Harrow Way Community School
Learning for life, success for all

Year 9 Knowledge Organiser

Spring 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 9 - SPRING TERM

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Art - Circles

1. Judy Pfaff

- A pioneer of installation-art
- Born in London in 1946
- Works in painting, printmaking, sculpture and installation
- Described as painting in space
- References spiritual, botanical and art historical imagery
- Work takes months or years to make, but exhibitions last only weeks
- Does not give narrative meaning to her work

Judy Pfaff

Klari Reis

6. Klari Reis

- curiosity and desire to explore and document the natural and unnatural with a sense of wonder and joy
- uses the tools and techniques of science in her creative process
- collaborates with local biomedical companies
- works in plastic and epoxy polymer and cutting edge technology
- uses dyes and pigments on aluminium and wooden panels
- pigments the plastic with powders, oils, acrylics and industrial dyes, built up through many layers of the ultra-glossy plastic
- the work is brightly coloured, ever changing and no two pieces are the same

2. Textiles

Applique: a decoration made by cutting shapes of fabric and sewing them to another piece of fabric
Embellishment: a decorative detail or feature added to something to make it more attractive
Stitch: a loop of thread than can connect fabric pieces together, either by hand or machine
Fabric: cloth produced by weaving or knitting textile fibres
Surface decoration: applying decorative stitches and other embellishments to the surface of fabric
Fabric manipulation: altering and changing the appearance of fabric by using different methods such as pulling the fibres, twisting and stitching
Couching: stitching over yarn or thread
Weaving: crossing threads over and under each other
Fabric fusion: cutting, attaching and marking man-made fabric with a soldering iron
Batik: dyeing fabric using hot wax as a resist
Heat press: fusing man-made fabrics together or transfer a design to fabric using dyes

Wassily Kandinsky

Robert Delaunay

Year 9
Circles + Rings

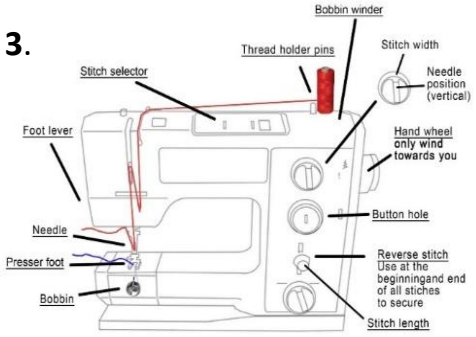
7. Painting

Acrylic paint: a fast-drying paint made of pigment suspended in acrylic polymer emulsion. Mixes with water, but water-resistant when dry
Wash: semi translucent layer of colour
Underpainting: first layer of paint applied to a canvas or board as a foundation for your painting. Useful for building contrast and tonal values
Glaze painting: a thin layer of paint that is very translucent, allowing some of the colour underneath to show through. The glaze subtly transforms the colour of what is beneath

4. Synonyms

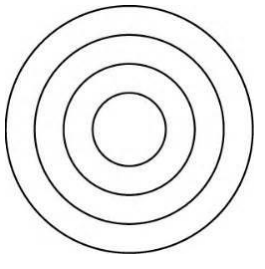
circles spirals helix rings round roundabout loops spheres discs balls orbit turn encircle surround revolve rotate rotor cycle cyclone coil

3.

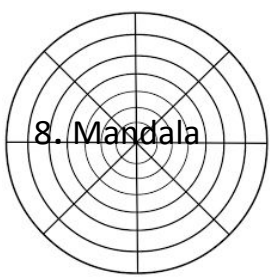


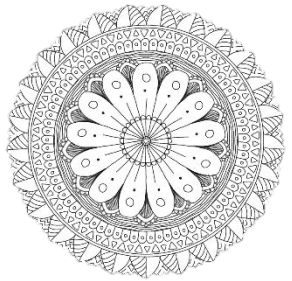
5. Venn diagram

Similarity and difference



8. Mandala





https://harrowway.satchelone.com/school/homeworks/35720838

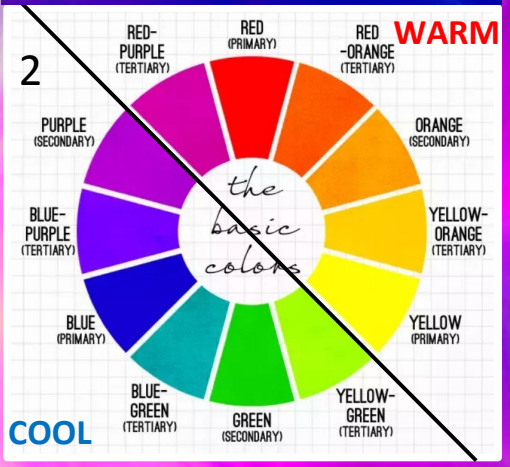
COLOUR

1

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

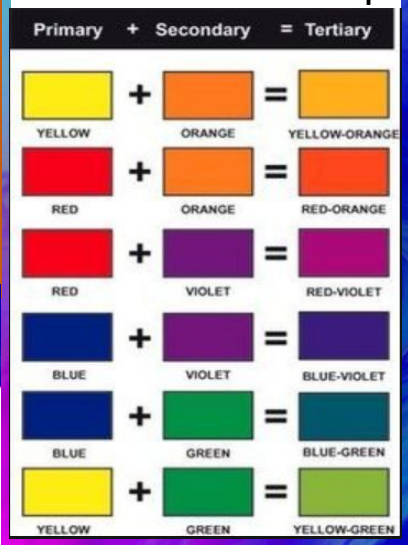
2



Cool colours painting

Warm colours painting

4



5

TINT
is adding white to a colour

TONE
is adding grey to a colour

SHADE
is adding black to a colour

ADJECTIVES TO DESCRIBE COLOURS

3

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

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.

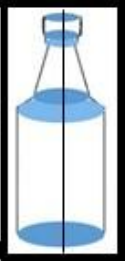
DRAWING

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.

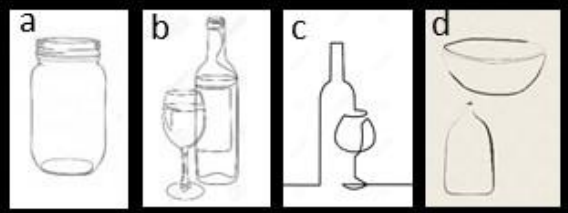
2 CENTRE LINE: Divides the object vertically in two equal parts.
LINE OF SYMMETRY: the line at which the bottle is symmetrical.
Mirror image symmetry: exactly matching opposite sides



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

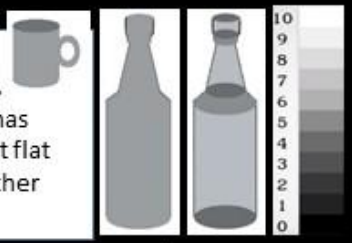
NEGATIVE SPACE: (*All in black*)
The rest of the space around or in between the object/s.

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**.

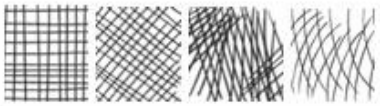
SHADING (light from the side):
On the outside of the object the tone changes gradually from one side to the other. Light and dark areas swap direction on the inside opening of the object like in this cup.

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

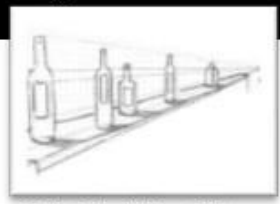
Cross- Hatching in 2,3 or more directions



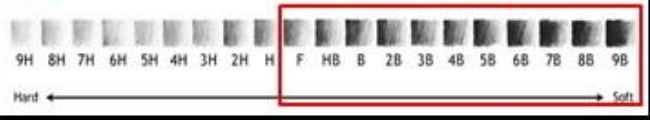
Other elements of drawing

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.



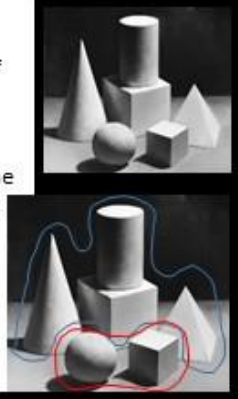
10 RANGE OF PENCILS:



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.

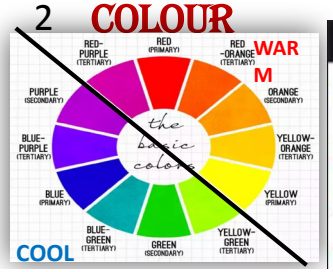


12 COMPOSITION:
Refers to the organisation, arrangement, and combination of objects within the borders of a **drawing** space.
For a great **drawing**, you want to bring the eyes of the viewer toward your centre of interest within an aesthetically pleasing **composition**.

FORMAL ELEMENTS

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

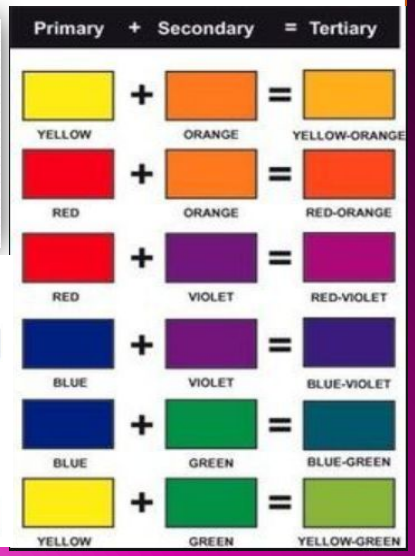
2 COLOUR



TINT
is adding white to a colour

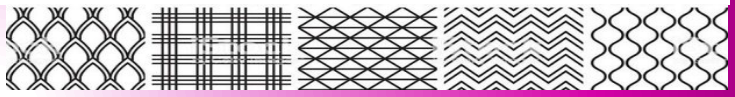
TONE
is adding grey to a colour

SHADE



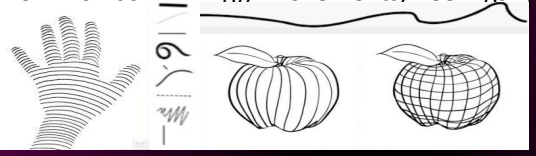
3 PATTERN

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.



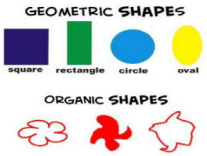
4 LINE

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



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 space between the shapes is called **negative space**.

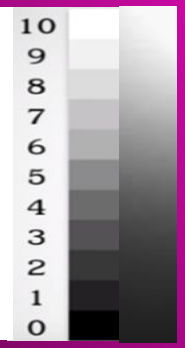


6 FORM

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.

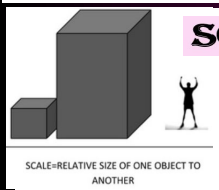


8 TEXTURE

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.
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.

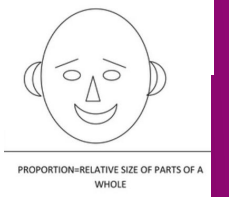
9 SCALE

is the size of one object in relation to the other objects in a design



10 PROPORTION

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



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.

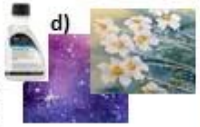
HP- Hot Press. Smooth surface for detailed work
CP (NOT) – Cold press. Slightly textured for most types of work
Rough – Heavily textured paper enhances the final piece of work.

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.

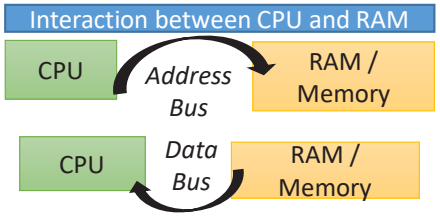
ASSEMBLAGE:
The making of 3D art, often involves using found objects.

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 9 Computer Science 1.1

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



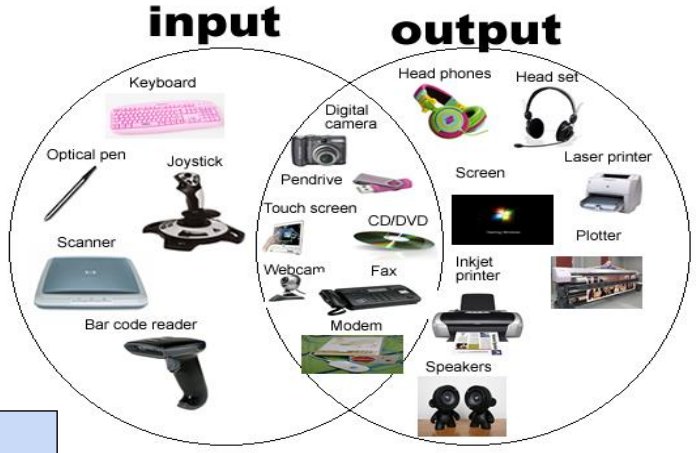
The Fetch-Execute Cycle (FCE)

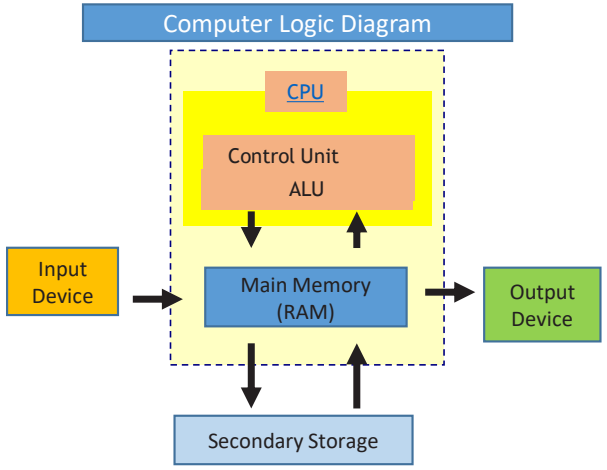
Fetch
- The address of the next instruction to be processed is copied from the Program Counter (PC) to the Memory Address Register (MAR)
- The PC is incremented to point to the next instruction that will be needed when the cycle starts again
- The instruction stored at the location held by the MAR is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

What is a Computer System?
Computer systems includes 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. **Input** ⇨ **Process** ⇨ **Output**





Key words	
BIOS	Basic Input Output System. A small program stored on the ROM chip to load the OS.
CPU	Central Processing Unit. Used to control and execute commands within the computer. Measured in GHz,(the number of processes executed in 1 second.)
Motherboard	Used to connect all components to each other for them to communication.
RAM	Random Access Memory. Data and instructions are stored which are currently in use or recently been used by the CPU
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 higher the rate, the faster the clock speed, the faster the computer works.
Cache Size	Fast memory between the CPU and RAM. It is used to store recent / common programs taking advantage of the short FDE cycle. The larger the size of the cache the more that can be stored without having to go back to slower memory (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 responsible for a FDE cycle. Allowing computers to do more than 1 thing at a time.

Year 9 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 is volatile memory used to store data and instructions which are needed by the CPU. Also referred to 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	A magnetic storage device used to store data longterm, 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	A storage device that uses flash memory to store data. It has no moving parts. Normally an SSD, memory stick or SD card
Volatile	Data is lost when the device is switched off
Non Volatile	Storage which does not lose its contents when the power is lost
CPU	Central Processing Unit – the brains of the computer, where all the data and instructions are processed.
Bootstrap loader	A small program that loads the operating system from the secondary storage to the RAM and starts the computer.

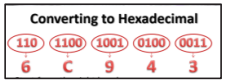
Memory - stores programs, operations and data while a program is being executed. There are several types of memory: registers, cache, RAM, ROM and virtual memory.

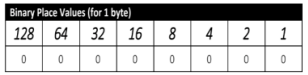
Storage - stores programs and files long term, even when they are not in use. Storage devices include: hard drives, USB memory sticks and SD cards. .

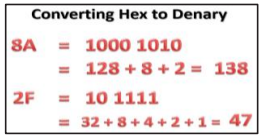
Digital Sound Sampling – The more samples taken means the improved quality of the digital signal. It becomes more like the original sound
Sample Rate – How many samples are taken. The Increase of the number of bits per sample allows for a more precise recording to be taken.

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 or 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



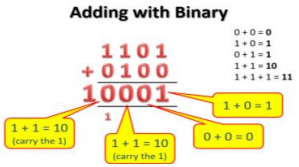




Binary	Denary	Hex
0000	0	0
0001	1	1
0010	2	2
0011	3	3
0100	4	4
0101	5	5
0110	6	6
0111	7	7
1000	8	8
1001	9	9
1010	10	A
1011	11	B
1100	12	C
1101	13	D
1110	14	E
1111	15	F

Character Sets – A set of letters number and 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 means that it can allow character sets from other languages and emoji's.

Adding with Binary



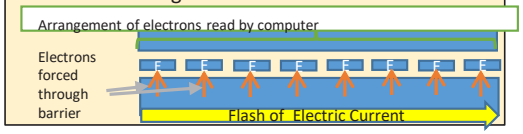
Size	Name
1 Bit = 0 or 1	Bit
8 Bits	Byte
1024 Bytes	Kilobyte
1024 Kilobytes	Megabyte
1024 Megabytes	Gigabyte
1024 Gigabytes	Terabyte

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 – easy to move 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 an extremely fast **memory** type that acts as a buffer between **RAM** and the CPU. It holds frequently requested data and instructions so that they are immediately available to the CPU when needed. **Cache memory** is used to reduce the average time to access data from the Main **memory**.

Year 9 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.

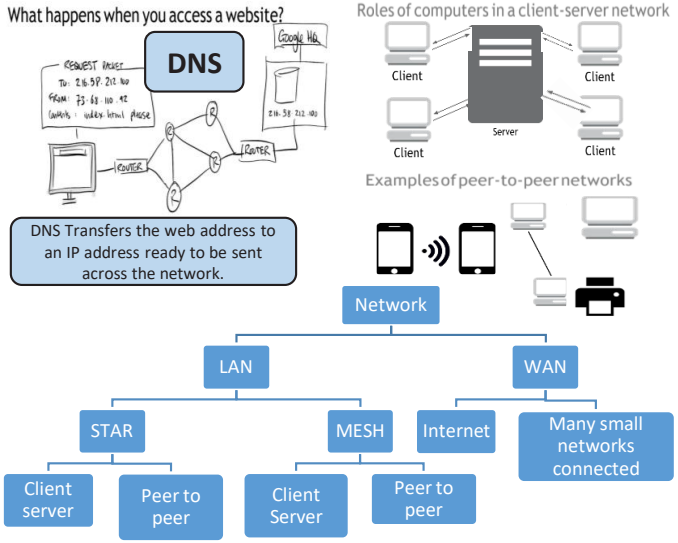
Factors that affect network performance include:
Number of devices and users - the bandwidth is shared between all devices, so the more devices, the less everyone gets to use
Transmission media - using Wi-Fi will result in slower data transfer speeds and a greater number of lost or corrupted data packets.
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 – 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.

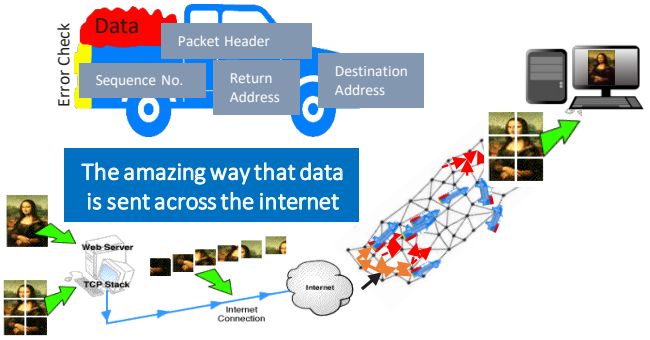
A Virtual Network is a type of network is not physical. It uses software to connect users.

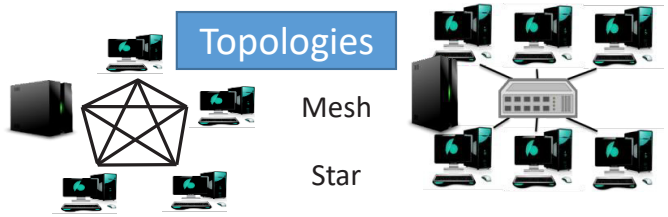


The Internet
The Internet is a **worldwide collection of computer networks**
The set of rules **Internet Protocol** (IP) ensure that devices work together on the Internet. Every computer on the Internet has an **IP address** that is used to send data from one device to another.
Routers are essential 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. Its 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.

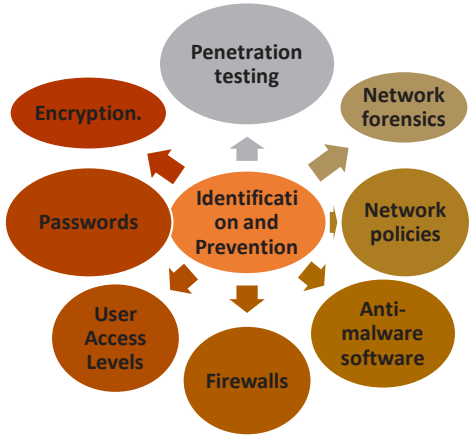


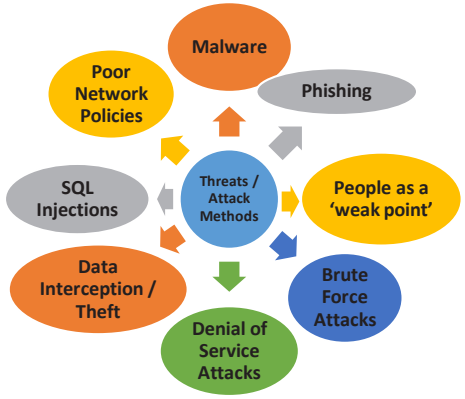


Star – All computers connect to a central switch. The switch routes the traffic to the correct computer. The switch is the main cost of the network.
Mesh – All computers connect to each other via a dedicated link. Cost of cables is expensive. Used mainly in wireless topologies.

Year 9 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 9 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	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 and their user access rights.
Providing utility software	Software tools that are designed to manage and optimise the performance of a computer system

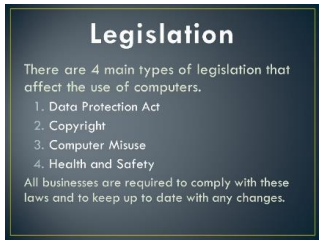
Year 9 Computer Science 1.6

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.

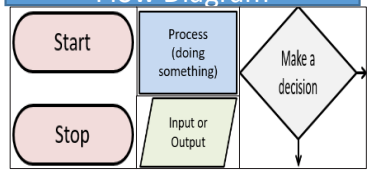
Sustainability – Computer systems have some positive impacts. The use of paperless communication (email, social media) had reduced the need for paper production, and computers are used to develop and produce sustainable technology. Although much of the material used in making computer systems relies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

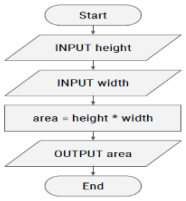
Recycling – There are legal guidelines for the disposal of computer systems and there are companies that deconstruct the machines and extract all of the valuable materials for recycling. It is also possible to extend the life of a computer system by donating them through charities. This process can help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

Year 9 Computer Science 2 . 1

Computational thinking:
The use of computers to solve problems.
Development of algorithms to solve problems.
Uses the 4 steps below to do this.
Decomposition – breaking down a large problem into smaller sub-problems.
Abstraction – representing 'real world' problems in a computer removing unnecessary elements from the problem.
Pattern Recognition – Finds any patterns in the problem/solution.
Algorithmic Thinking - identifying the steps involved in solving a problem.

Flow Diagram





Flow diagrams visually represent the steps that make an algorithm. A standard set of shapes are used to represent different types of step, such as running a sub-process. The arrows in a flow diagram represent the flow of control through the algorithm.

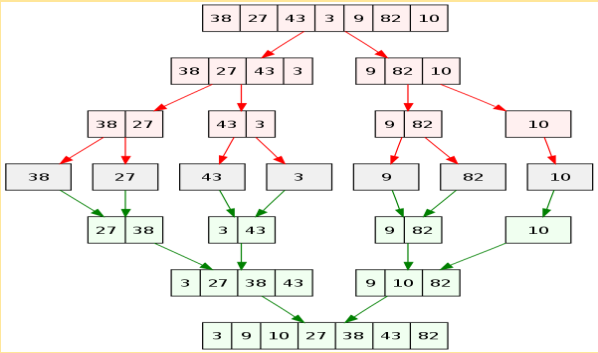
Pseudocode is fake code. Between code and written English

```
x = 0
while x != 100:
   x = int(input("Please type in a number"))
print("Loop has ended")
```

```
for counter in range(3,20,2):
    print(counter)
```

```
name=input("Please type in your name")
print("hello ",name)
```

Merge Sort The list is repeatedly divided into two until the elements are separated individually. Pairs of elements are then compared, placed into order and combined. The process is then repeated until the list is whole again.



Bubble Sort: Each item is compared with the one on its right, and swapped if it is larger At the end of the first pass the largest item bubbles through to the end of the list (Mauve indicates sorted items)

9	5	4	15	3	8	11	2
5	9	4	15	3	8	11	2
5	4	9	15	3	8	11	2
5	4	9	15	3	8	11	2
5	4	9	3	15	8	11	2
5	4	9	3	8	15	11	2
5	4	9	3	8	11	15	2
5	4	9	3	8	11	2	15

Linear Search: This involves searching through a set of data, one item after the other, until the item we are looking for is found. Searching for the number 36.

INDEX	0	1	2	3	4	5	6

Binary Search - Summarise the method of a binary search.
A **binary search** works by repeatedly dividing the number of items by two until you are left with the item that you are searching for. We are searching for the number 2!

Step 1: Put the items into order.

Step 2: Locate the middle number (Divide the total by 2 e.g. 10/2 = 5)

Step 3: Check! Is your this number less than, equal to or greater than the number you are looking for?

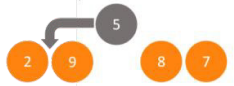
If it is greater than, you can remove all of the numbers to the right. If it is less then, you can remove all of the numbers to the left.

Repeat steps 2 and 3 until you find the number you are looking for.

The **insertion sort** works by looking at each value in turn and inserting the value into its correct place in the list.

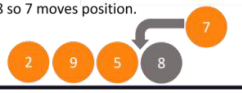
Step 1: Compare the first two items.
9 > 2 so 2 moves position.

Step 2: Insert 5 into its correct position.
5 > 2 and 5 < 8 so 5 moves position.



Step 3: Insert 8 into its correct position.
8 > 5 so stays in the same position.

Step 4: Insert 7 into its correct position.
7 > 5 and 7 < 8 so 7 moves position.



Low Level Language

Machine code - Not understood by humans, only by computers. The instructions are fetched from RAM, decoded by the CPU and then executed one after the other.

Assembly language – It uses Binary and short acronyms, like commands JMP 1024 (jump to instruction 1024) An assembler translates the code into machine code so the processor can deal with the code

A high level language

uses human words which a CPU does not understand. A computer uses a translator to change the code so it can understand it. There are 2 ways to translate - **Complier** coverts the code into machine code before running it or **Interpreter** which coverts the code one instruction at a time running

Types of Errors

Syntax errors - Variables not declare correctly or Variable names spelt incorrectly
Logic errors - Conditions that can not be met such as Infinite loops or Missing brackets
Run time errors - Programs that do not complete or where the memory is too

Year 9 Computer Science 2 . 2

Data types – How the data will be stored

Integer – Whole Number - 23
Real - Any number with a decimal – 2.223
Character - 1 single letter - A
String - A mix of letters, numbers and symbols - A546TH
Boolean - Has 2 states - TRUE or FALSE. 1 or 0

Casting This is the process of **converting data** from one type to another. For example str(age 13) converts the integer to a string. This may be required for a program to process information for a different outcome.

Variables - Are used to store values in a program. Variables can be changed. For example a variable might allows a name or age to be entered to a program. Or change a score when you get something correct.
Example – Name=Input ("What is your name?")

Constants - **A**re used to store values in a program. It is a part of a program that cannot be changed. For example a constant could be the use of Pi.

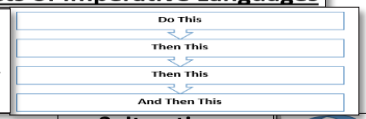
Types of sub Programs
A Function – Returns a value to the main program
A Procedure – Carries out a task, does not return a value to the main program
A Parameter – A value passed to the main program

Maths Operators For Pseudocode

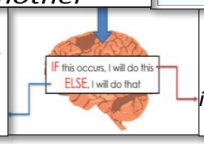
+	Addition	3+3=6
-	Subtraction	3-3=0
*	Multiplication	3*3=9
/	Division	3/3=1e
Mod	**Modulus Division -** Returns the remainder after division	17/3=6R2 Remaindr No. **Mod 2**
Div	**Quotient Division -** Returns the quotient or the lowest integer	11/4=2 Complete **Div=2**
^	Exponential Powers of	3^3=27

The 3 Constructs of Imperative Languages

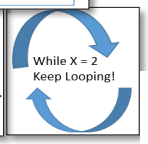
1. Sequencing *Performing one instruction after another*



2. Selection *The program making decisions*



3. Iterations *The program repeating, looping infinitely or for a set number of times.*



Iteration – For and While Loops

```
x = 0
while x != 100:
    x = int(input("Please type in a number"))
print("Loop has ended")
```

```
for counter in range(3,20,2):
    print(counter)
```

Sub Program – This is a self contained sequence of instructions within a program. These are also known as subroutines and can be called on for a single specific function within a program.
Benefits to the use of subroutines - Reduce the amount of code - Make programs easier to read and test - Give code better structure

Maths Operations

For multiple maths operations this is the order that needs to be followed
Brackets 3^2*12/(3*2)+6-6
Brackets (3*2)=6
Indices of Power Index 3^2 =3x3=9
Division Divide 12÷ 6 = 2
Multiplication Multiply 9*2 = 18
Addition Add 18+ 6 = 24
Subtraction Subtract 24- 6 = 18

Data types

Integer e.g. 23
Real e.g. 23.7
Character e.g. A or 5
String e.g. A546TH
Boolean e.g. TRUE or FALSE.

Python -> English	
`print('hello!')`	Prints a value on screen (in this case, hello!)
`input('')`	Inputs a value into the computer.
`x=input('')`	Inputs a value and stores it into the variable x.
`x=int(input(''))`	Inputs a value into x, whilst also making it into an integer.
`print(str(x))`	Prints the variable x, but converts it into a string first.
`if name == "Fred":`	Decides whether the variable 'name' ha a value which is equal to 'Fred'.
`else:`	The other option if the conditions for an if statement are not met (eg. name = 'Bob' when it should be Fred)
`elif name == "Tim"`	elif (short for else if) is for when the first if condition is not met, but you want to specify another option.
`#`	# is used to make comments in code – any line which starts with a # will be ignored when the program runs.

Year 9 Computer Science 2 . 3

Defensive design: - Programs need to be designed to cope with bad entries made by users. This will will:

- Minimise bugs or issues
- Program works regardless of user actions
- Errors are identified on entry

Contingencies (all possibilities) need to be considered at the planning stage for programs. This should consider possible user inputs and how to manage these.

Authentication

Identifies a user

Normally requires a combination entry (username and password)

Authentication checks against pre-set entries

- **Validation** is a method of checks an entry to ensure it is valid for the purpose that it is being used. There are some ways that code can be set up to validate inputs
- **Length Check** – Checks the number of characters in an inputs
- **Range Check** – Checks to ensure that an input falls between a set range of values
- **Presence Check** – Ensures that a field cannot be left blank

Defensive design considerations:

Sub Program – This is a self contained sequence of instructions within a program. These are also known as subroutines and can be called on for a single specific function within a program.

Types of sub Programs
A Function – Returns a value to the main program
A Procedure – Carries out a task, does not return a value to the main program
A Parameter – A value passed to the main program

Indentation – used to highlight the blocks of code. If a block has to be more deeply nested, it is simply indented further to the right.

```
database={'name': '1234', 'name2': '5678', 'name3': '9012'}
name = input('Enter username: ')
ask = input('Enter pin: ')
if ask == database[name]:
    print ("Welcome", name)
else:
    print ("Invalid code")
```

TESTING –

ITERATIVE TESTING - Tests carried out during development.
FINAL TESTING – Test once a program has been completed.
ALPHA TESTS - final testing carried out by a programmer
BETA TESTS – Final testing carried out by users

Suitable Test Data - There are three methods to test a program.

NORMAL TESTS uses a check with a program that is expected to work.
BOUNDARY TESTS (or extreme tests) will check the program limits, with the highest and lowest numbers in a range that should work.
ERRONEOUS TESTS uses data that is not expected to work to check if the program rejects this information.

Syntax and Logical Errors –

SYNTAX errors - Grammar, spelling and character mistakes in code
LOGIC errors occur when an incorrect operand has been used, like an AND instead of an OR. These errors may allow a code to operate, but work incorrectly

Commenting - Comments are the useful information that developers provide to make the reader understand the source code. They are usually helpful to someone maintaining or enhancing the code when the programmer is not around to answer questions about it.

```
# This is a comment
# Print “GeeksforGeeks !” to console
print("GeeksforGeeks")
```

```
a, b = 1, 3 # Declaring two integers
sum = a + b # adding two integers
print(sum) # displaying the output
```

Year 9 Computer Science 2 . 4

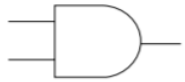
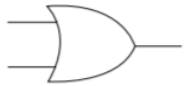
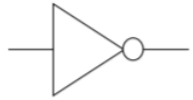
LOGIC GATES AND TRUTH TABLES

Computational logic has only two outcomes: true or false. This is represented in binary with 1 and 0. **Boolean logic** reduces all values to the these two states. Computer processors contain 1 billion **TRANSISTORS** and these transmit current (on-true) or don't (off – false).

AND GATES
With "AND" logic there are two inputs and one output.
If both of the inputs are positive then the output will be positive.
OR GATES
With "OR" logic there are two inputs and one output.
If either of the inputs is positive or if both of the inputs are positive then the output will be positive.
With "NOT" logic there is just one input and one output.
It changes the input to the opposite value.

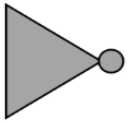
Truth Tables

AND			OR			NOT	
A	B	A AND B	A	B	A OR B	A	NOT A
0	0	0	0	0	0	0	1
0	1	0	0	1	1	1	0
1	0	0	1	0	1		
1	1	1	1	1	1		

Boolean Operators	Logic Gate Symbol
AND *(Conjunction)*	
OR *(Disjunction)*	
NOT *(Negation)*	

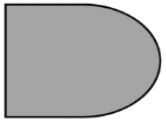
Binary Logic Gate Diagrams

NOT



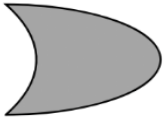
A	Out
0	1
1	0

AND



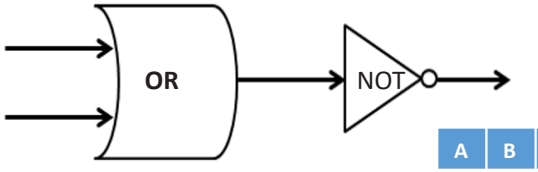
A	B	Out
0	0	0
0	1	0
1	0	0
1	1	1

OR

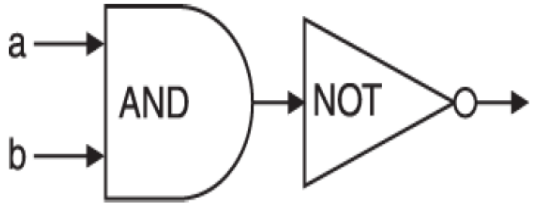


A	B	Out
0	0	0
0	1	1
1	0	1
1	1	1

Input (A)	Input (B)	Q = A OR B	Not Q
0	0	0	1
0	1	1	0
1	0	1	0
1	1	1	0



NOT (a AND b)



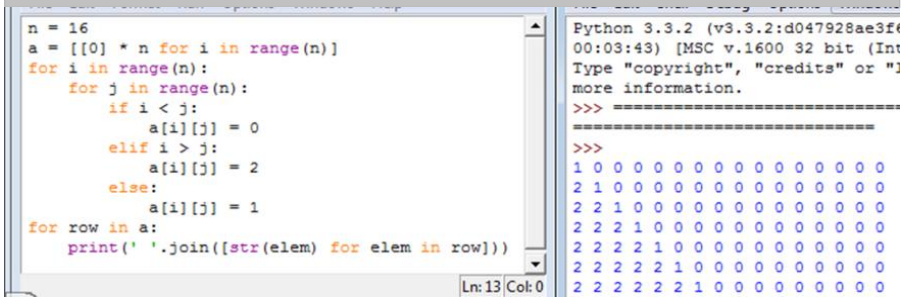
A	B	NOT (a AND b)
0	0	1
0	1	1
1	0	1
1	1	0

LOGIC GATES use transistors to carry out all calculations and run program instructions in the processor. These are represented by the symbols below. **A TRUTH TABLE** is used to show how a "logic gate" works in an easy to read format.

Year 9 Computer Science 2 . 5

Translators: For assembly and high level languages to be understood systems require **TRANSLATORS** to interpret them.
Compilers: Translate the source code into machine code
Interpreters: Translates code in a line by line process
Assemblers: Translate the mnemonics of the language

An **Integrated Development Environment (IDE**) is an application software that allows programmers to develop code and test operations with a variety of facilities . An example is Python IDLE



Common IDE Tools
Editor to enable program code to be entered/edited
Error diagnostics / debugging to display information about errors (syntax / run time) / location of errors and suggest solutions
Run-time environment to enable to the program to be run and check for run time errors / test the program
Translator / compiler / interpreter to convert the high level code into machine code / low level code / binary AND to enable to code to be executed / run
Breakpoint to stop/pause program execution at a specific point
Watch window to check contents of variables
Syntax completion suggests/corrects code
Keyword highlighting / colour coding keywords / pretty printing colours command words / variables
Best to memorise three for the exam

Python IDLE contains a variety of features that support the development of code including
- **Syntax Highlighting** – coloured illustration of coded elements
- **Auto indentation** – keeping subroutines in proper locations
- **Bracket Matching** – Indicating matching sets of delimiters
- **Auto complete** – finding key words from dictionaries to aid with code entry
- **Syntax error checking** – Illustrating the lines within the code that contain errors

Computer Languages

Computer instructions can be written in a variety of different programming languages which need to be translated into machine code for computers to understand them. Languages exist at low and high levels

Assembly Language	Machine Code
LOAD 3	0011 0011
STORE 12	0100 1100
ADD 3	0110 0011
ADD # 7	0111 0111
SUB 5	1000 0101
SUB # 10	1001 1010
HALT	1110 0000

Low Level Language		High Level Language
Machine Language Processors only understand language in binary format 1s and 0s	Assembly Language contains instructions that are directly equivalent to machine language. Mnemonics are used to replace the commands in the code	Java and Python are examples of High level languages and these use terms that are clear like 'print'. Most software programs are written in high level language.
Used in: embedded systems (in tv's, microwave ovens, etc.) **Used for:** Device drivers, real time systems Assembly languages are machine specific and cannot be transferred to different devices		**Used in** most software apps Portable between devices Used on different computing systems

Year 9 Design and Technology Knowledge Organiser Access FM and health and safety

We use **ACCESS FM** to help us write a **specification** - a list of requirements for a design - and to help us **analyse and describe** an already existing product.

ACCESS FM - Helpsheet

A is for **Aesthetics**

Aesthetics means **what does the product look like?**
What is the: Colour? Shape? Texture? Pattern? Appearance? Feel? Weight? Style?

C is for **Cost**

Cost means **how much does the product cost to buy?**
How much does it: Cost to buy? Cost to make?
How much do the different materials cost? Is it good value?

C is for **Customer**

Customer means **who will buy or use your product?**
Who will buy your product? Who will use your product?
What is their: Age? Gender?
What are their: Likes? Dislikes? Needs? Preferences?

E is for **Environment**

Environment means **will the product affect the environment?**
Is the product: Recyclable? Reuseable? Repairable? Sustainable? Environmentally friendly? Bad for the environment?
6R's of Design: Recycle / Reuse / Repair / Rethink / Reduce / Refuse

S is for **Size**

Size means **how big or small is the product?**
What is the size of the product in millimeters (mm)? Is this the same size as similar products? Is it comfortable to use? Does it fit? Would it be improved if it was bigger or smaller?

S is for **Safety**

Safety means **how safe is the product when it is used?**
Will it be safe for the customer to use? Could they hurt themselves? What's the correct and safest way to use the product? What are the risks?

F is for **Function**

Function means **how does the product work?**
What is the products job and role? What is it needed for? How well does it work? How could it be improved? Why is it used this way?

M is for **Material**

Material means **what is the product made out of?**
What materials is the product made from? Why were these materials used? Would a different material be better? How was the product made? What manufacturing techniques were used?

Year 9 Design and Technology Knowledge Organiser Access FM and health and safety

Risk assessment

A widely accepted practice when carrying out a practical activity is to carry out a risk assessment before the work commences. In a risk assessment, all of the hazardous presented by the activity need t be identified, along with the risk that they present. The level of each risk is then considered, and a decision is made whether it is acceptable to continue the activity. If not, then it might be possible to reduce the risk in some way so that the activity can go head more safely.

Risk assessment table (like the one shown below are used to determine if the level of risk is acceptable. This is assessed in two ways:

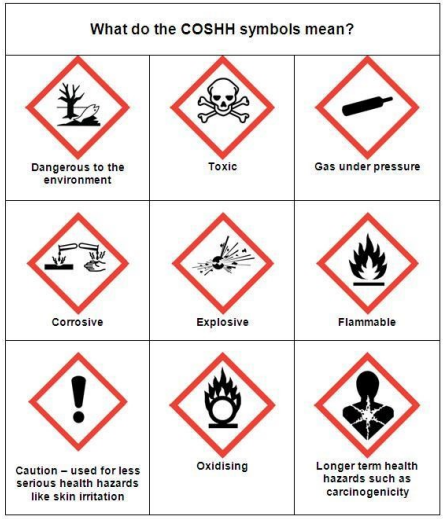
- How likely it is that an accident will happen (likelihood), and
- How much damage or injury could occur if it does (severity)

LIKELIHOOD (probability) How likely is the event to occur at some time in the (Linear Scale time specific matrix)	CONSEQUENCES: What is the Severity of injuries /potential damages / financial impacts (if the risk event actually occurs)? (Logarithmic Scale, property industry specific matrix)				
	Insignificant: No Injuries First Aid; No Envir Damage; << $1,000 Damage	Minor: Some First Aid required; Low Envir Damage; << $10,000 Damage	Moderate: External Medical; Medium Envir Damage; <-$100,000 Damage	Major: Extensive injuries; High Envir Damage; <-$1,000,000 Damage	Catastrophic: Death or Major Injuries; Toxic Envir Damage; >-$1,000,000 Damage
Almost certain - expected in normal circumstances (100%)	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK	CRITICAL RISK
Likely – probably occur in most circumstances (50%)	MODERATE RISK	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK
Possible – might occur at some time. (1%)	LOW RISK	MODERATE RISK	HIGH RISK	HIGH RISK	CRITICAL RISK
Unlikely – could occur at some future time (0.1%)	LOW RISK	MODERATE RISK	MODERATE RISK	HIGH RISK	HIGH RISK
Rare - Only in exceptional circumstances (0.01%)	LOW RISK	LOW RISK	MODERATE RISK	MODERATE RISK	HIGH RISK

Control of substances hazardous to health (COSHH)

COSHH is the law that requires employers to control substances that are hazardous to health. You can prevent or reduce workers exposure to hazardous substances by:

- finding out what the health hazards are; deciding how to prevent harm to health (risk assessment);
- providing control measures to reduce harm to health;
- making sure they are used ;
- keeping all control measures in good working order;
- providing information, instruction and training for employees and others;
- providing monitoring and health surveillance in appropriate cases;
- planning for emergencies.



Personal protective equipment. (PPE)

Personal Protective Equipment (PPE) is equipment that workers can use or wear to guard against risks in the working environment. For instance, workers use items like helmets, gloves, and hi-vis clothing on a construction site staff, while in a laboratory you will often find technicians using safety goggles, masks, and coveralls

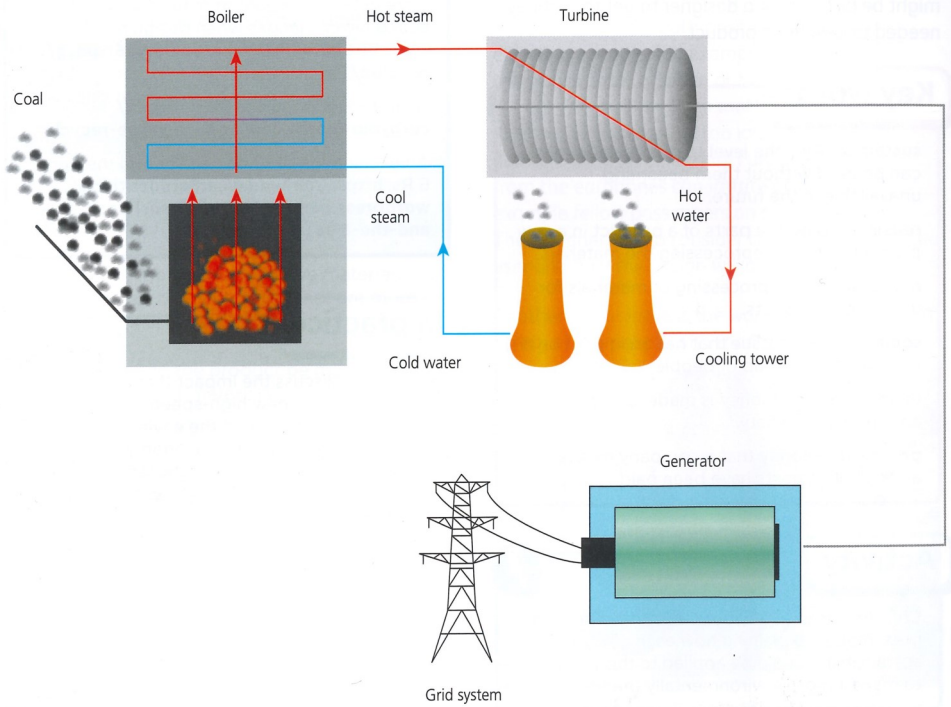
PPE can range from basic protective clothing, like gloves, helmets, and footwear, to specialised gear like fall harnesses or respirators. However, they all have the same thing in common: safeguarding the wearer from injury or other health issues. In any workplace, there are risks that could cause injury or illness to employees. Under UK law, it is the duty of the employer to make sure that all reasonable precautions are taken to remove or reduce this risk to staff, taking the form of preventative or protective measures.

Year 9 Design and Technology Knowledge Organiser Energy Sources

Energy is needed to convert raw materials into finished products. It may also be needed to operate products as they are being used.

How electricity is generated

The most common type of energy used in manufacturing is electricity. Other sources of energy have to be converted to make electricity. This normally involves using the energy source to turn a turbine and generator – how the turbine is turned will depend upon the energy source. A generator acts like the opposite of an electric motor (see Section 3.2): rather than electricity being used to turn a motor, the turning of the generator creates electricity.



▲ How electricity is generated in a coal-fired power station

Fossil fuels

Fossil fuels are a **non-renewable energy source**. This is because they are not easily replaced and will eventually run out. They are formed from the remains of plants and animals that died a very long time ago and are buried underground. The most common examples are coal, oil and gas.

Fossil fuels are burnt in a furnace at a power station, which creates steam. This then turns the turbines. One problem with this type of energy generation is that it releases a lot of carbon emissions into the atmosphere, which contribute to global warming.

Nuclear power

With **nuclear power**, the heat needed to create steam is produced using a nuclear fission reaction. Nuclear power is a non-renewable energy source as it uses uranium for fuel. It does not produce any greenhouse gases, but it does produce some radioactive waste.

Although nuclear power stations are generally safe, there have been a small number of incidents where highly dangerous radioactive materials have been released into the environment. The most well-known of these is the Chernobyl disaster, which took place in 1986. The effects of this are still being felt in the surrounding areas and are likely to continue to do so for many years to come.

Key words

fossil fuels – fuels formed over a long period of time from the remains of dead plants and animals, e.g. coal, oil and gas.

non-renewable energy source – an energy source that cannot quickly be replaced and will eventually run out.

nuclear power – energy produced through the use of nuclear reactions.

▲ A wind turbine farm

Year 9 Design and Technology Knowledge Organiser Energy Sources

Sustainable Sources

Wind and hydroelectricity

More and more energy is being produced using **renewable energy sources**. These are sources that will not run out and can be quickly replaced.

One example is **wind turbines**, which can be turned using the wind. This produces no carbon emissions. These turbines must be placed where there is a good source of wind, such as at sea or in hilly areas. As a result, some people feel that they spoil views of the countryside and coastline.

Another renewable energy source is **hydro-power**. This is where a large volume of water is stored behind a dam. A small amount is allowed to continuously flow out, which turns the turbines.

Solar power

Solar power is different from most energy sources as it does not make use of turbines. Instead, solar panels convert energy from the sun into an electric current. The advantage of this energy source is that it is renewable and produces no carbon emissions. The main disadvantage is that it cannot produce power when there is no sunlight.

▲ Solar energy panels convert energy from the sun into an electric current

▲ A hydro-power dam

Tasks you can do

Key words

renewable energy source – an energy source that is quickly replaced by natural means and will not run out.

wind turbine – a turbine that produces electricity as a result of being turned by the wind.

hydro-power – the use of flowing water to produce electricity.

solar power – converting energy from the sun into electricity.

Activity

Imagine that a nuclear power station is to be constructed close to your home town. In a group, discuss the benefits that this might bring to the town and wider area, along with the potential downsides. Decide as a group whether you think the power station should be built and justify your choice to the whole class.

Knowledge check

1. State what is meant by a renewable and a non-renewable energy source.
2. Give three examples of fossil fuels.
3. Describe how electricity is generated using nuclear power.
4. Name two renewable methods of turning turbines to generate electricity.
5. Give two advantages of solar power.

Extension

6. Tidal power is an alternative source of energy that is used to generate electricity. Describe how electricity is generated using tidal power, and outline the advantages and disadvantages of using this source of energy.

Find out more

How fossil fuels are formed: **www.bbc.co.uk/bitesize/guides/z27thyc/revision/1**

How coal is used to make electricity in Australia: **www.originenergy.com.au/blog/what-is-coal/**

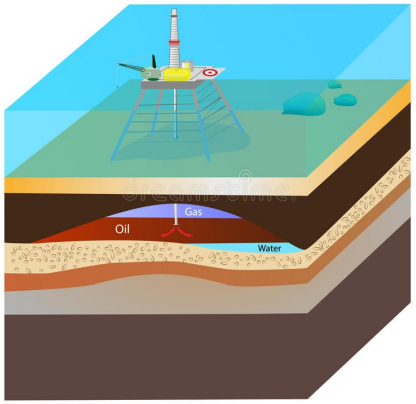
The arguments for and against using nuclear power: **www.technologystudent.com/energy1/nuclear1.htm**

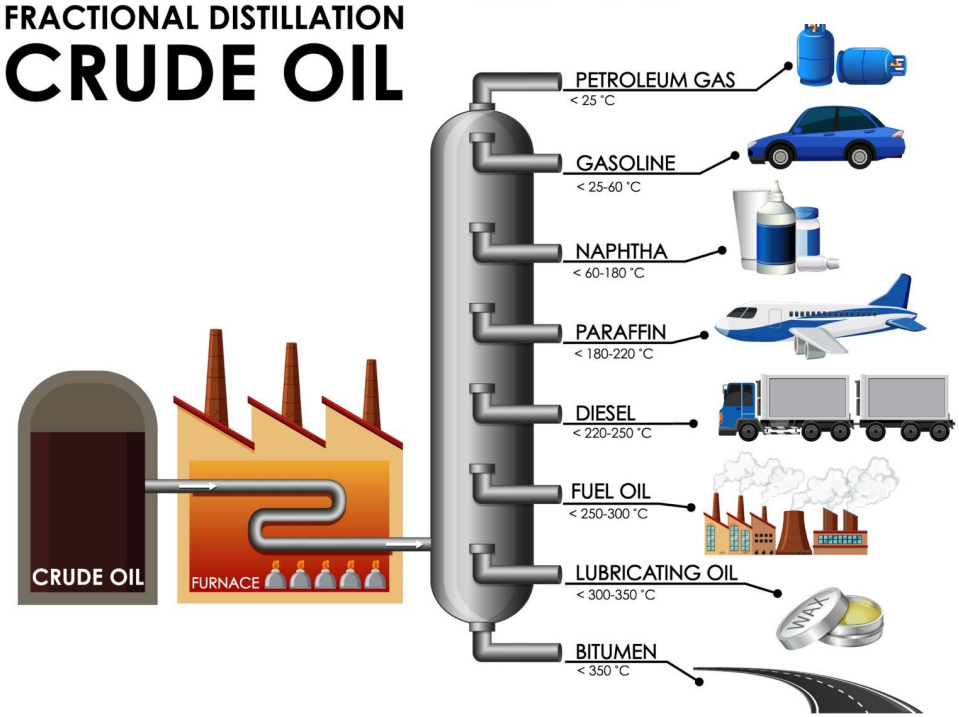
How solar cells work: **www.energysavingtrust.org.uk/renewable-energy/electricity/solar-panels**

In practice

Design a future transport vehicle that uses renewable energy sources to power it.

Crude Oil and Natural Gas





Year 9 Design and Technology Knowledge Organiser Legislation and marks

Copy right

Copyright provides protection for piece of work. Such as literature, web content, music, film or technical drawings and indicates that they must not be copied without permission. Where copyright applies it will be marked with the copy right symbol.

In the UK , there is no fee to apply a copyright and no register of copyright to which it needs to be added.

Copyright s different from patent, as it only protects how ideas are expressed– not the actual ideas themselves.

Patent

A Patent is a legal document, that gives its owner the right to exclude other people from, making, using , selling or importing something they have invented.

Patents provide the protection for a set number of years—not indefinitely

It is important to note that the patent does not protect a product itself, only the ideas and inventions that have gone into its design or manufacture.

Trademarks

A trademark typically protects a brand or logo that identifies the product or well know business. Many companies have a well-known brand or logo that is instantly recognisable by their customers, making the brand an asset to the company.

Trademarks are usually identified by the symbol that follows them:

- If a trademark is registered, the ® is used
- If a trademark is not registered, the ™ symbol is used.

Registered trademark.

A patent protects an invention and how it works. whereas a registered design can be used to protect the way a product looks.

Where a product instantly recognisable and successful because of its unique appearance, a company may want to prevent other people from copying the way it looks. A registered design can last for 25 years

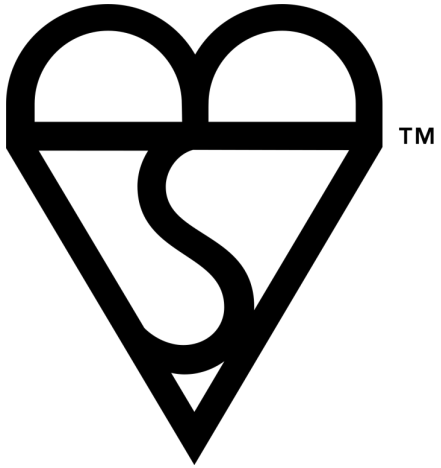
but must be renewed every 5 years. An example of a famous registered design is the shape of the coca cola bottle.

Year 9 Design and Technology Knowledge Organiser Legislation and marks

British standards - kite mark

British standards are created by the British Standards Institute (BSI). They are technical specifications that can be used as guidance when designing or manufacturing new products. Conformity to the standards helps to make products better quality, easier to use more sustainable and more secure and safer.

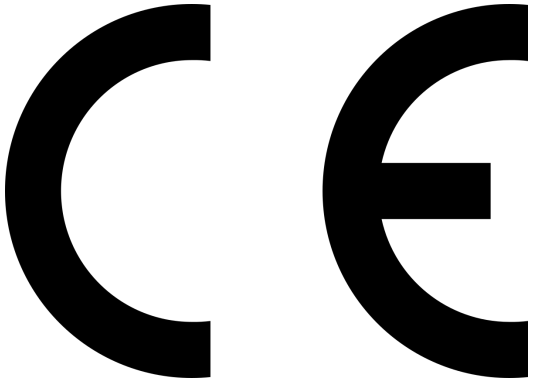
Companies, designers and manufacturers need to pay close attention to the standards that are applicable to the products they are producing. For example a company that designs and manufactures toys will need to consider flammability and toxicity of material and the risk of choking on small parts.



European conformity (CE)

The CE mark is the symbol for European Conformity. Recognised world wide, it indicates that the product conforms with the health, safety and environmental protection for protects sold in the European Economic Area (EEA)

To demonstrate conformity, the manufacturer may need to have the product checked and tested, o it is critically important that during the development of the design all of the associated directives and regulations are listed in the specification and the requirements incorporated into the design.



Waste Electrical and Electronic Equipment (WEEE)

The Waste Electrical and Electronic Equipment (WEEE) directive is an EU directive covering the collection, recycling and recovery of waste electrical equipment and electronic goods.

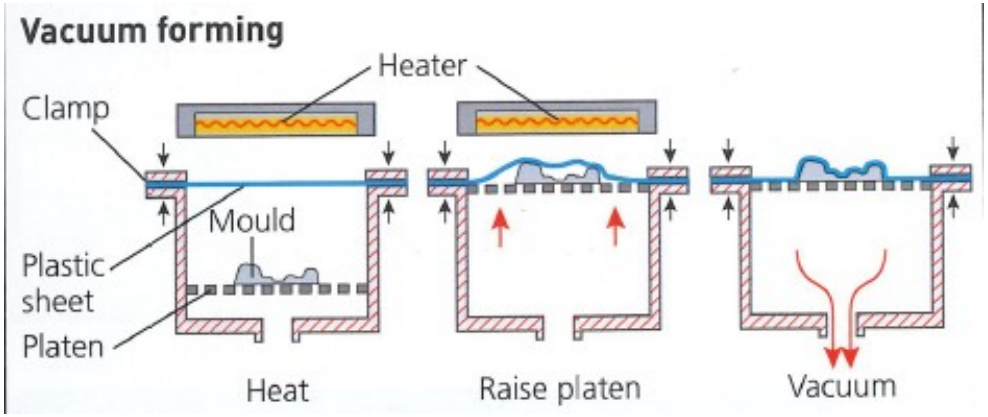
Before the WEEE directive, waste electrical and electronic equipment in the Uk was often disposed of and processed alongside other household waste. Since the WEEE directive, although waste electrical equipment can still be taken to designated waste recycling centres, it is then sent specialist recycling and treatment centres, where it can be recycled or disposed of safely.

Year 9 Design and Technology Knowledge Organiser Manufacturing Processes

Vacuum forming

Vacuum forming is used to shape and form thin sheet thermoplastic polymers.

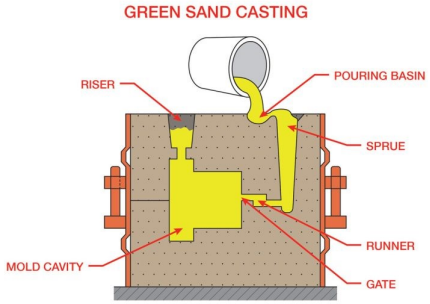
- A mould is located within a vacuum chamber and a polymer, such as high impact polystyrene, is clamped in the frame above the mould.
- The polymer is heated from above: once it is uniformly pliable, it is lowered onto the mould.
- A vacuum pump is turned on to remove the air between the polymer and the mould
- The polymer is drawn down over the mould and left to cool.
- Once cooled, the polymer will have taken the form of the mould.



Casting

What is metal casting?

Metal casting is the process of making objects by pouring molten metal into an empty shaped space. The metal then cools and hardens into the form given to it by this shaped mould. Casting is often a less expensive way to manufacture a piece compared with machining the part out of a piece of solid metal. There are many metal casting methods to choose from. What type of casting is most efficient depends on the metals used, the size of the run, and the complexity of the casting



Overview of the casting.

There are a number of different methods of casting, each of which are done in a slightly different way. Each have some similarities: which are.

- Metal is heated until it is molten.
- The metal is poured into a mould, through the sprue. It will be filled until metal is visible in the riser.
- The metal is allowed to cool and solidify. Then it is removed from the mould.
- Any finishing wok is then completed on the work piece.

Year 9 Design and Technology Knowledge Organiser Manufacturing Processes

Soldering

Soldering is a joining process used to join different types of metals together by melting solder. Solder is a metal alloy usually made of tin and lead which is melted using a hot iron. The iron is heated to temperatures above 300 degrees Celsius which then cools to create a strong electrical bond.

What Metals are Used?

Filler metals used in soldering were once lead based (lead solder), however, owing to regulations, lead-based solders are increasingly replaced with lead free solders, which may consist of antimony, bismuth, brass, copper, indium, tin or silver.

Soldering Iron

A soldering iron is a **hand tool used to heat solder**, usually from an electrical supply at high temperatures above the melting point of the metal alloy. This allows for the solder to flow between the work pieces needing to be joined.

This soldering tool is made up of an insulated handle and a heated pointed metal iron tip.

Addition manufacture—3D printing

3D printing or **additive manufacturing** is the construction of a three-dimensional object from a CAD model or a digital 3D model. It can be done in a variety of processes in which material is deposited, joined or solidified under computer control, with material being added together (such as plastics, liquids or powder grains being fused), typically layer by layer.

Rapid prototyping, a 3D printing process works by depositing hot filament polymer such as acrylonitrile butadiene styrene (ABS) or the natural Polylactic acid (PLA) polymer.

Some of the more sophisticated rapid prototyping machines have multi coloured polymer can be deposited one after another, so each component within the product can be a different colour.

Dance - Terminology

Year 9 - Knowledge Organiser - Dance

Performing skills

Term	Definition
Timing	moving to the beat of the music and/or your group.
Energy	performing actions with the full amount of effort required.
Movement memory	remembering all of the movements.
Accuracy	making the correct shapes with your body.
Facial expressions	showing the mood of the dance through your face.
Extensions	fully extending the legs, toes, arms and fingertips
Focus	being fully committed to the performance by ignoring distractions.
Flexibility	being able to perform a wide range of movements with ease.
Projection	extending your performance to the back of the venue.
Musicality	expressing the dynamics of the music through your body.

Class terminology

Conditioning - develops the strength and endurance of particular muscles.

Exercises - short phrases of movement that develop a dance technique. Rehearsed right and left side.

Travel - travelling movements such as leaps, rolls and gallops which move the dancer from one side of the room to the other.

Sequence - often considered a mini dance, a sequence will help dancers to develop the dance style and last no longer than a minute.

Dance - is produced with the aim of performing it to an audience. A dance will usually use most or all of the song to perform to.

Choreography skills

Term	Definition
Narrative	telling a story by playing a character.
Characterisation	playing the role of a character.
Theme	The subject or topic that the dance will explore.
Levels	the different heights the dancer reaches whilst performing.
Formations	the positions or shape that the dancers stand in.
Directions	the direction of travel or the way that the dancers are facing.
Transitions	linking one movement to another.
Dynamics	how the actions are performed.
Unison	same movements at the same time.
Canon	same movements performed one after another.

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?

↓

IMPROVEMENT - strategy to improve

Dance - Movements

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.

Foot positions we will use:

Key movements	
Name	**Description**
Step ball change	a travelling movement with a gallop feel.
Jazz pas de bourree	behind, side, front.
Jazz pirouette	a turn on one leg.
Split leap	a jump which aims to replicate the splits in the air.

Contemporary dance

Contemporary is considered the freest of all dance styles. It uses the feeling of contracting and releasing the body whilst also experimenting with falls, floor work, turns and travels.

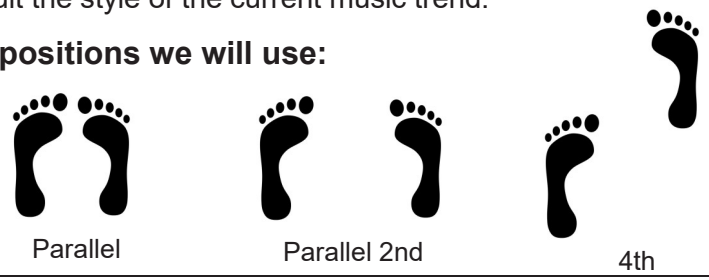
Foot positions we will use:

Key movements	
Name	**Description**
Lunge	moving one leg forward whilst remaining on balance.
Contraction	curving the spine then releasing.
Body circle	circling the body including the head.
Shift	transferring the weight from one leg to another

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.

Foot positions we will use:



Key movements	
Name	**Description**
Top rock	shifting the weight from one foot to another in a rocking motion.
Tutting	making intricate shapes with your hands and arms.
Popping and Locking	popping forces body parts outwards, whilst locking is similar to contacting the body part.

Year 9 - Drama - Term 2

Vocal Skills

Definition	Term	⇩⇩ Cover & Test ⇩⇩
How clearly the audience can hear your voice.	**Vocal Clarity**	
How loud your voice is. An ingredient of Vocal Clarity.	**Volume / Projection**	
How quickly or slowly you speak. An ingredient of Vocal Clarity.	**Vocal Pace**	
The way your voice communicates what you are thinking or feeling.	**Vocal Expression**	
The emotion or attitude we can hear in your voice. An ingredient of Vocal Expression.	**Tone of Voice**	
Pausing during lines to add emphasis, to show a struggle or to create tension. An ingredient of Vocal Expression.	**Pause**	
The keywords you emphasise in a sentence to help communicate what you are thinking or feeling. An ingredient of Vocal Expression	**Inflection**	

Physical Skills

Definition	Term	⇩⇩ Cover & Test ⇩⇩
The way a character moves. This communicates their personality or mood.	**Physicality**	
An expressive movement of the body to show a feeling or characteristic. e.g. Fiddling with fingers = nervous. Punching fist into hand = aggressive.	**Gesture**	
Acting when you are not speaking.	**Reacting**	

Evaluation Skills

Term	Definition
Evaluation	Working out what was good about the performance and what could have been better.
Strength	What was good about the performance. Always refer to an **acting skill**.
Weakness	What could have been better about the performance. Always refer to an **acting skill.**
Example	The specific moment or line that you are writing about. If possible, always use a quote.
Target	What you will do next time to make your work better.

When you make a comment about a strength or a weakness you must always do these four things:

1. **Describe** the strength/weakness.
e.g. In this scene one of my weaknesses was my tone of voice.
2. Give an **example** of the strength/weakness. Try to use a **quote**.
e.g. When I said 'Look out! It's a bear!' I didn't sound very scared.
3. Explain **why** it made the performance better/worse. Try to reference **impact on the audience**.
e.g. This might have made the audience think my character was not scared of the bear which would confuse them as I am supposed to be a coward.
4. Explain **how** you could improve the weakness.
e.g. In the future I could pick a strong tactic for that line, such as 'to alarm', and pick a keyword to stress, such as 'bear'.

Try using theses Sentence Starters to get you going...

1 Strength / Weakness:	2 Example:	3 Why:	4 Target:
A strength of mine in this scene was… A weakness of mine in this scene was...	This was evident in the line...	This made my character seem...	I would do this again next time because….
A skill I used well was… A skill I could have been better at was…	You could see this when I...	This was a problem because it made the audience think that...	To improve my work I could...
My performance was good because of my… My performance was harmed because of my…	An example of this was...	This could have confused the audience because...	To avoid this in the future I will...
Something I did well was... Something I could have done better was...	This was obvious when I...	This suggested to the audience that my character was...	When I am getting ready for my next performance I will...

English Department

YEAR 9

Spring Term – Grammar

SPEECH FORMATTING

There are two ways to include speech in your writing: you can use **direct speech** or **reported speech**.

Direct speech looks like this:

'I'm sorry I got angry with you after the netball game,' said Josie.

'That's OK,' said Selma, reassuringly. 'I didn't take it personally.'

Reported speech looks like this:

Josie told Selma that she was sorry for getting angry with her after the netball game. Selma reassured her that it was OK and that she hadn't taken it personally.

Can you see the difference? In direct speech, we 'quote' the actual words that the characters say, placed inside speech marks; whereas, in reported speech, we 'report' what was said as part of the normal narration of a story.

When using direct speech, there are a few rules that you must follow:

- You must enclose the speech inside speech marks. *You can choose to use single speech marks or double speech marks, but don't switch between the two!*
- Direct speech is normally followed by a **reporting clause** which indicates who is speaking and how. In the example above, the reporting clauses are 'said Josie' and 'said Selma, reassuringly'.
- You must insert a punctuation mark <u>before</u> the closing speech mark. This will normally be a comma, but can be a question mark, exclamation mark or, if you do not intend to follow the speech with a reporting clause, a full stop.
- When a new character speaks, <u>you must start a new paragraph.</u>

SENTENCE FUNCTIONS

Sentences can be grouped into four categories, based on their **function** (i.e. what the sentence is *doing*).

DECLARATIVE – A sentence that makes a factual statement, e.g. *Josie is eating an apple. (Sometimes called the 'indicative mood.')*

IMPERATIVE – A sentence that is a command or instruction, e.g. *Eat this apple, Josie.*

INTERROGATIVE – A sentence that is a question, e.g. *Why is Josie eating an apple?*

EXCLAMATION – A sentence that expresses surprise or strong emotion, usually followed by an exclamation mark, e.g. *Josie ate my apple!*

SENTENCE TYPES

Sentences fall into three categories: **simple**, **compound** and **complex**.

SIMPLE SENTENCE – A simple sentence contains only one **clause.** *A clause is a unit of a sentence containing a subject and a verb, or a subject, verb and object.* Here are two examples:

Josie drew a picture.

Concentrating intensely, Josie drew a picture using pens and coloured pencils.

Although the second sentence is much longer, it is still only a simple sentence because the other parts are phrases, not clauses.

COMPOUND SENTENCE – A compound sentence contains two clauses joined together with a coordinating conjunction. *There are only seven coordinating conjunctions in the English language, which you can remember with the acronym FANBOYS: For, And, Nor, But, Or, Yet, So.* Here is an example:

Josie drew a picture <u>and</u> Selma made a sculpture.

COMPLEX SENTENCE – A complex sentence is made up of a main clause and a subordinate clause joined by a subordinating conjunction. Subordinate means 'less important'. We call it this because its meaning is tied in with the main clause: it cannot stand alone as a sentence on its own. Here is an example. The subordinate clause is underlined:

Josie drew a picture <u>because Selma asked her to</u>.

With complex sentences, you can also switch the clauses around so that the subordinate clause comes first, like this:

<u>Because Selma asked her to</u>, Josie drew a picture.

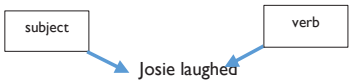
CLAUSE STRUCTURE

Sentences are built out of smaller units called **clauses** and **phrases**. The most basic type of sentence is called a **simple sentence** and consists of only one clause.

A clause must contain two elements: a **subject** and a **verb**.

The subject of a clause must be a **noun** or **noun phrase**.

Here is an example of a basic clause:



A clause can also contain a third element, called the **object**, which must also be a **noun** or **noun phrase**.

You can think of the subject as the 'thing' which *does* the action indicated by the verb. In the example above, Josie is the one laughing, which is why she is the subject of the sentence.

The object is the 'thing' which *receives* the action indicated by the verb. Here is an example of a clause with an object:

Here, Selma is the one being *laughed at* – she is not the one doing the laughing. Therefore, she is the object in the clause.

Most clauses in English follow the order *subject, verb, object.*

PHRASES

In grammar, the term **phrase** indicates a unit of a sentence which is below the clause in rank. A clause must contain a **subject** and **verb**, and can therefore stand alone as a sentence in its own right, whereas a phrase lacks one or both of those elements, so it cannot form a complete sentence.

NOUN PHRASE – A group words containing a noun that can function as the subject or object in a clause, e.g. 'the beautiful weather'.

VERB PHRASE – A group of words that convey an action, e.g. 'was staring'.

ADVERBIAL PHRASE – A group of words that give more information about how an action occurred, e.g. 'very successfully'.

PREPOSITIONAL PHRASE – A group of words that show the relationship between two things in a sentence, normally to do with location or time, e.g. 'beside the path'.

PREFIXES

*These are morphemes added to the **beginnings** of words in order to alter the meaning in some way.*

Prefix	Meaning
un-	opposite of
de-	away
dis-	apart
pre-	before
con-	with
anti-	against
inter-	between
intro-	inwards
ex/e-	out of
pro-	forwards
sub-	below
re-	back/again
trans-	across
geo-	relating to Earth
bio-	relating to life
tele-	far off/distant

IMPORTANT TERMS 1

MORPHEME – A 'chunk' of a word that carries meaning.

MORPHOLOGY – The study of how words are formed from smaller parts.

ETYMOLOGY – The study of where words come from and how they evolve over time.

LATIN – An extinct language, spoken by the Romans, from which we get many of our morphemes.

GREEK – Another extinct language, older than Latin. We tend to see Greek morphemes in technical or scientific words.

BOUND MORPHEME – A morpheme that cannot stand as a word on its own: it must be used in combination with another morpheme in order to form a word. Prefixes and suffixes are bound morphemes, as are most of the roots in the box to the right.

FREE MORPHEME – A morpheme that can stand as a word by itself, such as 'book'. While most of our bound morphemes come from Latin or Greek, many of our free morphemes can be traced to other ancient languages.

MORPHOLOGICAL ANALYSIS

*By breaking a word down into its separate morphemes, we can analyse how the **meaning** of the word emerges from its separate parts.*

transportation

PREFIX	ROOT	SUFFIX
trans-	port	-ation
'across'	'carry'	*nominal – a process*

'The process of carrying something from one place to another.'

English Department

YEAR 9 MORPHOLOGY

ROOT MORPHEMES

Root morphemes are 'chunks' of words that carry a certain 'flavour' of meaning. These roots appear in many different words, and they always signal the same meaning. If you can recognize the root in a word that you don't know, this will help you work out what the word means.

Root	Meaning	Origin
spect	look/see	Latin
rupt	break	Latin
port	carry	Latin
grad/gress	step	Latin
capt/cept	take	Latin
flec/flex	bend	Latin
fact	make	Latin
vert/vers	turn	Latin
spire	breathe	Latin
cede/ceed	go	Latin
struct	build	Latin
mis/mit	send	Latin
tract	pull	Latin
junct	join	Latin
ject	throw	Latin
dict	speak	Latin
fract	shatter	Latin
duc	lead	Latin
graph	write/draw	Greek
photo	light	Greek
phon	sound	Greek
chron	time	Greek
morph	form	Greek

ETYMOLOGY BASICS

- Modern English evolved from Anglo-Saxon (Old English);
- Anglo-Saxon evolved into Middle English, which evolved into Modern English;
- Many of our words come from other languages, such as Latin, French, Old Norse, and Greek;
- With many of our synonyms, the two words that form the pair come from different languages – these are called *dual variations.*

IMPORTANT TERMS 2

SUFFIX – A morpheme added to the end of a word to alter its meaning in some way. Suffixes that form nouns are called *nominal suffixes*, suffixes that form verbs are called *verbal suffixes*, suffixes that form adjectives are called *adjectival suffixes*, and suffixes that form adverbs are called *adverbial suffixes*.

ANGLO-SAXON – The language also known as Old English, spoken by the Germanic peoples who settled in England in the 5th century.

INFLECTION & DERIVATION

Prefixes and suffixes alter the meanings of words in two ways: inflection and derivation.

INFLECTIONAL MORPHEMES – In the English language, all inflectional morphemes are suffixes. They alter how a word functions, but they do not alter the meaning or the word type. There are eight of them:

-s or *–es* turn a word into a plural.

-s' or *-'s* turns a noun into a possessive (showing ownership).

-s is added to verbs to indicate the third person singular..

-ed indicates verbs in the past tense.

-ing indicates the present participle, meaning an action that is ongoing.

-en indicates a form of past participle.

-er is added to adjectives to form a comparison.

-est is added to adjectives to create a superlative.

DERIVATIONAL MORPHEMES – These can be prefixes or suffixes. They either change a word's meaning, or they change one word type into another, e.g. a noun into an adjective. There are many derivational morphemes in English.

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

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

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

FUTURE TENSE VERBS WITH "JE"

1- je vais être = I will be
2- je vais avoir = 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

French y9

Core Language

KnowIT

TIME MARKERS

PAST
1- hier = yesterday
2- l'année dernière = last year
3- la semaine dernière = last week

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

PRESENT

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- soir = evening
9- matin = morning
10 – 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. qui = who
9. où = where
10. dans = in
11. ne..pas = not
12. ne…plus = not anymore
13- ne… jamais = never

CONNECTIVES AND INTENSIFIERS

1- d'abord = firstly
2- puis / ensuite = then
3- enfin = finally
4- et = and / ou = or
5- mais = but
6- cependant = however
7- si = if
8- quand = when

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

Les passe-temps – *Past-times*

Les passe-temps	*Hobbies*
Je joue …	*I play …*
au badminton/au basket	*badminton/basketball*
au billard/au foot/au golf	*snooker/billiards/football/golf*
au hockey/au rugby	*hockey/rugby*
au tennis/au volley	*tennis/volleyball*
à la pétanque	*French bowls*
aux cartes/aux échecs	*cards/chess*
du piano/du saxophone	*the piano/the saxophone*
du violon	*the violin*
de la batterie/de la guitare	*the drums/the guitar*
de l'accordéon (m)	*the accordion*
de l'harmonica (m)	*the harmonica*
Je fais …	*I …*
du footing	*go jogging*
du trampoline	*do trampolining*
du vélo	*go cycling*
de la boxe	*do boxing*
de la danse	*go dancing*
de la natation	*go swimming*
de l'équitation (f)	*go horse-riding*
de l'escalade (f)	*go climbing*
de l'escrime (f)	*do fencing*
des randonnées (f)	*go hiking*
Je fais ça depuis …	*I have been doing that for …*
six mois/deux ans	*six months/two years*

Parler de sport	*Talking about sport*
Je préfère les sports individuels.	*I prefer individual sports.*
Je préfère les sports d'équipe.	*I prefer team sports.*
Je trouve ça …	*I find it/that …*
rigolo/facile/rapide	*fun/easy/fast*
Ça me fait du bien.	*It does me good.*
Ça me détend.	*It relaxes me.*
Ça booste le moral.	*It boosts my/your mood.*
C'est bon pour le corps et le mental.	*It's good for the body and the mind.*
Quand je fais ça, …	*When I do/I'm doing it, …*
je respire	*I breathe*
j'oublie mes soucis	*I forget my worries*

Les films	*Films*
une comédie	*a comedy*
un western	*a Western*
un film fantastique	*a fantasy film*
un film d'action	*an action film*
un film d'arts martiaux	*a martial arts film*
un film d'aventure	*an adventure film*
un film d'horreur	*a horror film*
un film de gangsters	*a gangster film*
un film de science-fiction	*a science-fiction film*
La séance commence à quelle heure?	*At what time does the screening start?*
Je peux vous aider?	*Can I help you?*
Je voudrais deux billets pour …	*I would like two tickets for …*
Ça coûte combien?	*How much does it cost?*

Sur mon téléphone portable/ ma tablette, …	*On my phone/tablet …*
je crée des playlists	*I create playlists*
je télécharge de la musique	*I download music*
je regarde des clips vidéo	*I watch music videos*
je joue à des jeux	*I play games*
je fais des recherches pour mes devoirs	*I do research for my homework*
je fais des achats	*I buy things*
j'écris des messages	*I write messages*
je lis mes e-mails	*I read my emails*
je vais sur des réseaux sociaux	*I go onto social media sites*
je mets mes photos sur Instagram ou Snapchat	*I put my photos on Instagram or Snapchat*
Il est facile de (d') …	*It is easy to …*
Il est possible de (d') …	*It is possible to …*
rester en contact avec ses amis	*stay in contact with your friends*
faire des recherches pour ses devoirs	*do research for your homework*
utiliser un dico en ligne	*use an online dictionary*
partager des photos	*share photos*
Il est dangereux de …	*It is dangerous to …*
partager ses détails personnels	*share your personal details*
passer trop de temps sur Internet	*spend too much time on the internet*
tchatter en ligne avec des inconnus	*chat to strangers online*

La lecture	*Reading*
J'apprécie beaucoup les …	*I really appreciate/like …*
Je préfère les …	*I prefer …*
J'adore les…	*I love …*
J'ai une passion pour les …	*I'm passionate about …*
Je n'aime pas les …	*I don't like …*
J'ai horreur des …	*I hate …*
romans fantastiques	*fantasy novels*
romans policiers	*detective novels*
romans d'amour	*romance novels*
Je lis beaucoup en ligne.	*I read a lot online.*

La musique	Music
J'aime …/Je n'aime pas …	*I like …/I don't like …*
le jazz/le rap	*jazz/rap*
le reggae/le rock	*reggae/rock*
la musique classique	*classical music*
la musique pop	*pop music*
J'écoute ma musique …	*I listen to my music …*
sur mon téléphone portable avec mes écouteurs	*on my phone with my earphones*
sur mon ordi	*on my computer*
sur une tablette	*on a tablet*
Je regarde des clips vidéo pour écouter ma musique.	*I watch music videos to listen to my music.*
Mon chanteur préféré/Ma chanteuse préférée, c'est … car …	*My favourite singer is … because …*
j'aime ses paroles	*I like his/her lyrics*
j'aime ses mélodies	*I like his/her tunes*
sa musique me donne envie de danser	*his/her music makes me want to dance*
sa musique me donne envie de chanter	*his/her music makes me want to sing*

Les émissions de télé	TV programmes
J'aime/Je n'aime pas …	*I like/I don't like …*
les documentaires (m)	*documentaries*
les jeux télévisés (m)	*game shows*
les magazines culturels (m)	*magazine programmes*
les séries (f)	*series*
les émissions de sport (f)	*sports programmes*
les émissions de musique (f)	*music programmes*
les émissions de télé-réalité (f)	*reality TV programmes*
les actualités	*the news*
parce qu'ils/elles sont …	*because they are/it is …*
amusant(e)s	*funny*
divertissant(e)s	*entertaining*
intéressant(e)s	*interesting*
passionnant(e)s	*exciting*
éducatifs/-ives	*educational*
ennuyeux/-euses	*boring*
(trop) sérieux/-euses	*too serious*
originaux/-ales	*original*
Mon émission préférée s'appelle …	*My favourite programme is called …*
C'est un jeu télévisé.	*It's a game show.*
C'est une série.	*It's a drama series.*
J'aime bien l'animateur(-trice).	*I like the presenter.*
Les acteurs sont très doués.	*The actors are very talented.*
Le scénario est passionnant.	*The plot is exciting.*
J'apprends beaucoup.	*I learn a lot.*
Je ne rate jamais cette émission!	*I never miss this programme!*

Year 9 Geography Knowledge Organiser Term 3: Climate Change

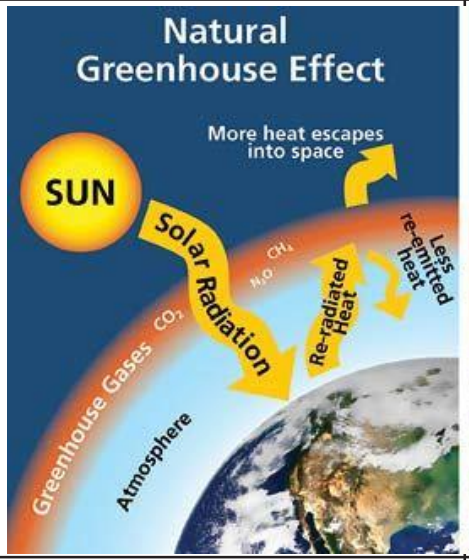
Climate Change

"A change in global or regional climate patterns, that is attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels".

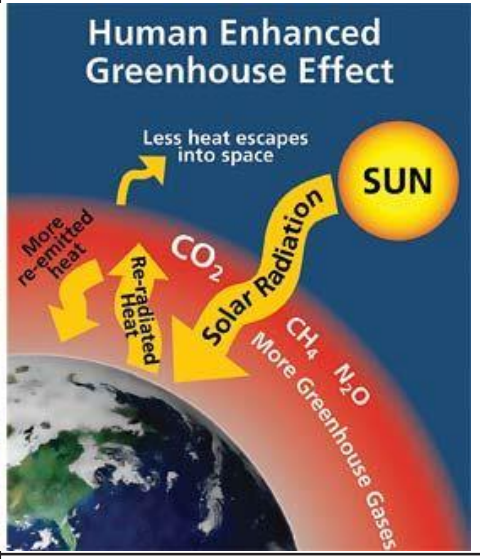
Earth is 4.5 billion years old. Scientist divide Earth's history into different time periods and we are in the **Quaternary** period, which began 2.6 million years ago.

Although the **Quaternary** period is an ice age, the temperature has always fluctuated, moving up and down. Colder periods are called **glacial** (lasting 100 000 years) and warmer periods are called **interglacial** (lasting 10 000 years).

The Natural Greenhouse Effect



Human Enhanced Greenhouse Effect



Impacts

Impact on	Negative	Positive
Health	Strain on medical services, rise in death rate	No positive outcome
Vegetation	Spread of pests and disease, may increase food shortages	UK able to grow different crops
Landscape	Rise in sea levels	Extended summer season; increasing revenue
Population	Increased population densities and possibility of disease and malnutrition	Forced movement of population to less populated locations

Solutions

Mitigation: action we can take now to slow down climate change and reduce its' effects.

- Planting trees
- Renewable energy
- International meetings and agreements
- Carbon capture and storage
- Cycling to work

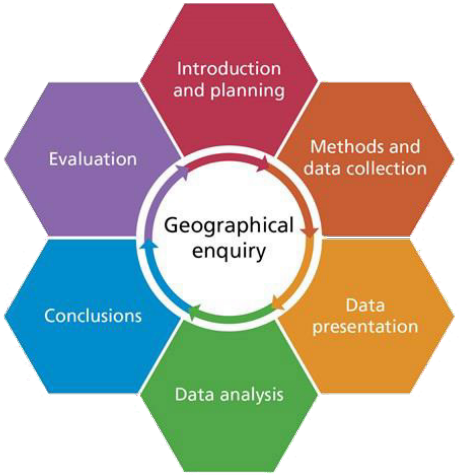
Adaptation: actions we have to take in the future to be able to live with the impacts of climate change.

- Building canals through cities
- Scientifically modifying crops/agriculture
- Desalinising sea water
- Installing air condition

Speak Like a Geographer

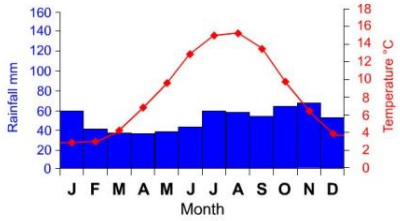
Glacial, Interglacial, Greenhouse effect, Global warming, Climate change, Quaternary period, Greenhouse gases, Adapt, Mitigate, Ice cores, Carbon footprint, Carbon dioxide

Fieldwork



Skills

A climate graph shows how temperature and precipitation vary throughout the year for a particular location.

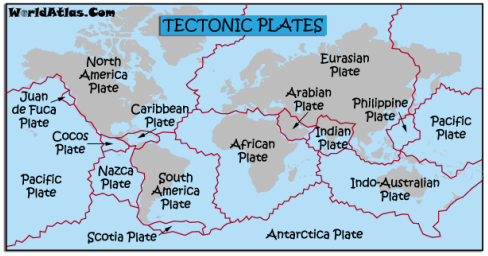


Year 9 Geography Knowledge Organiser Term 4: Earthquakes

Location

Earthquakes are vibrations caused by earth movements at plate boundaries and at major fault lines (cracks in the earth's surface).

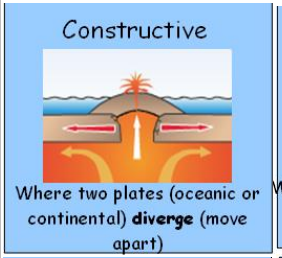
The earth is not a solid ball made up of rock. The outside of the earth is made up of huge slabs of rock, which float on molten rock. The giant slabs of rock are always moving, and this movement is called tectonic activity.

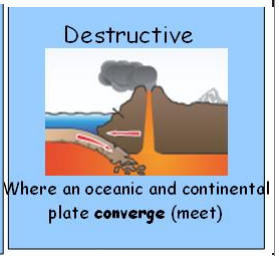


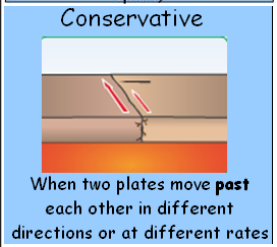
Structure of the Earth

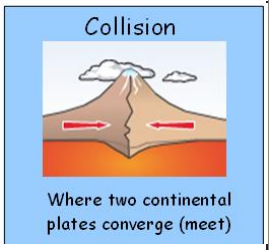
- The Earth's crust (top layer) is not a solid shell.
- It is made up of thick, connecting pieces called tectonic plates which fit together like a puzzle.
- Underneath the plates is thick, soft, hot flowing rock called mantle.
- Convection currents in the mantle is what moves tectonic plates and cause tectonic activity.

Causes









Impacts

Primary Effects

Are caused DIRECTLY by the earthquake as it hits e.g. death, injury, buildings collapsing and roads, railways and bridges being destroyed.

Secondary Effects

Happen AFTER the event and are caused by a primary effect e.g. fires destroyed the city, caused by gas pipes rupturing and being ignited, homelessness, aftershocks destroying weakened buildings, landslides in mountains, schools, health facilities and government offices having to close.

Responses

Plan: buildings should be built or improved to be more earthquake proof – with deep foundations, strong materials, shock absorbers, cross bracing and building shape (wider base).

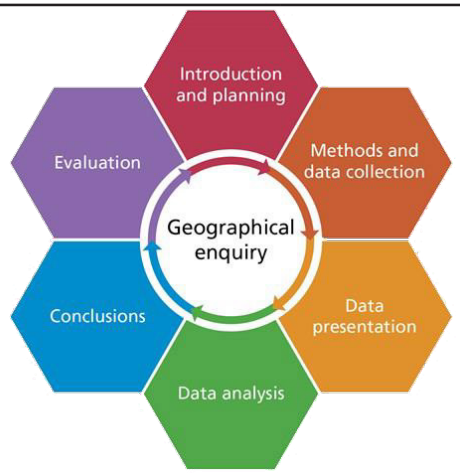
Predict: Using data recording collected from satellites and seismometers can be used in GIS and to produce hazard maps and warnings can be given out.

Prepare: Countries should be ready for an event with regular practice drills to know what to do and emergency survival bags.

Speak Like a Geographer

Plate Boundaries, Continental Drift, Convection Currents, Destructive, Constructive, Collision, Conservative, Plan, Predict, Prepare, Mitigate, Mercalli Scale, Richter Scale, Earthquake, Focus, Epicentre, Magnitude, Seismometer, Primary Impact, Secondary Impact, Aid, Response, NGO, Cause, AC, EDC, LIDC

Fieldwork



Skills

An isoline map shows lines that join up areas or values that are equal.

Advantages:
You can see gradual changes. They avoid the problem of boundary lines.

Disadvantages:
They can be difficult to read if the lines are very close together, and the numbers and lines are very small. They are very time consuming to make.

Health and Social Care Knowledge Organiser- Year 9

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

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

Care Values

1. Empowering and promoting independence by involving individuals, where possible, in making choices
2. Respect for the individual by respecting service users' need, beliefs and identity
3. Maintaining confidentiality
4. Preserving the dignity of individuals to help them maintain privacy and self-respect
5. Effective communication that displays empathy and warmth
6. Safeguarding and duty of care
7. Promoting anti-discriminatory practice by being aware of types of unfair discrimination and avoiding discriminatory behaviour

Physical and lifestyle factors that can have positive or negative effects on health and wellbeing:

a. Genetic inheritance, including inherited conditions and predisposition to other conditions
b. Ill health (acute and chronic)
c. Diet (balance, quality and amount)
d. Amount of exercise
e. Substance user, including alcohol, nicotine, illegal drugs and misuse of prescribed drugs
f. Personal hygiene

Part 1: Early threats to the Weimar Republic

Weimar Republic	*Due to violence, the new **Republic** was set up outside Berlin. The Kaiser had **abdicated** (resigned) and the country had no monarch*
Constitution	*The set of laws that governed the country. All adult Germans could vote but the President had emergency powers that weakened the **democracy**.*
Treaty of Versailles	*Peace Treaty signed to end WW1. Germany suffered huge losses as a result*
Putsch	*An attempt to overthrow the Weimar Republic. For example the **Kapp Putsch** led by right wing Freikorps.*
Ruhr Invasion	*France invades part of Germany to claim it's share of reparations*
Hyperinflation	*Value of German money drops dramatically as a result of actions taken to remove the French. A loaf of bread ends up costing 200 million marks*

Part 2: Rise of the Nazis

Munich Putsch	*Hitler attempted to **seize power** violently. Was arrested and imprisoned for 9 months*
Golden Age	*1924-29 Life in Weimar Germany **improved**. Foreign deals, more money and improved living conditions*
Great Depression	*The American **economy collapsed** which led to a worldwide economic depression. This hit Germany hard as they had borrowed lots of money from the USA.*
Work and Bread	*The Nazis decided to win power through elections and made **promises** of 'work and bread' to gain support*

Key dates

1918 WW1 ends
1918 Kaiser Abdicates
1919 Spartacist Uprising
1919 Treaty of Versailles
1920 Kapp Putsch
1923 Invasion of the Ruhr
1923 Hyperinflation
1923 Munich Putsch
1924-29 Golden Age
1929 Wall Street Crash
1933 Hitler becomes Chancellor (leader)
1939 WW2 breaks out
1944 D-Day landings
1945 WW2 ends

Part 3: Life under the Nazis

Opposition from youth	*There were many youth groups that resisted the Nazis. The **Swing Youth** for example, resisted the Nazis by listening to music and hosting parties that were deemed illegal. Some groups, such as the **Edelweiss Pirates** resisted with more violent methods, attacking and killing Nazis.*
Catholic and Protestant Church	*Germany was mostly **Catholic**. The Pope signed a **'Concordat'** with Hitler which meant the Catholics and Nazis agreed not to interfere with each other. Between 1939 and 1943 nearly 500 Catholic priests were arrested in Germany for challenging the Nazi Government. Almost 800 Protestant priests were arrested for resisting the Nazis.*
Military opposition	*Lots of attempts were made by groups of officers to remove Hitler. Operation Valkyrie came close to killing Hitler but he survived and the plotters were executed*
Nazi Policies	***Rearmament** and **conscription** led to more jobs and confidence* *Women were discouraged from holding jobs* *Harassment and imprisonment of political opponents, Jews, disabled, Gypsies and homosexuals*

Part 4: World War Two

Appeasement	*Britain's policy of **allowing Hitler** to expand German territory in the hope of avoiding all out war.*
Nazi Soviet Pact	*1939: The USSR and Nazi Germany agreed **not to attack** each other for 10 years or help anyone who attacked the other. In secret they carved up **Eastern Europe** between them*
D-Day Landings	*Landings by Allied troops on the beaches of France. This marked the start of the campaign to **liberate Nazi occupied Europe** and began the process of winning the war for the Allies.*
Atomic Bomb	*In 1945 the USA dropped two Atomic Bombs on Japan in order to **force their surrender.** The loss of life was estimated at up to 200,000.*

History skills

Significance
When something is important
Interpretations
An opinion of a past event
Change
When an event changes life at the time
Continuity
When things stay the same.
Causation
The reasons why an event happens
Consequence
Something that happens as a result of something else

Hospitality & Catering - LO1.1

The hospitality and catering industry includes hotels, guest houses, bed and breakfasts (B&Bs), inns and pubs, restaurants, cafes and takeaways, contract catering (such as weddings), catering in leisure attractions (such as museums) and motorway service areas. It includes aeroplane meals and snacks on trains. It also includes food served in hospitals, prisons, schools and the armed services.

LO1 Understand the environment in which hospitality and catering providers operate

Commercial – make profit e.g. hotel

Non commercial – don't make profit e.g. prisons

Residential- can book in to stay over night

Non residential – cannot stay overnight

commercial	Non commercial
hotels	hospitals
B&B's	schools
pubs	army
Guest houses	Care homes
Holiday parks	prisons

Cafes/Coffee Shops

Restaurants

Hospitals | Prisons | Armed Services | Fast-food & Take-away Outlets

Air-line Meals

Residential Homes

The Main sectors of the Hospitality Industry are:

- Accommodation e.g. Hotels & **guest houses**
- **Food and drink e.g. Pubs & restaurants**
- **Meetings and events e.g. hotels and conference centres**
- **Entertainment and leisure e.g. spas , leisure centres , golf clubs, bowling alleys**
- **Travel and tourism e.g. Aeroplanes , cruise ships and hotels**

- 1.7 million people **employed**
- **£85 billion** brought into the UK economy
- **£7.5 billion** on accommodation

Marriott Niagara

- 4 star Hotel
- 3 different themed restaurants
- Breakfast restaurant
- Room service
- Starbucks attached to ground floor!

Bristol hotel Gibraltar

- No food or restaurant on site
- Shared breakfast room across street with another hotel

Meals on wheels

Social meal service provided by volunteers, to people unable to prepare their own food.

Care home meals

food served may depend on the needs of the clients, some may have conditions which need special meals. Some residents may need help eating and drinking

Bed & breakfasts, Guesthouses, Farmhouses

Often showcase local themes or produce.
May be breakfast, Half board or full board, family run

Motels & Holiday parks

Lower standard than hotels, food is usually buffet style breakfast. Corporate or independent

CONTRACT CATERERS

These provide food and drink for a function where catering facilities are not already provided

They prepare the food for functions such as, weddings, banquets, garden parties, and parties in private houses. They may prepare and cook food in advance, and deliver it the venue, or they may cook it on site. They may also provide staff to serve the food if required.

Great for - **parties**

Weddings

Proms

Establishments that do not have facilities to provide food and drink

Armed services meals

Mass catering, Camps on active service, Canteens at bases.High energy, balanced nutritionally

Prisons

Food is prepared in by prison inmates to ensure that tight budgets for food are met

Restaurants

Variety of styles and food types, may be specialist eg italian, or gourmet or fine dining
Styles of service vary with types of food and cost
See styles of service section for more…

Cafes

Can vary from independent "greasy" spoon, Tea rooms or coffee shops.
Serve snacks and full meals.

Type of Service	Description
Plate	Meals are pre plated in the kitchen. Good portion control methods. All plates are consistent in the food presentation. The method relies more on skilled kitchen staff than serving staff. Time consuming for the kitchen staff.
Family	The food is placed on the table, spoons are provided and customers serve themselves. It is a sociable method and it is easy and quick to serve. It requires larger tables. There is less portion control. It suits families.
Silver	Food is served by the staff using a spoon and folk. Full silver service is when all the food is served in this way. It provides a more personal customer experience, service can be slow. It is expensive and staff costs are high as more serving staff are required.
Gueridon	A person serves food from a side table of trolley. Sometime dishes are cooked or assembled in front of the customer. This requires skilled service and is very specialist. It is time consuming with high staff and menu costs.

Type of Service	Description
Cafeteria	Counters displaying food. Customers queue up. Simple basic experience for customers. High turnover and fast method. Low skill of serving staff. Customers may impulse buy from the displays.
Buffet	Food set up along a table, can be self service or served by staff. Less formal than plated or silver service. Fast and simple method, can be low cost depending of the food served. Poor portion control.
Fast food	Take-away service with the option to eat in. Customers collect food from a counter. Quick and simple method. Can have a high customer turnover. Often limited menu choice. Food served in disposable packaging.
Tray or trolley	A meal provided in a tray or a choice of food from a trolley. Food is served like this on airlines and in hospitals.
Vending	Food service from a machine. Food can be served 24 hours. Usually snacks are served in this way but it can also be hot meals.
Home delivery	Delivered to a house. Can be a take-away such as a Chinese or Indian meal. Care services such as meals on wheels also use this type of food service.

Fast food

Chains eg KFC, Dominos or independent businesses
Limited menu, low cost, eat in or take away
Disposable packaging

Take aways

Dedicated take away or restaurant attached or may be just take away, most food is cooked to order.

Public houses

Can serve "basket" meals sandwiches or full table service. Some chain pubs have a fixed menu eg Wetherspoons.

Bars

more cosmopolitan menu than pubs , often themed to the type of establishment. Table service or eat at the bar

Hospitality & Catering - LO1.2

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.

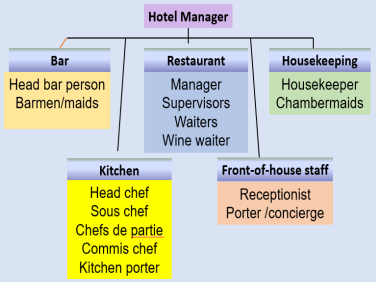
Michelin and rosette inspections are anonymous and are just 1 persons opinion. Trip Advisor and The Good Food Guide are lots of peoples opinions, so likely to be accurate.

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

Maître d'Hôte

Staff structure in a hotel



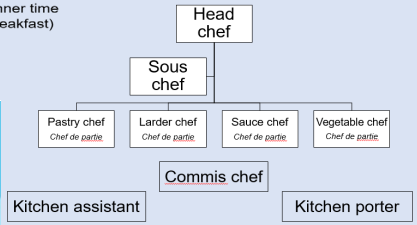
Employers want to employ most workers when they have busy times

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.

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.

Hospitality Brigade

GENERAL MANAGER

The manager is in charge of the whole company and is responsible for whether it makes a profit. The manager needs to make sure each part of the company is working properly so that it is successful.

CONCIERGE

Make dining and other reservations for patrons, and obtain tickets for events. Provide information about local features such as shopping, dining, nightlife, and recreational destinations.

FLOOR MANAGER

Supervise the porter staff and deal with any guest request/issues related to luggage/access.

SECURITY

Monitor CCTV and maintain security of staff and patrons.

PORTER

Hotel porters welcome guests, carry their luggage and answer their queries.

MAID

Cleans and prepares bedrooms, tidiness of general areas around hotel. Laundry services.

WAITER

Serves meals prepared in the hotel restaurant. May deliver room service.

BARTENDER

Prepares and serves beverages.

EXECUTIVE/HEAD CHEF

An experienced chef who plays a largely supervisorial role: managing the business aspects of the kitchen (money, food orders), creating the menu, and directing the staff. In larger restaurants or hotels—especially ones with multiple locations—the executive chef is more of a figurehead whose day-to-day work likely involves little active cooking.

SOUS CHEF

The Sous chef (sous=under in french) is directly in charge of food production, the minute by minute supervision of the kitchen staff, and food

PÂTISSEUR

Makes desserts, sweets, and can prepare pasta. If a restaurant has no boulanger, the pâtissier will oversee breads and baked goods. This position usually has one or several cooks underneath it.
Glacier - Ice-cream cook.
Boulanger - Baker.
Makes breads and certain pastries.

GARDE MANGER OR LARDER CHEF

Responsible for most cold preparations: salads, charcuterie plates, and other cold hors d'oeuvres. They are also in charge of the pantry. If a restaurant has their own boucher or charcutier, the garde manger will oversee these roles.
Boucher - Butcher.
Oversees butchering of meat and poultry.
Charcutier - Person in charge of charcuterie.

CHEF DE PARTIE

Senior cooks, line cooks.
Each is the head of a particular station, which prepares specific dishes or types of cuisine.
This includes:

SAUCIER

Considered the most respected of the chefs de partie, the saucier often reports directly to one of the sous chefs. Their central role is preparation of sauces and possibly sautéed dishes.

RÔTISSEUR

Responsible for the roasting and braising of meats. In the traditional Escoffier brigade, the rôtisseur would also be in charge of the grillardin and friturier.
Today, he or she may simply take on these roles.
Grillardin - Grill cook.
In charge of the grill, specifically grilled meats.
Friturier - Fry cook.
Takes care of all frying, specifically deep-frying.

POISSONIER

Prepares and oversees all fish and seafood dishes. This position usually involves butchering the fish as well. Restaurants with an emphasis on shellfish may also employ an écailler. An écailler prepares fruits de mer or shellfish (i.e., shucking oysters).

COMMIS

Work at specific stations under one of the chefs de partie. They are responsible for the tools at their station. Also described as a kind of apprentice who is usually a recent graduate of culinary school.

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

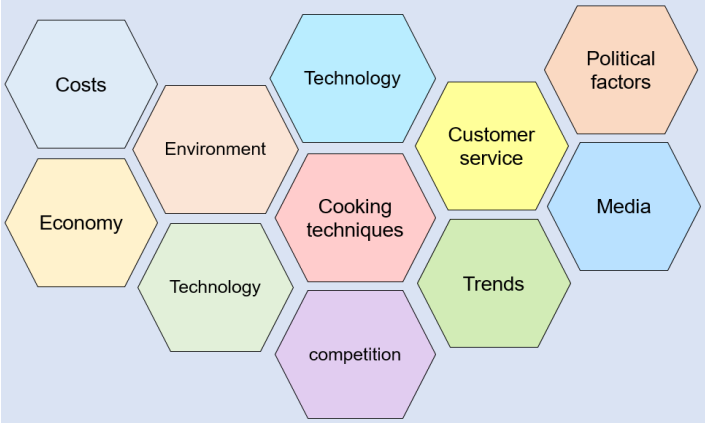
Casual workers are hired on an irregular basis for a short period of time (no more than 12 weeks). There is no continuing commitment from the employer to offer work, and no obligation on the part of the casual worker to do the work offered.

Full-time and part-time employees must have

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 - LO1.3

Factors affecting success



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.

Costs for an establishment

Materials costs
Soap, loo roll,
Menus
Order pads
Cleaning materials
flowers

Food costs
Ingredients
Pre made foods
Bar food and drink
Food and drink for staff

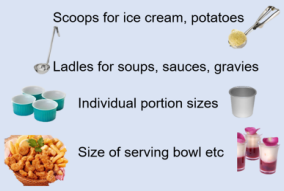
Overhead costs
Heating, lighting
Furniture
Maintenance of equipment
Curtains, carpets

Personnel costs wages
Chefs
Kitchen assistants
Bar staff
Waiting staff
Managers
Casual staff

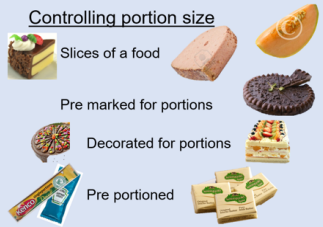
Benefits of portion control

- 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

Controlling portion size



Controlling portion size



Legislation that protects workers

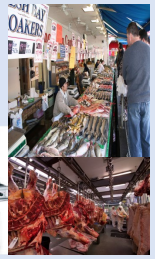
- Disabled Discrimination Act 1995
- Equal Pay Regulations 1970
- Health and Safety At Work 1974
- National minimum wage
- Working Times Regulations 1998
- Part-time workers Regulations 2000

Cost per portion x 100

40

Catering equipment

Specialist large scale catering and kitchen equipment from specialist companies



Independent shops may supply some establishments

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

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

Specialist markets

Equipment suppliers

Suppliers to the hospitality and Catering industry

Local Supplier delivery

Large wholesalers

Independent suppliers

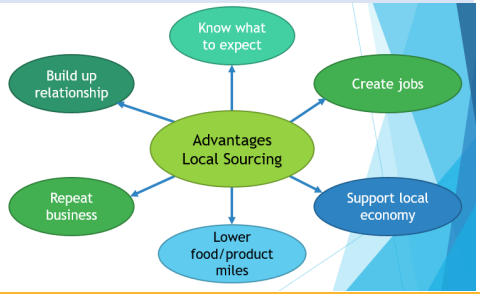
Local suppliers

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

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

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**

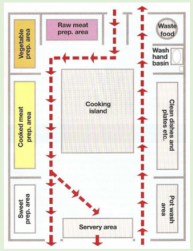


Hospitality & Catering - LO2.1

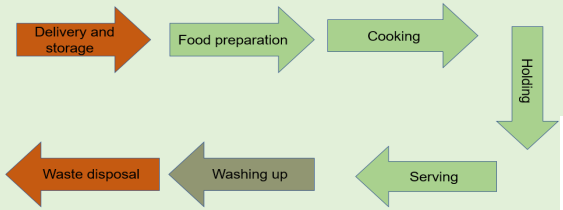
Kitchen workflow

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

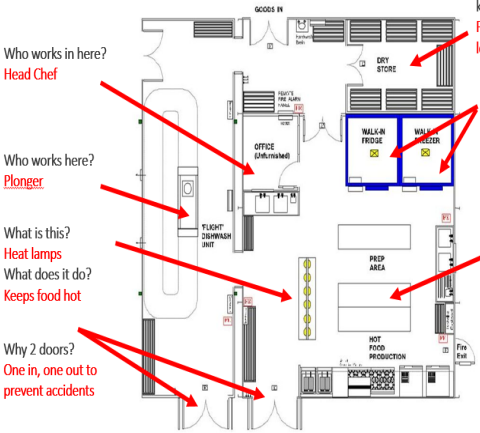


Workflow



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.

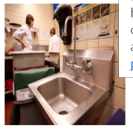
Kitchen Layout



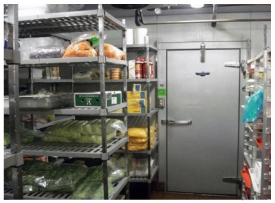
LO2 Understand how hospitality and catering provisions operate

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.

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.



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.



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.

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.

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.

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 of 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

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

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, ethinic, 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

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

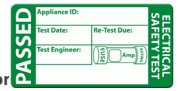
Hospitality & Catering - LO2.2

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.

Large Powered Equipment

Identify the name and use of each item.

Rotisserie:
For cooking large joints and whole animals, such as chickens.

Deep-fat fryers
For deep-fat frying food in very hot oil.

Floor-standing mixers
For kneading, mixing or whisking large quantities of dough, cake or cream.

Other examples:
Grills
Hotplates
Ovens
Potato chippers

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

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

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.

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

Consumer Rights Act 2015

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.

Staff allocation

The restaurant manager coordinates all activities at the restaurant.

The restaurant manager must define the tasks that staff must perform Consider

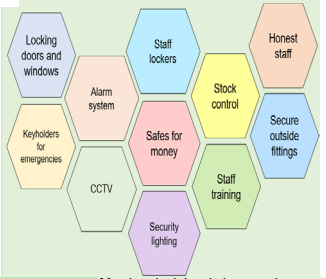
- The size of the restaurant,
- Flow of customers, type of clientele and
- Menu offerings
- Different skills and personnel requirements related to changes of volume and customer preferences.

Customer trends

Customers are influenced by

- TV
- Magazines
- Health
- Travel abroad
- Technology
- Ratings and reviews

Safety and security



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 - LO2.3

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

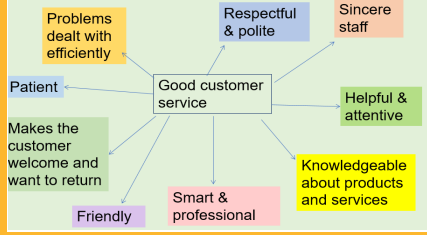
Local customers requirements

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?

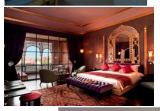


Types of Bedroom Accommodation

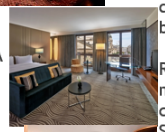
Youth hostel (YHA)
Accommodation is usually in comfortable bunk bedded rooms, sharing with people of the same sex.

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.

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.

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.

Equality Act 2010

Equality Act 2010

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

- 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 - LO3.1

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.

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.

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.

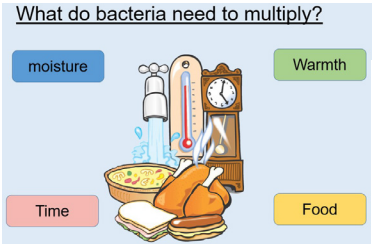
Hospitality & Catering - LO4

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!**



Pregnant Women



AT RISK GROUPS


Children


Elderly


People with weakened immune systems

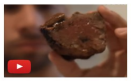

People on certain medications that may suppress the immune system

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

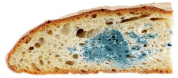
WHAT FOOD SPOILAGE LOOKS LIKE


Odour - break down of proteins (rotten egg smell)


Sliminess - tissue breakdown


Gas Formation - swollen packaging


Sourness - production of acid, sour milk


Discolouration - green/blue molds on foods like bread, fruits and vegetables.

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

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.

CHEMICALS

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

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.

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

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

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 - LO4.2

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

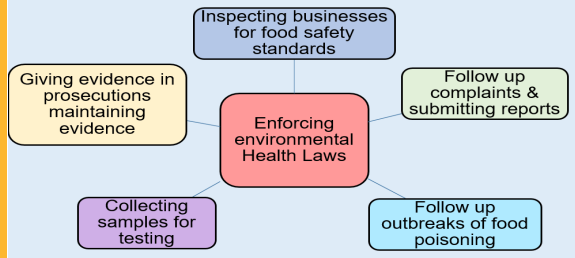
What is an Environmental Health Officer?

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 - LO4.3

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

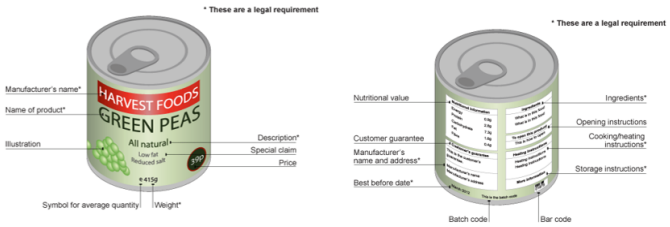
all stages from purchasing through to preparation and serving is controlled.

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

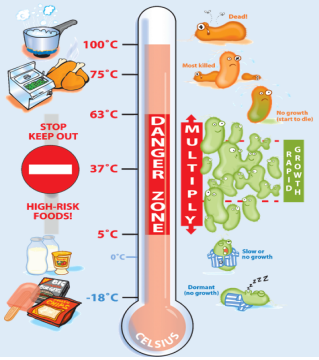
Legal requirement that certain records are kept as part of the HACCP-based food safety management system, eg:
- Fridge/freezer records
- Cooking/hot-holding temperatures
- Cleaning records
- Training records
- Pest control checks

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 - LO4.4

Campylobacter

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

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!

Clostridium Perfringens

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

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

Contract Me!

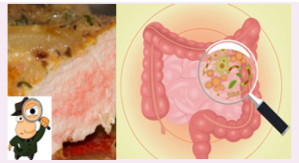
Symptoms: Can last for 3 weeks!

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

Produces spores which may not be killed by cooking!

E-coli

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



Found in: the gut of animals and humans

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

Can survive refrigeration and freezing

Illness caused by small numbers.

Symptoms:

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

Salmonella

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

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!

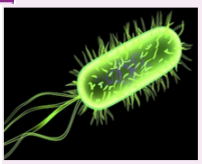
2nd most common form of food poisoning!

Caused by large numbers

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



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

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

Staphylococcus Aureus

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

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

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

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

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

Mathematics

Spring Term 1

Year 9 (A)

Topic: Frequency Tables

Frequency tables show you how many of something there are. They can be for either **discrete**, **continuous** or **qualitative** data.

Discrete data that only has specific values (eg: age in years or shoe size), **continuous data** can take any value (eg: distance or weight). **Qualitative data** is for qualities (eg: colour or breed of dog).

Make sure your tables have: **clear headings**; are **clearly laid out**; drawn with a **pencil and a ruler**

Video Links: Mode (from table) Mean (from table) Median (from table)

Topic: Probability

Probability is the chance of something happening, it can be written as a **fraction**, **decimal** or **percentage**.

Mutually exclusive events are ones that cannot happen at the same time. All probabilities from the event will sum to 1.

Independent events are ones where the outcome of one doesn't affect the outcome of other events.

Dependent events are ones where the outcome of one *does* affect the outcome of the other events.

Video Links: Probability Trees Dependant Events

Topic: Charts and Diagrams

When **drawing** diagrams:

1. Have a clear title
2. Label scales and categories clearly
3. Use correct equipment

To draw a **pie chart**:

1. Work out how many degrees per item by dividing 360° by the total frequency.
2. Multiply each frequency by the answer to part 1.
3. Draw the angles in turn using your protractor

Video Links: Drawing a Pie Chart Reading a Pie Chart

Topic: Averages and Range

An **average** is a single number that represents a whole set of other numbers

We use three different averages, **mean**, **median** and **mode**.

Mean: the mean is the sum of the values divided by the number of values.

Median: the median is the middle value when the data is put in size order.

Mode: the mode is the value (or values) that occur the most.

The **range** is measure of **spread**. It is the difference between the largest and the smallest values in the data.

Video Links: Mean Median Mode Range

Mathematics — Spring Term 2 — Year 9 (A)

Topic: Equations

An **equation** is made from two equal algebraic expressions; they have an **equals sign** to show this.

To **solve** an equation means to find out the value of the **variable** (letter).

We use the **balance method** to **solve** equations. To keep both sides of the equals sign 'balanced' and equal, whatever you do to one side of the equation you do exactly the same to the other. Here are some examples of solving:

1-Step 2-Step Brackets 'x' On Both Sides With Fractions-1 With Fractions-2

Topic: Sequences

We study 3 main types of sequence: arithmetic, geometric and Fibonacci.

Arithmetic – you add (or subtract) the same value to find the next term in the sequence.

Geometric – you multiply by the same value to find the next term in the sequence.

Fibonacci – the next term in the sequence is made by adding the previous two terms.

Ascending sequences go up, **descending** go down.

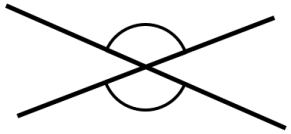
Video Links: Describing Nth Term Fibonacci Missing Terms of a Sequence

Topic: Angles

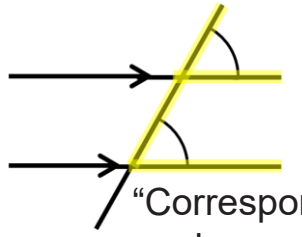
There are key phrases you need to remember and reproduce when completing angle questions.

When a question asks you to **"give reason(s) for your answer"**, this is what they mean:

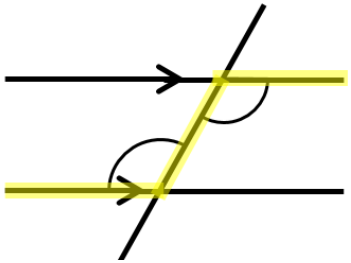
- **Angles** on a **straight line** add up to **180°.**
- **Angles around a point** add up to **360°.**
- **Angles** in a **triangle** add up to **180°.**
- **Angles** in a **quadrilateral** add up to **360°.**



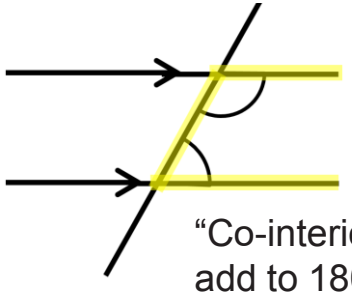
"Vertically opposite angles are equal"



"Corresponding angles are equal"



"Alternate angles are equal"



"Co-interior angles add to 180°"

Video Links: Triangles Quadrilaterals On a Straight LineAround a point On Parallel Lines

Mathematics — Spring Term 1 — Year 9 (B/C)

Topic: Surds

Surds are **irreducible square roots** of integers. They are irrational numbers (they have an infinite number of decimal places with no pattern).

Some **Surd** rules:

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

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}} \qquad \sqrt{a} + \sqrt{a} = 2\sqrt{a}$$

Video Links: Surd Basics — Expanding Brackets

Topic: Transformations

There are 4 **transformations** we can perform on 2D shapes:

Translation – moves position using a **column vector**.

Reflection – mirror image using a **mirror line**.

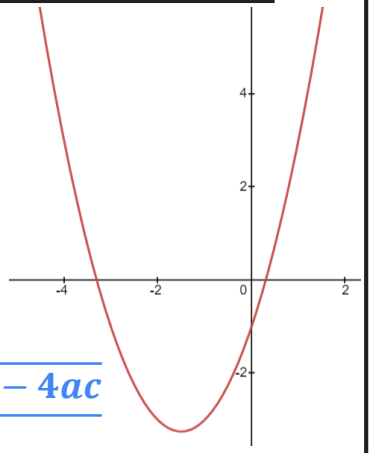
Rotation – turned through an **angle**, around a **centre of rotation**, either **clockwise** or **anticlockwise**.

Enlargement – changes size, using a **scale factor** and **centre of enlargement**.

Video Links: Translations — Reflections — Rotations — Enlargements

Topic: Quadratic Equations and Inequalities

A **graph** of a quadratic expression should be a parabola shape.



To **solve** a quadratic equation, make sure it equals zero, then either:

1) **Factorise** into double brackets and find the roots, *or*,

2) Us the **quadratic formula**.

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

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

Video Links: Solve by Factorising — Quadratic Formula — Quadratic Inequalities

Topic: Angles

There are key phrases you need to remember and reproduce when completing angle questions.

When a question asks you to **"give reason(s) for your answer"**, this is what they mean:

- **Angles** on a **straight line** add up to **180°.**
- **Angles around a point** add up to **360°.**
- **Angles** in a **triangle** add up to **180°.**
- **Angles** in a **quadrilateral** add up to **360°.**

Video Links: Triangles — Quadrilaterals — On a Straight Line — Around a point

Mathematics

Spring Term 2

Year 9 (B/C)

Topic: Congruence and similarity

Two shapes are **congruent** if they are identical; exactly the same shape and size.

The four rules of **congruency** are – **SSS**, **SAS**, **ASA**, **RHS**

Two shapes a mathematically **similar** if one shape is an enlargement of the other. All the lengths will have been enlarged using a **scale factor**.

$$\text{Scale factor} = \frac{new\ length}{original\ length}$$

Video Links: Congruency | Congruent Triangles | Similar Shapes | Similarity (missing sides)

Topic: Averages from a table

Calculating an average (Mean, Median, Mode) from a table is similar but slightly difference to calculating them from a list.

Mean: the mean is the sum of the values divided by the number of values.

Median: the median is the middle value when the data is put in size order.

Mode: the mode is the value (or values) that occur the most.

The **range** is the difference between the largest and the smallest values in the data.

$$\text{Estimated mean} = \frac{sum\ of\ (frequency \times midpoint)}{sum\ of\ frequency}$$

Video Links: Mean (from a table) | Median (from a table) | Estimate the Mean

Topic: Algebraic proof

We use proof in two main ways. One is to show that a mathematical statement is *not* always true, this is called "Proof by counter example". The other is to show that a mathematical statement is *always* true. To do this you need to use algebra to prove it.

Here are some useful expressions for algebraic proof:

Any number: n

An even number: $2n$

An odd number: $2n + 1$

Consecutive numbers: n, $n + 1$, $n + 2$, …

Consecutive even numbers: $2n$, $2n + 2$, $2n + 4$, …

Consecutive odd numbers: $2n + 1$, $2n + 3$, $2n + 5$, …

A square number: n^2 A cube number: n^3

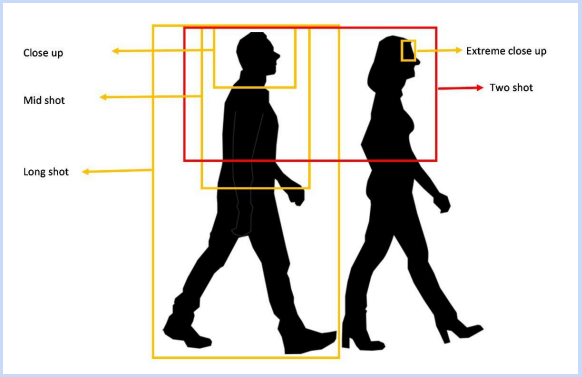
Video Link:
An Algebraic Proof Lesson

Media 1

Mise-en-scène (images)

Props	Colour palette	Cinematography →
Dress codes	Layout and Design	Lettering/Font (Typography)
lighting	Location / setting	Stance/Gaze

Cinematograpy (Camera shots)



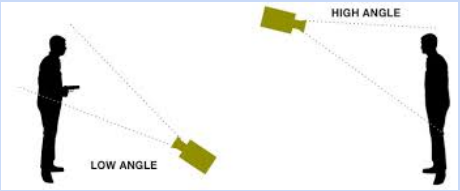
Denotation	What an item actually is - 'a heart'
Connotation	The second level of analysis. It is the meaning associated with the item. It can be a deeper meaning, meaning by association, or emotional response e.g. love, passion

Media

Institutions (Industry)	→	The Media: Text, Form, Genre	⇆	Audience (Consumers)
Entertainment & Escapism	Information & Education	Enhance Social Interaction	Associate with Characters/Events	

Media: the communication outlets or tools used to store and deliver information or data. The term refers to components of the mass media communications industry, such as print media, the news media, cinema, broadcasting, and advertising.
Context: the set of circumstances or facts that surround a particular text

Choices made by Media institutions = representation



Editing (layout & design)

Continuity editing	The system of cutting used in most films to establish the illusion of continuous action and keep the audience's attention focused

Cross-cutting	Establishes action happening at the same time in two different locations. The action will cut back and forth between the two locations.
Shot-reverse-shot	A technique where the action cuts back and forth between two (or more) shots in the same location. Usually used to show conversation, showing the character and then what the character is looking at.
Dissolve	The gradual transition between one image and another
Fast paced editing	When scenes are edited together using lots of shots cut together quickly. Has the effect the action is happening quickly and can build tension.
Non-continuity editing	When jump cuts are used to show that the film is"constructed" not "natural" or that something is wrong
Split Scene	When two (or more) shots are shown next to each other on the screen

Sound

Diegetic sound	'Real sound' within the narrative and from the visible source. Part of the 'story' - heard by characters
Non diegetic sound	'Non-real' sound outside of the narrative (sound effects/ music for the benefit of the audience)

Sound Effects	Noises used to create meanings such as tension or suspense
Sound Motif	Sound or music that is associated with a character/setting/change of scene
Sound Bridge	when audio is carried over the visual transition to tie together two scenes
Contrapuntal Sound	sounds that are used in deliberate contrast to the action that is being shown on the screen

Genre

Sub-genre	A genre within a bigger category. For example Drama has sub-genres such as crime drama or soap operas (like Eastenders)
Hybrid	Hybrid genres combine elements of two different genres together. So if a detective in a drama was also a vampire or a zombie then that might end up being a horror crime drama. Often other genres are combined with comedy or celebrities for example.
Iconography	The pattern of signs we associate with a particular genre. An obvious example would be the combination of futuristic costumes, props, and settings in science-fiction films. Or the inevitable fight sequences and car chases in action films
Expectation	What we expect to happen in a given genre of text.
Convention	Conventions are repeated ways of constructing media works, using codes that have become accepted by audiences. (e.g. a fade to black indicates time has passed; a scene of a car chase will include dramatic music)
Typicality	How typical or not a character or a text is
Stock Character	An easily recognizable character. A flat, one-dimensional character with predictable actions
Tropes	A common or overused theme in a particular genre or type of Media text, used to help the audience understand the story. For example, Superheroes have a secret identity, aliens will want to invade Earth (America), a detective wears a dishevelled suit.
Intertextuality	The relationship between media products where one text references another text by reusing some of its ideas and meanings. It might be a vivid image, iconic music, or even an entire plotline. Importantly, our interpretation of a particular sign is shaped by our understanding of its connotation in the other text.

Industry

The BBC Charter		
	1 To provide impartial news and information	**2** To support learning for people of all ages
3 To show the most creative, highest quality and distinctive output and services	**4** To reflect, represent and serve the diverse communities of all of the United Kingdom's nations and regions	**5** To reflect the United Kingdom, its culture and values to the world

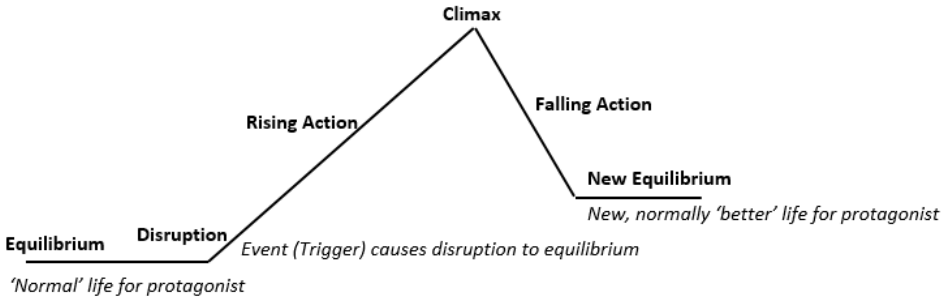
Franchise	a collection of related media in which several derivative works have been produced from an original creative work of fiction, such as a film, a work of literature, a television program or a video game.
Conglomerate	a company that owns numerous companies involved in mass media enterprises, such as music, television, radio, publishing, motion pictures, theme parks, or the Internet.

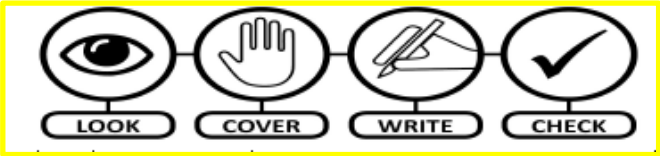
Narrative

Vladimir Propp

The Hero	The main protagonist with whom the audience will associate most strongly.	**The Donor**	A character that gives the hero something important or special (magic weapon, map, knowledge).
The Helper	Supports the hero in the narrative and to help show off the hero's character traits. Sometimes used for 'comic relief' or to fight for the hero.	**The Dispatcher**	The character who sends the hero on the mission. Can be combined with another Propp character type ('Princess' Father', 'False Hero', 'Villain', 'Helper' etc)
The Villain	The antagonist contrasts with the hero and is normally a barrier preventing the hero from reaching his goal	**The Princess**	Normally 'the prize' for the hero. Sometimes needs to be rescued/saved or is the actual reward for completing a different mission.
The False Hero	A type of villain who seems heroic and is sometimes mistaken for the hero. Might try to take credit for the hero's success or to marry the princess/claim the prize instead.	**The Princess' Father**	Sometimes acts as 'The Dispatcher' to send characters to rescue 'The Princess'. Sometimes holds 'The Princess' as a prize for characters.

Tzvetan Todorov





KNOWLEDGE ORGANISER – Year 9 – Musicals / Film Music

Musicals

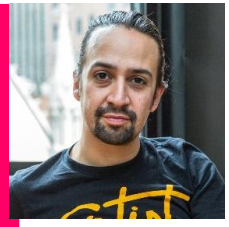
Libretto	The overall text including the spoken and sung parts.
Action songs	These move the plot forward.
Character songs	These enable a character to express their feelings.
Ballads	These are usually slow, romantic and reflective.
Production numbers	These involve the full company and are used to show major changes in location or plot, and often open and close acts.
Through-composed	There is little or no dialogue, nearly everything is sung.
32 bar song form	AABA – each section is 8 bars long. An example of this is "Over The Rainbow". The A section is usually the chorus and the B section is the verse.

The Composers - Musicals

Andrew Lloyd Webber

He was born on March 22, 1948, in South Kensington in London. His father was an organist and composer. His mother was a pianist and violinist. His brother is a famous cellist. Young Andrew Lloyd Webber learned to play various musical instruments at home and began composing at an early age (6). At the age of 9, Andrew was able to play the organ and assisted his father during performances. In 1964 he went to Oxford University as a Queens Scholar of history.

When Sunset Boulevard joined School Of Rock, Cats and The Phantom Of The Opera on Broadway in 2017, Andrew became the only person to equal the record set in 1953 by Rodgers and Hammerstein with four Broadway shows running concurrently. Other musicals he has composed include Aspects Of Love, Joseph and the Amazing Technicolor Dreamcoat, Jesus Christ Superstar, Evita and Love Never Dies.



Lin-Manuel Miranda

Lin-Manuel Miranda, (born January 16, 1980, New York) an American actor, composer, lyricist and writer who created and starred in stage productions that blended modern musical forms with classic musical theatre. Perhaps his best-known work was *Hamilton*, a hip-hop musical about Alexander Hamilton.

Miranda was born to parents of Puerto Rican origin and grew up in a Hispanic neighbourhood in northern Manhattan. His father was a political consultant, and his mother was a psychologist. His childhood home was filled with the sounds of salsa and show tunes. Miranda saw his first Broadway musical, *Les Misérables*, at the age of seven, and it made a lasting impression on him. His tastes also ran to hip-hop and R&B, and he became a proficient rapper.

Film Music

Diegetic music	Music contained within the action, e.g. music heard on a radio.
Non-Diegetic music/ Background music	Is often referred to as **underscoring**. It adds to the **mood** of the scene, reinforcing dramatic developments and aspects of character.
Mickey-Mousing	When the music is precisely synchronised with events on screen.
Atonal Music	The music is not related to a tonic note and therefore has no sense of key - often used in horror films.
Leitmotif	A recurring musical idea (a melody, chord sequence, rhythm or a combination of these) which is associated with a particular idea, character or place.
Ostinato	a musical phrase or rhythm that is repeated many times in the course of a longer piece.

The Composers - Film

John Williams

Born in Long Island, New York on February 8, 1932, John Towner Williams discovered music almost immediately as he was the son of a percussionist. Williams's most familiar style may be described as a form of neoromanticism, inspired by the late 19th century's large-scale orchestral music—in the style of Tchaikovsky or Richard Wagner and their concept of leitmotif

With a massive list of awards that includes over 41 Oscar nominations Williams is undoubtedly one of the most respected composers for Cinema. Williams has composed for many critically acclaimed and popular movies, including the *Star Wars* saga, *Schindler's List*, *Close Encounters of the Third Kind*, *Superman*, *E.T. the Extra-Terrestrial*, the *Indiana Jones* series, the first two *Home Alone* films, the first two *Jaws* films, the first two *Jurassic Park* films, *Hook*, and the first three *Harry Potter* films.

Anne Dudley

Having studied at the Royal College of Music and Kings College in London, Anne went on to become a founding member of the avant-garde group **Art of Noise**.

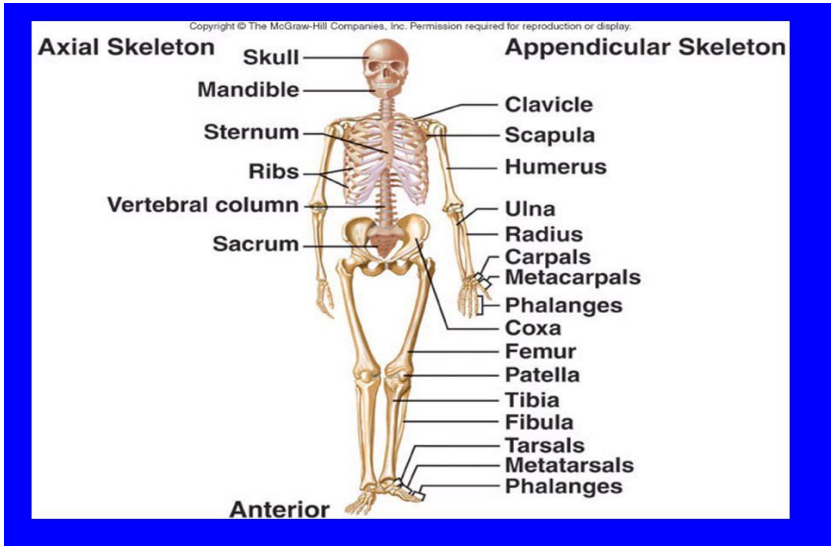
Anne's film scoring career was launched after her score to the British film ***Buster***. Since then she has won many awards and score produced the musical feature, ***Walking On Sunshine*** and the film adaptation of ***Les Miserables***. Her film score credits include ***The Walker***, ***American History X***; ***Elle***, ***Benedetta*** and ***Black Book***; ***The Crying Game***; ***Pushing Tin***, ***Mamma Mia! Here We Go Again!***; ***The Hustle***. Anne won an Oscar for her score to ***The Full Monty***, now the highest grossing film in the UK of all time. The soundtrack won a BRIT at the 1998 awards and is now a triple platinum album.

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



- **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)

Joints

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).

Joint Actions

- **Abduction**: this is movement away from the mid-line of the bod
- **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 Main Functions of the Skeletal System

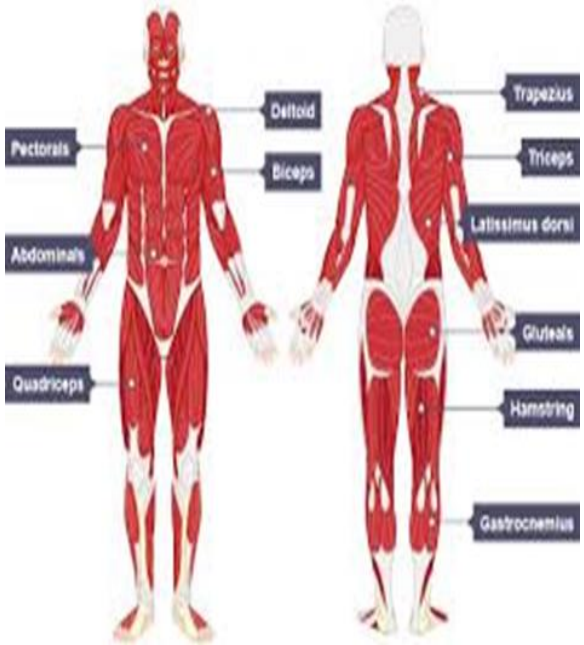
- Working with muscles to allow **movement** in joints
- Giving **support** to our muscles and organs
- **Protecting** vital organs (for example, our skull protects our brain)
- Maintaining our basic **body shape**
- **Producing red and white blood cells** (this is done in the bone marrow)
- **Storing minerals**, such as calcium

Muscular System

The Muscular System

Location and Movement Functions of Key Skeletal 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 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

Cardiovascular System

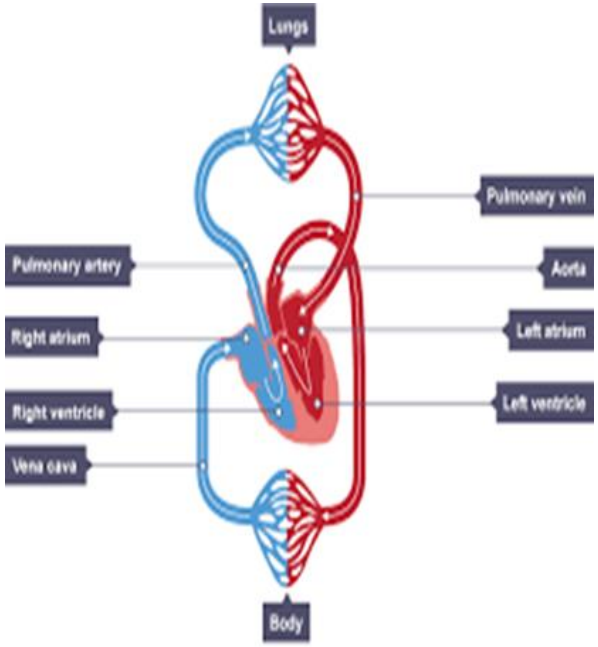
The Cardiovascular (CV) System

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.**

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

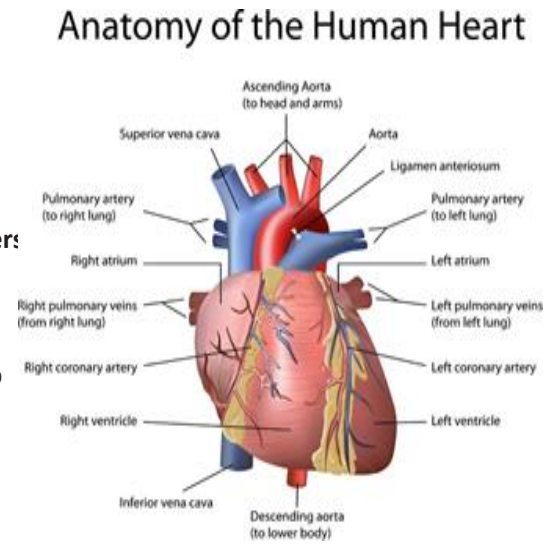
Oxygenated Blood Pathway

- from the lungs to
- the pulmonary vein,
- to left atrium,
- to left ventricle,
- to aorta,
- to the body to drop off O2 and nutrients
- Also here the blood picks up waste products (CO2) and becomes deoxygenated

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



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 – This is 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)*

Respiratory System

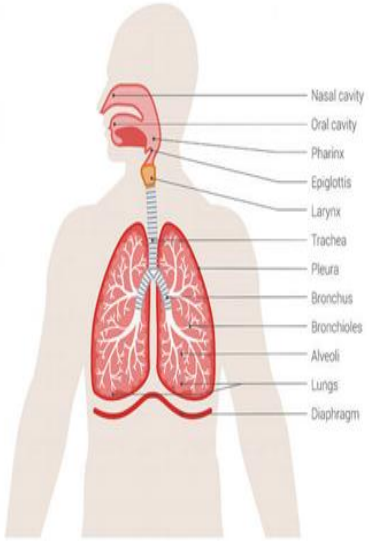
Pathway of Air Through the Respiratory System

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 -

1. **Pharynx -** This also known as the Throat . The air passes through this into the –

1. **Larynx** – This is also known as the Voice Box. The air passes through this into the
2. -
3. **Trachea –** This also known as the Windpipe and is the '*main trunk of the tree*' At this point there is the –

1. ***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

PE - Effects of Exercise on 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.

Diet

Balanced Diet

It is important that you take into account that a Diet should contain-

Carbohydrate (50-60%) Most energy that your body needs comes from these. They are either **Simple** Sugars (sweets, biscuits, fruit) or **Complex** Starch (Pasta, rice, bread, potatoes).

Protein – (15-20%) This is broken down to **amino acids** by the body. These help the body with growth and repair. They are very important for building muscle in your client. Eg chicken, fish, eggs, meat, nuts, milk, tofu/ Quorn.

Fat – (15-20%) – Your need fat in your diet to help maintain skin, protection for vital organs, give body warmth and help absorb vitamins. Fats are either saturated (meat, butter, milk, cream and cheese), or unsaturated (oily fish, such as salmon and mackerel, nuts and seeds).

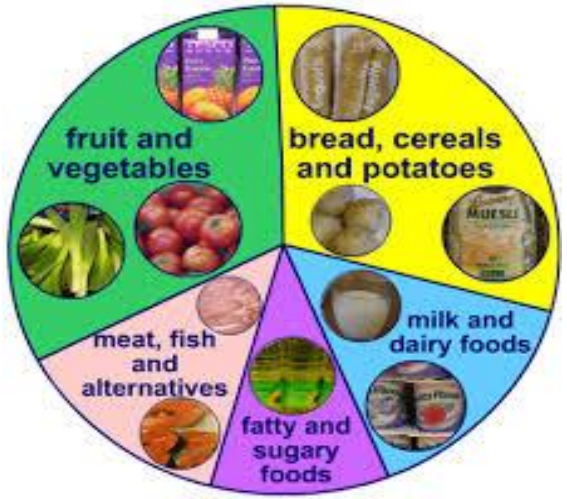
Fibre - This helps to keep the digestive system healthy, lower cholesterol levels and reduce the risk of bowel cancer eg Wholemeal bread rice , potato , nuts, baked beans , carrot

Water – (6-8 cups per day) – can also be fruit juices and other drinks. Your client will need this to cool their body, carry nutrients in the blood.

The Eatwell plate

This is one way to analyse a persons diet. It recommends

- five portions of a variety of fruit and vegetables a day
- Meals based on starchy foods, such as bread, rice, pasta and potatoes
- Some dairy foods (or alternatives), such as milk, cheese and yoghurt
- Sources of protein, such as fish, eggs, meat and pulses
- At least two portions of fish every week (one of which should be oily, such as salmon or mackerel)
- Only small amounts of foods that are high in fat, salt and sugar



Energy balance – If your client eats more than the recommended 2000 kcal per day and does limited/ no exercise they will gain weight. If your client is eating less than 2000kcal per day and or completing a lot of exercise they will lose weight and struggle to build muscle / repair the body after exercise. Remember exercise uses Kcal's.

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).

Fitness Testing

Introduction

•When you are preparing and planning for health and fitness, it is useful to be able to test and measure various components of fitness. By measuring fitness at the start of an exercise programme, it enables you to set meaningful goals for improvements.

•You always gain a score for the test completed that you can then relate to normative tables to see if you are average / good./ Excellent etc for your age group and gender.

Health Related Components of Fitness tests

Cardiovascular Endurance -

Multistage, This test involves carrying out a series of 20-metre shuttle runs in time with an electronic bleep that speeds up every minute (each minute represents one level of the test)

Muscular Strength -

Hand dynamometer . this test involves squeezing a handheld dynamometer as hard as possible for 5 seconds at a time – it is used to test grip strength. The test can be repeated three times, with a minute of rest allowed between each attemp

Muscular Endurance –

- **Press ups**, This test requires the performer to do as many press ups as possible in 60 seconds.
- **sit ups,** This test requires the performer to do as many sit-ups as possible in 30 seconds.

Body Composition –

- **BMI Test (body mass index)**

1.Measure the weight of the person in kilograms (kg).
2.Measure the height of the person in metres (m).
3.Multiply the height by itself and then divide the weight by that total
4.This figure is then compared against the normative tables.

- **Hip to waist ratio test** This ratio is calculated as waist measurement divided by hip measurement. For example, a person with a 64cm waist and 97cm hips will have a waist-to-hip ratio of approximately 0.66.

Flexibility –

Sit and reach,

Here he performer removes their shoes and sits on the floor with their legs straight out in front of them. Their feet are placed flat against a box, with both knees flat against the floor.The performer puts one hand on top of the other and slowly reaches forward

Skill Related Components of Fitness tests

Agility

Illinois agility run. This test uses a course of cones set out in a particular layout. At the beginning of the test, the performer lies face down on the ground at the starting line with their hands by their shoulders. When the start command is given, the performer must get up onto their feet as quickly as possible and run around the course of cones to the finishing line.

Speed

. 30m sprint. The performer will get into a sprint start position. The performer then sprints for 30 metres and the time it takes them is recorded.

Coordination –

Wall toss test . The performer will stand 2 metres away from a smooth wall. When the test starts, the stopwatch is started. The performer then begins to throw the tennis ball against the wall – first, throwing it with their right hand and catching it with their left, then throwing the ball with their left hand and catching it in their right. This carries on for 30 seconds

Power –

Vertical jump test

- the performer holds a piece of chalk and stands by a wall.
- Keeping both feet on the ground, the performer reaches up as high as possible and marks the wall with the chalk. This reach distance is recorded.
- Then, the performer jumps up as high as possible and marks the wall again with chalk
- Finally, the difference between the standing reach distance and the jump distance is recorded.

Balance –

Stork Stand. It is carried out as follows:

- The performer begins by standing comfortably on both feet and hands on their hips.
- Raise right leg and place the sole of the right foot against the side of the left kneecap.
- When the test begins, the performer will stand on tiptoes. At this point, the stopwatch is started. The performer holds their position for as long as they can
- The test is then repeated raising the left leg this time.

Reaction Time – Ruler drop test The performer will stand with their dominant arm stretched out in front of them with the assistant will hold the ruler between the performer's index finger and thumb on their outstretched arm . The assistant drops the rule and the performer must catch it in between their index finger and thumb as quickly as possible. The distance between the bottom of the rule (0cm) and the top of the performer's thumb where the ruler has been caught is measured

Photography - Photoshop

Tool Bar

Move + Select

Move Tool (V) – to move things

Quick Select (W) – to make a quick selection of similar pixels

Crop

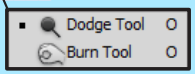
Crop Tool (C) – to trim your canvas

Retouching + Painting

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%

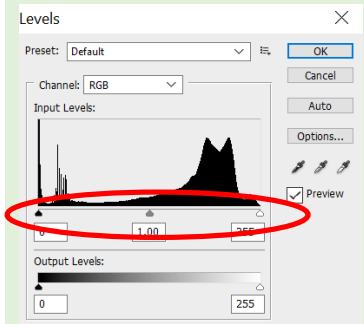
Drawing + Type

Navigation

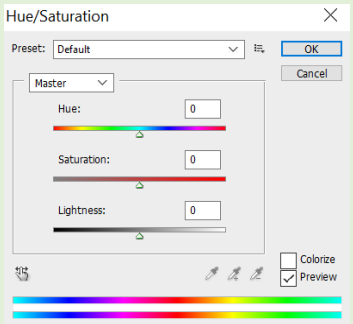
Zoom Tool (Z) – to zoom in/out

Colour

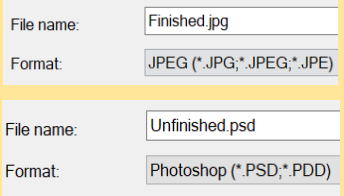
Foreground colour
Background colour



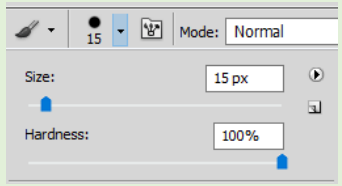
Levels (CTRL + L)
Adjust the exposure of your photograph using the black/grey/white arrows under the histogram. The histogram tells you where the majority of your light falls, from mostly shadow on the left to highlights on the right. This histogram says this image is quite bright.



Hue/ Saturation (CTRL + U)
To adjust the colours in your photograph/selection.
Hue is the colour in your image.
Saturation is the intensity, or richness of that colour/hue.
Lightness controls the brightness value, but to a poor effect- use levels instead to control light.



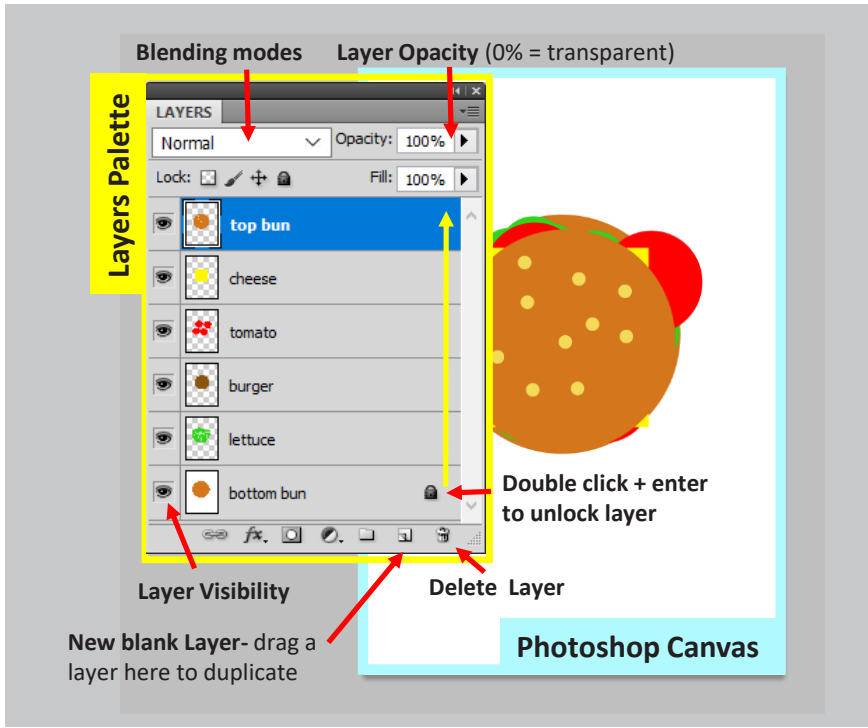
Saving Work
Finished work must be saved as a JPEG (not JPEG 2000).
Unfinished work needs to be saved as a Photoshop PSD file.



Brush settings (under file/edit)
Size is the diameter of the brush (this can also be changed using the square brackets).
Hardness controls the finish of the brush. A harder brush will have clear, sharp edges, whereas a softer brush will have blurred and less defined edges.

Useful Shortcuts

- **CTRL+T –** Transform Tool- use to resize elements. Hold down **shift** to keep your proportions
- **CTRL+D** – Deselects your selection
- **CTRL+ / CTRL __**– zoom in / out
- **[/] (square brackets** when using a brush based tool) will make your brush size smaller / bigger
- **CTRL+C** – copy a selected area
- **CTRL+V** – paste a copied area
- **Shift** (when using a brush based tool) – hold down shift to connect brush strokes to form a straight line
- **Space** – hold space to pan around your screen



Photography - Key Words

1. Photography Vocabulary

Connectives
However
Although
On the other hand
Whereas
Similarly
Furthermore
In addition
Additionally
It seems

Mood
Calm
Emotive
Exciting
Fearful
Humorous
Joyful
Peaceful
Provoking
Sad

Technique
Collaged
Digital
Edited
Layers
Mixed media
Stop frame
Sewn
Transfer

Colour
Bright
Contrasting
Dark
Dull
Highlight
Muted
Rich
Saturation
Shadow
Vibrant
Black & White

Light
Balanced
Bright
Dull
Harsh
Limited
Natural
Soft
Strong
Subtle

Composition
Background
Balanced
Blurred
Centred
Depth /of field
Foreground
Horizon
Juxtaposed
Rule of Thirds
Perspective
Strong

2. 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
2. **Highlight/ shadow:** Light and shadow in your photo can be created and controlled with artificial light (lamps or flash) or natural light (sun)
3. **Contrast:** the difference between the darkest and lightest area in your photograph (high contrast = strong colours- punchy, Low contrast = grey/foggy)
4. **Focal Point:** The part of the photograph that the eye is immediately drawn to
5. **Composition:** To arrangement of the subject matter and how they relate to one another within the photograph
6. **Portraiture:** a photograph of a person or group of people that captures the personality of the subject by using effective lighting, backdrops, and poses
7. **Landscape:** shows spaces within the world. Landscape photographs typically capture nature but can also focus on the man-made features of the land
8. **Still Life:** focuses on inanimate objects; manmade (clothing, technology…) and natural (food, shells…) **Flay lay photography** is a modern take on still life
9. **Close up:** a photograph that shows a lot of detail because it is taken very near to the subject. **Macro** is where small items are photographed larger than life
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

3. How to evaluate your work

1. How did you take your photograph? How did you set up your shot/ control your background/ lighting? Why?
2. Technical comments- depth of field? Rule of thirds? What can you tell me?
3. How did you edit your photograph? Why?
4. How does your work link to the photographer / theme?
5. What are your opinions of your work? Is your end result successful? Why?
6. How could you improve your work? *Bonus- do this!*
7. Did you enjoy your shoot? Why?

AO1: Develop

Artist research and how the artist fits the theme, explore, annotate, opinions.

AO2: Refine

Linking techniques to artists and themes, experimenting with a range of media and processes.

AO3: Record

Your ideas, plans, explanations, annotations, photographs linking together and to a theme and artists.

AO4: Present

Personal response, final pieces & body of work, presentation, technical ability.

Photography - Research

1. Tien-Min Liao

Tien-Min Liao was born and raised in Taipei, Taiwan. After graduating from National Chengchi University in Taiwan with a BA degree in advertising. In this experiment she drew shapes with ink onto her hands, manipulating her gestures into the corresponding shapes to signify the letters of the alphabet.

2. John Hilliard

John Hilliard is an English conceptual artist. Hilliard's ongoing body of work addresses the quality of photography: its uncertainty as a representational device and its status within the arts. Hilliard demonstrates how the way we understand a photographic image may be influenced and changed by the way it has been technically created, edited by the artist, and presented in the gallery.

3. Slinkachu

Slinkachu is a London-based street installation and photographic artist. His work involves remodelling and painting of miniature model train set characters, which are then placed on the street. The titles given aim to reflect the loneliness and melancholy of living in a big city but along side this there is always some humour in the work.

4. Zev Hoover

Zev Hoover (born 1999), from Natick, Massachusetts. Hoover creates work about a 'miniature world'. In his fantastical photos people (usually himself) are digitally shrunken. The process involves capturing the background image first, shrinking photos of people in similar lighting, manipulating the images in Photoshop and editing the colour scheme so that it all matches.

5. Sandy Skoglund

Sandy Skoglund is an American photographer and installation artist. Skoglund creates surrealist images by building elaborate sets, furnishing them with carefully selected coloured furniture and other objects. The works are characterized by an overwhelming amount of one object and either bright, contrasting colours or a monochromatic colour scheme.

6. Yulia Yakushova

Yulia Yakushova is a Russian creative director living and working in New York. **'Face your pockets'** is a body of work featuring a scanned image of part of the owners face alongside the objects from their pockets or handbags. The odds and ends that people possess often show what is important to them as a person.

7. Tom Hussey

Tom Hussey is an American photographer specialising in commercial advertising and lifestyle photography. **'Reflections of the Past'** was used by a healthcare company in a marketing campaign for the treatment of Alzheimer's disease. The work features elderly models staring at reflections of their former selves.

8. Research prompts

1. Brief background (who, what, where- no Google copy and paste)
2. Describe the composition of the photo
3. Describe the lighting
4. What technical elements can you tell me?
   (rule of thirds / depth of field)
5. How do you think the photograph was taken? Make some guesses
6. What do you like most about the photo? Why?
7. How does the work fit with your current topic?
8. What ideas does the work give you?

Year 9 Knowledge Organizer
Spring Term
Good and Evil

Key Words;

Free Will; the ability to make choices voluntarily and independently. Belief that nothing is pre-determined.

Belief in Free Will is in many religious teachings and views and influences attitudes towards doing wrong or bad things, for if there is free will, it is possible to choose what you do. However, all religions acknowledge doing 'right' is not always easy.

A religious person would say that crime is set against the backdrop of there being evil and sin in the world and in humanity. The rules are clear in religion as to what to not do; you just have to obey them.

Cause of Crime	Explanation
Poor Parenting	The main reason for crime. This is the catalyst which starts off all crime as seen in Mary Bell case and the Bulger killings.
Poverty	Poverty can lead a person into committing illegal acts in order to gain money.
Media	Social media is included here with it playing a large role in some of the knife crime currently in large cities. Media can perpetuate stereotypes.
Mental Health Issues	Lack of diagnosis can link with crime.
Addictions	Often '*hand in hand*' with mental health issues. Addictions cause lack of control, decreased inhibitions and desperation to gain money.
Poor Education	Generally stems from poor parenting; if your parents value education, you are likely to as well. Fewer qualifications means fewer opportunities for jobs etc.
Unemployment	Linked with education. Not having a job and therefore a role in society causes friction and lack of stability.
Peer Pressure	Weaker people particularly susceptible to this which also links with mental health, addictions and unemployment.

All these have various ways of overlapping to cause the crime we see in society. Addressing even one or two of them can have long lasting effects but it is a fact that if you are born into a family which doesn't parent well…….your chances in life are greatly diminished as they are your greatest influence.

Year 9 Knowledge Organizer
Spring Term
Good and Evil

Key Words;

Punishment; penalty given to someone for a crime they have done.

Justice; fairness, where everyone has equal provisions and opportunity

Main Aims of Punishment	Explanation
Retribution	A form of revenge on behalf of those who were wronged or subject to attack
Reparation	Criminals should have the right to 'pay' for the wrong they have done to show they are sorry and repair the damage
Reformation	Trying to ensure the criminal is helped to change their approach and way of life
Protection	Making sure that all people and society are kept safe from recurrence of a crime by that criminal. Criminals may need protection as well.
Justice	To show that the law and authority are of supreme importance and ensure that the law is upheld and justified.
Deterrence	To try and discourage people from committing crimes because they know what he punishment will be.

- The Qur'an teaches that believers should make the choice between good and evil deeds
- Punishment is seen as an important aspect of justice but forgiveness is also important. Allah is compassionate and merciful as well as being a judge.
- All will be the final judge on the Day of Judgement (Qiyammah)
- The Qur'an teaches that God sets the rules and shows the way
- Some countries use Shari'ah law which sets laws and punishments based on the Qur'an (the Straight path)

Beliefs and teachings about aims of punishment

- Christians believe that everyone was created with free choice to accept or rejects God's ways
- If people do sin or commit crimes then justice must follow, but JC also taught the importance of forgiveness
- Most Christians believe that to gain justice, punishment should be given and forgiveness sought
- Most Christians believe that at the end of life, God will be the final judge
- JC taught compassion, not revenge

Year 9 Knowledge Organizer
Spring Term
Good and Evil

Key Word;
Death Penalty; when the state executes you for a crime

Christianity
Against

- Most Christians believe only God has the right to take life
- *'thou shalt not kill'* Decalogue
- JC taught *'if someone strikes you on the right cheek, offer them your left cheek also'*
- JC stated *'love your enemies and pray for those who persecute you'*
- Many Christians see the two quotes above as teachings which go against the OT such as *'An eye for an eye'*
- The Golden Rule 'do unto others as you would have them do to you' conflicts with death penalty
- Quakers have campaigned against death penalty for years.

For

- OT 'an eye for an eye and a tooth for a tooth'
- Death penalty is given by authorities after a trial and not revenge meted out by someone angry
- JC said *'I cam to uphold the law, not to change it'*
- Not treating serious crimes with serious punishment diminishes the crime.

Islam
Against

- A growing number of Muslims disagree with the death penalty calling for it to be abolished 'never take life which God has made sacred'
- Some want to stress the importance of forgiveness and reconciliation
- Punishment is important for justice to be done but there are better ways than death penalty

For

- God will punish at DofJ but criminals need to be punished on earth
- Qur'an states *'never take a life EXCEPT for a just cause'*
- Shari'ah law allows executions for adultery, murder and apostasy

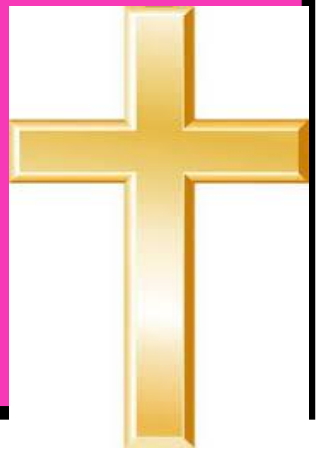
Year 9 Knowledge Organizer
Spring Term
Good and Evil

Key Word

Forgiveness; to grant a pardon to a wrongdoer

Christianity

- Christians believe God forgives sins if they are confessed
- In the Lord's Prayer it says *'forgive us our trespasses, as we forgive those who trespass against us'*
- JC said *'if you do not forgive men their sins, your Father will not forgive you'*
- JC told the disciples *'you should forgive not 7 times but 7 times 77'*
- JC example on the cross *'forgive them father for they know not what they do'*
- Catholics; sacrament of confession
- Evangelicals; forgiveness comes through faith



Islam

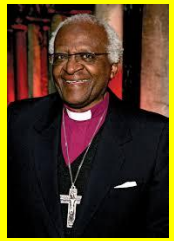
- In Islam there are two types of forgiveness; human and God's.
- Humans need both types as they make mistakes
- There is no limit to God's forgiveness especially if you are penitent
- *'and whoever strikes you of disaster, it is what your hands have earned, but he pardons much'*
- Example of Muhammad who helped a woman who was sick even though she had repeatedly brushed dust in his direction

Examples of Forgiveness

Christian;

Gee Walker; mother of Anthony Walker who was murdered by schoolboys in a racist attack. As a Christian she felt the teachings of hate were not right.

Archbishop Desmond Tutu; Anglican bishop in South Africa during apartheid era. Tutu led the truth and reconciliation committee after a change in government led to apartheid being dismantled. 'holding onto resentment means are locked in victimhood and you allow the perpetrator control over your life'



Islam;

Khaled Hosseini; born in Afghanistan and moved to America and became a doctor. A lot of his family who remained in Afghanistan were imprisoned or disappeared. *'I wondered if that was how forgiveness budded…..with pain gathering up its things and slipping away unannounced in the middle of the night'*

Year 9 Knowledge Organizer
Spring Term
Good and Evil

Key Words;

Good; an act which is morally right
Evil; an act which is immoral
Sin; breaking God's laws/moving away from God
Suffering; pain, distress or injury which can be psychological, physical or spiritual

Origins of Evil
Christianity

- Some Christians believe humans are born with Original Sin which results in a built in urge to do things that are bad
- Some Christians believe God allows evil to exist to develop moral souls (soul shaping)
- Irenaeus believed God does not prevent evil as this would interfere with free will
- Hick and Irenaeus believed God created humans with the potential for spiritual growth

Islam

All that happens is part of God's plan (al Qadr)
Humans are given free will and their actions will be judged DofJ
Shaytan tempts humans but he can be resisted.

Suffering
Christianity

- Some Christians believe that suffering through evil helps develop a moral soul (soul making).
- For many Christians suffering is believed to be part of life with the purpose often not known
- The story of Job teaches that it is wrong to question God about suffering and why it is happening as we cannot understand the full picture.
- Through suffering some Christians believe they understand JC and what he went through on the cross
- Catholics; 5 sorrowful mysteries of the rosary

Islam

- Suffering is a test to demonstrate the will of Allah
- It is important to help others e.g. zakah which alleviates suffering

Free Will
Christianity

- God has given everyone freedom to live their lives.
- Different emphasis regarding relationships between predestination and free will depending on denomination
- Catholics; don't view FW as existing apart from grace
- Methodists; God is omniscient yet gives us choice.

Islam

- Many Muslims believe in predestination and FW
- Allah knows the final outcome
- FW granted so humans are not puppets
- Qur'an used in making decisions
- Everyone can choose whether to obey Allah or not
- On the DofJ the impact of FW will be determined.

Year 9 Knowledge Organizer
Spring Term
Human Rights

Key Words;

Human Rights; the things a person should expect to be able to have or do. Basic human rights are shelter, food and education

Social Justice; promoting a fair society by challenging injustice and valuing diversity. Ensuring everyone has equal provisions opportunities and rights.

Dignity of Human Life

Christianity:

- Belief that all humans are created in the image of God
- JC showed in his teachings and practice all life should be valued and treated with respect; parable of Good Samaritan
- Pope Francis emphasised looking after elderly and homeless
- Every person is sacred
- Agape

Islam

- The Qur'an refers to the uniqueness of each individual and the importance of helping just one individual
- Allah created all life so it should be treated with respect
- Importance of the worldwide community of Muslims; ummah in which all are equal

Religious Practices to Promote Human Rights, Including Equality

Christianity; Agape in action. Following action of JC many Christians work for charities, donate money or volunteer etc.

Islam; Ummah in action. Promotes the welfare of the Muslim community by paying zakah and sadaqah to help poor and needy. Islamic Relief charity

ISLAMIC RELIEF SAVING LIVES SINCE 1984

How and why do they help? Make sure you know and have examples.

christian aid

Year 9 Knowledge Organizer
Spring Term
Human Rights

Key Words;

Prejudice; pre-judging someone and assuming them to be superior or inferior without evidence

Discrimination; putting the prejudice into action e.g. not offering someone a job based on religion, race ethnicity etc

Censorship; suppressing or limiting access to information regarded as offensive or a threat.

Extremism; believing in and supporting ideas that are very far from what most would consider reasonable

In Britain and most countries in Europe, everyone is free to express their ideas and feelings or reactions about religious, political, economic and governmental matters. This links with Article 19 of the UN Declaration of Human Rights.

When it comes to freedom of religious expression it can be difficult to decide where one person's faith and freedom to express this can become derogatory to others.

Extremism has become more common and to religious extremists their beliefs and actions are just and moral and possible even a duty. To others they are potentially dangerous.

1. **Absolutism;** no alternative to what is believed or stated
2. **Heroic leadership;** extremists often follow a charismatic leader
3. **Immovableness;** extremists are unwilling to see another point of view
4. **Narrow mindedness;** 1 goal and 1 focus
5. **Superiority;** their view an belief are the right ones
6. **Sacrifice;** extremist groups tend to expect their followers to sacrifice huge amounts for the cause.

Beliefs, Teachings and Attitudes Towards Prejudice and Discrimination

Christianity:

- Prejudice and Discrimination are unacceptable and are against Christian beliefs and teaching
- God created all humans equal
- Decalogue gives advice for living in harmony with others
- JC gave examples of lepers and outcasts whom he treated the same as anyone else
- Parable of the Good Samaritan
- Catholic and Orthodox churches don't allow women priests
- Anglicans allow women priests and bishops.

Islam;

- All people are equal though not the same
- All people are important in their own right as created by Allah; men and women face the same judgement
- The ummah crosses all national, racial and political divides e.g. Malcolm X
- Wearing the ihram on hajj shows equality
- Prayer shows submission to God, everyone shows it
- Muhammad selected Bilal, a Somali former slave, as his first imam
- Women are given additional rights and protections; e.g. freedom from sexual harassment

Year 9 Knowledge Organizer
Spring Term
Human Rights

Campaigners for Human Rights

Martin Luther King Jr

King, always interested in civil rights, was heavily influenced by Gandhi's policy of non violence when he visited India with his wife and met with Muhammad Jinnah. His involvement with the black civil rights movement was closely related to his Protestant faith. After gaining a major victory in the Bus Boycott of 1956, when the boycotting of the bus services by black people led to their de-segregation, he became president of the Southern Christian Leadership Conference in 1957. The ideals for this organization came from Christianity, but the method of non violence from Gandhi.

Over eleven years from 1957 to 1968 he travelled over six million miles, gave over two and a half thousand speeches, and addressed a quarter of a million people in his 'I have a dream' speech alone.

His policy of non-violence led to his arrest twenty times, and he was personally abused four times. He became a figurehead for not only black people in separatist America, but as a leader for human rights wherever there was injustice, locally, nationally, and globally.

After being the youngest ever person to win the Nobel Peace Prize at age just 35, he was assassinated on 4 April, 1968. True to his revolutionary spirit, he had been just about to lead a protest march in sympathy with striking street cleaners of Memphis, Tennessee

The Christian Muslim Forum

- **Based in London and brings together Christians and Muslims so as to build good relationships**
- **It creates safe places for discussion and exploration of differences between Christianity and Islam**
- **It educates others through interfaith dialogue**

www.christianmuslimforum.org

Year 9 Knowledge Organizer
Spring Term
Human Rights

Key Words;

Absolute Poverty; acute state of desperation where the person is lacking even the most basic necessities.

Relative Poverty; standard of poverty measured in relation to others in society.

Ethical Considerations about the Acquisition and use of Wealth Christianity;

- Spiritual values are the most important
- A person's value should be based on their actions rather than their possessions
- Being wealthy is not bad or wrong but it depends on how the wealth was acquired
- Many Christians oppose gambling, especially Methodists
- Most Christians believe giving to charity is important and tithing (10% of income to others)
- Parable of the Rich Man and Lazarus
- Parable of the Sheep and the Goats

Islam;

- Proper use of one's wealth is of lasting value
- All wealth is a gift from Allah
- The wealthier you are, the more generous you should be
- Wealth shouldn't be used to harm others
- 4 x types of giving; zakah, khums, sadaqah, zakat ul fitr
- *'true righteousness is in one who believes in God and who gives wealth to relatives, orphans, the needy and the traveller, those who ask for help and in freeing slaves'*

Actions and Attitudes of Religious Charities to Alleviate Poverty Christianity;

- **Christian Aid;** aims to challenge systems which favour the rich, reflects a belief that God loves all and the dignity of human life, committed to being effective stewards of the planets resources. Organizes projects to educate people, runs campaigns and Fairtrade activities, publicises examples of inequality and poverty.

Islam;

- Islamic Relief; guided by Muslim values to create a caring world, aims to show compassion justice and sincerity through their actions. Responds to disasters and emergencies, provides long term support for shelter and education and supports orphans

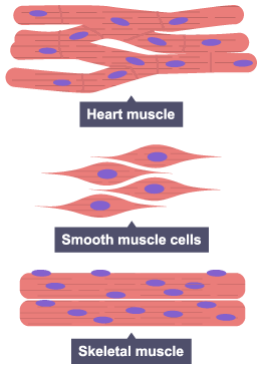
Science - Biology - Heart & Health

Y9 Heart and health

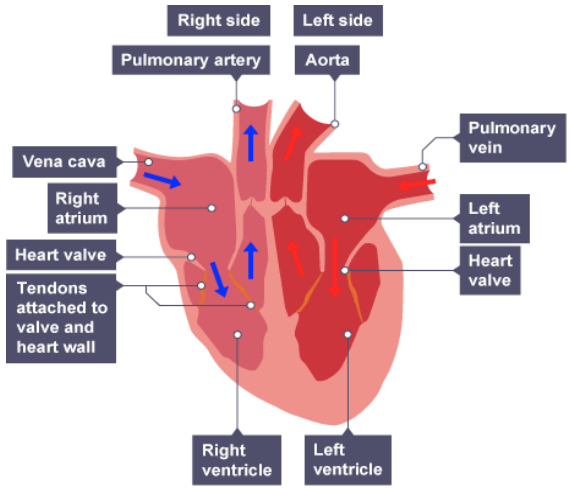
Section 1- Muscle Cells

Muscle cells contain filaments of protein that slide over each other to cause muscle contraction.

They contain many mitochondria to provide energy for muscle contraction.



Section 2 – Heart



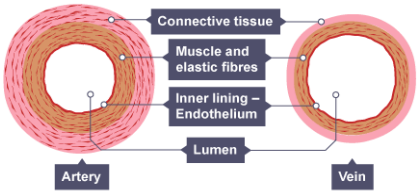
Humans have a double circulatory system – blood passes through the heart twice in one complete circulation.

The systemic circulation (left side) transports oxygenated blood around the body and waste away from cells.

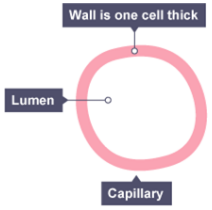
The pulmonary circulation (right side) transports deoxygenated blood to the lungs for gaseous exchange.

The left side of the heart is under more pressure as it has to deliver blood to the extremities of the body (travels further).

Section 3- Blood Vessels

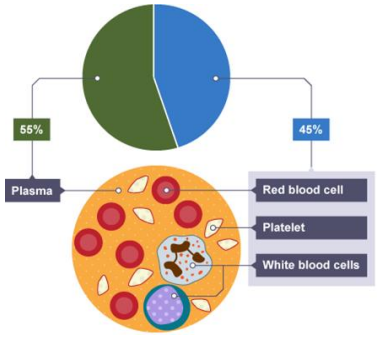


Arteries	Veins
Carry blood away from the heart	Carry blood to the heart
High pressure	Low pressure – has valves to prevent backflow
Thick muscular and elastic walls	Thin walls
Thin lumen	Wide lumen



Capillaries have walls that are one cell thick to allow exchange of substances between blood and cells

Section 4 – Blood



Component	Function(s)
Plasma	Transporting carbon dioxide, digested food molecules, urea and hormones; distributing heat
Red blood cells	Transporting oxygen
White blood cells	Ingesting pathogens and producing antibodies
Platelets	Involved in blood clotting

Section 5 – Health and Disease

Health is the state of physical and mental well-being

A disease is a disorder that affects an organism's body, organs, tissues or cells.

Non-communicable disease is a disease that is not transferable between people or organisms.

Non-communicable diseases include:
- cancer
- diabetes
- genetic diseases and conditions
- heart disease
- neurological disorders

Section 6 – Disease of the heart

Coronary heart disease is caused by layers of fatty material (cholesterol) 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. This can lead to a heart attack.

Treatments of CHD include:

- Stents to widen the blood vessel
- Statins to reduce the blood cholesterol
- Heart transplant (to treat severe CHD or heart failure)

Section 7 – Risk Factors

Factors affecting your health include:

Obesity
Smoking
Diet
Drug and alcohol use
Stress
Exposure to radiation
Genetics

Section 8 – Cancer

Cancer is the uncontrollable growth and division of cells. A group of cancerous cells is called a tumour.

There are 2 types of tumour:

Malignant – grows quickly, invasive to neighbouring tissue and spreads to other parts of the body via the blood (metastasis)

Benign – grows slowly, can be easily removed, does not affect other areas of body

Chemicals and other agents that can cause cancer are called **carcinogens**.

Science - Chemistry - Bonding

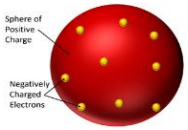
Y9 Introduction to bonding

Section 1 – Development of the structure of the atom

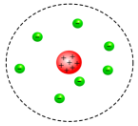
450 BC – Democritus - Said everything was made of particles called atoms.

1803 – Dalton -Reintroduced the idea of atoms. Suggested they were solid dense balls.

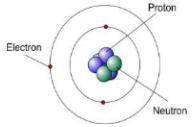
1897 – JJ Thomson - Plum pudding model: Discovered electrons. He suggested they were spread out throughout the atom like plums in a pudding.



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.



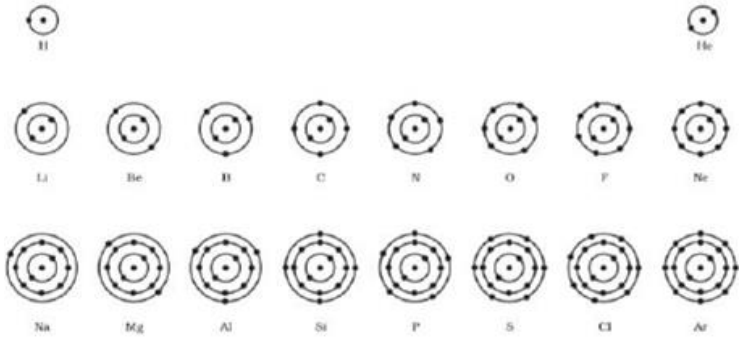
1913 – Bohr - Suggested the electrons orbited the nucleus in fixed electron shells.



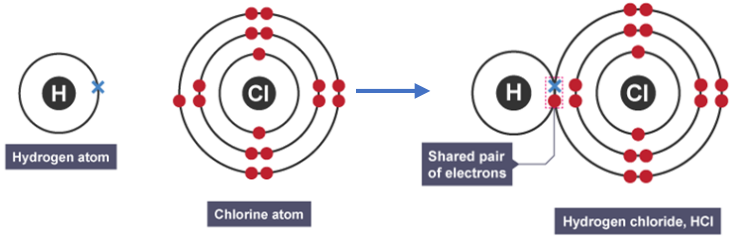
1932 – Chadwick - Discovered a new sub atomic particle – same mass as protons but no charge. He called them neutrons

Section 2 – Electron Configuration

Electrons are arranged in shells orbiting the outside of the nucleus. The first shell can take 2 electrons, the second shell 8 electrons and the third shell 8 electrons(2, 8, 8) . Electrons always occupy the lowest available energy level.



Section 3 – Covalent Bonding (Simple)



Covalent bonding occurs between non-metals only.

It is the sharing of electrons to make a full outer shell of electrons

Usually consist of small molecules. Examples include water (H_2O), chlorine (CL_2), hydrogen (H_2), methane (CH_4) and ammonia (NH_3)

Section 4 – Simple Covalent Properties

Substances that consist of small molecules are usually gases or liquids that have relatively low melting points and boiling points.

These substances have only weak forces between the molecules (intermolecular forces). It is these intermolecular forces that are overcome, not the covalent bonds, when the substance melts or boils.

The intermolecular forces increase with the size of the molecules, so larger molecules have higher melting and boiling points.

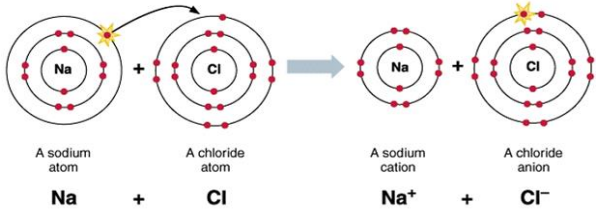
These substances do not conduct electricity because the molecules do not have an overall electric charge.

Section 5 – Ionic Bonding

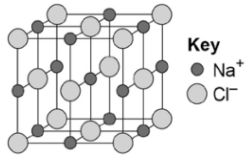
Ionic bonding occurs between metal and non-metal elements

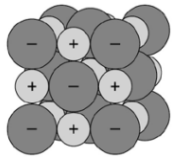
Metals give away electrons while non-metals take electrons to make full outer shells

Metals form positive ions (**cations**) as they have lost electrons while non-metal form negative ions (**anions**) as they have gained electrons. These ions are strongly attracted to each other forces of electrostatic attraction.



Ions form giant ionic lattice structures, which can be represented by either of the following:





Section 6 – Ionic Bonding Properties

Solids at room temperature, crystalline structure

Ionic compounds have regular structures (giant ionic lattices) in which there are strong electrostatic forces of attraction in all directions between oppositely charged ions.

These compounds have high melting points and high boiling points because of the large amounts of energy needed to break the many strong bonds.

When melted or dissolved in water, ionic compounds conduct electricity because the ions are free to move and so charge can flow.

Ionic compounds are brittle and break into small pieces easily

Quantitative Chemistry

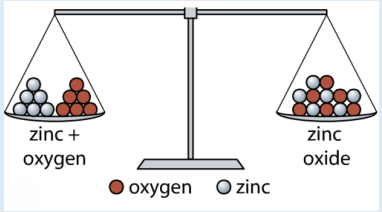
Section 1 – Definitions

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.
Relative atomic mass	Number of neutrons and protons in an atom - A_r
Relative formula mass	The relative formula mass (M_r) of a compound is the sum of the relative atomic masses of the atoms in the numbers shown in the formula.

Section 2 – Conservation of mass

Atoms can never be created or destroyed.
Total mass of reactants = total mass of products.

If mass 'seems to change' then there is usually a gas involved.



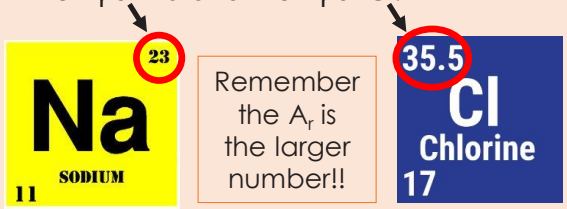
If mass increases → One of the reactants is a gad found in the air (e.g. oxygen) and all of the produces are solids, liquids or aqueous.

If mass decreases → One of the products is a gas and all the reactants are solids, liquids or aqueous.

Section 3 – Relative formula mass - M_r

- Atoms are too small to weigh individually.
- Carbon-12 is used as the standard and is assigned a mass of 12.
- Other atoms are given a mass relative to (compared to) carbon-12.
- For example, A Magnesium-24 atom weighs the same as two Carbon-12 atoms.

- The relative formula mass of a compound can be calculated by working out the sum of all the relative atomic masses (A_r) of the atoms within that compound.
- For example, To calculate the M_r of sodium chloride (NaCl) you need to add the **A_r of Na** and the **A_r of Cl**:



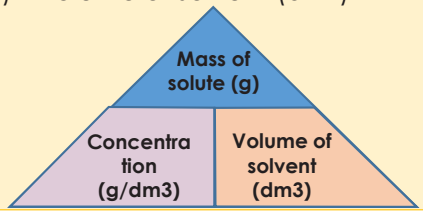
Remember the A_r is the larger number!!

Na + Cl → NaCl

23 + 35.5 → M_r 58.5

Section 4 – Concentration of solutions

- One way to measure the concentration of a solution is by calculating the mass of a substance in a given volume of solution.
- Mass of solute (g) = concentration (g/dm^3) x volume of solvent (dm^3)



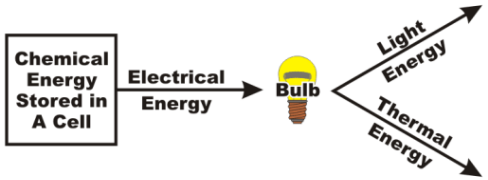
Science - Physics - Energy

Y9 Energy

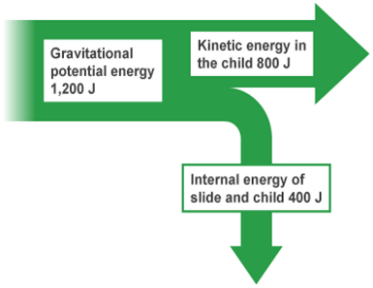
Section 1 – Law of Conservation of Energy

Energy can be transferred usefully, stored or dissipated, but it cannot be created or destroyed. There are 9 different forms of energy: kinetic, light, thermal, sound, electrical, chemical, gravitational potential, elastic potential and nuclear. Energy is measured in joules, J.

Section 2 – Energy Transfer and Sankey Diagrams



$$Efficiency\ (\%) = \frac{Useful\ energy}{Total\ energy}$$



Size of arrow is proportional to the amount of energy. Arrow pointing across shows useful energy while arrow pointing down shows wasted energy

Section 3 – Calculations of Energy Changes

Units	Conversion
MJ = megajoule	1 MJ = 1000 000 J
kJ = kilojoule	1 kJ = 1000 J
mJ = millijoule	1 mJ = 0.001 J

$$Kinetic\ energy = \frac{1}{2} mass\ x\ velocity^2$$

$$Gravitational\ potential\ energy = mass\ x\ gravitational\ field\ x\ height$$

$$Elastic\ Potential\ Energy = \frac{1}{2} spring\ constant\ x\ extension^2$$

Section 4 – Power

Power is defined as the rate at which energy is transferred or the rate at which work is done.

Work is the measure of energy transfer when a force (*F*) moves an object through a distance (*d*), therefore:

$$Work\ done = force\ x\ distance$$

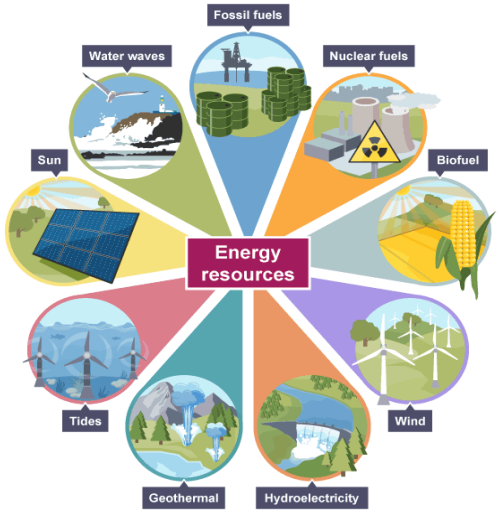
An energy transfer of 1 joule per second is equal to a power of 1 watt.

Power can be calculated using the following:

$$Power = \frac{Work\ done}{Time} \quad \text{or}$$

$$Power = \frac{Energy\ transferred}{Time}$$

Section 5 – Energy Resources



Non-renewable energy (fossil fuels and nuclear) will run out and have environmental implications. However the energy output is high and they are reliable, as well as cheap.

Renewable energy is energy that is replenished as it is used and has less environmental impact. But energy output for some is low and reliability is questionable for most.

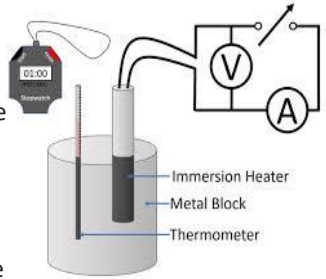
Section 6 – Specific Heat Capacity and Required Practical

Energy required to heat up 1kg of substance by 1°C

Calculated by:

$$Energy = mass\ x\ specific\ heat\ capacity\ x\ temperature\ change$$

To find out the specific heat capacity of a substance you can:



1. Weigh mass of block
2. Set up equipment as shown. Fully insulate the block by wrapping with cotton wool.
3. Record starting temperature of block.
4. Connect heater to the power supply and turn it off after ten minutes.
5. Record voltage, current and highest temperature reached then calculate the overall temperature rise during the experiment.
6. To find total energy transferred first work out power = voltage x current
7. Energy transferred during experiment = power x time (in seconds)
8. Rearrange specific heat capacity equation so that SHC is the subject and calculate: SHC = Energy ÷ (mass x temperature change)

Section 7 – Conduction and Insulation

A conductor is a material that allows internal (thermal) energy to be transmitted through it easily. All metals are good conductors

An insulator is a material that will not allow the easy flow of energy

Understanding the conductivity of materials is important when designing houses to help minimise heat loss

Spanish - Mi Vida en el Insti 1

Spanish Y9 – Mi vida en el insti (1)

¿te interesa(n)?		Are you interested in?	
El arte dramático	Drama	Prefiero	I prefer
El dibujo	Art	Porque es/son	Because it is
El español	Spanish	Mi día preferido	My favouirte day
El inglés	English	Mi horario	My timetable
La biología	Biology	Tengo inglés los…	I have english on…
La física	Physics	A la una/a las dos	At 1/at 2
La informática	ICT	Y cuarto	Quarter past
La lengua	Language	Menos cuarto	Quarter to
La química	Chemisty	Y media	Half past
Los idiomas	Languages	Y veinte	20 past
Las empresariales	Business	La educación infantil	Infants school
Las ciencias	Science	La educación primaria	Primary school
Me encanta/me chifla	I love	La educación secundaria	Secondary school
Me interesa(n)	It interests me	El bachillerato	A levels
Me fascina(n)	It fascinates me	El colegio	School
Odio	I hate	El instituto	Schools

¿Qué tal los estudios?		How are your studies?	
Es más… que	It is more… than	Listo/tonto	Smart/silly
Es menos… que	It is less… than	Paciente/ impaciente	patient/impatient
Tan… como	As…	explica	He/she/it explains
Fácil/difícil	Easy/difficult	Nunca se enfada	Never gets annoyed
Divertido/ aburrido	Fun/boring	Crea un buen ambiente de trabajo	It creates a good work environment
Útil	Useful	Me hace pensar	It makes me think
Creativo	Creative	Las pruebas	Exams
Exigente	Exciting	Las evaluaciones	Assessments
Mi profesor es…	My teacher is…	Suspender/ aprobar	To fail/to pass
¿Cómo es tu día escolar?		**What is your school day like?**	
Normalmente	Normally	En coche	By car
Salgo de casa a las	I lesve the house at…	Las clases empiezan a las	The classes start at…
Voy…	I go…	Las clases terminan a las	The classes finish at…
A pie	By foot	Tenemos… clases	We have… classes
En bici	By bike	El recreo	Break
Andando	Walking	La hora de comer	Lunch time
En autobús	By bus	Vuelvo a casa	I return home

Spanish - Mi Vida en el Insti 2

Spanish Y9 – Mi vida en el insti (2)

Las normas del insti		School rules	
Tengo que llevar	I have to wear	Mantener limpio el patio	To keep the plaground clean
Tenemos que llevar	We have to wear	Respetar el turno de palabra	Wait for your turn to speak
No llevo	I don't wear	La norma más importante es…	The most important rule is
Es obligatorio	It is obligatory	Respetar a los demás	Respect others
Hay que	You have to	Las normas son	The rules are
Ser puntual	Be on time	Necesarias	Necesary
Se debe	You must	Severas	Strict
No se debe	You must not	Sacar buenas notas	To get good grades
Comer chicle	Chew gum	Sacr malas notas	To get bad grades
Usar el móvil en clase	Use phones in class	Un problema de mi insti es	A problema of my school is
Dañar las instalaciones	Damage the facilities	El estrés de los examines	Stress of the exams
Ser agresivo o grosero	Be agressive or rude	El acoso escolar	School bullying
Correr en los pasillos	Run in the hallways	La presión del grupo	Peer pressure
Llevar piercings	Wear piercings	La mala influencia	Bad influence

El uniforme		Uniform	
Un jersey	Sweater	Unos zapatos	Shoes
Un vestido	Dress	Unos vaqueros	Jeans
Una camisa	Shirt	Unas medias	Tights
Una camiseta	T-shirt	Bonito/feo	Pretty/ugly
Una chaqueta	Jacket/blazer	Cómodo/incómodo	Comfy/uncomfy
Una corbata	Tie	Elegante/formal	Formal
Una falda	Skirt	Mejora la disciplina	Improves discipline
Unos pantalones	Trousers	Limita la individualidad	Limits individuality
Unos calcetines	Socks	Da una imagen positive del colegio	Gives a positive image of the school

¿Qué vas a hacer?		What are you foinf to do?	
Voy a…	I am going to…	Asistir a clases	To attend lessons
Vamos a…	We are going to…	Practicar el español	To practice spanish
Llegar	To arrive	Pasar todo el día en…	To spend the whole day in…
Salir	To go out	Ver los edificios	To see the buildings
Estar	To be	Ir de excursión	To go on a day out
Hacer una visita guiada	To do a guided tour	Tener una programación variada	To have a varied programme

Spanish - Mi Vida en el Insti 3

Spanish Y9 – Mi vida en el insti (3)

¿Cómo es tu insti?		What is your school like?	
En mi insti hay	In my school there is	Mi insti es	My school is
Mi instituto tiene	My school has	Mixto	Mixed
Un salón de actos	Drama room	Femenino	Feminine
Un comedor	Canteen	Masculino	Masculine
Un campo de fútbol	Football pitch	el colegio	School
Una piscina	Swimming pool	Público	Public
Muchas aulas	Lots of classes	Privado	Private
Lo Bueno es	The good is	Pequeño	Small
Lo malo es	The bad is	Grande	Big
Lo mejor es	The best is	Moderno	Modern
Lo peor es	The worst is	Antiguo	Old
Lo qué más me gusta	The think I most like	Hay mucho deberes	There is a lot of homework
Los que menos me gusta	The think I like the least	Espacio verdes	Green spaces
Nada	Nothing	El edificio	Building
Nadie	No-one	Las clases son	The classes are

Las actividades extraescolares		Extracurricular activities	
Toco la trompeta	I play the trumpet	Olvidar las presiones del colegio	To forget the pressures of school
Canto en el coro	I sing in the choir	Desarrollar tus talentos	To develop your talents
Voy al club de	I go to … club	Hacer amigos	To make friends
Ajedrez	Chess	Más confianza	More confidence
Jugo	Judo	La oportunidad de se creativo	The oportunity to be creative
Teatro	Drama	Te ayudan a	It helps you to
Periodismo	Journalism	Algo diferente	Something different
Lectores	Reading	La oportunidad de expresarte	The opportunity to express yourself
Escoescuela	Ecoschool	Gané un trofeo	I won a trophy
Fotografía	Photography	Toqué un solo	I played a solo
Para mí	For me	Ganamos una competición	We won a competition
Pienso que/creo que	I think that	Fue un éxito	It was a success
Son	They are	Dimos un concierto	We gave a concert
Muy divertido	Very fun	Participé en un evento	I participated in an event

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