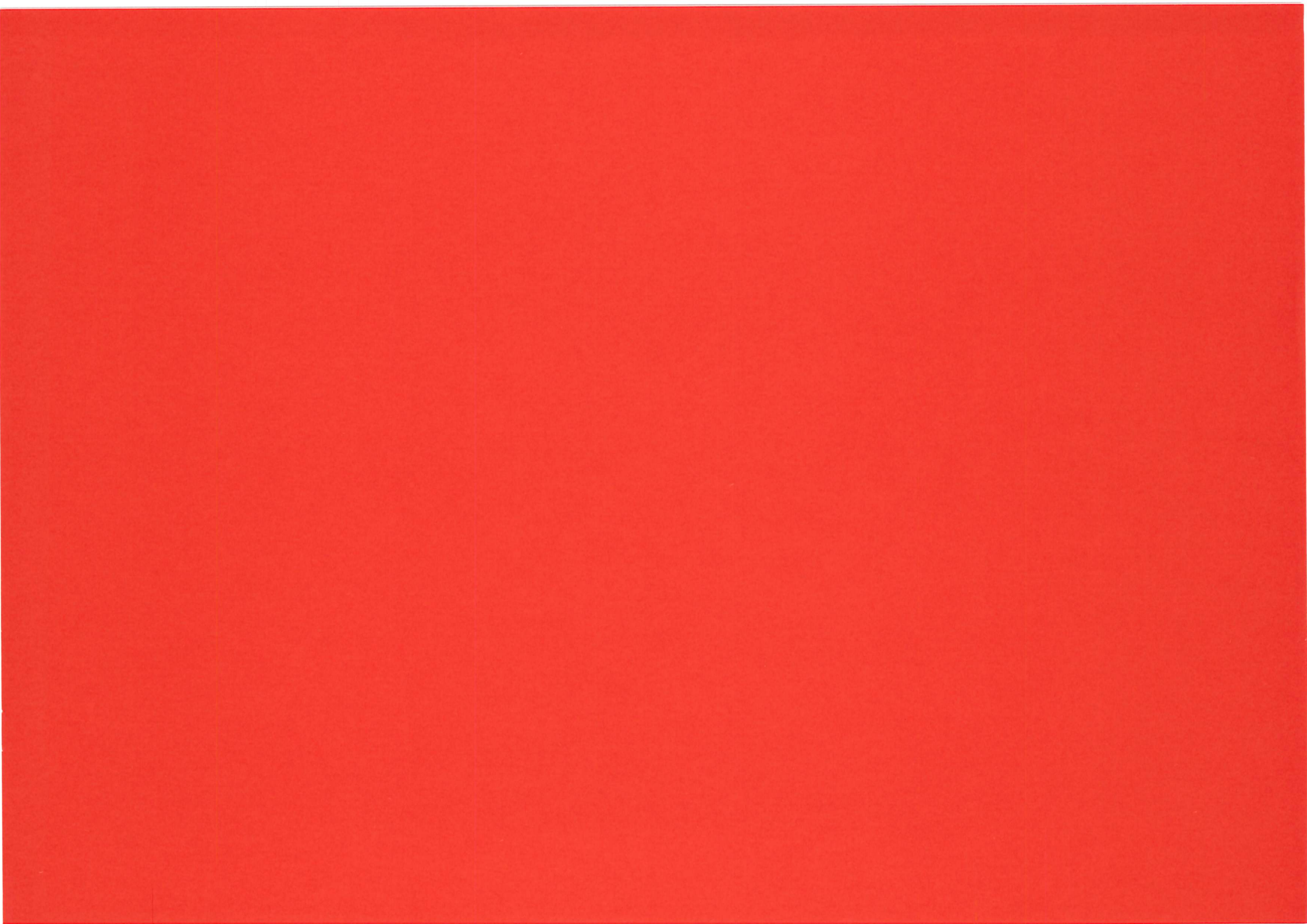
- Extensive sample planning making connections between your idea and research/designer techniques to develop your own ideas.
- In your planning, you should show **clear connections** to your photographer but then **develop your ideas** further through trying out different composition/clothing/props/lighting.
- Drawings should be relevant to the theme – you could also explore painting, digital drawing and photography.
- Annotations should make clear links between your own work and research. State clearly whether you'll use techniques again and how you will develop them.

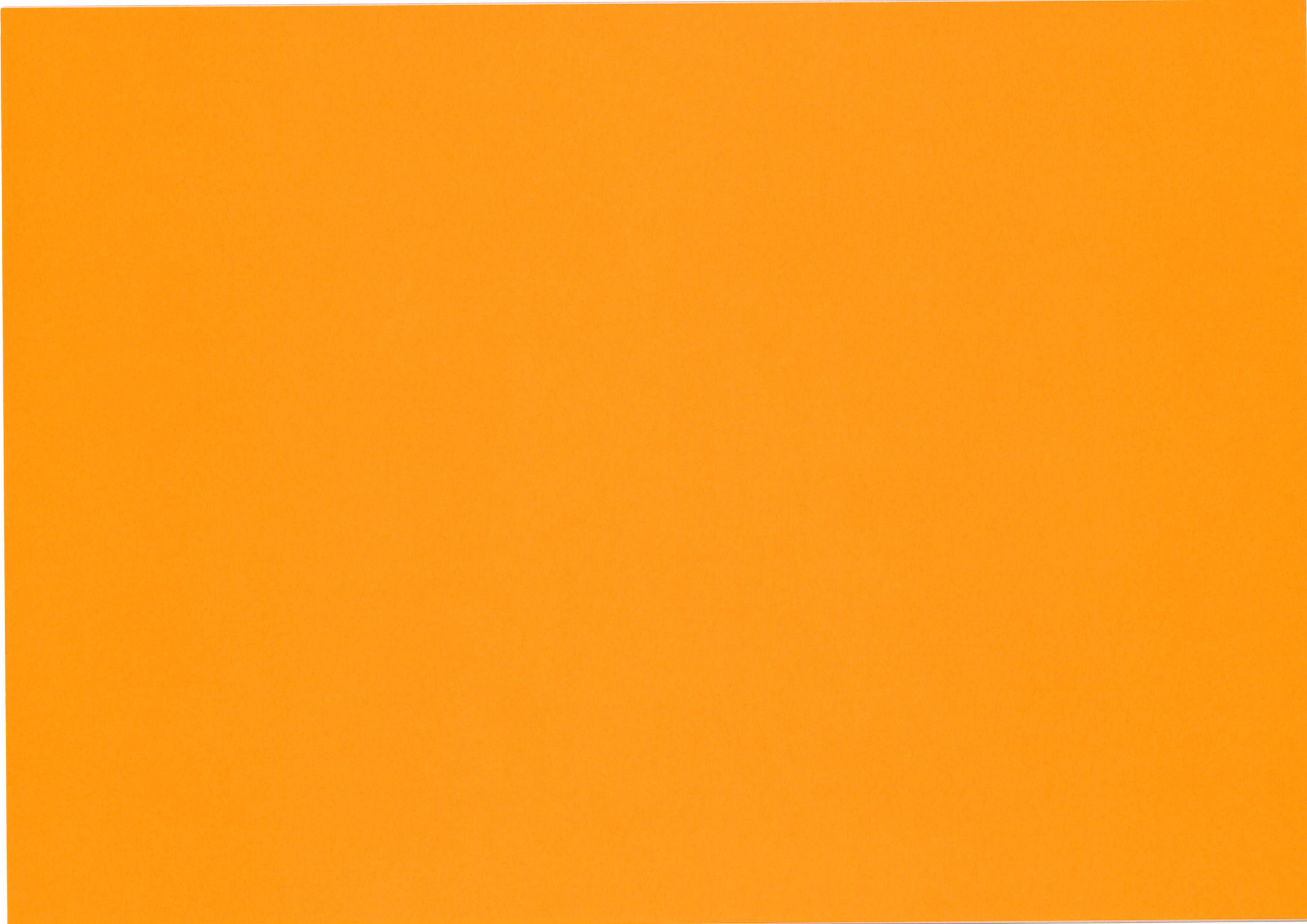
### Final Piece planning

I have done the following:

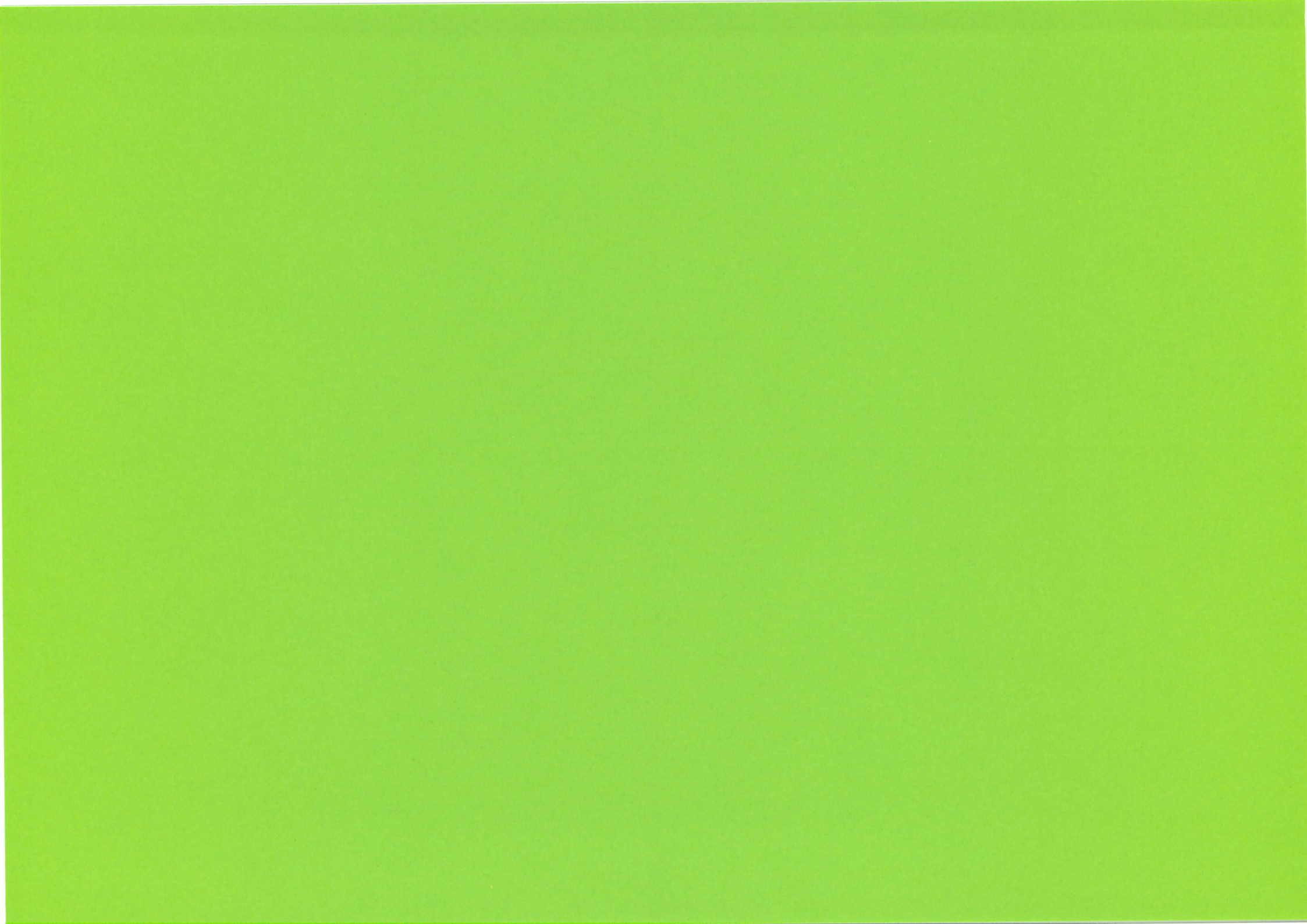
- ✓ Drawn what my sample will look like by hand/computer.
- ✓ Added labels to show different techniques.
- ✓ Included colour where appropriate.
- ✓ Annotated with a statement of intent to show where my idea has come from - link to research/project. Experimented with techniques.
- ✓ Made a toile.











## Notes

## Notes

## Notes

## Notes

## Notes