Harrow Way Community School
Learning for life, success for all

Year 10 Knowledge Organiser

Autumn Term

How do I complete Knowledge Organiser Homework?

Link to self-quiz video: https://youtu.be/cFUuhtPIMPU

Step 1

Check on:
ShowMyHomework for what words / definitions / facts you have been asked to learn.

Step 2

Write today's date and the title from your Knowledge Organiser in your self-quizzing book.

Step 3

Read the section of the Knowledge Organiser that you are studying. Read it slowly, you can read it aloud and with a ruler if this helps.

Step 4

Cover up the section and try to write out the information exactly as it is written on the Knowledge Organiser in your self-quizzing book.

DO NOT PEEK!

Step 5

Uncover the section and compare it to what you have written. If you have made mistakes or missed parts out, add them in using a pencil or a different colour.

Step 6

Repeat steps 3-5 again until you are confident.
You will need to bring your self-quizzing book in every day and your teacher will check your work.
You will be tested in class.

Knowledge Organiser - YEAR 10 - AUTUMN TERM

Contents

GCSE Assessment objective 1 Part 1: MIND MAPPING

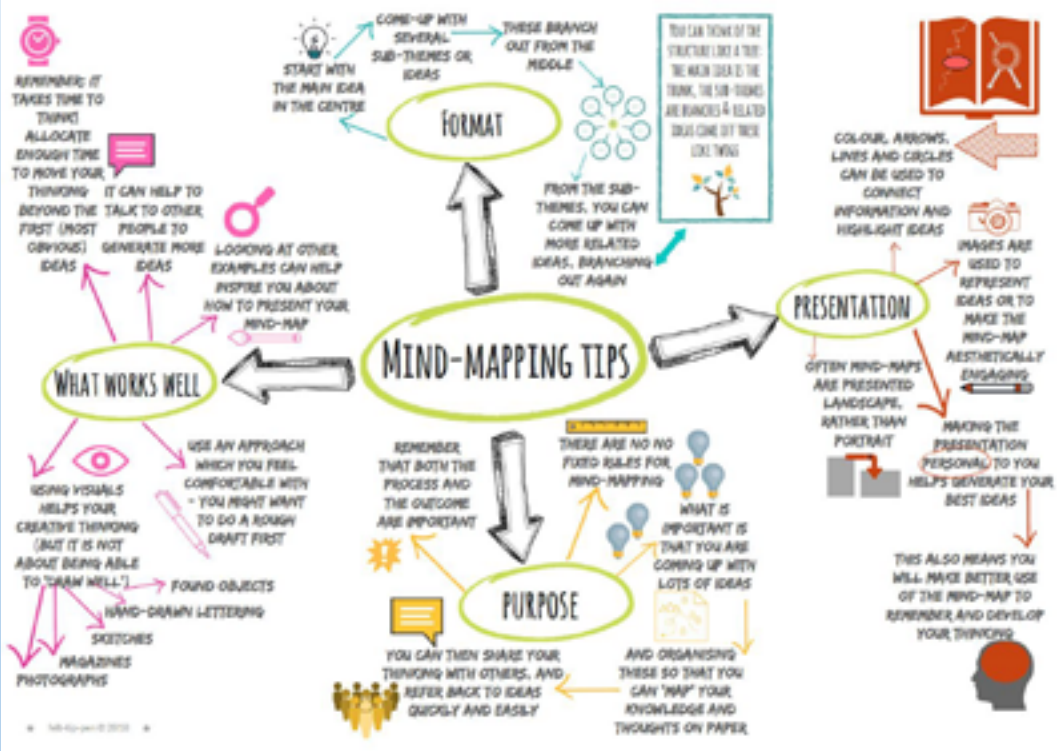
DEVELOP ideas through investigations, demonstrating critical understanding of sources.

AO1

Showing your ideas

Central idea = Starting point

Must be clear and central



Key words = key idea

One word per branch which will spark a number of associations

Colour coding = clarity

This links the visual with the logical and helps your brain to create mental shortcuts. The code allows you to categorise, highlight and analyse information. Colours also make images more appealing and engaging

Branches = key themes

You can explore each theme or main branch in greater depth by adding smaller branches

What to include

IDEAS exploring the starting point: notes, phrases, drawings, images.

Images = powerful message

Visuals can convey much more info than a word or sentence. They are processed instantly by the brain and act as visual stimuli to recall info

Art - Assessment Objective 1.2

GCSE Assessment objective 1 Part 2: MOOD BOARD
DEVELOP ideas through investigations, demonstrating critical understanding of sources.

AO1

Gathering resources

Consider your theme
Do you want it quite narrow or are you happy to collect a wider range of ideas?

Use a range of sources
Internet images, photographs, magazine cuttings, drawings etc

Don't limit yourself
Even if it doesn't directly link to your starting point it may relate to the theme. Consider colours and words to help you.

What to include
IMAGES of the work of artists, designers, craftspeople, art movements, song lyrics
Quotes from poetry, literature, film etc.

Apply your ideas
Your moodboard will directly link to the development of your project. If there is empty space fill it with sketches or annotations

Pick a style
Pulling it all together with a colour theme or visual style will make your page work together as a whole

Art - Assessment Objective 1.3

GCSE Assessment objective 1 Part 3: Artist Research
DEVELOP ideas through investigations, demonstrating critical understanding of sources.

AO1

Showing your understanding of an artists work or style

Biographical information
Birth, death, style, education, important works

Social, historical and economic influences
What was happening at the time? Were they responding to anything that was happening around them?

Collected images
Select images that are relevant and that appeal to you, make comments about why you like them

Technical information
How was their work produced? What methods and materials did they use?

Artistic influences
Who influenced their work? Did their work influence anyone else?

What to include
IMAGES of the work of one artists, designer or craftsperson that inspires you
ANNOTATION (see separate knowledge organiser)
ARTIST RESPONSE (to demonstrate your understanding of the style

Art - Assessment Objective 1.4

GCSE Assessment objective 1 Part 4: Art analysis

AO1

Analysing artwork

CONTENT 1.
Looking at the subject of the work

- What is it?
- What exactly can you see?
- What is happening?
- What does the work represent?
- What does the artist call the work?
- Does the title change the way we see the work?
- What I the theme of the work?
- Landscape, portrait, journey, moment, memory, event, surreal, fantasy, abstract, message

FORM Looking at the formal elements 2.

- What colours does the artist use and why? How is the colour organised?
- What kind of shapes can you see?
- What kind of lines and marks does the artist use?
- What is the surface like?
- What textures can you see?
- What patterns can you see?
- How big is the work?
- Light, delicate, layered, strong, rough, dark, peaceful, dripped, textured, scale, vivid, bright

PROCESS 3.
How the work has been developed and made

- What materials and tools have been used?
- What is the evidence for how it has been made?
- Painted, drawn, woven, printed, cast, stitched, constructed, collaged

Technical information 4.

- How was their work produced?
- What methods and materials did they use?

Artistic influences 5.

- Who influenced their work?
- Did their work influence anyone else?

Write in note form and discuss with your teacher

Sentence starters

6.

Looking at artwork **OBJECTIVELY**.
What are the facts? Don't guess

Use these sentence starters to direct your research:

I particularly like…(title of the work you have chosen to talk about)
It is a… (painting, sculpture, textile etc)
It has been created by… (what materials and techniques did the artist use?)
The subject of this piece is… (what is in the work? If there are people in it what are they doing? If there are objects in it, what are they and where are they placed?) Describe it in detail.
The composition is inviting because…
This artwork is unique because…

7.

Look at the work **SUBJECTIVELY** (your opinions & thoughts)
Use these sentence starters to direct your research:

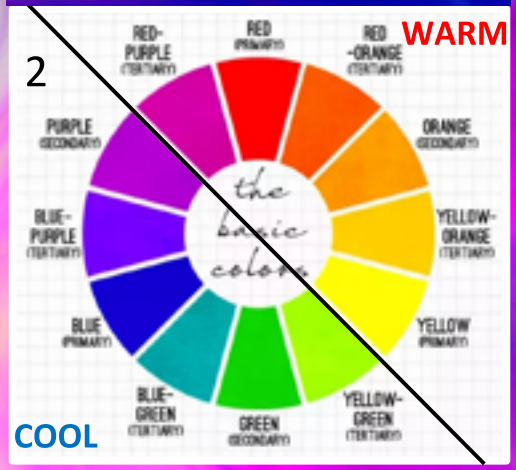
This artwork reminds me of…because…
This artwork makes me think of…because…
Through speculation I have come to the conclusion that…
(what do you think is happening in the artwork, how is it different or strange?
I believe the artist has created this kind of work because…
On closer inspection I notice that…
(what have you noticed since you started looking more carefully at the artwork OR by reading about it)
This piece is exciting because
(Why were you drawn to this piece of artwork? Is it the colours? How it makes you feel? How the artist has arranged the objects? Because it draws the eye in a certain direction? Look carefully and explain what is going through your mind.
I appreciate the way the artist has…
This work is similar to … (another work you have looked at) because…
This work is in contrast to … (another work you have looked at) because…
I prefer this work to… (another work you have looked at) because… (mention the differences and similarities of the two artworks)
I am interested in this type of work because at this stage I think I might… (what are you going to make or create?)
To develop my ideas I will be experimenting with… (materials/techniques)

1 COLOUR

Colour plays a vitally **important** role in the world in which we live. **Colour** can sway thinking, change actions, and cause reactions. It can irritate or soothe your eyes, raise your blood pressure or suppress your appetite. As a powerful form of communication, **colour** is irreplaceable.

COLOUR WHEEL

2



Cool colours painting

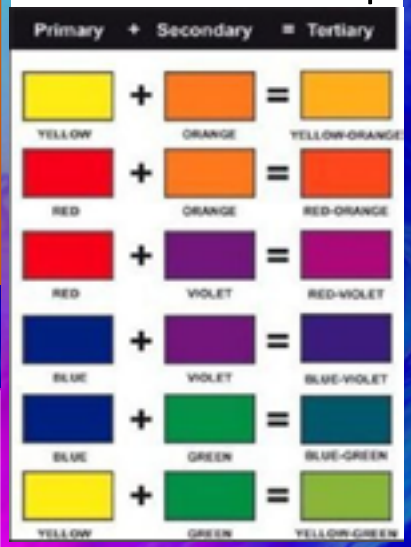
Warm colours painting

3

ADJECTIVES TO DESCRIBE COLOURS

Light Bright Vivid Glowing Vibrant Brilliant Intense Dazzling Subdued Diluted Gloomy Depressing Pale Dull Murky Muted Monotonous Fluorescent Saturated Opaque Transparent

4



5

TINT
is adding white to a colour

TONE
is adding grey to a colour

SHADE
is adding black to a colour

COLOUR SCHEMES 6

PRIMARY

Uses the primary colours: Red, Yellow & Blue. They can not be made by mixing other colours.

COMPLEMENTARY

Uses a pair of colours that are opposite each other on the colour wheel. The pairs are: Green/Red; Blue/Orange; Yellow/Purple.

SECONDARY

Uses the secondary colours: Orange, Green & Purple. Each secondary colour is made by mixing two primary colours.

HARMONIOUS

Uses three or four colours (primary, secondary and tertiary) that are next to each other on the colour wheel.

TERTIARY

Uses the tertiary colours. They are made by mixing a primary and a secondary colour next to each other on the colour wheel.

MONOCHROMATIC

Uses Tints, Tones & Shades of one colour. The word MONO means ONE and the word CHROMA means INTENSITY OF COLOUR.

DRAWING

The **basic craft of drawing** is about two things: **1. To control your hand** and **2. Learn to see.**

Line drawing

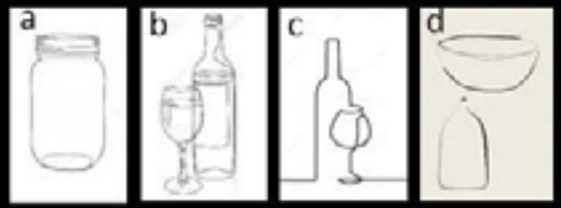
1 ELLIPSES:
The circle found at the top and the base of a cylindrical object; i.e. bottle, cylinder, etc. Ellipse can also occur when the sides of the bottle change direction, i.e. get narrow or wide.

2 CENTRE LINE: Divides the object vertically in two equal parts.
LINE OF SYMMETRY: the line at which the bottle is symmetrical.
Mirror Image symmetry: exactly matching opposite sides

3 POSITIVE SPACE: (*Object in white*)
The space occupied by the object/s.

NEGATIVE SPACE: (*All in black*)
The rest of the space around or in between the object/s.

4 LINEAR DRAWING
A drawing using line only to:
a) outline the shape of the object;
b) to add detail;
c) using continuous line (without lifting your pencil of the paper from start to finish.
d) Minimalist drawing



Tonal drawing

5 FLAT TONE:
A solid block of tone, see Tonal Ladder. It has no outlines. Different flat tones next to each other define shapes.

6 SHADING:
When the tone gradually changes from dark to light. It can appear a) smooth or b) rough by using lines called **Hatching** or **Cross Hatching**.

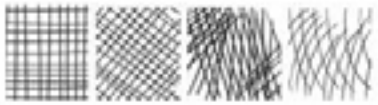
SHADING (light from the side):
On the outside of the object the tone changes gradually from one side to the other. Light and dark areas swap direction on the inside opening of the object like in this cup.

SHADING (light from the centre):
The tone is dark on both sides and smoothly gets light in the middle. It gives a 3D effect and looks very realistic.

7 TEXTURE and MARK-MAKING:
Texture is the **surface quality** of something. Artists use mark-making techniques to represent different textures.

8 Hatching

Cross- Hatching in 2,3 or more directions



Other elements of drawing

9 PERSPECTIVE:

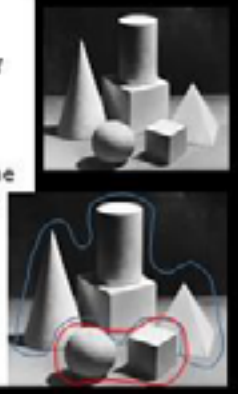
the art of representing three-dimensional objects on a two-dimensional surface so as to give the right impression of their height, width, depth and position in relation to each other.

10 RANGE OF PENCILS:

11 FOREGROUND: An art term that describes the objects in the scene that are closest to the viewer. It is the part in front of everything else and has the most detail.

MIDDLE GROUND: lies between the foreground and background of a painting. The objects in this area appear smaller. They are usually placed behind the objects in the foreground.

BACKGROUND: is the part of a scene or picture that is farthest from the viewer. It usually has the least detail.

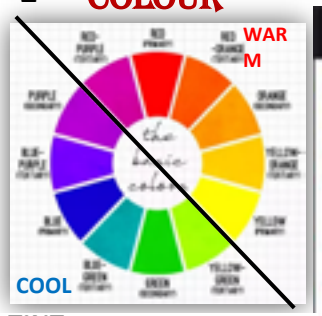


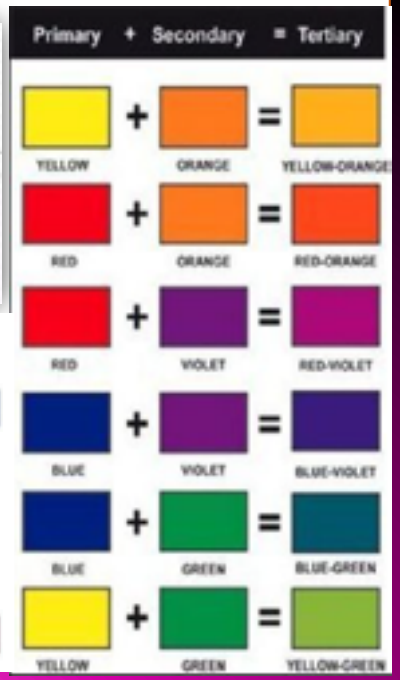
12 COMPOSITION:
Refers to the organisation, arrangement, and combination of objects within the borders of a **drawing** space.
For a great **drawing**, you want to bring the eyes of the viewer toward your centre of interest within an aesthetically pleasing **composition.**

FORMAL ELEMENTS

1 The Formal Elements are: **line, shape, form, tone, texture, pattern and colour**. They are used together to create artwork.

2 COLOUR





TINT
is adding white to a colour

TONE
is adding grey to a colour

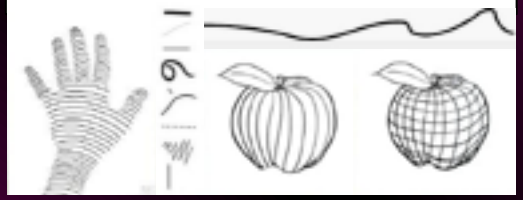
SHADE
is adding black to a colour

3 PATTERN

is a symbol or shape that is repeated. A design that is created by repeating lines, shapes, tones or colours. The design used to create a pattern is often referred to as a **motif**. Motifs can be simple shapes or complex arrangements. Tessellating any image creates a Repetitive pattern.

4 LINE

is the path left by a moving point, i.e. a pencil or a brush.
A line can take many forms. It can be horizontal, diagonal or curved. Line can be used to show: contours (the shape and form of something); movements, feelings or expressions (a short, hard line gives a different feeling to a more flowing one).

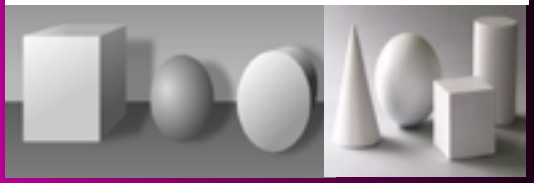


5 SHAPE

is an area enclosed by a line. It could be just an outline or it could be shaded in. When drawing shapes, you must consider the size and position as well as the shape of the area around it. The shapes created in the spaces between shapes are referred to as **negative space**.

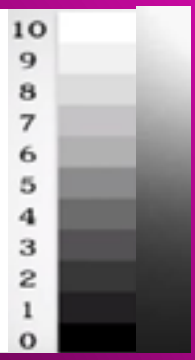
6 FORM

is a three dimensional shape (3D), such as a cube, sphere or cylinder. Sculpture and 3D design are about creating forms. In 2D artworks, lines, tones and perspective can be used to create an illusion of form. The three dimensions of form are width, length and depth.



7 TONE

is the lightness or darkness of an object. This could be a shade or how dark or light a colour appears. Tones are created by the way light falls on a 3D object. In every 3D object there are minimum of 3 tones; light, mid-tone and dark. Tone can be flat or it can vary from dark to light.

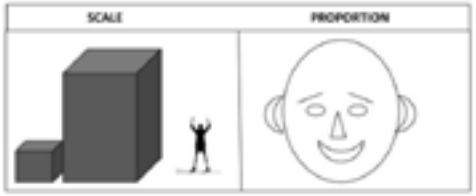


8 TEXTURE

is the **surface quality** of something, the way something feels or looks like it feels. **Actual texture** really exists, so you can feel it or touch it. You can create actual texture in an artwork by changing the surface, such as sticking different fabrics onto a canvas.
Visual texture is created using marks to represent actual texture. It gives the illusion of a texture or surface. You can create visual texture by using different lines, shapes, colours or tones.

9 SCALE

is the size of one object in relation to the other objects in a design or **artwork**.



10 PROPORTION

refers to the relationship of the sizes of two or more subjects or elements.

Art - Painting

PAINTING

1. The act of **painting**, using a brush, palette knife, sponge, or airbrush to apply the paint; 2. The result of the action – the **actual picture**.

1 Watercolour brushes:
Are specially made to allow the artist to control the flow of the colour from the **brush** onto the paper. A watercolour brush should hold a fine point when wet and spring back into shape after each stroke. It should carry the colour allowing the artist to:
a) lay it down on the paper evenly 2) consistency.

2 WATERCOLOUR:
a) Paints that are made of pigments suspended in a water-based solution (binder).

b) The art of painting with watercolours, especially using a technique of producing paler colours by diluting rather than by adding white.

WATERCOLOUR PAPER:
Best watercolour papers are made from **cotton fibres.** There are three types of w/c paper.

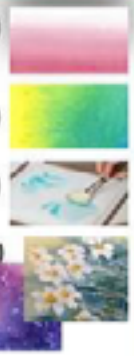
HP- Hot Press. Smooth surface for detailed work
CP (NOT) – Cold press. Slightly textured for most types of work
Rough – Heavily textured paper enhances the final piece of work.

3 WATERCOLOUR TECHNIQUES:
a) Wash: When watercolour mixture is gradually diluted with water.

b) Blending: When two colours seamlessly merge into one another.

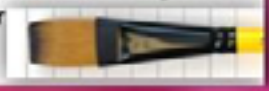
c) Wet –on – Wet: Water is applied onto the paper and then paint is applied onto it.

d) Masking Fluid
It is a rubber type product that prevents the paint from reaching the paper and is peeled off to expose the whitepaper left untouched.



4 ROUND BRUSHES:
Good for sketching, outlining, detailed work, controlled washes, filling in small areas.

FLAT BRUSHES: Good for bold strokes, washes, filling wide spaces, impasto. Edge can be used for fine lines, straight edges and stripes.



5 ACRYLIC PAINT: Opaque and semi-opaque fast-drying paint made of pigment and acrylic polymer emulsion dilutable with water.

ACRYLIC PAINTING SURFACES:
Canvas, paper, wood, or anything which is neither greasy nor too glossy.

ACRYLIC PAINTING BRUSHES:
A good selection of round and flat stiff synthetic brushes. Palette knives.

6 ACRYLIC PAINTINGS TECHNIQUES:
UNDERPAINTING: A layer of paint applied first to a canvas or board.

a) Tonal Grounds Under Painting
This type of painting has the entire canvas covered in a single transparent colour. This layer will create backlighting shadows that will tone the entire painting and provide contrast.

b) A Tonal Under-Painting
A layer of paint applied first that acts as a foundation for the painting with some **built in contrast** and **tonal values.**

IMPASTO: A technique used in **painting,** where paint is laid on in very thick layers that the brush or **palette**-knife strokes are visible. Paint can also be mixed right on the canvas. When dry, impasto provides texture; the paint appears to be coming out of the canvas.

7 POSTERPAINT:
A semi-opaque paint with a water-soluble binder, used mainly in schools.

8 OIL PAINTS: is a type of slow-drying **paint** that consists of pigment suspended in a drying **oil,** commonly linseed **oil.** Not used in schools.

9 MIXED MEDIA:
A Technique that uses more than one medium or material. Assemblages and collages are two common examples of art using different media that will make use of different materials including cloth, paper, wood and found objects.

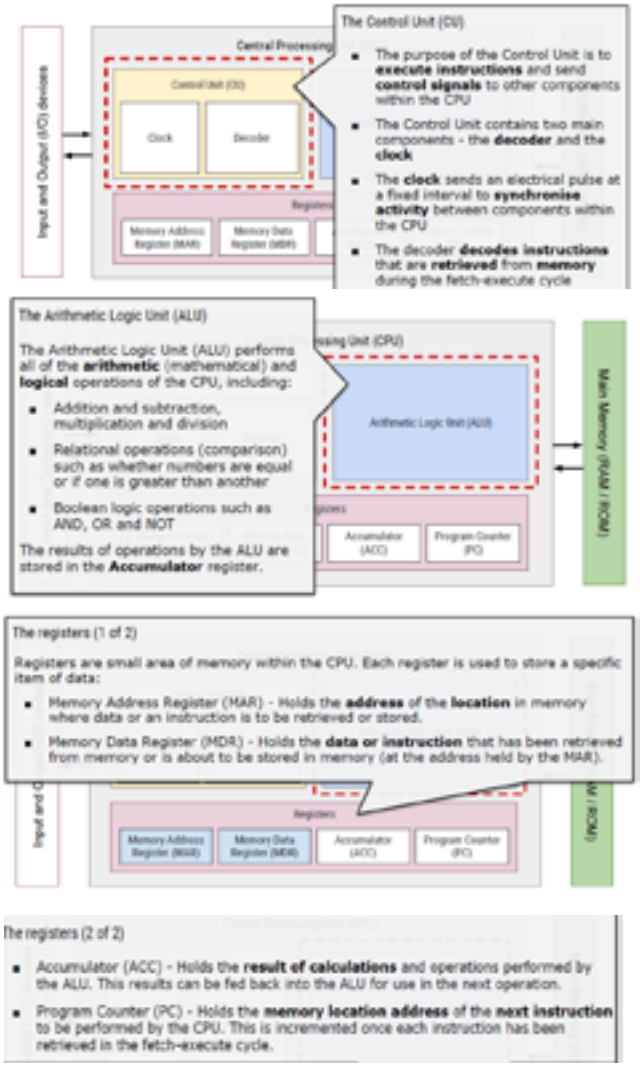
ASSEMBLAGE:
The making of 3D art, often involves using found objects.

MIXED MEDIA COLLAGE:
This is an art form which involves combining different materials with paint to create a whole New artwork.

10 SGRAFFITO TECHNIQUE:
Used in **painting,** pottery, and glass. Consists of putting down a preliminary surface, covering it with another, and then scratching the top layer. The pattern or shape that emerges is of the colour below.

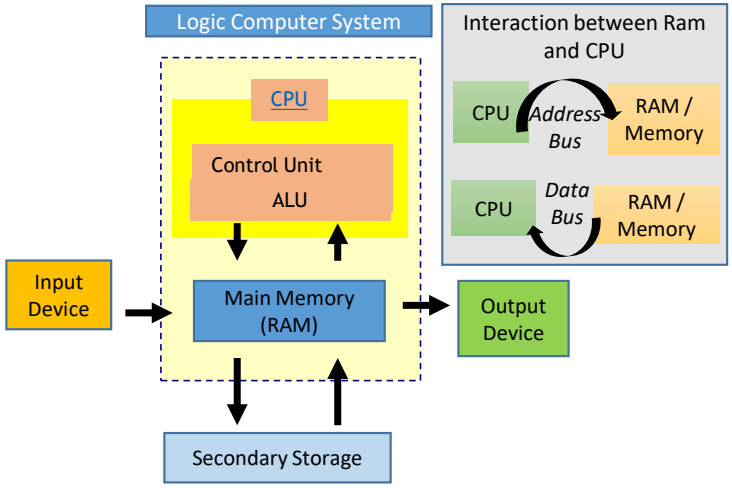
Year 10 Computer Science 1.1

The Von Neumann CPU architecture



What is a computer system? Input ⇨ Process ⇨ Output

Computer systems include the computer along with any software and peripheral devices (hardware) that are necessary to make the computer function. It will receive inputs, process the data it receives and then produce an output.



The Fetch-Execute Cycle (FCE)

Fetch
- The address of the next instruction to be processed is copied from the Program Counter (PC) to the Memory Address Register (MAR)
- The PC is incremented to point to the next instruction that will be needed when the cycle starts again
- The instruction stored at the location held by the MAR is copied to the MDR

Execute
- The operation indicated by the instruction is performed by the appropriate component, for example:
- The Arithmetic Logic Unit (ALU) performs the operation given by the Control Unit
- The value of stored by the Program Counter or Memory Address Register might be changed

Decode
- The Control Unit decodes the instruction and sends control signals to the component within or outside the CPU that needs to act

An **EMBEDDED SYSTEM** is a combination of hardware and software, designed for a specific function within a larger **system**. (Washing machine, Microwave, Dishwasher.)

Key Words	
BIOS	Basic Input Output System. A small program stored on the ROM chip to load the OS from storage.
CPU	Central Processing Unit. Used to control and execute commands within the computer. Measured in GHz,(the number of processes executed in 1sec)
Motherboard	Used to connect all components to each other for them to communication.
RAM	Random Access Memory. A temporary store of data and instructions which are currently in use.
Hardware	The physical parts / components of a computer
Peripheral	Any auxiliary device such as a computer mouse or printer that connects to and works with the computer in some way.
Input Device	A peripheral which converts data from a human to the computer system.EG Mouse.
Output Device	A peripheral used to bring data from the computer into a human form EG A monitor .
Clock Speed	Measured in Hertz. It is the frequency at which the internal clock generates pulses. The faster the pulse rate, the faster the CPU and the quicker the computer works.
Cache Size	Fast memory between the CPU and RAM. It stores recent / common programs taking advantage of the short FDE cycle. The more cache the more data can be stored without having to go back to slower RAM, speeding up processing. Having 3 levels level 1 smallest quickest and nearest to the CPU Level 3 Slowest biggest and closer to the RAM.
Cores	A multi-core processor is a single component with two or more independent CPUs, each responsibly for a FDE cycle. Allowing computers to do more than 1 thing at a time.

Year 10 Computer Science 1.2

Key Words	
Primary Storage	A device's internal memory, includes RAM, ROM and Cache memory. Used to store data and instructions that are required by the CPU.
RAM	Random Access Memory. Volatile memory used to store data and instructions which are currently in use and needed by the CPU. Also known as main memory.
ROM	Read-Only-Memory. Internal memory that cannot be changed, stores the boot sequence for the device. This memory is non- volatile.
Secondary Storage	Long term storage, can be internal (hard-disk drive) or external (USB Drive/DVD-ROM/SD Card)
Hard Disk Drive	Uses magnetic storage to store data long term. Most computers have a built in hard drive
Magnetic Storage	A storage device that saves data using strong magnetic fields to record, change or delete data
Optical Storage	A storage device that uses laser light to retrieve data from the surface of optical media such as CDs & DVDs
Solid State Storage	Uses flash memory to store data long term. It has no moving parts. Normally an SSD, memory stick or SD card. An SSD can replace a HDD inside a computer.
Volatile	Data is lost when the device is switched off
Non Volatile	Data is not lost when the device is switched off.
CPU	Central Processing Unit – processes all the data and instructions in a computer

Memory - stores program operations and data while a program is being executed. There are several types of memory, including: registers, cache, RAM, ROM and virtual memory.

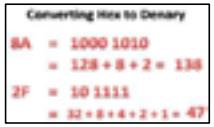
Storage - stores programs and files long term, even when they are not in use. Devices such as hard drives, USB memory sticks or SD cards.

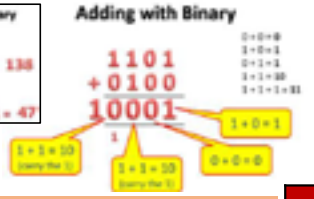
Digital Sound Sampling – The more samples taken means the improved quality of the digital signal, so becomes closer to the original analogue one:
Sample Rate - Increase how often the sample is taken Increase the number of bits per sample allowing for a more precise recording to be taken – eg. have a range between 0 and 255 (8 bits) rather than 0 – 31 (5 bits)

Virtual Memory
When RAM is full, a section of the hard drive can be used to store programs and instructions.

Compression – Reduces the size of a file to enable it to be stored / sent easier.
Lossy – Compressed losing some quality. Normally done by reducing the colour depth. JPEG is a lossy file compression type.
Lossless – Compressed by sending the file reducing the memory example: red, red, red, blue, blue, red, red, red reduce to:3 x red, 2 x blue, 3 x red

Binary	Denary	Hex
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	10	A
1011	11	B
1100	12	C
1101	13	D





Character Sets – A set of letters/number or symbols.
ASCII - "American Standard Code for Information Interchange". Is used to represent letters and symbols as numbers. Standard ASCII uses 7 bits to encode characters. Extended ASCII uses 8 bits
Unicode uses 16 or 32 bits and is shown in hexadecimal (FFFF). The larger character set

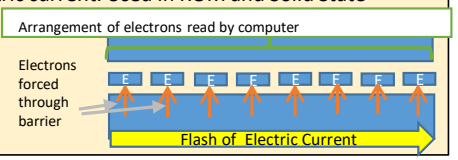
Size	Name
1 Bit = 0 or 1	Bit
8 Bits	Byte
1024 Bytes	Kilobyte
1024 Kilobytes	Megabyte
1024 Megabytes	Gigabyte

RAM	ROM
Volatile memory	Non-volatile memory
Stores open programs including the operating	Store the BIOS (bootstrap Loader)
Memory can be written to or read from.	Memory can only be read from and not written to.

Storage Media

Storage Characteristics
Capacity - how much data can it store?
Speed - how fast can it access the data?
Portability - how easy is it to move it from one place to another
Durability - how well does it last e.g. if it is dropped
Reliability - how consistently does it perform
Cost - how much does it cost per KB, MB or GB?

Flash Memory - Electrons are forced into a layer between two barriers which hold the charge by using a high electric current. Used in ROM and Solid State Storage



Cache memory is extremely fast memory that acts as a buffer between RAM and the CPU. It holds frequently requested data and instructions so they are immediately available to the CPU. Cache memory is used to reduce

Year 10 Computer Science 1.3

A NETWORK - 2 or more computers connected together using wired or wireless media to share resources, files, programs and to communicate.

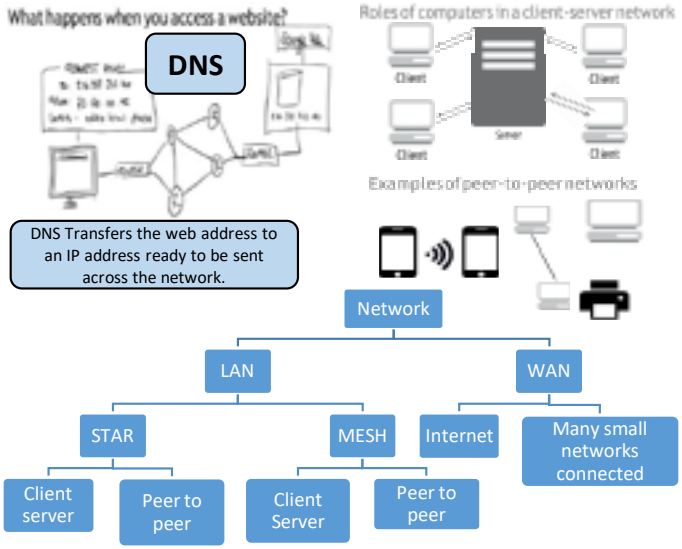
Factors that affect network performance include:
Number of devices and users - The bandwidth is shared between all devices, so the more devices, the less everyone gets to use
Transmission media - Using Wi-Fi will result in slower data transfer speeds and a greater number of lost or corrupted data packets.
Interference - Wireless transmission are prone to electromagnetic interference that can corrupt data as it travels
Obstacles - Physical obstacles can prevent radio waves from travelling
Bandwidth – The amount of data that can be carried at a time
Latency –Is the time delay between the moment the first data packet of a communication starts and when it is received at its destination
Collisions and errors - Errors and high network traffic may result in data collisions between packets making them corrupted or lost.

A LAN - A collection of computers connected together over a small geographic area found in homes and single-site companies. The hardware is owned and maintained by the organisation that uses it.
A WAN - A collection of computers that are connected over a large geographic area. The hardware required is often owned and maintained by large telecommunication companies. They are used by companies that have office locations in countries throughout the world that need to be connected together. The Internet is the largest WAN in the world.

Hardware to connect to a network
- Network Interface Card (NIC) – Built into the motherboard it contains a MAC address that allows the computer to communicate on a network
- Router – Connects the network to an external source and transfers data to their intended destination. Routing data onto the Internet.
- Wireless Access Point – Allows wireless access to the internet
- Switch - Connects computers together on a network reducing collisions
- Transmission media – The physical connection to transmit the data. Fibre optic, Coaxial, Satellite, Wi-Fi, Bluetooth

The Cloud – storage, services and applications that exist on the Internet rather than a local device such as your PC.

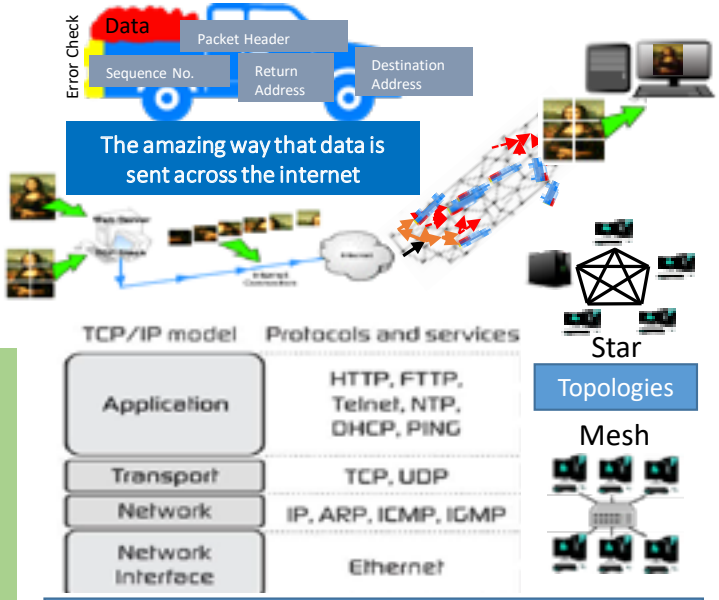
A Virtual Network is a type of network that uses software to connect users.



The Internet
The Internet is a **worldwide collection of computer networks**
The set of rules **Internet Protocol** (IP) ensure that devices work together on the Internet. Every computer on the Internet has an **IP address** that is used to send data from one device to another.
Routers are essential to the Internet as they pass data packets between the interconnected networks that form the Internet via a process called **Packet Switching**.
The internet is like a major road network connecting places together. Different vehicles can use the road network to send things from one location to another. These vehicles represent the various **applications** that make use of the Internet, such as the World Wide Web (WWW), email, multiplayer games and video streaming services.

Client Server Network - Computers take the role of either a central server or a client. The server provides services to clients such as storing files and emails. There are different types of server: printer servers provide access to printers, file servers host files. The server allows the computers to have a central backup, communicate, share files and monitor and maintain everything from a central point. They are available 24/7

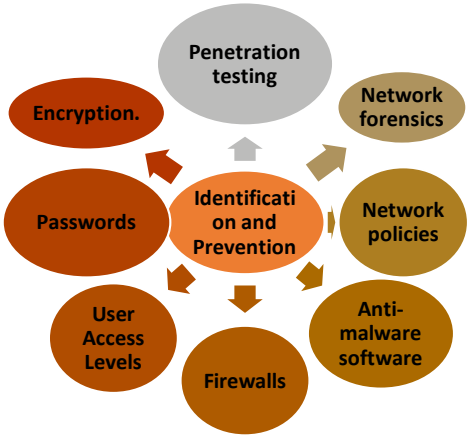
Peer to Peer Network - is connected directly together - NO central server - easy to set up . Each user has the responsibility of its own hardware and software and can then share resources, files and communicate with others on the network but only when they are connected.

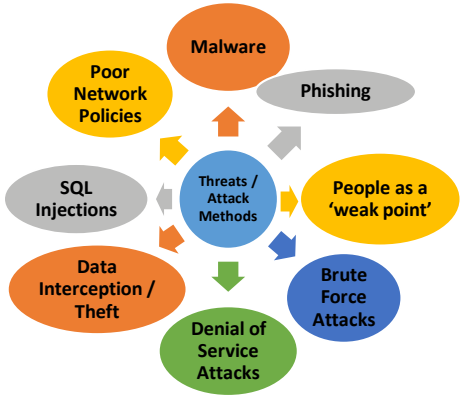


Topologies
Star – All computers connect to a central switch. The switch routes the traffic to the correct computer. The switch is the main cost of the network.
Mesh – All computers connect to each other via a dedicated link. Cost of cables is expensive. Used mainly in wireless topologies.

Year 10 Computer Science 1.4

Identification and prevention	
Penetration testing	A company invites / employs experts to simulate network attacks such as DOS and SQL injections. They try and find weaknesses in the system and tell the company so they can make improvements to their system security.
Network Forensics	Network Forensics are used to monitor and find out how an attack was carried out and by whom on a network.
Network Policies	A set of rules which explains how employees must secure their passwords and conduct business online.
Anti Virus Software	Dedicated to finding / destroying viruses on a computer. They have to be up-to-date for them to work.
Firewalls	Monitors the data which flows in and out of the network. Having ports closed protects the computer from hackers, and it monitors and detects hacker activity.
User Access Levels	Different access is given to files and data meaning employees cannot view sensitive company information and cannot sabotage vital system data.
Passwords	Strong passwords reduce networks unauthorised access.
Encryption	Data is scrambled using a set of "keys" before being sent across a network so that it is unreadable if intercepted.





Threats and Attack Methods	
Social engineering	The act of manipulating people to force them to make mistakes which can compromise a network's security.
Phishing	Using Email and phone calls criminals impersonate companies like banks requesting your personal information: usernames, and bank details etc.
Brute Force	Criminals repeatedly try to 'login' with one password after another to hack an account
DOS	This can bring down websites. Using multiple computers (often with malware) they repeatedly access a website. The traffic increase overloads the server's CPU/memory, crashing it.
Data inception and theft	Hackers use 'packet sniffers' to sniff out and intercept data packets. Then decode and steal the information.
SQK injection	SQL injections 'bolts on' some SQL to the end of your password. This will then alter the statement and allow you to access the accounts of other users.
Poor Network policy	Network policies should be in place. These are a set of rules to keep the network safe from Threats. They include passwords and user levels.

Malware	
Standard Virus	Hide in files / programs and replicate themselves in order to spread into other programs / files. Their aim is to delete or damage data.
Worms Virus	These don't damage data, they replicate themselves, taking up more of the computer's resources, slowing down your computer and making it useless.
Trojan Virus	These are programs you can use. But in the background will cause harm, like deleting files, making annoying changes to your computer setup or creating a portal for other users to use to gain access to your system.
Spyware	This is used to spy on the user and send back as much information about them as possible (passwords, usernames, websites they visit, purchases they have made). A common piece of spyware is a key logger which runs in the background recording every key you hit. It collects data to steal your identification or sell your information to third parties.
Adware	Its aim is to download and display unwanted adverts and collect marketing information about your online habits. It will often also try to direct you to unwanted websites by changing your default homepage
Pharming	This malware tries to change the IP address stored in the DNS to another IP address so that the user is sent to a phoney website instead of the one they intended.
Scareware	Often comes in the form of a pop up telling you that you have a virus. The pop up will them advertise purchasable software hoping that you will pass over your money.
Ransomware	This will seek to lock your computer making it useless. It will then demand that you pay a sum of money in order for you to get your computer working again.
Rootkits	These pieces of malware contain a set of tools, which once installed, allow a criminal to access your computer at an administrator level, allowing them to do what they like.

Year 10 Computer Science 1.5

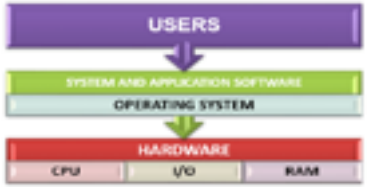
Key Words	
Application Software	Software installed to perform a specific task such as creating documents or spreadsheets
Operating System	Comes installed on your computer and is used to control the workings of a computer.
Utilities Software:	These carry out specific tasks which help the computer system run efficiently such as virus checking and Winzip.

Application Software

The processes that are carried out by end-users (people working on a computer system) are commonly done using application software. These are run and managed by the operating software. Applications come in a very broad variety and cover features like creating documents, editing images, performing calculations and browsing websites.

Application software

Programs that do specific tasks, such as write a letter (word processor) or edit a video.



Utility Software

Utility Software is the name given to the software tools that are designed to manage and optimise the performance of a computer system. There are a variety of functions that it performs.

Compression

Lossy Compression	Lossless Compression
This format can compress files to a much smaller size, but will lose some of the data from the files which cannot be recovered	This compresses the files to a slightly reduced size. All of the data can be recovered when uncompressing

Incremental Backup	Full Back up
This a process where only files that have been altered are selected for backup. It is much less time consuming than a full backup and less of a drain on the computers processing speed	This is a full back up of all of the files and data on a network. This can take some time. It is an effective way of ensuring all of the information is safe

Graphical User Interface (GUI) - Uses WIMP – Windows Icons Menus/Mouse and pointers. Found on most modern operating systems.
Command Line - Line by line code like Python
Language interface - Uses natural language like SIRI
Menu Interface - Uses lists to choose from like ATM or Sky TV.

Operating System (OS)

User Interface Manager
Provides the user interface that allows users to control the computer.

Device Manager
Allocates resources to external hardware devices and allows them to be used by applications.

Memory Manager
Controls the allocation of memory between applications.

User Manager
Authenticates and separates users of the computer.

Process Manager
Controls the allocation of CPU cycles to multiple running applications.

File Manager
Controls the opening, reading and writing of files to storage and determines whether files are documents or executable programs.

Utility Software

Encryption	Antivirus software	Compression	Back up	Defragmentation	Disk checkers / cleaners
Protects the system by scrambling data so it cannot be accessed by unauthorised users	This prevents the system from becoming infected with malware	An algorithm reduces the space required to represent a file or its content. There are 2 types Lossy and Lossless	Makes copies of the data that are restored in the event of data loss There are 2 types Full and Incremental	Organises the data on an HDD into clusters so its easily accessible.. This improves the speed the system can operate.	These scan the hard drive and find files that are not used or are unnecessary.

Operating Systems Functions

Device management	Controlling hardware components and managing peripherals
platform for software to	Allows software and applications to run
Providing a user interface	A way the user is able to interact with the software. These can be Graphical user interface (GUI), Command line Interface, Natural Language Interface and Menu Interface.
Multitasking facilities	Allows for many programs and software to operate at the same time.
Memory Management	Looking after where data is stored in the computer's memory
File Management	Naming, Allocating to folders, Moving files, Naming and Saving files
Managing users details	Allocation of an account, Access rights, Security, File management, and the key features, e.g.: § Not required û Understanding of paging or segmentation
Providing utility software	software tools that are designed to manage and optimise the performance of a computer system

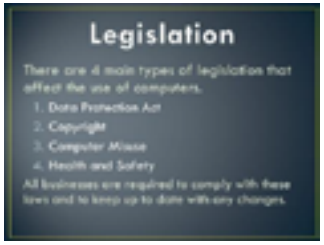
Year 10 Computer Science 1.6

Stakeholders
This term refers to all the people that have an interest in an organization, or issue. For example a the stakeholders in a school are the students, parents or guardians, teachers and local community. In terms of computing technology the global community are stakeholders and the developments in this area have an impact, to some degree, on everyone. This section will examine the impact technology has on different groups within society.

Stakeholders Rights and Responsibilities
All people have the right to access technology and are allowed to use computer systems. This includes being **allowed to use computer systems** and to **access internet services**. These must be legally acquired, which usually means through payment. With the rights of access come **responsibilities**, these include using computers **ethically** and disposing of old equipment in an **environmentally friendly** way.

The 8 principles of the Data Protection Act

1. Data must be used and processed in a fair and lawful way
2. Data must only be used for the stated purpose
3. Data should be adequate, relevant and not excessive for the use
4. Data must be accurate and kept up-to-date
5. Data should not be kept longer than necessary
6. Data should only be used according to the rights of the data subject
7. Data should be kept safe and secure
8. Data must not be transferred to organisations within other countries that do not offer a similar level of protection



Proprietary Software
This is software that you pay for, you can not access the source code and is owned by a company.

Open Source Software
This is software that is free, the source code is open and everyone can access it.

Factors Affecting the Digital Divide
Access – Not all areas in the UK have access to high speed internet as the map shows. The government has been driving forward an initiative to improve this balance, but there remains large areas where access to the internet is limited.

Economic – The cost of broadband internet access and computer systems is too expensive for some people in society and this means they are part of the divide between the **'haves and have nots'**

IT Literacy – Although IT is part of the school's curriculum there are still large numbers of people in society, especially among the older community, who are not able to use computers.

There are laws that control the use of Computer Systems. You are required to know the principles of these laws.

Data Protection Act – This law governs the information that is held on computer systems about people. According to this law the users must: **Keep information Secure, only use necessary info, Only Keep for as long as necessary , keep the information accurate and up to date, not use the information for any other purpose without permission.**

Computer Misuse Act – This law restricts how computers can be accessed and used. It is principally designed to stop hacking. It states there should be **no unauthorised access, unauthorised modification,** and **no accessed with intent to damaged**

Copyright Designs and Patents Act – This law is designed to **protect the work and content of individuals** from being **used or shared without permission**.

Freedom of Information Act – This law protects **people's rights to access information** that should be available to the public **including services such as Government, Health, Schools, Police and Courts**. Information from these organization can be accessed on request

Creative Commons Licensing – This law gives people the right to share and use information in certain formats: **Public Domain** (No restrictions); **Attribution Commercially** (Work used with the creator given credit) ; **Attribution Non-Commercially** (Work shared, but not sold on, with the creator given credit)

Digital Divide
This term refers to all the people that have an interest in an organization, or issue. For example a the stakeholders in a school are the students, parents or guardians, teachers and local community. In terms of computing technology the global community are stakeholders and the developments in this area have an impact, to some degree, on everyone. This section will examine the impact technology has on different groups within society.

Energy Consumption – Lots of energy is required for the production and assembly of computer equipment. Energy is also required to run computers and to maintain online storage systems. To reduce the demands on energy manufacturers have developed smarter technologies which require less energy to run systems and smaller more efficient devices.

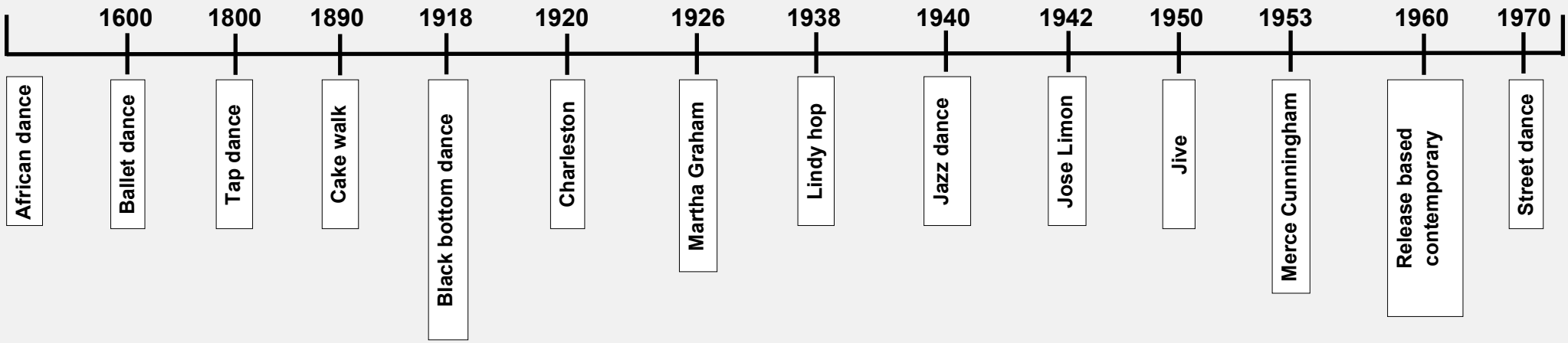
E Waste – Old computers contain some parts that can be recycled and some metals that are valuable such as gold and aluminium. Other parts that cannot be recycled form waste which accounts for millions of tonnes that is dumped into landfills.

Sustainability – Computer systems have some positive impacts. The use of paperless communication (email, social media) had reduced the need for paper production, and computers are used to develop and produce sustainable technology. Although much of the material used in making computer systems relies on non renewable resources (metals) there are an increasing number of components that can be renewed for future uses.

Recycling – There are legal guidelines for the disposal of computer systems and there are companies that deconstruct the machines and extract all of the valuable materials for recycling. It is also possible to extend the life of a computer system by donating them through charities. This process can help bridge the gap in the digital divide.

Year 10 - Knowledge Organiser - Dance

Dance styles chronology



Tier 3 vocabulary

Key features - the main movements used/ what does it look like.

Historical context - when in history the dance form emerged.

Social context - what was happening in society when the dance form emerged.

Personal aims - what you want to achieve as a dancer.

Theme - the subject or topic that the dance will explore.

Collaboration - working with other people to produce something.

Narrative - telling a story by playing a character.

Reflecting - Structure for success

WHAT is the skill?

HOW do you know it is a strength/weakness?

WHY is this skill important for a dancer to have?

IMPACT that the skill has on the audience?

IMPROVEMENT - strategy to improve

Dance - Dance Styles 2

Jazz dance

Jazz dance uses extensions and foot positions from ballet, but aims to have a freer feel to the movement by using contractions and arches in the back and a variety of floor work.	**Key people**	**Key movements**		
	Bob Fosse	Leaps	Drags	Jazz pirouette
	Jack Cole	Kicks	Contractions	Pas de bourree

Contemporary dance

Martha Graham		Jose Limon		Merce Cunningham	
	Martha Graham technique focuses on the idea of contraction and release in the torso and also explores twists in the spine. It uses weight and gravity as a dramatic tool whilst falling to the floor.		Limon technique focuses on fall and recovery, suspension and momentum and rebound. Sequences will often move in and out of the floor in an effortless manner.		Cunningham technique focuses on the 5 movements of the back; tilt, twist, curve, arch and straight. He also invented chance choreography which used random methods to determine the movements, staging and music.

Street dance

Street dance has many sub-styles like hip hop, popping and locking and breaking. These are normally up-beat and energetic movements that suit the style of the current music trend.	**Key people**	**Key movements**		
	Rock steady crew	Top rocks	Body ripples	Slides
	New York City Breakers	Up rocks	Tutting	Tricks
	Diversity	Freezes	Isolations	Breaking

Drama - Terminology & Skills

Year 10 - Drama - Term 1

Acting Terminology

Term	Definition	⇦ Cover & Test Name The Term ⇩
Naturalism / Naturalistic	A style of theatre in which the performers try to appear like 'real' people. The actors will ignore the audience as if they were not there.	
Non-Naturalistic	A style of theatre that is not trying to appear like 'real' life. The actors might interact with the audience or use obvious acting techniques such as freeze frames or mime.	
Character	A fictional person who is part of the plot of a play.	
Characterisation	The physical, vocal and psychological choices the actor makes to play the character.	
Duologue	A scene featuring two characters.	
Monologue	A section of the play in which just one character speaks.	
Dialogue	The words characters say to each other in a play.	
Playwright	The author / writer of a play.	
Staging	Deciding how you will set up your stage in terms of set and entrances.	
Blocking	Deciding when and where you will move on stage.	
Rehearsal Schedule	A plan of when, where and what you will rehearse. This keeps you on track and makes sure you rehearse effectively, not missing scenes or spending too much time on any one scene.	

Directing Skills

When you are directing a scene, here are some questions you should ask the actors:
★ What does your character **want** from the scene (their objective)?
★ How is your character **trying to get** what they want (their tactic)?
When you are directing a scene, here are some questions you should ask yourself:
★ Is your s**taging** interesting? e.g. making the 'V' shape, using levels, giving focus to main characters.
★ Are your actors **moving** like their characters? e.g. using gestures, facial expressions and reactions.
★ Are your actors **speaking** like their characters? e.g. using a clear emotion or attitude.
★ Would your performance **make sense** to an audience who had never seen it before?

Drama - Scripts

Year 10 - Drama - Term 1

Objective
What your character wants in that moment/scene.

e.g. Dave wants a rest because he's tired.

Highlighting
Highlighting your lines helps when using 'script-in-hand technique'.

Do not highlight your **name** or **stage directions**, only your **dialogue**.

Key Words
Underline one or two important words per sentence that you have chosen emphasise.

Subtext / Inner Monologue
What your character really means or is thinking on each line.

Tactics
What your character does to get their objective. You write these to the **left** of each line.

Your script should have all these notes on every page!

Example Script

Tactics

Objective: To rest.

Obstacle: Kelly wants to walk on.

(A wood at night. Dave and Kelly enter from USL. Dave is struggling to carry a big, heavy looking back-pack. Kelly is carrying an identical one and making it look easy.)

U.S

D K

D.S

I complain. Dave: This is bag is so heavy! I need a rest.

U.S

(He dumps his bag on the floor and sits down)

K

D

D.S

Kelly: Don't be such a wimp! Give it here. *I don't have time for this!*

(Kelly picks up the bag with ease and walks off USR)

I dismiss / I insist. Dave: Fine! Go! I'm staying here and having a rest.

U.S

(In the bushes something growls)

I beg. Dave: Ummm… on second thoughts, wait for me!

D

D.S

(Dave runs off after Kelly)

Obstacle
The thing that is stopping your character getting what they want.

e.g. Kelly wants to keep walking which means Dave can't rest.

Super-Objective
What your character wants from life / the play overall.

Stage Diagrams
A bird's eye view diagram of the stage on to which you can draw the blocking (movements).

Gestures
Draw a sketch or make a note of the gesture, facial expression or movement you are linking to each line.

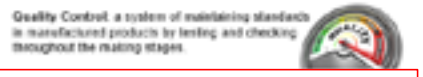
Translations (Shakespeare Only)
Write out each line in your own words. Research any words you don't know.

Always make notes in pencil.

Then you can easily change your mind!

D&T - Engineering Design 1

R105: OCR Engineering design Examination Subject Knowledge



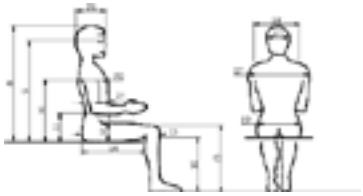
Identify	Brief	Research	Process Planning
Design	Specification	Design	Manufacturing Plan
Optimise	Prototyping	Error proofing	
Validate	Test	Evaluate	

- A **Design Brief** is a ***statement of how you are going to solve the Design Problem***.
- Research findings and Client feedback can be used to create a **Process Plan.**
- A **Design Specification** is a ***list of requirements your product has to meet in order to be successful.***
- After a Specification has been developed, the **designing** of the product will begin.
- Once the final design has been chosen, a **Manufacturing Plan** is then created.
- **Prototyping** is the creation of a **model or "mock-up"** of a product after the Design Process
- **Error Proofing** is ensuring that the product cannot be assembled or used in an incorrect way
- **Testing** and **Evaluation** happens because designers need to ensure the product is successful before being released, and is competitive with the market.

Specification Points	Meaning
Aesthetics	What the product will look like, style, colour, etc.
Customer	Who the **Target Market** is, how it will appeal to them, what **Anthropometrics** and **Ergonomics** will be used, etc.
Cost	Cost to make, as well as cost to sell
Environment	Where it will be used
Safety	How it will be safe to use, what standards and regulations it will have to meet
Size	What dimensions it will be, as well as components and parts
Function	What the purpose of the product will be, and what **features** it will have
Materials	What is will be made from
Manufacture	How it will be be made

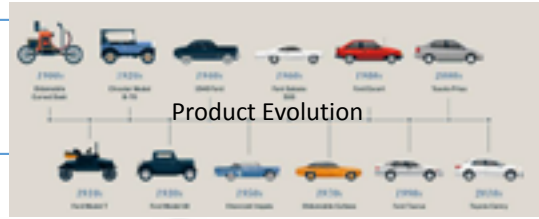
Product requirements are what a product has to meet/ must do. Common requirements are:

- Features – *what makes a product unique and sellable*
- Performance – *how well it completes its function*
- Target Market – *how it appeals to its customers*
- Working Environment – *how it is suitable for where it will be used*
- Constraints – *what is must do or must not do*
- Ergonomics – *how its comfortable and safe to use*
- Lifecycle – *what environmental impact it makes (and how that can be reduced)*

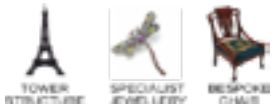


Anthropometrics is the ***study of measurements of the human body***
Ergonomics is the ***application of anthropometrics in order to make products and places efficient, comfortable and safe to use***

Technology Push is when *new developments in materials and technologies improve existing products/ create new ones*
Market Pull is when consumers demand improvements/new products. Often found by conducting market research



Sales and Supply of Goods Act 1994	All Products have to be of a "satisfactory quality. They have to be safe, fit intended purpose, not be faulty
Trade Descriptions Act	False or misleading information must not be given out about products. E.g. accurate information must be given out who made the product
Consumer Protection Act 1987	The right to claim compensation if a defective product causes death, damage or injury
The Waste Electrical and Electronic Equipment Regulations 2013	The government regulate the amount of electronics going to landfill as the chemicals and electronics can harm the environment and wildlife Companies must provide electronic disposal for their products



One-off Production
This is the manufacture of **one item**
This item can be custom made/ designed (bespoke manufacture)

Batch Production
This is where small quantities of identical items are made (10s-1000s)
To ensure all items are identical, jigs, moulds and templates to aid workers

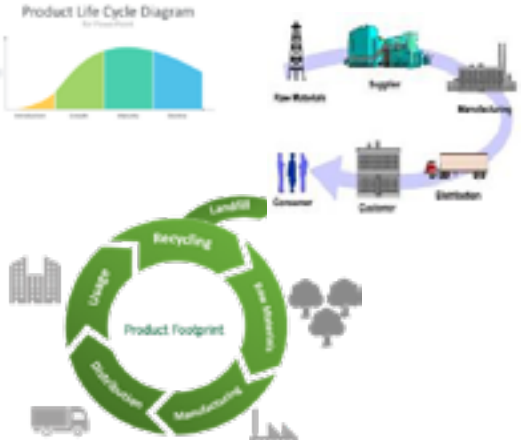
Mass Production (High-Volume Production)
This is where large quantities of products are made (10,000s-100,000s)
There are often assembly lines (for the main product) and sub-assembly (for small pieces and components)

Continuous Production
This is when large quantities of products is produced (100,000s +)
However, unlike Mass Production this is **never ending** production e.g. power plants

Just-in-time production (JIT)
This is when products made to order, but can be used in conjunction with any other scale of production

D&T - Engineering Design 2

R106: OCR Engineering design
Product Analysis and Disassembly

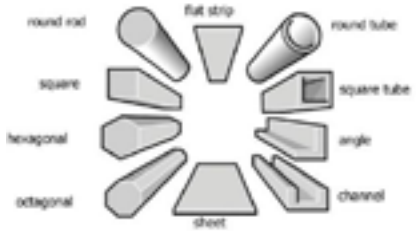


A **stock form** is when a raw material has been machined/processed into a stock/standard size, shape or form. This can be easily used during manufacturing on a production line.
Like standard components, buying in these stock forms is often easier and cheaper that companies trying to create their own and are internationally recognised

When manufacturing a product, there are several considerations that need to be planned for. These considerations often include:

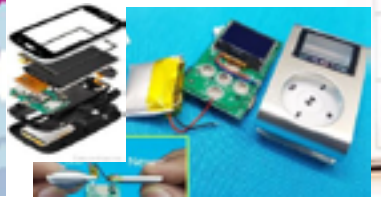
- Standard Components
- Stock Forms
- Supply Chains
- Durability and Maintenance
- Product Safety
- Costs and Budget

A **standard component** is usually an individual part or component, manufactured in thousands or millions, to the same specification. These are often bought in bulk and saves companies money, rather than them trying to make their own.
The sizes of standard components are often internationally recognised, making manufacturing easier to communicate



Disassembly may refer to any of the following:

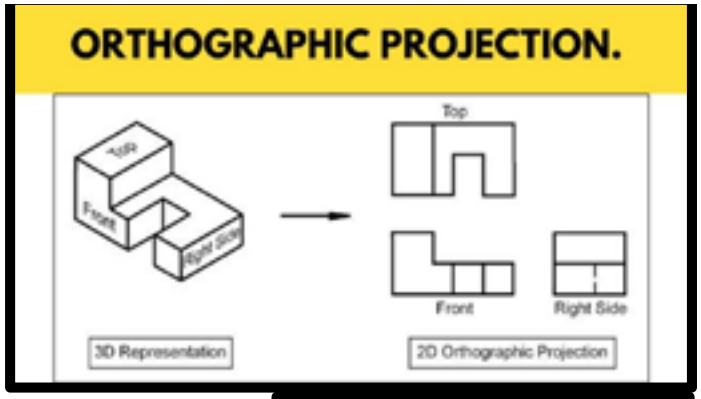
1. When referring to hardware, **disassemble** is the process of breaking down a device into separate parts. A device may be disassembled to help determine a problem, to replace a part, take the parts and use them in another device or sell them individually. For example, if a computer has a bad processor, may need to open the computer case, disassemble the heat and processor, and manually replace it.

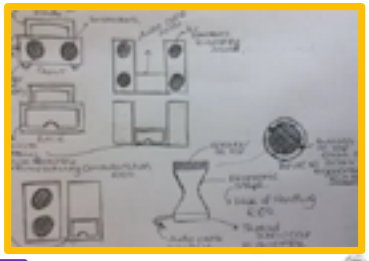


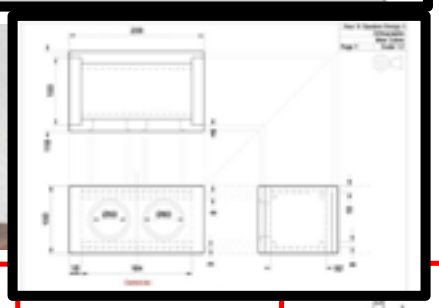
Specification Points	Meaning
Aesthetics	What the product will look like, style, colour, etc.
Customer	Who the **Target Market** is, how it will appeal to them, what **Anthropometrics** and **Ergonomics** will be used, etc.
Cost	Cost to make, as well as cost to sell
Environment	Where it will be used
Safety	How it will be safe to use, what standards and regulations it will have to meet
Size	What dimensions it will be, as well as components and parts
Function	What the purpose of the product will be, and what **Features** it will have
Materials	What is will be made from
Manufacture	How it will be be made

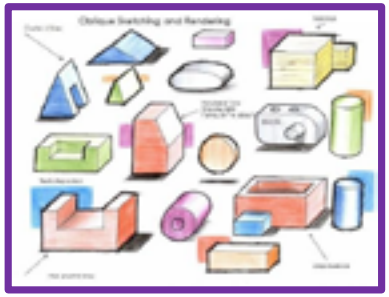
D&T - Engineering Design 3

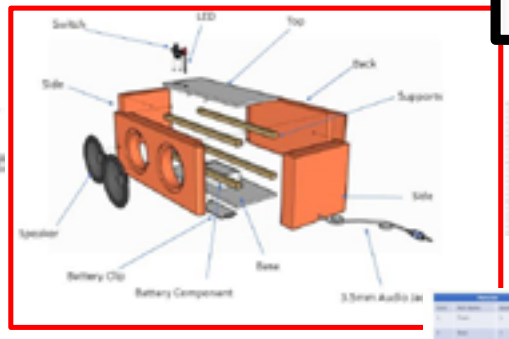
R107: OCR Engineering design
Designing and developing Ideas

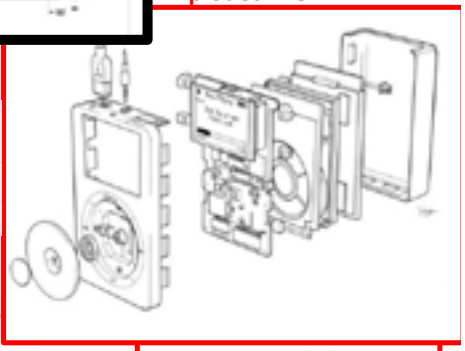


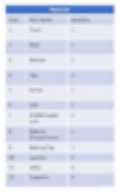


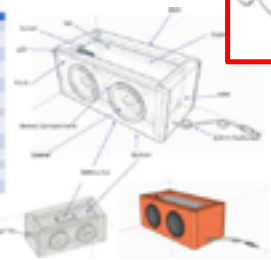


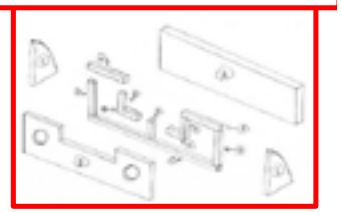




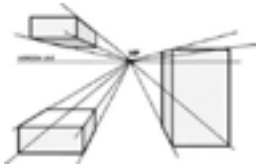




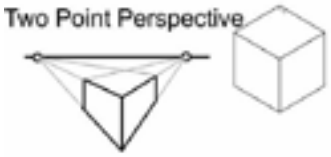




One Point Perspective



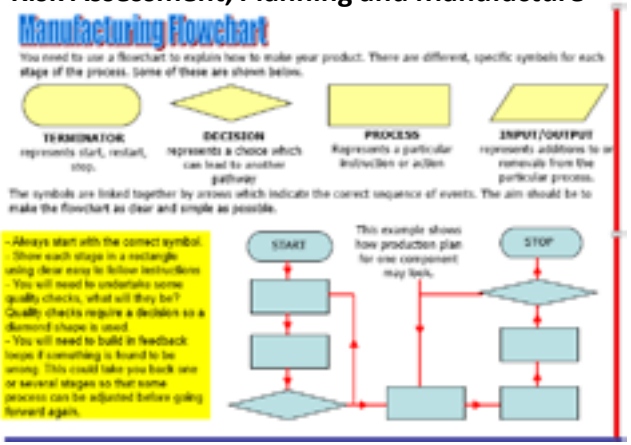
Two Point Perspective

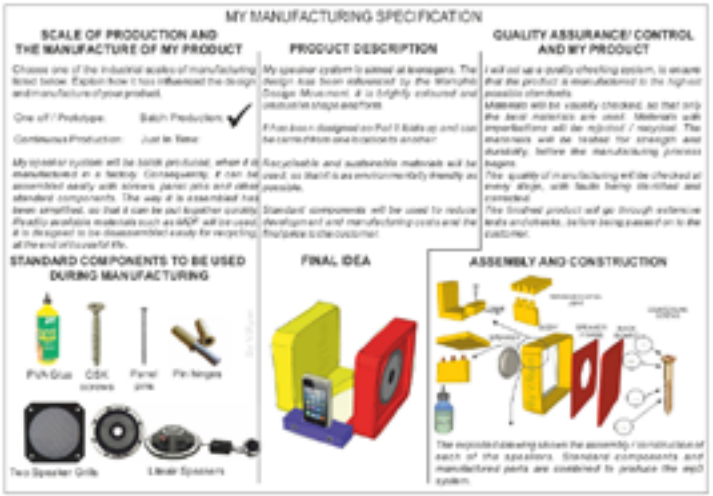


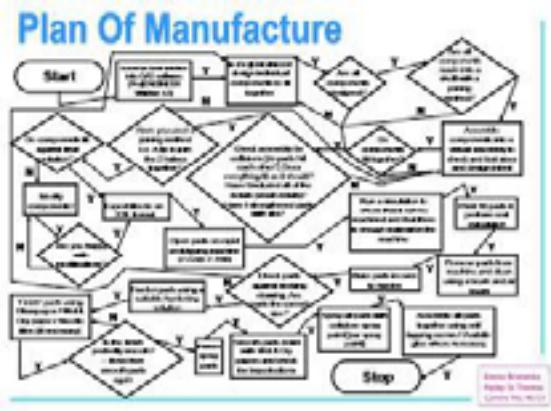
Key Words:
Thumbnail sketch
Initial idea
Developed idea
Working drawing
Dimension
CAD
Standardised
Component
Oblique
One Point Perspective
Two point perspective
Orographic Projection
Freehand
Thick and Thin lines
Rendering
Annotation
Two Dimensions
Three Dimensions
Exploded View

D&T - Engineering Design 4

R108: OCR Engineering design
Risk Assessment, Planning and Manufacture







Planning Steps/ Flow diagram
Manufacturing Specification
Risk assessment
Making Diary
Modelling, testing and Developing
Cutting list
Final Product- Range of manufacturing skill

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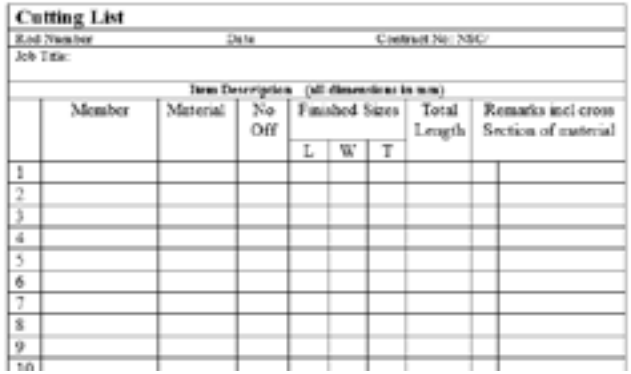


English

ESSAY SKILLS

READ THE QUESTION CAREFULLY – Make sure you know exactly what you are being asked to write about; identify the key words in the question and *use these frequently* in your answer. This applies even if you have set your own essay question.

MAKE A PLAN – Spending time thinking through the question and sketching out a rough structure for your essay will give your finished work a greater sense of focus and direction - and it will make the writing process easier.

COVER THE STORY – What is an essay really, but a story you are telling about something you have studied? If you can convey the story of the text successfully, then this shows you have secure understanding of what you are writing about. Try to write about events in order, and clearly explain what is happening at the points you have chosen to analyse.

POINT OUT INTERESTING THINGS – As you track through the story, point out some interesting things along the way. This could be an important quotation, a special effect that the writer has created, some beautiful imagery, something unusual, a powerful word or group of words. Try to give your own ideas on *what is interesting* about the things you point out.

KEEP COMING BACK TO THE QUESTION – Don't lose sight of what you are being asked to do. After every point you make, ask yourself, 'Is this relevant to the question?' Keep checking in with yourself as you write: if your ideas are wandering, ask yourself, 'How am I going to bring this back to the question?'

BE EVALUATIVE – The beauty of analysing literature is that, once we go beyond the basic facts of the story – i.e. what happens, who is who – there are no 'right' answers, only interpretations. Use discourse markers like 'perhaps', 'arguably' and 'in my opinion' to show that you understand this, and to bring in your own ideas.

PUNCTUATION RECAP

.	full stop	Signals the end of a sentence. Don't forget to use them!
,	comma	Divides clauses in a sentence; separates out ideas to aid meaning.
:	colon	Signals that you are about to explain or elaborate on something, or start a list.
;	semicolon	Joins two closely related sentences, instead of a full stop.
'	apostrophe	Indicates ownership, or where letters have been omitted in a contraction.
" " ' '	speech marks/quotation marks	Denotes speech or a quotation from a text. You can use either single or double speech marks, but don't switch between them.
–	dash	Indicates an interruption or an unfinished thought.

POETRY STUDY AREAS

Your poetry responses need to include comments and analysis across all four poetry study areas.

THEMES/IDEAS/STORY – What is the poem about? What is happening in it? Where is it set? What main points does the poet make? Do you think there is a message? Does the poet keep coming back to the same big ideas?

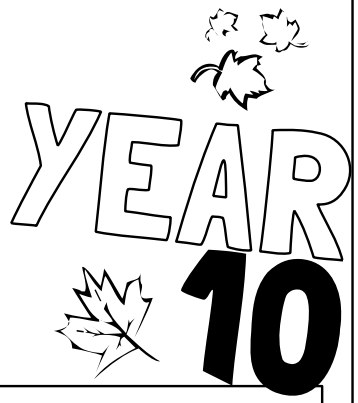
LANGUAGE AND EFFECTS – Point out interesting words, phrases and examples of imagery. Explain why you think these are effective. Can you detect any mood and atmosphere in the text?

STRUCTURE AND FORM – How is the poem organized on the page? Has the poet done anything interesting with the way the lines/stanzas are laid out? Does the poem seem to follow some sort of order? What type of poem is it?

CONTEXT – What 'background information' do you know about the poem? Was it influenced by real-life events? Did the poet's own life influence it in some way? Is it part of a certain genre or movement?

HWCS English Department

Autumn Term



HOW TO ANNOTATE

Annotation is a crucial skill for both English Language and English Literature. It is a vital part of how we interact with the texts that we are studying. But how can you ensure that you annotate successfully?

Annotation is a two-part process: first, you need to **identify interesting things** in the text you are studying. These could be powerful words, important quotations, descriptive phrases…anything that stands out to you as meaningful in some way. We normally use a highlighter to mark these interesting parts of the text.

Next, you need to **attach a note to the interesting thing you have highlighted**. Try to capture your thoughts on why this particular thing stood out to you. Does it reflect an important theme in the text? Is it raising an interesting question? Does it communicate some interesting subtext or hidden meaning? Is the writer using a particular technique that you think is interesting? Does it reveal something important about a character's thoughts and feelings?

You can think about the process of annotation as a bit like having a 'conversation' with the text you are studying. What is it saying to you? How are you reacting to it? *It is fine to be tentative or uncertain in your annotations. Remember, there is no 'right answer' to find in English: you need to let the text speak to you and come up with your own ideas as to what it might be saying.*

Here is an example of useful annotation:

Important men. Iago must be well respected. Maybe he really was the right man for the job?

High opinion of himself – he deserved the job!

Three great ones of the city,
In personal suit to make me his lieutenant,
Off-capp'd to him: and, by the faith of man,
I know my price, I am worth no worse a place:
But he; as loving his own pride and purposes,
Evades them [..]

Sees Othello as arrogant? Othello is too 'full of himself' to listen to others?

DISCUSSION TIPS

Discussion is a vital part of literature study. Here are some tips to help you have better discussions.

THINK 'DIALOGUE' – Dialogue is the basis for all effective discussion. It is a constructive process: the idea is that, by **listening carefully** and **building on each other's contributions**, we create a shared understanding and help each other learn.

ASK QUESTIONS AS WELL AS GIVING ANSWERS – Did you know that the questions we ask can say more about how much we have learned than the answers we give? Asking an interesting question can take a discussion into exciting new territory.

RE-WORD OTHERS' RESPONSES – A really effective way of absorbing someone else's idea is to say it back to them in your own words.

LISTEN – Perhaps the most important discussion skill of all. Really *listen* to what someone is saying, especially if you disagree with them! You cannot even begin to argue with someone unless you fully understand their point of view.

BE OPEN-MINDED – When you are in any kind of discussion, you should think to yourself, 'What can I learn from this person/these people?' Expect to have your beliefs challenged. Be interested in other people's perspectives.

DISAGREE GRACIOUSLY – Sometimes you will come up against ideas or viewpoints that you do not agree with. This is a good thing! Resist the urge to attack the views of others, and avoid 'talking past' them. You still need to listen. In all likelihood, your opponent feels just as strongly that they are *right* as you do that they are *wrong*!

KEY LITERATURE TERMS

CHARACTERIZATION – The process of developing a character; showing a character's personality.

SUBTEXT – 'Hidden meaning'; messages or ideas that are not explicitly stated, but can be discovered through close analysis.

IMPLY – To suggest without stating directly.

INFER – To discover meaning in a text; to interpret.

ANALYSE – To study a text closely, usually by focusing on the language and effects that a writer has used.

EVALUATE – To 'step back' and consider the wider meaning and messages in a text; to give our own views on the text and how it communicates meaning.

VERB INFINITIVES

1-ETRE = to be
2- AVOIR = to have
3- FAIRE = to do
4- ALLER = to go
5- JOUER = to play
6- REGARDER = to watch
7- ECOUTER = to listen
8- AIMER = to like
9- MANGER = to eat
10- BOIRE = to drink
11- TRAVAILLER = to work
12- HABITER = to live
13- VISITER = to visit
14- SORTIR = to go out
15- PRENDRE = to take
16- ACHETER = to buy

PRESENT TENSE VERBS WITH "JE"

1- je suis = I am
2- j'ai = I have
3- Je fais = I do
4- je vais = I go
5- je joue = I play
6- je regarde = I watch
7- j'écoute = I listen
8- j'aime = I like
9- je mange = I eat
10- je bois = I drink
11- je travaille= I work
12- j'habite = I live
13- je visite = I visit
14- je sors = I go out
15- je prends = I take
16- j'achète = I buy

PAST TENSE VERBS WITH "JE"

1- j'étais = I was
2- j'avais = I had
3- j'ai fait = I did
4- je suis allé(e) = I went
5- j'ai joué = I played
6- j'ai regardé = I watched
7- j'ai écouté = I listened
8- j'ai aimé = I liked
9- j'ai mangé = I ate
10 – j'ai bu = I drank
11- j'ai travaillé = I worked
12- J'ai habité = I lived
13- j'ai visité = I visited
14- je suis sorti(e) = I went out
15- j'ai pris = I took
16- j'ai acheté = I bought

FUTURE TENSE VERBS WITH "JE"

1- je serai = I will be
2- j'aurai = I will have
3- je vais faire = I will do
4- je vais aller = I will go
5- je vais jouer = I will play
6- je vais regarder = I will watch
7- je vais écouter = I will listen
8- je vais aimer = I will like
9- je vais manger = I will eat
10- je vais boire = I will drink
11- je vais travailler = I will work
12- je vais habiter = I will live
13- je vais visiter = I will visit
14- je vais sortir = I will go out
15- je vais prendre = I will take
16- je vais acheter = I will buy

French GCSE Foundation

Core Language

KnowIT

TIME MARKERS

PAST
1- hier = yesterday
2- l'année dernière = last year
3- la semaine dernière = last week
4- le mois dernier = last month
5- avant = before
6- Il y a 3 ans = 3 years ago

FUTURE
1- demain = tomorrow
2- l'année prochaine = next year
3- la semaine prochaine = next year

1- Aujourd'hui = today
2- maintenant = now
3- quelquefois = sometimes
4- tous les jours = everyday
5- une fois par semaine = once a week
6- toujours = always
7- souvent = often
8- l'été = summer
9- l'automne = autumn
10- l'hiver = winter
11- le printemps = spring
12- soir = evening
13- matin = morning
14 – d'habitude = usually

OTHER VERY IMPORTANT PHRASES

1- je peux +inf = I can
2- je veux +inf = I want
3- je voudrais / j'aimerais = I would like
4- on peut = we can
5- on doit / il faut = you have to
6- depuis = for / since
7- il y a = there is
8- plus…. que = more…. than
9- moins que = less…. than
10- qui = who
11- où = where
12- dans = in
13- devant = in front of
14- derrière = behind
15- ne….pas = not
16 – ne……plus = not anymore
17- ne…. Jamais = never

CONNECTIVES AND INTENSIFIERS

1- d'abord = first
2- puis / ensuite = then
3- enfin = finally
4- et = and / ou = or
5- mais = but
6- cependant = however
7- si = if
8- quand = when
9- même si = even if
10- par contre = on the other hand

1- trop = too
2- très = very
3- assez = quite
4- un peu = a little
5- vraiment = really

OPINIONS

1- à mon avis / selon moi = in my opinion
2- je pense que / je trouve que = I think that
3- c'est = it is
4- c'était = it was
5- ce sera = it will be
6- parce-que / car= because

génial / chouette = great
Intéressant = interesting
marrant / drôle = fun
ennuyeux / barbant = boring
pénible = annoying
nul / horrible = rubbish

French Higher - Core Language

IMPERFECT

1- je faisais = I used to do
2- nous faisions = we used to do
3- je jouais = I used to play
4- nous jouions = we used to play
5- j'allais = I used to go
6- nous allions = we used to go
7- je regardais = I used to watch
8- nous regardions = we used to watch

CONDITIONAL

1- j'aurais = I would have
2- je serais = I would be
3- je ferais = I would do
4- nous ferions = we would do
5- je jouerais = I would play
6- je regarderais = I would watch
7- nous regarderions = we would watch
8- j'écouterais = I would listen

FUTURE

1- j'aurai = I will have
2- je serai = I will be
3- je ferai = I will do
4- nous ferons = we will do
5- je jouerai = I will play
6- je regarderai = I will watch
7- nous regarderons = we will watch
8- j'écouterai = I will listen

EXPRESSIONS WITH MULTIPLE VERBS

1- après avoir (+ fait / regardé/ joué/ visité/ écouté etc) = after (+doing / watching / playing / visiting / listening etc)
2- après être allé(s) = after going
3- j'espère pouvoir (+ aller / regarder / jouer etc) = I hope I will be able to (+go / watch / play etc)
4- j'aurais dû (+ aller / regarder / jouer etc) = I should have (+ gone / watched / played etc)
5- j'aurais voulu (+ aller / regarder / jouer etc) = I would have liked to (+go / watch/ play etc)
6- j'ai toujours rêvé de (+ aller / regarder / jouer etc) = I have always wanted to (go / watch / play etc)

French GCSE Higher

Core language!

Use It!

EXPRESSIONS THAT MAKE YOU SOUND GREAT (IDIOMS)!

1- c'est un perte de temps = it's a waste of time
2- quel dommage = what a shame
3- quel gaspillage = what a waste
4- quelle honte = how shameful
5- c'est le pied = it's awesome
6- ce n'est pas grave = it's not a big deal
7- j'en ai marre de (+ inf) = I'm fed up of…
8- ça vaut le coup = it is worth it
9- cela n'a pas de sens = it doesn't make sense
10- j'ai envie de (+inf) = I feel like (+ -ing)
11- ca m'est égal = I don't mind
12- j'ai horreur de (+inF) = I really hate..
13- ca me donne envie de (+inf) = it makes me want to ….
14- au lieu de (+inf), on devrait (+inf) = instead of (-ing) , we should …
15- il faut regarder le bon côté des choses = we have to look at the bright side

SUBJUNCTIVE

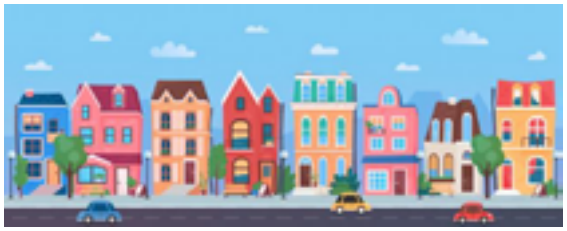
1- il faut que je fasse = I have to do
2- il faut que je sois = I have to be
3- bien que ce soit = although it is
4- il est possible que ce soit (vrai) = it's possible that it is (true)

OPINION – SYNONYMS!

1- génial = épatant, extra, top, sensass, formidable, splendide, merveilleux, inoubliable
2- intéressant = captivant, fascinant
3- nul = épouvantable, lamentable, affreux, horrible, désastreux
4- ennuyeux = barbant, monotone, razoir
5- stupide = ridicule, idiot, bête
6- pénible = agaçant, casse-pieds, énervant
7- triste => déprimant

Où j'habite – Local Area

Où j'habite	Where I live
J'habite …	I live …
Ma famille et moi habitons …	My family and I live …
On habite …	We live …
dans une ville historique/touristique	in an historic/touristy town
dans un petit village	in a small village
au bord de la mer	at the seaside
au centre-ville	in the town centre
à la campagne/montagne	in the countryside/mountains
en ville	in town
dans le nord/le sud/l'est/ l'ouest …	in the north/south/east/west …
dans le centre …	in the centre …
J'y habite depuis …/J'y vais …	I have lived there since …/I have been going there …
Dans ma région, il y a …	In my region there is/are
des vignobles/stations de ski	vineyards/ski resorts
des collines/forêts	hills/forests
des fermes/champs	farms/fields
un port de pêche	a fishing port
un lac	a lake
Le paysage/La côte est vraiment magnifique/impressionnant(e).	The landscape/coast is really wonderful/impressive.



En ville	In town
Il y a …	There is/are …
un château	a castle
un centre de loisirs	a leisure centre
un marché	a market
un musée	a museum
un parc/jardin public	a park
un stade	a stadium
un supermarché	a supermarket
un théâtre	a theatre
une bibliothèque	a library
une cathédrale	a cathedral
une église	a church
une gare (SNCF)	a (train) station
une mairie	a town hall
une mosquée	a mosque
une pharmacie	a chemist
une poste (un bureau de poste)	a post office
des hôtels	hotels
beaucoup de magasins	lots of shops
Il n'y a pas de …	There isn't a/aren't any …

Qu'est-ce qu'on peut faire?	What can you do?
On peut …	You can …
aller à un match de foot	go to a football match
aller au cinéma	go to the cinema
faire du cheval	go horse-riding
faire du ski	go skiing
faire du snowboard	go snowboarding
faire des promenades	go for walks
faire les magasins	go shopping
se baigner dans la mer	swim/bathe in the sea
se détendre sur la plage	relax on the beach
visiter le château	visit the castle
visiter les musées	visit the museums

Les directions	Directions
Où est le/la/l' …? / Où sont les …?	Where is the …? / Where are the …?
Pour aller au/à la/à l'/aux …?	How do I get to the …?
Va/Allez tout droit.	Go straight on.
Tourne/Tournez à gauche/droite.	Turn left/right.
Prends/Prenez la première/ deuxième/troisième rue à gauche/droite.	Take the first/second/third street on the left/right.
Traverse/Traversez le pont/la place.	Cross the bridge/square.
Descends/Descendez la rue.	Go down the street.
C'est près/loin?	Is it near/far?
C'est tout près/assez loin.	It's very near/quite far.

Le temps/La météo	The weather/ The weather forecast
Quel temps fait-il?	What is the weather like?
Il fait beau.	The weather is good.
Il fait mauvais.	The weather is bad.
Il fait chaud.	It's hot.
Il fait froid.	It's cold.
Il y a du soleil.	It's sunny.
Il y a du brouillard.	It's foggy.
Il y a du vent.	It's windy.
Il y a un orage.	There's a storm.
Il pleut.	It's raining.
Il neige.	It's snowing.
brumeux/ensoleillé	misty/sunny
nuageux/orageux	cloudy/stormy
variable	changeable
Il y aura …	There will be …
Il fera …	It will be …

French - Ou J'habite 2

Ville de rêve ou ville de cauchemar?	*Dream town or nightmare town?*
J'habite dans la banlieue/un quartier de …	*I live in the suburbs/a district of …*
Ce qui me plaît ici, c'est qu'il y a …	*What I like is that …*
Le problème, c'est que/qu' …	*The problem is that …*
il n'y a pas assez de (magasins/ espaces verts)	*there is/are not enough … (shops/ green spaces)*
il n'y a plus de (cinéma)	*there is/are no longer (a cinema)*
il n'y a ni (parc) ni (aire de jeux)	*there is neither (a park) nor (a playground)*
il n'y a aucun (bowling)	*there isn't a (single) (bowling alley)*
il n'y a aucune (zone piétonne)	*there isn't a (single) (pedestrian area)*
il n'y a rien pour les jeunes	*there is nothing for young people*
il n'y a pas grand-chose à faire	*there's not a lot to do*
Il y a …	*There is/are …*
beaucoup de monde/de voitures	*lots of people/cars*
trop de circulation/de gens	*too much traffic/too many people*
tellement de bruit/de gens au chômage	*so much noise/so many people out of work*
peu de travail/de transports en commun/commerces	*not much work/public transport/ not many businesses*
toujours des déchets par terre	*always litter on the ground*
C'est sale/(trop) tranquille/très animé.	*It's dirty/(too) quiet/very lively.*
Ce n'est jamais tranquille.	*It's never quiet.*
Je trouve ça triste/déprimant/affreux/ nul/désagréable.	*I find that sad/depressing/awful/ rubbish/unpleasant.*

Geography - Dynamic Development

What is development?

Development is an improvement in living standards through better use of resources.

Economic	This is progress in economic growth through levels of industrialisation and use of technology.
Social	This is an improvement in people's standard of living. For example, clean water and electricity.
Environmental	This is advances in the management and protection of the environment.

Measuring development

There are used to compare and understand a country's level of development.

Economic indictors examples	
Employment type	The proportion of the population working in primary, secondary, tertiary and quaternary industries.
Gross Domestic Product (GDP) per capita	This is the total value of goods and services produced in a country per person, per year.
Gross National Income (GNI) per capita	An average of gross national income per person, per year in US dollars.
Social indicators examples	
Infant mortality	The number of children who die before reaching 1, per 1000 babies born.
Literacy rate	The percentage of population over the age of 15 who can read and write.
Life expectancy	The average lifespan of someone born in that country.
Mixed indicators	
Human Development Index (HDI)	A number that uses life expectancy, education level and income per person.

Variations in the level of development

ACs	These countries are wealthy with a high GNI per capita and standards of living. These countries can spend money on services.
EDCs	These countries are getting richer as their economy is progressing from the primary industry to the secondary industry. Greater exports leads to better wages.
LIDCs	Poorest countries in the world. GNI per capita is low and most citizens have a low standard of living.

Uneven development

Development is globally uneven with most ACs located in Europe, North America and Oceania. Most EDCs are in Asia and South America, whilst most LIDCs are in Africa. Remember, development can also vary within countries too.

Topic 6
Dynamic Development

Physical factors affecting development

Natural Resources

- Fuel sources such as oil.
- Minerals and metals for fuel.
- Availability for timber.
- Access to safe water.

Natural Hazards

- Risk of tectonic hazards.
- Benefits from volcanic material and floodwater.
- Frequent hazards undermines redevelopment.

Climate

- Reliability of rainfall to benefit farming.
- Extreme climates limit industry and affects health.
- Climate can attract tourists.

Location/Terrain

- Landlocked countries may find trade difficult.
- Mountainous terrain makes farming difficult.
- Attractive scenery attracts tourists.

Human factors affecting development

Politics

- Corruption in local and national governments.
- The stability of the government can effects the country's ability to trade.
- Ability of the country to invest into services and infrastructure.

Trade

- Countries that export more than they import have a trade surplus. This can improve the national economy.
- Having good trade relationships.
- Trading goods/services is more profitable than raw materials.

Education

- Education creates a skilled workforce meaning more goods and services are produced.
- Educated people earn more money, meaning they also pay more taxes. This money can help develop the country in the future.

Health

- Lack of clean water and poor healthcare means a large number of people suffer from diseases.
- People who are ill cannot work so there is little contribution to the economy.
- More money on healthcare means less spent on development.

Aid

- Aid can help some countries develop key services and infrastructure faster.
- Aid can improve projects; schools, hospitals and roads.
- Too much reliance on aid might stop other trade links becoming established.

History

- Colonialism has helped Europe develop, but slowed down development in many other countries.
- Countries that went through industrialisation a while ago, have now develop further.

Consequences of Uneven Development

Levels of development are different in different countries. This uneven development has consequences for countries, especially in wealth, health and education.

Wealth	People in more developed countries have higher incomes than less developed countries.
Health	Better healthcare means that people in more developed countries live longer than those in less developed countries.
Education	More developed countries have better standards of education available than those in less developed countries.

Five stages of economic development.	1. Traditional society	2. Preconditions for take-off	3. Take-off	4. Drive to maturity	5. Mass Consumptions
Rostow's model predicts how a country's level of economic development changes over time. The model also shows how people's standard of living improves.	Subsistence based. i.e. farming, fishing and little trade.	Manufacturing starts to develop with better infrastructure.	Rapid growth with large-scale industrialisation.	Economy grows so people get wealthier & have higher standards of living	Lots of trade with a high level of consumption.

Geography - Dynamic Development

Barriers to ending Poverty

Debt	Many LIDCs have huge national debts from burrowing from wealthy countries and organisations. With high interest rates, these debts are difficult to wipe out and can lead to a spiral of decline. This situation makes it difficult for these countries to invest in services and infrastructure.
Trade	Countries with a negative balance of trade, import more than they export make development difficult. Also ACs have TNCs that operate in LIDCs. These companies take profits away from LIDCs to ACs where their headquarters are.
Political unrest	Widespread dissatisfaction with the government can be caused by political unrest, corruption and a lack of investment and attention into services (i.e. education and healthcare).

Breaking out of Poverty

Countries can try various ways to reduce poverty and increase development. These often involve different types of aid that can either be short term or long term strategies.

Top Down	These are large scaled, government led and expensive schemes involving money borrowed from wealthier countries. Their is little community involvement but instead large scale projects.
Bottom Up	These are small scaled, local led and less expensive schemes. They involve communities and charities developing local businesses and housing.
Short term	This aid is sent to help countries cope with emergencies such as natural disasters.
Long term	This is aid given over a long period to help countries develop through investing in projects such as education and healthcare.
Trade	Fair trade can allow for fair wages. Also grouping with other countries in the form of trading blocs can increase links and increase the economy.
Debt Relief	Wealthier countries can cut or partly cut debt to countries that have burrowed money. This allows for money to be reinvested in development.

Positives and Negatives of Aid

Positives	Negatives
Allows for immediate or long-term investment into projects that can develop a countries prospects.	Local people might not always get a say. Some aid can be tied under condition from donor country.

Are LIDCs likely to stay poor?
Case Study: Ethiopia

Location & Background

Ethiopia is a LIDC in the horn of Africa. A **landlocked** country surrounded by six countries. The **10th largest in Africa**, it has the second largest population with **94 million**. The capital is **Addis Ababa** with a population of 3.5 million.

Current level of development

- GNI per capita is **$505** compared to a world average of **$10,858**
- Level of wealth per person is **significantly less** than other LIDCs across the world.
- High birth rate & slower death rate equals growing population.
- A long history of **disease, poverty** and **political unrest**.
- HDI of **0.435 with low life expectancy** at **63 years**.
- Country is **reliant on agriculture** with **89%** of all exports.
- Country receives **more imports** than exports.

Influences upon Ethiopia's development

Political

- Ethiopia has suffered from various civil and military unrest.
- Derg government (1974-1987) killed thousands and terrorised people to cause many to migrate as refugee.
- Government is now stable since being a republic in 1991.

Social

- 1984-85 famine killed a million people in just 1 year due to drought and high food prices.
- Growing population is causing a food deficient.
- People have a growing trust of the government but free speech is still limited.

Physical

- Rainfall in the country is unpredictable. This makes agriculture difficult.
- Inaccessibility, water shortages and infestations make valuable land difficult to farm.
- Drought affected areas has caused over-farming and desertification.

Economic

- Agriculture makes up most of the country's economy.
- Reliance on agriculture is vulnerable to climate change.
- Economy is now growing meaning fewer are in poverty.
- Income in the secondary & tertiary sectors are growing (particularly in tourism).

Ethiopia & Rostow's Model

- Despite the large primary industry, Ethiopia has improved education and healthcare due to investments from TNCs. As a result, Ethiopia is at stage 2.
- Better technologies & quality of life is allowing for pre Take off to emerge.

Millennium Development Goals

Set by the UN to set targets to reduce poverty.

+ Ethiopia is on track with primary education, reducing child mortality and healthcare.
- Malnutrition , gender equality, disease, global partnership and environmental sustainability is still a problem

Investment from TNC

A range of TNCs such as H&M and Afriflora are now operating in Ethiopia at a primary, secondary and tertiary level.
+ Investment in infrastructure is increasing tourism.
+ Increase employment levels and people receive fair wages.
-Some TNC pay low salaries and working conditions are poor.
-TNCs sometimes take advantage of the unstrict regulations in place.

Aid & Debt relief

- **5 million** people receive food aid from charities such as Oxfam and Farm Africa.
- Oxfam's Goat Aid is sustainable for young women. **'The Girl Effect'** encourages equality & reduces birth rates.
- Wealthier countries encouraged the **decline** of the country's **massive debt**.
- Less debt repayments has meant **more reinvestment**.

Development strategy for Ethiopia

Bottom-up

This is led by local people and are known as 'grassroot' project.

+ Mission Aviation and Farm Africa have helped locals create sanitation, water systems, educate farmers and breed a livestock.
- Bottom-up approaches can be localized and depend on volunteers.

Top-down strategies

This is large scale investment at a national level.

+ $3.6 billion has been spent converting rural mud roads into asphalt roads. Investment in HEP dams has produced a reliable source of energy.
- Local farmers have been evicted from HEP dam areas and water has become polluted.

Geography - Global Hazards 1

Global pattern of air circulation

Atmospheric circulation is the large-scale movement of air by which heat is distributed on the surface of the Earth.

Hadley cell	Largest cell which extends from the Equator to between 30° to 40° north & south.
Ferrel cell	Middle cell where air flows poleward between 60° & 70° latitude.
Polar cell	Smallest & weakness cell that occurs from the poles to the Ferrel cell.

Climate Zones

The global circulation system controls temperatures by influencing precipitation and the prevailing winds. This creates distinctive climate zones.

Temperate Climate	Mid-latitude, 50° - 60° north &south of the Equator. Here air rises and cools to form clouds and therefore frequent rainfall. e.g. UK.
Tropical Climate	Found along the Equatorial belt, this zones experiences heavy rainfall and thunderstorms. E.g. Brazil.
Polar Climate	Within the polar zones cold air sinks causing dry, icy and strong winds. E.g. Antarctica.
Desert Climate	30° north and south of the equator, sinking dry airs leads to high temperatures without conditions for rainfall. E.g. Libya.

High and Low Pressure

High Pressure	**Low Pressure**
Caused by cold air sinking. Causes clear and calm weather	Caused by hot air rising. Causes stormy, cloudy weather.

What is wind?

Wind is the movement of air from an area of high pressure to one of low pressure.

Types of wind

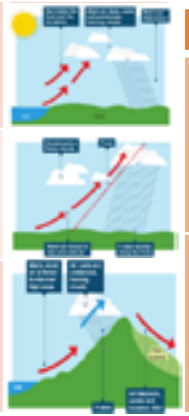
Katabatic Winds	Winds that carry air from the high ground down a slope due to gravity. e.g. Antarctic.
Trade Winds	Wind that blow from high pressure belts to low pressure belts.
Jet Streams	These are winds that are high in the atmosphere travelling at speeds of 225km/h.

What is precipitation?

This is when water vapour is carried by warm air that rises. As it gets higher, the air cools and the water vapour condenses to form a cloud. As water molecule collide and become heavier, the water will fall to Earth as precipitation.

Types of precipitation

Convectional Rainfall	When the land warms up, it heats the air enough to expand and rise. As the air rises it cools and condenses. If this process continues then rain will fall.
Frontal Rainfall	When warm air meets cool air an front is formed. As the warm air rises over the cool air, clouds are produced. Eventually steady rain is produced.
Relief Rainfall	When wind meets mountains, the warm air is forced to rise quickly and cool. This leads condensation and eventually rainfall. When the air descend however, little very rainfall falls, creating a rain shadow.

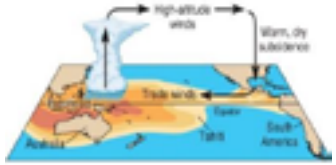


Distribution of Droughts

Drought can occur anywhere throughout the world but they are more frequent between the tropics of Cancer and Capricorn. Many countries in Africa suffer from severe drought, such as Ethiopia but Australia also suffer.

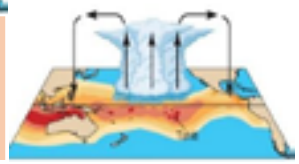
Causes of Drought: El Nino effect

The El Nino effect is also associated with creating dry conditions.



Normally, warm ocean currents off the coast of Australia cause moist warm air to rise and condense causing storms and rain over Australia.

In an El Niño year (every 2-7 years) the cycle reverses. Cooler water off the coast of Australia reverses the wind direction leading to dry, sinking air over Australia causing hot weather and a lack of rainfall.



Topic 1
Global Hazards

Extremes in weather conditions

Wellington, New Zealand
Very high wind speeds (248mkm/h) due to the surrounding mountains funnelling wind.

Puerto Lopez
Found along the equator, high temperatures lead to rapid condensation and heavy rainfall.

The Atacama, Chile
The Andes mountains block moist warm travelling any further west. This causes rainfall to the east, but a rain shallow to the west.

Mawsynram, India
This village see a lot of rain each year (11m per yr). This is due to the reversal of air conditions/directions from sea to land. In the summer, this contributes to monsoons.

Changing pattern of these Hazards

Tropical Storms	Scientist believe that global warming is having an impact on the frequency and strength of tropical storms. This may be due to an increase in ocean temperatures.
Droughts	The severity of droughts have increase since the 1940s. This may be due to changing rainfall and evaporation patterns related to gradual climate change.

Distribution of Tropical Storms.

They are known by many names, including hurricanes (North America), cyclones (India) and typhoons (Japan and East Asia). They all occur in a band that lies roughly between the tropics of Cancer and Capricorn and despite varying wind speeds are ferocious storms. Some storms can form just outside of the tropics, but generally the distribution of these storms is controlled by the places where sea temperatures rise above 27°C.

Formation of Tropical Storms

1	The sun's rays heats large areas of ocean in the summer. This causes warm, moist air to rise over the particular spots
2	Once the temperature is 27°, the rising warm moist air leads to a low pressure. This eventually turns into a thunderstorm. This causes air to be sucked in from the trade winds.
3	With trade winds blowing in the opposite direction and the rotation of earth involved (Coriolis effect), the thunderstorm will eventually start to spin.
4	When the storm begins to spin faster than 74mph, a tropical storm (such as a hurricane) is officially born.
5	With the tropical storm growing in power, more cool air sinks in the centre of the storm, creating calm, clear condition called the eye of the storm.
6	When the tropical storm hit land, it loses its energy source (the warm ocean) and it begins to lose strength. Eventually it will 'blow itself out'.

Case Study: UK Heat Wave 2018

Causes

The heat wave was caused by an anticyclone (areas of high pressure) that moved north from Spain. This blocked any low pressure systems that normally brings cooler and rainier conditions.,

Effects	Management
• People suffered from heat strokes and dehydration. • 2000 people died from causes linked to heatwave. • Rail network disrupted and crop yields were low.	• The NHS and media gave guidance to the public. • Limitations placed on water use (hose pipe ban). • Speed limits imposed on trains and government created 'heatwave plan'.

Case Study: Typhoon Haiyan 2013

Causes

Started as a tropical depression on 2rd November 2013 and gained strength. Became a Category 5 "super typhoon".

Effects	Management
• Almost 4,000 deaths. • 130,000 homes destroyed • Water and sewerage systems destroyed caused diseases. • Emotional grief for lost ones.	• The UN raised £190m in aid. • USA & UK sent helicopter carrier ships deliver aid remote areas. • Education on typhoon preparedness.

Geography - Global Hazards 2

The structure of the Earth

The Crust	Varies in thickness (5-10km beneath the ocean. Made up of serval large plates.
The Mantle	Widest layer (2900km thick). The heat and pressure means the rock is in a liquid state that is in a state of convection.
The Inner and outer Core	Hottest section (5000 degrees). Mostly made of iron and nickel and is 4x denser than the crust. Inner section is solid whereas outer layer is liquid.

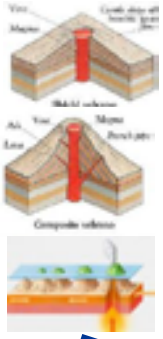
Convection Currents

The Lithosphere is divided into tectonic plates which are moving due to convection currents in the asthenosphere.

1. Radioactive decay of some of the elements in the core and mantle generate a lot of heat.
2. When lower parts asthenosphere heat up they become **less dense** and **slowly rise**.
3. As they move towards the top they cool down, become **more dense** and **slowly sink**.
4. These **circular movements** of semi-molten rock are **convection currents**
5. Convection currents create **drag** on the base of the tectonic plates and this causes them to move.

Types of volcanoes

Shield	Made of basaltic rock and form gently sloping cones from layers of runny lava. Location: hot spots and constructive margins. Eruptions: gentle and predictable
Composite	Most common type found on land. Created by layers of ash and lava. Location: Destructive margins Eruptions: explosive and unpredictable due to the build of pressure within the magma chamber.
Hotspots	These happen away from any plate boundaries. They occur because a **plume of magma rises** to eat into the plate above. Where lava breaks through to the surface, **active volcanoes** can occur above the hot spot. E.g. Hawaii.



Case Study: Eyjafjallajokull Eruption, Iceland 2010

Causes

- The North-American and Eurasian plates move apart- called constructive plate boundary.
- The disruption caused by Eyjafjallajökull was the result of a series of small volcanic eruptions, starting on the 20th March and ending in the October.

Effects

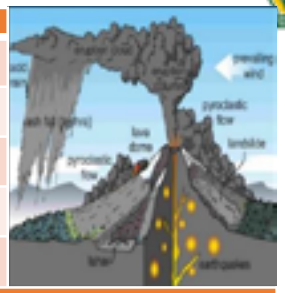
- The thick ice cap melted causing major flooding.
- No reported deaths.
- Airspace closed across Europe, with at least **95,000** flights cancelled
- Costed insurers **£65million** to customers with cancelled flights.

Management

- Iceland had a good warning system with texts being sent to residents within a 30 minutes warning.
- Large sections of European airspace were closed down due ash spreading over the continent.
- Airlines developed ash monitoring equipment

Volcanic Hazards

Ash cloud	Small pieces of pulverised rock and glass which are thrown into the atmosphere.
Gas	Sulphur dioxide, water vapour and carbon dioxide come out of the volcano.
Lahar	A volcanic mudflow which usually runs down a valley side on the volcano.
Pyroclastic flow	A fast moving current of super-heated gas and ash (1000ºC). They travel at 450mph.
Volcanic bomb	A thick (viscous) lava fragment that is ejected from the volcano.



Managing Volcanic Eruptions

Warning signs	Monitoring techniques
Small earthquakes are caused as magma rises up.	Seismometers are used to detect earthquakes.
Temperatures around the volcano rise as activity increases.	Thermal imaging and satellite cameras can be used to detect heat around a volcano.
When a volcano is close to erupting it starts to release gases.	Gas samples may be taken and chemical sensors used to measure sulphur levels.

Preparation

Creating an exclusion zone around the volcano.	Being ready and able to evacuate residents.
Having an emergency supply of basic provisions, such as food	Trained emergency services and a good communication system.

Earthquake Management

PREDICTING

Methods include:

- Satellite surveying (tracks changes in the earth's surface)
- Laser reflector (surveys movement across fault lines)
- Radon gas sensor (radon gas is released when plates move so this finds that)
- Seismometer
- Water table level (water levels fluctuate before an earthquake).
- Scientists also use seismic records to predict when the next event will occur.

PROTECTION

You can't stop earthquakes, so earthquake-prone regions follow these three methodsto reduce potential damage:

- Building earthquake-resistant buildings
- Raising public awareness
- Improving earthquake prediction

Types of Plate Margins

Destructive Plate Margin

When the denser plate subducts beneath the other, friction causes it to melt and become molten magma. The magma forces its ways up to the surface to form a volcano. This margin is also responsible for devastating earthquakes.

Constructive Plate Margin

Here two plates are moving apart causing new magma to reach the surface through the gap. Volcanoes formed along this crack cause a submarine mountain range such as those in the Mid Atlantic Ridge.

Conservative Plate Margin

A conservative plate boundary occurs where plates slide past each other in opposite directions, or in the same direction but at different speeds. This is responsible for earthquakes such as the ones happening along the San Andreas Fault, USA.

Collision Zones

Collision zones form when two continental plates collide. Neither plate is forced under the other, and so both are forced up and form fold mountains. These zones are responsible for shallow earthquakes in the Himalayas.

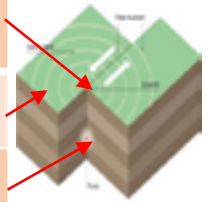
Causes of Earthquakes

Earthquakes are caused when two plates become locked causing friction to build up. From this stress, the pressure will eventually be released, triggering the plates to move into a new position. This movement causes energy in the form of seismic waves, to travel from the focus towards the epicentre. As a result, the crust vibrates triggering an earthquake.

The point directly above the focus, where the seismic waves reach first, is called the **EPICENTRE**.

SEISMIC WAVES (energy waves) travel out from the focus.

The point at which pressure is released is called the **FOCUS**.



Depth of Earthquake

Shallow Focus	Deep Focus
-Usually small and common. -Seismic waves spread and damage wide area.	-Occur on destructive margins. -Damage is localised as seismic waves travel vertically.

How do we measure earthquakes?

Mercalli Scale

- Measures how much damage is caused, based on observations, not scientific instruments.
- Base from 'Instrument' and 'Weak' to 'Extreme' and 'Cataclysmic'.
- Limitations is that its subjective due to it being based on perception.

Richter Scale

- Is a scientific measurement based on the energy released.
- Measured by seismometers using measurement from 1 – 10
- Logarithmic – each point up the scale is 10 times greater than the one before.

Earthquake proof buildings ideas

1. Counter-weights to the roof to help balance any swaying.	2. Roof made from reinforced cement concrete.
3. Foundations made from reinforced steel pillars, bail-bearings or rubber.	4. Windows fitted with shatter-proof glass to reduce breakage.
5. Lightweight materials that cause minimal damage if fallen during an earthquake.	6. Ensure gas pipes have an automatic shut off to prevent risk of fire.

Health and Social Care Knowledge Organiser: Component 1 Human Lifespan Development

Learning Aim A: Understand human growth and development across life stages and the factors that affect it

How do people grow and develop throughout their lives? How can factors such as lifestyle choices, relationships affect this? Understanding these processes is essential knowledge and understanding for health and social care practitioners.

A1 Growth and development across life stages

Lifestages

1. Infancy (0 – 2 years)
2. Early childhood (3 – 8 years)
3. Adolescence (9 – 18 years)
4. Early adulthood (19 – 45 years)
5. Middle adulthood (46 – 65 years)
6. Later adulthood (65+ years)

Holistic Development

1. **P**hysical development – Physical growth and physiological change
2. **I**ntellectual development – Developing thinking and language skill and common activities that promote learning and development
3. **E**motional development – Developing feelings about self and other
4. **S**ocial development – Forming relationships

A2 Factors affecting growth and development

1. Physical factors

a) Genetic inheritance
b) Diet and lifestyle choices
c) Experience of illness and disease
d) Appearance

2. Economic factors

a) Income/ wealth
b) Material possessions

3. Social, Cultural and emotional factors

a) Educational experiences
b) Culture, e.g. community involvement, religion, gender
c) Influence of role models
d) Influence of social isolation
e) Personal relationship with friends and family

Learning Aim B: Investigate how individuals deal with life events

B1 Different types of life event

1. Physical events

a) Accident/ injury
b) Ill health

2. Relationship changes

a) Entering a relationship
b) Marriage
c) Divorce
d) Parenthood
e) Bereavement

3. Life circumstances

a) Moving house, school or job
b) Exclusion from education
c) Redundancy
d) Imprisonment
e) Retirement

B2 Coping with change caused by life events

1. **How individuals adapt to these changes**
2. **Sources of support**
   a) Family, friends partners
   b) Professional carers and services
   c) Community groups, voluntary and faith based organisations
3. **Types of support**
   a) Emotional
   b) Information advice
   c) Practical help, e.g. financial assistance, childcare, transport

TOPIC 1: WEIMAR REPUBLIC 1918 - 1929

The Weimar Republic

November Criminals	Nickname given to the Government
Proportional Representation	Parties awarded seats based on % votes
Article 48	Emergency law making power
Constitution	Set of rules to govern the country

The Treaty of Versailles

LAND	**Saar & Alsace Lorraine to France Polish Corridor created**	**Lost land was rich in resources Millions of Germans now living under foreign rule**
ARMY	**100,000 soldiers 6 battleships No air force or subs Rhineland demilitarised**	**Unemployment increased Germany now difficult to defend**
MONEY	**£6.6billion in reparations – payable in cash, raw materials and gold**	**Germany in debt, hinders ability to recover from the impact of WW1**
BLAME	**Clause 231 – The War Guilt Clause**	**Germany is forced to accept blame for causing the war, people felt this was unfair**

Challenges to the Weimar Republic

Spartacists Uprising January 1919	**Left wing uprising (Communist) led by Luxemburg & Leibknecht**	**Freikorps (ex-soldiers) used to crush the revolt. Leaders executed**
Kapp Putsch Mar 1920	**Right wing uprising led by Dr Wolfgang Kapp & 5000 Freikorps**	**Government flees, general strike in Berlin stops Kapp**
Munich Putsch Nov 1923	**Fascist uprising led by Adolf Hitler and the DAP**	**16 Nazis are killed and Hitler is arrested and imprisoned**

The Ruhr and hyperinflation

Treaty of London 1921	**Final agreement of the Reparations bill**	**Germany pays the first instalment in 1922; fails to pay in 1923**
Invasion of the Ruhr 1923	**France and Belgium want their money and invade the Ruhr, a resource and raw material rich area.**	**Government orders workers to strike (passive resistance). Production stops but workers still need to be paid**
Hyperinflation	**Germany government prints money to pay workers**	**Hyperinflation, currency is worthless, those on fixed incomes struggle**

Stresemann and the Golden Years 1924-29

The Dawes Plan 1924	**Charles Dawes, US Banker, agrees loan of $200m**	**Reparations payments begin again, new currency Rentenmark, investment sparks Golden Age**
Foreign Policy successes	**1925 Locarno Pact – borders are agreed 1926 League of Nations**	**Successes demonstrate that Germany is no longer a threat to Europe.**
The economy	**Investment using American loan allows for cultural changes**	**Theatre & cinema boom. Bauhaus movement – architecture and design**

Key Dates

Armistice	**1918**
Kaiser Abdicates	**1918**
Weimar Republic formed	**1919**
Spartacist Uprising	**1919**
Treaty of Versailles	**1919**
Kapp Putsch	**1920**
French invasion of Ruhr	**1923**
Hyperinflation	**1923**
Munich Putsch	**1923**
Dawes Plan	**1924**
Locarno Pact	**1925**
Germany joined League of Nations	**1926**
Wall Street Crash	**1929**

PUCK – How useful

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TOPIC 2: HITLER'S RISE TO POWER 1918 - 1933

The early Nazi party

The D.A.P	Hitler joins the German Workers Party (DAP) led by Anton Drexler
N.S.D.A.P	The National Socialist German Workers Party (Nazi Party)
25 Point Programme	Drexler and Hitler issue their plan to recreate a strong Germany.
The S.A	'Brownshirts' or 'Stormtroopers' used to disrupt meetings of political opponents

The Munich Putsch and Lean Years

1923	**The Munich Putsch**	**Following the chaos of the Ruhr invasion Hitler attempts to seize power in Munich**
1924	**Hitler on trial**	**Hitler uses the trial as a propaganda platform and media attention increases his popularity**
1924-9	**The 'Lean Years'. Whilst Hitler is in prison support for the Nazis reduces**	**Hitler writes Mein Kampf whilst he is in Landsberg prison – he only serves 9 months**
1926	**The Bamberg Conference**	**Conference to reunite the party and changes approach from violence to winning elections as a way to seize power**

The impact of the Great Depression

The Wall Street Crash	**US Economy collapses and sparks the Great Depression**	**Loans made under the Dawes Plan are recalled**
The Great Depression	**By 1932 6 million people are unemployed in Germany**	**Nazis capitalise on the situation offering 'Work' and 'bread'**
Election campaign	**Hitler launches his campaign flying across Germany making speeches and attending rallies**	**By 1932 Hitler secures 230 seats in the Reichstag making him the biggest political party.**

Hitler becomes Chancellor PLUGS

P	**POLICIES**	• **Work and bread- simply solutions** • **Remove the Treaty of Versailles**
L	**LEADERSHIP**	• **Charismatic public speaker** • **Other Nazis taught to public speak** • **Clear vision for the political party** • **Democracy used as a tool for power; mass rallies and events to gain support**
U	**UNITY**	• **Everyone striving for the same goal** • **SA used to help remove opposition** • **Swastika as symbol, easily recognisable**
G	**GREAT DEPRESSION**	• **Huge numbers of unemployed people** • **Offered solutions to the problems, promising work and bread** • **People in state of desperation happy to vote for someone that promises to help**
S	**SNEAKY DEAL**	• **Hitler leader of the biggest party** • **Hindenburg and Von Papen planned to make Hitler Vice Chancellor** • **Hitler offered Chancellor, as Hindenburg and Von Papen thought they could control him**

Key Dates

Hitler joins DAP	**1919**
DAP becomes the NSDAP	**1919**
25 point programme is issued	**1920**
Hitler becomes leader of NSDAP	**1921**
Munich Putsch	**1923**
Hitler imprisoned	**1924**
Bamberg Conference	**1926**
Lean years	**1924-9**
Wall Street Crash	**1929**
Unemployment reaches 6million	**1932**
Election success	**1932**
Hitler becomes Chancellor	**1933**

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TOPIC 3: CONTROL AND DICTATORSHIP 1933-39

The impact of the Reichstag Fire

The Reichstag Fire	German Parliament fire is blamed on the Dutch Communist Marius Van der Lubbe
Decree for protection of the people	German constitution is suspended - Germany is now in a state of emergency
Concentration camps	Used to house political prisoners - Communists are arrested
Enabling Act	Allows Hitler to pass laws without approval of the Reichstag

The removal of the opposition

Trade unions are banned	**Groups representing the workers are abolished. The DAF (German Labour Front) is establish in replacement**
Other parties are banned	**New parties illegal and existing ones are severely restricted. November 1933 elections Hitler secured 95.2% of the votes**

The Night of the Long Knives

By 1932 the SA numbered 600,000 men	**Led by Ernst Rohm this posed an internal threat to the security of Hitler as leader**
June 1934 Hitler arranges to meet Rohm and 100 men	**They are arrested, taken to Munich and shot**
Approximately 400 people were killed in the purge of the SA	**This event secured Hitler's position of leader. The SA were no longer an important group.**

The Fuhrer

August 1934 Hindenburg dies	**An election should have taken place to appoint a new President. Hitler instead combines the roles of President and Chancellor to become Fuhrer**
Army oath of allegiance	**The army leaders swore an oath of allegiance agreeing to give Hitler unconditional support.**

Controlling the people

GESTAPO	**Set up in 1933 by Goering, was under the control of the SS by 1936**	**Could arrest and imprison without trial Had the power to send opponents to concentration camps**
THE SS & SD	**SS Protection Squad SD intelligence agency**	**SS were responsible for the removal of all opposition and were the main means of intimidating people SD located potential enemies .**
LEGAL SYSTEM	**All judges had to become members of the League for Maintenance of Law**	**The Nazis controlled the law courts and only Nazi views were upheld in court**

Key Dates

Gestapo formed	**1933**
Reichstag Fire	FEB 1933
Enabling Act	**March 1933**
Boycott Jewish shops	**APR 1933**
Trade Unions banned	**MAY 1933**
Other political parties banned	**JULY 1933**
Night of the Long Knives	**JUNE 1934**
Hindenburg dies	**Aug 1934**
Hitler declares himself Fuhrer	**AUG 1934**
Jews banned from public places	**1934**
Nuremberg Laws	**1935**

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TOPIC 4: LIFE UNDER THE NAZIS 1933-39

Life for women and children

Women	Kinder, Kuche, Kirche (children, kitchen and Church) Newly married couples offered loans No longer allowed to work
Hitler Youth	Compulsory by 1936, wrestling, camping, marching drills, uniform worn League of German Maidens for girls
Education	Nazi curriculum followed in all schools 1938 Jewish children banned from school
Childbirth	Women encouraged to have multiple children - The Motherhood cross awarded, Gold for 8 babies Lebensborn programme encouraged unmarried women to pair up with SS members

Opposition groups

The church	1934 Hitler signed an agreement with the Pope. The Concordat meant that Catholics could worship as long as they did not interfere with Nazi policies. Some Protestants resisted; Martin Niemoller was arrested and sent to Sachsenhausen
Edelweiss Pirates	Wore clothes that the Nazis considered inappropriate. Tried to interrupt Hitler Youth meetings
Swing Youth	Listened to swing music, which the Nazis considered to be inappropriate.

Life for workers

REICH LABOUR SERVICE	Aimed to provide manual labour jobs for those 18-25 Workers lived in camps, wore uniforms and had low pay
REARMAMENT & AUTOBAHNS	Conscription from 1935 Army went from 100,000 to 1,400,000 in 1939 Autobahn (motorway) building provided employment
STRENGTH THROUGH JOY (KdF)	AImed to reward workers, theatre tickets, day trips and holidays
BEAUTY OF LABOUR	Aimed to improve working conditions in factories

Persecution of minorities

ARYAN	Hitler wanted to create the master race, which the Nazis believed could be done through selective breeding
BOYCOTT	April 1933 The SA organised a Boycott of Jewish shops, which would have resulted in a reduction in trade and therefore revenue
STERILISATION	The 1933 Sterilisation Law meant that anyone suffering from any illness or disability was not allowed to have children
NUREMBERG LAWS	Introduced in 1935, these laws said that only those of German blood were allowed to be citizens. Jews lost their citizenship, along with their rights to vote and hold any governmental office. Relationships between Germans and Jews were banned.
KRISTALLNACHT	November 1938 The Night of the Broken Glass - attacks on Jewish homes, shops and synagogues. This sparked an increase in the persecution of Jewish people.
OTHER GROUPS	Gypsies, homesexuals, and those of other unwanted nationalities were also persecuted by the Nazis.

Key Dates

Boycott Jewish Shops	1933
Conscription	1935
Nuremberg Laws	1935
Reich Labour Service compulsory	1935
Hitler Youth Compulsory	1936
Jewish Children banned from school	1938
Kristallnacht	1938

WORKERS - Better? Worse?

Better off:
Unemployment reduced
Strength through Joy (KdF)
Beauty of Labour

Worse off:
Trade Unions removed
Invisible unemployment
VW swindle

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Hospitality & Catering Part 2

What are the benefits of ratings?

- Reviews can make or break a business! A good review can increase business for establishments, as people will often try an establishment based on a recommendation.
- Reviews and ratings generate publicity, awards get you in the press!
- Customers might come from further away to dine or stay or both based on reviews.
- Customers can identify less favourable establishments that they will then avoid.

Michelin and rosette inspections are anonymous and are just 1 persons opinion. Trip Advisor and The Good Food Guide are lots of peoples opinions, so likely to be accurate.

Restaurant manager

- The restaurant manager is in overall charge of the restaurant,
- Takes bookings, relays information to the head chef, completes staff rotas, ensures the smooth running of the restaurant

Staff structure in a hotel

Employers want to employ most workers when they have busy times

Busy times of year:
- Christmas
- Tourist season
- School holidays
- Mothers day
- valentines

Days of the week
- Friday
- Saturday
- Sunday
- Pay day

Time of day
- Lunchtime
- Afternoon
- Dinner time
- (breakfast)

The kitchen brigade

PLONGEUR or ESCUELERIE

Kitchen Porter / Dishwasher.

PERSONAL ATTRIBUTES TO WORK IN THE HOSPITALITY AND CATERING INDUSTRY ARE VERY IMPORTANT BECAUSE IT IS CUSTOMER DRIVEN

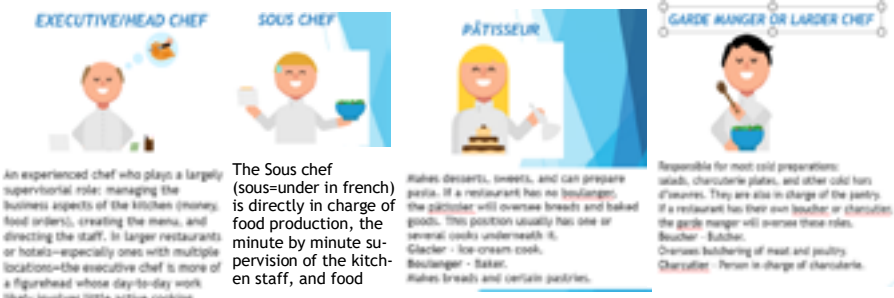
- Friendly personality
- Pleasant and polite manner
- Clean and proper clothing, possibly a set uniform
- Spotlessly clean hands and nails
- A pleasant smell, i.e. no overpowering after-shave or perfume and no body odour
- Fresh breath, discreet make-up, long hair tied back, well-groomed appearance
- Steady hands to be able to carry and serve food
- Knowledge of the menu in order to answer any customer queries and advise on allergies, etc
- Enthusiasm for the job and a willingness to serve others
- Good health because of long hours on feet
- Polite, calm and tactful even when dealing with awkward customers
- Loyalty to place of work and the ability to 'sell' and 'promote' facilities to customers
- Ability to handle compliments and complaints

- **Personal Qualities:** Reliable, punctual, team worker etc.
- Can operate machinery e.g. coffee machines.

The organisation depends on the type and size of the establishment;a large restaurant may include all these roles:

- Head Chef or Executive Chef
- One or two sous chefs
- Chefs de parties or sectional chefs looking after each section (e.g. pastry)
- A demi chef de partie, reporting to and working the opposite shift to the chef de partie
- One or two commis chefs per section per shift
- An apprentice per section per shift.

Hospitality Brigade



ENTREMÉTIER/VEGETABLE CHEF

Entrée preparer/manager. Note that an entrée, under Escoffier, is a starter and not a main dish. Thus, the entremétier traditionally handles vegetable, egg, or soup dishes—generally things that do not involve meat. He or she may supervise the potager and legumier or take on these roles.

Full time

No specific number of hours that makes someone either full or part time, but a full time worker usually works more than 35 hours. The law says that workers don't usually have to work more than 48 hours a week on average, unless they choose to. This law is sometimes called the 'working time directive' or 'working time regulations'.

Part time

Part-time work is when a worker is contracted for anything less than the basic full-time hours. There are no set number of hours that makes someone full or part-time, however average part-time contracts are often 16-20 hours.

Agency Staff:
As an employer, you can hire temporary staff through agencies.
This means:
- you pay the agency, including the employee's National Insurance contributions (NICs) and Statutory Sick Pay (SSP)
- it's the agency's responsibility to make sure workers get their rights under working time regulations
- after 12 weeks' continuous employment in the same role, agency workers get the same terms and conditions as permanent employees, including pay, working time, rest periods, night work, breaks and annual leave
- you must provide the agency with information about the relevant terms and conditions in your business so that they can ensure the worker gets equal treatment after 12 weeks in the same job
- you must allow agency workers to use any shared facilities (e.g. a staff canteen or childcare) and give them information about job vacancies from the first day they work there
- you are still responsible for their health and safety

Casual/Seasonal

Casual workers are hired on an irregular basis for a short period of time (no more than 12 weeks). There is no continuing commitment from the employer to offer work, and no obligation on the part of the casual worker to do the work offered.

Staff can earn extra money if they are given tips because the service and food they have delivered has been good. It is sometimes considered rude not too tip. More expensive restaurants automatically add 10-12.5% extra to a bill to cover tips

Hospitality & Catering Part 3

Factors affecting success

Legislation that protects workers

- Disabled Discrimination Act 1995
- Equal Pay Regulations 1970
- Health and Safety At Work 1974
- National minimum wage
- Working Times Regulations 1998
- Part-time workers Regulations 2000

Type of staff	Benefits for employer	Benefits for employees	Disadvantages for employer	Disadvantages for the employees
Full-time 36 hours plus 28 days holiday	Reliable Permanent staff Staff have a good knowledge of services provided	Regular income Job security Permanent contract with holiday benefits. Regular hours of work Will receive sick pay	Bound by contract terms Has to pay sick pay, maternity leave and holidays. Expensive to employ Require lunch breaks unlike part time staff	Usually have to work shifts Less flexibility
Part-time 4-16 hours 28 days holiday	Can be employed at busier times of the day such as lunch or dinner service	Can be more cost effective with less wages needed	Will need to pay for training of more staff rather then small amount of full time staff	Need to work basic requirement of hours before they are entitled to holidays and sick pay
Casual	Can be employed for functions or busy times of the year	Can choose when they want to work	Can be unreliable Have to pay agency fees Don't know the routines Casual staff haven't been trained Unfamiliar with services provided	Called at short notice to work Not a regular income No sick pay Often don't know where they will be working until the week before

Food costs are large **percentage** of costs for most **hospitality businesses**. When planning menus chefs must **calculate** how much dishes will **cost per portion** to be able to **justify** keeping it on the menu. **Expensive** dishes that are not ordered often may lead to **wasted ingredients** that are unused, which result in **less profit.** Chef's must design dishes that generate a profit to stay operational.

Cost per portion x 100

40

Independent shops may supply some establishments

Large Wholesalers

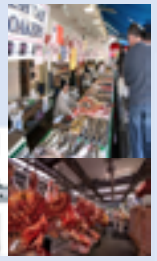
Advantages	Disadvantages
• Very large range of commodities and sundries • Can have in house butchery department • Pre made and pre portioned food • Large bulk packaging of ingredients	• May be expensive for pre made foods • Have to order well in advance • Set delivery days • Have to order large quantities to get a discount

Benefits of portion control

- Keeps the food costs down
- Keep losses in food preparation and serving to a minimum
- Offer a consistent portion to customers
- Minimise waste eg leftovers
- To make a profit which is constant

Catering equipment

Specialist large scale catering and kitchen equipment from specialist companies



Specialist markets

Advantages	Disadvantages
• Large choice of commodities • Several suppliers at the market means costs are kept down by competition • Supplies are always at their freshest • New supplies in every day	• May not be easy to get to eg London • Work through the night and close early in the morning • Costs of transport back may be expensive • Purchaser has to judge quality for themselves before they buy

Local suppliers

Advantages	Disadvantages
• Local deliveries, less environmental impact • May use local farms and companies for commodities • Smaller firms, personal business relationship • May be able to change order at short notice	• May not have a wide selection • Smaller companies buy in smaller quantities so costs more • May not be able to supply large orders

It's important to remember that local sourcing can encompass much more than just using locally supplied and seasonal food. **Local sourcing can also include toiletries for guest rooms and flowers for reception**

Hospitality & Catering Part 4

Kitchen workflow

Workflow in the kitchen should follow a logical process by using different areas so that the clean stages in food production never come into contact with the "dirty" stages.

1. Delivery
2. Storage
3. Food preparation
4. Cooking
5. Holding
6. Food service area
7. Wash up
8. Waste disposal

Workflow

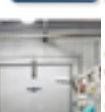
Organising the kitchen into separate areas for separate jobs is the heart of hygienic kitchen design. The e layout will depend upon the size of the kitchen as well as on the type of meals it prepares.

LO2 Understand how hospitality and catering provisions operate

Delivery
Goods vehicles should have adequate access to premises, providing direct deliveries to catering areas. This limits the length of time chilled foods may be in the danger zone. Have adequate space to check orders before they enter the catering area. Check temperature of van and visually examine goods.

Storage
Storage should be near to the delivery area to limit delivery staff entering the catering area. This also reduces the need to move heavy items of stock that may cause injury to staff. Make sure adequate room is available for stock.

Food Prep
Separate hand wash, pot wash and food wash areas/sinks need to be provided as well as separate areas for potential allergen containing food prep. Where premises are small, systems should be in place to ensure utensils are kept separate.



Cooking
Cooking equipment should be selected based on the menu being produced and the ability of the staff using it. State-of-the-art equipment such as water baths, programmable Rational ovens and computerised deep-fat fryers would be desirable, however, if they are not necessary they are a waste of money. Most importantly, the equipment layout should be safe and manageable to work around to prevent accidents.

First In, First Out (FIFO) is a system for storing and rotating food. In FIFO, the food that has been in storage longest ("first in") should be the next food used ("first out"). This method helps restaurants and homes keep their food storage organized and use food before it goes bad. First In, First Out is an effective system that should be standard operating procedure for every food service establishment.

Cooking
A 900mm corridor should be allowed for around the front of cooking equipment, ideally 1200mm. You may be limited by the energy supply available, gas may not be permissible in the building or the incoming electrical supply may be limited. Large scale equipment, whilst can be energy efficient and have energy saving features such as thermostats and auto switch-off, often requires a large electrical supply to run in the first place.

Holding
The food holding area should be near the food service area in order to keep the food at the right temperature (above 63°c). Some kitchens may require separate refrigerator areas to keep desserts chilled and away from raw foods.

Food Service Area
In an à la carte restaurant adequate space needs to be considered to allow plating up.

Food Service Area
In a buffet or canteen system, multiple food collection points can limit queuing. Large service areas may need stock replenished frequently, such as all you can eat buffets, therefore the food service area should be located near the kitchen area.

Wash Up Area
An integral part of the kitchen. If the dish washing area does not function, neither does the kitchen. Ample space should be given to both the size of dish washing area needed for the number of dishes, pots, pans etc. are used in one night as well as adequate space to store and sort washing up. As hot water produces steam, adequate ventilation is required.

Waste Disposal
Dirty plates and waste food needs to be kept separate from food prep and storage areas to prevent cross contamination. Ideally a separate refuse bay should be made available well away from the kitchen entrance (so customers do not see this side of the business)! Adequate changing rooms/facilities should also be provided for staff to change at the start and end of shifts and also easily accessible staff toilets nearby.

Hygienic kitchen design

Work surfaces
Must be strong, hard wearing and easily cleaned. Stainless steel with wheels that can be moved out of the way while cleaning

Floor
Hard wearing, easy to clean , non absorbent and non slip
Coving with the walls prevents dirt and food particles from accumulating

Walls
Smooth, can be tiled or lined with stainless steel as splashback light colour to show dirt easily

Hygienic kitchen design

Ventilation
Effective ventilation system to remove the heat, steam and condensation from the kitchen. Bacterial growth in moist conditions

Sinks
For washing food and utensils. Hot and cold water, stainless sinks are the best

Waste disposal
Waste disposal unit or separate waste bin with a lid that can be foot opened

Advantages
Effective work flow systems, both in the kitchen and front of house staffing, will lead to:
- Good communication between sections/ departments
- More efficient working (time/labour saving)
- Improved quality of the finished product
- Reduce the risk of accidents
- Maintain high standards of hygiene and food safety

All of the above will lead to better customer service and therefore satisfied customers.

In Summary:
When planning a kitchen you must consider:
- The type of customers you wish to attract
- The type of menu (à la carte, table d'hôte, seasonal, ethnic, children's, rotating ...)
- The type of service (self service, plated, buffet, fast food, canteen ...)
- The kitchen brigade structure and number of staff required to make your menu
- Compliance with legislation

Kitchen Layout

Importance of documentation

Why must they be completed?
1. Maintaining organisational procedures
2. Safety of staff and customers
3. Legal requirements
4. Complying with food safety legislation
5. Complying with accounting and taxation practices
6. Ensuring accurate payment of bills
7. Ensuring profitability of kitchen

Chef's uniform

- Chef's jacket
- Chef's pants
- Hat
- Neckerchief
- Apron
- Hand towel
- Slip-resistant shoes

Some establishments have staff wear the same uniform; this makes them easily identifiable for staff and customers. The uniform may change depending on which area of the establishment they work in.

Protective clothing as part of a uniform must be paid for by the employer.

Documentation and Administration

Types of Kitchen Documents

- Temperature charts – fridge, freezer, display, point of sale. Taken at least twice per day.
- Time sheets – logging staff working hours
- Accident report forms – used to report any accidents and near misses
- Food safety information – blast chill records, food related incidents and cleaning rotas
- Equipment fault reports – What was the issue and how was it dealt with.
- Stock usage reports– order books, stock control sheets, requisition books, invoice, delivery notes

Documentation and Administration

Complete kitchen documents:

- They must be legible (readable)
- At correct interval (daily, hourly)
- Completed accurately
- They must be signed and date.

Where do you get kitchen documentation from?:

- Purchased from stationers
- Designed in-house
- Central purchasing

Stock control

Staple foods and supplies that are canned, bottled, dried or frozen
These have a longer shelf life and so do not need to be purchased as frequently. Larger amounts can be bought to get cheaper prices and can be stored .

- Condiments,
- Canned vegetables
- Frozen foods including meat, fish and deserts
- Sauces
- Flour, sugar, fat,oil
- FIRST IN FIRST OUT stock rotation

Perishable food and products that do not stay fresh for very long

- Fresh fruit, vegetables
- Dairy products
- Meat and fish
- Only buy enough to last a few days because they will not last
- FIRST IN FIRST OUT- stock rotation

Hospitality & Catering Part 5

Food Service Equipment

Food service equipment is equipment used to **serve food** in the catering industry

Service equipment can be anything which is **used by customers** or to **serve food to the customers.**

Hand Held Equipment

Hand equipment is non-powered equipment which is used to serve or consume food and drink.

Tableware:
Equipment usually used to 'set' a table
Includes crockery, glasses, cutlery etc

Serving equipment:
Equipment for serving food. This includes utensils for placing food onto tableware such as tongs and ladles.
It also includes items such as wine coolers, champagne buckets and bottle openers.

Care, Use and Maintenance of Hand Equipment

1. Equipment used by customers must be **cleaned at least once a day.**
2. Equipment must be cleaned according to the manufacturer's instructions.
3. Powered equipment **must be serviced** regularly.
4. Powered equipment should be switched off when not in use.
5. Equipment which requires training to use must not be available to customers.

Powered Equipment

Kettle
A jug for boiling water

Mincing machine
For mincing meat

Microwave
For defrosting, reheating and cooking

Food processor
For chopping, mixing and blending food

Blender
A jug with a rotating blade for blending foods to smooth texture

Large Powered Equipment

Identify the name and use of each item.

Specialist Hand Equipment

Hand Equipment: Knives

Care, Safe Use and Cleaning

- If equipment has a blade always take care when using and cleaning: **keep fingers away from sharp edges.**
- **Clean items as soon after use as possible.** If food dries on they will be harder to clean effectively.
- **Choose correct cleaning utensils** which can reach all parts of the equipment – such as a brush for between the wires in a whisk.
- Store small utensils in a drawer or on hooks so they are not lost easily.
- **All equipment should be cleaned in hot water using detergent.**

Powered Equipment: Care, Safe Use and Cleaning

Should be **serviced regularly** by an electrician. Usually at least once a year.

Should be cleaned according to a regular routine and a record kept of maintenance.

Staff must be trained in safe operation of larger equipment.

Manufacturers instructions for cleaning and use must be read, followed, and kept safely.

Equipment should be **switched off at the wall while not in use.**

Equipment must not be situated where it could create **a fire hazard.**

Safety notices should be placed on all large pieces of equipment.

Staff allocation

The restaurant manager coordinates all activities at the restaurant.

The restaurant manager must define the tasks that staff must perform Consider
- The size of the restaurant,
- Flow of customers, type of clientele and
- Menu offerings
- Different skills and personnel requirements related to changes of volume and customer preferences.

Customer trends

Customers are influenced by
- TV
- Magazines
- Health
- Travel abroad
- Technology
- Ratings and reviews

Customer rights

- The right to be protected (against hazardous goods)
- The right to be informed (about quality, quantity, allergies etc)
- The right to have their complaints be heard
- The right to seek redressal (compensation.)
- The right to receive satisfactory goods that match their product description

Safety and security

How can you reduce the risks?
- **Reduce cash handling** by staff, have specific staff take responsibility for money.
- Train staff to **identify suspicious packages** and **individuals.**
- Use **security passes;** ask visitors to sign in.
- **Restrict** workmen or outside agencies to certain areas.
- **Security mark** all equipment.
- Use strict **stock control** procedures, have a **checking system** in place.
- Keep all areas **well-lit.**
- Use **CCTV** cameras.
- Check **guest identification** on check-in with photo I.D.

Health and safety, hygiene

- Fire certificate
- Staff training records
- Accident book
- Food hygiene checks
- Cleaning checks
- First aid records

Monitor stock levels for re ordering
Decide frequency of stock check
First in First out for items with a shelf life
Stock level checks could be for
- Wines
- Spirits
- Coffee
- Order pads
- Garnishes
- Cutlery
- Crockery
- Drinks in bar area
- Nuts, breadsticks
- Other consumables

Food service

Food can be served in many ways. The type of service depends on the following factors:

- The type of establishment or where it is
- The type of food or menu being served
- The cost of the meal or food
- The time available for the meal
- The type of customer
- The number of customers expected
- The availability of skilled serving staff

Documentation

A senior staff member such as the head chef or kitchen manager is responsible for carrying out administrative tasks that ensure the efficient working of all equipment and machinery.

Other documentation such as HACCP checks and accident records are kept up to date to comply with legislation.

Temperature control charts
Reading temperature of refrigerators, freezers and store cupboards

Hygiene information
Hazard Analysis Critical Control Points (HACCP)

Time sheets
Staff shifts, rotas

Accident forms
It is the law to report all accidents that occur on the premises

Equipment faults
Any equipment not working properly must be recorded and reported to the appropriate person. Where equipment is under warranty it must be reported to the manufacturer for repair.

Bookings and reservations

- Electronic booking system
- Electronic reservations system
- Diary with bookings and reservations
- Feedback forms

The EPOS system is a computerised piece of technology that **records data.** In the hospitality industry it is used when customers **purchase** services or food. It can be set up to **record bookings**, therefore preventing double bookings as well as updating **food stock levels** as menu items are purchased.

It can be used for –
- Recording sales
- Updating stock levels
- Providing accurate pricing information
- Enable fast and efficient customer service
- Keeping track of sales and taxes

Hospitality & Catering Part 6

Types of customer

Leisure	Local residents	Business / corporate
Customers who visit the establishments in their leisure time e.g. a meal with friends, a family day out, tourists,	Customers who live in the local area who visit the establishment often eg regular Sunday lunch, or get togethers	e.g. business lunches. Use business facilities in establishment for meetings or presentations . Courses and conferences

Leisure customers requirements

- Value for money
- Good facilities
- Families want child menus, play area, child friendly
- Tourists want local food, easy to communicate
- Older people may want more formal service
- Good customer service
- Varied choice of menu
- Dietary needs eg allergies, intolerances, vegetarian catered for without having to ask for special foods
- Facilities for physically impaired customers

Local customers requirements

- Value for money
- good standard of customer service so they return
- Catering for local needs (culture, religion)
- Consistent dishes served
- Loyalty schemes
- Recognised by staff- feel welcome
- Menu specials
- Theme nights
- OAP discount day
- Child friendly
- Entertainment
- Mailing list or email for special offers

Business customers requirements

- Dedicated corporate (business) contact at establishment
- Discounted rates
- Meeting rooms
- Water, juice on tables
- Presentation equipment, projector, tv,
- Office facilities- printer, phone, fax, internet, stationery
- Tea and coffee for breaks
- Lunch or other meals- buffet or restaurant
- Accommodation if attendees are from a long distance
- Quick service for lunch meetings

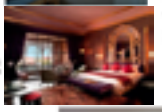
What is good customer service?

Types of Bedroom Accommodation

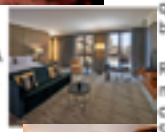
Youth hostel (YHA)
Accommodation is usually in comfortable bunk bedded rooms, sharing with people of the same sex.

Showers and toilets are shared. Bed linen, pillows, duvet and blankets are provided free of charge for you to make up your bed.

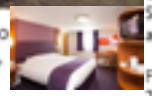
A full meal service is usually provided. Some locations also have self-catering kitchens. Most locations will have a sitting area, drying room and cycle store.

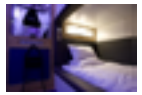


Hotel deluxe suite (Hilton)
Stylish suite with separate living room and large bathroom with free soap, shampoos and creams. A toweling bath robe and slippers are also provided.



Desk with high-speed Internet connection. Also provided: Safe, iron, ironing board, clock, radio and radio alarm, hair-dryer, sofa bed, trouser press, TV with teletext, satellite channels and on-demand films, tea- and coffee-making facilities, bottled water and biscuits.





Cabin room at airports (Yotel)
Book from just a few hours, day or night, to 24 hours or more. Large single bed 2m x 1m (large enough for one or two people at a push) with full sitting height.
Bathroom with shower, revitalising all-in-one body wash, heated mirror and soft towels.
Fold-out work desk and stool (doubles for unpacking), overhead hand-luggage stowage, suit-bag hanging and storage areas for small pieces.
Complete range of power and connectivity including free Internet access and local lighting.
20-inch flat-screen TV with choice of films, radio, games and Internet. 'Cabin'-service menu on screen, and 24-hour 'galley' café service.

Boutique hotel
Designed with a sophisticated and modern slant on the Moroccan theme. Funky leather bed and "bellydancing" ornate bottles. Luxury room featuring a chameleon-floor seating area in the bay window.

New luxury Italian tiled en-suite shower and toilet, CD player (with shower-room speakers), flat screen TV with Free view, fridge, hair-dryer and hot beverage facility.

Motel (Premier/Travel Inn)
Comfortable king-sized beds. Good quality duvets and pillows. En-suite bathrooms with shower gel.

Remote control TVs. Tea- and coffee-making facilities. Hairdryers. Heater control.
Spacious desk area with Internet access.

Family rooms, with cots on request. 24-hour reception. Restaurant and licensed bar nearby. Hot breakfast available.

If you provide any sort of accommodation, serviced or self-catering, the Equality Act 2010 applies to you.

Equality Act 2010

- The Act protects anyone who is disabled, is thought to be disabled or is associated with someone who is disabled.
- The Act gives these people rights of access to goods, facilities and services (including tourist accommodation) and ensures that they are treated no less favourably than other customers.
- You are also required to make reasonable adjustments to the way you deliver your services and to the physical features of your premises to make it easier for disabled guests to use them.

Why is customer service so important in the hospitality industry?

Customer service is what an establishment does in order to meet the **expectations** of their customers and generate customer satisfaction.

- **So customers return.** - People will not return to a place where they were not satisfied with the service. Repeat business means a successful business.
- **Exceeding expectations**-This makes repeat business more likely
- **Growth of the business-** If customers receive a high standard of service and return, they will spend more money and also tell other people about the business

Instruction	Guidelines	Sign
Stop	Prohibition Sign • Round shape. • Black pictogram. • White background. • Red edging.	
Danger	Warning Sign • Triangular shape. • Black pictogram. • Yellow background. • Black edging.	

Obey	Mandatory Sign • Round shape. • White pictogram. • Blue background.	
Safety	Emergency Escape or First Aid Sign	
Fire	Fire Fighting Sign. • Rectangular or square. • White picture. • Red background.	

Risk and Security

Workers can be at risk from security hazards in the same way they are from safety hazards.
Security risks include

- Disagreements between customers
- Customers being intoxicated (alcohol)
- Customers who have used drugs
- Verbal abuse
- Physical assaults

Risk factors

- Handling large amounts of money in open areas
- Face to face contact with customers
- Opening late in the evening or early in the morning
- Dealing with customer complaints or disputes
- Selling high value items such as alcohol
- Establishment in an isolated area eg country pub
- Poor lighting
- Establishment in a high crime area

Staff (and customers) may feel threatened by physical assaults, threats and intimidation and verbal abuse
People at risk includes

- Young workers who have less experience
- Night shift workers where there are less people
- Lone workers e.g. people working early or late
- Customers in the establishment

Prevention

- Brightly lit areas
- CCTV
- Easy escape routes
- Area for handling larger sums of money
- Appoint more senior staff to deal with problems and complaints
- Train staff to diffuse angry customers
- Contact local police if necessary
- Make sure lone workers are aware of risks
- Keeping doors and windows secure and locked

Hospitality & Catering Part 7

LO3 Understand how hospitality and catering provision meets health and safety requirements

The Health and Safety at Work Act (HASAWA) 1974, regulates health and safety issues.

The act aims to:

- secure the health, safety and welfare of persons at work
- protect other people from health and safety risks caused by work activities
- control the use and storage of explosive and dangerous substances.

Under the Health and Safety at Work Act, employers have responsibilities to:

1. ensure the health, safety and welfare of employees
2. provide and maintain safe equipment and systems of work
3. make arrangements for safe use, handling, storage and transport of articles and substances
4. provide information, instruction, training and supervision
5. provide a safe place of work, safe entrance, exit, and work environment
6. provide adequate toilet, washing and changing facilities.

Under the Health and Safety at Work Act, employees have responsibilities to:

1. follow safety instructions and training received
2. co-operate with their employer
3. not to misuse or tamper with anything provided in the interests of health and safety
4. take reasonable care of their own and other people's health and safety
5. tell someone if you think the work or inadequate precautions are putting anyone's health and safety at serious risk.

PPER - Personal Protective Equipment

Employers have duties concerning the provision and use of personal protective equipment (PPE) at work.

PPE is equipment that will protect the user against health or safety risks at work. It can include items such as safety helmets, gloves, eye protection, high-visibility clothing, safety footwear and safety harnesses. It also includes respiratory protective equipment (RPE).

These prevent injuries to:

- the lungs, eg from breathing in contaminated air
- the head and feet, eg from falling materials
- the eyes, eg from flying particles or splashes of corrosive liquids
- the skin, eg from contact with corrosive materials
- the body, eg from extremes of heat or cold
- PPE is needed in these cases to reduce the risk.

RIDDOR - Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013.

What to report?

- Deaths and injuries
- Occupational Diseases
- Carcinogens, mutagens and biological agents
- Specified Injuries to Workers
- Dangerous Occurrences
- Gas Incidents

HSE Health & Safety Executive

Who should report it?

If you are an employer
If you are an employer, you must report any work-related deaths, and certain work-related injuries, cases of disease, and near misses involving your employees wherever they are working.

If you are in control of premises
If you are in control of premises, you must report any work-related deaths, certain injuries to members of the public and self-employed people on your premises, and dangerous occurrences (some near miss incidents) that occur on your premises.

Agency Workers/Casual Staff
Agencies should ensure that responsibility for reporting under RIDDOR is clearly assigned to the appropriate person based on the particular facts of the employment relationship. Agencies should ensure that reporting responsibilities are clearly understood by host businesses and the workers.

Accidents are reported to the **HSE** Health and Safety Executive

Record other accidents resulting in injuries where a worker is absent from work or is incapacitated for more than 3 days.

H.S.E Health and Safety Executive.

- H.S.E stands for the **Health and Safety Executive.**
- The H.S.E will investigate any complaints and safety incidents.
- The H.S.E employ Health and Safety Enforcement Officers who will inspect safety procedures being used.
- They have the power to serve notice and/or issue legal proceedings over safety incidents.
- It is compulsory to contact the H.S.E if an operative has an absence of more than three days following an accident at work.

First Aid

- Employers have to provide first aid facilities at work
- As a minimum, there should be a fully stocked green first aid box and a person appointed to take charge in an emergency
- Some workplaces have qualified first aiders and first aid rooms
- Green and white notices should inform you where the first aid box is kept and who the first aider(s) or appointed person(s) is/are

Fire safety

- Employers must have arrangements in place
  - to prevent fires
  - To raise the alarm
  - To fight fires (fire extinguishers)
  - Emergency evacuation (including a pre-arranged meeting place for staff to assemble following evacuation)
- Notices showing the safe evacuation routes from buildings should be green and white

COSHH - Control of Substances Hazardous to Health Regulations 2002

COSHH covers substances that are hazardous to health.
Substances can take many forms and include:

- chemicals
- products containing chemicals
- fumes
- dusts
- vapours
- mists
- nanotechnology
- gases and asphyxiating gases and biological agents (germs). If the packaging has any of the hazard symbols then it is classed as a hazardous substance.
- germs that cause diseases such as leptospirosis or legionnaires disease and germs used in laboratories.

Employers must display health and safety posters in work areas where necessary, especially related to COSHH.

Every substance that is a hazard has a COSHH safety sheet

Employees responsibilities under COSHH

1. Use control measures and facilities provided by the employer
2. Ensure equipment is returned and stored properly
3. Report defects in control measures
4. Wear and store personal protective equipment (PPE)
5. Removing PPE that could cause contamination before eating or drinking
6. Proper use of washing, showering facilities when required
7. Maintaining a high level of personal hygiene
8. Complying with any information, instruction or training that is provided

PPE in catering situations

- You **must** wear the p.p.e. if it has been provided for you. You could be held personally liable if you had an accident which could have been prevented by you wearing your p.p.e.
- You must care for it, store it and clean it as necessary;
- You must report any defects.

What Is Manual Handling?

- Any transporting or supporting of a load by hand or bodily force
- Lifting, putting down, pushing, pulling, carrying or moving

The top 4 injury types in Hospitality and catering

- Cuts
- Burns
- Sprains & strains
- Slips, trips and falls

How Can Cuts Be Prevented?

- To prevent knife cuts:

Cut properly, using the bridge and claw grips


incorrect


correct

- Carry knives with point down and backwards
- Wear gloves that protect your hands from cuts.

- To prevent machine cuts:
  - Be sure moving parts are covered by guards.
  - Turn off power and unplug to clean.
  - Keep your hands, face and hair away from moving parts.


Meat Slicer

Teens under the age of 16 are prohibited from operating food slicers.

- Not wearing clothing or jewelry that could get caught in machines.

- Not using equipment that you have not been trained to use.

How Can Strains Be Prevented?

- Ask for help with heavy loads.
- Ask for training in safe lifting methods.
- Push loads rather than pull them.

- Don't lift and then twist.
- Don't lean out drive-through windows.

How Can Slips, Trips & Falls be Prevented?

To prevent trips, slips and falls:

- Make sure your path is clear, clean and dry before carrying a load.

- Move boxes and carts out of the way.
- Watch for mop and broom handles

- Use non-slip floor pads.


Slip-resistant shoes

Customer safety

- Warning signs when cleaning is taking place
- Do not allow customers in areas where maintenance work is happening
- Signs "mind your head" "watch the step" "hot water"

- Use ladders correctly

- Don't lean out
- Move it closer
- Have a helper

Causes of fires

- **Equipment** that is not serviced regularly can cause over heating and cause fires.
- **Human Error** many fires that happen in catering. Such as fat fryers.
- **Electrical** smouldering wires can develop unseen overnight and be the cause of major incidents,
- **Arson** rare occurrence. grudge between employee and employer, or insurance fraud.
- **Chemical** not very common now due to the COSHH regulations.

Action on Discovering a Fire.

- Raise the alarm. *Break the glass of the nearest alarm point.*
- Call the fire services.

- If safe to do so tackle the fire, if in doubt get out.
- Leave the building via the nearest exit calmly. DO NOT run or use lifts.
- Evacuate the premises and report to your designated assembly point.

How Can Burns Be Prevented?

- To prevent other oil and grease burns:
  - Watch out for spatters and spills.
  - Use protective apron and mitt.
  - Clean up spills as soon as they happen.


Protective Mitt

- To prevent burns from open flames:
  - Keep hair and clothes away from flames.
  - Keep flammable materials away from flames.

To prevent steam burns:

- Watch out for steam cloud when you open dishwasher, steam table or other places where steam occurs.
- Wear protective gloves whenever you open something filled with steam.

Hospitality & Catering Part 9

BACTERIA

Bacteria are microscopic organisms which are commonly referred to as **'GERMS'**. They found everywhere including on and in people, on food, in water, soil and air. Some are **good** for us, and some are **bad!**

LO4 Know how food can cause ill health

MICROBES (or BACTERIA) are found in:

- Soil and Water
- Plant and Plant Products
- Air and Dust
- Animal Fur
- Gut of animals and humans
- Food handlers
- Food prep and serving utensils

Metals like lead and mercury stay in our body for a long time and make us ill. Foods may taste or smell funny.

Mercury is a naturally occurring element found in air, water and soil. A highly toxic form (methylmercury) builds up in **fish, shellfish** and animals that eat **fish**. Fish and **shellfish** are the main sources of methylmercury exposure to humans. Fish that typically have higher levels of mercury include **king mackerel, marlin, shark, swordfish, tilefish**, and tuna.

Many of these types of fish are used in sushi.

SIGNS AND SYMPTOMS

- Impairment of peripheral vision
- Disturbances in sensations 'pins and needles'
- Lack of coordination
- Impairment of speech, hearing, walking
- Muscle weakness

AT RISK GROUPS

COMMON CAUSES OF FOOD SPOILAGE

- Inadequate temperature storage
- Prolonged storage times
- Inadequate ventilation
- Cross contamination
- Delays between delivery and storage
- Delays between preparation and cooking

WHAT FOOD SPOILAGE LOOKS LIKE

Intolerance	Allergy	Poisoning
Hours to days to see effect	Can occur within minutes of exposure to food	From 30 min for toxins 12-48 hours bacterial
Digestive system cant process the food	Immune response to allergen	Bacteria poison or disrupt digestive system
Possible to eat a small amount without effect	Body reacts to tiny amounts of food	Toxins- few bacteria Large amounts colonise gut
Stop eating the food and it goes away	May need adrenaline or anti histamines	Runs its course of illness then ends
Easier to detect the food	Allergens may be small amount in ingredients	No smell, no taste, no sign
Symptoms if you eat a lot or frequently	Symptoms every time even tiny amounts	Symptoms if the food is contaminated
Moderate to serious illness	Can be fatal	Serious illness to fatal

Food intolerance

Mouth ,may be sore, bad breath

Skin rash, redness, itching swelling eczema

Gut abdominal pain, bloating, heartburn, cramping, vomiting, diarrhoea or constipation

Lungs chronic cough, wheezing

Head headache, brain fogginess, migraines

Perception irritable, moody, panic, depression

MOULDS

- Tiny fungi which grow from spores found in the air
- Settle on food products and multiply
- When visible, food is described as 'mouldy'
- Causes food spoilage

CHEMICALS

- Remnants of cleaning chemicals
- Pesticides
- Insecticides
- Paint (wall surfaces)

PARASITES

Parasites are organisms that derive nourishment and protection from other living organisms known as hosts. The most common foodborne parasites are protozoa, roundworms, and tapeworms.

Causes food poisoning when humans ingest undercooked meat products in which the parasite has often survived.

PHYSICAL

Physical Contaminants Include:

- Hair
- Finger nails
- Broken utensils
- Pests

POISONOUS PLANTS

Some plants naturally produce poisonous chemicals. If these are eaten they may cause death. Other foods may contain chemicals that give rise to allergies in some people.

Other poisonous plants: some fungi, rhubarb leaves, parts of potatoes which are exposed to the sun while growing.

PESTICIDES AND HERBICIDES

Some of the chemicals used in farming may remain on or in the food we eat. These may cause us harm.

Farmers spray pesticides on crops to kill the insects that may reduce crop yield. They also spray herbicides to kill weeds that may compete with the crops. Some of these chemicals may remain on the surface of, for example, fruit. Others may be absorbed by the plant and therefore be present in the crop.

The European Union has strict laws that determine how much of these chemical residues are permitted in foods.

If you suspect someone of going into anaphylaxis you must:

- Call an ambulance
- Check for the casualty's Epi-Pen and help them use it. You may have to do this for them, all pens have instructions on the side.
- Lie the casualty down with their legs elevated to treat for shock
- Stay with the casualty and reassure them while you wait for the ambulance

ALLERGENS

Some people may develop an allergy to peanuts or to the gluten in wheat. If they eat foods containing these, they may become very ill, and possibly die.

The 8 most common food allergies include:

- Cow's milk
- Eggs
- Tree Nuts
- Peanuts
- Shellfish
- Wheat
- Soy
- Fish

Symptoms can occur anywhere from a few minutes after exposure to a few hours later, and they may include some of the following:

- Swelling of the tongue, mouth or face
- Difficulty breathing
- Low blood pressure
- Vomiting
- Diarrhea
- Hives
- Itchy rash

COW'S MILK

Milk, Milk powder, Cheese, Butter, Margarine, Yogurt, Cream, Ice cream

TREE NUTS

Brazil nuts
Almonds
Cashews
Macadamia nuts
Pistachios
Pine nuts
Walnuts

SHELLFISH

Shrimp, Prawns, Crayfish, Lobster, Squid, Scallops

In more severe cases, a food allergy can cause anaphylaxis. Symptoms, which can come on very quickly, include an itchy rash, swelling of the throat or tongue, shortness of breath and low blood pressure. Some cases can be fatal.

Hospitality & Catering Part 10

INTOLERANCES: LACTOSE INTOLERANCE

What is the issue?

Can't digest lactose.

What are the problem ingredients?

Lactose can be found in dairy products.

What food products cannot be eaten by coeliac disease sufferers?

Milk, Milk powder, Cheese, Butter, Margarine, Yogurt, Cream, Ice cream

INTOLERANCES: COELIAC DISEASE/GLUTEN INTOLERANCE

What is the issue?

Can't digest gluten.

What are the problem ingredients?

Gluten can be found in wheat and other grains.

What food products cannot be eaten by coeliac disease sufferers?

Flours, Pasta, Bread, Cereal, Certain alcoholic drinks

What is an Environmental Health Officer?

EHOs are personnel qualified in Environmental Health laws, enforcement and inspection methods. They have a 3 year degree in Environmental Health

Many organisations employ EHOs including

- Local councils
- Private companies
- NHS
- Military
- Food Standards agency

EHO roles in the Hospitality and Catering industry

Legislation enforced by EHOs

The Food Safety Act.
Food safety from the manufacturer or producer to the point of sale. Might involve different companies or premises e.g. suppliers, manufacturers or kitchens, shops or restaurants.

The Food Safety Act (General Food Hygiene) Regulations.
Ensures food producers **HANDLE** all food hygienically.

Legislation enforced by EHOs

The Food Safety Act (Temperature Control) Regulations.
Temperatures at which to store or hold food.
- Freezers from –18°C
- Chillers from 3°C to 8°C
- Fridges from 0°C to 5°C
- Cooked core temperature at 75°C or above
- Hot holding above 63°C

The Food Composition Regulations.
Specifies what ingredients **CAN** or **CANNOT** be used in the manufacture of foods e.g. bread, breakfast cereals and use of additives

Inspecting businesses for food safety standards

- Powers of entry at any reasonable time
- Inspect food and premises
- Power to seize and detain food
- Serve notices
- Power to close
- Prosecute

Why do we have Food Hygiene Regulations?

- We have food hygiene regulations to prevent outbreaks of food poisoning.
- Customers need to know that food is safe to eat.
- Food safety regulations are constantly changing and establishments should follow the latest guidelines.
- Food safety and hygiene regulations are enforced by Environmental Health Officers (EHO) who regularly check all food premises.

The Environmental Health Officer's (EHO) role is to inspect premises in order to ensure the food a establishment produces is safe to eat.

At the end of their visit, in England, Wales, and Northern Ireland, they will present the establishment with a score from the Food Hygiene Rating scheme of 0 - 5. The scheme is standardised across England and Wales to maintain a consistent assessment of safety standards. Any business should be able to achieve a "5 - very good" rating.

These regulations cover three main areas:

- Food premises
- Personal hygiene of staff
- Hygienic practices

Food premises must:

- Be well maintained.
- Be regularly cleaned.
- Have lockers for employees.
- Have hand-wash facilities provided.
- Have clean cloakroom and toilet facilities.
- Have first aid available.
- Have clean storage areas.
- Have temperature-control fridges and freezers.
- Have equipment that is clean and in good working order.
- Be free from pets, pests, etc.

Food handlers must:

- Have a **certificate/regular training in food safety.**
- Be dressed in **clean** 'whites' or other uniform.
- Have **hair tied back** (and ideally wear a hat or hair/beard net).
- Have **short, clean nails** - no nail varnish or jewellery.
- Be in **good health** (they cannot work with upset stomachs).
- Have **'good' habits**, e.g. no coughing or sneezing over food.
- **Wash their hands** after handling raw meat, after blowing nose, after going to the toilet, etc.
- Cuts should be covered with coloured waterproof plasters.

Examples of good hygiene practices include:

- Food deliveries should be checked thoroughly.
- Food should be labelled and stored correctly (in freezers, chillers, fridges and dry stores).
- Food should be 'rotated' (first in, first out).
- Care should be taken with temperature control in the kitchen (i.e. food kept out of the danger zone of 5°-63°C).
- Food should be prepared quickly and as close to cooking time as possible.
- Hot food should be maintained at above 63°C.
- The core temperature of cooked food needs to be at least 75°C.
- Chilled food should be stored below 5°C
- Washing up should be done in hot soapy water if there is no dishwasher available.
- Waste should be disposed of safely.

Hospitality & Catering Part 11

HACCP (2006)

What does it stand for?

Hazard
Analysis
Critical
Control
Points

What does it mean?

- Legal requirement
- Identify the most critical (dangerous in terms of bacteria) areas of their business to make sure they are under control

HACCP System

Food companies need to:

- Analyse the hazards to food safety
- Assess the level of risk from each hazard
- Decide the most critical points that require controls
- Implement appropriate controls
- Establish a monitoring system
- Set up procedures to correct problems (corrective action)
- Review the system when operations change

Hazard
Analysis

A hazard is something that has the potential to cause harm.....

Type of hazard	Example
Biological	Salmonella in chicken
Chemical	Contamination from cleaning materials e.g. bleach
Physical	Damaged packaging, glass found in food

Critical
Control
Points

A critical control point is a step which eliminates or reduces the hazard

Control is essential to reduce the risk of food poisoning.

If a caterer gets it wrong they could be breaking the law all stages from purchasing through to preparation and serving is controlled.

The Consumer Protection Act 1987

This protects the public by:

- prohibiting the manufacture and supply of unsafe goods
- making the manufacturer or seller of a defective product responsible for damage it causes
- allowing local councils to seize unsafe goods and suspend the sale of suspected unsafe goods
- prohibiting misleading price indications

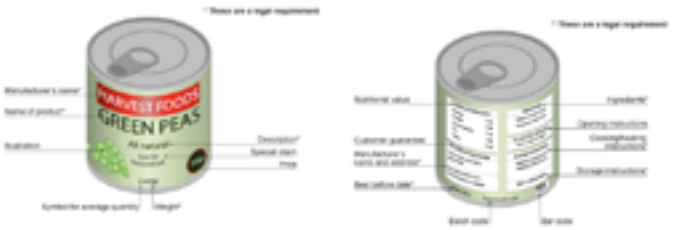
The Trade Descriptions Act 1968

The Trade Descriptions Act makes it an offence for a trader to make false or misleading statements about goods or services.

It carries criminal penalties and is enforced by Trading Standards Officers, making it an offence for a trader to:

- apply a false trade description to any goods
- supply or offer to supply any goods to which a false trade description has been applied
- make certain kinds of false statement about the provision of any services, facilities or accommodation

Food Labelling Regulations (1996)



Examples of CCP's (Critical Control Points) are:

- Inspection of goods on delivery
- Storage & handling of ingredients & finished product
- Temperature of fridges, freezers & ovens
- Cleaning procedures for equipment
- Cross-contamination
- Personal hygiene & health standards
- Proficiency of use and cleaning of equipment

Record Keeping

Legal requirement that certain records are kept as part of the HACCP-based food safety management system, eg:

- Fridge/freezer records
- Cooking/hot-holding temperatures
- Cleaning records
- Training records
- Pest control checks

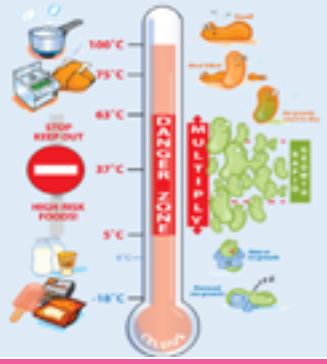
The Food Hygiene regulations 2006

- Applies to high-risk foods
- Cold foods- store below 8°C
- Hot foods – store above 63°C

During service :-

- Cold food max 4hrs at room temperature then discard or refrigerate
- Hot food maximum 2 hrs
- Buffet food 90mins at room temperature

Influence of temperature



Dead!.
Destroys most pathogens

Too hot (start to die 63°C)

Multiply rapidly

Spoilage slow growth, most pathogens no growth (<5°C)

Dormant (no growth – spoilage or pathogens).

Defence of Due Diligence

- The principal of defence under The Food Safety Act 1990
- A business must be able to demonstrate that it has done everything within its power to safeguard consumer health
- Accurate records are useful in proving this defence; these may include:
  - Temperature control records delivery/storage/cooking
  - Microbiological records
  - Hygiene training for staff
  - Use of HACCP system
  - Pest control records
  - Hygiene manuals, cleaning schedules
  - Hygiene policy

Food poisoning

Mouth increase in saliva

Head headache

Skin fever, shivering

Gut abdominal pain, nausea vomiting, diarrhoea

Circulation, low blood pressure, weak pulse, fatigue

The Food Safety Act 1990

Food businesses:

- Must ensure that the food served or sold is of the nature, substance or quality which consumers would expect, e.g. :
  - Nature - pollock rather than cod;
  - Substance - contains foreign material including glass or packaging;
  - Quality – mouldy bread or stale cake.
- Ensure that the food is labelled, advertised and presented in a way that is not false or misleading, e.g. photos on menus that do not look like the dishes served to customers.

Hospitality and Catering Businesses can be fined up to £20,000 or owners can face up to 2 years in prison for failing to comply with food laws.

1. Keep yourself clean.
2. Keep the workplace clean.
3. Wear suitable clothing.
4. Protect food from contamination.
5. Store, prepare & serve food at the correct temperature.
6. Inform a manager if you are ill.
7. Do not work with food if you have symptoms of food poisoning.

PREVENTION: Personal Hygiene

- Tie hair back
- Remove jewellery
- Roll up sleeves
- Wear an apron
- WASH HANDS THOROUGHLY

Hospitality & Catering Part 12

Campylobacter

Found in: raw meat and poultry

Contract Me!

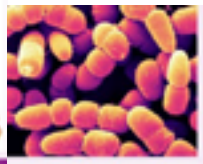
Symptoms: Can last for 10 days

Fever
Headache
Abdominal pain
Diarrhoea

Illness caused by small numbers.

Most common form!

Friend suggestions:
Salmonella
E-coli
Clostridium Perfringens
Listeria
Bacillus Cereus
Staphylococcus Aureus



Clostridium Perfringens

Found in: animal poo, soil, manure, sewage, raw meat, and poultry

Contract Me!

Symptoms: Can last for 3 weeks!

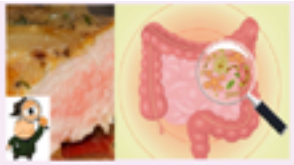
Can take 8-18hrs for symptoms to show:
Nausea
Abdominal pain
Diarrhoea
Can be fatal!

Produces spores which may not be killed by cooking!

Friend suggestions:
Campylobacter
Listeria
Bacillus Cereus
Staphylococcus Aureus
Salmonella
E-coli

E-coli

Found in: the gut of animals and humans



Can survive refrigeration and freezing

Illness caused by small numbers.

E Coli 0157 found in raw and undercooked meats and raw vegetables

Symptoms:

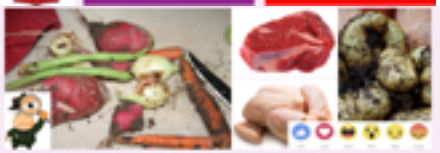
Can take up to 5 days for symptoms to show:
Diarrhoea
Can be fatal!

Friend suggestions:
Campylobacter
Clostridium Perfringens
Listeria
Bacillus Cereus
Staphylococcus Aureus
Salmonella

Salmonella

Found in: raw meat, poultry and unwashed vegetables

Contract Me!



Symptoms: Can last for 3 weeks!

Can take 48hrs for symptoms to show:
Fever
Vomiting
Abdominal pain
Diarrhoea
Can be fatal!

2nd most common form of food poisoning!

Caused by large numbers

Friend suggestions:
Campylobacter
E-coli
Clostridium Perfringens
Listeria
Bacillus Cereus
Staphylococcus Aureus

High Risk Foods

- Foods high in protein
- Foods high in moisture
- Stocks, sauces, gravies and soups
- Eggs
- Meat, poultry and other meat products
- Milk and dairy products
- Fish and Shellfish
- Cooked rice
- Foods which are handled and those which are reheated
- However, preserved foods, or those with high concentrations of vinegar, salt or sugar, are low-risk.

Listeria

Found in: soil, vegetation, meat, poultry, soft cheese and salad vegetables

Contract Me!

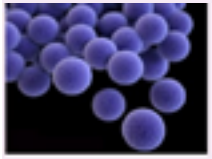
Symptoms: Can last for 3 weeks!

Can range from:
Flu like symptoms
Meningitis
- Pregnant women
- Elderly
- Very Young

at greater risk!

Can grow at low temperatures

Friend suggestions:
Campylobacter
E-coli
Clostridium Perfringens
Salmonella
Bacillus Cereus
Staphylococcus Aureus



Staphylococcus Aureus

Found in: on the skin, cuts and boils and up the nose!

Contract Me!

Symptoms: Onset within 6hrs

Two types:
Severe vomiting
Diarrhoea
Abdominal pain
Can last 6 days!

Transferred to food from hands, nose or mouth

Survives refrigeration

Caused by large numbers

Produces a toxin which may survive cooking

Friend suggestions:
Campylobacter
E-coli
Clostridium Perfringens
Salmonella
Listeria
Bacillus Cereus

INFECTIVE POISONING
Result of eating contaminated food with bacteria itself;
Examples: Salmonella, Listeria

TOXIC POISONING
Some bacteria produce toxins, these toxins cannot be destroyed with cooking. Examples: Staphylococcus Aureus, Clostridium Perfringens

Bacillus Cereus

Found in: soil and dust

Contract Me!

Frequently found in: rice dishes

Symptoms: Usually lasts less than 24hrs

Two types:
After 1-5hrs
Vomiting
After 8-18hrs
Diarrhoea and Abdominal pain

Forms spores that are resistant to heat

Illness can be caused by a small number of bacteria

Friend suggestions:
Campylobacter
E-coli
Clostridium Perfringens
Salmonella
Listeria
Staphylococcus Aureus

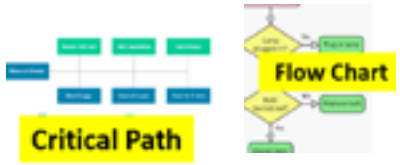
Yr10 Cambridge National LO1

Key Words	
Workflow	What task is dependent on another
Contingency	Time in a project plan that has no tasks assigned. Making sure the project still meets the final deadline.
Milestone	A point in time when a task is expected to be started, completed or checked.
Interaction	How the phases link together.
Iteration	The repeating of a phase.
Data dictionary	A description of the structure, contents and format of a spreadsheet or database. The relationships within the database can be included.
Asset log	A list of all the resources used in a project
Iterative process	A process of repeatedly carrying out a process
Concurrent: Tasks	Tasks that can be completed at the same time
Dependency	A task that cannot be started until a previous task has been completed.
Feasibility report:	Created during the initiation stage and considers each of the questions and constraints. Success criteria and objectives are also defined.

Advantages of the Project Life Cycle

It provides a structured approach.
It shows clearly defined tasks to be carried out in each phase.
The inputs and outputs of each phase are defined
The roles and responsibilities of each project team member are defined.
Resources are allocated at the start of the project.
The project progress can be monitored to make sure the final product is delivered to the client on time.

Constraints:
Time
Resources
Regulations
Security/Risk management
Mitigation of Risks



Phase	Input	Output
Initiation	User requirements User constraints	Feasibility report Legislation implications Phase review
Planning	Feasibility report Legislation implications	Project plan Test plan Constraints list Phase review
Execution	Project plan Test plan Constraints list	Deliverable product Test results Phase review
Evaluation	Deliverable product Test results	Release of deliverable product User documentation Final review report

Planning Tools

Gantt Chart Components: Dates/days along the top. Tasks down the left side. Milestones. Dependent tasks. Concurrent tasks.

PERT chart Components: Nodes/sub-nodes. Time. Dependent tasks. Concurrent tasks. Critical path.

Visualisation diagram Components: Multiple images. Position and style of text. Font. Annotations. Colours/themes.

Flow Chart Components: Start point. End point. Decisions. Processes. Connection lines. Direction arrow.

Mindmap Components: Nodes. Sub-Nodes. Branches/connecting lines. Key words. Colours. Images.

Task list Components: Tasks. Sub-tasks. Start date. End date. Duration. Resources.

Time

- Is there enough time to reasonably develop the product?
- Is there extra time available if problems are found?

Security

- What data needs to be protected?
- Who needs access to the data?
- Do different groups needs to be able to do different things?

Resources

- What hardware is needed?
- Do you have access to them?
- Can you use them?
- What software is needed?
- Do you have access to them?
- Can you use them?

Regulations

- What laws do you need to think about?

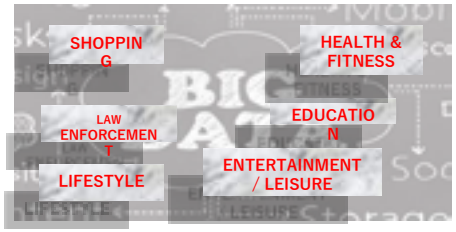
Ethical and moral

- What data do you need?
- Who should not see it?
- What should not happen with the data?

Mitigating Risk

ICT Cambridge National LO3

Cambridge National LO3



Key Words	
Bias	Considering only one point of view.
Closed question	A question with only a set of number of questions.
Open question	Allows the person completing the questionnaire to give a detailed answer in their own words.
Data subject	The person the data is being stored about.
Data types	A specific kind of data item that is defined by the values that can be stored using it.
Information	Processed data that has a meaning and is in context.
Interviewee	The person answering the questions.
Interviewer	The person asking the questions.
Record	A collection of data about a single item. Each record must be unique.
Personal data	Information held about an individual.
Primary research method	When the data and information collected is fresh data collected for a specific purpose.
Secondary research methods	Methods that use data and information that has already been collected
Validation:	Can include length checks, presence checks, format checks, range checks and input masks.
Validity:	How believable the data and information collected is.

Methods used to collect data

1. Questionnaire
2. Email
3. Sensors
4. Interviews
5. Consumer panels
6. Loyalty schemes
7. Statistical reports

Data Collection Tools

Barcode Reader
QR Codes
Web Based
Surveys
Wearable Technology
Mobile Technologies

Data	Raw facts collected for a purpose
Information	Data in Context - making sense of the data.

Data must be processed to become information.
Information = data + [structure] + [context] + [meaning]

What is cloud storage?

Online devices to …
…place, keep and retrieve electronic data

What is physical storage?

Physical solid devices to …
…place, keep and retrieve electronic data

Data Types	
Text	Any character
Alphanumeric	Any combination of letters, symbols, spaces and numbers
Integer	Whole numbers
Real	Any number with or without a decimal place
Currency	Numbers in the form of money, sometimes with 2 decimal places and a currency symbol
Percentage	A number that includes decimal places and a % symbol
Fraction	A number which allows fractions to be input and manipulated
Decimal	A number which includes a decimal point.
Date/time	Different formats of the way he date and time can be displayed.
Limited choice	Restricts the choice by a user and used to gather information reducing data errors on input. (e.g. drop down lists, radio buttons, tick list)
Object	An additional component. It can consist of a chart graph or image.
Logical/Boolean	There are only 2 choices Yes/No True/False

Storage Methods

The Cloud - Hard Disk Drive - Solid State Drive - Optical Drive - Flash Memory

ICT Cambridge National LO4

Yr10 Cambridge National LO4

Vulnerabilities which can be exploited in a cybersecurity attack:
Environmental - natural disasters
Physical - theft of identity, theft of property
System - insecure software applications, weak passwords, insecure modems

Prevention Measures	
Physical:	Biometric access device Emerging measures
Logical:	Access rights and permissions including authentication, usernames and passwords - anti-virus software - encryption - secure backups of data.
Secure destruction of data:	Over writing - magnetic wipe - physical destruction

Malware		
Malware Type	**Why/how it's used**	**How to mitigate**
Adware	Generates revenue for its author: this is any software that shows adverts such as pop-ups.	Install, run and update a security software package. Do not run software/click links from unknown sources.
Bot	Takes control of a computer system: this is a type of malware that works without a user's knowledge. It can result in a 'botnet', which is a network of infected computer systems.	
Bug	Connected to flaws in software; usually the result of human error during coding of the software.	Check for and install any patches that are released from software vendors.
Ransomware	Holds data on a computer system to ransom; usually encrypts files and displays a message to the user. It spreads like a worm.	Install, run and update a security software package. Do not run software/click links from unknown sources.
Rootkit	Designed to remotely access a computer system; allows a remote cyber attacker access to steal/modify data and/or configuration on a computer system.	Difficult to detect as they are not usually detected by security software; regular software update, keeping security software up to date and not downloading suspicious files are the only ways to trying to avoid a rootkit being installed.
Spyware	Collected data from infected computers; usually hidden from the user and installed without the user's knowledge.	
Trojan horse	Standalone malicious program designed to give full control of a PC to another PC; can be hidden in valid programs.	Install, run and update a security software package. Do not run software/click links from unknown sources.
Virus	Attempts to make a computer system unreliable; replicates itself from computer to computer.	
Worm	Standalone program that replicates itself to other computers; almost always cause harm to networks even if only by using bandwidth.	

Current relevant IT legislation:

GDPR 2018	Aims to protect the rights of the owners of data – the data subjects. It does not protect the data itself.
Copyright, Design and Patents Act 1998	Makes it illegal to copy a work without permission from the owner or copyright holder. It is also illegal to make unauthorised copies of software.
Computer Misuse Act 1990	Aims to protect data and information that is held on computer systems.
Health and Safety at Work Act 1974	Provides guidance to employers and employees when working with computer systems. The act also defines actions that an employer should take to protect employees who work with computers in their job.
Freedom of Information Act 2000	Provides public access to information held by public authorities.

Security/risk Management

Logical protection methods include:
- Firewalls
- Encryption
- Access rights
- Usernames and passwords

Physical protection methods include:
- Locking rooms that computer equipment is located in.
- Bolting computers to desks.
- Using device locks.
- Using and closing blinds at windows.

LO4: Understand the factors to be considered when collecting and processing data and storing data/information

RFID: Radio Frequency Identification Tags can use radio frequency to transfer data from the tags to a computer system, for example to allow access to a room.

Access rights: Control over who has access to a computer system, folder, files, data and/or information.

Permissions: A set of attributes that determine what a user can do with files and folders, for example to read, write, edit or delete.

Encryption software: Software that is used to encrypt a file or data.

Encryption code/key: A set of characters, phrase or numbers that is used when encrypting or decrypting data or a file.

The impacts of a cyber-security attack
Denial of service (DoS) to authorised others
Identify theft
Data destruction
Data manipulation
Data modification
Data theft
Consequences of a cyber-security attack
Loss: financial - data - reputation
Disruption: Operational - financial - commercial
Safety: individuals - equipment -finance

ICT Cambridge National LO6

Yr10 Cambridge National LO6

LO6: Understand the different methods of processing data and presenting information

Distribution channel: The methods that can be used to share information by individuals

- Email
- Social Media
- Websites
- Intranet – private network
- Internet
- VoIP – enables voice calls to be made over the internet
- Multimedia – text, sound, video and graphics
- Cloud
- Mobile apps
- Integrated document – document containing components from other documents
- End user documentation – User guide

DISTRIBUTION CHANNELS

EXAMPLES OF ...

Messaging services	Websites	VOIP	Cloud Based
Email Social Media	Websites	Skype Podcasts Lync	Google Drive Office 365

Multimedia	Mobile Apps
YouTube & Web Conference	Fitness app: e.g. Couch to 5k ☺

TARGET AUDIENCE	CONTENT LIMITATIONS	AVAILABILITY OF INFORMATION	IMPACT OF DISTRIBUTION
Gender Age Ethnicity Income Location Accessibility	A database is not suitable for presenting to an audience	Real- Time Location Delay effects	Grabbing the attention of the audience

Spreadsheet software

PROS
Stores and processes text and numerical data
Can create charts from processed data
Can carry out calculations

CONS
Data entry takes time
Easy to make errors in formulas
Needs experience to use effectively

Word Processing software

PROS
Easy to enter Text
Excellent for reports
Excellent for mail merge
CONS
Costly to buy
Takes time to learn mail merge
Limited to word processing

Presentation software

PROS
Easy to manipulate text & images
Excellent for slides

CONS
Costly to buy
Takes time to learn

Desk top Publishing software

PROS
Easy to manipulate text & images
Excellent for marketing

CONS
Costly to buy
Takes time to learn

Database software

PROS
Fewer data entry errors
More accurate data
Independence from applications programs

CONS
Skills are required to set up a database
Multiple tables can take time to set up
Lots of training required for all users

Key Words	
Table	Contains data about 'things'. EG A customer's table.
Validation	Can include length checks, presence checks, format checks, range checks and input masks.
Validity	How believable the data and information collected is.
vlog	A video blog.
VoIP	Voice over Internet Protocol is a system that enables voice calls to be made over the internet.
Workbook	A collection of worksheets.
Worksheet	One spreadsheet contained within a workbook.
Integrated document	A document featuring components from other documents.
Distribution channel	The methods that can be used by an individual or businesses to share information.
Blog	A regularly updated website that is usually run by one person.

PRESENTATION METHODS

Reports	**Tables**
Presentations	**Integrated Documents**
Graphs/ Charts	**User End Documents**

Maths F - Fractions & Percentages

UNIT 1 Foundation FRACTIONS & PERCENTAGES

CONVERT IMPROPER FRACTIONS & MIXED NUMBERS v139, 140

$3\frac{2}{5}$

A mixed number is a number consisting of an integer and a proper fraction.

Improper fractions are greater than a whole

$\frac{19}{5} = 3\frac{4}{5}$

How to make a mixed number MAD

whole number — $4\frac{3}{5}$ — numerator, denominator

Multiply denominator by whole number

5 x 4 = 20

Add product to the numerator

20 + 3 = 23

Divide by denominator

23 ÷ 5 or $\frac{23}{5}$

How to make a mixed number

Convert $\frac{20}{3}$ to a mixed number

Divide the numerator by the denominator

20 ÷ 3 = 6 plus 2 remainder

$\frac{20}{3} = 6\frac{2}{3}$

6 becomes the whole number
2 is the numerator of the fraction as shown
3 is the denominator

ADD & SUBTRACT MIXED NUMBER v132, 133

$3\frac{2}{5} + 1\frac{4}{7}$

All we have to do is change these to improper fractions... Then we can add them!

$3\frac{2}{5} + 1\frac{4}{7} = \frac{17}{5} + \frac{11}{7}$ (change to improper fractions)

$= \frac{17\times7}{5\times7} + \frac{11\times5}{7\times5} = \frac{119}{35} + \frac{55}{35}$ (change to the LCD of 35)

$= \frac{119+55}{35} = \frac{174}{35}$

$3\frac{2}{5} - 1\frac{4}{7}$

$3\frac{2}{5} - 1\frac{4}{7} = \frac{17}{5} - \frac{11}{7}$ (change to improper fractions)

$= \frac{17\times7}{5\times7} - \frac{11\times5}{7\times5} = \frac{119}{35} - \frac{55}{35}$ (change to the LCD of 35)

$= \frac{119-55}{35} = \frac{64}{35}$

MULTIPLY & DIVIDE FRACTIONS v134,142

$2\frac{3}{5} \times 3\frac{1}{7}$

Again, let's change these into improper fractions and go for it!

$2\frac{3}{5} \times 3\frac{1}{7} = \frac{13}{5} \times \frac{22}{7} = \frac{286}{35} = 8\frac{6}{35}$

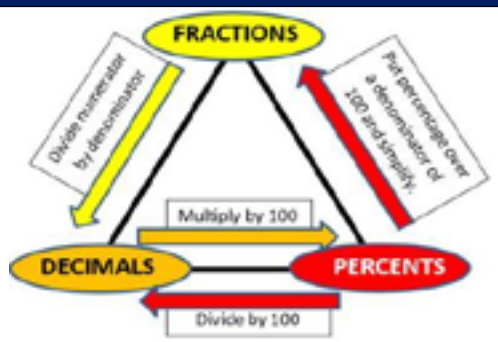
You use the same trick as you do when multiplying - you change everything to fractions and then go for it!
Check it out:

$\frac{1}{11} \div 3$

$\frac{1}{11} \div 3 = \frac{1}{11} \div \frac{3}{1} = \frac{1}{11} \times \frac{1}{3} = \frac{1\times1}{11\times3}$

$= \frac{1}{51} = \frac{1\div3}{51\div3} = \frac{3}{11}$

CONVERT FRACTION, DECIMAL, PERCENTAGE video



Percentage	Fraction	Decimal
100%	1	1
75%	3/4	0.75
66.66%	2/3	0.66
50%	1/2	0.50
33.33%	1/3	0.33
25%	1/4	0.25
20%	1/5	0.20
12.5%	1/8	0.125
10%	1/10	0.10
5%	1/20	0.05
2.5%	1/40	0.025

SIMPLE INTEREST video

Simple Interest = Investment x time x interest (as a decimal)

Example 3: Find the simple interest when £80 is invested for 12 years with interest rate 1.75%

Put the numbers into the formula: I = 80 x 1.75 x 12 ÷ 100

Work out the calculation: Interest = £16.80

COMPOUND INTEREST v236

number of years

new amount = original amount x (percentage)$^{\text{number of years}}$

multiplier

£2000 earning Compound Interest at 5% per year for 3 years

Original Amount = 100%
Compound Interest = 5%

100% + 5% = 105% = 1.05

£2000 x 1.05^3 = £2315.25

This is the total amount including interest:

£2315.25

PERCENTAGE PROFIT OR LOSS & VAT

Profit = selling price – cost/ buying price

Percentage profit = $\frac{\text{profit}}{\text{cost price}} \times 100\%$

Loss = cost/ buying price –selling price

Percentage loss = $\frac{\text{loss}}{\text{cost price}} \times 100\%$

How to calculate VAT @ 20%

- Calculating VAT using a normal calculator:

Please note: 20% = 0.2 and (examples are in red)

– Add VAT: Amount * 1.2 (£500 * 1.2 = £600)

– Takeaway VAT: Amount / 1.2 (£600 / 1.2 = £500)

REVERSE PERCENTAGE v240

Increase M by 12% and you get 100.8

New Value = 100.8
Multiplier = 100 + 12 = 112% → 1.12

New Value = Original Value x Multiplier
100.8 = M x 1.12
100.8 ÷ 1.12 = M
M = 90

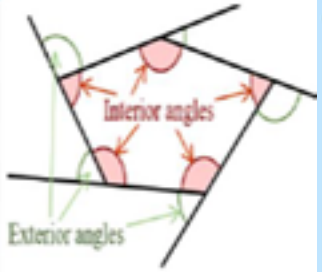
Decrease P by 45% and you get 44

New Value = 44
Multiplier = 100 - 45 = 55% → 0.55

New Value = Original Value x Multiplier
44 = P x 0.55
44 ÷ 0.55 = P
P = 80

Maths F - Angles

INTERIOR AND EXTERIOR ANGLES v325, 326



n =number of sides of the polygon

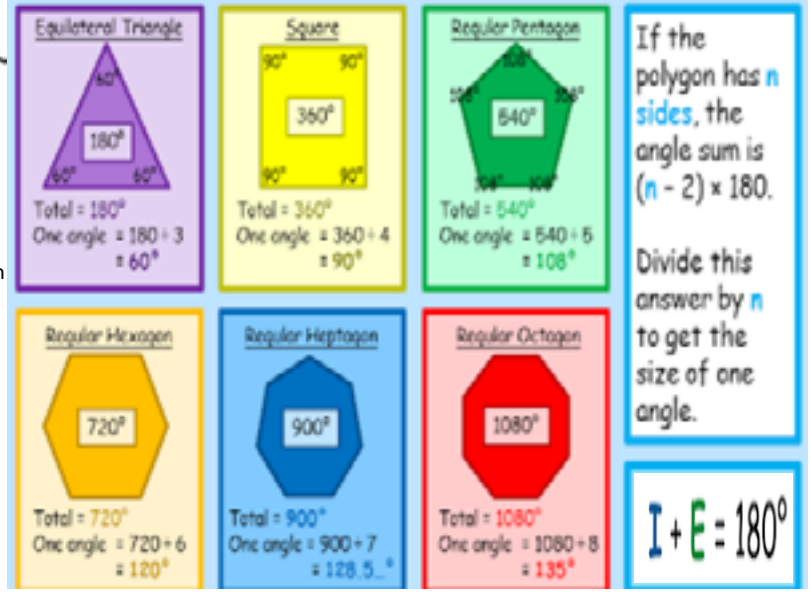
Interior Angle

$$\frac{(n-2)\times 180^\circ}{n}$$

Each exterior angle =

$$\frac{360^\circ}{n}$$

If a shape is regular, all of its angles are the same size.



If the polygon has n sides, the angle sum is $(n-2)\times 180$.

Divide this answer by n to get the size of one angle.

$I + E = 180^\circ$

HOW TO CALCULATE THE NUMBER OF SIDES OF A POLYGON clip

Example

How many sides does each regular polygon have if its exterior angle is:

a. 120° b. 24°

$n = \frac{ext\ sum}{one\angle} \rightarrow \frac{360}{120} = 3$ 3 sides

$\frac{360}{24} = 15$ 15 sides

Example:

Find the sum of the interior ∠s of a polygon if it has **one** exterior ∠ measure of 24°.

$n = \frac{ext\ sum}{one\angle}$

$n = \frac{360}{24} = 15$ sides

$S = (n-2)180$

$= (15-2)180$

$= (13)180$

$S = 2340^\circ$

What is the measure of **an** interior angle of a regular octagon? (*use the exterior angle*)

Solution:

one ext $\angle = \frac{360}{8}$

exterior angle = 45°

interior angle = 180 – exterior angle

interior angle = 180 – 45 = **135°**

Example

- *How many sides does each regular polygon have if its* **interior angle** *is:*

a. 90° b. 144°

TESSELLATION v36

Polygons tessellate if the interior angles can be added together to make 360°

EXAMPLE

4 x 90° = 360°

ANGLES IN POLGONS WITH ALGEBRA clip

$180(6-2) = 720^\circ$

Solve for *x*.

Add the interior angles, set the sum equal to 720, and solve for *x*:

$(8x-8)+(4x+14)+7x+(5x-6)+6x = 720^\circ$

$120+8x-8+4x+14+7x+5x-6+6x = 720$

$30x+120 = 720$

$30x = 600$

$x = 20$

Maths F - Right Angles

PYTHAGORAS' THEOREM v257E

$c = \sqrt{a^2 + b^2}$

$a = \sqrt{c^2 - b^2}$

$b = \sqrt{c^2 - a^2}$

Find the Value of c:

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

$c = \sqrt{b^2 + a^2}$

$c = \sqrt{12^2 + 9^2}$

$c = \sqrt{144 + 81}$

$c = \sqrt{225}$

$c = 15$

Find the Value of a:

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

$a^2 = c^2 - b^2$

$a = \sqrt{c^2 - b^2}$

$a = \sqrt{13^2 - 12^2}$

$a = \sqrt{169 - 144}$

$a = \sqrt{25}$

$a = 5$

Find the Value of b:

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

$b^2 = c^2 - a^2$

$b = \sqrt{c^2 - a^2}$

$b = \sqrt{17^2 - 8^2}$

$b = \sqrt{289 - 64}$

$b = \sqrt{225}$

$b = 15$

LABELING TRIANGLES v329

Trigonometry – Naming Angles

The Angle in a Right Triangle is not called "x" or "y", but is assigned the special Greek letter θ which is called "theta".

Naming Sides - HYPOTENUSE

The Hypotenuse or "HYP" or just "H" is the LONGEST SIDE of the Right Triangle.

It is the long sloping side opposite the Right Angle.

Naming Sides - OPPOSITE

The Opposite or "OPP" or just "O" is the SIDE of the Right Triangle opposite the angle θ

We call it the "Rocket Opposite" eg. Think of where

Naming Sides - ADJACENT

Adjacent - ADJ - A

The Adjacent or "ADJ" or just "A" is the SIDE of the Right Triangle next to the angle θ

The Adjacent runs between θ and the right angle.

SINE v333

SOH

SOH

SINE = OPP / HYP

SINE TO FIND HYPOTENUSE

Step 1: Draw and name the sides of the triangle

Step 2: Record the Sine ratio

Sine ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

$x = 14.00$

Step 6: Statement The hypotenuse is 14.00 units in length.

SINE TO FIND ANGLE v334

SINE TO FIND ANGLE

Step 1: Draw and name the sides of the triangle

Step 2: Record the Sine ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

$x = 36.87°$

Step 6: Statement The missing angle is 36.87 degrees.

COSINE v335

CAH

CAH

COSINE = ADJ / HYP

COSINE TO FIND ADJACENT SIDE

Step 1: Draw and name the sides of the triangle

Step 2: Record the Cosine ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

500m = adj

Step 6: Statement The height of the adjacent is 500 metres.

COSINE TO FIND ANGLE v336

COSINE TO FIND ANGLE

Step 1: Draw and name the sides of the triangle

Step 2: Record the Cosine ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

$x = 50.21°$

Step 6: Statement The missing angle is 50.21 degrees.

TANGENT clip

TOA

TOA

TANGENT = OPP / ADJ

TANGENT TO FIND OPPOSITE SIDE

Step 1: Draw and name the sides of the triangle

Step 2: Record the Tangent ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

7.00 = opp

Step 6: Statement The height of triangle is 7 units.

TANGENT clip

TANGENT TO FIND ANGLE

Step 1: Draw and name the sides of the triangle

Step 2: Record the tangent ratio

Step 3: Substitute vales

Step 4: Rearrange

Step 5: Solve

$x = 53.13°$

Step 6: Statement The missing angle is 53.13 degrees.

Maths F - Inequalities

INEQUALITY SIGNS v176

Equality and Inequality

larger > smaller

= equal	> greater than
≠ not equal	≥ greater than or equal
	< less than
	≤ less than or equal

a ≠ b says that a is not equal to b

a < b says that a is less than b

a > b says that a is greater than b

(those two are known as strict inequality)

a ≤ b means that a is less than or equal to b

a ≥ b means that a is greater than or equal to b.

SOLVE INEQUALITIES v178, 179

$c + 9 \geq 20$

$c + 9 \geq 20$

$-9 \quad -9$ Subtract 9 from both sides.

$c \geq 11$

$4x > 9$

$4x > 9$

$\frac{4x}{4} > \frac{9}{4}$ Divide both sides by 4.

$x > \frac{9}{4}$, or $2\frac{1}{4}$

$-60 \geq -12y$

$-60 \geq -12y$

$\frac{-60}{-12} \leq \frac{-12y}{-12}$ Divide both sides by −12, and reverse the inequality symbol.

$5 \leq y$

Sunday's high temperature of 72 °F was at least 40 °F higher than Monday's high temperature. What was Monday's high temperature?

Sunday's high	was at least	40 °F higher than	Monday's high.
72	≥	40	+ t

$72 \geq 40 + t$

$-40 \quad -40$ Subtract 40 from both sides.

$32 \geq t$ Rewrite the inequality.

$t \leq 32$

Monday's high temperature was at most 32 °F.

$3x - 12 - x > -18$

$2x - 12 > -18$ Combine like terms.

$+12 \quad +12$ Add 12 to both sides.

$2x > -6$

$\frac{2x}{2} > \frac{-6}{2}$ Divide both sides by 2.

$x > -3$

$-5(x + 2) - 7 \leq 38$

$-5(x) - 5(2) - 7 \leq 38$ Distribute the −5 on the left side.

$-5x - 10 - 7 \leq 38$ Simplify.

$-5x - 17 \leq 38$ Combine like terms.

$+17 \quad +17$ Add 17 to both sides.

$-5x \leq 55$

$\frac{-5x}{-5} \geq \frac{55}{-5}$ Divide both sides by −5, and reverse the inequality symbol.

$x \geq -11$

$-3 \leq 2x - 1 \leq 5$ ditch the -1

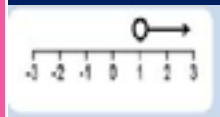
$+1 \quad +1 \quad +1$

$-2 \leq 2x \leq 6$

$\frac{-2}{2} \leq \frac{2x}{2} \leq \frac{6}{2}$ ditch the 2

$-1 \leq x \leq 3$

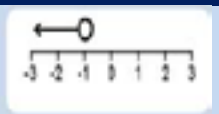
INEQUALITIES ON A NUMBER LINE v177



$x > 1$

x is any number greater than 1

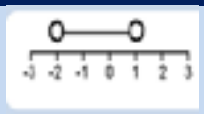
Examples: 2, 3, 4, 5...



$x < -1$

x is any number less than -1

Examples: -2, -3, -4, -5...



$-2 < x < 1$

x is any number greater than -2 and less than 1

Examples: -1 and 0 only

$x \geq 1$

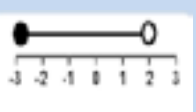
x is any number greater than or equal to 1

Examples: 1, 2, 3, 4, 5...

$x \leq -1$

x is any number less than or equal to -1

Examples: -1, -2, -3, -4, -5...



$-3 < x \leq 2$

x is any number greater than -3 and less than or equal to 2

Examples: -2, -1, 0 and 1 only

REARRANGING FORMULAE v7

Rearranging Formulae

Make c the subject of the formula y = mx + c.

$y = mx + c$

$-mx \quad -mx$

$y - mx = c$

Make m the subject of the formula y = mx + c.

$y = mx + c$

$-c \quad -c$

$y - c = mx$

$\div x \quad \div x$

$\frac{y - c}{x} = m$

Change the subject of the formula $V = IR$ to I

$V = IR$

$\Rightarrow \frac{V}{R} = I$ Divide both sides by R

$\Rightarrow I = \frac{V}{R}$

Change the subject of the formula $A = BC - 3D$ to C

$A = BC - 3D$

$\Rightarrow A + 3D = BC$ Add $3D$ to both sides

$\Rightarrow \frac{A + 3D}{B} = C$ Divide both sides by B

$\Rightarrow C = \frac{A + 3D}{B}$

make C the subject of

$F = \frac{9C}{5} + 32$

subtract 32: $F - 32 = \frac{9C}{5}$

multiply by 5: $5(F - 32) = 9C$

divide by 9: $\frac{5(F - 32)}{9} = C$

$C = \frac{5(F - 32)}{9}$

$F = 6p - 9$

$\div 9$

$F + 9 = 6p - 9 + 9$

$F + 9 = 6p - 9 + 9$

$F + 9 = 6p$

$\times 6$

$\frac{F + 9}{6} = 6p \times 6$

$\frac{F + 9}{6} = 6p \times \frac{6}{6}$

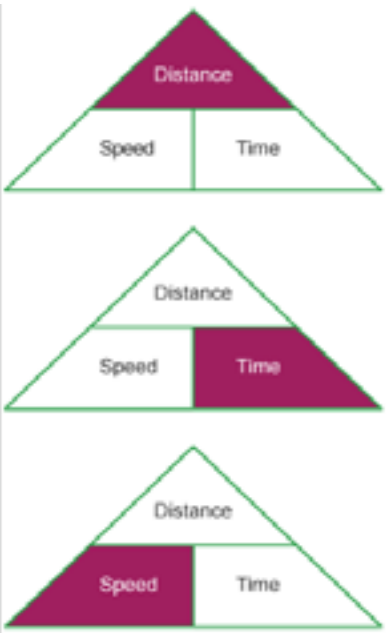
$P = \frac{F + 9}{6}$

Here you are applying the inverse of ÷9. But on the LHS ÷9 and ×9 cancel out, so you are left with only 6p.

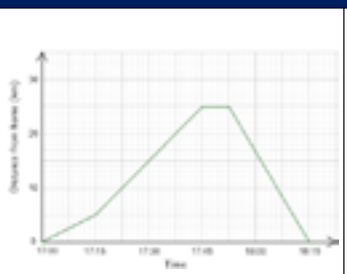
Again, multiplying by 6 and then dividing by 6 cancel out.

Maths F - Graphs

SPEED DISTANCE TIME v87L



DISTANCE TIME GRAPHS v171

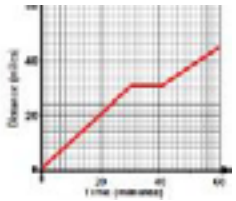


a) We can see that the graph was flat for the duration of one big square. From the axis, we can see

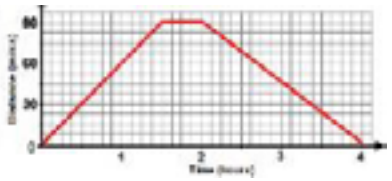
that two big squares total 15 minutes, therefore one big square is worth 7.5 minutes, so she was stationary for 7.5 minutes.

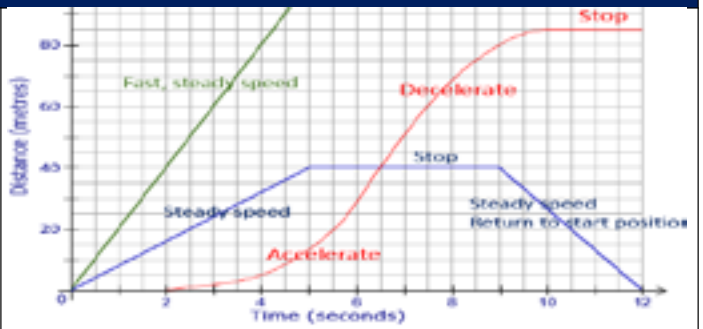
b) Valentina travelled away 25km away from home, stopped briefly, and then travelled 25km back home. Therefore, she travelled 50km in total.

A car travels 30 miles for 30 minutes.
The car then stops at a service station for 10 minutes.
The car continues for another 20 minutes at a constant speed of 45 mph.
Draw the distance-time graph for the car.



A car drives for 1.5 hours at a steady speed of 60 mph, then stops for 30 minutes. The car then drives back to where it started at 45 mph.
Draw the distance-time graph.





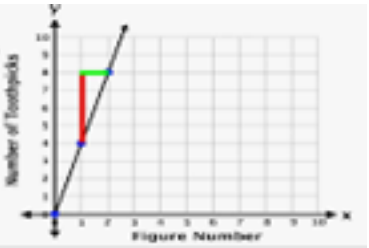
The green line shows a fast, steady speed, moving from 0 to 100 m in 5 seconds.
The blue line shows a journey with a stop and a return to the starting position.
The red line shows a journey starting 2 seconds later than the other two, with an initial acceleration, then a deceleration and then a stop.

Finding the rate of change on a graph is called:

RISE over RUN

or

$$\frac{\text{RISE}}{\text{RUN}}$$



AVERAGE SPEED, DISTANCE, TIME

$$\text{Average Speed} = \frac{\text{Total distance travelled}}{\text{Total time taken}}$$

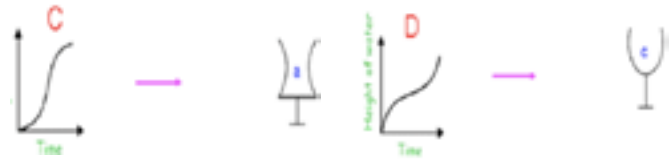
CONVERT MEASURE SPEED

To convert from m/s to km/h, *multiply by 3.6.*

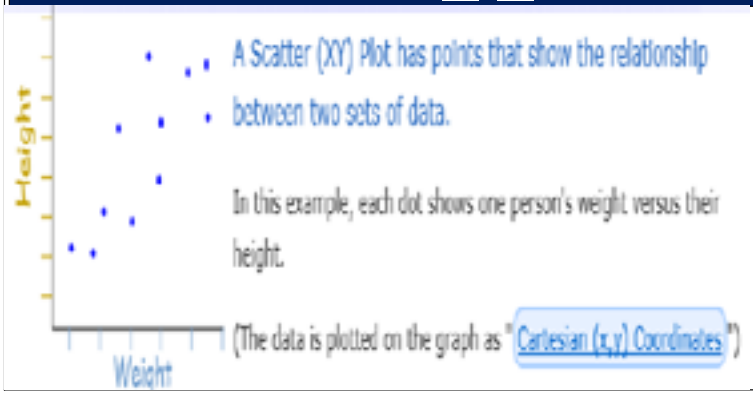
m/s ⟷ km/h (×3.6 / ÷3.6)

To convert from km/s to m/s, *divide by 3.6.*

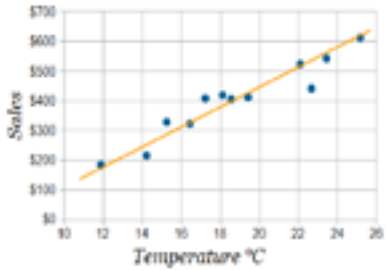
REAL LIFE GRAPHS



SCATTER GRAPH v165, 166

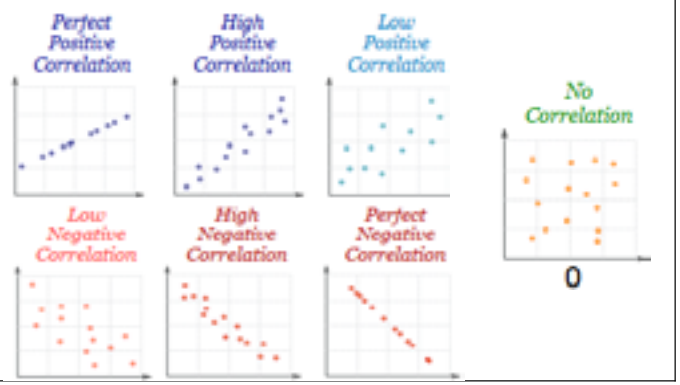


LINE OF BEST FIT v167



Try to have the line as close as possible to all points, and as many points above the line as below.

CORRELATION v168



Maths F - Ratio & Proportion

USING PROPORTION v255a

A construction worker has a 25 m length of metallic piping which weighs 50 kg. He needs 150 m of piping for a certain job, but the 150 m length of piping must not weigh more than 520 kg. Is this piping suitable for the job?

Start by finding out the weight of 1 metre of piping:

÷ 25 ⟨ 25 m weighs 50 kg / 1 m weighs 2 kg ⟩ ÷ 25

Now scale this up to find out how much 150 metres weighs:

×150 ⟨ 1 m weighs 2 kg / 150 m weighs 300 kg ⟩ ×150

The **unitary method** is a **technique** for solving a problem by first finding the value of a single unit, and then finding the necessary value by multiplying the single unit value

BEST BUYS v210,

The local farmer sells potatoes in 5 kg bags at £3.40 per bag and in 17 kg bags at £11.56 per bag. Is there any monetary advantage gained if you buy the 17 kg bag?

In this problem you have to compare two situations to decide which is the better option.

÷ 5 ⟨ 5 kg is £3.40 / 1 kg is £0.68 — 17 kg is £11.56 / 1 kg is £0.68 ⟩ ÷ 11

The price for a kilogramme of potatoes is the same no matter what size bag you buy.

A 350 mL bottle of Suds washing-up liquid costs £1.86, but a 500 mL bottle costs £2.66. Is there any monetary advantage gained in buying the 500 mL bottle?

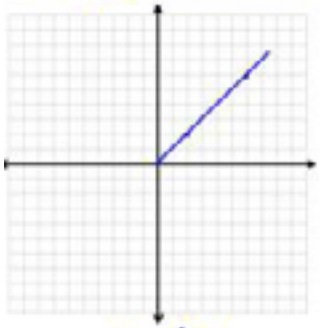
In this problem, it is sensible to change the costs into pence, otherwise you would be dealing with very small numbers.

÷ 350 ⟨ 350 mL is 186p / 1 mL is 0.53p — 500 mL is 266p / 1 mL is 0.53p ⟩ ÷ 500

There is no monetary advantage in buying the larger bottle.

PROPORTIN GRAPHS v254

Proportional

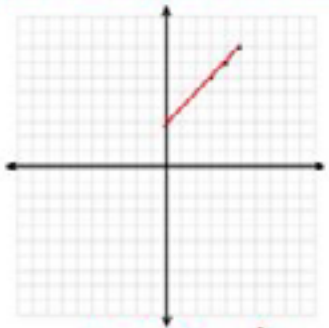


y = kx

crosses origin (0,0)

linear

Non-Proportional

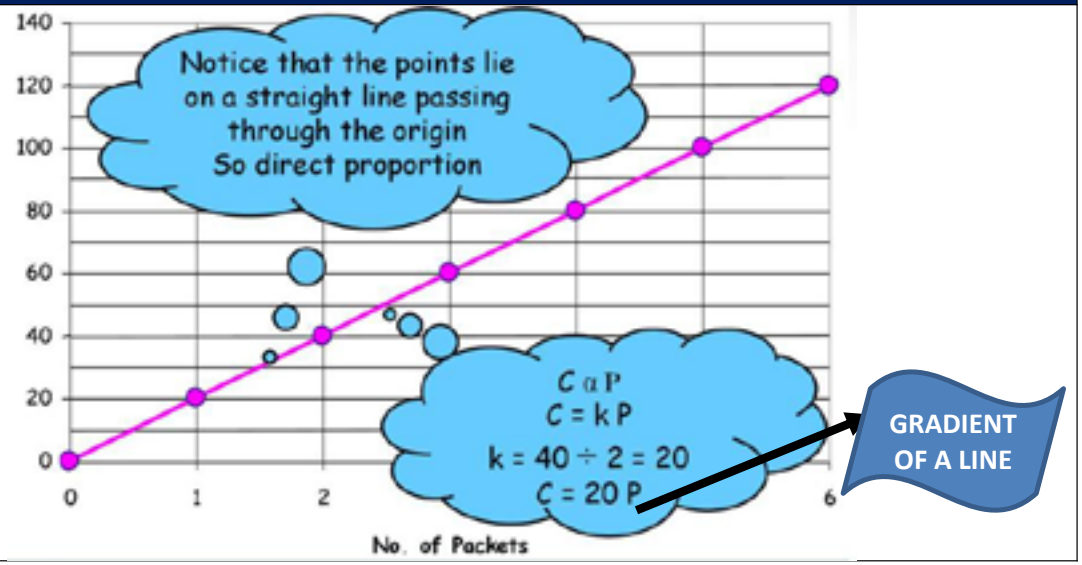


y = mx + b

does NOT cross origin

linear

USING PROPORTION GRAPHS clip



Year 10 Higher Half term 1, Topic 1: Fractions and Mixed Numbers

Simplifying and Equivalent Fractions V135 V146

Simplify - divide top and bottom by the same number

$\frac{9}{12} \div 3 \frac{3}{4}$

$\frac{21}{28} \div 7 \frac{3}{4}$

Find equivalent – multiply top and bottom by the same number

$\frac{2}{3} \times 8 \frac{16}{24}$

$\frac{1}{5} \times 9 \frac{9}{45}$

Mixed numbers to improper and improper to mixed V139, V140

Improper to mixed - divide top by bottom

$\frac{14}{3}$ How many 3's go into 14? 4

What is the remainder? 2

So we can make 4 wholes and we have 2 thirds left over:

$\frac{14}{3} = 4\frac{2}{3}$

Mixed to improper - multiply whole number by denominator and add numerator

$3\frac{1}{10} = \frac{31}{10}$

Multiply these numbers together=30

Add on the number at the top=31 (this will be the top number)

The number at the bottom will stay the same

Adding and subtracting V137

Step 1 – change mixed numbers to improper if necessary
Step 2 – find equivalent fractions with the same denominator
Step 3 – add or subtract the numerators (keep the denominators the same)
Step 4 – change improper fractions back to mixed numbers

$\frac{2}{5} + \frac{3}{6} =$ We need a number in the 5 and 6 times table to use as our bottom number- 30?

$\frac{12}{30} + \frac{15}{30} = \frac{27}{30}$

Multiplying - Just do it! V142

Step 1 – change mixed numbers to improper if necessary
Step 2 – multiply the numerators and the denominators
Step 3 – simplify your answer (don't forget you might be able to cross cancel before you start to keep the numbers easier)
Step 4 – change improper fractions back to mixed numbers

$\frac{2}{7} \times \frac{5}{6} = \frac{10}{42} = \frac{5}{21}$

$\frac{4}{9} \times \frac{6}{7} = \frac{4x2}{3x7} = \frac{8}{21}$

Fractions of… don't forget of means x in maths V137

Dividing – KFC! (keep it, flip it, change it) V134

Step 1 – change mixed numbers to improper if necessary
Step 2 – rewrite as a multiplication, keep first fraction the same, flip the second fraction, change the ÷ to a x
Step 3 – carry on from step 2 of multiplication

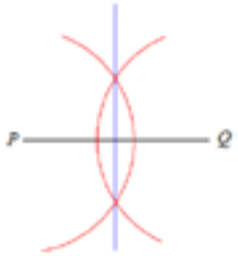
$\frac{3}{4} \div \frac{5}{8} = \frac{3}{4} \times \frac{8}{5} = \frac{24}{20} = 1\frac{4}{20}$ or $1\frac{1}{5}$

Maths H Constructions & Loci

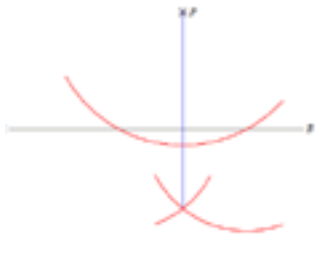
Year 10 Higher Half term 1, Topic 2: Constructions, Loci and Bearings

Constructions V78, V79, V80, V72

Perpendicular Bisector

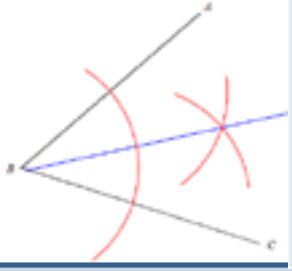


Perpendicular from a point above a line



Perpendicular from a point on a line

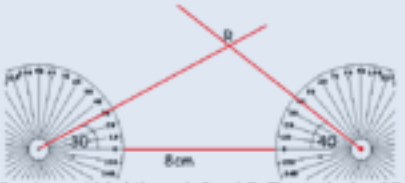
Angle bisector



2 sides and included angle (SAS) V82

- Draw an 8cm line and label the ends P and Q. This is the line PQ.
- Place the centre of the protractor on Q with the 0° line pointing to P.
- Measure a 40° angle clockwise from 0°. Mark it with a dot.
- Draw a 5cm line from Q through the dot. Label the end of this line R.
- Join up P and R to complete the triangle.

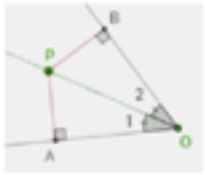
2 angles and included side (ASA) V81



- Draw an 8cm line and label the ends P and Q. This is the line PQ.
- Place the centre of the protractor on Q with the 0° line pointing to P.
- Measure a 40° angle clockwise from 0°. Mark it with a dot.
- Draw a line from Q through the dot.
- Place the centre of the protractor on P with the 0° line pointing to Q.
- Measure a 30° angle anticlockwise from 0°. Complete as with other angle.
- Point R is where the two lines meet.

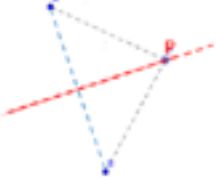
A **locus** is a set of points satisfying a certain condition. For example, the **locus** of points that are 1cm from the origin is a circle of radius 1cm centred on the origin, since all points on this circle are 1cm from the origin. V75, V76, V77

Locus of points equidistant from a point A will form a circle with center A.



Locus of points that are equidistant from two lines will bisect the angle formed by the two lines.

Locus of points equidistant from a line segment.

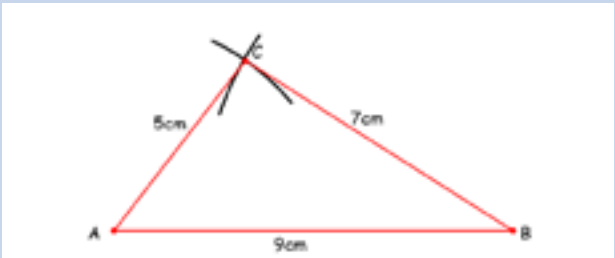


Locus of points equidistant from two points A and B forms a perpendicular bisector of the line AB.

Constructing Triangles

3 sides (SSS) V83 – NB just use compasses.

To construct 60° do an Equilateral triangle V70



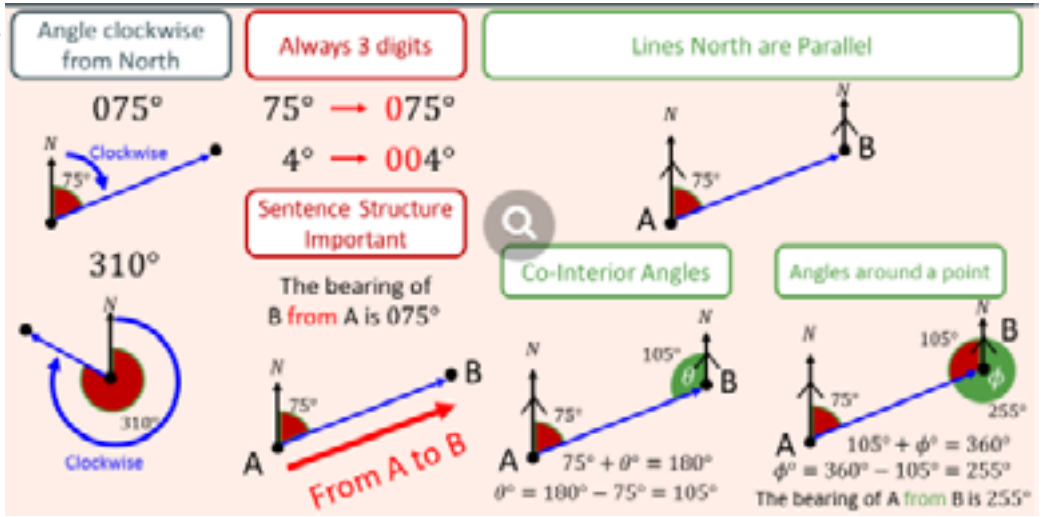
- Draw a 9cm line and label the ends A and B. This is the line AB.
- Set your compasses to 5cm and with the point on A draw an arc.
- Set your compasses to 7cm and with the point on B draw an arc.
- Label this point C and join A to C then B to C to get the lines AC and BC.

Bearings.

V26

V27

V27a



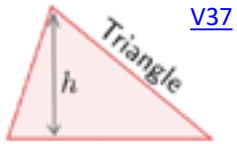
Maths H 2D Shapes

Year 10 Higher Half term 1, Topic 3: 2D shapes and algebra

Learn the formulae

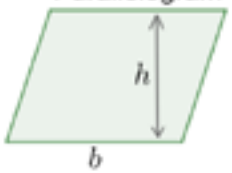
Area = length × width = $L \times W$

V37



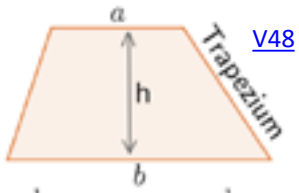
Area = $\frac{1}{2}$ × base × height = $\frac{1}{2}bh$

Parallelogram V44



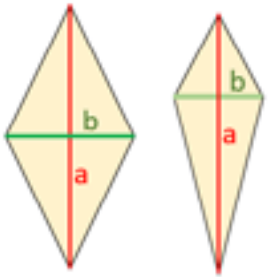
Area = base × height = bh

V48



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

Area of Rhombus and Kite

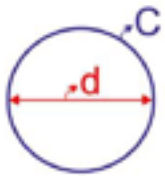


$A = \frac{1}{2}ab$

Circumference of a circle

V60

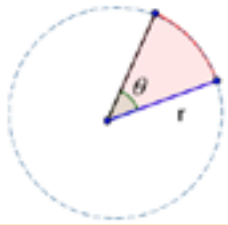
$C = \pi d$



Area of Circle

V40

Arcs and sectors – fractions of the whole circle

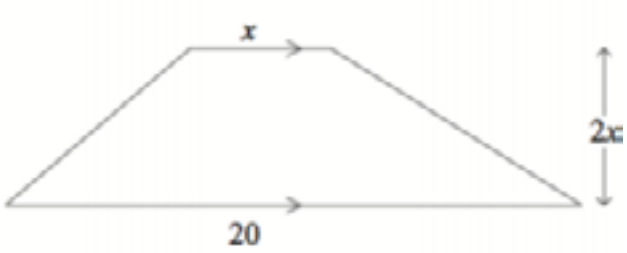


arc length = $\frac{\theta}{360°} \times 2\pi r$ V58

area of sector = $\frac{\theta}{360°} \times \pi r^2$ V46

2D shape with algebra - apply the correct perimeter or area formula using algebra
Example:

The diagram shows a trapezium. The measurements on the diagram are in centimetres. The lengths of the parallel sides are x cm and 20 cm.
The height of the trapezium is $2x$ cm.
The area of the trapezium is 400 cm^2 . Show that $x^2 + ax = b$ where a and b are integers to be found.



A = 400 = $\frac{(x+20)x\ 2x}{2}$

400 = $\frac{2x^2\ +40x}{2}$

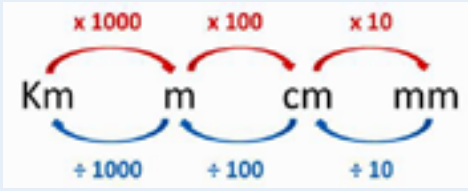
800 = $2x^2$ + 40x

400 = x^2 + 20x

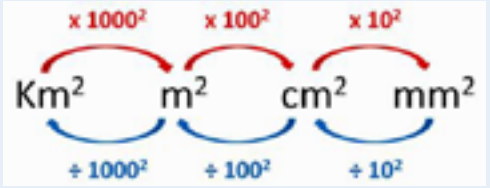
Hence
a = 20 and b = 400

Converting units

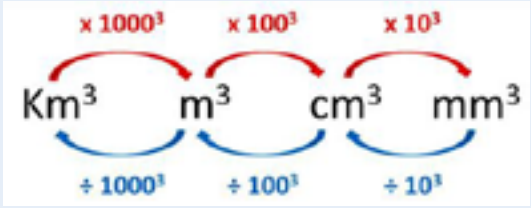
Length



Area – 2D so square the length conversion V350

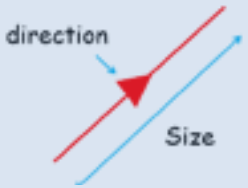


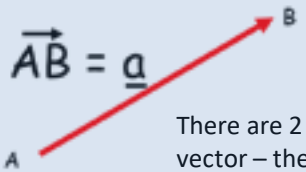
Volume - 3D so cube the length conversion V351



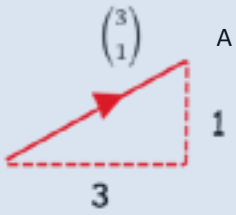
Year 10 Higher Half term 1, Topic 4: Vectors

Vectors have direction and length





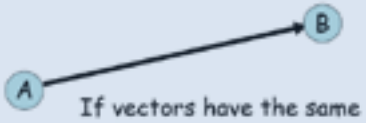
There are 2 types of writing a vector – the route or giving it a name



A column vector $\begin{pmatrix}x\\y\end{pmatrix}$ gives the movement in the x direction as + or - the movement in the y direction as+ or -

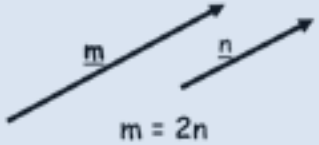
Vectors with the same magnitude and direction are equal

If different sized vectors have the same direction, they are scalar multiples of each other $\mathbf{m} = k\mathbf{n}$

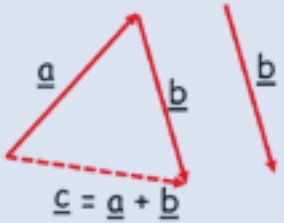


If vectors have the same magnitude and opposite directions then:

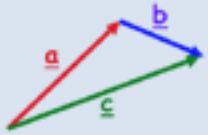
$\overrightarrow{AB} = a$ then $\overrightarrow{BA} = -a$



The resultant is a single vector which is equivalent to a set of vectors e.g. the result of adding $\underline{a}$ and $\underline{b}$

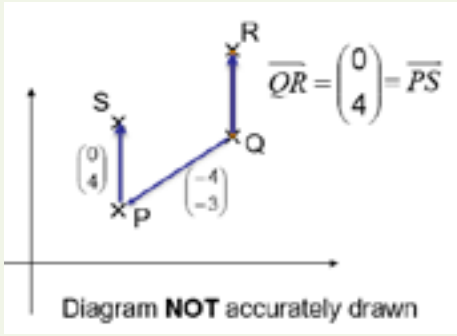


Vectors can be rewritten in terms of other vectors



Vector Arithmetic V353a

Column Vectors can be added, subtracted or multiplied by a scalar



$\overrightarrow{QS} = \overrightarrow{QP} + \overrightarrow{PS} = \begin{pmatrix}-4\\-3\end{pmatrix} + \begin{pmatrix}0\\4\end{pmatrix} = \begin{pmatrix}-4\\1\end{pmatrix}$

$\overrightarrow{RP} = \overrightarrow{RQ} + \overrightarrow{QP} = \begin{pmatrix}0\\-4\end{pmatrix} + \begin{pmatrix}-4\\-3\end{pmatrix} = \begin{pmatrix}-4\\-7\end{pmatrix}$

$2\overrightarrow{PQ} = 2\begin{pmatrix}4\\3\end{pmatrix} = \begin{pmatrix}8\\6\end{pmatrix}$

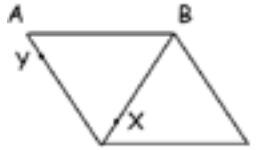
Exam Questions V353

Step 1 – put all the information on the diagram
Step 2 – write out the routes required
Step 3 – convert these to vectors and simplify like algebra (multiplying out brackets and collecting like terms)

NB Prove vectors are parallel – show the same "letter" combinations by factorising

Prove a straight line – show the two parts are parallel and go through the same point.

Example – show YX is parallel to YC

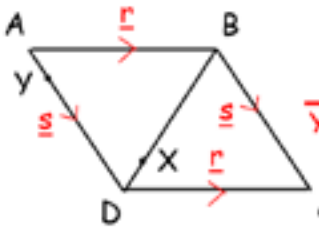


$\overrightarrow{AB} = \underline{r}$

$\overrightarrow{AD} = \underline{s}$

AY:YD = 1:2

DX:XB = 1:2



$\overrightarrow{AC} = \underline{r} + \underline{s}$

$\overrightarrow{DB} = -\underline{s} + \underline{r}$

$\overrightarrow{YX} = \overrightarrow{YD} + \overrightarrow{DX}$

$= 2/3\underline{s} + 1/3(-\underline{s} + \underline{r})$

$\overrightarrow{YX} = 1/3(\underline{r} + \underline{s})$

AC and YX are scalar multiples => parallel

Maths H Advanced Trigonometry

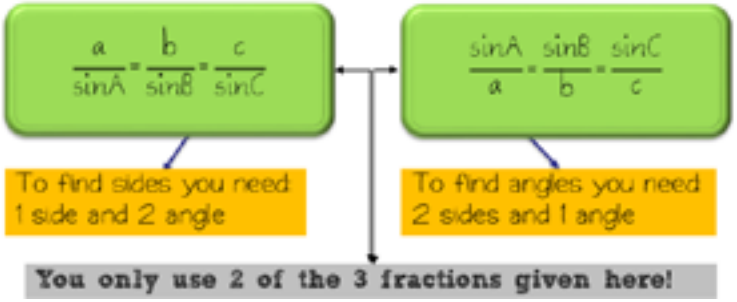
Year 10 Higher Half term 2, Topic 1: Advanced trigonometry (non right angled triangles

The general triangle – sides (little letters) go with their opposite (big letters) angles

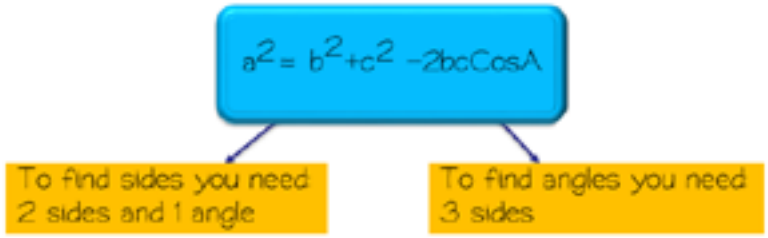
Learn the formulae:

Area of a triangle = ½ ab sin C

Sine Rule



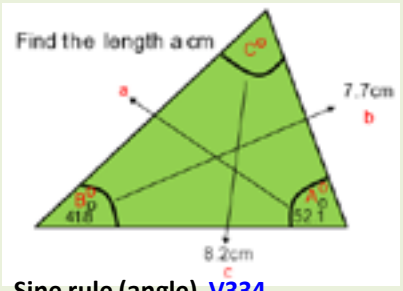
Cosine Rule



Area V337

A = ½ x 9 x 6.2 x sin 52
= 19.2 cm²

Sine rule (length) V333



$$\frac{a}{\sin 52.1^\circ} = \frac{7.7}{\sin 41.8^\circ}$$

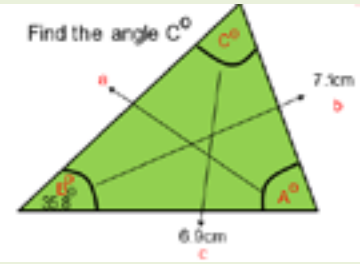
$$a = \frac{7.7}{\sin 41.8^\circ} \times \sin 52.1^\circ = 9.12\text{cm (2dp)}$$

Sine rule (angle) V334

$$\frac{\sin 35.8^\circ}{7.1} = \frac{\sin C}{6.9}$$

$$\sin C^\circ = \frac{\sin 35.8^\circ}{7.1} \times 6.9 = 0.56847\ldots \text{ (2dp)}$$

Shift | sin | 0.56847... = 34.64° (2dp)



Cosine rule (length) V335

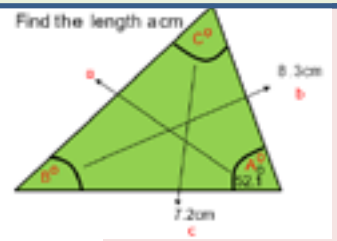
$a^2 = b^2 + c^2 - 2bc\cos A$

Sub your values into the formula:

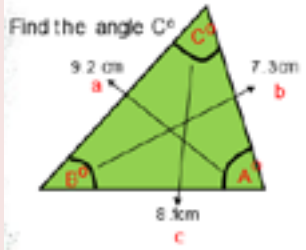
$a^2 = 8.3^2 + 7.2^2 - 2 \times 8.3 \times 7.2 \times \cos 52.1$

Calculate: $a^2 = 47.31063\ldots$

Square root your answer: $a = 6.88\text{cm (2 dp)}$



Cosine rule (angle) V336



Sub your values into the formula and simplify

$9.2^2 = 7.3^2 + 8.1^2 - 2 \times 7.3 \times 8.1 \times \cos C^\circ$

$84.64 = 53.29 + 65.61 - 118.26 \times \cos C^\circ$

$84.64 = 118.9 - 118.26 \times \cos C^\circ$

$84.64 - 118.9 = -118.26 \times \cos C^\circ$

$\frac{-34.26}{-118.26} = \cos C^\circ$

Calculate: $\cos C^\circ = 0.28970\ldots$

On your calculator:

Shift | cos | 0.28970...

$C^\circ = 73.16^\circ$ (2 dp)

Or use the rearranged cosine rule (remember SAS)

$C^\circ = \cos^{-1}\left(\frac{a^2 + b^2 - c^2}{2ab}\right)$

Year 10 Higher Half term 2, Topic 2: Set Theory and Venn Diagrams V379, V340

Definition:

A **set** is a collection of objects named elements.

Notation:

A set can be defined by listing its elements between curly brackets

Example: A = {1, 2, 3, 4, 5}.

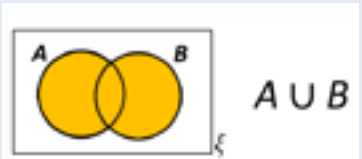
Element of a set $\in$ $2 \in A$ $89 \notin A$
Not an element $\notin$

Empty set. $\emptyset$.
Universal set is the set of all elements being considered ξ.
Not a member of the set A is A'

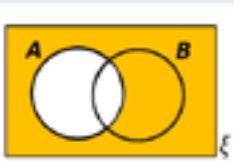
The **union** of two sets, *A* and *B*, is the elements in *A* **or** *B* or in both. $A \cup B$.

The **intersection** of two sets, *A* and *B*, is the elements that are in *A* **and** *B* $A \cap B$.

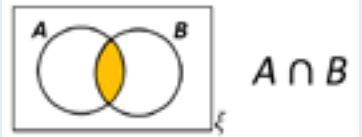
Example
A = {2, 3, 5, 7, 11, 13, 17, 19}
B = {1, 3, 5, 7, 9, 11, 13, 15, 17, 19}
ξ is all the numbers 1 to 20.
a) Find $A \cap B$ {3, 5,7,11,13,17,19}
b) Find $A \cup B$ {1,2,3,5,7,9,11,13,15,17,19}



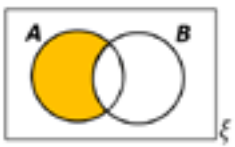
$A \cup B$



A'



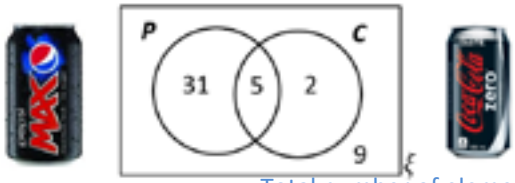
$A \cap B$



$A \cap B'$

Venn diagrams and probability Examples

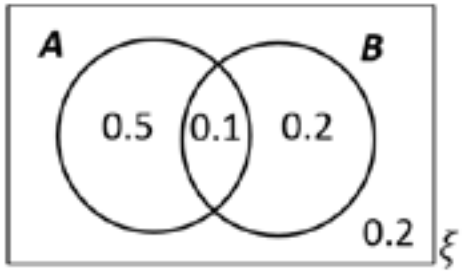
1. The Venn diagram shows the number of people who like Pepsi Max and Coke Zero.



a) Find P(P)
b) Find P(P ∪ C)
c) Find P(P ∩ C')

Total number of elements is 31+5+2+9 = 47
a) 36/47 b) 38/47 c) 31/47

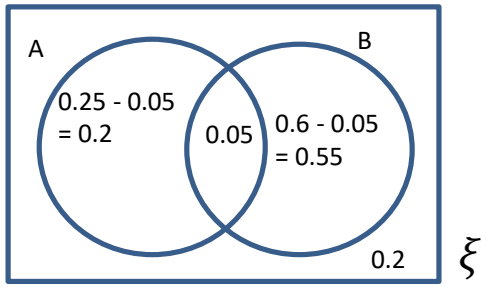
2.



a) Find P(A) 0.6
b) Find P(A' ∩ B') 0.2
c) Find P(A' ∩ B) 0.2

3. P(A) = 0.25, P(B) = 0.6 and P(A ∩ B) = 0.05.

a) Draw a Venn diagram
b) Find P(A ∪ B) 0.8
c) Find P(A' ∩ B) 0.55



Maths H Simultaneous Equations

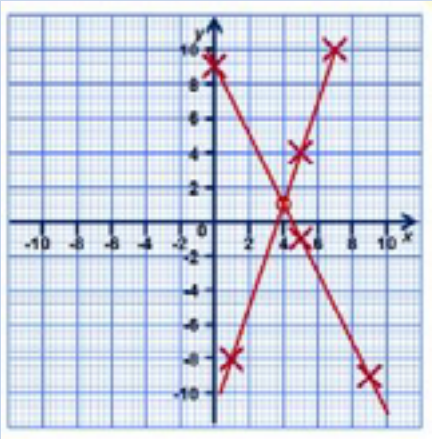
Year 10 Higher Half term 2, Topic 3:
Simultaneous Equations V295, V297, V298

Definition: a set of two equations each involving two variables. The solutions for these variables (letters) satisfy both equations at the same time.

Solve graphically

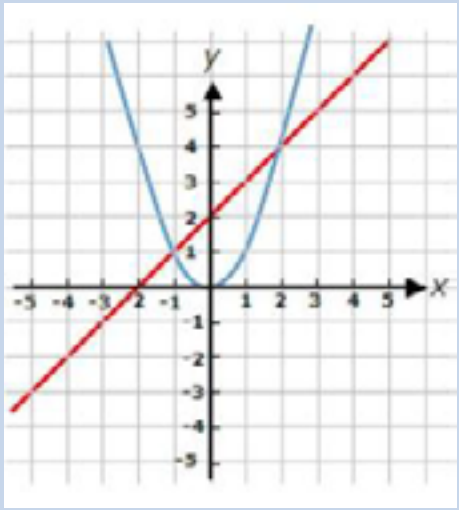
Step 1 – plot the graphs of the two equations
Step 2 – read the point where the two lines intersect (note if one equation is a quadratic, there will probably be two crossing points and two pairs of solutions
Step 3 – write your answer as x =……., y= ……

Example 1 – use a graphical method to solve the simultaneous equations
y=3x-11 and y= -2x+9



The lines cross at (4,1) so the solution is x=4 and y = 1

Example 2 – use a graphical method to solve the simultaneous equations
$y=x^2$ and y= x+2



The lines cross at (2,4) and (-1, 1) so the solutions are
x=2 and y = 4
x = -1 and y = 1

Solve algebraically by elimination (when both equations are linear)

Step 1 – multiply all the terms in one (or both) of the equations to get the number in front of the x or the y the same

Step 2 – add or subtract the two equations to **eliminate** a letter

Step 3 – solve for a letter
Step 4 – substitute to get value of other letter

$3x + 5y = 36$ … (1)
$4x + 2y = 20$ … (2)
$6x + 10y = 72$ … 2 x (1)
$20x + 10y = 100$ … 5 x (2)
$-14x = -28$
$x = -28 \div -14$
$x = 2$
$3 \times 2 + 5y = 36$ … (1)
$6 + 5y = 36$
$5y = 30$
$y = 30 \div 5$
$y = 6$

Note – at step 2 if the signs of the letter to be eliminated are the same you subtract, if they are different you add. Be careful about with negative number rules!

Writing your own simultaneous equations

Step 1 – rewrite all the words using letters for the variables
Step 2 – solve as above.

Example 4 – one adult and 2 child tickets cost £7
one adult and 5 child tickets cost £13
Find the cost of an adult ticket and a child ticket.
One child ticket costs £2
One adult ticket costs £3

$a + 2c = 7$
$a + 5c = 13$
subtract
$3c = 6$
$a + 2 \times 2 = 7$

Solve algebraically by substitution (one quadratic and the other linear)

Step 1 – make either x or y the subject of the linear equation
Step 2 – substitute this into the quadratic
Step 3 – make the quadratic =0 and simplify if possible
Step 4– solve the quadratic (factorise or use the equation) and get two solutions
Step 5 – substitute these (one at a time) into the linear equation
Step 6 – arrange your solution as two pairs (see example 2)

Example 5
Solve $x^2+y^2=5$ and x+y=3

$x = 3 - y$
$(3-y)^2 + y^2 = 5$
$9 - 6y + y^2 + y^2 = 5$
$2y^2 - 6y + 4 = 0$
$y^2 - 3y + 2 = 0$
$(y-1)(y-2)=0$
$y = 1$ and $y = 2$

$x = 3 - 1 = 2$ and $x = 3-2 = 1$
Solutions: x=2, y = 1
x = 1, y = 2

Maths H Percentages

Year 10 Higher Half term 2, Topic 4: Percentages V239, V237, V240, V236

For easy percentages of questions you can use the rules
To find 10% ÷ 10
To find 20%, 30%, 40% etc find 10% and then multiply
To find 5% find 10% and divide answer by 2
To find 50% ÷ 2
To find 25% ÷ 4

For harder percentage questions convert the percentage to decimal

Percentage of
Without a calculator – change the percentage to a decimal and do long multiplication
With a calculator – use the % and multiply buttons

Example 1 – find 17% of 56 0.17 x 56 = 9.52

Percentage Change - Increase/Decrease by a percentage
Increase – add the percentage to 100 to find the new percentage
change to a decimal (divide by 100)
multiply
Example 2 – increase 56 by 17% 100 + 17 = 117% = 1.17
1.17 x 56 = 65.52
Decrease - subtract the percentage from 100 to find the new percentage
change to a decimal (divide by 100)
multiply
Example 3 – decrease 56 by 17% 100 – 17 = 83% = 0.83
0.83 x 56 = 46.48

Finding the percentage change (increase, decrease, profit, loss, appreciation, depreciation etc)
$\frac{New}{Old}$ then multiply by 100. To find the change
If more than 100, subtract 100
If less than 100, subtract from 100
Example 4 – There were 160 smarties in the box ,but now there are 125.
What is the percentage change?
$\frac{160}{125}$ = 1.28 1.28 x 100 = 128% 128 – 100 = 28% change

Percent to Decimal – Divide by 100 **Decimal to Percent** – Multiply by 100 **Percentage to Fraction**: Put percentage over 100, simplify if poss.
Fraction to Percentage:
- Try to get the denominator to 100
- Or bus stop to divide the fraction (to get a decimal) and then x100

One number as a percentage of another
Make sure the units are the same
Write as a fraction and multiply by 100 to get the percentage
Example 5 Express 75 cm as a percentage of 2.5 m.
First, change both quantities to the same units. 2.5 m = 250 cm
Now express 75 cm as a percentage of 250 cm.
Set up the fraction and multiply by 100. $\frac{75}{250} \times 100 = 30\%$

Reverse percentages (undo the change) by dividing
look for the clue in the wording of the question "before", "original"
Example 6 – a number has been increased by 17% and is now 146.25.
What was it before?
100 + 17 = 117% =1.17 ? x 1.17 = 146.25 so ? = $\frac{146.25}{1.17}$ = 125

Simple Interest
Pays the same amount each year.
Do as % of.
Example 7 – Elizabeth has £400 in her account. It pays **simple** interest of 2.5% and she leaves her money in the account for 3 years. How much will she have in the account after 3 years and how much has she earned?

6.5% = 0.065
400 x 0.065 = 26 a year
3 x 26 = 78
400 + 78 = 478
In account after 3 years = £478
Earned £78

Compound Interest
The amount changes each year.
Do as % increase (or decrease)
Example 8 – Elizabeth has £400 in her account. It pays **compound** interest of 2.5% and she leaves her money in the account for 3 years. How much will she have in the account after 3 years and how much has she earned?

100 + 6.5 = 106.5% = 1.065
400 x 1.065^3 = 483.17985
In account after 3 years = £483.18
Earned 483.18 – 400 = £83.18

Successive Changes – just keep multiplying. Example 9. Increase by 10% and then 12%. Multiply by 1.1 x 1.12

MEDIA LANGUAGE

Signs are designed to convey meaningful and important information in a condensed way.

The study and understanding of signs and the meaning they communicate is called semiotics.

In the media, it is agreed among producers and audiences that specific meanings can be attributed to certain signs.

Denotation refers to what is literally visible within a sign or symbol.

Connotations are the meanings associated with a sign or symbol.

Charles Sanders Peirce was an American philosopher who identified three different types of signifier:

An **icon** is a signifier which resembles. *For example, a bicycle is used to indicate a cycle lane*	
An **index** is a signifier which is physically or literally connected to what is being signified. *For example, the skull and cross bones indicates a toxic substance*	
With a **symbol** there is no resemblance between the signifier and the signified. *For example, the interlocking symbols indicate male and female solely due to a collective agreement among people*	

Ferdinand de Saussure was one of the key founders of semiotics. He proposed that signs have meanings via two elements.

1. **The signifier** is the form of a sign – something which can be seen, heard, touched, smelt or tasted.
2. **The signified** is the idea or meaning conveyed by that signifier. An example of these two elements working in correlation can be found in the theatrical poster for the film *Jaws* (1975). **The signifier** is a young woman swimming in the ocean with an open-mouthed great white shark swimming beneath the surface of the water. **The signified** is the idea that the shark is probably about to eat the woman. You are likely to find examples of this in all four media frameworks.

Roland Barthes was a French theorist and semiotician who suggested that a story's narrative uses five different types of code. These codes work together to enable the reader to make sense of what is happening in the story.

1. Action Codes – an object or event (often very simple) that leads to narrative progression *e.g. the drawing of a gun suggests that violence will occur*
2. Enigma Codes – the set-up and resolution of a puzzle, *e.g. a film poster might contain an image of a closed treasure chest (the puzzle). The audience must see the film in order to discover what is inside the treasure chest (the resolution)*
3. Semic Codes – signs referring to additional meaning through the use of connotation, *e.g. A model lifting weights implies that they are strong or like exercising*
4. Symbolic Codes – a range of non-literal references found in an image or a text, normally presented through two contrasting codes, *e.g. good vs bad, man vs woman*
5. Cultural codes – all references found within a text that can be understood with a good knowledge of news, events and culture, both contemporary and historical, *e.g. the image of the Union flag usually implies British pride*

Mode of address – The type of media language used to speak to audiences. *For example, in most lifestyle magazines the cover star will look into the frame (at the audience) creating a direct mode of address*

Iconography – Visual codes that audiences associate with certain genres. *For example, frightening masks will often appear on the posters for horror films*

Typography – The style of font. This helps to create a house style or brand identity for a print media product as well as helping to establish genre. *For example, large boldface typography is a common convention of tabloid newspapers*

Intertextuality – When a media text references another text in order to shape meaning and affect audience interpretation. *For example, advertisements may contain references to a popular film in order to create comedy and make them stick in the audience's head*

Genre provides us with a way of clearly categorising media products.

We can determine which products fit into which genre by looking out for the **repetition** of certain codes and conventions. ➡ *For example, a film is likely to fit into the crime genre if it contains certain character types (gangsters, detectives), narrative beats (a heist, an arrest), technical codes (rapid editing, low-key lighting) and familiar visual iconography (guns, dark suits, getaway cars).*

Producers incorporate new and unexpected codes and conventions into their products in order to maintain audience interest. **Genre hybridity** (the incorporating of codes and conventions from multiple genres into a single product) is an effective way of achieving this. ➡ *For example, the film Shaun of the Dead effectively blends elements of the horror genre with elements of the romantic comedy genre.*

NARRATIVE DEFINITIONS

Content	Refers to what happens in the story as well as the meaning behind it
Form	Refers to the text type that the writer uses *e.g. magazine, newspaper, website*
Plot	The term used to describe how the main events in the story unfold
Structure	Relates to the order of events in a narrative and the form in which it is told
Storytelling	The activity of presenting a story to an audience
Action	Either the physical movements of the people in the story or their behaviour
Dialogue	The engagement of conversation or vocalised thought of the people in the story
Conflict	The struggle that often presents itself in a story
Character	Any person, animal or figure presented in a story
Setting	The time and place in which the story takes place
Event	Something that will happen, has happened, or is thought to happen in the future

Vladimir Propp is a theorist whose work is derived from his studies of Russian folk tales with a particular focus on their characters. Through his studies, Propp identified eight types of character, not unlike stock characters, which he claims serve a specific purpose to the story's narrative. It is likely that different character types will overlap, e.g. the dispatcher and the princess's father.

Vladimir Propp – Character Types

1. Hero – the protagonist of the story. Embarks upon a journey motivated by the lack or loss of something.
2. Villain – an antagonistic character who wants to ruin the hero's journey
3. Donor – someone who provides the hero with either an object or the advice they need to complete their journey
4. Helper – someone who aids the hero on their journey (often described as a sidekick)
5. Princess/reward – someone who / something that is unattainable throughout the journey. The story usually ends with the hero acquiring this prize.
6. Princess's father – the person who rewards the hero with the prize at the end of their journey
7. Dispatcher – sends the hero on the journey and illustrates the importance of the journey
8. False hero – raises complications. Tries to take credit for the hero's action and obtain the reward.

Remember: the majority of media products are **polysemic**. This means that their meanings can be multilayered and interpreted in a number of different ways. For example, the image of a scantily clad woman in a fashion magazine might connote liberation and female empowerment for some viewers while connoting objectification and oppression for others.

MEDIA REPRESENTATION

When it comes to analysing representation in the media, it is useful to be aware of contextual factors that have affected cultural attitudes in Western society. Listed below are a number of specific or ongoing events that are likely to inform your analysis.

Gender	Ethnicity	Age
		
In 2017, there was a huge series of accusations from women accusing powerful men in the media of sexual harassment and assault. The hashtags #MeToo and #TimesUp were shared by thousands of women exposing an underlying sexism running through mainstream media (particularly the film industry). This movement has greatly enhanced conversations about female representation in the media.	Martin Luther King Jr's 'I Have a Dream' speech in 1963 was a defining moment for the civil rights movement. With it came a rapid change in rights for the US African-American community.	Traditionally in the media, children have often been depicted as being helpless and in need of saving. Particularly in mainstream cinema, recent representations, e.g. *Stranger Things* and *Pokemon*, have shown children to be capable and often 'more in the know' than their parents about important issues.
A recent statistic revealed that the greatest killer of men under 45 in the UK is suicide. A concerted effort has been made to counter hypermasculine representations in the media and allow men to be presented as being emotionally vulnerable.	The Black Lives Matter movement was founded in 2013 following a number of unprovoked shootings by police on African-Americans in the USA.	Historically, teenagers have been depicted either as stroppy or as violent and rebellious thugs. Over time, mainstream media has started to acknowledge the complex issues of adolescence, representing teenagers as ambitious and three-dimensional. This particularly caters to the **millennial generation**, largely defined by concerns about mental health and an uncertain job market.
According to certain statistics, women (on average) earn 78% of the average male salary in the United States. This inequality is largely reflected in the media. For example, only two of 2016's top 10 paid actors were women	The hashtag #OscarSoWhite was a retaliation to the abundance of white nominees at the 2015 Academy Awards. In June 2016, the British people voted to leave the European Union. Many believe that racist attitudes towards immigrants largely determined the result of the vote, *e.g. a column in* The Sun *(the highest-selling newspaper in Britain) described Syrian migrants as 'cockroaches'.*	The majority of the baby boomer generation are currently in their 60s or 70s. More so than in previous generations, many baby boomers are still healthy, highly active and in possession of significant disposable income. This is being reflected in the mainstream media, particularly in advertising as producers will often target the grey pound (a marketing term used to describe the high amounts of money older people have to spend on consumer goods).

Stereotypes are representations that reduce a person or a group of people to a narrow set of traits and characteristics, *e.g. all women want to be domestic housewives.*

Counterstypes are representations that emphasise the positive attributes of a person or a group of people, often combating stereotypes in the process, *e.g. women are physically capable and courageous.*

Representation Terms

Passive objects are characters that have no active role in shaping the narrative. They are only there to be looked at as events unfold around them

Active subjects are characters that affect the progression of the narrative. They take action and make things happen.

Under-representation

Definition: People or social groups who do not appear (or who appear very briefly) in a media product which might benefit from an individual's or a group's perspective.

Example: Homosexual couples have been historically under-represented in television adverts.

Misrepresentation

Definition: When a media product depicts a person, a group of people or an event in a way that is misleading or unfairly negative.

Example: Many people accuse newspapers such as *The Sun* of misrepresenting the entire British Muslim community as a threat to traditional British values.

The process by which producers **select** and **combine/construct** elements of media language to feature in a media product is known as **mediation**. The messages and ideas that are shown in the product will often be constructed in a way that establishes a particular **point of view**. For example, a newspaper article might use first-person pronouns to align the audience with a particular person's point of view. This process is known as **audience positioning**.

The Theory of 'Otherness'

Representations in the mainstream media have been constructed and mediated by people who are in possession of great social, economic and political power. Stuart Hall argued that media representations often result in an emphasis on 'otherness'. For years this has had a negative effect on representations of active, three-dimensional characters that are not straight, white or male.

Media representation is all about the way in which media producers choose to portray something or someone in a product. Reality is complex, so representing every part of society within a single product is impossible. This is why producers consciously decide who their product is being made for (i.e. its target audience) and then select the parts of life that this group of people can relate to. In doing so, producers construct a version of reality for this particular audience. Representation is often concerned with Gender, Age, Sexual Orientation, Social Class, Ethnicity and Religion. Use the acronym 'GASSER' to help you remember

Important Theories for discussing Gender Representation

Male gaze – Laura Mulvey was a feminist theorist who suggested that visual media (particularly mainstream cinema) is constructed in a way that caters specifically to the pleasure of a male heterosexual audience. This theory largely explains the various ways in which women's bodies have been objectified in mainstream media.

Patriarchy – the idea that Western civilisation is structured in a way that provides socio-economic advantages for white heterosexual males (more specifically father figures) at the expense of women and minorities.

The development of the feminist movement throughout the past 100 years has majorly influenced representations of men and women in the media. The second wave of feminism in the 1960s and 1970s was a time of particular social change– *For example, the contraceptive pill wasn't made widely available in the UK until 1974.*

MEDIA AUDIENCES

Active audience: An audience that actively selects the types of media product they consume. They are also able to actively engage and interpret messages within a media text, applying different readings to different messages.

Passive consumer: An audience that consumes various types of media without actively engaging with the content's messages. They are also happy to accept the meaning of a media product on the most basic and superficial level.

Mass audience: A large audience with mixed interests that collectively consumes the same media product that appeals to the general interests of the masses. It is often mainstream media that appeals to mass audiences.

Niche audience: A small audience with specialised and particular interests. Producers often create much smaller-scale products for these audiences as the financial return is not often very high.

A **demographic** is a group of people distinguished by their identity or socio-economic status: gender, race, age, class, marital status, ability/disability.

A **psychographic** is a group of people distinguished by their lifestyle, habits and interests: Donald Trump supporters, sports enthusiasts, cinema goers, feminists, musicians, etc.

The **primary audience** is the main group targeted by a media product. For example, e.g. GQ magazine has a primary audience of young men.

The Effects Debate: For a long time, it was widely accepted that a large section of the general public were passive consumers, taking the messages encoded in media products at face value. This in turn sparked a debate as to whether the media could shape people's attitudes and behaviours for the worst. A key example of the effects debate taking place in British history is the outrage that was provoked by the release of video nasties: a list of unregulated horror films which began to circulate through video shops throughout the 1980s. Politicians and the popular press expressed their moral outrage and began a fierce campaign to have these videos banned. They argued that the general public (particularly young people) could be encouraged to commit violent behaviour if they were exposed to these films. In hindsight, this campaign is generally considered to be an extreme overreaction and a patronising way of viewing media audiences.

Stuart Hall – Reception Theory

It is widely agreed that media producers encode messages into their products in order to invoke a particular response from the audience.

The audience in turn will decode these messages. However, they will not always do this in the way the producer(s) intended.

Preferred Reading – The audience accepts the messages encoded in the text, interpreting the product in the exact way in which it was intended, e.g. 'Call of Duty is an exciting game with fantastically realistic graphics'.

Negotiated Reading – Certain encoded messages are accepted by the audience whereas others are challenged e.g. "Call of Duty is very well designed, but the gameplay becomes boring. I don't think I'm the target audience"

Oppositional Reading – The audience rejects the encoded messages entirely, e.g. "Call of Duty is a disgusting game that encourages teenagers to become violent killing machines. It is also incredibly boring!"

The uses and gratifications model was originally proposed by Jay Blumler and Elihu Katz in 1974. These theorists developed the model based on the idea that media audiences are not passive. On the contrary, audiences have the ability to select what media they consume, based on their own needs and desires. To a large degree, this theory empowers audiences by suggesting that media producers acknowledge the requirements of an audience and fulfil these requirements in order to prevent their products from being left without an audience.

Uses and Gratifications

Entertainment/Diversion
e.g. The James Bond action films offer audiences escapism from the boredom of daily life.

Education/Information
e.g. BBC World Service informs audiences of the latest news and events.

Personal Identity
e.g. Many people read tabloid newspapers to have their political opinions reaffirmed.

Social Interaction
e.g. Many video games allow audiences to compete with their friends and exchange tactics.

Demographics

Media products tend to establish target audiences based on the following demographics:

Gender: Perhaps the most widely considered demographic in media. Magazines and advertisements in particular will usually establish a demographic based on gender, *e.g. GQ specifically targets young men.*

Age: Certain media industries will establish specific age bands. However, most will establish general age categories, *e.g. children, teenagers, adults, elderly people.*

Ethnicity: Audiences are rarely targeted based on ethnicity as racism remains such a contentious issue. There are notable exceptions, *e.g. Pride magazine specifically targets women of colour.*

Class: While it is rare for audiences to be targeted based on class, demographics in the UK can be broken down into the following socio-economic groups: A, B, C1, C2, D, E.

The **secondary audience** will be a group that consumes a media product even though they are not the main target audience, e.g. young women might also read *GQ* magazine in order to understand men's interests.

A **water-cooler topic** is a huge, widely recognised event or topic that can be discussed in the workplace during lunch breaks as well as in other public spaces.

The **mode of address** describes the way in which a media product communicates with its audience, e.g. adverts often use imperatives such as 'Buy this!'

Media conglomerate: A large media company that owns a number of smaller media companies

Vertical integration: The act of a media company owning most (if not all) of the chain of production for a media text

Horizontal integration: When a media company which is already established in creating a particular form of media text acquires another company operating within the same form. This may also be referred to as **diversification.**

Synergy: Different parts of a media conglomerate combining to promote two separate products

Cross-platform marketing: Involves campaigns that span across different media platforms

Viral marketing: Exclusive to the Internet (particularly to social media); its success is dependent on the success of, and awareness raised by, collective sharing and discussion of the product being marketed

Convergence: The act of media products that were previously perceived as being exclusively separate from one another coming together to enhance the media form in question or create a new one. Originally, mobile phones were used to make calls and text. Now, mobile phones can be used to enhance our lives in ways that were not considered possible before the creation of smartphones.

Instagram
Founded: 2010

Facebook
Founded: 2004

Twitter
Founded: 2006

The distribution and circulation of modern media products have been significantly affected by the development of online technology. Most media companies will maintain active social media pages, allowing them to target a wider range of audiences. *For example, distribution companies will generate hype for a new film by releasing posters and trailers through various social media accounts. They then rely on audiences to share this marketing material, building a larger audience through word of mouth.*

MEDIA INDUSTRIES

Every media product goes through three general stages...

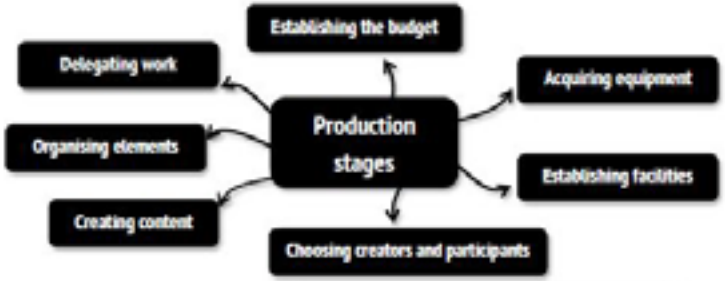
Production: the initial construction of a media product – e.g. writing, shooting and editing a film

↓

Distribution: the delivery of a media product through the appropriate platforms – e.g. stocking newspapers in shops / delivering newspapers to people's homes

↓

Consumption: the audience's experience of 'consuming' the media product – e.g. playing a video game



How are different media products distributed?

Media Form	Methods of Distribution
Magazines	Online editions, delivery through subscription, shops stocking physical copies, physical copies in public spaces (e.g. cafés, waiting rooms)
Newspapers	Online editions, delivery through subscription, shops stocking physical copies, physical copies in public spaces (e.g. cafés, waiting rooms), shares on social media
Advertisements	Television, cinemas, billboards, posters, pages in magazines and newspapers, official websites, shares on social media
Films	Cinemas, DVD, Blu-ray, streaming services, iTunes, television programming
Radio	Live broadcasts, repeat broadcasts, online catch-up services, iTunes, downloadable podcast
Video Games	Physical copies for consoles, console-specific store (e.g. Nintendo eShop), mobile app stores, PC, arcades

Regulation

The rise of online media has made regulation significantly more difficult. An effort has been made to establish online regulation for **video on demand** services such as BBC iPlayer under the watch of ***Ofcom*** (Office of Communications). However, it is almost impossible to effectively regulate online media, meaning more young people than ever before are exposed to adult content.

Many media products are produced by subsidiaries of large organisations. These products will usually have a high amount of financial backing, and access to the best resources and talent, and will, therefore, tend to have high production values (the technical quality of a media product). However, there is more pressure for these media products to appeal to a mass audience otherwise these large organisations risk losing huge amounts of money. ***Notable examples: News Corporation, Channel 4, Sony***

VS

Many media products are produced by independent companies. While these products may lack a huge amount of financial backing, there are advantages for companies operating outside of the mainstream. These products are less restricted by the aims and political biases of media conglomerates. They can also be designed to target a more niche audience, without the producer's vision becoming compromised. ***Notable examples: Pride Media Group, Atlantic Productions***

Magazine Covers

Genre Conventions of Lifestyle Magazines

- **High-key lighting** – *Lighting designed to create visual clarity and prevent shadows*
- **Mode of address** – *Direct: cover star makes eye contact with the reader*
- **Cover star** – *Will usually be a celebrity or an elite person*
- **Shot types** – *Cover stars are usually framed in full or medium shots*
- **List-based articles** – *A clear, readable way of conveying life advice*
- **Imperatives** – *Media language which instructs the audience: 'Do it!'*
- **Audience appeal** – *Highly gendered and generally appealing to 'aspirers'*
- **Ideology** – *Focus on buying products promotes consumerism*
- **Coverline features** – *Many include pull quotes from celebrity interviews*

Circulation	The number of people who exchange money for the consumption of a magazine
Readership	The number of people who consume a magazine regardless of whether they have bought it, *e.g. in a waiting room*
Selection	The combination and exclusion of elements in a magazine. Generally, current affairs will be selected over past affairs.
Construction	The way a magazine is pieced together before it is provided to consumers. This mainly refers to the layout and design stages.
Mediation	The final process the magazine goes through before it is released to consumers, usually overseen by editors and media owners

Dateline and **issue number** refer to information relating to the date of publication and the number of previous publications.

Cover price: information that reveals the price of the publication. In tabloid magazines, this will appear in a larger font.

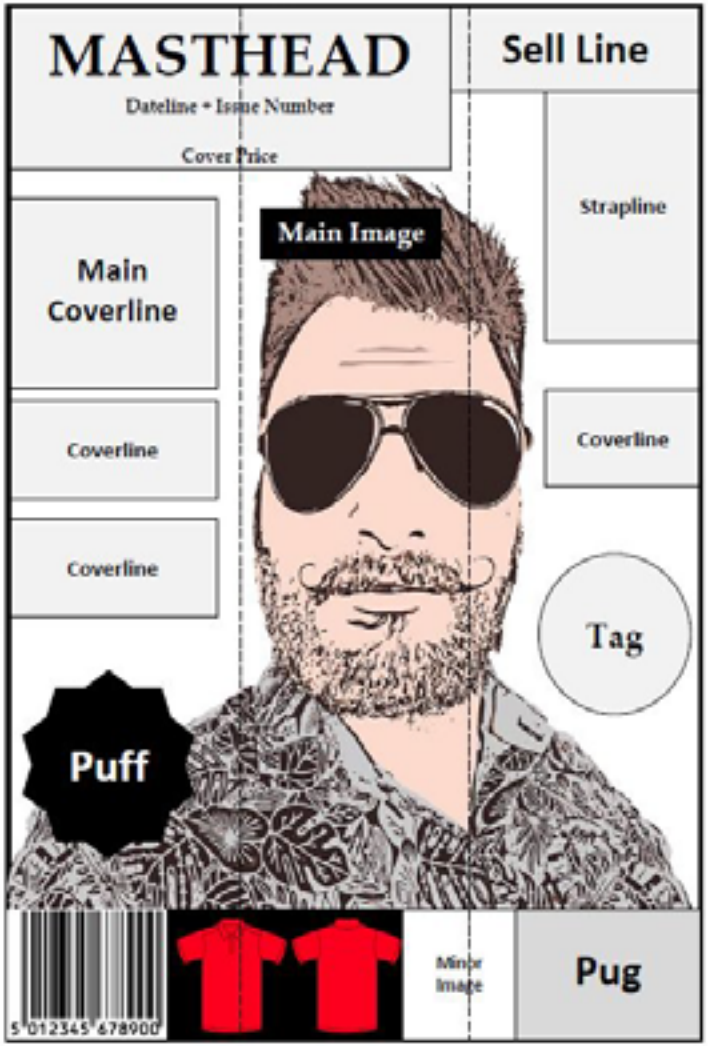
The **main coverline** is considered the main title of the cover page. This often corresponds to the main image or to the model of that issue.

Cover lines are titles/excerpts from articles found in the issue which appear on the front cover. Editors believe these will sell the issue if they feature heavily.

A **puff** is an added incentive featured on the magazine cover (e.g. a voucher or instructions for a new diet). This usually contrasts stylistically with the rest of the cover.

The **masthead** is the title of the magazine, designed and displayed on the front page.

The **sell-line** is generally found close to the masthead. It acts as a hook to gain audience interest and make the publication stand out.



A **barcode** will often feature in the bottom corner of the cover.

Most covers can be split into **thirds**.

Minor images are positioned in the outer sections of the cover and do not intrude on the main image.

A **strapline** is fairly similar to a sell line; however, it directly relates to articles found in the issue. Often located down the right-hand side of the cover.

A magazine cover will typically feature one **Main image** (sometimes called the **cover image**) – often of a model or a celebrity – that ties into themes of the issue.

Tags are phrases used to catch the reader's attention. Often sensational, with exclamatives such as 'Exclusive interview!' or 'Plus!'. Can also be called **buzzwords**.

Pugs are pieces of information located on the outer corners of the cover, used to catch the reader's eye and draw their attention to the magazine. Can be in the form of straplines, promo info and imagery.

Media - Magazines GQ

Language

Colour scheme
Colours carry dozens of meanings and connotations. Media producers are highly aware of the qualities that audiences associate with certain colours. Producers will use this knowledge to create a colour palette that helps to establish a particular tone or genre. In the case of *GQ*, the following colours combine to emphasise ideas of physical strength, determination and becoming the ultimate 'masculine man'.

Colour	Connotations
Red	anger, passion, danger, power, sexuality, courage
Black	strength, power, danger, mystery
White	goodness, perfection, a successful beginning

Imagery

Gaze
The Rock faces directly into the camera, making eye contact with the reader. Cover stars will almost always look outwards towards the reader in order to form a personal connection between the reader and the magazine.

Facial expression
Stern, brooding expression – invokes emotions often associated with traditional masculinity. Also a sense of Johnson challenging the reader to aspire to his success.

Shot type
Johnson's biceps is presented in an extreme close-up, placing emphasis on the actor's strong physical appearance rather than his clothes (which a fashion magazine may emphasise using a full shot).

Body language
The Rock's chin is resting on his flexed biceps, emphasising his muscular physique. This invokes themes of modern masculinity and being 'the perfect man'.

Imperative → 'Man Up!'

Consumerist ideology → 'The best for under £300'

Mode of address → 'Your ideal beach watch'

Magazines: Set Product
GQ (Gentlemen's Quarterly)

GQ © Condé Nast Publications Limited, 2016

Publisher	Condé Nast Inc.
Circulation (2018)	114,000
Readership (2018)	400,000
Founded in	1931
Catchphrase	'The magazine for men with an IQ'
Cover star	Dwayne 'The Rock' Johnson
Tone	Viola Beach were a British indie rock band whose members died in a car crash in Sweden (evidence of more serious journalism from the magazine).

3 THINGS TO KNOW ABOUT DWAYNE 'THE ROCK' JOHNSON

1. The Rock was the highest paid actor of 2016 with an annual income of $64 million (US dollars), a huge increase from 2015.
2. In the summer of 2016, The Rock was promoting *Central Intelligence*, one of 2016's most financially successful comedy films.
3. The Rock started his career as a professional wrestler. His muscular physique established him as a Hollywood action star.

The focus of *GQ* magazine...

Fashion | Watches | Grooming | Health/Fitness

Politics | Cars | Sport | Food/Drink

Representation

The film industry has a particularly long history of under-representing non-white faces both on and off camera.

In 2015, April Reign (the editor of *Broadway Black*) initiated #OscarsSoWhite in response to the all-white list of acting nominees at the 2015 Academy Awards. This act of under-representation was repeated the following year.

Ethnicity in Magazines

The Rock is of mixed racial background (black Nova Scotian and Samoan).

The Rock's status as the highest paid actor in Hollywood has made him an inspiring role model for BAME audiences.

Gender: Stereotypes vs Countertypes

'Man Up!' (Coverline) → Stereotype

A common phrase associated with male bullying, toxic masculinity and representations of 'how a man should act' in the media.

'GQ's rebooted fashion guide' (Puff) → Countertype

Fashion has traditionally been represented as a 'feminine' interest in mainstream media.

'Mind, Body & Masculinity' (Strapline) → Combination

The importance of a strong body has been historically encouraged in men. The importance of a healthy mind is a more contemporary and sensitive approach to masculinity.

BAME – black, Asian and minority ethnic
Metrosexual – Heterosexual men living in urban environments who hold more 'feminine' interests, such as fashion and shopping
Spornosexual – men who care about their physical appearance but focus mainly on having a toned, muscular body
Hypermasculine – describes stereotypical 'male' qualities, such as strength and aggression

Media - Magazines Pride

CONTEXT

Distributor COMAG A subsidiary of Condé Nast Inc.	Catchphrase 'Celebrating the Woman of Colour'
Circulation 50,000 per month (as of 2018)	Readership 146,000 per month (as of 2018)
Founded in 1990	Cover star Naomie Harris

Cultural references
'Bond' (the popular British spy film franchise)
'FGM' (female genital mutilation)
'Harley Street' (a street in London known for private medical practices)

The Focus of *Pride* magazine...


Life stories


News


Hair and beauty


Entertainment


Fashion


Health

3 THINGS TO KNOW ABOUT NAOMIE HARRIS

1. Naomie Harris was still a rising star in the film industry in 2015. Her most recognisable role to date had been as Calypso in the *Pirates of the Caribbean* film franchise.
2. By November 2015, Harris had gained some global prominence due to having starred alongside Daniel Craig in the 24th Bond film *Spectre* (2015).
3. Harris is the first black actress to play the iconic role of Eve Moneypenny in the James Bond franchise. (Her mother and father emigrated from Jamaica and Trinidad respectively.)

Magazines: Set Product
***Pride* magazine**

MEDIA LANGUAGE

Colour scheme: in this context, bright red is likely to connote power, passion and courage. White is likely to connote perfection and success.

Strapline: *Celebrating 24 years at the top!* – highlights an achievement. Lends a sense of accomplishment to loyal readers, providing a sense of community.

Masthead: hidden slightly by the cover star – this shows the editor's confidence that the magazine is established enough to still be recognised by the core target audience, even if the magazine's main identifier is not fully visible.

Coverlines
- Rhetorical questions
- Audience-specific subjects
- List-based articles
- Exclamatory sentences
- Direct mode of address

Intertextuality: *Bond And Beyond* – this cover was published in November 2015 while the James Bond film *Spectre* was enjoying its run in cinemas. The selection of Harris is significant considering that she was neither the lead actress (*Léa Seydoux*) nor the most high-profile actress (*Monica Bellucci*).

Thirds: the left third focuses on the strapline and coverlines. The right third focuses on the image of Harris. The right third focuses predominantly on the main coverline.

Imagery: like the majority of cover stars, Harris stares directly into the frame, looking outwards towards the audience. Harris is not sexualised in the image, nor is her skin Photoshopped to appear whiter (A common magazine convention).

Main coverline: simply states the name of the actress. The phrase 'Bond And Beyond' tells the audience that they can learn about Harris's involvement in the franchise as well as her wider career or personal life.

#BlackLivesMatter is a social movement which began in 2013 following a number of unprovoked shootings by American police officers on African-Americans.

REPRESENTATION

The word 'pride' has been historically associated with the civil rights movements of the 1960s and 1970s. As a result, *Black Pride* and *Gay Pride* have become common expressions. *Pride* magazine's title emphasises the idea that BAME British women should feel empowered and proud of their ethnicity. It has maintained its status as a market leader for BAME audiences.

The topics discussed on the cover are very representative of women in the twenty-first century: free and autonomous from men to some extent but still systematically oppressed by the opposite sex.

'Failed by Feminism' – feminism is a major hot topic in many social circles. Any article pointing out criticisms of this movement is likely to attract the attention of women with activist tendencies or just a passing interest in the matter.

Female Issues

'FGM on Harley Street' – refers to the exposure of a horrific practice carried out on women of all ages happening in Central London.

'Objectified. Sexualised. Mocked.' – gives the target audience of black women a communal sense of concern about the ways in which their bodies are perceived in contemporary society.

Stereotypical representation	Pride representation
Women have historically been represented as the fairer sex and the homemaker.	The combination of Harris's confident body language and the controversial issues in the coverlines imply that women can be strong, independent and unafraid of a challenge
In lifestyle magazines, women are often sexually objectified for a heterosexual male gaze.	Harris wears a long dress and is standing upright, as opposed to lying down or sitting. The coverlines address issues of objectification and unrealistically high beauty standards.
Black women are often stereotyped as having thick, curly and unmanageable hair.	The juxtaposition of Harris with long, sleek, straight hair and 'The wig revolution is here!' suggests that Harris has hair women should aspire to have.
Lifestyle magazines often suggest women are primarily interested in fashion, beauty and physical appearance.	The coverlines featured on *Pride* cover a range of intellectual issues from social activism to feminism and political change to the exposure of FGM.

FILM MARKETING

MEDIA LANGUAGE AND REPRESENTATION

Different Types of Film Marketing


Trailer


TV spot


Press pack


Social media


Website


TV interview


Merchandise


Articles


Poster

The Matrix © Warner Bros. / Village Roadshow Pictures / Silver Pictures, 1999

Star names: The names of the principal actors are included in order to bring in audiences. Marketing producers used the established fan bases of Keanu Reeves and Laurence Fishburne (who had previously appeared in *Speed* (1994) and *Boyz n the Hood* (1991) respectively) to sell the film.

Main image: A central image connoting the genre, characters or narrative of the film. The costumes and sunglasses of the characters connote the cyberpunk subgenre of the film. The guns connote the presence of conflict and binary opposites.

Title: Piques the audience's interest and reveals information about the film's tone, content or genre. 'Matrix' connotes deep intellectual themes surrounding society and culture. Its vagueness creates enigma and audience intrigue.

Billing block: Reveals the film's key creative contributors. Certain writers, supporting actors, composers and producers are famous enough to increase audience hype; for example, following the success of *The Matrix*, mentioning the Wachowskis as directors would be an effective method of selling a new film.

Tagline: A catchy slogan used to increase audience intrigue. This is a rare example of a tag line being blended with the release date. The words 'fight' and 'future' immediately connote the genres of action and science fiction. The line also invokes binary opposites through the promise of a fight between two sides.

Technical information: Situated below the billing block are the age rating (R is an American rating), the logos for the two major production companies (Warner Bros. and Village Roadshow Pictures) and a link to the film's official promotional website, encouraging active audience participation.

This poster is riddled with **enigma codes**. The costumes and sunglasses suggest that the characters are unified in some way, but we are not sure how. Furthermore, the vertical green computer coding layered over the background connotes something that needs solving in the narrative.

The thin, distorted typography of the title suggests that something in the story is broken or manipulated by a higher power. The sans serif font of the stars' names and the tag line resembles the typography seen online. This connotes modern technological themes and elements of the science-fiction genre.

High-concept: Refers to a film in which the premise is striking and easy to summarise, e.g. a boy is transformed into a superhero when he is bitten by a radioactive spider.

Distributor: The company responsible for marketing a film and getting it seen in cinemas, on streaming services, on DVD, etc.

Terms that really need to be known!

Tent pole: A film with a significantly high budget, often designed to financially provide for a major film studio.

Franchise: A series of films that collectively cover a single narrative or character, e.g. *Star Wars*

Tzvetan Todorov was a Bulgarian-French philosopher who proposed that there is a repeated structure for all linear narratives. He discovered this while researching classic folk stories and fairy tales. This structure can be particularly applied to mainstream cinema.

Equilibrium – A state of balance in the story. There is no conflict.
Disruption – The point at which equilibrium balance is disturbed by an action or event
Recognition – The point at which the protagonist acknowledges that equilibrium has been disrupted
Resolution – The character(s) attempt(s) to solve the problem
New equilibrium – Balance is restored

Examples of Propp's character types in the *Bond* franchise

Hero – James Bond is always sent on a dangerous mission motivated by the desire to save the world and serve 'queen and country'.

Villain – Every *Bond* film has a main antagonist motivated by either a personal vendetta against Bond or a desire to destroy the world.

Princess/Reward – Every *Bond* film has a romantic interest. Their main function in the narrative is usually to be saved by Bond and to fall in love with him.

Helper – In most films, the 'Bond Girl' will take the role of the helper as well as the princess. They often share a similar motivation to Bond.

Dispatcher / Princess's father – 'M' is James Bond's boss. He/she appears in most films to give Bond his mission and congratulate him when he succeeds.

Dispatcher – 'Q' is James Bond's quartermaster. He is usually there to provide Bond with the gadgets he will need to complete his mission.

False hero – The majority of *Bond* films will feature an additional female character. Bond is attracted to her at first, but it is later revealed that she is working with the villain.

Media - Spectre

Set Product 1: *Spectre* (2015)

Eon Productions and United Artists	$245 million	$880 million
Production Company and Distributor	The Film's Production Budget	The Film's Worldwide Box Office

FILM MARKETING

Action code	Bond's pistol (fitted with a silencer) suggests that violent conflict will take place in the narrative.
Enigma code	The sinister figure in the background is wearing a skeletal mask to conceal his identity. The audience must watch the film to discover the identity of this figure and the true meaning behind the word 'Spectre'.
Semic code	Bond's white tuxedo implies that the character will have to infiltrate 'high-class' events. From previous films in the franchise, we can assume these might be casino nights or functions in private bars.
Symbolic code	The contrast between the sinister shades of dark blue and grey with Bond's white tuxedo and the elegant gold typography culminates in binary opposites: light and darkness; good and evil; the familiar and the unknown.
Cultural code	The figure in the background is dressed for the 'Day of the Dead' festival. This implies that Bond may travel to Mexico at some point in the story.

THREE EXAMPLES OF INTERTEXTUALITY IN THE *SPECTRE* POSTER

Daniel Craig's white dinner jacket and blood-red corsage directly mirror the tuxedo worn by Sean Connery in the classic James Bond film *Goldfinger* (1964).

The pistol fitted with a silencer is a piece of iconography historically associated with the James Bond character. There is not one major James Bond poster in which the titular character is not holding a gun.

Daniel Craig's cool and calm posture pays homage to previous images of the character in film marketing material (particularly Sean Connery, the first actor to play the role of James Bond).

Representation of Masculinity

Bond holds his iconic pistol close to his chest. This is iconography of the classic Hollywood action hero, who solves narrative conflict through violence. This stereotype almost always manifests itself in male characters, perpetuating the idea that men are physically stronger and more violent than women.

Bond's white tuxedo is a brand from celebrated designer Tom Ford. The image forms a glamorous and elegant representation of masculine values as the character is painted as a gentleman.

Bond is positioned centrally within the frame. His arms are folded and his legs are spread apart culminating, in a strong, secure posture. His masculine qualities are presented as strengths which contribute to his status as the film's hero.

Like all previous lead actors in the franchise, Craig is a white, middle-aged actor who speaks in an RP accent, connoting middle-upper-class roots. He possesses many of the same identifying qualities as classic action heroes from the early days of Hollywood cinema.

Bond stares into the camera with cold, glaring eyes. He fits into the stereotype of the stoic action hero who never shows emotional vulnerability and who will always 'get the job done'. This is a fairly old-fashioned representation of masculine values.

How do we know this is a darker take on the James Bond character?

The title in itself is an enigma code invoking images of a ghost or a mysterious and dangerous presence. It might also suggest that Bond is haunted by something in his past, suggesting a deeper look into the character's psychology.

The juxtaposition of cloudy blue and grey contributes to a bleak colour scheme connoting a sinister sense of the unknown.

The background image of a looming skeletal figure connotes themes of death and haunting. The fact that the image is faded and obscured in darkness could imply the skeleton represents Bond's inner demons, connoting themes of fear, guilt and mental health. This shows some evidence of movement towards a more complex representation of masculinity.

Bond's facial expression is cold and devoid of emotion. He is presented more as a ruthless killing machine than he is in posters for other Bond films, such as *The Man with the Golden Gun* (1974).

Technical information: A tent-pole film such as *Spectre* will often be marketed not just as a film but as a 'cinema experience'. This poster emphasises that the film will be screened in IMAX, a cinematography technique which significantly increases the size and richness of a film's image.

Day of the Dead: The pre-title sequence of *Spectre* takes place during the 'Day of the Dead' festival in Mexico City. The film inspired the Mexican government to organise a parade similar to the one seen in the film the following year. This was seen as a brilliant way of promoting the vibrancy of Hispanic culture, and the parade was attended by over 250,000 people. This is a core example of a mainstream film inspiring events in real life.

FILM MARKETING

Set Product: *The Man with the Golden Gun* Poster (1974)

Production Company and Distributor	The Film's Production Budget	The Film's Worldwide Box Office Takings
Eon Productions and United Artists	$7 million	$97 million

Representation of Men	Representation of Women
Only the men hold guns in the poster	The character dressed in the karate outfit is the only example of a woman who is not represented as a sexual or domestic object
James Bond has his arms crossed, exuding strength, confidence and calm in the midst of chaos	The women are illustrated in a way which emphasises the shape of their bottoms and breasts for heterosexual male pleasure
James Bond and the henchman NickNack are dressed in full-piece suits	Both women are heavily sexualised by the fact they are wearing revealing bikinis
Roger Moore receives top billing followed by Christopher Lee reflects the way men were traditionally cast as the active leads in action films	Britt Ekland is the only woman to receive billing on the poster – suggests that women take a 'back seat' role in the story
Bond looks into the camera frame, establishing familiarity with the audience	Both women look into the camera, establishing familiarity with the audience

THREE THINGS TO KNOW ABOUT THE MAN WITH THE GOLDEN GUN

- Laura Mulvey's theory of the male gaze can definitely be applied to the *Bond* franchise as a whole. Up until 1990, all major *Bond* posters depicted women in various states of undress, presumably for the pleasure of a heterosexual male audience.
- The film was released shortly after the 1973 energy crisis. The poster's representation of power plants and explosions relates to certain Arab countries ceasing to supply oil to the West due to its involvement in the Egypt–Israel conflict.
- *The Man with the Golden Gun* was the second film starring Roger Moore as Bond. He had appeared in *Live and Let Die* the previous year. Moore had also attracted a large fan base due to his playing the lead role in the TV series *The Saint* (1962–1969).

EXAMPLES OF ROLAND BARTHES' CODES

Action code: The golden gun being loaded with a bullet with '007' inscribed on it implies that the unknown assailant intends to shoot James Bond

Enigma code: The face and body of the man loading the golden gun are not visible. The audience must question who the man with the golden gun is – a question they can only answer by watching the film.

Semic code: The fact that both white women wear revealing bikinis suggests that these characters will form sexual or romantic relationships with Bond.

Cultural code: The man in the boat on the top right-hand side is wearing a conical hat, possibly hinting at an Asian setting.

Symbolic code: Multiple binary opposites are present in the poster: two women, one protecting Bond and one pointing him out to the shooter (good vs evil); Bond (the hero) facing off against the man with the golden gun (the villain); the blown-up beach hut on the left contrasting with the untouched hut on the right (chaos vs order).

The Man with the Golden Gun. © Danjaq/EON/UA/Kobal, 1974

PROPP'S CHARACTER TYPES

Hero: James Bond – The main character who goes on a quest, often for the greater good. *Bond is positioned centrally within the poster, making direct eye contact with the audience. In the tradition of most action film heroes he is a white, handsome man holding an iconic weapon.*

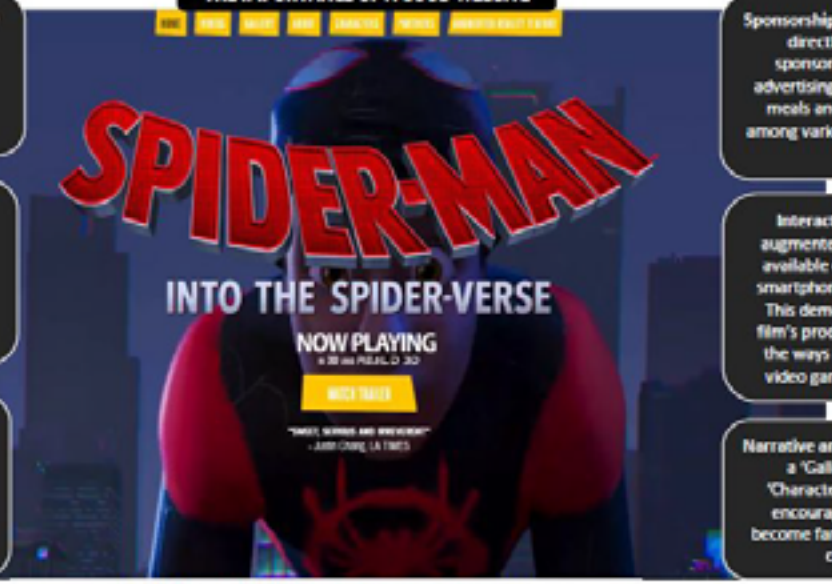
Villain: the man with the golden gun – an evil character who wants to antagonise the hero. *The mysterious man in the foreground of the frame is pointing a gun directly at Bond. The fact he is not shown leads to enigma.*

Princess: blonde woman – the reward given to the hero for overcoming the villain. *Britt Ekland plays the bikini-clad woman who falls for Bond and must be saved by him. However, the fact that she is trying to shield Bond from a bullet suggests that she may also act as a helper in the film.*

The film's poster was illustrated by American artist Robert McGinnis, who worked on multiple *Bond* posters throughout the 1960s and 1970s.

FILM INDUSTRIES

THE IMPORTANCE OF A GOOD WEBSITE



Audiovisual material: Links are provided to the film's three main trailers. There are also links to featurette videos and lyric videos for songs which appear in the film.

Technical information: The film's high budget spectacle and unique animation style make it an event film. Much emphasis is placed on the availability of 3D screenings in cinemas.

Critical reception: Since the film's release, *Spider-Man: Into the Spider-Verse* has received extreme critical acclaim and an Academy Award. This information is regularly added to the

Sponsorship: Unusually, the film directly promotes its sponsorship partners by advertising McDonalds Happy meals and Jordan trainers, among various other associated brands.

Interactive features: An augmented reality feature is available on the website for smartphone and tablet users. This demonstrates that the film's producers are aware of the ways in which films and video games can converge.

Narrative and character: There is a 'Gallery' page and a 'Characters' page included, encouraging audiences to become familiar with the film's characters.

Link to Website: https://sites.sonypictures.com/spiderverse/site/

Did you know?
A decent number of mainstream films earn over 30% of their gross profit in the opening weekend that they are released.

Disney is a media conglomerate that owns both its films and the merchandise associated with those films.

Horizontal Integration

Vertical Integration

Disney has bought film franchises such as *Star Wars* and *MCU*, reducing competition from other studios.

Key Stages of Mainstream Film Production
The budget is decided
Rights are purchased, particularly as so many modern films are based on existing properties or franchises
The script is written
Shooting locations are selected
The cast and crew are hired
The production schedule is created
The film is shot
The film is edited
If necessary, digital effects are added
Any sound effects or soundtracks are added
The film is distributed; usually through cinema screenings or streaming services
Marketing campaigns are launched
Trailers, TV spots, promotional interviews, press packs and posters are released for public consumption

1. Discrimination
2. Drugs
3. Imitable behaviour
4. Offensive language
5. Nudity
6. Sex
7. Threat
8. Violence

British Film Regulation

Age ratings applied to films in the UK are decided by the British Board of Film Classification (BBFC). Films are assigned one of several core age certificates, based on a set of eight content categories.

DISTINGUISHING RATINGS

Remember that films are only rated **12A** when they are distributed to cinemas. This rating means people under the age of 12 can see the film, providing they are accompanied by an adult. Home media releases are rated **12** and can only be purchased by those who are older than 12.

KEY DEFINITIONS

- A distribution company is responsible for the marketing and promotion of the film, as well as the channels which the film will go through in order to reach audiences, e.g. cinemas, television rights, streaming services, DVD
- Sponsorship describes deals between film companies and alternative companies, which allow them to promote one another, e.g. James Bond will often be shown drinking Heineken beers on screen. This is known as product placement.
- Syndication is the process in which the rights to a media company's material are sold to another company for exhibition or integration with their material
- Blockbusters are high-budget films designed to appeal to a wide demographic and make studios a lot of money, e.g. *Spectre*, *Skyfall*
- A production studio is responsible for the development and creation of the film e.g. casting, shooting, editing, soundtrack
- Independent forms of media are free from the influence of government or corporate interests. Independent films tend to be made with a great deal of creative freedom, e.g. *Lady Bird*, *I, Daniel Blake*.
- Mainstream media products are considered to be most popular at the time of their release. It is often films produced in Hollywood that fit the mainstream criteria, e.g. *Star Wars*, *Avengers*, *James Bond*
- Exhibition is the process in which films are presented on various platforms, such as television, streaming services and, most commonly, cinemas

Film Industries

Production studio: Eon Productions and United Artists	Budget: $245 million (approx.)	Director: Sam Mendes
Distributors: MGM and Columbia	Profit: $880 million (approx.)	Producers: Michael G Wilson and Barbara Broccoli
Exhibition: 4,000 cinemas (approx.)	Release date: 26/10/2015 (UK)	Original author: Ian Fleming

Daniel Craig: Since being cast as James Bond in 2005, Craig has achieved international stardom, appearing in films ranging from *Cowboys & Aliens* (2011) to *The Girl with the Dragon Tattoo* (2011). For many audiences, Craig has become the quintessential *Bond* actor, appearing in some of the franchise's most critically acclaimed films, as well as in a video segment at the 2012 London Olympics.

Sam Mendes: Following an Academy Award for his feature film debut *American Beauty* (1999), Mendes continued to direct critically acclaimed dramas throughout the 2000s. In 2012, Mendes directed *Skyfall*, arguably the most critically and financially successful *Bond* film of all time. Mendes demonstrated here that mainstream cinema and artistic film-making can sometimes be one and the same.

Christoph Waltz: This German actor shot to fame playing the infamous 'Jew hunter' in the film *Inglorious Basterds* (2009). Waltz has since become one of the most iconic screen actors of recent years, bringing his sinister charm to the role of Bond's most classic nemesis, Blofeld (a character who had already appeared in six films in the franchise prior to *Spectre*).

Naomie Harris: Despite working as a character actress throughout the noughties, Harris rose to fame thanks to her co-starring role in *Skyfall* (2012) and *Spectre* (2015) as the iconic character of Moneypenny. Appearing in such a large franchise has put Harris on the road to global stardom. In 2017, Harris received an Academy Award nomination for her performance in *Moonlight* (2016).

Comparing the production budgets and worldwide gross (not adjusted for inflation) for the oldest *Bond* films against the most recent *Bond* films

Film	Production Budget	Worldwide Gross
Dr. No	$1.1 million	$59.6 million
From Russia with Love	$2 million	$79 million
Goldfinger	$3 million	$124.9 million
Thunderball	$9 million	$141.2 million
Casino Royale	$150 million	$599 million
Quantum of Solace	$200 million	$586.1 million
Skyfall	$200 million	$1.18 billion
Spectre	$245 million	$880.7 million

Analysing the official poster for *Spectre* can offer good insight into the ways in which producers have attempted to market the film. As shown above, the producers of *Spectre* have utilised exciting technologies to create a sense of grandeur around the film's opening. The film was released in IMAX theatres, demonstrating to the audience that the film would be of a high visual quality and require viewing on the big screen.

The Appeal of *Spectre*

- Daniel Craig has established star appeal and become the quintessential Bond for many contemporary audiences.
- The soundtracks to *Skyfall* and *Spectre* (sung by Adele and Sam Smith respectively) have both won Academy Awards and reached number one in the UK charts. *Bond* themes have arguably become as iconic – in some cases, more so – than the films themselves.
- *Spectre* fulfils the minimum requirements of a mainstream film produced for a mass audience. It is a big-budget action film with a familiar genre, a three-act structure and a satisfying resolution.
- The franchise has largely remained popular on account of its use of exotic locations. For example, scenes from *Spectre* were shot across Rome, Soelden, Morocco, Austria and Mexico City (the setting of the opening scene).

SPECTRE Marketing Strategies

- A James Bond themed comedy sketch was released on Red Nose Day, featuring the film's principal cast
- Companies sponsoring the film, such as Heineken and Omega, integrated aspects of the film into their advertisements in exchange for product placement
- The Aston Martin DB10 was revealed as Bond's official car for the film at a press conference
- Video logs and production stills were posted on Eon's social media pages

Production Issues

Since *Die Another Day* (2002), every James Bond film has received a 12A rating. However, producers at Sony were forced to cut certain images of violence in order to secure a 12A rating in the UK and allow a family audience to see the film. It is likely that this decision was made without the approval of director Sam Mendes, demonstrating that the generation of profit is more important to the film's producers than artistic integrity.

The complicated process of film production is reflected in the fact that the James Bond franchise was very nearly cancelled. The production of the 2012 Bond film *Skyfall* was suspended when MGM Studios were revealed to be on the verge of bankruptcy. The company eventually managed to secure $500 million revolving credit.

ADVERTISE MENT

Context- Gender Roles in Society

In terms of women's roles, the 1950s are known as an era of domesticity and conformity. Having been forced into traditionally male jobs during the Second World War, women were largely encouraged to be domestic housewives and allow men to retain their positions as 'breadwinners'. Despite the social change that occurred as a result of the civil rights movement and the second wave of feminism in the 1960s and 1970s, advertisements (until quite recently) have primarily depicted white, middle-class models that conform to patriarchal ideas. Print advertising became a booming industry during the 1950s. The Conservative government at the time repeated the slogan 'Set the people free', promising to allow the general public more access to arts, entertainment and luxury. A similar technological boom has occurred in the last 15 years or so, with the invention of YouTube, Facebook, smartphones, etc.

Commercial advertising describes the promotion of goods or services for a consumer audience, *e.g. McDonald's, Gillette*. **Non-commercial advertising** seeks to provide the audience with public information relating to a certain issue. In most cases, this form of advertising will encourage the audience to take some form of action, *e.g. Think! Outan*

Personification: When human characteristics or personality are applied to a non-human object. This can make advertising more vivid and allow audiences to view a product in a certain way.

'I really am that tasty'

'These are berry, berry tasty'

Wordplay: Experimenting with the multiple meanings or spellings behind words create humorous effect (often in the form of puns).

'Stupendous strawberries'

Alliteration: When the same consonant sound is repeated at least twice in a phrase or sentence in order to emphasise style or a particular emotion (often humour).

Rhetorical question: A question that dramatically implies an answer without stating it, allowing the audience to answer for themselves.

'What are you waiting for?'

Hyperbole: When language is used to exaggerate statements and make something sound larger or more extreme than it really is.

'The finest strawberries in the South'

'Ripe strawberries ripe'

Intertextuality: When a media text references another text in order to shape meaning and effect audience interpretation, e.g. 'Ripe strawberries ripe' references the musical: *Oliver!*

'Get them while they're half price!'

Imperatives: Media language which directly instructs or commands the audience to take action (in this case, the action is to buy a particular product).

Each of these quotes could qualify as the SLOGAN for a strawberry advertisement. Slogans are designed to summarise the benefits or importance of a product, service or message in a short, memorable manner.

'Ripe, Juicy, Jam-packed with flavour.'

Rule of three: The act of making speech or text more memorable, emotive and satisfying by breaking down ideas into three points.

Key Definitions!

Shock Tactics – when elements of media language are used to invoke a highly emotional response from an audience, *e.g. adverts tackling domestic abuse may use violent images to shock the audience into recognising the seriousness of the issue*

Advertising campaign – the strategy an advertising company will use to promote a particular product, service or message, possibly across multiple media platforms, *e.g. This Girl Can used a range of print and video advertisements to encourage women to participate in sport*

Public service announcement – the promotion of a message through the media on the basis of public interest or to raise social awareness, *e.g. anti-smoking adverts*

Targeting – the ways in which media producers select and mediate their content in order to appeal to a particular audience demographic, *e.g. adverts for toy lightsabers have traditionally targeted an audience of young boys*

Aspiration – describes the desire people have for greater levels of wealth or success, *e.g. advertisements for beauty products will often feature actors or models who present a high standard of beauty for audiences to strive to*

Advertising copy – the main body of text in a print advert explaining the functions and benefits of a product, service or cause, *e.g. an explanation of each flavour in a tin of chocolates*

HARD SELL – an advertisement which places sole emphasis on the promotion of a product, service or message

SOFT SELL – an advertisement which places less direct emphasis on the central product, service or message, rather it constructs a scenario which indirectly shows the benefits of this

Set Product 1 – Quality Street Advert

Framing – The male character is positioned centrally within the frame facing out towards the audience. This encourages the audience to identify primarily with his situation.

Advertising copy – The advert is mainly image-based. The most detailed copy comes in the form of the descriptions of the three individual chocolates in the bottom third of the page.

Typography – Tall, elegant characters emphasise the luxurious nature of the brand. The brand name is written in large text in order to catch the audience's attention.

Targeting – The age of the characters and the comedic approach to representing gender suggests that the target audience are young professionals aged between 21 and 40.

Alliteration – The use of repeated 'd' sounds ('delicious dilemma') rolls off the tongue, creating a sense of strength behind the brand.

Narrative – The male character is positioned as the hero (according to Vladimir Propp's character type theory). His dilemma in the story revolves around which of the two women (the princesses) he will choose.

Repetition – The word 'delicious' is repeated three times across the advertisement, emphasising the quality of the brand and implying that, above all else, the product tastes good.

Enigma codes – The advert sets up a puzzle by providing detail on only three of the individual chocolates. The audience must buy the entire tin in order to solve this puzzle.

Quality Street © Alamy Stock Photo, 1956

Mode of address – The advert establishes a mode of address which is playful and casual in its use of alliteration and hyperbole. However, the audience is not directly addressed through the image or the text.

Anchorage – The positioning of the male character's head in front of the golden frame forms the image of a halo, providing him with godlike status.

Cultural codes – The painting in the background shows a couple dressed in clothes reminiscent of the Regency era. Certain audiences will associate these characters with a sense of luxury and cultural development. Furthermore, certain audiences will recognise the couple as Miss Sweety and Major Quality from the 1930s adverts for Quality Street, solidifying the brand's identity.

The advert enforces the stereotype that there is a universal love of chocolate among women. Many chocolate advertisements identify young women as their key target audience due to scientific evidence that chocolate increases levels of serotonin in women's brains.

There is clear reinforcement of patriarchy: the two women are given a choice in the advert, but the man is allowing the women to select a chocolate. This is emphasised by centrally framing the male character and giving him possession of the product.

KEY REPRESENTATIONS

The male character's eyeline is directed at the product which is placed suggestively on his lap. This gives the product something of a phallic significance (it is an effective way of attracting the opposite sex).

By placing the audience's identification with the male character, the advert acts as a clear illustration of Laura Mulvey's theory of the male gaze (in which media is framed from the perspective of a heterosexual, patriarchal male audience).

How do we know this is an advert from the 1950s?

1. The male model wears a traditional pinstriped suit with a handkerchief.
2. The women wear colourful, long frilly skirts, typical of the period.
3. The pastel coloured illustration style is highly typical of the period. Photographic imagery is most commonly used for contemporary adverts.
4. The image shows a domestic environment in which characters are well dressed and conform to traditional gender roles.
5. Quality Street was still a fairly recent brand. It was still necessary to illustrate and describe the specific types of chocolate in the tin. Nowadays, a Quality Street advert is likely to be more enigmatic and focus on the already established brand identity.

ADVERTISE MENT

Little Boxes of Context on Quality Street

Quality Street chocolates were originally manufactured by Harold Mackintosh in 1936.

They were originally named after a theatrical play by JM Barrie.

Quality Street is currently produced by Nestlé.

Initially only families from middle- to upper-class backgrounds could afford to buy tins of chocolates.

Throughout the 1950s, Mackintosh endeavoured to make the product affordable for working-class families following the post-war rationing period.

The characters in the framed painting are typical of the Regency era (1811–1837), a time of great development in culture and architecture for the United Kingdom.

Colour Scheme

Colour is one of the most important indicators of meaning in print-based media. The colours in the Quality Street advert carry dozens of meanings and connotations.

Red: love, passion, danger, power, sexuality, courage, fire, blood, anger

Purple: reflection, wisdom, royalty, luxury

Gold: extravagance, quality, value, wealth, status

Crime Dramas
Language and Representation

Effect of Context on Representations

The second wave of feminism became prominent throughout the 1960s and 1970s. This movement had a huge effect on the increasingly prominent and complex representations of women on television throughout the following decades. Notice how independent and empowered the female characters in *Luther* are in 2010 compared to those in *The Sweeney* from 1975.

The embracing of ethnic diversity in film and television has been a fairly slow process. Despite the power of the civil rights movement in the 1960s and the Civil Rights Act of 1991, it is only in the last decade that British television has truly embraced ethnic diversity. Remarkably, Idris Elba was the first black actor to be cast in the lead role of a British crime drama.

Major Crime Dramas

- *Dixon of Dock Green* (1955)
- *The Sweeney* (1975)
- *Minder* (1979)
- *21 Jump Street* (1987)
- *Inspector Morse* (1987)
- *Twin Peaks* (1990)
- *Prime Suspect* (1991)
- *Silent Witness* (1996)
- *NCIS* (2003)
- *Life on Mars* (2006)
- *Luther* (2010)
- *Sherlock* (2010)
- *Line of Duty* (2012)
- *Broadchurch* (2013)
- *Mindhunter* (2017)

Key Character Types

Crime dramas typically include several (or all) of the following stock characters. The assumptions audiences make about these characters based on previous crime dramas they have watched can either be embraced to make the storytelling clear, or be subverted to keep the audience on their toes!

The Detective	Usually the protagonist; given the task of catching the criminal.
The Rookie	The detective's junior partner; will usually help the detective catch the criminal.
The Superior	The detective's boss; will usually give the detective an assignment and rein them in when they threaten to break police protocol.
Forensics	Specialists who will often provide the detective with the evidence they need to solve the crime.
Crime Boss	A powerful and influential criminal who the protagonist must struggle to bring down.
Henchman	The criminals who work for the crime boss. Henchmen tend to physically act out the crimes that their boss is responsible for organising.
Serial Killer	Crime dramas that focus less on organised crime might instead feature a serial killer, a lone villain who must be stopped by the detective.
Victim	Someone who is killed by the villain or that must be saved from the villain by the main detective.
Witness	A character who provides the detective with the crucial information they need to solve the crime or catch the criminal(s).
Informant	Has the same function as the witness but will usually give the detective information because they have been complicit in the crime being solved.

Binary Opposites

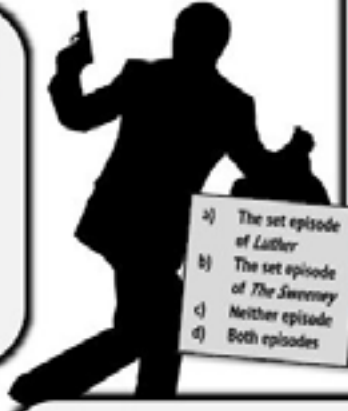
The progression of crime drama narratives relies heavily on conflict. This can be easily established through the use of **binary opposites** (two elements that oppose each other). Typical examples of the genre include...

Cops vs Criminals

Good vs Evil

Law and Order vs Chaos

Innocence vs Guilt



a) The set episode of *Luther*
b) The set episode of *The Sweeney*
c) Neither episode
d) Both episodes

Typical Narrative Beats of a Crime Drama

- A crime occurs *(a robbery, a murder)* D
- The detective visits the crime scene A
- The investigation is planned and specific roles are assigned A
- Witnesses are interviewed D
- Suspects are put under surveillance B
- Suspects are arrested B
- Suspects are interrogated D
- The villain learns the identity of the protagonist D
- The villain threatens or hurts someone close to the protagonist D
- The team investigating weigh up all existing evidence D
- The detectives collaborate with the forensics department C
- A red herring *(a false arrest)* C
- A suspect is put on trial C
- A suspect is sentenced for their crime C
- The detective confronts the main villain one-to-one A

Technical codes commonly found in crime dramas

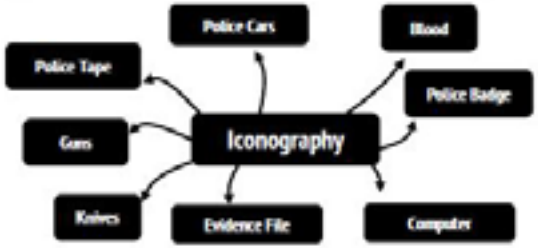
- ★ **Low-key lighting:** A strong source of light is used to emphasise shadows and darkness. This invokes a sense of mystery and fear.
- ★ **Partial Vision:** A film-making technique used to restrict the audience's view contributing to a sense of enigma (perfect for withholding the identity of a killer or informant)
- ★ **Close-up Shot:** A shot in which the camera films a subject at close range, drawing attention their facial expressions and the emotions they feel.
- ★ **Shaky Cam:** A shaky shooting style used to make the audience feel disorientated and immersed, particularly in an action sequence or a chase sequence

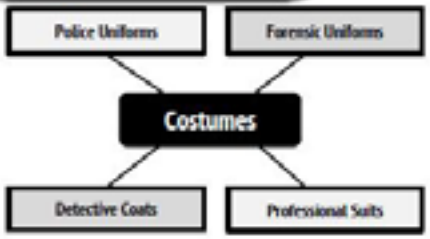
Differentiating between episodic and serial crime dramas

The main distinction between an **episodic** crime drama and a **serial** crime drama is implied in the name. **Episodic** crime dramas (also known as **procedurals**) feature one-off storylines that are set up and resolved within a single episode. Most story arcs are not developed over multiple episodes. However, each episode will feature the same (or similar) characters, settings and themes.

Conversely, **serial** crime dramas have a serialised nature, so each episode leads straight on from the previous episode and into the next. Storylines continue from one episode to the next and the crime in question takes a number of episodes (usually an entire season) to solve. While procedurals are often American, serialised crime dramas are more popular in the UK and Scandinavia. Because European crime dramas have fewer episodes, exploring longer-running storylines is more feasible, since crime dramas produced in these countries usually have between four and 10 episodes. Therefore, a serialised series feels less long-winded.

In a sense, *Luther* follows a 'villain of the week' structure. However, Luther's relationships with Zoe and Alice are developed throughout the series, lending the programme elements of the serial crime genre. *The Sweeney* is more of an episodic crime drama as there are very few narrative or character arcs which develop over multiple episodes.





Subsidiary – Small company working as part of a larger company, e.g. BBC Studios (the distributor of *Luther*) is a commercial subsidiary of the BBC

Global Marketing – Methods used to promote a media product in multiple countries, e.g. trailers, pre-roll advertising, and social media marketing for crime dramas is accessible for audiences across the globe

Regional Marketing – Methods used to promote a media product within a smaller geographical area, e.g. outdoor advertising, TV conventions and private panel shows are only available to audiences within a specific country or region

Synergy – Two media companies working in accordance with each other to increase profits and audience engagement, e.g. graphic novels and a prequel novel have been released alongside the BBC crime drama *Luther*. Different media platforms are used to attract audiences to the same series.

Piracy – The illegal access and consumption of media products. This includes peer-to-peer file sharing and illegal streaming. Piracy is currently the biggest threat to the profits made by television series.

Shareholders – Individuals or businesses that legally own profit shares of a media production company, e.g. as a commercial broadcaster, ITV has a number of shareholders, including Liberty Global Inc. and Capital Research

Syndication – A television product is sold and distributed across numerous platforms and organisations, sometimes on a global scale, e.g. *Luther* was originally broadcast on the BBC but has since been made available on Netflix, DVD, BBC America and the Chinese streaming service PPTV

On Demand Services – These allow audiences to stream or download television programming by means of an internet connection, e.g. BBC iPlayer allows audiences to binge-watch their favourite crime dramas

Press Release – A public announcement made by a company regarding any news or developments. The purpose of this is to attract as much news coverage as possible, e.g. a television production company will publicly announce each new series of a show such as *Luther* at least a few months in advance.

Distribution – The delivery of a television programme to appropriate media platforms, e.g. rights to screen *Luther* have been purchased by Netflix

Pilot – The first episode of a television programme. This will be assessed and a decision will be made as to whether an entire series is broadcast, e.g. both set products in the crime drama genre are pilot episodes

Exhibition – The way a television programme is screened, streamed or broadcast to an audience, e.g. *Luther* has been exhibited on BBC One, BBC iPlayer, DVD release and Netflix, providing audiences with a range of opportunities to watch the show

CRIME DRAMA INDUSTRIES AND AUDIENCES

The main factors media producers use to target audiences

This is not to say that crime dramas cannot be enjoyed across multiple demographics (e.g. male and female, teenagers and baby boomers). However, the creator (with instruction from the broadcaster) will produce every crime drama with a specific target audience in mind.

- Gender
- Age
- Ethnicity
- Social Class
- Upbringing

TRUST THE CRITICS!

Positive reviews on sites such as Metacritic and Rotten Tomatoes can allow television shows to reach huge international audiences as these sites can be accessed across the globe. *Luther* still appears on the Internet Movie Database's top-rated television shows according to audiences.

Pleasures of the Genre

The genre will often feature exciting set pieces and extreme situations making for effective escapism. Crime drama episodes will often have one of two general narrative structures, each one possessing their own pleasures...

- ★ **Restricted narrative**: A drama in which the identity of the criminal(s) is kept a mystery until the end of the episode, allowing the audience to actively uncover the mystery while watching
- ★ **Inverted narrative**: The identity and plans of the criminal(s) are revealed very early on. Pleasure is derived from the satisfaction of watching the detective(s) solve the case.

The increasing popularity of DVD box sets and online streaming services over the last 20 years has largely affected the pleasures audiences receive from watching crime dramas. Before these innovations, audiences would have to wait a week between episodes, giving them time to predict what would happen in the next episode. Nowadays, there is a culture of binge-watching in which audiences will watch an entire series in a very short space of time.

The Benefit of streaming services: crime dramas produced by traditional broadcasters will often be sold to online streaming services such as Netflix and Amazon. Keeping the series readily available for audiences is an effective way to maintain its **relevance** in an age of such heavily saturated media content.

THE BBC Commissioning Process

Option 1: The BBC may have an idea for a new television show. It will then approach any independent production companies that might be interested in developing the script. These independent companies will primarily be involved in the creative process of a television series.

Option 2: Independent artists or companies will send in and pitch their ideas to the BBC. The BBC chooses whether or not to develop these ideas depending on the extent to which they adhere to its wider aims as an organisation.

BBC Genres: Children's; Comedy; Drama; Entertainment; Factual; Learning; Music; News; Religion and Ethics; Sport

PROBLEM WITH PIRACY!

Television crime dramas are often pirated online through peer-to-peer downloading and illegal streaming. This has a huge negative impact on the money that can be put towards creating new programmes. Piracy is currently the biggest threat to the television industry. *Game of Thrones*, *The Walking Dead*, *The Big Bang Theory* and *Ricky and Morty* have been among the most pirated television programmes over the last couple of years. Piracy is a huge issue among UK audiences for US programmes as UK audiences do not want to wait weeks to watch an episode after it has already been broadcast in America.

HOWEVER

Risks to the UK licence payer's fee

More and more audiences are subscribing to streaming services such as Netflix and Amazon. These audiences are consuming the majority of their television through these platforms rather than public service broadcasters such as the BBC. Many of these audiences feel, therefore, that they should not be obliged to financially contribute towards a TV licence.

HOWEVER

Traditional channels such as the BBC and Channel 4 have a long-established history of producing high-quality television

According to Ofcom, approximately 70% of the television watched in 2016 was accessed on the UK's four main channels: BBC, ITV, Channel 4, and Channel 5

Terrestrial channels such as the BBC and Channel 4 have consistently invested in new innovations (BBC iPlayer, More 4, the red button, active social media accounts, online forums) in order to maintain a large audience

Transmission – The broadcast of a television or radio programme to multiple audiences simultaneously

Ofcom – The regulatory body that oversees the UK's mass communications industry

Production Costs – The money put towards the creation of TV shows, e.g. the cost of pre-production, filming, post-production, marketing, etc.

Convergence – The increasing availability of a single media product across multiple technological platforms, e.g. shows such as *The Sweeney*, that were once only available on cable television, can now be accessed on multiple platforms, such as Blu-ray

Pitch – A statement that summarises the premise and ideas of a television programme, usually directed towards a particular organisation, e.g. Neil Cross pitched the idea for *Luther* to the BBC based on the organisation's values and capacity to produce the script

Subscription – Payments made on a regular basis in exchange for goods or services, e.g. in order to access Netflix in the UK and watch shows such as *Luther*, audiences have to pay a subscription fee of £5.99 per month

Commercial Broadcasters – Provide programming with the end goal of making money via advertising or subscription fees, e.g. ITV (the original network for *The Sweeney*)

Public Service Broadcasters – Provide programming to audiences but the end goal is solely to inform, educate and entertain the public, e.g. BBC (the original network for *Luther*)

Watershed – The rule stating that programmes featuring adult content should not be broadcast before 9pm. This was designed by Ofcom to protect young people from viewing potentially harmful material, e.g. *Luther* and *The Sweeney* were both broadcast after the watershed.

Spin-off – A media product which acts as an extension of an existing product, e.g. *Better Call Saul* is a spin-off series from the popular AMC crime drama *Breaking Bad*

LUTHER MEDIA LANGUAGE

Character	Character Type (Crime Genre)	Character Type (Vladimir Propp)
DCI John Luther	Detective	Hero
Alice Morgan	Serial Killer / Criminal	Villain
DCI Ian Reed	Colleague/Friend	Helper
Zoe Luther	Detective's Wife	Princess
Rose Teller	Boss / Senior Officer	Dispatcher
Justin Ripley	Detective's Partner	Helper
Mark North	The Other Man	False Hero

Remember: Over the years there has been a demand for crime dramas to become more complex and morally ambiguous. While the characters in *Luther* can be basically categorised according to Vladimir Propp's character types, in many ways they are too complex to be labelled in such a restrictive fashion.

Example: Some of Luther's personality traits are not particularly heroic. He is physically aggressive to Mark, he is willing to break police protocol in order to confront Alice and he allows Henry Madsen to fall to his death.

Example: Certain characters shift character type throughout the course of the series. Ian Reed begins the series as Luther's friend but eventually goes on to accidentally kill Zoe and frame Luther for the murder. On the contrary, Mark North begins the series as Luther's rival but eventually helps him bring Zoe's killer to justice.

Technical Code	Definition	Example
Establishing Shot	A shot which shows the location in which a scene is about to take place	The episode begins with a slow zoom in to an abandoned factory (the main location for the opening scene)
Over-the-shoulder Shot	A shot in which the camera is positioned behind (and usually slightly above) a character's shoulder following them through a location	As Luther pursues Madsen through the factory, the camera closely follows him as if attached to his shoulder. This obscures his face, creating an enigma.
Extreme Close-up	Captures a very specific part of a subject; usually used to create an intense mood and emphasise a particular emotion	Once Luther has cornered Madsen, there is an extreme close-up of his eyes, emphasising his anger and his primal desire to hurt Madsen
Low-angle	Sequences or images taken by a camera, situated below the main subject, often to make them appear large or powerful	Shots of Henry Madsen dangling from the bridge are filmed from below, emphasising how far off the ground he is and that if he falls, he is likely to die
High-angle	The camera is positioned up high and looks down at the subject. It has the effect of belittling the subject.	Low-angle shots are intercut with images of Madsen's face from Luther's perspective, emphasising Madsen's fear and lack of power in the situation
Tracking Shot	When the camera moves in conjunction with a person or subject in order to keep it/them in the frame	As Luther walks towards the Morgan family crime scene, the camera closely follows him, implying that he is an important and authoritative presence
Zoom in	A camera technique used to magnify focus on a subject within a single shot	As Luther is about to enter the interrogation room, the camera zooms in on his face as he takes a deep breath, emphasising how important this moment is for him
Canted Angle	A shot in which the camera is slanted so horizontal lines do not run in parallel with the bottom of the frame, traditionally used to imply that 'all is not well'	The opening chase sequence is primarily made up of canted angles, contributing to the scene's sense of tension and conflict
Panning Shot	A shot in which the camera remains stationary but rotates on a horizontal access	As Luther explains how he knows Alice killed her parents, the camera follows him as he paces from side to side, capturing the exhilaration he feels

NARRATIVE STAGES

Cold Opening: Detective John Luther allows the child murderer Henry Madsen to fall to his death

Equilibrium: After a seven-month absence, Luther is reassigned as a detective to investigate the murder of Alice Morgan's parents. Meanwhile, he feels ready to rekindle his marriage with Zoe.

Disruption of Equilibrium: Luther interrogates Alice only to discover that she killed her own parents. Meanwhile, Zoe is revealed to be seeing Mark North behind Luther's back.

Recognition of Disruption: Zoe breaks Luther's heart when she tells him of her new relationship with Mark. Luther attempts to distract himself by thinking of ways to prove Alice is guilty.

Attempt to Repair Disruption: Luther visits his wife at work and demands an explanation. He also visits Alice in her home where she proudly admits to the murder of her parents. He discovers that Alice has kept the murder weapon.

Resolution: Luther allows Alice to keep the murder weapon on the condition that she never hurts Zoe. He goes on to visit Zoe and tell her that he is ready to move

ROLAND BARTHES' CODES

Action Codes – Alice calling in the death of her parents: this phone call sets the central plot into motion

Enigma Codes – The opening enigma of where the young girl is hidden and whether she is alive or not is a fairly common narrative device in crime dramas. These kinds of enigma give the plot direction and make the story more exciting and intense as a young life is at stake.

Symbolic Codes – Throughout the episode, John Luther is framed in wide-angle shots. This imagery of the character alone within vast rooms or landscapes suggests that his character is lonely and emotionally isolated

Cultural Codes – It is established that Alice Morgan attended Oxford University at the age of 13. Most audiences will immediately understand how intelligent the character is considering that most people attend university when they are 18 and that Oxford is one of the most prestigious universities in Britain.

Luther makes effective use of **chiaroscuro lighting:** With its name based on a combination of the Italian words 'dark' and 'light', this lighting technique is noted by dramatic contrasts of light and shadows. It aims to focus attention, articulate space, create drama and bring out the 3D properties in an image. This style of lighting was heavily utilised in the film noir movies of the 1940s and 1950s to emphasise a sense of mystery and moral ambiguity. The inclusion of harsh shadows and dark urban landscapes appropriately connotes a sense of evil and corruption being around every corner.

CRIME DRAMA ICONOGRAPHY IN *LUTHER*

EDITING TECHNIQUES

Pacing – In the opening sequence, the shots of Luther are fairly sustained in length. However, when the camera follows Madsen, the editing is quick and sporadic. This implies that Luther is more calm and controlled in the situation compared to Madsen, who is panicking.

Continuity Editing – The events of the story are presented in chronological order. In the opening scene, the editing style is frantic and rapidly intercut. However, the shots of Luther chasing Madsen through the old brewery are still edited in a way which makes it clear where the characters are in relation to one another.

Cross Cutting – The shots of Luther searching through Alice's apartment for the remains of the gun are intercut with shots of Alice walking back to the apartment. The audience can automatically tell that these events are happening simultaneously, heightening the tension.

Match Cut – The shot of Rose telling Luther to arrest Alice 'the right way' is immediately followed by a Polaroid photo of the dead dog. These shots are thematically linked as the dog turns out to be the key piece of incriminating evidence Luther needs to beat Alice.

LUTHER REPRESENTATION

Ethnicity in *Luther*

Idris Elba was the first black actor to be cast as the protagonist of a crime drama, making *Luther* a culturally significant television series

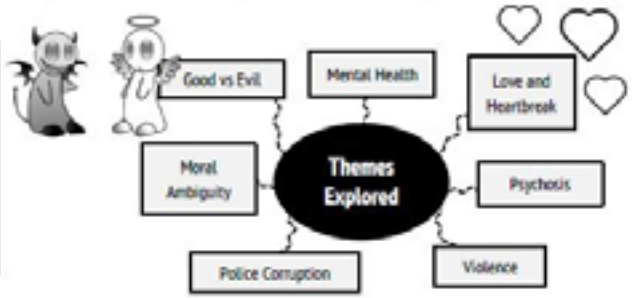
Historically, black actors have been cast regularly as criminals and rarely as detectives, a stereotype that is subverted through the casting of Idris Elba as the programme's titular detective

The casting of non-white actors (Idris Elba, Indira Varma) as characters in senior positions represents the growing multiculturalism of London as well as the growing diversity in places of work

The opening sequence appears to deliberately play with the audience's expectations by creating the illusion of negative representations. It shows a smartly dressed white man (Henry Madsen) running through an abandoned brewery, pursued by a large, physically imposing black man (John Luther). Well-lit close-ups of the frightened white man are provided while the black man remains hidden in shadow, making him seem more sinister. The audience's point of identification is aligned with the white man. It is only when the men come face-to-face that we realise we have been made to sympathise with a child killer and distrust the black detective trying to stop him.

The characters in Luther are constructed as three-dimensional individuals transcending the stereotypes that the crime drama genre has historically depended on. In a programme in which moral ambiguity is such a prominent theme, the major characters all have flaws, virtues and their own sense of complexity...

John Luther	Alice Morgan	Zoe Luther	Rose Teller	Justin Ripley	Ian Reed	Mark North
Dominant male Tough Muscular Intelligent Reckless Rule breaker Workaholic Good detective Protective Rage issues	Intelligent Manipulative Femme fatale Psychopathic Meticulous Self-obsessed Smartly dressed Flirtatious Sexually confident	Successful Career woman Scared of Luther Compassionate Afraid to be honest Needs protection Intelligent Quick-witted	Good boss Practical Compassionate Knowledgeable Respects police Procedure Tough Eager for justice Defends Luther	Loyal Honest Empathetic Gentle nature Straight-faced Observant detective Openly respects Luther	Corrupt World-weary Listens to Luther Cares for Luther Encourages Luther to slow down	Gentle Good-natured Considerate of Luther's feelings Protective of Zoe Non-violent Not used to confrontation



Significant Lines of Dialogue

Luther: 'but Criminals aren't as smart as they think they are' – **implies he is a smart and experienced detective**

Zoe: 'Now when I wake up I feel sick, I've got this permanent knot in my stomach... It's gonna kill him' – **her decisions are largely driven by her emotions. She is flawed but compassionate.**

Alice: 'Love is supposed to dignify us, exalt us. How can it be love, John, if all it does is make you lonely and corrupt?' – **she completely lacks sentimentality and mocks the idea of love: an unusual representation of femininity**

Teller: 'Rule number one, don't get yourself into this situation again which means you observe case management protocol' – **she is practically minded and not afraid to assert authority over the men in her precinct**

Justin: 'I've lobbied to be stationed with you, put in the request nine months ago, chased it up three times a week in writing' – **he is not afraid to show sincerity and modesty in a largely male-dominated environment**

Mark North: 'You can't keep lying. It's cruel' – **he is sensitive and concerned about the feelings of others**

Luther: 'One minute I'm one place then the next minute I'm 15,000 miles away and I know that I've travelled because I'm dizzy and I just wanna throw up' – **he struggles with his mental health**

Luther © BBC Drama Productions, 2010

A character's appearance can be a huge indicator of the way in which they are represented. **John Luther** is simultaneously presented as a professional and a maverick. His shirt, tie and jacket suggest that he is professional while his undone top button and loose tie indicate that he does not always follows rules or care about conventions. Ripley wears a similar outfit, demonstrating that he is also a high-ranking detective, but both his jacket and top button are fastened up, connoting a more measured approach to police work. Ripley's costume is black and white, demonstrating his stable moral sense of right and wrong. Luther's costume is comprised of different shades of brown and grey, possibly connoting that he is more morally flawed. Furthermore, his red tie invites connotations of passion and rage. This partnership creates an interesting representation of age. Despite being older and more experienced, Luther is a hothead who plays by his own rules. Ripley's status as the junior and yet significantly more sensible police officer demonstrates television's increasing ability to represent young professionals as capable and intelligent.

REPRESENTATION OF LONDON

London is depicted as a nihilistic and violent environment. Luther is forced to confront child murderers, psychotic killers and ruthless hitmen throughout the series.

The shots of high-rise towers and modern office buildings emphasise London's status as a busy and developing metropolis

Unlike in *The Sweeney*, London is represented as a place in which positions of responsibility are distributed fairly equally amongst different ages, genders and ethnicities, e.g. female boss, black detective

LUTHER MEDIA INDUSTRIES

LUTHER– FACT SHEET

- **First trailer release:** 16 April 2010 (Official BBC YouTube channel)
- **Initial date of broadcast:** 4th May 2010
- **Time of broadcast:** 9pm (after the watershed)
- **Original network:** BBC One
- **Original target audience:** Adults aged 25–54
- **Series creator:** Neil Cross
- **Producer:** Katie Swinden
- **Production Company:** BBC Drama Productions
- **Distributor:** BBC Studios
- **Pilot episode length:** 52:28
- **Opening credits song:** 'Paradise Circus' (Massive Attack)
- **Episode 1 UK viewing figures:** 6.35 million
- **Series 1 average UK viewing figures:** 4.83 million

***Luther* was a major investment for the BBC**

The show was originally broadcast on BBC One, the organisation's main channel

The show was originally broadcast at 9pm on Tuesday nights, the prime-time slot in which networks bring in their highest viewing figures. Crucially, it was broadcast after the **watershed**, a rule enforced by Ofcom stating that adult content may only be broadcast between 9pm and 5.30am

The show was immediately made available on BBC iPlayer, allowing audiences to catch up if they weren't available for the 9pm slot

The BBC's decision to allow Netflix to screen *Luther* has significantly increased the show's global reach

The BBC is a public service broadcaster. The organisation's primary obligation is serving the public. Funding comes from the public, and in turn the broadcaster is perceived to be owned by the public. Public service broadcasters are often run by the state on behalf of the public.

***Luther* has been made available on the following platforms...**

BBC iPlayer | BBC One | Netflix | BBC America | DVD Box Set

Evidence of *Luther*'s success...

The first episode of *Luther* attracted approximately 6.35 million viewers. *EastEnders* and *Doctor Who* were the only television shows to bring in higher audience figures that week.

In 2011, *Luther* was one of BBC America's most popular shows, only surpassed by *Dr Who* and *Top Gear*

Luther currently holds a score of 8.5/10 on the Internet Movie Database and an impressive 90% fresh rating on Rotten Tomatoes

BBC America came on board as *Luther*'s co-producer in 2012

The series premiered on the Australian channel ABC1 and BBC America in October 2010. All series since have also been broadcast on these networks.

Luther's international syndication

Luther's first season is now available to view online through the popular Chinese streaming service PPTV

Luther has been broadcast in France, Germany and Denmark and several countries in Africa and Asia

Online Convergence
As of 2019, *Luther* is available to watch on Netflix in 32 countries. Producers recognised this as an effective way of allowing audiences to binge-watch the series all over the world.

BBC One Programming Requirements...

- Originality
- High quality
- Innovation
- Challenging
- Content which nurtures UK talent

These requirements were set out by the BBC Trust Service licence (2016–2017), which in itself is committed to ensuring diversity and quality within the BBC's programming

Features of *Luther*'s Official Website

- Links to active social media accounts
- Popular clips from the show including 'the bus killer scene that terrified fans!'
- Links to interviews with Neil Cross, the creator of the show
- Usable links to each episode on BBC iPlayer
- Video logs with cast members
- Graphic novels depicting episodes from *Luther*
- Profiles on all major characters and the actors that play them
- Trailers for each season

Good to Know: BBC America is a subsidiary of BBC Worldwide, a commercial branch of the BBC maintained without funding from the UK's licence fee, rather being commercially funded through the sale and redistribution of existing BBC programmes. BBC Worldwide distributes huge amounts of TV programming on behalf of both independent producers and the BBC. In 2014, BBC Worldwide sold 670 hours of drama to countries across multiple continents, most notably China, where there is increasingly high demand for British programming.

Inspiration: Neil Cross claimed that the construction of Luther's character is influenced both by Sherlock Holmes' detective skills and Columbo's 'inverted detective' approach to structuring the story. In *Luther*, both the crime and the criminal are known to the audience quite early on in the episode. The tension in the episode comes from watching the detective attempt to solve the crime.

LUTHER AUDIENCES AND CONTEXT

John Luther shares a name with pioneering leader of the civil rights movement Martin Luther King Jnr. This could be a reference to the fact that Luther is an intelligent and courageous man working in a job that has been primarily occupied by white men throughout history.

The pilot episode of *Luther* was broadcast during the run-up to the 2010 general election. Britain's economy had been hit hard by the 2007 financial crash so people were anxious to see which political party would be elected to implement their policies. In this sense, *Luther* provided audiences with escapism from the threat of an uncertain future.

Four Key Facts

The second wave of feminism took place in the 1970s, when the representation of women in the media, marital rights, contraceptive rights and workplace rights became huge points of discussion among the general public. This progress is somewhat demonstrated by the group of strong and complex female characters in *Luther*.

The early seasons of *Luther* were highly criticised for primarily depicting acts of violence against women. Idris Elba and Neil Cross responded to these audience criticisms and attempted to balance this out in later seasons. This is a prime example of audiences actively influencing the direction television programmes move in.

Idris Elba rose to fame when he was cast in the highly popular American crime drama *The Wire*. On the back of this success, Elba appeared in films such as *Rock N Rolla* and *American Gangster*, as well as the American remake of *The Office*. Elba received rave reviews for his performance as Luther and won a Golden Globe award in 2011.

Film noir is a genre that became popular during the 1940s and 1950s in American cinema. Film noir films were usually bleak and violent, focusing on a flawed detective's attempts to uncover a mystery. A common character type in film noir was the **femme fatale**, a young, sexually attractive woman who uses her feminine charm to manipulate the protagonist and eventually betray him. The juxtaposition of Alice Morgan's violent behaviour, intelligence and sexual charm make her a modern reinterpretation of this classic character type. Since the 1970s, more and more high-profile female serial killers have entered the popular consciousness, e.g. Aileen Wuornos, Rose West and Myra Hindley. In recent years, crime dramas such as *Luther* have increasingly attempted to reflect this trend more accurately.

Uses and Gratifications	Explanation
Entertainment / Diversion	• Effective use of enigma codes, growing tension and mystery, e.g. the killer of Alice's parents; Alice thoughtfully watching Henry Madsen in the hospital • Standard of dialogue and storytelling is high for the genre • Cliffhanger endings make audiences want to watch the next episode • Award-winning performances • Flawed and morally complex characters make for unpredictable television • The psychology of the criminals is explored in more depth than is traditional for the genre, making the show unusually interesting
Information	• Arguably lends some insight into how real-life police procedures work
Personal Identity	• *Luther* has a diverse cast in terms of ethnicity, social background and personality; a wide range of characters for audiences to identify with • Combination of highly relevant and timely issues such as mental health, masculinity and morality • Possible to connect emotionally with the characters and their experiences, e.g. Luther losing his wife, Rose wrestling with her responsibilities
Social Interaction	• The continuous narratives and cliffhanger endings make for appropriate **water cooler topics** (cultural events that can be discussed casually within the workplace) • The show has attracted wide global audiences thanks to Netflix and international broadcasting. Audiences from different countries are able to bond through discussing the show. • Audiences can exchange their opinions about the series over social media, particularly over Twitter using #Luther

***Luther* Website – Active Audience Interaction**

★ **Crime Board** – A video was made available in which the character of DSU George Stark speaks directly into the camera, showing the audience a 'crime board' of evidence proving that Luther is a corrupt police officer. This is designed to immerse audiences further into the story and make them feel a part of the story.

★ **Postcards from Alice** – In 2013, fans of the show were encouraged to create their own postcards from Alice Morgan to Luther and send them to the show's creators. The winning postcards appeared in an episode of the following series. The clip was made available on Luther's official website with the winning participants being congratulated below.

★ **Links to Social Media Pages** – *Luther* maintains active social media accounts for Facebook, Twitter and Instagram. In 2015, the hashtag #LutherisBack was initiated in the run-up to a new series. The show's Facebook account is fairly tongue-in cheek, including video clips such as "Your Luther life lessons" and a *Luther* parody video independently made by *Cassetteboy*.

Critical Praise for *Luther*

- Crimes reflect those currently covered in the news (e.g. kidnapping, shooting and stabbing)
- Luther's intelligent and resourceful approach to solving crimes
- The episode's conclusion effectively captures reality in that criminals are not always brought to justice
- Interesting and subversive to see a young, conventionally attractive woman cast as a psychotic killer
- Effective use of harsh shadows and bleak cinematography
- A detailed focus on the psychology of the police and (unusually) criminals. More focus is given to who they are and why they choose to commit crimes.
- Complex and flawed protagonist wrestling with mental health issues
- Engaging use of enigma codes (particularly cliffhanger endings)

Criticisms of *Luther*

- Luther is too flawed and aggressive a protagonist to sympathise with
- Too gruesome and disturbing
- Audiences that prefer narratives with traditional resolutions may find the endings of episodes unsatisfying
- Too serious and lacking any element of fun
- Generic procedural show elevated by strong performances

Luther's Depiction of the Police

The casting of Saskia Reeves as Luther's boss in 2010 demonstrates the media's acknowledgment of gender equality within the police service

However, the department is still overwhelmingly male, suggesting that the character may have been included as a 'token' female detective

Showing a black man in the lead role may act as a rare inducement to encourage more people from BAME communities to join the police force

Luther depicts policing that reflects modern values, such as not beating up suspects or forcing confessions, and respecting victims

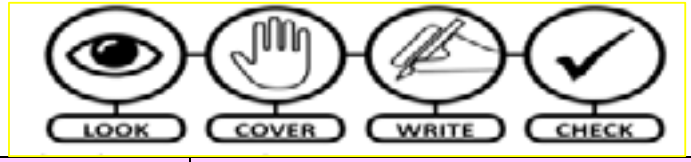
As of 2018, 30% of police officers in the UK were women

20% of senior police service roles in the UK have been occupied by women

In 2017, Cressida Dick became the first woman to be appointed as Commissioner of London's Metropolitan Police Service

Historically, the police services in Britain have been accused of 'institutional racism'. This was fiercely debated throughout the case of Stephen Lawrence: a black teenager from South East London who was murdered by a group of white teenagers. It took decades of public pressure and criticism for the police to bring these killers to justice.

KNOWLEDGE ORGANISER – Year 10 – Music Knowledge/Listening Skills



Inception:	The establishment or starting point of an institution or activity, in this case genre.
Significant:	Sufficiently great or important to be worthy of attention; noteworthy.
Factors:	A circumstance, fact, or influence that contributes to a result.
Imagery:	Visual images collectively.
Comprehensively:	In a very clear or convincing manner.
Compare:	Measure or note the similarity or dissimilarity between things.
Policitcal Context	What was happening at the time - relating to the government or public affairs of a country.
Social Context	The physical and social setting in which people live or in which something happens or develops.

Paragraph Structure Task 1

1. WHAT happened/was the style/recording/event? Or WHO was the person?
2. ILLUSTRATE your point using images (if you can).
3. WHO did it influence/effect?
4. WHY was this significant to the genre?
5. COMPARE is this similar or different to the other genre you are writing about? How?

Genres: You will need to pick two to write about.

Rock
Rock 'n' roll is a style of popular music that emerged from America in the 1950s. It has its roots in various African-American styles of music, such as blues. It was played by both African American and white musicians. Teenage culture started to develop in the 1950s. Rock 'n' roll was the first style of music to appeal to the new young audience. It was often disapproved of by the older generation, and so represented a sense of youthful rebellion.

Punk
"Punk Rock" was originally used to describe the garage musicians of the '60's. Bands like the Sonics were starting up and playing out with no musical or vocal instruction, and often limited skill. The first concrete punk rock scene appeared in the mid-'70s in New York. England's punk scene had political and economic roots. The economy in the United Kingdom was in poor shape, and unemployment rates were at an all-time high.

Electronica
Electronica music began in the 1960s but was popularized in the late 1970s and early 1980s. The most significant influence to the popularisation of this music was the Kraftwerk Band from West Germany who introduced electronic sounds to a wider audience. The spread of electronica music began in the 70s where it was played in clubs. Other styles of the music became popular in the 80s and 90s with high rankings on their popularity in Germany and the UK.

Hip Hop
In the 1970s, an underground urban movement known as "hip hop" began to form in the Bronx, New York City. It focused on MCing over house parties and neighborhood block party events, held outdoors. Hip hop music has been a powerful medium for protesting the impact of legal institutions on minorities, particularly police and prisons

Tick when done	Listening Tasks: Write down all the instruments you can hear and research the tempo of each song (use this website: https://songbpm.com/)
	https://www.youtube.com/watch?v=T38v3-SSGcM "Johnny B Goode" by Chuck Berry
	https://www.youtube.com/watch?v=EfK-WX2pa8c "London Calling" by The Clash
	https://www.youtube.com/watch?v=iukUMRlaBBE"AutoBahn" by Kraftwerk
	https://www.youtube.com/watch?v=PobrSpMwKk4 "The Message" by Grandmaster Flash

Music Practice Techniques

PRACTICE TECHNIQUES
WARM UP - Technical exercises: scales, arpeggios, strokes, etc. - Understand the music – identify as much theory as possible – look for keys, scales, chords, patterns, rhythms).
SET A TARGET - Know what you want to achieve in the session - Be realistic
RECORD YOURSELF Compare this with what the piece **should** sound like and identify the problem areas
IDENTIFY THE PROBLEM AREAS Practice the parts you can't play (not the parts you can) first: - Use a metronome - Play it slowly, then speed it up - Try the part in different rhythms so that you get the pitches accurate - Aim to play it correctly **three time in a row** – if you make a mistake, start again!
BREAK IT DOWN - Play the piece section by section: split the piece into **small** parts; practice each one until right; combine each section as you work through the piece - Don't just play through the whole piece repeatedly, be focused - Try to memorise sections
IF YOU CAN PLAY IT – ADD EXPRESSION! - Add dynamics - Play with the tempo - Think about articulation & phrasing
PLAY ALONG WITH A RECORDING/ANOTHER PERSON
REWARD YOURSELF

PE - Principles of Training

Principles of Training

- **Principles of Training (SPORT)**

Specificity - This is all about making sure that training needs are relevant to an individual's sport, activity or fitness goals. For example, a marathon runner would make sure that their training helped to increase levels of cardiovascular endurance, while a weightlifter is more likely to will

- *Applying specificity to your training ensures that the appropriate muscles and energy systems are used in the most effective way to achieve adaptations, and that these adaptations help to achieve the individual's specific fitness goals.*

Progression- This principle can be closely linked to overload and it is all about gradually increasing the level of overload that you include in a fitness programme. This avoids 'plateaus' where performance stays the same.

- *When you are training, it is important to progress and increase your efforts gradually – this gives your body a chance to adjust to the demands you are putting on it. It's also important to get the balance right – if you don't change your training levels at all or you do it too slowly, then progression will not happen; however, you must also make sure you don't push your body too hard or too quickly, as this can lead to injury or illness.*

Overload - This is when you challenge your body beyond its current limit when training. This is gained by increasing (FITT). When this happens, the body must adapt in response to this and increase performance

- *If a person continually performs the same exercise, at the same level of intensity for the same length of time/frequency, then this will not result in any improvements/adaptations. If the person begins to increase the intensity, frequency or duration of their exercise, overload is introduced to challenge the body and it will then adapt to become fitter in order to meet the challenge.*

Reversibility- This is the opposite to progression. Basically, if you reduce training levels too much or stop training altogether, then all of the positive effects that you have achieved can be lost This is sometimes referred to as 'detraining'.

- *Fitness adaptations can reverse very quickly – for example, after just a couple of weeks of detraining, you may start to notice reduced fitness levels!*

Tedium - Tedium means boredom and the focus of this principle is to incorporate a variety of training methods to prevent boredom and lack of motivation in training.

- *Adding variety to the training programme can also help to avoid overworking certain muscles, allowing them to rest and recover while other parts of the body are exercised.*

- **Principles of Overload (FITT)**

Frequency – How often you train over a set period of time

- *For example, the number of training sessions that are carried out per week).*

Intensity – How hard you work during a training session. It's important to get the level of intensity right –

- *If you don't work hard enough, no significant adaptations will occur; however, if you train too hard, then you may not be able to exercise for as long (duration) or as often (frequency) as you want to, and it can also lead to a risk of injury.*

Time –How long you train for/the duration of each training session. This principle is closely linked to intensity –

- *if you are working at high intensity levels, then the length of time spent exercising may be shorter; however, low intensity exercise will need to be performed for longer durations for any benefits to be gained.*

Type -This is all about using the right method of training to achieve the desired fitness goals. The chosen method should also suit individual needs – for example, high impact/high intensity exercise would not be suitable for overweight individuals who are new to exercise.

- *When choosing methods of training, the specificity principle should be considered – by establishing the specific component of fitness/sports performance that needs to be improved, it becomes easier to identify the most suitable training method(s).*

Health and Fitness

Health has been defined by the World Health Organisation as:
"A state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity."
Physical Fitness means having the ability to perform an activity to the required level (this could be a sport, occupation, etc).
There is a clear **link between health and fitness**, it is also important to remember that a person can be healthy and unfit, and also fit and unhealthy eg

- You can be fit, but not physically healthy – a person could have a cold, but still be fit enough to play a football match
- You can be fit, but not mentally healthy – a person may suffer from depression, but goes to the gym regularly
- You can be healthy, but not fit – a person could be free from illness, but not be fit enough to take part in fitness activities

Health Related Components of Fitness

Cardiovascular Endurance – "*being able to exercise the whole body for long periods of time". Eg, in sports such as l*ong distance running and cycling, triathlon events and football. The heart and lungs need to be able to keep supplying oxygen to the body (through the bloodstream) in order to give the body the energy it needs throughout the exercise activity

Muscular Strength "*the amount of force that can be generated by a muscle or muscle group"* Muscular strength is divided into three areas:

1. **Explosive strength** – this is the force that can be generated with one quick and powerful movement, as the muscle contracts at high speed (eg throwing a ball)
2. **Dynamic strength** – this is the force that can be repeatedly generated by a muscle, as it moves and contracts (eg when performing weight lifting repetitions).
3. **Static strength** – this is when the muscles contract and hold one position without changing length (eg when holding a heavy object or performing a statics plank).

Muscular Endurance "A *muscle or muscle group being able to continue performing/contracting over a set period of time and against resistance, without becoming tired*" eg , a swimmer needs muscular endurance in the upper body so that they are able to constantly use their arms and shoulders for the duration of a race.

Body Composition " *the percentage of fat, muscle and bone that makes up your body weight".* Having the right body composition is important for eg , a rugby player will need to have a very different body composition to a marathon runner.

Flexibility " *the amount of movement that can be achieved in all joints of the body*".

1. **Static flexibility** involves holding part of the body still, at its full range of movement (a gymnast holding a balance on the beam).
2. **Dynamic** uses the full range of movement across a joint, and a fast action is performed but not held (a high jumper arching their back over the bar)

Skill Related Components of Fitness

Agility " *the ability to quickly move/change the direction or position of your body, in a controlled way".* To move and change direction quickly is important in sports such as football, tennis and basketball.

Balance " *the ability to maintain your centre of mass over a base of support".*
This is demonstrated when a person is still (static balance) or when they are moving (dynamic balance). Eg, a gymnast performing a handstand would require static balance, while a footballer running while dribbling the ball would require dynamic balance

Coordination "*is the ability to control two or more body parts at the same time particularly during physical activity*" Eg:, having good hand-eye coordination means that you are able to coordinate eye movement with hand movement in a controlled way – this skill is used when catching a ball, using a racket, etc.

Power "*is the ability to use strength at speed, usually in an explosive movement*" (for example, jumping, sprinting, throwing, etc).This is done by combining maximum speed with maximum strength.

Reaction time *"the time it takes for the body, or part of the body, to respond to a stimulus".* The speed of response can be affected by the situation

- **Simple situations** – here, there is only one response so it should not take a long time to react. Eg a sprinter reacting to the starter's gun
- Com**plex situations** – here there is a choice to be made so more time is needed in order to evaluate the situation and choose a response. For example, a tennis player deciding which shot to play in a match.

Speed "the ability to perform a movement or cover a distance as quickly as possible.

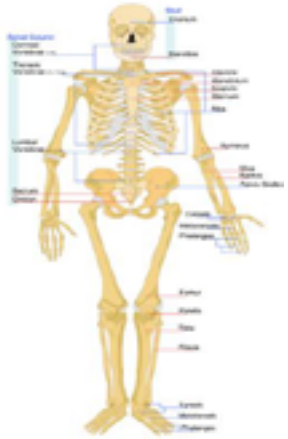
- **Accelerative Speed** (used in sprints up to 30 metres)
- **Pure Speed** (this is used in sprints up to 60 metres)
- **Speed Endurance** (this is used when sprinting with short recovery periods in-between such as in team games and racket sports).

Skeletal System

The Skeletal System

Structure – The skeleton is divided into two sections and you should be able to locate the bones listed below:

- **Axial** – cranium, sternum, ribs and vertebrae
- **Appendicular** – clavicle, scapula, humerus, radius, ulna, carpals, tarsals, pelvis, femur, tibia, fibula and phalanges



The skeletal system is made up of bones that join together to form **joints.** The skeletal system allows **movement** to happen when it is joined up with the muscular system. **Connective tissue** called **tendons** link the bones to the muscles and **ligaments** join up bones at the joints.

Three Types of Joints

- **Fixed joints** - There is no movement in these joints. Examples are the skull and the pelvis.
- **Slightly moveable joints** - These joints are linked by cartilage, which means that there is some movement but it is very slight/limited. Examples of these joints can be found in the spine, ribs and sternum.
- **Synovial joints** These are the joints that provide a great range of movement within the body

Types of Synovial Joints

Pivot joint – this type of joint is found in the neck/; it allows rotation of the head**.**
Condyloid joint – these joints are found in the wrist and ankle.
Saddle joint – this type of joint is found at the base of the thumb.
Gliding joint – this type of joint is found in the wrist and the clavicle.
Ball and socket joint – these joints are found in the shoulder and hip; this type of joint allows the greatest range of movement.
Hinge joint – these joints are found in the elbow and knee; they allow movement that is limited to one plane (similar to a door swinging on its hinge).

Four Different Types of Bone

- **Long bones,** such as the femur (your thigh bone) and the humerus (in your upper arm). These bones are usually connected with large movements of the body.
- **Short bones**, such as the carpals and tarsals (found in your hands and feet). These bones are linked to smaller movements of the body.
- **Flat (or plate) bones**. These bones protect the internal organs – for example, the skull, the ribs, the sternum and the scapula.
- **Irregular bones**. These bones are irregular in shape, such as the vertebrae (in your spine)

The Main Functions of the Skeletal System

- Working with muscles to allow **movement** in joints
- Giving **support** to our muscles and organs
- **Protecting** vital organs (for example, our skull protects our brain)
- Maintaining our basic **body shape**
- **Producing red and white blood cells** (this is done in the bone marrow)
- **Storing minerals**, such as calcium

Joint Actions

- **Abduction**: this is movement away from the mid-line of the body.
- **Adduction:** this is movement towards the mid-line of the body.
- **Extension**: this is when we straighten the limbs (arms/legs) at a joint.
- **Flexion:** this is when we bend the limbs (arms/legs) at a joint.
- **Rotation**: this is a circular movement around a fixed point, either inward or outward

The Spine (also known as the vertebral column or spinal column)

The spine is split into the following regions:

- Cervical (7 vertebrae)
- Thoracic (12 vertebrae)
- Lumbar (5 vertebrae)
- Sacrum (5 fused vertebrae)
- Coccyx (4 fused vertebrae)

Kyphosis is a curving (curvature) of the spine that causes the top of the back to appear more rounded than normal.
Lordosis where the lumbar or cervical vertebrae are either slightly or significantly pronounced (curved).
Scoliosis is when the spine curves to either side of the body.

Muscular System

Types of Muscle

Cardiac:
- Found in the heart
- Oxygen dependent, involuntary
- Aids blood flow through the heart

Smooth
- Found in multiple locations including digestive tract, blood vessels and lungs; contracts in all directions
- Can work without oxygen, involuntary
- Aids digestion, helps the distribution of blood

Skeletal:
Found around the body
Can work with or without oxygen, works voluntarily
Aids with movement

The Muscular System

Location and Movement Functions of Key Muscles

- **Biceps** – Found in Upper front Arm and allow flexion of the elbow
- **Triceps** –Found in upper rear arm and allow extension of the elbow
- **Hip Flexor-** – Found in hip and allow flexion of the hip
- **Gluteus Maximus** – Found in rear of lower torso and allow extension of legs at hip
- **Abdominals** – Found in lower front torso and allow flexion of the spine
- **Quadriceps** – Found in upper front leg and allow extension of the knee
- **Hamstring** - Found in upper rear leg and allow flexion of the knee
- **Pectorals** – Found in upper torso and allow adduction of the arm
- **Deltoids** - Found in the neck and allow abduction of the deltoid

Antagonist Pairs

Each pair of muscles has an **agonist** (*the muscles that pull, produce the movement and shorten)* and **antagonist (** *the muscle that relaxes and lengthens*). An example of an **Antagonist Pair** is the biceps and triceps. When the elbow flexes the bicep is the **agonist** and triceps is the **antagonist .**

Types of Mucle Contractions

Isotonic Contractions – This is when a muscle contracts to create movement. These are either :
- **Concentric** which causes the muscle to shorten as it contracts eg during a bicep curl the bicep shortens, pulls the lower arm up and flexes the elbow.
- **Or Eccentric** where the fibres contract as the muscle lengthens. Eg when the weight is lowered after performing a bicep curl. Here it continues to contract (and lengthen) in order to allow the weight to be lowered back down with control.

Isometric Muscle Contractions - The muscle contracts but there is no resulting movement of either the limb or the joint. The muscles are working and contracting to keep the joint stable and working with high amounts of force . Eg plank, Rugby scrum

Muscles Fibre Types

Type 1 - Slow twitch –these fibres **contract slowly** and produce **low force.** They can produce **large amounts of energy** and **work for a long time** without getting tired. For this reason, slow twitch fibres are important in **endurance activities, eg running or cycling.**
- ***Slow twitch fibres*** *need a good supply of oxygenated blood in order to produce energy for muscle contraction. This means that muscles that contain a lot of slow twitch fibres are red, because they contain lots of blood vessels.*

Type 2 – Fast Twitch – These fibres **contract much more rapidly** and produce **medium to high force.** They can **produce explosive energy**, but they can **quickly get tir**ed as they consume lots of energy when contracting. Fast twitch muscle fibres are used in shorter, higher intensity actions – such **as jumping to catch a ball or sprinting short distances**.
- ***Fast twitch muscles*** *are white in colour, compared with slow twitch muscles. This is because fast twitch muscle fibres don't need oxygen in order to produce energy, so they don't need such a rich blood supply*

Key point Remember we all have a **mixture** of these fibres. If you have a high percentage of Fast Twitch muscles you will be good at explosive actions such as sprinting, jumping.

Cardiovascular System

The Cardiovascular (CV) System

The main functions of the CV system during exercise are -

1. **Transport oxygen** and nutrients to fuel vital organs and muscles in the body.
2. **Transport carbon** dioxide and waste products away from organs & muscles.
3. **Regulate** body temperature.
4. Redistribution of Blood during Exercise (**Vascular Shunt)** during exercise .

The cardiovascular system comprises the **heart, blood** and **blood vessels.**

Blood Vessels

Veins

- Thin walls, contain valves to ensure blood flows in one direction
- Carry deoxygenated blood to the heart,
- carry blood under low pressure

Arteries

- Thick, muscular walls
- carry blood under high pressure
- Carry oxygenated blood away from the heart to the body

Capillaries

- The smallest blood vessels,
- with very thin walls
- Assist with gaseous exchange at the lungs

Vascular shunt – the function of blood redistribution to the muscles with greater demand, while diverting away from areas of lower demand, through:

- *The widening of blood vessels (vasodilation). The narrowing is called (vasoconstriction)*

Blood Pressure (BP)

- The **systolic pressure** (higher number/ first number) measures the force at which the heart is pumping blood around the body
- The **diastolic pressure** (lower number/ second number) measures the resistance to the blood flow in the blood vessels.
- Both numbers are measured in **millimetres of mercury** (or mmHg) and expressed as systolic pressure/diastolic pressure mmHg.
- A '**normal/ideal range'** would be between 90/60mmHGg and 120/80mmHg. A **high blood pressure (hypertension)** measurement is considered to be 140/90mmHg or higher, while a l**ow blood pressure** measurement would be 90/60mmhg or lower
- **Factors** that effect Blood Pressure – Activity Level, stress, diet, age, alcohol.

CV Measurements

Heart Rate (HR) - the number of times your heart beats in a minute. A normal resting heart rate is 70 to 100 beats per minute.

Stroke Volume (SV) - the amount of blood that is pumped from the left ventricle of the heart every time it beats.

Cardiac output (CO) = Heart rate (HR) x Stroke volume (SV)

Maximum Heart Rate (MHR) = 220 minus your age

Energy Systems

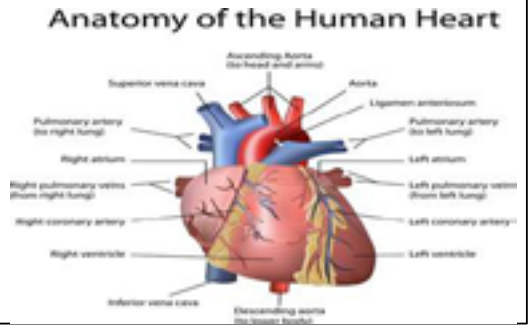
Aerobic – produces the **large amount of energy** and **needs oxygen** in order to be able to work (it makes energy by burning fuel with oxygen). Can be sustained for **long periods of time** in activities such as longer distance running. Carbon dioxide and water are waste products . Uses slow twitch muscle fibres.

Anaerobic –used for activities that involve short, fast, powerful bursts of energy (such as sprinting, powerlifting, throwing), but only for around 10 seconds. Lactic acid is a by-product of this system . The anaerobic system uses fast twitch fibres

The Heart

This is a muscle which is continually contracting and relaxing, in order to pump blood through the blood vessels. Every time the heart contracts and relaxes is called a 'heartbeat'.

- The heart is made up of **four chambers**.
- The **top two** are called the **atria**
- The **bottom two** are called the **ventricles**
- The heart also has **valves**, which stop the
- blood from flowing backwards



Cardiac Cycle

Deoxygenated Blood Pathway – from the body to vena cava, to right atrium, to right ventricle, to pulmonary artery, to the lungs to pick up oxygen and nutrients

Oxygenated Blood Pathway – from the lungs to the pulmonary vein, to left atrium, to left ventricle, to aorta, to the body to drop off oxygen and nutrients, pick up waste products and become deoxygenated

Respiratory System

Pathway of Air Through the Respiratory System

1. **Nose / Mouth –** The nose is the primary opening in the body's airway the mouth the secondary. Air is drawn into these and then passes to the -
2. **Pharynx -** This also known as the Throat . The air passes through this into the -
3. **Larynx** – This is also known as the Voice Box. The air passes through this into the -
4. **Trachea –** This also known as the Windpipe and is the '*main trunk of the tree*' At this point there is the -
5. ***Epiglottis*** *– 'a small flap of cartilage that acts as a switch between the trachea and the oesophagus (the tube connecting the pharynx to the stomach). When breathing this covers the oesophagus and when eating it covers the trachea to stop choking.'*
6. **Bronchi** - Air then travels into either the left or right bronchi *(the two main branches of the tree)* and then into smaller Bronchi. Then air passes into the -
7. **Bronchioles –** These spread like *small branches* into the lungs
8. **Alveoli -** Finally air passes into the Alveoli and you can think of these *as leaves of a tree.* Here oxygen is diffused into the blood. There are thousands upon thousands of these.

Mechanics of Breathing

1. Inspiration (Breathing In).

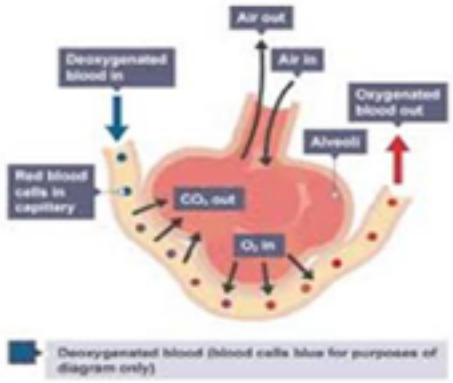
- The **external intercostal muscles** contract and lift up the ribcage (expanding it outwards and upwards).
- The **diaphragm** flattens, pulling downwards and contracting to **increase the volume** of the chest/lungs.
- **Pressure** inside the chest is **lowered** and air is taken into the lungs through the nose/mouth. *(remember gases move from a high to low pressure)*

2. Exhalation (Breathing Out)

- The **internal intercostal muscles** contract , lowering the ribcage (it drops inwards and outwards).
- The **diaphragm** becomes dome-shaped, relaxing and moving up
- The **volume** of the chest/lungs **decreases,**
- **Pressure** inside the chest **increases** and air is forced out of the lungs

Diffusion and Gaseous Exchange

Diffusion –' *gas moving from a high concentration to a low concentration*'
Gaseous Exchange – '*the movement of oxygen and carbon dioxide between the lungs and blood at the alveoli'*



Features of the Alveoli that assist Gaseous Exchange.

- Moist, very thin walls (one cell thick)
- Provide large surface area
- Short diffusion distance
- Surrounded by capillaries

Explanation of how Gaseous Exchange Works

Once oxygen has been breathed in and delivered to the lungs, a process called gaseous exchange takes place in the alveoli. During this process, the oxygen is passed from the alveoli into the blood so that it can be circulated around the body. Carbon dioxide is then removed from the blood and returns to the alveoli so that it can be breathed out of our lungs.

During the process of gaseous exchange, the gases are moved by diffusion…*from a high concentration to a low concentration.* When blood arrives in the alveoli, it has a higher concentration of carbon dioxide. However, the air in the alveoli has a much lower concentration of carbon dioxide which diffuses the carbon dioxide in the blood. Similarly, blood arriving into the alveoli has a lower oxygen concentration, while the air in the alveoli has a higher oxygen concentration. Therefore, oxygen moves into the blood

Lung Volumes

Tidal volume This is the amount of air that enters the lungs during normal inhalation /breathing in when the body is at rest. The average tidal volume is 500ml.
Inspiratory reserve volume This is the amount of extra air that is inhaled / breathed in (over and above the tidal volume) during a deep breath in when exercising
Expiratory reserve volume This is the amount of extra air that is exhaled / breathed out (over and above the tidal volume) during a forceful breath out when exercising
Residual volume. This is the amount of air that remains in the lungs, following maximum exhalation / breathing out .There is always some air in the lungs, to prevent collapsing.
Vital capacity This is the maximum amount of air that you can exhale/breath out after breathing in as much as you physically can

Effects of Exercise of the Body

Short Term Effects'*The immediate responses that your body makes when exercising*'

1. **Breathing rate** - During exercise, our muscles need more oxygen to provide fuel for the increased work they are doing . This increases the **rate and depth of breathing**

2. Heart rate, stroke volume and cardiac output - As your rate of exercise increases, your muscles need more oxygen for fuel. This causes an
•Increase in your **heart rate** and the f**orce/frequency** of its contractions, in order to pump enough oxygenated blood to the muscles that need it most.
•Your body may also **release adrenaline** before exercise begins, and this can also cause the heart rate to rise.
• The wall of the left ventricle expands to allow it to fill up with more blood. This increases the **stroke volume** and so pumps more blood out into the body.
•Increase in **cardiac output .**As cardiac output is determined by heart rate and stroke volume (CO = HR x SV), an increase in these increases cardiac output.

3. Blood Pressure - during and immediately after exercise your blood pressure. will increase. This is because the force of your heart's contractions has increased.

4. Body temperature (sweating) During exercise, the body's temperature will rise. When this happens-
•Messages are sent from the brain to the skin to make it sweat. Sweating is our way of losing heat from our body by the evaporation of sweat.
•Blood vessels near the surface of the skin open up, so that heat can be released.

5. **Hydration levels** As our body temperature increases during exercise, the skin produces sweat. The body can lose a lot of water and become dehydrated.

6 **Muscle fatigue** At some point during exercise, our muscles will experience a decline in their ability to generate force or power (this is known as muscle fatigue). This is because the muscles are contracting more often , therefore using up more energy.

7. **Delayed onset of muscular soreness (DOMS) -** This is when we experience sore muscles after exercise/fitness activities, and occurs 1 or 2 days after exercising. DOMS will usually occur when your muscles work harder than they are used to – for example, if you start a new exercise programme/training method, change exercise or increase intensity. This causes damage to the muscle fibres which results in muscles feeling sore

8. Vascular shunt – This will start. Remember this is the process of redirecting blood away from inactive organs to areas of the body that need more blood.

Long Term Effects .*'The changes to your body due to exercise over a period of time'*
*1***Cardiovascular endurance increases**

- The **ventricle walls get larger/thicken** and become able to contract more powerfully, **pumping out more blood (which increases stroke volume**). This increase in size and volume is known as **cardiac hypertrophy**. Examples of exercise that would produce this include any endurance sport, such as long-distance running, swimming or cycling.
- The **respiratory muscles** (diaphragm, intercostal muscles and lungs) **become stronger.** They are then able to make the chest cavity expand more which allows more oxygen to be inhaled and so more is able to be supplied to the muscles.

2. Efficiency to use oxygen(VO2 Max) increases.
VO2 max is *'maximum amount of oxygen that the body is able to use during exercise'*).

- Long-term exercise leads to an **increase in vital capacity.** This means more oxygen is able to enter the body and go to the working muscles so they can work harder and more diffusion can occur so there are less waste products such as carbon dioxide.
- The **number and diameter of the capillaries around the alveoli will increase** due to long-term exercise – this leads to an increased efficiency in gaseous exchange.

3**. Blood pressure decreases -** Regular exercise can result in a decrease of approximately 6 to 10mmHg in both resting systolic and resting diastolic BP.
4. Resting heart rate deceases . This is because the size of the left ventricle (stroke volume) increases due to regular exercise and gas exchange becomes more efficient.

5. Muscular endurance increases - Through regular training, our body can become more efficient at tolerating the lactic acid and getting rid of it. This will mean the muscles will not fatigue (get tired) as quickly

6. Muscle hypertrophy and strength increases The term '*hypertrophy' means an increase in size,* so muscle hypertrophy means that muscles get bigger.

- Muscle hypertrophy occurs when the muscle cells increase in size. When you overload the muscle, small tears in the muscle fibres occur. When these tears repair themselves, the muscle will increase in size. This means that the muscle becomes stronger and it can contract with greater force.

8 -Red blood cells increase. This increase means that the body becomes more efficient at transporting oxygen in the blood to the muscles that need it during exercise.

9. Flexibility increases. This is due to the ligaments and tendons being stretched and becoming stronger and more when we exercise.

Photography - Photoshop

Photoshop Tool Bar

Move + Select

Move Tool (V) – to move things

Quick Select (W) – to make a quick selection of similar pixels. The **Magic Wand Tool** is also here and is used to select pixels by colour

Crop

Crop Tool (C) – to trim your canvas

Eyedropper Tool / Ruler Tool / Count Tool (I)

Retouching + Painting

Spot Healing Tool (J) – to remove spots from a layer

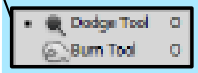
Brush Tool (B) – to manually add colour to layers/masks

Clone Stamp Tool (s) – to 'paint' parts of your image from a target source. ALT = target area

Eraser Tool (E) – to delete pixels on a layer

Gradient Tool (G) – to create a colour blend. Use on a separate layer and apply a blending mode

Dodge / Burn Tool (O) – hold click to alternate between



Dodge (lighten) – highlights @ <5%
Burn (darken) – shadows @ <5%

Drawing + Type

Type Tool (T) – creates a box which you can type into

Navigation

Hand Tool (H) – to move an image within the window

Zoom Tool (Z) – to zoom in/out

Colour

Switch Foreground and Background colours (X)
Default Foreground and Background colours (D)
Foreground colour
Background colour

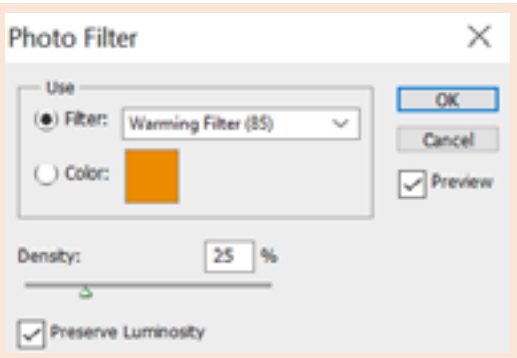
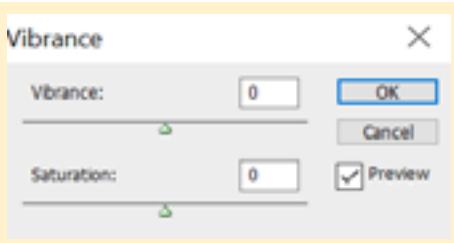
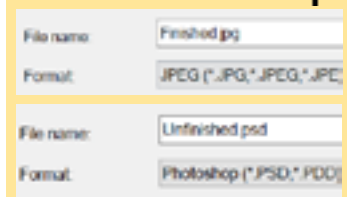


Photo Filter (*Image> Adjustments> Photo Filter*)
Use to mimic the effect of lighting gels



Vibrance (*Image> Adjustments> Vibrance)*
Saturation is the intensity, or richness of the colour/hue. **Vibrance** will only increase the intensity of the more muted hues and leaves already bright hues alone- this protects skin tones.

Gcse Photoshop



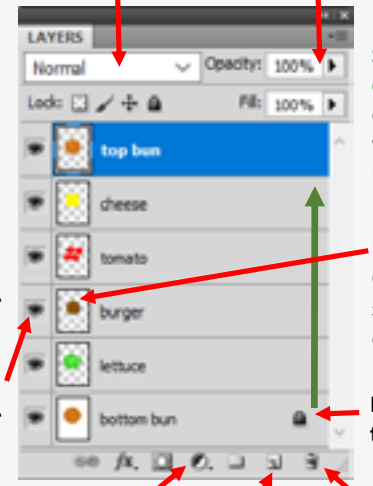
Saving Work
Finished work must be saved as a **JPEG** (not JPEG 2000).
Unfinished work needs to be saved as a Photoshop PSD file.

Useful Shortcuts

1. **CTRL+T –** Transform Tool- use to resize elements
   Hold down **shift** to keep your proportions
2. **CTRL+D** – Deselects your selection
3. **CTRL+ / CTRL—** – zoom in / out
4. **[/] (square brackets** when using a brush based tool)
   will make your brush size smaller / bigger
5. **CTRL+C** – copy a selected area
6. **CTRL+V** – paste a copied area
7. **Shift** (when using a brush based tool) – hold down shift to connect brush strokes to form a straight line
8. **Space** – hold space to pan around your screen
9. **ALT** – when using the Clone Stamp Tool, use ALT to define your source
10. **F7** – Layers- if you layers palette disappears
11. **CTRL+R** – rulers
12. **Filter> Blur> Gaussian Blur** – add a level of blur to a layer
13. **File> Automate> Merge to HRD Pro** – create a HRD image

Layers Palette

Blending modes **Layer Opacity** (0% = transparent)



Side view of your canvas – layers closer to the top will overlap lower layers

Layer Visibility

Layer Thumbnail- CTRL + CLICK to select everything on the layer

Double click + enter to unlock layer

Adjustment Layer Masks

New blank Layer- drag a layer here to duplicate

Delete Layer

Photography - Assessment Objectives

Assessment Objectives

AO1: Develop

- Find relevant artists/photographers to look at
- Find links between the work of others and your theme
- Produce research pages showing your understanding
- Make personal comments about their work
- Use this work to inspire your work- create your own version

AO2: Refine

- 'Evidence of exploration'
- Explore different media and materials
- Use different techniques and processes
- Use 'digital' manipulation
- Show a connection between experimentation and outcomes
- Show skill and achievement
- Show accuracy in content

AO3: Record

- 'Ability to reflect on work and progress'
- Quality in photography
- Directly support ideas, try things more than one way
- Show skill when using materials or alternative media
- Annotate your work, evaluate how successful it is

AO4: Present

- 'Realisation of intensions' – does your work show a journey?
- Includes every best piece of work
- Is your work presented well? Stuck in straight, mounted nicely, with readable handwriting?
- Ensure your work relates to the preparatory work and artists studied
- Remember 'quality' not 'quantity'

How your book should look

PHOTOGRAPHER / DESIGNERS NAME

Artist work

Name and date if known

Artist work

Name and date if known

Artist work

Name and date if known

- BRIEF background of the artist. "_____ takes photographs which feature/ show us the importance of/ about..." Do not copy and paste from Google.
- Explain why you have picked the contextual references that you have, what do you like most about the work?
- How does the artist relate to the theme? For example- if you looked at Titarenko, his TECHNICAL ability might be something you'd explore (long shutter speeds) or it might be the MESSAGE/ MOOD of his work (being a shadow/ loneliness...). Both could relate to your theme- but what's your link?
- Analyse ONE image in detail- can you pick it apart? How was the photo taken? What lighting? How has light been used? What set up? How was it edited? Informed guesses!

YOUR RESPONSE

Your work

Labelled with meta data (ISO, aperture and shutter speed)

Y11 EXAM ONLY

Try to come up with at 3 ways you could respond to the Artist AND the theme.

For example (Confectionery & Billy Kidd- decay work)

1. Still life sweets- same background and lighting setup
2. Sweets next to fruit rotting away (and the sweets not)
3. Sweet jars filled with photos of decayed teeth and overweight people (the effects of too much)

This could be a spider diagram, or a small list.

Try at least one of these ideas- experiment and refine!

Evaluate your response and include

- Technical details- What did you do? How did you set up your shoot? How did you edit your work? What lighting setup did you use? Why?
- What are your thoughts towards your work? Is your work successful? Why?
    - If you're going to say it's not- fine- do another shoot that works better
- Does your work fit the theme? How? What was your idea?

You could add before and after images that show how you edited your photo (definitely do this if you've combined more than one photograph). You can tie work in the middle.

Photography - Vocab & Words

Photography Vocabulary

Connectives	Form & Shape	Space	Texture	Mood	Technique	Colour	Light	Composition
However	2D / 3D	Above	Bumpy	Atmospheric	Animated	Bright	Balanced	Abstract
Although	Angular	Below	Cracked	Calm	Burnt	Clash	Bright	Background
On the other hand	Obscure	Between	Flat	Depressive	Collaged	Contrasting	Dull	Balanced
Whereas	Geometric	Illusion	Glossy	Emotive	Digital	Cool	Direct	Blurred
Similarly	Perspective	Negative	Grainy	Exciting	Edited	Dark	Dramatic	Bold
Furthermore	Proportion	Open	Hard	Fearful	Film	Dull	Fade	Centred
In addition	Simple	Positive	Matte	Humorous	Filmed	Highlight	Harsh	Depth /of field
Additionally	Silhouette	Shallow	Reflects	Joyful	Layers	Muted	High Key	Distance
It seems	Scale		Rough	Peaceful	Mixed media	Rich	Low Key	Empty
			Shiny	Provoking	Painted	Saturation	Limited	Foreground
			Smooth	Sad	Projected	Shadow	Natural	Horizon
			Spiky	Uplifting	Stop frame	Warm	Soft	Juxtaposed
					Sewn	Vibrant	Strong	Rule of Thirds
					Transfer	Black & White	Subtle	Perspective
							Tonal range	Strong
								Vanishing

Photography Key Words

1. **Exposure:** How light or dark an image is. Can be described hen too much or too little light is in your photo. The exposure is controlled by the aperture, shutter speed and ISO
2. **Aperture**: The size of the hole which controls how much light is allowed into the camera when taking a photograph. The higher the aperture the smaller the hole (less light): This is measured in f/stops, eg, f/16
3. **ISO**: ISO is a camera setting that will brighten or darken a photo. As you increase your ISO number, your photos will grow progressively brighter, but also grainier
4. **Shutter speed**: How long the cameras shutter is kept open . This is measured in seconds and fractions of seconds, eg, 1/125s
5. **Highlight/ shadow:** Light and shadow in your photo can be created and controlled with artificial light (lamps or flash) or natural light (sun)
6. **Contrast:** the difference between the darkest and lightest area in your photograph (high contrast = strong colours- punchy, Low contrast = grey/foggy)
7. **Focal Point:** The part of the photograph that the eye is immediately drawn to
8. **Subject matter:** What is represented in the photograph, a basic breakdown of what can be seen
9. **Composition:** To arrangement of the subject matter and how they relate to one another within the photograph
10. **Crop:** To select an area of an image and remove surrounding area
11. **Perspective:** The position or angle of the shot in relation to object being photographed- this is usually done looking through the viewfinder before you take your photo but can also be adjusted after using the crop feature of Photoshop
12. **Forced Perspective:** A technique that employs optical illusion to make an object appear bigger/smaller/closer/further away than it actually is
13. **Focus:** Areas of an image may be in focus (clear and sharp) and some areas may be out of focus (blurry and difficult to see or make out)
14. **Depth of field:** How much of the image is in focus. It can be described using a scale of two terms- shallow/small and deep/large
15. **Rule of thirds**: A technique used to create a successful composition. The rule states that the focal point should not be dead centre in the image but either one third from the top, bottom or from one side of the image ie, in one of the intersecting points. In landscapes, the horizon line should fall on one of the horizontal grid lines
16. **Leading lines:** A composition technique used to guide the audience to a specific area of your photo through the use of lines
17. **Bokeh:** the orbs created when light is out of focus in an image
18. **Collage:** an image that is created by using layers of other images and/or materials
19. **Mixed Media:** Using a variety of different media to create an artwork.

Photographer Bank

Landscape
Ansel Adams, Joe Cornish, Bill Brandt, Edward Weston, Guy Edwardes, Jem Southam, Adam Burton, Fay Godwin, Michael Kenna

Portrait
Martin Parr, Steve McCurry, Diane Arbus, Sally Mann, David Bailey, Richard Avedon, Nan Goldin, Jane Mown, Martin Schoeller, Alexander Rodchenko

Documentary
Henri Cartier-Bresson, Eve Arnold, Martin Marr, Steve McCurry, Robert Frank, Jan Grurup, John Hilliard,

Architecture
Alexander Rodchenko, Rob Watkins, Simon Doling, Ivan Baan

Fashion
Annie Leibovitz, Corrine Day, Mario Testino, Helmut Newton, Cecil Beaton, Richard Avedon, David Bailey, Lord Snowdon, Dani Carrig, Steven Meisel
Fashion/ Fairy-tale/Illustration
Annie Leibovitz, Tim Walker, Cindy Sherman, Zev Hoover, Slinkachu

Wildlife
Colin Varndell, Xavi Bou, Marina Cano, Nick Brandt

Photography - Lighting Setups

Camera techniques
Long exposures
Quick exposures
Panning
Tracking
Cinematic conventions
Panning with flash
Zoom during exposure
Experiment with depth of field (aperture)
Tilt shift
Macro /wide angle / fish eye
Home made cameras / pinhole / matchbox
Shoot from the Hip
Scanography
Moving image capture
Filters polarizing and neutral density
Microscopy
Blurring
Continuous sequence
Vignette
Low fi

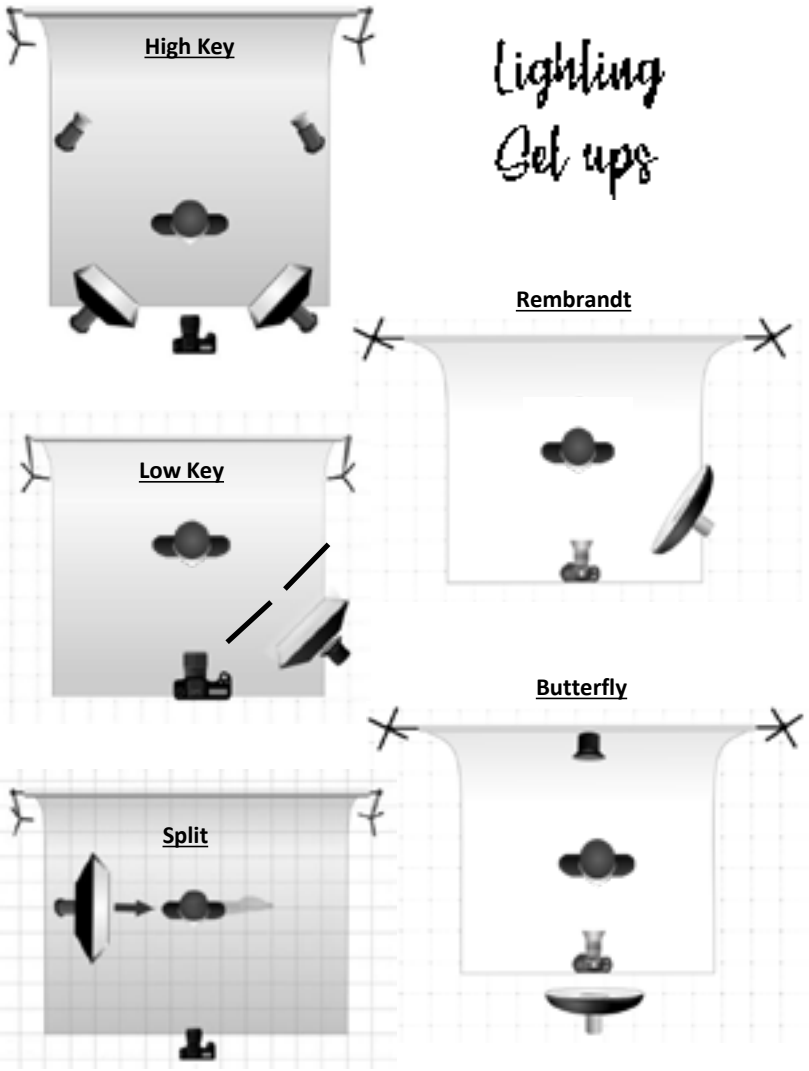
Photoshop
HDR
Panoramic stitching
Repetition and rotation kaleidoscopic
Pattern
Composite montage
Image manipulation
Colour correction
Merging images double exposure
Enhancing
Moving image (cinemographs / stop motion / time-lapse / film)
Over time
Infrared processing

Lighting
Portrait lighting Rembrandt,
Noir style
Hair lighting
Butterfly lighting
Levels of diffusion, (soft light hard light)
Background lighting
Natural
Silhouettes
Shadows
Jill Greenberg
Use of reflectors / mirrors
Use of key and fill lighting
Painting with light
Strobe lighting (Edgerton style)
Colour gels / acetates
Vignette

Further media / format
Sculpture
Sewing
Projection
Framing
Distressing printouts
Triptych
Narrative
Mobiles
Boxes
Books
Obscure formats
Printing on range of surfaces / tracing paper / acetate
Re-photography Combining secondary source
Combining image with text

Types of Photography
Abstract
Architecture
Black & White
Candid
Close-up
Children
Commercial
Cityscape
Composite
Documentary
Double Exposure
Editorial
Fashion
Fairy- Tale
Fine Art
Food
Golden Hour
Interior
Landscape
Long Exposure
Love
Macro
Photojournalism
Photo manipulation
Portraiture
Seascape
Sport
Still Life
Surreal
Street
Time-lapse
Wildlife
War

Ways to experiment



Year 10; Christianity; beliefs. Knowledge Organizer 1 Autumn

Nature of God;

1. Omnipotence; all powerful
2. Omnibenevolent; all loving
3. Oneness; Trinity; Father, Son, Holy Spirit

Creation 1

Creation of the world, humans, heaven and everything from nothing by God. Made everything in 6 days then rested on the 7th. Adam created from dust. Eve created from Adam's rib.

Creation 2 'the Fall'

The moral fall of Adam and Eve and their subsequent banishment from Eden. Serpent tempted Eve to eat the apple of the Tree of the Knowledge of Good and Evil, she then tempted Adam. They aligned themselves with God by having his knowledge is the metaphor.

Original Sin

Some believe this 100% = **literalists**

Some believe parts and/or it's a metaphor = **non literalists.**

6 phrases in Gospel of John which show Trinity	Most Christians believe 'the Word' refers to JC
In the beginning was the Word	*JC was there before the world began*
And the Word was with God	*JC was with God*
And the Word was God	*JC was God*
He was with God in the beginning	*JC and God were there at the beginning*
Through him all things were made	*Through JC all things were made*
Without him nothing was made that has been made.	*Without JC nothing was made that has been made*

Yr10 Knowledge Organizer 2 Autumn

Key Words;

Incarnation; God on earth as flesh (JC)

Atonement; JC death healed rift between God and humans caused by original sin.

Salvation; saving of a soul.

Ascension; soul and body going up to heaven.

Christian teaching about the crucifixion is that JC died to fulfil OT prophecy about sacrifice and atonement in order to gain salvation for humans. It is all part of God's plan for humankind. Without the crucifixion, the resurrection couldn't happen.

Resurrection proves death isn't the end, there is heaven/hell and salvation can be achieved with the right behaviour.

Resurrection is one of the key Christian beliefs with evidence being in the Bible in various books. There is proof of his resurrection as he appeared to more than 500 people. The stone was rolled away from the tomb, no sign of his body and two men in white gleaming clothes said 'why do you look for the living among the dead'.

JC had predicted his arrest, death, crucifixion and resurrection and they realized it had come true.

Need to weigh up JC as human being with JC as Son of God.

Knowledge Organizer 3 Autumn

Salvation and how humans achieve it.

1. The Law; e.g. Decalogue and how the rules of the religion are followed.

1. The Bible; inspired by God and can be literally true, non literal or symbolic.

1. The Sacraments; RC only. Way of achieving grace through the Holy Spirit.

1. Sin; separates humans from God.

1. Holy Spirit; helps, Evangelical belief.

1. Other sources of authority; priests, conscience, teachings of church, Holy Spirit.

1. Baptism
2. Confirmation
3. Marriage
4. Eucharist
5. Confession
6. Last Rites
7. Holy Orders

An outward sign of an invisible grace

Afterlife; heaven and hell are permanent. Purgatory (RC only) temporary. All very definite places (parable of sheep and goats)

Judgement; D of J where the quality of your life will be judged by God. Parable of Lazarus and Rich Man. Some believe in JC having a '2nd coming'.

Resurrection; soul goes to heaven at death. There will be a physical resurrection where bodies come back after the trumpet is sounded (you are buried facing Jerusalem in Christianity to ensure you are facing the right way when this happens)

Note how similar to Islam this is

Science - Biology - Cells

Section 1: Definitions

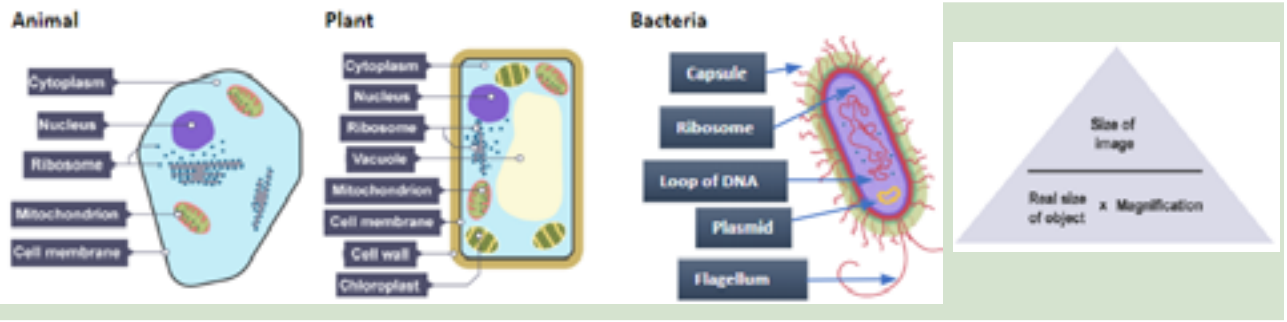
1	Eukaryote	Plant and animal cells that have a cell membrane, cytoplasm and genetic material enclosed in a nucleus.
2	Prokaryote	They have cytoplasm and a cell membrane surrounded by a cell wall. The genetic material is not enclosed in a nucleus. (E.g. Bacteria)
3	Cell membrane	Holds the cell together and controls what goes in and out.
4	Cytoplasm	Gel-like substance where most of chemical reactions happen.
5	Nucleus	Contains genetic material (DNA)
6	Cell Wall	Made of cellulose: supports cell
7	Chloroplast	Where photosynthesis occurs
8	Vacuole	Contains Cell sap
9	Stem Cells	An undifferentiated cell of an organism which is capable of giving rise to many more cells of the same type, and from which certain other cells can arise from differentiation.
10	Therapeutic Cloning	Embryo is produced with the same genes as the patient.
11	Specialised cells	Cells that are specialised to carry out a particular function

Paper 1: Cells

Section 5: Movement of Particles

Process	Description	Substances transported	Energy required
Diffusion	Substances move from a high to a lower concentration down a concentration gradient	Carbon dioxide, oxygen, water, food substances, wastes, eg urea	No
Osmosis	Water moves from a high to a lower concentration across a partially permeable membrane and down a concentration gradient	Water	No
Active transport	Substances more from low to higher concentration up a concentration gradient	Mineral ions into plant roots. Glucose from the gut into intestinal cells, from where it moves into the blood	Yes

Section 2: Cell Structure and Magnification



Section 3: Stem Cells

Function of stem cells from:

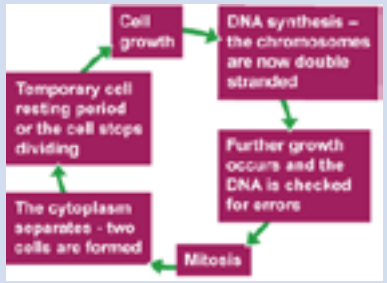
1. human embryos can be cloned and made to differentiate into most different types of human cells.
2. adult bone marrow can form many types of cells including blood cells.
3. Meristem tissue in plants can differentiate into any type of plant cell, throughout the life of the plant.

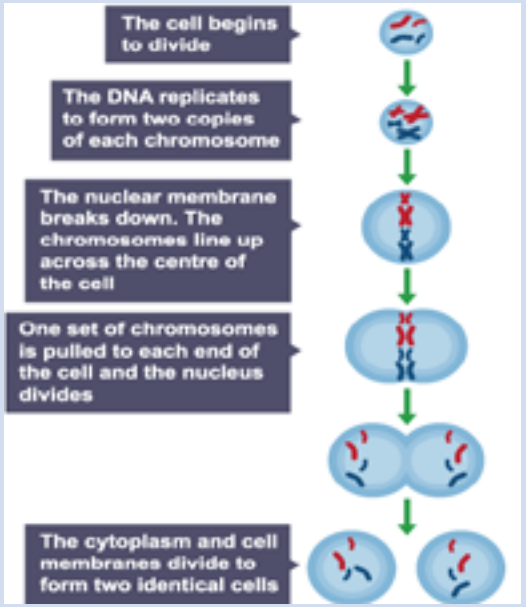
Treatment with stem cells - Humans: may be able to help conditions such as diabetes and paralysis.

Uses of Stem cells - plants: can be used to produce clones of plants quickly and economically. Rare species can be cloned to protect from extinction. Crop plants with special features (disease resistance) can be cloned to produce large numbers

Disadvantages : stem cells has potential risks such as transfer of viral infection, and some people have ethical or religious objections

Section 4: DNA





Science - Biology - Organisation 1

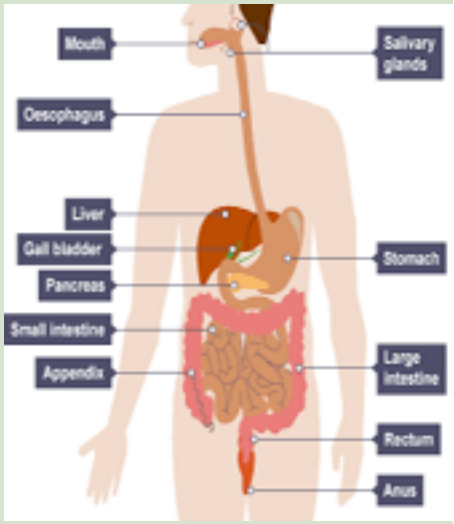
Section 1: Definitions

1	Digestive Enzymes	convert food into small soluble molecules that can be absorbed into the bloodstream.
2	Carbohydrase	Enzymes that break down carbohydrates to simple sugars. Amylase is a carbohydrase which breaks down starch.
3	Protease	Enzyme that break down proteins to amino acids.
4	Lipase	Enzyme that break down lipids (fats) to glycerol and fatty acids.
5	Plasma	Liquid that carries everything in the blood
6	Red Blood Cells	Cells that carry oxygen
7	White Blood Cells	Cells that defend against infections
8	Platelets	Small fragments that help blood clot
9	Heart	An organ that pumps blood around the body in a double circulatory system
10	Natural Pacemaker Cells	The natural resting heart rate is controlled by a group of cells located in the right atrium that act as a pacemaker
11	Artificial Pacemaker	An electrical devices used to correct irregularities in the heart rate.

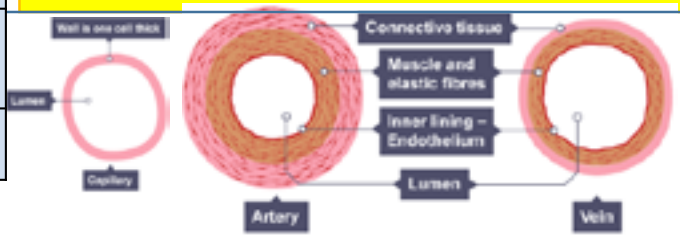
Section 2:Digestion

Bile is made in the liver and stored in the gall bladder. It is alkaline to neutralise hydrochloric acid from the stomach. It also emulsifies fat to form small droplets which increases the surface area. The alkaline conditions and large surface area increase the rate of fat breakdown by lipase.

Test	Method	Positive Result
Sugars: Benedict's test	Add Benedict's solution to food sample; Place in water bath; Leave for 5min	Colour change (from Blue) to: green, yellow, yellow or Brick-red
Protein: Biurete's test	Add Biurete's solution to food sample; shake gently	Colour change (From Blue) to purple
Starch: Iodine Test	Add Iodine solution to food sample	Colour change (from Brown-Orange) to Blue-Black
Fat: Sudan III Test	Add Sudan III to food sample; shake gently	Separate red layer forms



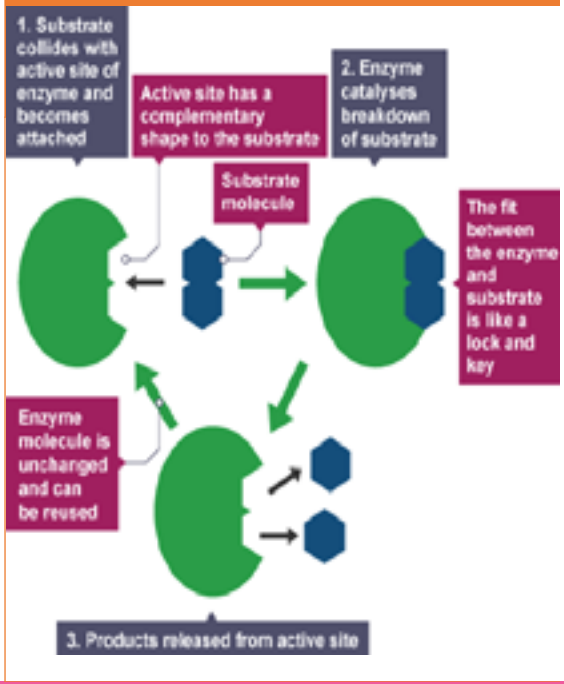
Paper 1: Cells



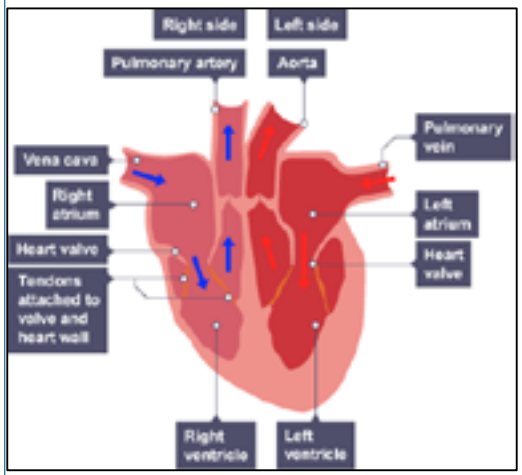
Capillaries have walls that are one cell thick to allow exchange of substances between blood and cells

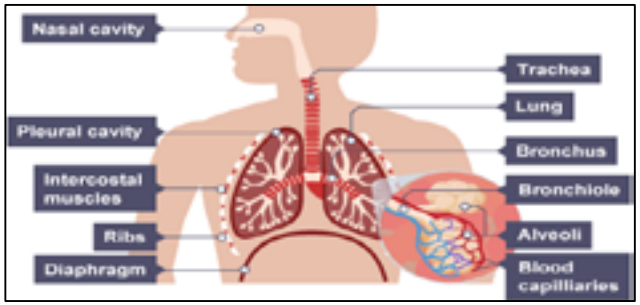
Arteries	Veins
Blood away from Heart	Blood to the Heart
High Pressure	Low Pressure (valves)
Thick muscular and elastic walls	Thin walls
Thin lumen	Wide lumen

Section 3: Enzymes



Section 4: Circulatory System





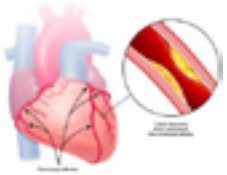
Science - Biology - Organisation 2

Section 1 Definitions

1	CHD	Coronary heart disease
2	Statins	Drug used to lower cholesterol in the blood and slow down the rate of fatty material deposit
3	Cholesterol	Cholesterol is a waxy substance found in your blood. Your body needs uses it to build healthy cells, but high levels can increase your risk of heart disease. Due to developing fatty deposits in your blood vessels
4	Stents	Stents are used to keep the coronary arteries open
5	Transplant	An organ is replaced with one from a donor
6	Pacemaker	is a group of cell in the right atrium of the heart. It produces electrical signals that causes the heart muscles to contract (beat)
7	Valve	Structure in the heart and veins that allows blood to flow in one direction only
8	Communicable disease	Is a disease that can be spread from one person to another. A disease caused by microbes eg flu
9	Non communicable disease	Is a condition due to life style or faulty genes. It can not be passed on to another person eg cancer
10	Risk factor	A characteristic, condition, or behaviour that increases the likelihood of getting a disease or injury.
11	Diabetes	Diabetes is a disease that occurs when your blood glucose, also called blood sugar, is too high. It can be genetic or caused by life style
12	Cancer	Cancer is the result of changes in cells that lead to uncontrolled growth and division
13	Carcinogen	a substance capable of causing cancer in living tissue.eg ionising radiation such as x-rays
14	Malignant	Benign tumours are growths of abnormal cells which are contained in one area, usually within a membrane. They do not invade other parts of the body.
15	Benign	Benign tumours are growths of abnormal cells which are contained in one area, usually within a membrane. They do not invade other parts of the body.

Section 2 Coronary heart disease and treatments

In coronary heart disease layers of fatty material build up inside the coronary arteries, narrowing them. This reduces the flow of blood through the coronary arteries, resulting in a lack of oxygen for the heart muscle. Statins and stents can be used to treat this.



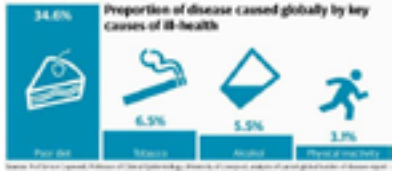
In some people heart valves may become faulty, preventing the valve from opening fully, or the heart valve might develop a leak In the case of heart failure a donor heart, or heart and lungs can be transplanted.

Treatment	Advantage	Disadvantage
Statins	• Prevent heart disease developing • Improve quality of life	• Long term treatment • Side effects
Stents	• is made of metal alloy reducing rejection • Improved quality of life	• Surgery needed which may have risks of infection
Heart transplant	• Treats complete heart failure • Extend and improve life • Artificial plastic heart can be used until a donor is found	• Requires major surgery • Lack of donors • Risk of infection or organ rejection
Artificial pacemaker	• An electrical devise used to regulate abnormal heart beats • Quality of life	• Infections • Clots may form
Mechanical valves	• Durable (last a long time) • Improve quality and extends life	• Risk of clot forming on valve • Need blood thinning drugs for life • May need to be replaced.

Section 3 Health and health risks

Organisation 2 Health

Health is the state of physical and mental well-being. Diseases, both communicable and non-communicable, are major causes of ill health.



Other factors including diet, stress and life situations may have a profound effect on both physical and mental health.

- Defects in the immune system mean that an individual is more likely to suffer from infectious diseases.
- Viruses living in cells can be the trigger for cancers.
- Immune reactions initially caused by a pathogen can trigger allergies such as skin rashes and asthma.
- Severe physical ill health can lead to depression and other mental illness.

Risk factors are linked to an increased rate of a disease.
They can be:
• aspects of a person's lifestyle
• substances in the person's body or environment.

A causal mechanism (a reason for the disease) has been proven for some risk factors, but not in others.

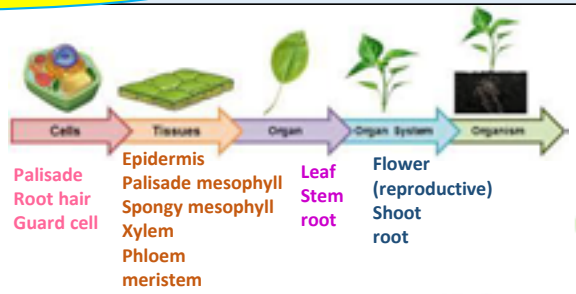
Risk factor	Disease - effect
Diet / obesity	Cardiovascular disease (heart and blood vessels). Diabetes (type 2)
Smoking	Lung disease and lung cancer / growth of unborn babies / cardiovascular disease
Exercise	Cardiovascular disease
Alcohol	Liver and brain functions / Unborn babies
carcinogens	Various cancers

Organisation 2 Plants

Section 1 Definitions

1	Epidermal tissue	The epidermis is a single layer of cells that covers the leaves, flowers, roots and stems of plants.
2	Palisade mesophyll	A layer of rectangular cell on the upper side of the leaf. They are packed with chloroplasts so they can photosynthesise.
3	Spongy mesophyll	Layer of cells in a leaf with large air spaces between them to allow the easy diffusion of gases
4	Xylem	Xylem tissue transports water and mineral ions from the roots to the stems and leaves
5	Phloem	Phloem tissue transports dissolved sugars from the leaves to the rest of the plant for immediate use or storage.
6	Meristem	found at the growing tips of shoots and roots. It consists of undifferentiated cells capable of cell division. Cells in the **meristem** can develop into all the other tissues and organs that occur in plants.
7	Guard cell	Cells surrounding pores (stomata) in the leaf . They open and close the stomata to control gas exchange and water loss
8	Stomata	Pores in the leaf that allow gases (carbon dioxide and oxygen) in and out and the evaporation of water
9	Root hair cell	Root hair cells are adapted for the efficient uptake of water by osmosis, and mineral ions by active transport.
10	transpiration	Transpiration is the process of water movement through a plant and its evaporation from aerial parts, such as leaves, stems and flowers.
11	translocation	The movement of food molecules through phloem tissue
12	Diffusion	The movement of particles from an area of high concentration to an area of low concentration across a semi permeable membrane
13	Osmosis	The movement of **water particles only** from an area of high concentration to an area of low concentration across a semi permeable membrane
14	Active transport	The movement of particles from an area of low concentration to an area of high concentration across a semi permeable membrane. This requires energy

Section 2 Plant organisation

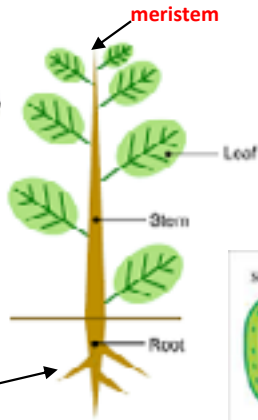


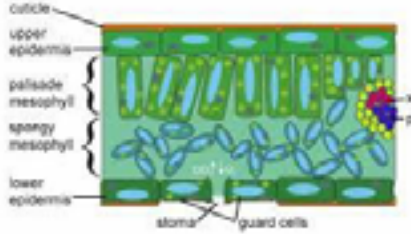
Palisade
Root hair
Guard cell

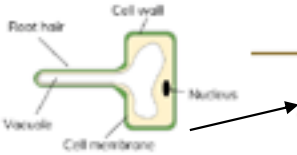
Epidermis
Palisade mesophyll
Spongy mesophyll
Xylem
Phloem
meristem

Leaf
Stem
root

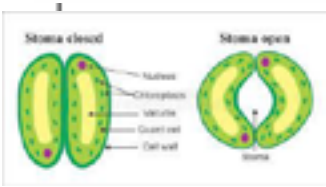
Flower
(reproductive)
Shoot
root



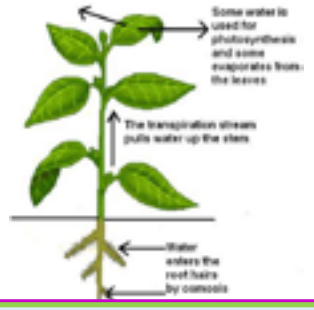




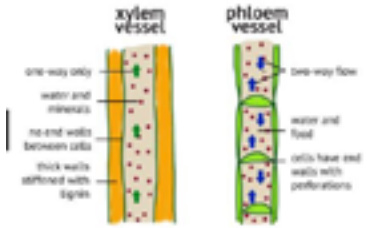
Root hair cell **- adaptation**
Large surface area to absorb more water and minerals



Stomata (stoma) - pores surrounded by guard cells – allow gas exchange and water to evaporate



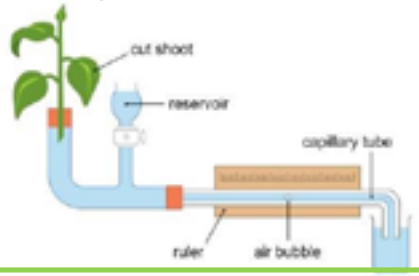
Xylem tissue transports water and mineral ions from the roots to the stems and leaves. It is composed of hollow tubes strengthened by lignin adapted for the transport of water in the **transpiration** stream.



The movement of food molecules through **phloem tissue** is called **translocation.** Phloem is composed of tubes of elongated cells. Cell sap can move from one phloem cell to the next through pores in the end walls.

Section 3 Environmental factors affecting transpiration rate

Transpiration is the process of water movement through a plant (xylem) and its evaporation through stomata. The rate can be measured using a **potometer**



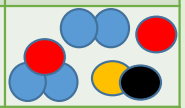
Apparatus:
A **potometer** is a device used to estimate *transpiration rates*

Experimental Method:
The distance moved by an air bubble can be recorded every minute and used to indicate the rate of water uptake by the plant

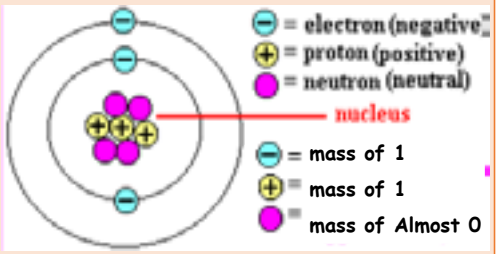
factor	Effect
light intensity	Light causes the stomata to open Transpiration increases
Temperature	Warm temperatures causes water to evaporate quicker. Transpiration increases
Humidity	If the air is damp, less water will evaporate. Transpiration decreases
Wind speed	Wind causes water to evaporate faster. Transpiration increases.

Atomic Structure and The Periodic Table

Section 1 – Atomic Structure Definitions

Atom	The smallest particle of an element.	
Molecule	Two or more atoms chemically bonded together.	
Element	A substance made up of only one type of atom and cannot be broken down chemically.	
Compound	Substance made from two or more elements chemically bonded together.	
Mixture	Two or more substances mixed together, but do not react together. A mixture is not a pure substance.	
Isotope	Atoms of the same element but with different numbers of neutrons.	
The law of conservation of mass	During a reaction, the atoms in the reaction are rearranged into different compounds. Therefore, mass is never gained or lost in a chemical reaction.	

Section 3 – Electronic structure

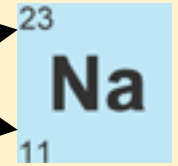


Energy shell 1 = max. of 2 electrons
Energy shell 2 = max. of 8 electrons
Energy shell 3 = max. of 8 electrons

[2,8,8] rule

Section 4 – Sub-atomic particles

Mass Number (larger number) →
Atomic Number (smaller number) →



Mass no. = no. of Protons + Neutrons
Atomic no. = no. of Protons
No. of Electrons = no. of Protons
No. of Neutrons = Mass no. – Atomic no.

Section 5 – Separating Techniques

1. **Filtration:** Using a filter to separate an insoluble solid from a liquid.
2. **Crystallisation:** The liquid (solvent) evaporates away leaving the soluble solid crystals (solute) behind.
3. **Simple distillation:** Separates a liquid from a solution. The solution is heated, it evaporates and then condenses for collection.
4. **Fractional distillation:** Separates multiple liquids from a solution, based on boiling points.
5. **Chromatography:** separating soluble substances from one another.

Section 2 – History of the atom

450 BC – Democritus

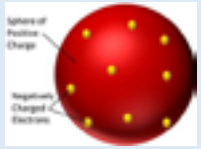
Said everything was made of particles called atoms.

1803 – Dalton

Reintroduced the idea of atoms. Suggested they were solid dense balls.

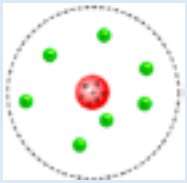
1897 – JJ Thomson

Plum pudding model:
Discovered electrons. He suggested they were spread out throughout the atom like plums in a pudding.



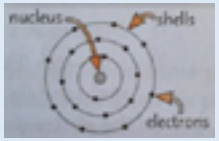
1907 – Rutherford

Alpha particle scattering experiment:
Discovered the nucleus and protons using radiation. Put forward the idea that atoms were mainly an empty space with a nucleus in the middle.



1913 – Bohr

Suggested the electrons orbited the nucleus in fixed electron shells.



1932 – Chadwick

Discovered a new sub atomic particle – same mass as protons but no charge. He called them neutrons.

Atomic Structure and The Periodic Table

Section 6 – The Periodic Table Definitions

Alkali metals	Elements in group 1 of the periodic table.
Halogens	Elements in group 7 of the periodic table.
Noble gases	Elements in group 0 of the periodic table.
Transition metals	Elements from the central block of the periodic table.
Displacement reactions	A reaction where a more reactive element takes the place of a less reactive element in a compound.

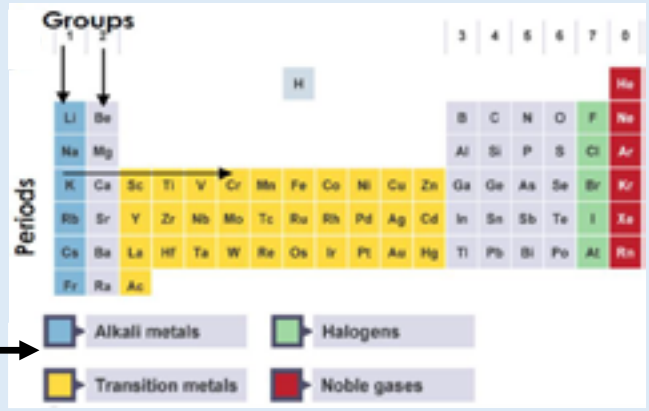
Section 7 – Development of the Periodic Table

- In the **early 1800s** elements were arranged by atomic mass.
- The early periodic tables were incomplete
- In **1869**, **Dmitri Mendeleev** changed this by leaving gaps for elements that he thought had not been discovered and changed the order based on chemical properties.
- Elements with properties predicted by Mendeleev were discovered and filled the gaps

Section 8 – The modern day periodic table

- The elements are ordered by atomic number.
- Elements in the same group have the same number of electrons in their outer shell and this gives them similar chemical properties.
- The majority of elements are metals.
- Metals are found to the left and towards the bottom of the periodic table.
- Non-metals are found towards the right and top of the periodic table.
- Metals react to form positive ions.
- Non-metals react to form negative ions.

Learn the position of these elements



Section 9 – Groups

Group 1 – Alkali metals

- One electron in outer shell.
- Form ionic compounds with non-metals.
- React with water to produce hydrogen gas.
- React with chlorine to produce a salt.
- React with oxygen to form a metal oxide.
- Down the group:
  - Increase in reactivity
  - Lower melting & boiling point
  - Higher relative atomic mass

Group 7 – Halogens

- Seven electrons in outer shell.
- Form molecular compounds.
- Form ionic bonds wit metals.
- More reactive halogens will displace less reactive ones.
- Fluorine – very reactive, gas.
- Chlorine – fairly reactive, gas.
- Bromine – dense, liquid.
- Iodine – dark grey crystalline solid.
- Down the group:
  - Decrease in reactivity
  - Higher melting & boiling point
  - Higher relative atomic mass

Group 0 – Noble gases

- Eight electrons in outer shell.
- Not very reactive because of their stable outer shell.
- Monatomic gases – single atoms not bonded to each other.
- All colourless gases at room temperature.
- Non-flammable.
- Down the group:
  - Higher boiling point
  - Higher relative atomic masses.

Transition metals

Properties which are different from those of the elements in Group 1.
They are:

- Much less reactive than group 1 elements.
- Good conductors of electricity.
- Hard and strong.
- High density.
- High melting points (with the exception of mercury).

Many transition elements have ions with different charges, form coloured compounds and are useful as catalysts.

Structure and Bonding

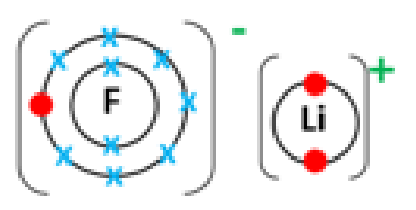
Section 1 – Definitions

Covalent bond	The attraction between two atoms that share one or more electrons.
Ionic bond	The electrostatic force of attraction between positively and negatively charged ions.
Metallic bonding	The electrostatic attraction between the positively charged atomic nuclei of metal atoms and the delocalized electrons in the metal.
Ion	An ion is a particle which has gained or lost an electron to become a charged particle.
Intermolecular forces	The attraction between the individual molecules in a covalently bonded substance.
Polymer	A substance made from very large molecules made up of many repeating units.
Delocalised electrons	Bonding electron that is no longer associated with any one particular atom.
Fullerene	Form of the element carbon that can exist as large cage-like structures, based on hexagonal rings of carbon atoms.
Alloy	A mixture of two or more elements, at least one of which is a metal

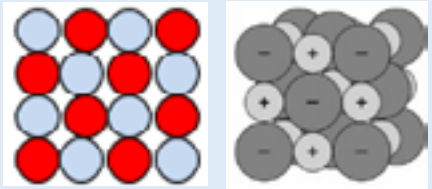
Section 2 – Bonding

Ionic Bonding

- Strong electrostatic forces hold ions of opposing charges together:



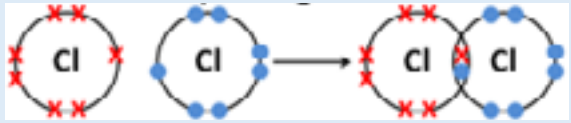
- The ions form a giant lattice:



- Bond formed between metals.
- Ionic bond are very strong so ionic compounds have very high melting and boiling points.
- Conductive when liquid/molten.
- Group 1 form 1+ ions, group 2 form 2+ ions, group 7 form 1- ions, group 6 forms 2- ions.
- An ionic compound has no overall charge.

Covalent Bonding

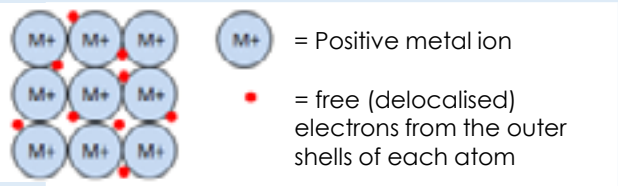
- Non-metal atoms bond by sharing electrons to form a very strong covalent bond:



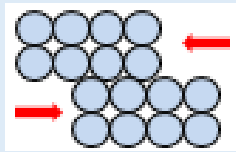
- Both chlorine atoms have 7 electrons on their outer shell, therefore each need to gain one more in order to be stable → by sharing one electron a single covalent bond is formed. Each Cl atom now has a full outer shell.
- No ions are formed.
- Low melting and boiling points.
- Non –conductive – no free electrons.

Metallic Bonding

- Metallic bonding is the strong attraction between closely packed positive metal ions and a 'sea' of delocalised electrons.



- The strong electrostatic forces between the ions and electrons mean a lot of energy is required to break them. This is why metals have very high melting and boiling points.
- The free electrons are able to move so metals are good conductors of electricity and heat.
- Metals are malleable – the layers can slide over each other because the free electrons can move.



Science - Chemistry - Covalent Structures

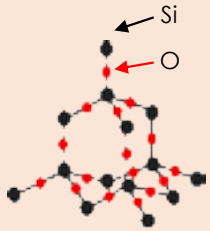
Section 3 – Giant Covalent Structures

Diamond:

- Each carbon atom is covalently bonded to four other carbon atoms to achieve a full outer shell.
- As these bonds are strong diamond is very hard and has a high melting point.
- It does not conduct electricity.

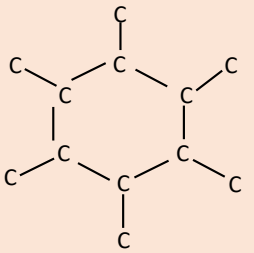
Silicon Dioxide (silica):

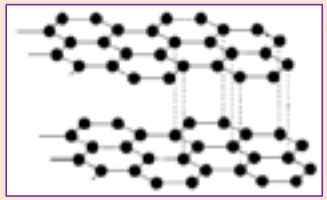
- Similar structure to diamond.
- It is hard and has a high melting point.
- Contains silicon and oxygen atoms, instead of carbon atoms.
- It is a semiconductor, which makes it useful in the electronics industry.



Graphite:

- Each carbon atom is covalently bonded to three other carbon atoms and makes 3 covalent bonds.
- Layers are formed and held together by intermolecular forces. Layers can slide over each other, making graphite soft and slippery.
- Each carbon atom has one free electron so graphite conducts heat and electricity.
- It is used in pencils.





One layer of Graphite is known as Graphene

Graphene:

- Is one layer of graphite.
- It is a sheet of carbon atoms joined together in hexagons.
- The sheet is one atom thick.
- It is very strong, light and can conduct electricity due to its delocalised electrons.

Fullerenes:

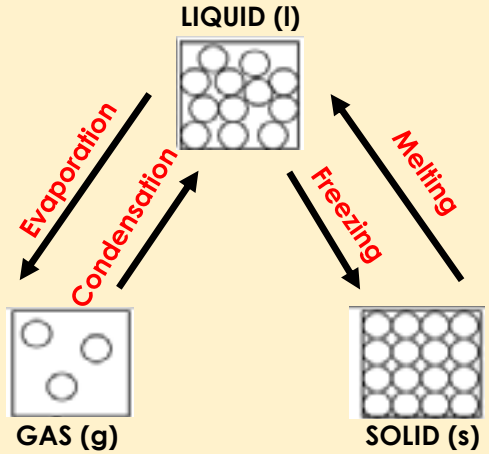
- Fullerenes are molecules of carbon with hollow shapes.
- The structure is based on hexagonal rings of carbon but they may also contain rings with 5 or 7 atoms.
- The first fullerene to be discovered was Buckminsterfullerene (C60) which has a spherical shape:

- Carbon nanotubes are cylindrical fullerenes with very high length to diameter ratios.

- Their properties make them useful for nanotechnology, electronics and materials.

Section 5 – States of Matter

- The stronger the forces between the particles the higher the melting point and boiling point of the substance.
- The amount of energy needed to change state from solid to liquid and from liquid to gas depends on the strength of the forces between the particles of the substance

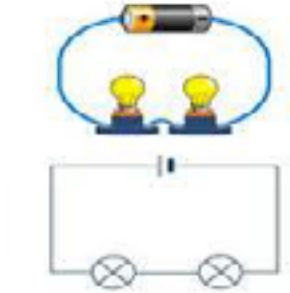


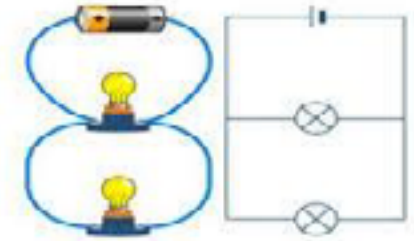
- Aqueous solutions state symbol (aq)

<u>Limitations of the particle model (Higher Tier only):</u>

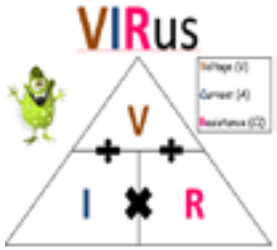
- **No forces shown between spheres.**
- **Particles represented as spheres.**
- **Spheres are solid.**

1. Electricity	Definition
Current	Flow of electrical charge in a circuit
Current formula	Charge (C) = Current (A) x Time (s) Q = I x T
Coulomb (C)	Unit of charge, same as 1 ampere per Second
Potential Difference	Difference in voltage between two points
Resistance (Ω)	Measure of how hard it is for current to flow
Ohms (Ω)	Unit for resistance
Voltage (V)	Unit for potential difference
Ohms Law	Voltage (V)= Current (I) x Resistance (R)
Series Circuit	Single loop for the current to flow
Parallel Circuit	Multiple pathways for the current to flow
$R_{total}= R_1 + R_2$	In a series circuit the total resistance is the sum of all individual resistors

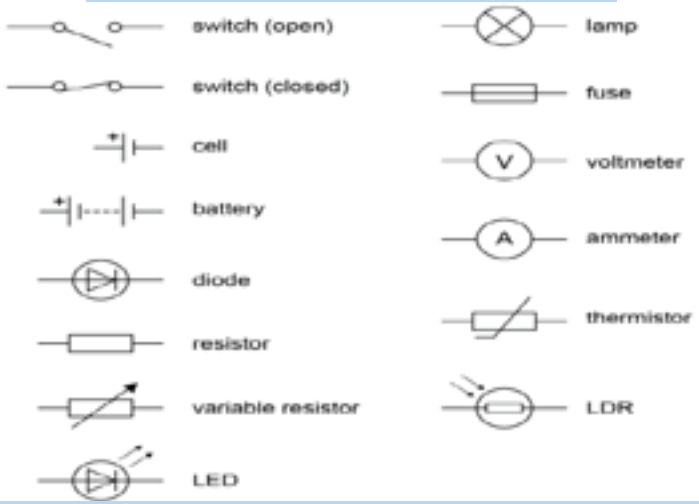




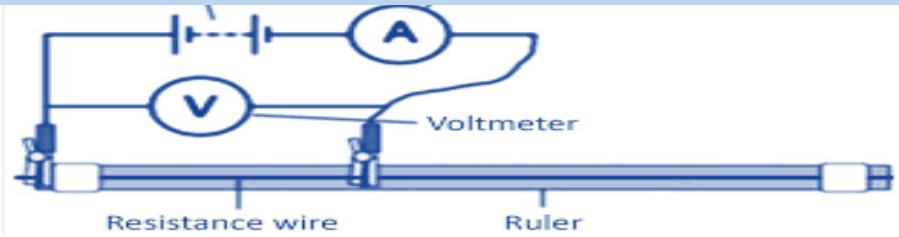
5.Series Circuit



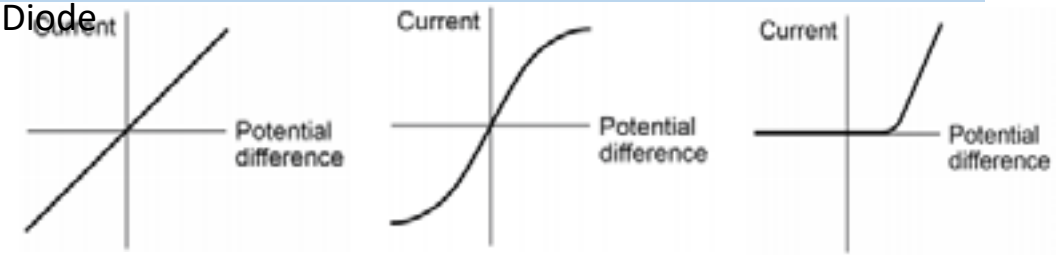
2. 15 Component Symbols



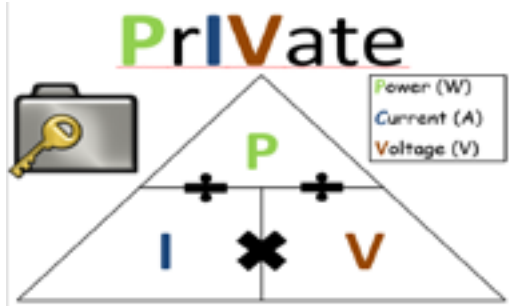
3. Required practical to find the resistance of a length of a wire

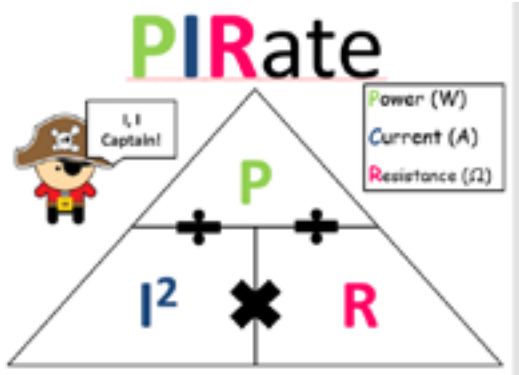


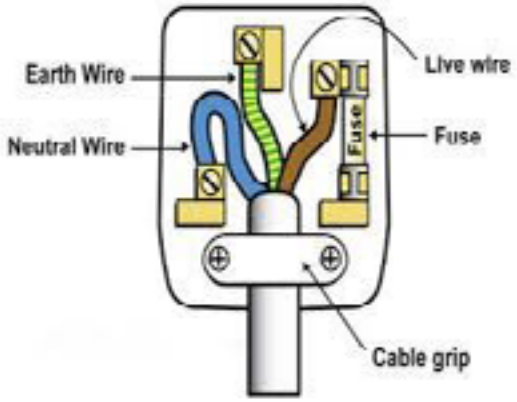
4. Resistor Filament Lamp Diode

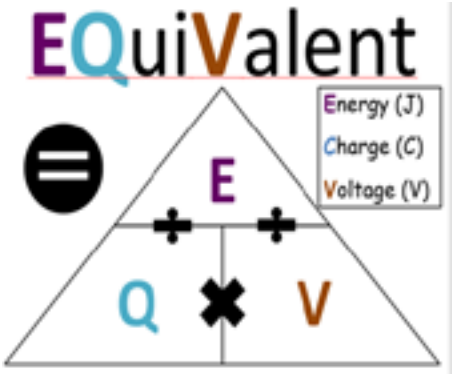


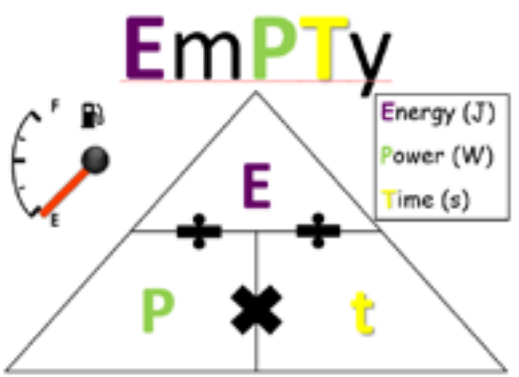
6. Mains Electricity	Definition
UK Mains Electricity is DC	230 V
Frequency of UK Main Electricity	50 Hz
DC	Direct Current (one direction)
AC	Alternating Current (changes direction)
Power	Power = Current x Voltage P = I x V
Power	Power = Current x Current x Resistance P = I^{2+} x R
National Grid	Series of wires, transfers and cables linking power stations to customers
Step up transformer	Increases the voltage to increase efficiency (less heat lost through resistance)
Step down transformer	Reduces the voltage to make it safe for homes to use electricity











Efficiency

$$\text{Efficiency} = \frac{\text{Useful Energy}}{\text{Total Energy}}$$

Science - Physics - Energy 1

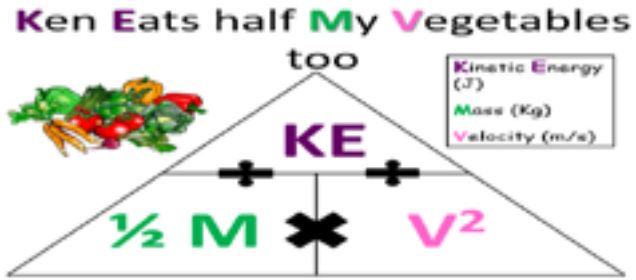
1. Energy Stores and systems	Definitions
Law of conservation	Energy cannot be destroyed nor created only transferred
9 types of energy	Light, sound, thermal (heat), nuclear, electrical, kinetic, chemical, elastic potential, gravitational potential
3 stores of energy	Chemical, elastic potential, gravitational potential
Joules (J)	Standard unit for energy

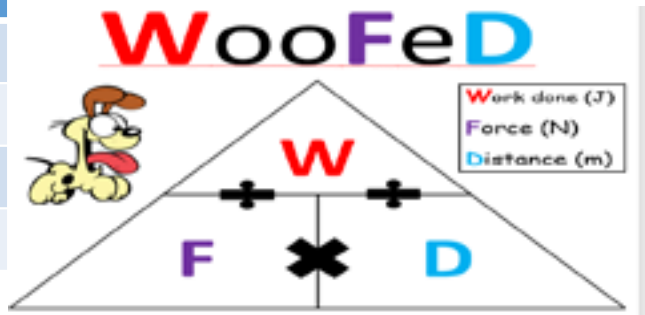
2. Changes in energy	Definitions
Kinetic energy	Movement energy calculated by ke (J) = ½ x m (Kg) x v^2 (m/s)
Elastic potential energy	Energy stored in a spring equation is given ee (J) = ½ x k (N/m) x e^2 (m)
Spring constant (K)	Amount of elastic energy stored in a stretched spring represented in formulae by k
Gravitational potential energy	Store of energy in an object at height calculated by gpe = m x g x h

3. Energy Changes in a system	Definitions
Specific Heat Capacity (J/Kg ^{0}C)	Amount of energy required to raise 1kg of a substance by 1^{0}C equation given $\Delta E = m c \Delta \theta$

4. Power	Definitions
Work Done (J)	Is equal to energy transferred - work done (J) = force (N) x distance (m)
Power	The rate at which energy is transferred (work is done)
Watts (W)	Standard unit for power 1 Watt = 1 Joule of energy used per second
Power equation	Power (W) = work done (J) ÷ time (s)

Units	Conversion
MJ = megajoule	1 MJ = 1000 000 J
kJ = kilojoule	1 kJ = 1000 J
mJ = millijoule	1 mJ = 0.001 J



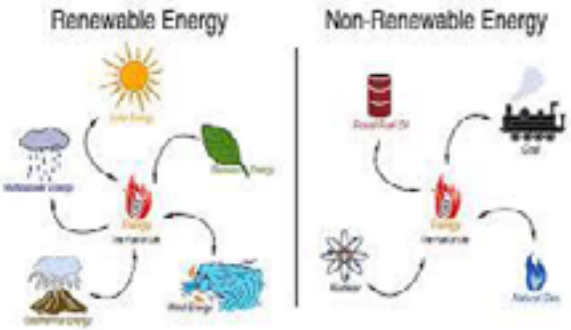


5. Efficiency	Definitions
Insulation	Use of materials that prevent the transfer of heat energy – non-metals e.g. glass
Lubrication	Use of materials to reduce friction to prevent the transfer of heat energy e.g. oil
Efficiency	Proportion of input energy transferred to useful energy, maximum is 1 or 100%
Efficiency formula	Efficiency = useful energy ÷ total input energy same applies to power

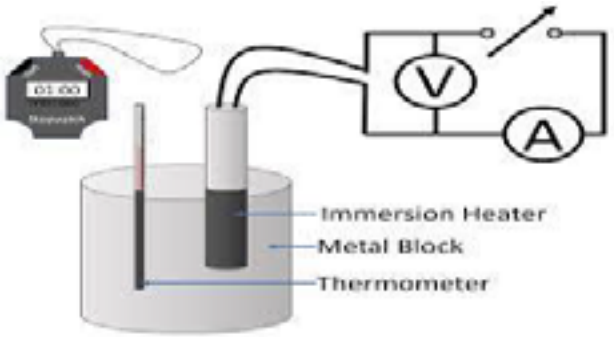
6. Energy Resources	Definitions
Renewable	Will not run out, can be reused
Non-renewable (finite)	Will run out
Fossil Fuels	Coal, oil, gas stores of Carbon burn to release CO_2
Nuclear Power	Uranium is non-renewable, will run out but not as fast as fossil fuels
Wind, solar, tidal, geothermal	Examples of renewable resources that have issues with reliability

Efficiency

$$\text{Efficiency} = \frac{\text{Useful Energy}}{\text{Total Energy}}$$



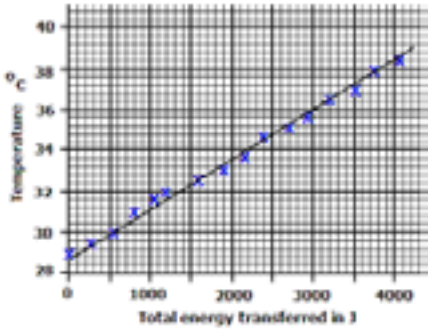
Specific Heat Capacity Required Practical



Method

1. Measure and record the mass of the metal block
2. Set up a series circuit as shown in the diagram
3. Record the current (I) and the voltage (V)
4. Record the temperature on the thermometer every 30s leaving the stop watch running until 10 minutes
5. Calculate the power of the heater using P = I x V
6. Calculate the work done by multiplying the power by the time in seconds
7. Plot a graph of your results

Results



Spanish - Intereses e Influencias 1

Spanish Y10 – intereses e influencias (1)

Mis ratos libres		My free time	
Las actividades	Activities	Descansar	To relax
El ocio	Leisure	Escuchar música	To listen to music
Tengo muchos pasatiempos	I have a lot of hobbies	Hacer deporte	To do sport
A la hora de comer	At lunch time	Ir al cine	To go to cinema
Cuando tengo tiempo	When I have time	Leer libros/revistas	To read books/ magazines
Después del insti	After school	Salir	To go out
Los fines de semana	At the weekend	Usar el ordenador	To use a computer
Juego al…	I play	Relajante	Relaxing
Billar	Billiard	Sano	Healthy
Fútbol	Football	Me ayuda a relajarme	It helps me to relax
Monto en bici	I ride my bike	Me hace reír	It makes me laugh
Monto en monopatín	I ride my skateboard	Me ayuda a olvidarme de todo	It helps me to forget everything
Voy de compras	I go shopping	Con otra gente	With other people
Mis pasión es…	My pasion is	Es muy guay	It is very cool
Suelo	I often	Qué divertido	How fun

La Paga	Pocket Money
Mis padres me dan	My parents give me
X euros a la semana	X euros a week
Gasto mi paga en	I spend my pocket money on
También compro	Also I buy
La ropa	Clothes
Las joyas	Jewelery
El maquillaje	Makeup
Las zapatillas de marca	Branded trainers
Los videojuegos	Video games
Las revistas	Magazines

La música	Music
Asistir a un concierto	To attend a concert
Cantar	To sing
Tocar un instrumento	To play an instrument
La batería	Drums
Mi cantante preferido	My favourite singer
Un espectáculo	A spectacle
Una gira	A tour
Un billete	A ticket
Una entrada	An entrance

La tele y las películas		TV and films	
Soy teleadicto/a	I am addicted to TV	Una serie policiaca	Crime series
Mi programa favorito es	My favourite programme is	Un misterio	Mystery
Un concurso	Competition	Una película de…	A film of
Un reality	Reality	Amor/terror	Love/horror
Un documental	Documentary	Acción/aventuras	Actions/adventure
Una comedia	Comedy	Animación	Animated
Un culebrón	Soap opera	Extranjero	Foreign

Spanish - Intereses e Influencias 2

Spanish Y10 – intereses e influencias (2)

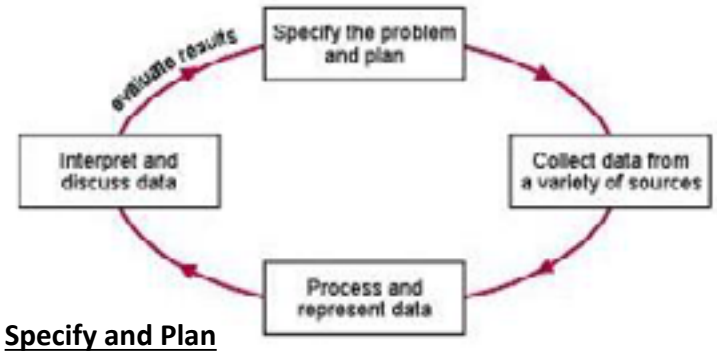
El deporte		Sport	
Soy	I am	La natación	Swimming
Era	I used to be	Deportes acuáticos	Water sports
Deportista	Sporty	La equitación	Horse riding
Un miembro de un club	A member of a club	El patinaje sobre hielo	Ice skating
Un miembro de un equipo	A member of a team	El tiro con arco	Archery
Aficionado de	A fan of	El piragüismo	Canoeing
Juego al	I play	El remo	Rowing
Jugué al	I played	La escalada	Climbing
Jugaba al	I used to play	Voy	I go
Baloncesto	Basketball	Fui	I went
Béisbol	Baseball	Iba	I used to go
Balonmano	Handball	A clases de	Classes of
Hago	I do	De pesca	Fishing
Hice	I did	Marcar un gol	To score a goal
hacía	I used to do	Participar en	To participate in
El baile	Dance	Un torneo	A tournament
El boxeo	Boxing	Una competición	A competiton

Adjectivos interesantes		Interesting adjectives	
Guay	Cool	Fascinante	Fascinating
Gracioso	Fun	Increíble	Incredible
Entretenido	Entertaining	Tonto	Silly
Fácil	Easy	Malo	Bad
Útil	Useful	Asqueroso	Disgusting
Agradable	Pleasant	Horroroso	Horrendous
Tolerante	Tolerant	Desastroso	Disastrous
Genial	Great	Flojo	Lame
Abundante	Full of	Pesado	Tiresome
Carismático	Charistmatic	Desagradable	Unpleasant

Los modelos a seguir		Role Models	
Admiro a	I admire	Apoya la gente	Helps people
Mi inspiración	My inspiration	Usa su fama	Uses their fame
Mi ídolo	My idol	Para ayudar	In order to help
Un buen modelo a seguir es	A good role model is	Un mal modelo a seguir es	A bad role model is
Alguien que	Someone who	Se comportan mal	They behave badly
Recauda fondos para	Raises money for	Se meten en problemas	They get into trouble
Tiene mucho talento	Has a lot of talent	Lucha por	They fight for
Tiene éxito	Has success	Lucha contra	They fight against

Statistics - Types of Data

Year 10 Statistics.
Half term 1 Module 1: Types of Data



Specify and Plan

- Specify the problem and write an hypothesis to investigate
- A **hypothesis** is an idea or opinion that you start with, and which you **test** using **statistical techniques**. eg "***Gromow*** makes plants grow taller"
- Plan what data you need to collect and how to collect it

Primary Data is collected by yourself, **Secondary Data** is collected by someone else.
Secondary data comes from published sources, such as newspapers, books or the Internet. You could do an experiment, carry out a survey or use a questionnaire to collect primary data.

	Advantages	Disadvantages
Primary data	Collection method known Accuracy is known Can find answers to very specific questions	Time-consuming to collect Expensive to collect
Secondary data	Easy to obtain Cheap to obtain Data from some organisations (such as the Office for National Statistics in the UK) can be more reliable than data you collect yourself	Method of collection unknown Data might be out of date May contain mistakes May come from an unreliable source May be difficult to find answers to specific questions

Raw data:	collected data before it is ordered, grouped etc...
Quantitative:	numerical observations or measurements, such as 1.4
Continuous:	can take any value on a continuous numerical scale length, time, weight etc...
Discrete:	can only take specific numerical intervals, shoe size, no. of pets, siblings etc...
Qualitative:	nonnumerical observations, such as blue
Categorical:	can be sorted into nonoverlapping categories.
Ordinal:	can be written in order or as a numerical scale.
Bivariate:	involves pairs of related data

Grouped Data

- data can be grouped to make it easier to read and look for trends/ patterns (the whole point of statistical analysis!)
- Class intervals need to be selected carefully too big or too small could disguise trends
- continuous data must not have gaps or overlap each other.
- If data is rounded it can be inaccurate (upper and lower bounds)

Statistics - Population & Sampling

Year 10 Statistics.
Half term 1 Topic 2: Population and Sampling

The **population** is every item or every person that could possibly be involved in an investigation.

Random means every member of the population has an equal chance of being chosen

A **census** is a survey or investigation with data taken from every member of a population.

A **sample** is a small selection of the population. To avoid **bias**, the sample should represent the characteristics of the population. The results from a sample can be used to make conclusions for the whole population.

	Advantages	Disadvantages
Census	Unbiased Accurate Takes the whole population into account	Time-consuming Expensive Difficult to ensure the whole population is used Lots of data to handle
Sample	Cheaper Less time-consuming Less data to be considered	Not completely representative May be biased

The **sampling units** are the people or items to be sampled.
The **sampling frame** is a list of all the sampling units.

Type	Method	Advantages	Disadvantages
Random	Assign all a data a number, use random number generator	More likely to be representative of the population. Unbiased.	A large sample size is needed. Can be expensive and time consuming
Stratified	Number in sample = $\frac{group\ size}{population}\ x\ sample\ size$	All groups in the population are fairly. Represented. Unbiased.	Can't be used if sample size is small.
Cluster	Population is grouped. Random sample of the groups selected, all items in the group in sample.	Good when impossible to use a stratified sample.	Not random
Quota	Split the population into groups by criteria and select a given number from each group.	Cheap and quick	May not represent the population
Systematic	Select from population at regular intervals	Easy	Not random
Convenience	When items are selected because of convenience. E.g. Asking people in your class rather than in the whole school.	Easy and cheap	Likely to be biased

Note: Petersen's Capture/Recapture to estimate size of population is covered in Maths Year 9 Higher Half term 5, Topic 3 Bias and Sampling

Statistics - Collecting Data

Year 10 Statistics. Half term 1 Topic 3: Collecting data

Interviews and surveys

	Advantages	Disadvantages
Interview	Can explain questions, out interviewee at ease, high response rate	Time and money, respondents less likely to honest, interviewer bias
Anonymous questionnaire	Quicker and cheaper. Respondent more likely to be honest. Easy to send to a large and representative sample	Lower response rate. Respondent may not understand questions.

Rules for questions

- Must be clear and closed (Open – allows a wide variety of responses and must be avoided!)
- Leading questions must be avoided
- Must have clear unambiguous response boxes – must not overlap, must be exhaustive (cover all possible replies) and mut include a time frame where necessary

Pilot surveys

- Used to test questions to make sure they are understood
- To make sure questionnaire provides the data needed and that it will give valid results

Cleaning data – making sure there are no anomalies, missing data fields, mismatched units or formatting etc.

Random Response Method

When a questionnaire asks sensitive questions the random response method is used. A random event such as tossing a coin is used e.g. Toss a coin. If it lands on heads tick Yes, if tails answer the question truthfully. 50% of the total respondents can be discounted from the yes ticks and the rest answered truthfully.

Experiments

An **explanatory variable** is one you can control in an experiment (eg *temperature or light or food* when growing plants) SHOULD be on the x-axis. Usually used on Scatter graphs. Also called a control variable.

A **response variable** responds to a control variable (eg height of plants in response to change in light/food) Usually used on Scatter graphs.

Type		Advantages	Disadvantages
Laboratory	Conducted in controlled environment	Easy to replicate. Easy to control.	Test subjects may behave differently.
Field	Carried out in test subject's normal environment where researcher controls one or more variables	More likely to reflect real life behaviour	Can't control extraneous variables
Natural	Carried out in test subject's normal environment but researcher has no control over any variables	More likely to reflect real life behaviour	Can't control any variables

Control group The group in an experiment or study that don't receive treatment to allow comparison with those that do.

Matched Pair testing where pairs have everything in common except the factor being tested.

Statistics - Tabulation

Year 10 Statistics. Half term 2 Topic 4: Tabulation

Reading from unfamiliar looking tables - cross refence the rows and columns, using rulers to find the data required. E.g. For graduates who studied in London, work out the total percentage who went into some type of employment.

Destinations of full-time first degree graduates 2002

Area of Study	UK Employment		Overseas Employment	Continuing Education	Unemployed
	Permanent	Temporary			
UK	42.8 %	20.1 %	2.1 %	19.8 %	6.8 %
North East	44.9 %	17.2 %	2.4 %	21.6 %	6.0 %
North West	44.5 %	21.3 %	1.7 %	18.9 %	6.5 %
Yorkshire and the Humber	47.5 %	18.5 %	2.6 %	17.7 %	6.1 %
East Midlands	47.1 %	18.9 %	1.9 %	17.7 %	6.1 %
West Midlands	42.2 %	21.1 %	2.1 %	20.6 %	7.1 %
East	38.9 %	19.1 %	1.9 %	26.5 %	5.6 %
London	40.2 %	19.5 %	1.2 %	19.6 %	9.1 %
South East	42.0 %	21.0 %	2.1 %	19.6 %	6.5 %
South West	45.7 %	19.0 %	2.4 %	16.0 %	6.9 %

(Source: www.gov.uk)

Data collection sheets
Must have 3 columns: list of data, tally and frequency.
The categories of data must be exhaustive so include other.

Colour of Car	Tally	Frequency
White	𝍸 I	6
Black	III	3
Grey	𝍸 𝍸	
Blue		
Red		
Purple		
Green		
Other		

Complete and interpret two way tables

80 students visited the library over three days.
The two-way table shows some information about these students.

	Monday	Tuesday	Wednesday	Total
Female			13	38
Male	14			
Total		33	26	80

Complete the table.

One of the students is picked at random. Write down the probability that the student was a female who visited on Tuesday.

Frequency Tables

Discrete data →

Number of bathrooms	Frequency
1	30
2	21
3	5

Age	Frequency
8 - 10	12
11 - 13	25
14 - 16	37
17 - 19	14

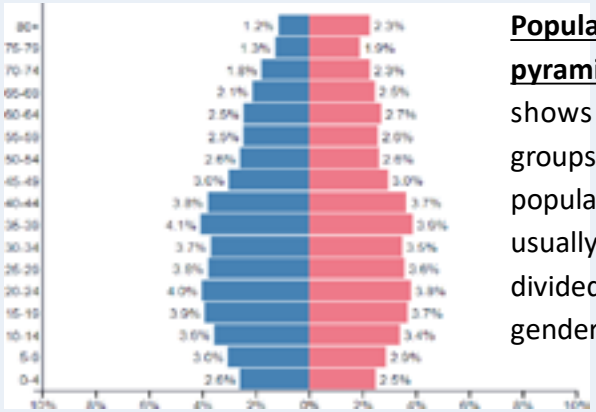
← Grouped discrete data

Grouped continuous data →

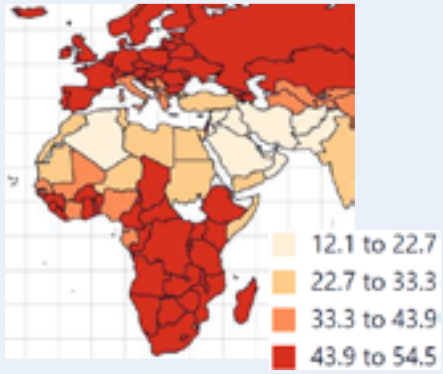
Heights, h (cm)	Frequency
$150 < h \leq 160$	13
$160 < h \leq 170$	33
$170 < h \leq 180$	35
$180 < h \leq 190$	11

Statistics - Representing Data

Year 10 Statistics. Half term 2 Topic 5: Representing Data



Population pyramid - shows age groups in a population, usually divided by gender.

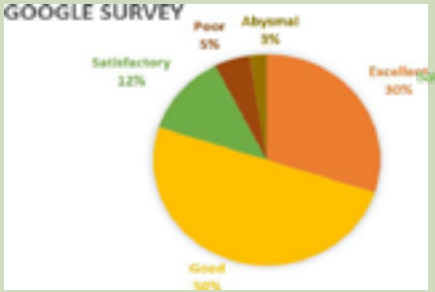


Choropleth Maps - A statistical diagram used to classify regions of geographical areas. Each region on the map is shaded with different intensities, which corresponds to a key.

Already covered in maths

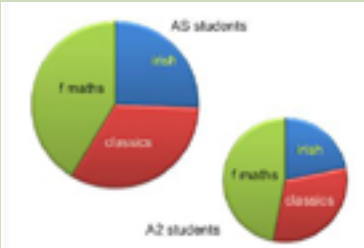
Pictograms
Bar Charts (multiple and composite and bar line graphs)
Pie Charts
Stem and Leaf Diagrams
Line graphs (time series)
Frequency Polygons
Cumulative Frequency graphs (continuous data)
Histograms
Box and Whisker diagrams

Comparative Pie Charts



With ordinary pie charts you cannot compare numbers, only compare proportion using the angle of the sector as a fraction of 360°.

With comparative pie charts the area is proportional to the frequency. If you know the radius you will use one you can work the radius for the other.



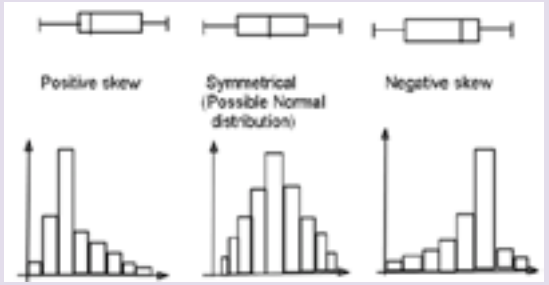
$\frac{r_2}{r_1} = \frac{\sqrt{F_2}}{\sqrt{F_1}}$

r_2 is the radius of the second pie chart.
r_1 is the radius of the first pie chart
F_2 is the total frequency of the second pie chart.
F_1 is the total frequency of the first pie chart.

Which can be rearranged to: $r_2 = r_1\frac{\sqrt{F_2}}{\sqrt{F_1}}$

Box and Whisker Diagrams (Statistics extras!)

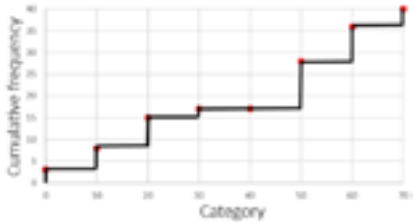
- medians in context
- IQR (UQ-LQ)
- Outliers <LQ – 1.5x IQR and >UQ+1.5xIQR
- Skew



the formula for calculating skew is given on the paper

$$\text{Skew} = \frac{3(\text{mean} - \text{median})}{\text{standard deviation}}$$

Cumulative Frequency graphs (discrete data) are stepped



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