# Knowledge Organiser Booklet Year 11 Term 1 Non Core

Our working memories can only store a limited amount of information, whereas our long term memories can store limitless information. To learn successfully, we need to store core knowledge into our long term memories, so we can retrieve it when we need it.

For instance, if you are at work or in the shops and need to work out a 25% discount, you can't memorise 25% of every number, so you need to be able to quickly recall the method for calculating a percentage. Committing core knowledge to our long-term memories is a life-hack. It makes thinking about difficult things easier.

Using a knowledge organiser with regular retrieval activities is a way for you to store core knowledge & subject specific words, into your long term memory so it is there when you need it.

Click here to be taken to the knowledge organiser part of the school website.
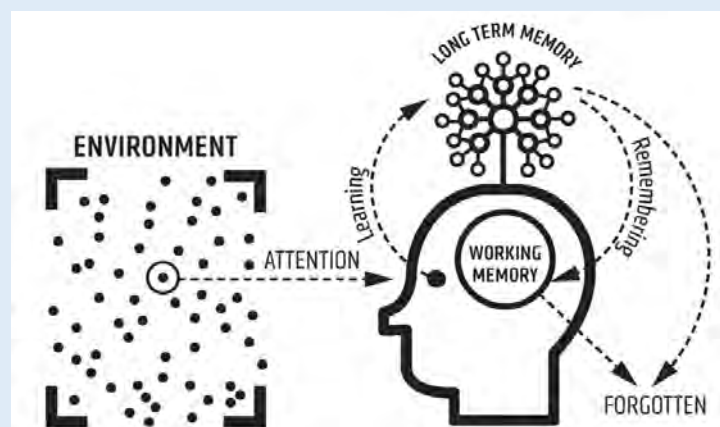
Contents

Clicking on the subjects below will take you directly to the knowledge organisers for each subject. These are to support learning that has taken place this past term. Use these to help reinforce the key knowledge. Use some of the strategies explained in the introduction to help you retain this important information.

Blended Learning Expectations

Make sure you have **access to a computer at home** (If you don't please make pastoral staff aware or email langley.homelearning@taw.org.uk)

Download Microsoft Teams on both your phone and computer. (If you don't know how to do this please ask a member of staff or do this in your next computing lesson)

Spend at least 2 hours a week using teams EVERY WEEK. (Engagement in teams can be tracked and monitored). You need to be accessing each of your class teams and recapping on the previous learning or completing additional tasks set by your class teacher.

If you have any issues with teams (e.g. login problems or missing classes etc then please email langley.homelearning@taw.org.uk)

Teams is a tool to support ongoing learning and should **only be used for educational purposes.**

Download and Install
Microsoft Teams

	LOOK, COVER, WRITE, CHECK	DEFINITIONS TO KEY WORDS	FLASHCARDS	DUAL CODING
STAGE 1	Look at & study an area of your knowledge organiser	Write down the key words & definitions	Write key words, dates/formulae, equations/quotes on one side & answers on the other	Draw pictures/diagrams/cartoon strips
STAGE 2	Cover up your knowledge organiser and write everything you remember	Cover up the definitions. How many can you remember? Repeat.	Include pictures or diagrams if it helps. Read through them.	Label your pictures/diagrams/cartoon strips
STAGE 3	Check. Correct mistakes in green and add anything you missed. Repeat	Check. Correct mistakes in green pen. Which ones do you find hard to remember?	Test yourself and get someone to test you.	Explain out loud to yourself or family/friend what your images show

	SELF QUIZZING	MINDMAPS	PAIRED RETRIEVAL	SPEAK, COVER, WRITE, CHECK
STAGE 1	Use your knowledge organiser to create quiz questions.	Create a mindmap of everything you can remember from your knowledge organiser	Give a family member/friend the knowledge organiser to hold	Read out loud the information from the knowledge organiser several times.
STAGE 2	Write down the answers to your quiz	Check your knowledge organiser & use a green pen to make any corrections.	Get them to test you using the knowledge organiser	Cover up your knowledge organiser and write everything you remember
STAGE 3	Keep self-quizzing until you get all the answers correct	Add additional information to your mindmap or make connections to other knowledge	Write down your answers to their questions	Check. Correct mistakes in green and add anything you missed. Repear.

How to complete homework your teacher has set

Retrieval Placemat

Look at your knowledge organiser. Now cover it up and write down Key vocabulary & definitons from memory:

First time: Look. Cover. State 3 facts

Second time: Look. Cover. State 3 facts

Third time: Look. Cover. State 3 facts

Check & green pen your answers

Look at the knowledge organiser again. Now cover it up and without looking, explain a concept or idea in your own words

Re-read your answer above. Look at the knowledge organiser again. Now cover it up and improve on your previous explanation in green pen.

Retrieval Relay

Look at your knowledge organiser. Now cover it up.

First time: Write down everything you can remember	Second time: Look. Cover. Write down everything you can remember	Third time: Look. Cover. Write down everything you can remember

Write down everything here that you didn't remember:

Vocabulary focus 1

Look at your knowledge organiser. Select a key word and write it here:

Write a definition of the key word in your own words - not the same as the one on the knowledge organiser:	Write a sentence with the key word in it:	Create a question where the key word is the answer:

What other words are connected to this key word?

Draw a picture or diagram to help you remember this key word:

Vocabulary focus 2

Definition: Characteristics:

Key word:

Examples: Non-examples:

What should my knowledge organiser homework look like?

Date

Topic clear

Homework activity written and underlined

Stages of homework activity in margin

Key words in a different colour or underlined

Green pen corrections

What should my knowledge organiser homework look like?

Date

Homework activity written and underlined

Key words in a different colour

Stages of homework activity as subtitles

Green pen corrections
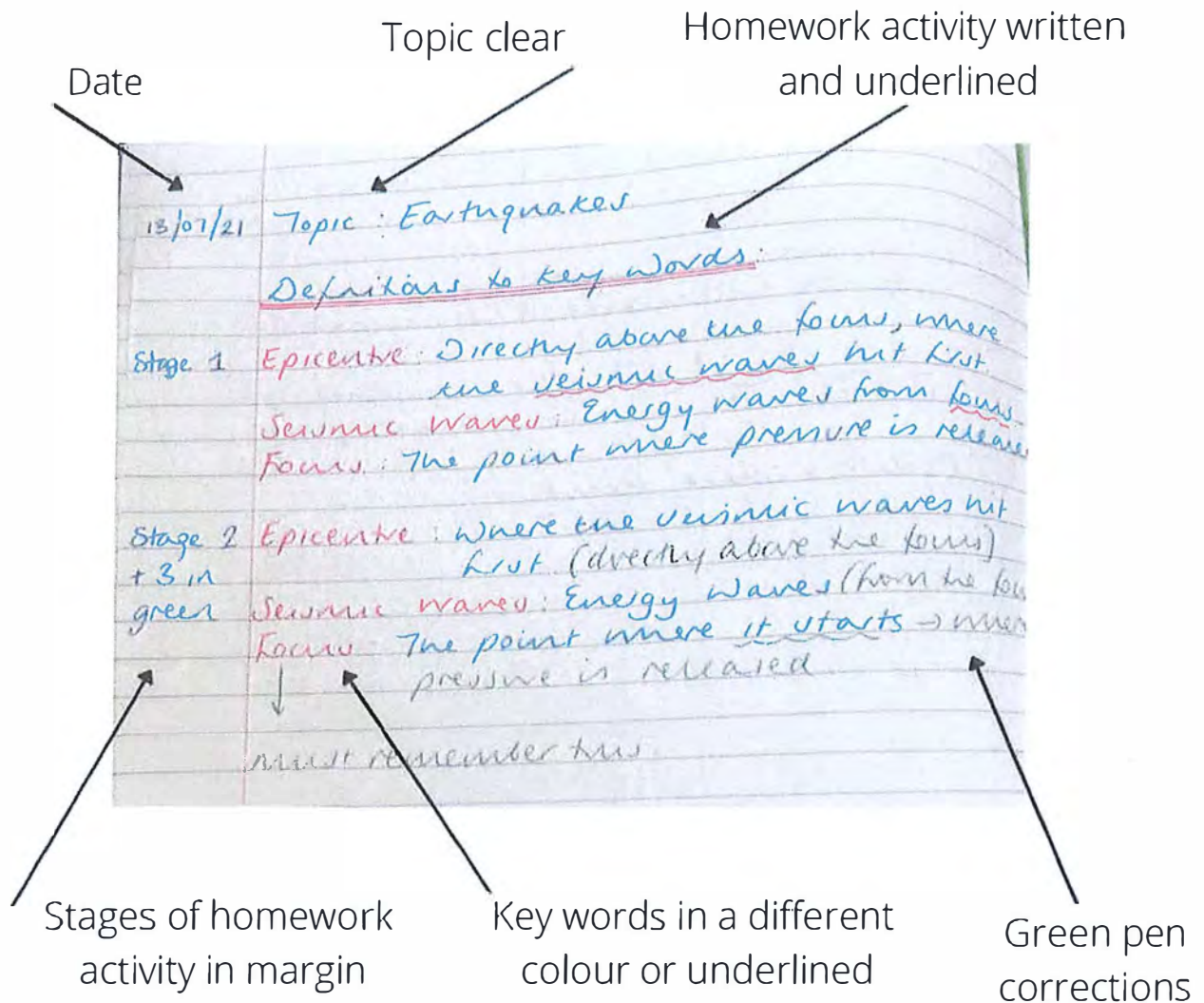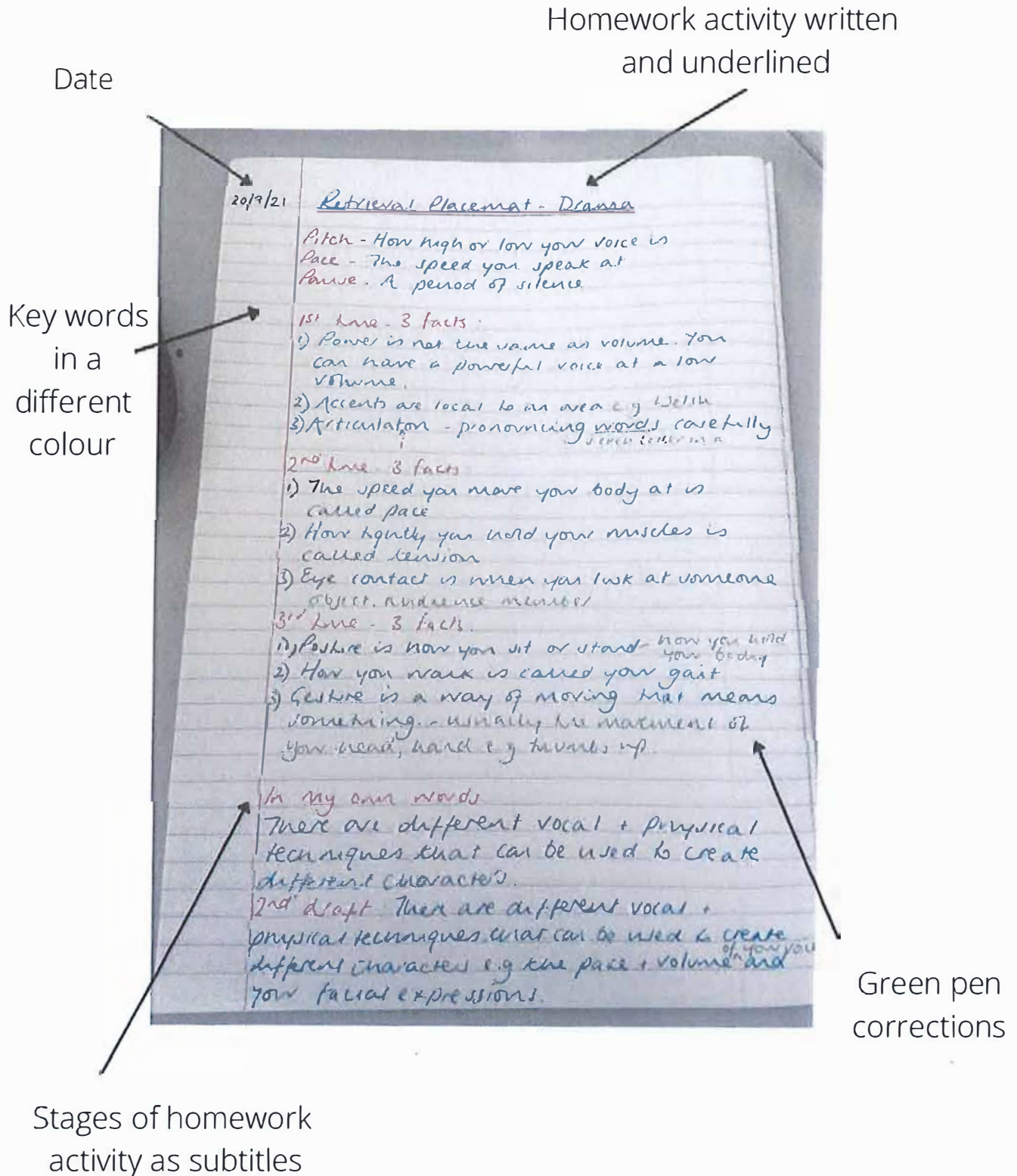
Art & Design

FLASHCARDS

Create your own flashcards, question on one side answer on the other. Can you make links between the cards?

What is:-
7 × 8 = ?
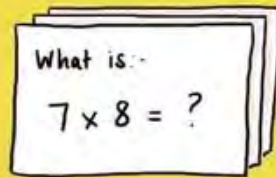
You need to repeat the Q & A process for flashcards you fail on more frequently & less frequently for those you answer correctly

Create a flash card with all the key facts you want to learn (this can be drawn in your book). On the next page try writing down as many facts or as much of the knowledge as you can. If you find you are getting certain facts wrong then these are where you need to focus and relearn.

Year 11: Coursework (Portfolio) completion by Christmas

Unit 6
Threshold Concept (TC57) - Understand that artwork can be influenced by many factors including the work of others.
Threshold Concept (TC58) - Understand that developing, refining, recording and presenting are fundamental to the design process and these can be undertaken in any order to achieve a final outcome.
Threshold Concept (TC59) - Understand that artwork can take many forms using a wide range of materials and processes.

Refer to Year 10 Unit 2 for artist research and photography.

Refer to Year 10 Unit 3 for drawing.

Keywords
Develop,
Refine,
Record,
Present.

Formal Elements of Art
Colour – what you see when light reflects off something.
Line – a mark made which can be long, short, scribbled, straight etc.
Shape – a 2D area which is enclosed by a line.
Form – a shape which has 3 dimensions.
Tone – how light or dark something is.
Texture – how something looks or feels (visual or actual) rough etc.
Pattern – a symbol or shape that can be random or repeated.

AO1: Develop ideas through investigation, demonstrating critical understanding of sources
(Collect ideas and explore artists work to help inspire your own work).

AO2: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.
(Experiment with various media and techniques to help improve your skills and visual ideas).

AO3: Record ideas, observations and insights relevant to intentions as work progresses.
(Show a clear journey throughout your chosen theme by producing observations, reflecting and evaluating).

AO4: Present a personal response and meaningful response that realises intentions and demonstrates understanding of visual language.
(Complete a relevant and intentional final piece that shows a journey through your portfolio.

A study of the Ironbridge in a joiner style, influenced by the artist David Hockney.

Me, Myself and I (Self-Identity Project)

Coursework (Portfolio)
(60% of the your final grade)

Computer Science

Algorithms

An **algorithm** is a sequence of ordered instructions that are followed step-by-step to solve a problem. This does *not* need to be on a computer.

Decomposition is the breaking down of a complex problem into smaller more manageable problems that are easier to solve.
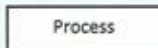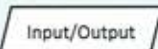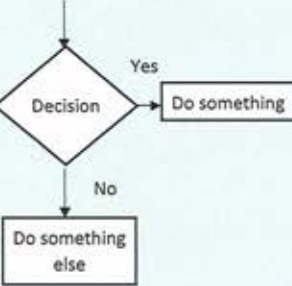
Abstraction allows us to remove unnecessary detail from a problem leaving us with only the relevant parts of a problem thereby making it easier to solve.

Algorithm Efficiency More than one algorithm can be used to solve the same problem. Normally we use the algorithm that solves the problem in the quickest time with the fewest operations or makes use of the least amount of memory.

Dry run testing is carried out using **trace tables**. The purpose of the trace tables is for the programmer to track the value of the variables and outputs at each step of the program and to track how they change throughout the running of the program.

Flowchart Symbols

We can represent algorithms using flowcharts

Start and Stop	Process – An operation that the algorithm performs
Start Stop	Process

Connector – Links all the other symbols together	Input and Output of data that is read in and written out
→	Input/Output

Decision is the same as a selection (if then … else)	

Decision → Yes → Do something; No → Do something else	IF answer is "yes" THEN
	    do something
	ELSE IF answer is "no"
	    do something else
	ENDIF

Pseudocode

We can represent algorithms using pseudocode

	Example	Python equivalent
Variable assignment	a ← 10	a = 10
Constant assignment	constant PI ← 3.142	PI = 3.142
Input	a ← USERINPUT	a = input()
Output	OUTPUT "Bye"	print("Bye")

Arithmetic Operators

Add	+	+
Multiply	*	*
Divide	/	/
Subtract	-	-
Integer division	a ← 7 DIV 2	a= 7 // 2
Modulus (remainder)	a ← 7 MOD 2	a = 7 % 2

Relational Operators

Less than	<	<
Greater than	>	>
Equal to	=	==
Not equal to	≠ or <>	!=
Less than or equal to	≤	<=
Greater than or equal to	≥	>=

Boolean Operators

AND	AND	AND
OR	OR	OR
NOT	NOT	NOT

Selection

if ..	IF i > 2 THEN
	    j ← 10
	ENDIF
		if i > 2:
		    j=10

if .. else …	IF i > 2 THEN
	    j ← 10
	ELSE
	    j ← 3
	ENDIF
		if i > 2:
		    j=10
		else:
		    j=3

if … else if … else	IF i ==2 THEN
	    j ← 10
	ELSE IF i==3 THEN
		if i ==2:
		    j=10
		elif i==3:

	j ← 3
	ELSE
	    j ← 1
	ENDIF
		else:
		    j=1

Iteration

While loops	a ← 1
	WHILE a < 4
	    OUTPUT a
	    a ← a + 1
	ENDWHILE
		while a<4:
		    print(a)
		    a=a+1

For loops	FOR a ← 0 TO 3
	    OUTPUT a
	ENDFOR
	a ← 1
		for a in range(3):
		    print(a)

Repeat loops	REPEAT
	    OUTPUT a
	    a ← a + 1
	UNTIL a←4	

Subroutines

procedure	SUB hello()
	    OUTPUT "hello"
	ENDSUB
		def hello():
		    print("hello")

Function (with paramerters and return)	SUB add(n)
	    a ← 0
	    FOR a ← 0 TO n
	        a ← a + n
	    ENDFOR
	    RETURN a
	ENDSUB
		def add(n):
		    a=0
		    for a in range(n+1):
		        a=a+n
		    return a

Built-in functions

Length of array	LEN(a)	len(a)
Random integer	RANDOM_INT(0, 9)	import random random.randint(0,9)

Computer Networks

A network is a set of computers that are connected to one another.

Standalone computers are isolated from other devices.

Advantages of a network
- ✓ Share resources, such as software applications, files and hardware (eg printers).
- ✓ Allows communication (eg email) and can transfer files easily.
- ✓ Easier network management (eg can backup data onto a central fileserver; updates can be sent to all computers; users on a network can login to any computer)

Disadvantages of a network
- ✓ Greater security risk as computers can be hacked if they are connected to the internet.
- ✓ Worms can spread from one computer to another
- ✓ A problem with any shared resource, (eg file server goes down) can impact the whole network.

Types of Computer Networks

Personal Area Network (PAN) set up around an individual person. Many people have multiple devices such as tablets, phones and computers that can be interconnected using a PAN. A Bluetooth PAN uses radio waves to communicate wirelessly between devices over a range of a few metres.

Local Area Network (LAN) covers a relatively small geographical area typically extends over the range of a single organisation such as a university campus, school site. LANs are usually managed by a single organisation.

Wide Area Network (WAN) made up of many local area networks and covers a much wider geographical area. The internet the ultimate WAN. It is a network of networks with billions of interconnected devices. No single person or organisation has control over a WAN.

Network Topology

A network topology describes how a set of computers are arranged within a network.

Bus network topology All devices including clients, servers, printers and so on are connected to a cable called a bus. All communication is via the shared bus. At either ends of the bus is a terminator.

Advantages
- ✓ Easy and cheap to install and does not require much cable
- ✓ Easy to add more computers

Disadvantages
- ✓ If the main cable fails then then the whole network fails.
- ✓ Less secure as data are broadcast to all devices on the network.
- ✓ Can be slow as there are collisions between data along the shared bus.
- ✓ Will get slower as more computers are added.
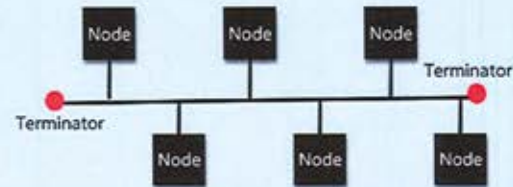
Star network topology all devices including clients, servers, printers and so on are connected to a central hub or switch. All communication is via the hub

Advantages
- ✓ Greater security as data are only sent to the intended recipient.
- ✓ If any of the connections fail only a single node will be affected.
- ✓ Fewer collisions between data packets

Disadvantages
- ✓ If the central hub fails then every computer on the network is affected.
- ✓ Expensive as extra cable and hardware (hubs) are needed.
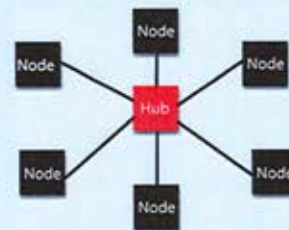
Wired and Wireless

Computers can be connected using wired or wireless methods

Wired transmission methods use cables to communicate

Wireless transmission use radio waves communicate (eg Wi-Fi).

Advantages of wireless
- ✓ Can use computer anywhere and not constrained by cables

Disadvantages of wireless
- ✓ Packets can be intercepted more easily than wired connections
- ✓ Security is a much more difficult challenge, as the network can be accessed from outside the confines of a building.
- ✓ Slower than wired methods
- ✓ Signal can be interfered with by other electronic devices.

Advantages of wired
- ✓ Allows more control, security and reliability. Can restrict who has access to the network.
- ✓ Wired methods have greater speeds than wireless methods.

Disadvantages of wired
- ✓ Cables can be difficult to maintain in big organisations

Wired networks use a variety of cables, including copper and fibre optic.

Copper cables use electrical signals to transmit data. Three main types:

- ✓ **Coaxial cable** – the signal loses strength over long distances
- ✓ **Unshielded twisted pair** – A pair of copper cables are twisted together and allows data to be transmitted over longer distances
- ✓ **Shielded twisted pair** – Shielding around the twisted cables means the signal is less susceptible to interference.

Fibre optic cables are glass or plastic and use use pulses of light to transmit data

Advantages of copper cables
- ✓ Cheaper than fibre optic
- ✓ Reliable because a telephone is powered from the copper cable and does not rely on a separate electrical power supply

Advantages of copper cables
- ✓ Slow
- ✓ Low capacity
- ✓ Can only be used over short distances
- ✓ Interference can occur

Advantages of fibre optic
- ✓ Higher bandwidth than copper so can transmit more data
- ✓ Less attenuation (degrading) of the signal so fibre optic is more suitable over long distances
- ✓ Less "cross talk" interference between fibres compared with copper so the quality of the signal is better

Disadvantages of fibre optic
- ✓ Expensive
- ✓ Difficult to install

Network Security and Protocols

Why do we need network security?
- ✓ To prevent unauthorised access to our electronic devices
- ✓ To protect our data eg to prevent sensitive data being stolen
- ✓ Prevent cyberattacks

Methods of Network Security

Authentication allows us to confirm the identity an individual. There are lots of ways of confirming the identity of an individual that come under one of three factors:
- ✓ Knowledge factor: Something the user knows, eg a password
- ✓ Possession factor: Something the user owns eg a mobile phone
- ✓ Biometric factor: eg Fingerprint, iris scan

Encryption The message is garbled so if it gets intercepted during transmission it will be almost impossible for anyone without the key to read the original message.

Firewall prevents packets containing malware getting on to the computer

MAC address filtering A MAC (Media Access Control) address is a unique identifier for any device that is connected to a network. Each network interface card has a unique MAC address that is a 12 digit hexadecimal code (e.g. 12-F3-EE-56-44-A1).

- ✓ *White list filtering* only allows devices on a list to connect to the network.
- ✓ *Black list filtering* devices in a black list blocked from accessing the network.

Network Protocols

A **network protocol** is a set of rules that allow computers to communicate and exchange information over a network. There are many types of protocols depending on the application.

HTTP (Hypertext transfer protocol) is the protocol used for the World Wide Web. An exchange begins with a request for a web page from a client web browser to a web server. The server then sends the web page to the client.

HTTPS (Secure Hypertext transfer protocol) is a secure way of transferring data between a web browser and a server because the data are encrypted during transfer. Used for e-commerce and online banking.

FTP (File Transfer Protocol) is usually used to download or upload large files from a server to a client.

Ethernet is not a single protocol but a collection of related protocols. LANs most commonly use ethernet. The following is a simplified procedure:
1) Check whether there is any traffic on the ethernet
2) If so wait for traffic to clear
3) Send the packet
4) If collision detected, go to step 1 to resend.

Wi-Fi is a collection of protocol that use radio waves to transmit data between devices. Wi-Fi is a trademark and WLAN (Wireless LAN) is the generic term. Data are transmitted when the medium is clear, and an acknowledgement is received if the transmission was successful. If no acknowledgement is received, then the data are resent as it is assumed that a collision occurred, and the packets did not reach their destination.

Email protocols

SMTP (simple mail transfer protocol) Sends the mail from the user onto the mail server.

IMAP (Internet Message Access Protocol) Retrieves the mail from the mail server to the client (user) and allows access from anywhere on any device because the email remains on the server.

TCP (Transport Control Protocol) When files are sent over the internet they are broken up into small chunks called packets. When they arrive at the destination computer they are reassembled back into the original format. TCP handles and controls all this. TCP waits for acknowledgements to verify whether the packets have reached their destination. TCP will also retransmit packets of they have not arrived at the destination or become corrupted.

IP (Internet Protocol) The internet protocol is a set of rules that govern the transmission of data across the internet.

UDP (User Datagram Protocol) is used as an alternative to TCP. It is used in video conferencing and online gaming when speed is necessary as huge volumes of data are transferred in real time. It improves speed by not checking for lost packets so they do not get re-sent.

TCP/IP

The TCP and IP protocol work closely together and are referred to as TCP/IP. The TCP/IP model consists of four layers that pass data between each layer.

Application layer contains protocols related to the application such as HTTP, HTTPS for web browsers, FTP for file transfer and SMTP and IMAP for email. The application layer interacts with the user via appropriate application software (eg web browser / ftp client).

The **transport layer** establishes the end to end connection. When files are sent over the internet, they are broken up into small chunks called packets. When they arrive at the destination computer they are reassembled back into the original format. It is the role of the transport layer to split the data into packets and pass the data onto the network layer. On the recipient's computer the transport layer reassembles the packets into the original form. The packets are numbered by this layer to allow them to the reassembled. The transport layer chooses the port number for sender and receiver. TCP and UDP are the main protocols used in this layer.

The **network layer** adds the source and destination IP address and route the packets over the network. At the destination the network layer strips out the IP addresses. The IP operates on this layer.

The **data link layer** has a network card and deals with the physical connection and adds the physical addresses (MAC address) of the hardware to the packets that it receives from the network layer. For each step the sender and receiver MAC address is removed then a new sender and receiver MAC address is added. The receiver MAC address becomes the sender MAC address.
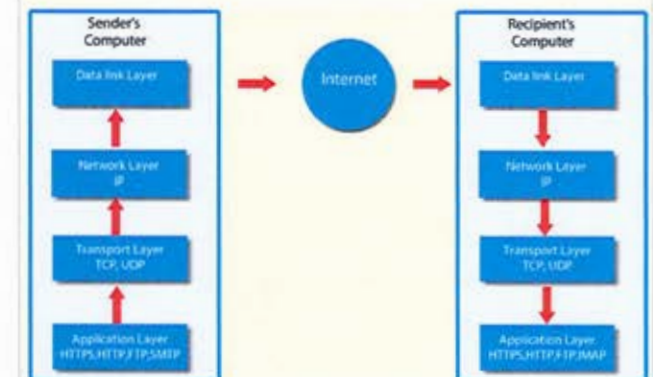
Cybersecurity

Cybersecurity is concerned with the protection of computer systems, computer networks and data. Its purpose is to:

- to protect computers and networks from cyberattacks
- to prevent unauthorised access to computers
- to protect computers against damage caused by malicious software
- to prevent data from being stolen
- to protect against the disruption of services running on the computer

Cyber Security Threats

Malware is software that has been purposely developed to damage, disrupt or take control of computer systems.

Social engineering techniques manipulate people into giving away confidential and personal information.

Weak passwords are easy to guess. Passwords that use words are easy to crack using an algorithm that systematically goes through all the words in a dictionary until the word matches the password.

Default passwords Upon registration for an online account, users may be given a default password that they do not change. Often these passwords are sent out unencrypted via email so pose a major security vulnerability.

Removable media such as a USB pen drive can be a vector for transmitting malware.

Unpatched/outdated software Software needs regular updates to fix security vulnerabilities in computer systems. Software that remains unpatched is vulnerable to attack.

Misconfigured access rights Users should only have access to files and data that they need, but sometimes they have access that they should not.

Penetration Testing

Penetration testing is legitimate testing of an organisation's computer system to identify whether there are any vulnerabilities that an attacker could exploit. By identifying vulnerabilities, these can be patched before the system gets attacked.

White box testing testers are given some information about the network, such as network architecture, source code, and IP addresses. This is designed to simulate an attack by a malicious insider.

Black box testing testers are given very little information about the network before the test. This is designed to simulate an outside attack or cyber warfare attack.

Cyber Security Threats - Malware

Computer viruses replicate themselves and can transfer from one computer to another. They are activated by a user often as email attachments and attachment to other files and programs.

Trojan gains access to a computer by pretending to be legitimate software. The trojan allows unauthorised backdoor access to a computer without the user being aware.

Spyware records the activity on your computer such as your keystrokes, thereby logging your passwords for instance and then send the data back over the network to a hacker. Spyware can also be used to control your webcam and microphone.

Adware includes banners and popups that are automatically installed onto a computer. Whilst this does not cause any, adware is undesirable and can slow down the performance of a computer.

Worms spread like viruses but do not require human intervention. They attach themselves to network tools to spread automatically around a network very quickly.

Methods to detect and prevent cyber security threats

Biometric measures such as fingerprints, facial recognition and iris scans are increasingly being used to verify a user's identity for mobile devices. These are more secure than passwords that can be guessed and forgotten. Biometric measures require a user to be present when signing into a system.

Automatic software updates to firewalls, operating systems, antivirus and other security software are needed so that software can be kept up-to-date against new malware and to fix recently discovered vulnerabilities.

CAPTCHA is a test that can distinguish between humans and bots. It uses images that machines cannot interpret but humans can.

Password systems Virtually all accounts require passwords to access. Some secure sites such as online banking require 2 passwords. Banks may also contact you by phone to confirm a large transaction. This is called two-factor authentication. Password systems can force users to have strong passwords that regularly need to be changed.

Using email to confirm a person's identity Often when you register for an online service you need to provide your email address. You are then requested to activate a link sent to you in an email. This is to confirm that the email account is actually active. Helps to ensure that the users are human and not bots.

Anti-virus software scans the computer intermittently to identify whether there is any malware on the computer. The software compares each file against a database of known virus codes. If viruses are found (ie contains code that is in the database) the file is quarantined. That is the file cannot be run without explicit authorisation from the user. New malware are regularly being created and so anti-virus software needs to be updated to identify the new viruses. That is why anti-virus software is regularly updated.

Cyber Security Threats – Social Engineering

Blagging (Pretexting) Fraudsters make up a scenario to con victims into revealing something they would not ordinarily do. They may have found out some personal information about you from social media sites, to pretend they already know you.

How to prevent
- Use biometric measures because these cannot be divulged.
- Ensure you have your privacy settings on any social media to maximum so that fraudsters cannot find information about you such as your date of birth, where you live etc.

Phishing Normally an email or text messaging scam where victims are conned into believing that they are being contacted by their bank for instance and can give sensitive personal details such as bank account passwords.

How to prevent
- Awareness and vigilance. Be particularly aware of unsolicited texts, emails and phone calls. Do not give personal confidential information away. Official organisations such as banks will never ask for this information.
- Apply email filtering to prevent dubious emails getting through.

Pharming Users are redirected to a fraudulent website that they believe to be genuine because it looks like the real site. For instance, you could be directed site that pretends to be an online store that asks you for your credit card information.

How to prevent
- Check the URL in the web address. For secure websites such as banking or e-commerce sites the HTTPS protocol should be used.
- Website filter

Shoulder surfing Fraudsters look over the shoulder of users to see what passwords or pin numbers that are being typed into the device. This can easily occur at computer terminals and at ATMs that are out in the street.

How to prevent
- Be aware of who is around you when typing in your pin into an ATM or into a chip and pin device. Make sure you cover your hands and they are shielded from prying eyes.
- Place computers in locations that makes shoulder surfing difficult

Databases

A **database** is a collection of **data** stored in an organised and logical way. Data are stored in **tables** and tables are made up of **records** (rows) which can have 1 more **attributes** (columns). An example of a table is given here:

Student ID	First Name	Surname	DateOfBirth	FormTutor
712	Bart	Simpson	1/4/10	Principal Skinner
423	Lisa	Simpson	20/5/12	Mrs Krabapple
917	Ralph	Wiggum	16/6/10	Mrs Krabapple
124	Nelson	Muntz	14/9/09	Principal Skinner

ENTITY

Each table contains information about an **entity**. A database entity is an object, person, item or thing about which you want the data stored. Examples of database entities are:

Person entity	Object entity	Item entity
✓ Customer	✓ Book	✓ Sale transaction
✓ Employee	✓ Car	✓ Appointment
✓ Student	✓ House	
✓ Teacher		

DATA

Data are atomised facts, values and observations that are stored in a database. That is they cannot be broken up further. Data can be stored as any data type.

Field	Student ID	First Name	Height	Date of Birth	Had Flu Vaccination?
Date Type	Integer/ number	Text/ string	Real/ float	date	Boolean – Yes/no or true/false
Record 1	712	Bart	1.35	1/4/2010	True
Record 1	423	Lisa	1.16	20/5/2012	True
Record 1	917	Ralph	1.05	16/6/2010	False

DATABASE INDEX

A database index allows for quick speed of retrieval of data from searches of tables. The index is a separate file that has a sorted column of values that link to records in a table.

RECORD

A record is a single row in a table that can have data stored as 1 or more fields (columns). A record needs to be uniquely identifiable and needs an entity identifier which in this example is Student ID. A table contains multiple records. The following example contains 4 records.

	StudentID	FirstName	Surname	DateOfBirth	FormTutor
Records	712	Bart	Simpson	1/4/10	Principal Skinner
	423	Lisa	Simpson	20/5/12	Mrs Krabapple
	917	Ralph	Wiggum	16/6/10	Mrs Krabapple
	124	Nelson	Muntz	14/9/09	Principal Skinner

The **Student ID** field contains unique values for each record; this means that each value is different. The **Surname** field does not contain unique values. For instance, *Simpson* appears twice.

FIELD

Fields / attributes form the columns of the database table and refer to the characteristics of a record. For instance, the fields of the table below include:

✓ Student ID
✓ First name
✓ Surname
✓ Date of Birth
✓ Form tutor

Fields

Student ID	First Name	Surname	Date of Birth	Form Tutor
712	Bart	Simpson	1/4/10	Principal Skinner
423	Lisa	Simpson	20/5/12	Mrs Krabapple
917	Ralph	Wiggum	16/6/10	Mrs Krabapple
124	Nelson	Muntz	14/9/09	Principal Skinner

DATA REDUNDANCY

Data redundancy occurs when the same data are stored in multiple places and so we have repeating data. As a result more space is needed to store the same values several times which is not efficient. In the table below notice how the Author Name fields are repeated.

BookID	Title	FirstName	Surname
1	Fantastic Beasts and Where to Find Them	J.K.	Rowling
2	Harry Potter and the Chamber of Secrets	J.K.	Rowling
3	Harry Potter and Order of the Phoenix	J.K.	Rowling
4	The BFG	Roald	Dahl
5	Going Solo	Roald	Dahl
6	Danny Champion of the World	Roald	Dahl
7	War Horse	Michael	Morpurgo
8	Private Peaceful	Michael	Morpurgo

DATA INCONSISTENCY

Data inconsistency occurs when data pertaining to the same object are in fact stored in a different format. For instance, JK. Rowling and Joanne Rowling refer to the same person, but the database may record these as two separate authors.

BookID	Title	FirstName	Surname
1	Fantastic Beasts and Where to Find Them	JK	Rowling
2	Harry Potter and the Chamber of Secrets	Joanne	Rowling
3	Harry Potter and Order of the Phoenix	Joanne	Rowling
4	The BFG	Roald	Dahl
5	Going Solo	Roald	Dahl
6	Danny Champion of the World	Roald	Dahl
7	War Horse	Michael	Morpurgo
8	Private Peaceful	Michael	Morpurgo

RELATIONAL DATABASES

Complex databases can be made up of multiple tables linked together by shared values called a key. These relational databases make it easier to search and find information that you want. Relational databases reduce the amount of duplication (redundancy) of data and reduces inconsistencies in the data.

PRIMARY KEY

All tables have a field that is the primary key and uniquely identifies each record. This is also known as entity identifier

FOREIGN KEY

These are primary keys that are held as fields in other tables to cross reference tables. They allow tables to be linked together.

For instance, in a book database with two tables including Author table and Book table, AuthorID is primary key in Author table and is used to cross-reference with the AuthorID in the book table which is the foreign key so the two tables can be linked.

AuthorID	FirstName	Surname	LiteraryAgent
1	Joanne	Rowling	Neil Blair
2	Roald	Dahl	David Higham Associates
3	Michael	Morpurgo	David Higham Associates

BookID	AuthorID	Title	YearPublished	Publisher	Genre
1	1	Fantastic ...	2001	Bloomsbury	Fantasy
2	1	... Chamber of Secrets	1998	Bloomsbury	Fantasy
3	1	... Order of the Phoenix	203	Bloomsbury	Fantasy
4	2	The BFG	1982	Penguin	Fantasy
5	2	Going Solo	1986	Jonathan Cape	Autobiography
6	2	Danny Champion ...	1975	Jonathan Cape	Children
7	3	War Horse	1982	Kaye & Ward	Historical fiction
8	3	Private Peaceful	2003	HarperCollins	Historical fiction

STRUCTURED QUERY LANGUAGE

We will use this book table in the examples that follow.

Book ID	Title	Author	Year Published	Publisher	Genre
1	Fantastic Beasts and Where to Find Them	JK Rowling	2001	Bloomsbury	Fantasy
2	Harry Potter and the Chamber of Secrets	JK Rowling	1996	Bloomsbury	Fantasy
3	Harry Potter and Order of the Phoenix	JK Rowling	2003	Bloomsbury	Fantasy
4	The BFG	Roald Dahl	1982	Penguin	Fantasy
5	Going Solo	Roald Dahl	1986	Jonathan Cape	Autobiography
6	Danny Champion of the World	Roald Dahl	1975	Jonathan Cape	Children
7	War Horse	Michael Morpurgo	1982	Kaye & Ward	Historical fiction
8	Private Peaceful	Michael Morpurgo	2003	HarperCollins	Historical fiction

SELECT

To retrieve data from the table

To retrieve all records data from the table we can use the SELECT statement with the wild card operator *.

```
SELECT *
FROM tableName
```

EXAMLPE

```
SELECT *
FROM book
```

Column 1

1	Fantastic Beasts ...	JK Rowling	2001	Bloomsbury	Fantasy
2	..Chamber of Secrets	JK Rowling	1998	Bloomsbury	Fantasy
3	... Order of the Phoenix	JK Rowling	2003	Bloomsbury	Fantasy
4	The BFG	Roald Dahl	1982	Penguin	Fantasy
5	Going Solo	Roald Dahl	1986	Jonathan Cape	Autobiography
6	Danny Champion ..	Roald Dahl	1975	Jonathan Cape	Children
7	War Horse	Michael Morpurgo	1982	Kaye & Ward	Historical fiction
8	Private Peaceful	Michael Morpurgo	2003	HarperCollins	Historical fiction

We can also choose the fields that we wish to retrieve:

```
SELECT field1, field2, ...
FROM tableName
```

EXAMPLE
```
SELECT Author, Title
FROM book
```

RETRIEVED DATA

Fantastic Beasts and Where to Find Them	JK Rowling
Harry Potter and the Chamber of Secrets	JK Rowling
Harry Potter and Order of the Phoenix	JK Rowling
The BFG	Roald Dahl
Going Solo	Roald Dahl
Danny Champion of the World	Roald Dahl
War Horse	Michael Morpurgo
Private Peaceful	Michael Morpurgo

We can sort the output of our SELECT statement by using the ORDER BY clause. ASC and DESC refer to sorting ascending and descending alphabetically or numerically of a specified field.

```
ORDER BY fieldname ASC|DESC
```

EXAMPLE SORT ASCENDING
```
SELECT Author, Title
FROM book
ORDER BY Title ASC
```

Danny Champion of the World	Roald Dahl
Fantastic Beasts and Where to Find Them	JK Rowling
Going Solo	Roald Dahl
Harry Potter and the Chamber of Secrets	JK Rowling
Harry Potter and Order of the Phoenix	JK Rowling
Private Peaceful	Michael Morpurgo
The BFG	Roald Dahl
War Horse	Michael Morpurgo

EXAMPLE SORT DESCENDING
```
SELECT Author, Title
FROM book
ORDER BY Title DESC
```

War Horse	Michael Morpurgo
The BFG	Roald Dahl
Private Peaceful	Michael Morpurgo
Harry Potter and Order of the Phoenix	JK Rowling
Harry Potter and the Chamber of Secrets	JK Rowling
Going Solo	Roald Dahl
Fantastic Beasts and Where to Find Them	JK Rowling
Danny Champion of the World	Roald Dahl

Column 2

WHERE CLAUSE
We can filter our selection using the WHERE clause

```
WHERE fieldname operator value
```

Operator	Description
=	Value equal to
!=	Value not equal to
<	Value less than
>	Value greater than
<=	Value less than or equal to
>=	Value greater than or equal to

SELECT USING WHERE CLAUSE

EXAMPLE 1 – SELECT BOOKS WRITTEN SINCE 2000
```
SELECT Title, Author, yearPublished
FROM book
WHERE YearPublished > 2000
```

Fantastic Beasts and Where to Find Them	JK Rowling	2001
Harry Potter and Order of the Phoenix	JK Rowling	2003
Private Peaceful	Michael Morpurgo	2003

EXAMPLE 2 – SELECT BOOKS WRITTEN BY MICHAEL MORPURGO
```
SELECT Title, Author
FROM book
WHERE Author = "Michael Morpurgo"
```

Notice how the author name is in speech marks because it is a string datatype.

War Horse	Michael Morpurgo
Private Peaceful	Michael Morpurgo

EXAMPLE 3 – SELECT BY DATE
```
WHERE Date < #1/1/2010#
```
For data type date you need to use #. Eg

BOOLEAN OPERATORS
We can use Boolean and relational operators with the WHERE clause if we have multiple conditions that need to be met.

Operator	Description
OR	Allows us to combine multiple conditions. Any of the conditions can be true for the overall expression to return true
AND	Allows us to combine multiple conditions. All conditions need to be true for the overall expression to return true
NOT	Reverses the value of a condition. If it is true it will be false and vice versa

EXAMPLE – SELECT ALL BOOKS WRITTEN BY MICHAEL MORPURGO SINCE 2016
```
SELECT Title, Author FROM book
WHERE Author="Michael Morpurgo"
AND YearPublished > 2000
```

Private Peaceful	Michael Morpurgo

Column 3

UPDATE - TO UPDATE RECORDS IN A DATABASE

To make changes to a record that is already in a table we can use the UPDATE statement.

EXAMPLE 1: Update the book table to change the genre of all fields to Children
```
UPDATE book
SET Genre="Children"
```

EXAMPLE 2: Update the book table to change the author name from JK Rowling to Joanne Rowling.
```
UPDATE book
SET Author="Joanne Rowling"
WHERE Author="JK Rowling"
```

Book ID	Title	Author	Year Published	Publisher	Genre
1	Fantastic Beasts .	Joanne Rowling	2001	Bloomsbury	Children
2	Harry Potter ...	Joanne Rowling	1998	Bloomsbury	Children
3	Harry Potter ...	Joanne Rowling	2003	Bloomsbury	Children
4	The BFG	Roald Dahl	1982	Penguin	Children
5	Going Solo	Roald Dahl	1986	Jonathan Cape	Children
6	Danny .	Roald Dahl	1975	Jonathan Cape	Children
7	War Horse	Michael Morpurgo	1982	Kaye & Ward	Children
8	Private Peaceful	Michael Morpurgo	2003	HarperCollins	Children

INSERT INTO - ADDING NEW RECORDS

INSERT INTO is a commonly used command in SQL for adding new records to database tables. To insert all attributes for a table we can use:

```
INSERT INTO table
VALUES(value1, value2,...)
```

EXAMPLE
```
INSERT INTO book
VALUES ('Boy', 'Roald Dahl', 1984, 'Penguin', 'Autobiography')
```

Sometimes we do not enter data into every field. Instead we can explicitly state which fields we would like to add the data to.

```
INSERT INTO table (field1, field2,...)
VALUES(value1, value2,...)
```

The values correspond to the fields in the table i.e.:
- ✓ Field 1: Book ID
- ✓ Field 2: Title
- ✓ Field 3: Author
- ✓ Field 4: YearPublished
- ✓ Field 5: Publisher
- ✓ Field 6: Genre

EXAMPLE
```
INSERT INTO book (Title, Author, YearPublished, Publisher, Genre) VALUES ('Boy', 'Roald Dahl', 1984, 'Penguin', 'Autobiography')
```

DELETING RECORDS
To delete a record we specify which record(s) from which table we wish to remove.

```
DELETE FROM table WHERE condition
```

Remove all books
```
DELETE FROM book
DELETE * FROM book
```

The WHERE clause is used to filter records so that we do not apply a statement to a whole table.

Remove all books written by JK Rowling:

```
DELETE FROM book WHERE Author='JK Rowling'
```

Remove all books written by Michael Morpurgo and written before 2000

```
DELETE FROM book WHERE Author='Michael Morpurgo' AND
YearPublished < 2000
```

SELECT ATTRIBUTES FROM MULTIPLE TABLES

So far we have looked at a database made up of a single table. databases can be made up of multiple tables. We can link tables together using primary keys and foreign keys. We can use SQL statements to select data from multiple tables. When selecting the data from multiple tables we need to specify the name of the table from which each attribute we are wishing to retrieve.

We will use the following database table as an example case study.

Primary key   Author Table

AuthorID	FirstName	Surname	LiteraryAgent
1	Joanne	Rowling	Neil Blair
2	Roald	Dahl	David Higham Associates
3	Michael	Morpurgo	David Higham Associates

Foreign key   Book Table

BookID	AuthorID	Title	Surname	YearPublished	Publisher
1	1	Fantastic Beasts and Where to Find Them	2001	Bloomsbury	Fantasy
2	1	Harry Potter and the Chamber of Secrets	1998	Bloomsbury	Fantasy
3	1	Harry Potter and Order of the Phoenix	203	Bloomsbury	Fantasy
4	2	The BFG	1982	Penguin	Fantasy
5	2	Going Solo	1986	Jonathan Cape	Autobiography
6	2	Danny Champion of the World	1975	Jonathan Cape	Children
7	3	War Horse	1982	Kaye & Ward	Historical fiction
8	3	Private Peaceful	2003	HarperCollins	Historical fiction

We need to specify that we only wish to select the records where the primary key and foreign key match.

Retrieve data book title and author surname

```
SELECT book.Title, author.Surname
FROM author, book
WHERE author.AuthorID=book.AuthorID
```

Fantastic Beasts and Where to Find Them	JK Rowling
Harry Potter and the Chamber of Secrets	JK Rowling
Harry Potter and Order of the Phoenix	JK Rowling
The BFG	Roald Dahl
Going Solo	Roald Dahl
Danny Champion of the World	Roald Dahl
War Horse	Michael Morpurgo
Private Peaceful	Michael Morpurgo

Retrieve book title and author surname where genre is *fantasy*

```
SELECT book.title, author.surname
FROM author, book
WHERE author.AuthorID=book.AuthorID
AND book.Genre="Fantasy"
```

Fantastic Beasts and Where to Find Them	JK Rowling
Harry Potter and the Chamber of Secrets	JK Rowling
Harry Potter and Order of the Phoenix	JK Rowling
The BFG	Roald Dahl

Retrieve book title and author surname where genre is fantasy and sort in descending order Title

```
SELECT book.title, author.surname
FROM author, book
WHERE author.AuthorID=book.AuthorID
AND book.Genre="Fantasy"
ORDER BY title DESC
```

The BFG	Roald Dahl
Harry Potter and Order of the Phoenix	JK Rowling
Harry Potter and the Chamber of Secrets	JK Rowling
Fantastic Beasts and Where to Find Them	JK Rowling

Ethical, Legal and environmental impacts of digital technology on society

The Ten Commandments of Computer Ethics (From the Computer Ethics Institute)

Thou shalt:

1. not use a computer to harm other people
2. not interfere with other people's computer work
3. not snoop around in other people's computer files
4. not use a computer to steal
5. not use a computer to bear false witness
6. not copy or use proprietary software for which you have not paid (without permission)
7. not use other people's computer resources without authorization or proper compensation
8. not appropriate other people's intellectual output
9. think about the social consequences of the program you are writing or the system you are designing
10. always use a computer in ways that ensure consideration and respect for other humans

Environmental Impacts

- The disposal of computer waste is a big problem because they contain many toxic chemicals. Often old computing equipment is illegally shipped for disposal to developing countries.
- The growth in cloud computing means a greater need for storing data online. For this data centres are used but they require huge amounts of electricity, thereby contributing to climate change.
- Cobalt is a key element requited for Lithium batteries for powering mobile devices. Much of the World's cobalt is mined in the Congo even by very young children in appalling conditions.

Environmental benefits

- Less reliance on paper saving resources
- More opportunity for online global communication and collaboration thereby saving on travel and associated pollution
- Greater insight of environment and climate through using computer to model and analyse and process environmental data

Legislation

Computer Misuse Act (CMA)
The purpose of the CMA is to prevent:
- unauthorised access to computers by hackers
- intentionally impairing the operation of computer systems through denial of service (DOS) attacks on web servers or distributing viruses
- the theft of data

Three levels of offence:
1) Unauthorised access
2) Unauthorised access with intent to commit an offence
3) Unauthorised modification of data

Copyright, Designs and Patents Act (CDPA)

Copyright is a law that protects the creators of original pieces of work. No one else has the right to use or copy it without permission from the owner. This ensures that people can be rewarded for their work.

Plagiarism To pass off some else's work as one's own work.

Patent An inventor has the exclusive right to create, use and sell an invention for fixed period

Piracy Illegally copying and distributing copyrighted material.

Fair use allows copyrighted work to be used legally in certain situations
- personal or educational use (not commercial use)
- use only a small amount of the work (e.g. a short quote)
- acknowledge original source of the work

Copyleft work can be copied, modified used even used for commercial gain as long as the derived works are also distributed under copyleft.

Creative Common Licences (CCL) The creator of the work has explicitly given anyone permission to use the work.

Investigatory Powers Act This is legislation that allows public authorities to carry out mass surveillance on electronic communications.

Justification - By monitoring electronic communications security services can keep us safe from terrorists and other serious criminals

Concerns - Can infringe on our privacy and civil liberties

In a liberal democracy there will always a need to balance security and privacy, but where we draw that line will always be a matter of debate.

Some powers of the security services under the IPA
- can hack into computers, networks, mobile devices, servers
- internet service providers have to store which websites users visit for 12 months and allow access to authorities when requested
- carry out mass surveillance of communications; authorities can collect bulk data including data about people who are not suspected of anything.

- demand that an internet service provider provide access to a customer's communications including keys to encrypted data

General Data Protection Regulation (GDPR)

The purpose of the GDPR is to ensure that personal information collected by businesses and other organisations are protected.

Personal data is defined as anything that allows an individual to be identified (e.g. name, biometric data)

Six principles of the GDPR
Personal information must:
- be used fairly and lawfully
- be used only for specific purposes for which it was collected
- be adequate, relevant and not excessive
- be accurate and kept up to date
- be kept for longer than is necessary and deleted when it is no longer needed
- be kept secure against unauthorised access

Other aspects of the GDPR
- The data subject needs to be notified if their data are shared with other organisations
- Obtain consent from the data subject to their process data
- Obtain consent from parents or guardians to process children's data.
- Allow data subjects to have their data removed
- Allow data subjects to access the data held about them
- Pay big fines for a breach of the GDPR

Other Social Impacts

Artificial Intelligence is replacing people in jobs. More hi-tech jobs but less need for many lower skilled jobs.

The **digital divide** refers to the unequal access to information technology between different groups of people, and the knowledge and skills needed to use the technology.

Online trolling, cyber bulling and fake news on social media sites is undermining freedom of expression

GCSE Design and Technology

GCSE

DESIGN AND TECHNOLOGY

(8552)

NEA

(Non Exam Assessment)

Name ………………………………………………

GCSE Design and Technology

Unit 2 – Non-exam assessment (NEA)
Design Challenge

This is the course work part of your GCSE

Students should produce at least one final made prototype, based on a design brief which will arise from Investigating the Contextual Challenge set by AQA.

Release date: 1st June
Time: 30-35 hours (recommended).

Evidence: Written or electronic design portfolio with photographic evidence of final prototype(s).
Approximately 20 pages of A3, digital or A4 equivalent.

The contextual challenge

Studying or working at home

Assessment objective 1

AO1: Identify, investigate and outline design possibilities to address needs and wants.

This AO forms 10% of the qualification and is examined solely through the NEA.

Identify – looking at areas and opportunities where designing can take place.

Investigate – pursuing ideas and gathering information relating to a context.

These are interdependent and take place in no particular order.

Outline – produce a design brief and specification to inform AO2.

AQA

The PLC below will help you to manage the tasks you need to work through to complete the investigation/research part of your project. This is worth 10 marks out of 100 and should take about 3 hrs. tick off each task as you complete it.
The following pages will give you examples of how to set out your work and how to do each task.

Personal learning Checklist

Tasks	Complete
Mind map the Contextual Challenge	
Identify the design problem	
Task Analysis	
Identify a client	
Interview your client	
Research existing products	

WAGOLLs

Bellow are examples of how your first page should look. It is good to do each task in a separate box so you can move them around and layout your page. Remember you only have 20 pages for your whole project so get as much information on every page as you possibly can. NO LAGRE WRITING!

Titles should be font size 16

The main writing (body text) should be no bigger than 12 and no smaller than 8.

Contextual Challenge: The Contemporary Home

PROBLEM

Our school boarding house has many boarding students attending each year. Quite often these students are international. The rooms are very well designed, however the desk space can be dark and sometimes cramped. I will conduct some initial research in order to determine what approach I taken when designing this Product.

EXAMPLES OF PRODUCTS:

Pictured here is a designer table lamp from Heal's, a British furniture store chain. It has a very attractive sleek, modern design and has been designed/made with expertise resulting in its expensive price.

This is ambient ceiling lamp also from IKEA. The product's price is from the solar panels used as they can be expensive but appeal to customers as they last for longer.

SOLVINDEN LED solar powered pendant lamp £12

LOCATION:

The product will be used in [ ] School Boarding House which is located in Brunei. It will be used on, either, a bedside table or the study desk as task lighting. Also in the Houses, there's communal areas that need some ambient lighting to be designed for socialising/relaxing. There is also the lighting for outside and around the Boarding House for when it's dark.

ANALYSIS OF PROBLEM:

RESEARCH TASKS:

CLIENT INTERVIEWS: To interview the buyer and end user - a teacher and student from the Boarding House - to establish their needs such as budget and practicality. This is important as it will develop my design to help satisfy both customers. Also the investigation of the environment used by the student for the lighting will aid the design.

EXISTING PRODUCTS: To evaluate/analyze existing products being manufactured and sold to the public. This will help to provide important features needed or elements that need to be considered.

DESIGN MOVEMENTS: To examine designers/movements to help begin a design strategy for the subsequent planning of my lamp. This will help when choosing the style and aesthetics for the lamp.

IMPORTANT SIZES: To attain the critical sizes of specific components that are necessary for the lamp. Also the minimum and maximum dimensions of the actual lamp and the space it could take up are significant.

SUMMARY:

I need to research the Boarding House including customer, environment and requirements as my product will be place in the Boarding House. As well analysing existing products, packaging and bulbs/fixtures, I will plan a design strategy using inspiration from movements/designers. The design will result in needing to decide if it's task or ambient and where it will be located in the Boarding House.

Contextual challenge: Providing a safe and comfortable home

Parents face a lot of issues with children. One of these issues is knowing what temperature it is safe to give an infant their food. My products are a range of kitchenware made of thermochromatic material. This is a safety feature that will make it easier for parents to give their children food at a safe temperature.

Examples of existing products:

1. This bottle is very suitable for children as it is brightly coloured, and the silicon sleeve will make it easier for infants to hold. It is long lasting and durable as it is made of glass but this makes it expensive compared to other bottles at £12.99. The fact that these bottles are made of glass is also a disadvantage because it is harder to store and transport as it may break, and it is heavier and more difficult to hold than plastic.

2. These spoons from mothercare are very appropriate as they are made of coloured plastic which is soft, flexible and not as hard as metal. The curved shape of them and the rounded edges make them aesthetically pleasing and safer for children as they are soft on their mouths. The rubber grips on the handles makes them easier for infants to hold and I will include this on my product to make it more suitable for the target audience. Because of the plastic material, they are cheap and easy to sterilize.

3. This product is a set including a plate, spoon, cup and cutlery, making it a better overall product because it can all be bought in one. The bright unicorn design is appealing to children however the packaging is plain. It is made of cardboard and the product is bamboo making it eco-friendly. However, I will not have access to bamboo so I will have to make mine from an alternative material which may be less environmentally friendly but easily recycled. I also found that kitchenware made of bamboo can be priced from £8.95 to £36. I like the package design as it can be kept as a way to store all the objects together.

Storage: It is suitable for the product(s) to be stored in kitchen cupboards/drawers with all other kitchenware and cutlery. The product will be waterproof if it is plastic so can go in a dishwasher. The size and for shape of the products makes it easy for them to be stored. Another storage option is to make the packaging in a style so it can be kept as a container or holder to store the product in. This will reduce the amount of packaging thrown away and make it more environmentally friendly.

Research tasks:

CLIENT INTERVIEW: I will interview someone who has small children to find out what parents want for their children. This will make my product more suitable for the target audience and its use.

ANTHROPOMETRICS: I will use anthropometrics to determine a suitable size and structure for my product based off existing products and the size that is suitable for children.

PTC PRODESKTOP AND 3D PRINTING: My product will be designed on PTC PRODESKTOP and made using a 3D printer. I will need to carry out both primary and secondary research in order to find out how to use both of these things to make my product.

EXISTING PRODUCTS: I'm going to do further and more detailed analysis on existing products and what people think of them in order to decide what I should and should not include in my products.
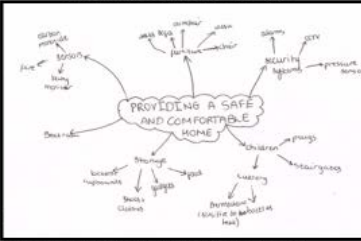
SHOPS: Looking at shops and brands that sell children's kitchenware will help me further develop my ideas based on the design ethos of other companies. It will also show me prices and materials of products which will help me choose what to make mine out of and what price it should be.

HEALTH AND SAFETY: I will research key health and safety features that should be included in a food related product for young children.

ERGONOMICS: I will research ergonomics and use anthropometrics research in order to find ideal size and structure that will make my product more suitable for children to use.

Analysis of the problem

Client interview:

Q: What do you think are the best colours for products for young children?
A:
Q: What ideal features would cutlery for your child have?
A:
Q: At what age would your child move on to metal cutlery?
A:
Q: If the product came with packaging you can store it in, would you be more likely to buy it?
A:
Q: How important is the sustainability of a product to you?
A:
Q: What price would you be willing to pay for a thermochromatic cutlery set?
A:

Summary: In conclusion, I have decided that my product will not be made from bamboo or glass as these materials are too expensive and make the product less suitable for the target audience. My products will be made of thermochromatic material in order to make it safer for children. I will include details, possibly made of rubber or plastic or grooves in the material, that will make it easier for children to hold. I will include packaging that is cardboard and therefore environmentally friendly, and can be kept and used as a way to store the products. I need to do a client interview before I decide more details of my product. The client I will interview will be a parent with a child under 5, but the product will be for the child to use. I will determine the exact age range after I do my interview.

Non Exam Assessment

- **The contextual challenge must be identified**
    Nature and the Environment. This must be written on your first page.
- **Mind map ideas**
    Bubble diagram of all the possibilities surrounding your chosen context.
And choose 1!

- State the "problem"
    Why is the product you are going to design needed?
- Write a design brief
    Briefly describe what it is you want to design.
- Task analysis
    List all the things you need to research for your project.
- Identify "the client"
    Who are you making this for? Is it an individual or a company? Write a profile of them
age, interests   likes/dislikes etc.
- Client interview.
    Write at least 5 questions and your clients answers to help you to write a specification
for your project and start designing.

Start with a mind map with Studying or working from home at the centre. Write down as many things you can think of that link to this theme. One of the ideas should be Houses for wildlife and you should branch off into all the possibilities for this such as bug hotels and bird houses.

Below is an example of a mind map on the theme of Providing a Safe and Comfortable home. The student settled on childrens safety spoons based on this part of their investigation.

Non Exam Assessment

- The contextual challenge must be identified
    Nature and the Environment. This must be written on your first page.
- Mind map ideas
    Bubble diagram of all the possibilities surrounding your chosen context. And choose 1!

- **State the "problem"**
    Why is the product you are going to design needed?
- **Write a design brief**
    Briefly describe what it is you want to design.
- Task analysis
    List all the things you need to research for your project.
- Identify "the client"
    Who are you making this for? Is it an individual or a company? Write a profile of them age, interests   likes/dislikes etc.
- Client interview.
    Write at least 5 questions and your clients answers to help you to write a specification for your project and start designing.

Now you have investigated the contextual challenge with your mind map you can identify the design problem. This should be a paragraph explaining what you think needs to be designed and why. For example:

When studying at home my brother makes a mess with his pens and pencils getting everywhere. He could do with a desk tidy to keep his equipment organised.

IMPORTANT!!! DO NOT COPY THIS IT IS JUST AN EXAMPLE. YOU MUST COME UP WITH YOUR OWN IDEA!

You can now write a design brief. This should be a short description of what you intend to make. For Example:

I intend to make a small desk tidy to keep pens and pencils organised. It could also have a docking station for a mobile phone and maybe a lamp or light built into it.

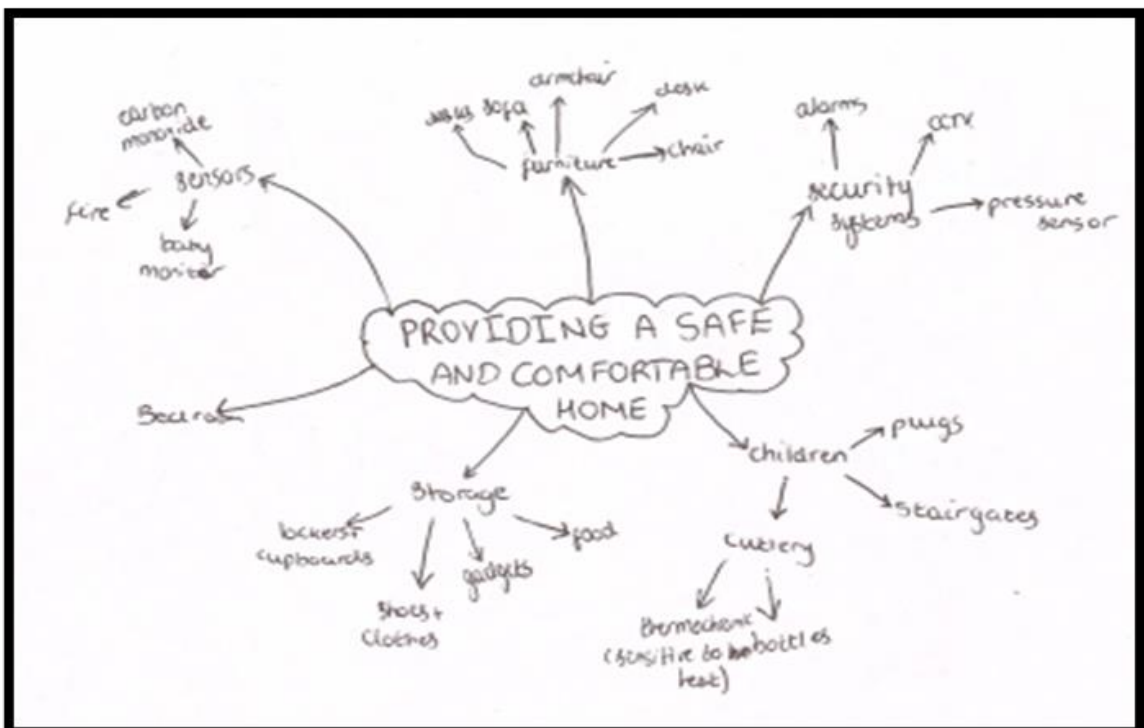**AGAIN, DO NOT COPY THIS IT IS JUST AN EXAMPLE. YOU MUST COME UP WITH YOUR OWN BRIEF!**

Non Exam Assessment

- The contextual challenge must be identified
  - Nature and the Environment. This must be written on your first page.
- Mind map ideas
  - Bubble diagram of all the possibilities surrounding your chosen context. And choose 1!

- State the "problem"
  - Why is the product you are going to design needed?
- Write a design brief
  - Briefly describe what it is you want to design.
- **Task analysis**
  - **List all the things you need to research for your project.**
- Identify "the client"
  - Who are you making this for? Is it an individual or a company? Write a profile of them age, interests   likes/dislikes etc.
- Client interview.
  - Write at least 5 questions and your clients answers to help you to write a specification for your project and start designing.

Now you have a clear idea in your mind about what you want to make you will need to make a list of all the things you need to research in order to design your product and make your idea a reality. See the example below for a child safety spoon.

Non Exam Assessment

- The contextual challenge must be identified
    - Nature and the Environment. This must be written on your first page.
- Mind map ideas
    - Bubble diagram of all the possibilities surrounding your chosen context. And choose 1!

- State the "problem"
    - Why is the product you are going to design needed?
- Write a design brief
    - Briefly describe what it is you want to design.
- Task analysis
    - List all the things you need to research for your project.
- **Identify "the client"**
    - **Who are you making this for? Is it an individual or a company? Write a profile of them age, interests likes/dislikes etc.**
- **Client interview.**
    - **Write at least 5 questions and your clients answers to help you to write a specification for your project and start designing.**

One research task that is essential is to identify and interview "a Client".
The client can be someone you know who will play the role of some one you are designing for or you can be the client but make up another name. Write a profile of the client and then an interview for them to answer about their needs for your product. The interview should be at least 5 questions. See the examples below.

Target Market and Client Profile   2

Name: Angela ▮▮▮▮▮

Gender: Female

Age: 45

Family: Husband, Robert, 3 children (19, 17, 15)

Occupation: Nurse, works long hours

Hobbies: Gardening, country walks, has lots of animals

Needs: A product that will be able to withstand family life, but also has an aspect of style consciousness. The product would need to be noticeable (from the style conscious aspect), but not stand out too much, as it would best fit in her bedroom, and after long hours at work she needs her bedroom to be both relaxing and comfortable, an easy place to fall asleep in. The product would need to be of good quality, in order to withstand her family orientated lifestyle, but would also need to not be too expensive, because a majority of her income is spent on providing for her family. The product would need to be practical and to be able to be used in different situations as well as being a bed throw, such as a picnic blanket or to be thrown over the sofa. She is fond of older movements, as she feels that more modern ones are too childish, and her whole family is a bit older now.

Specification points from this:

- Strong stitching- to withstand family life and the different things it may be used for

I need to research into the requirements of my target market, as this will play an important role in the design of my product.

My Target Market

My target market is for adults/ families, who need products that provide both practicality and look attractive. The age bracket is around 36-50, as I feel that this generation appreciate older movements, such as Arts and Crafts, which I prefer. I am not aiming my product at children, however the product needs to be able to be in a young child home.

Client Profile Questions and Answers

1. What is the maximum price you would pay for a soft furnishing?
    £300, for something of really good quality that was designed to last for some time
2. Requirements of the product?
    Good quality, uniqueness, bespoke, comfortable, correct size for my bedroom.
3. Would you want it to be the main feature of the bedroom?
    A strong feature, but not necessarily the main feature
4. Is practicality or design more important?
    Both are important in a product for me
5. Does the product need to be long lasting?
    I would like it to last 5-10 years. I wouldn't necessarily keep it forever, as after time I might want to redecorate
6. Many different designs on the product or one main one?
    I prefer eclectic designs
7. Best colours for the bedroom?
    Blue, cream, light pink and light green
8. Do you like the Arts and Crafts movement, or do you prefer more modern movements?
    I like the arts and crafts movement, and generally prefer older movements to the more modern ones   like Memphis

children to use.

Client interview:
Q: What do you think are the best colours for products for young children?
A:
Q: What ideal features would cutlery for your child have?
A:
Q: At what age would your child move on to metal cutlery?
A:
Q: If the product came with packaging you can store it in, would you be more likely to buy it?
A:
Q: How important is the sustainability of a product to you?
A:
Q: What price would you be willing to pay for a thermochromatic cutlery set?
A:

Research existing products

For the final stage of assessment objective 1 you will need to look at existing products, similar to your own idea, and analyse them. Your analysis should include images of the products and can be a paragraph describing the product or a full ACCESSFM analysis (there is a help sheet for this on the final page). Examples of both are shown below. You should analyse at least 3 different products.

Research–Current product analysis– Soft furnishings

I am going to look into what sort of soft furnishing there are currently available in the market, who they are aimed at, their prices, where they are intended to be placed etc.
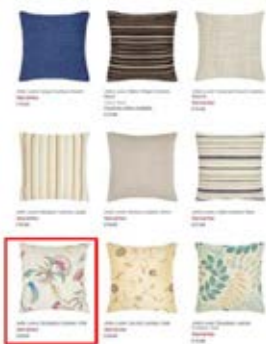
Soft furnishing there are currently available

On the John Lewis website the main soft furnishings that were currently available were pillows. However these were mainly intended to be decorative, rather than for practicality too. However I liked how they used multiple colours in their designs, and how they used colour to reflect their target market. I feel that all these pillows are aimed at 25- 60 year olds in my opinion, as they are all slightly more expensive than average pillows, meaning they are aimed at people who are going to be able to afford them, which won't be young adults. However only one of these products was intended for the bedroom (highlighted red) , with all the others being aimed at the living room or conservatories. I think that this is because of the materials they are made with, as most of them are made with cotton and another material, whereas the one intended for the bedroom are pr…

Soft furnishing that are currently in my home

In my home we currently have multiple soft furnishings, both large and small. The majority of our soft furnishings are pillows and blankets, although we have some sofas in our living room used as a primary feature. Some of our soft furnishings have an obvious intended room (e.g. sofas), however some of our pillows do not. We have lots of blankets around our home, that are used in many different ways, from covering the sofa, so it doesn't get messy, to being a decorative feature on my bed. We also have rugs that cover the floor, that are both practical and decorative, which is one of the main requirements from my target market. I like our rugs, however they are mainly plain and although some have motifs, there is no obvious pattern to them. I don't feel like some of our soft furnishings have a very small target market, as (especially with the rugs) they are plain and therefore do not draw in a specific gender, age group etc. I have shown some soft furnishings from my home on the next slide along with an analysis

Soft furnishing there are currently available

On the House of Fraser website the most popular soft furnishing was 'bedspreads, throws and blankets'. They had an obvious intended room, as it says in the name where they are intended for. I liked this product because it is both attractive and practical. They also have many different uses. I feel that these products are aimed again at families and adults, due to the pricing of them. These products aim from £35-£150, so even the cheaper products are more of an investment product than a one off use product. Again they mainly use cotton as their main material, however some of the products are more decorative, and therefore use other materials in their manufacture, such as ornamentation . I like the products that have the additional ornamentation, as I feel it makes them look more sophisticated and luxurious.

Rug

This is a rug that is in the office of my house. I really like the border with a central pattern design and also the colours it uses (gold, blue and burgundy). I also like the design of flowers and swirls and feel that this is quite typical of the era I have chosen. This rug is used to be attractive, however it is also good at keep the heat in and reducing the amount we have to vacuum.

Analysis of existing products

Product	Aesthetics	Cost	Consumer	Environment	Size	Structure	Function	Material
	The colours of this product are visually pleasing and appealing to young ages. The product looks nice because it has smooth, rounded edges that are also a safety feature.	One fork and one knife in this set costs £4.90. This is a reasonable price for some simple cutlery as it does not come with any extra features.	This product is made for young children over 9 months. It is suitable for this age as it helps children learn to feed themselves because of the comfortable shape and grips and it has smooth, safe edges.	This product is BPA free which makes it more environmentally friendly as it does not contribute to water pollution. However it is made of plastic and the manufacturing and disposal of the product is not environmentally friendly, although it can be washed and used again.	The size of this product is good because it is small enough that infants can hold it themselves which helps with the development of skills for the child.	The product has rounded edges and a small mouthpiece that make it safer for the baby to use. The handle is smooth and slightly curved which makes it easy for infants to hold.	This product helps teach infants to eat on their own. The curved shape, rounded design and grips on the product helps to do this as it helps infants to easily hold their own cutlery.	Although the material is not environmentally friendly, it is good for the function. It is soft and comfortable which makes it easy and safe for children to use, and it can be coloured to appeal to them.
	This product is colourful and attracts children. The product is coloured and can be personalised so is interactive. The box comes with different fun designs that appeal to kids.	The price of this product is a little more expensive than other baby cutlery but this is because it can be personalised to make it more appealing.	This cutlery is slightly less suitable for the target audience of 6+ months; it is at a low age but is more dangerous as it is made of metal and should be for older children.	As this product is made of mixed materials it would be hard to recycle, although the cardboard packaging could be easily recycled and the product can be re-used.	This product can be bought in a range of different sizes and most are suitable to be held and moved comfortably by infants.	The handles of the cutlery are moulded so they are rounded and the backs of them are textured and easy for children to hold.	The design of the handles makes it easy for children to operate but the mouthpieces are made of metal which may be dangerous and unsuitable for children.	The material of the handles is soft and safe but I would not make the mouthpiece out of metal because it can be dangerous and not function properly.
	This product comes in a range of different colours that makes it more attractive to children. The curved and smooth shape makes it appealing.	The price of this product starts at £30.49 which is very expensive for simple cutlery that does not come with any extra features. The same product can be bought cheaper elsewhere.	The design of the product makes it quite suitable for the user. The cutlery is curved and textured so is easy for infants to use although they are too big for most infants.	The product is made of plastic which makes it recyclable but it can be cleaned and used again so there is no need for it to be thrown away.	The size is suitable for most children over 10 months but it is too big for the target audience of children over 6 months. They have trouble getting them in their mouths and holding them.	This product's handles are extremely curved which makes it very easy for children to hold.	This product functions well for children slightly older than the age range. It is perfect size for older children and is easy for them to use themselves because of the structure.	The material is made of soft plastic. This makes it safe and comfortable for children to use, despite it not being very environmentally friendly.

A — Aesthetics

Where did the designer get their inspiration? Could the product look better?

Do you think it looks attractive or ugly, Why?

What does the product look like? THINK shape, form, materials, size, beauty, ugliness

C — Cost

Is it affordable to your customer? Will it make a profit?

Is it value for money?

How much does it cost £ £

C — Customer

What impact would it have on a customers life?

Why would a customer buy it? What makes it suitable for them?

Who would buy it? Who would use it?

E — Environment

What is the products impact on the environment? THINK batteries, rethink, refuse, reduce, reuse, recycle, lifecycle

How would the product be disposed of?

Is the product needed or wanted? How long will it last?

S — Safety

Is the product high quality? Does it meet safety standards?

How has the designer considered safety?

Could the product hurt anyone? Are there any sharp edges?

S — Size

Is it an appropriate size? Would it work better if it was bigger or smaller?

Does it come in different sizes ?

How big is it?

F — Function

Does the product work? Could the product work better?

How does the product work? Why is the product needed?

What does the product do? Is it easy to use?

M — Materials

What impact could the designer's choice of material have on the environment?

Would a different material make it better?

What material has it been made from?

Enterprise

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What is Market Segmentation?

Market Segmentation is the process of grouping potential customers together based on different factors. It is basically the method used by businesses to identify their target customer/market. Markets can be segmented in different ways and some businesses choose to use more than one characteristic to specifically segment their market.

How can markets be segmented?

○ **Age** – This is basically how old the customer is. Businesses tend to segment their market into age brackets. Toys, for example, are aimed at younger audiences, potentially between ages 3 and 13.

○ **Gender** – This is whether the target customers are typically going to be male or female. Make-up, for example, is targeted at females – this doesn't mean that males cannot buy it, it is just who the business is targeting!

○ **Occupation** – Occupation means the job or career that the people within the target market may have. This could be a specific job, for example Gym equipment being targeted at Personal Trainers, or a more general group of jobs, Office Workers for example.

○ **Income** – Some businesses segment their market based on how much money their potential customers make. Luxury branded items, for example, will be targeted at customers with more disposable (spare) income.

○ **Geographic** – This is when businesses segment their market by their location. A local newspaper, for example, will segment their market to include only those in the area in which the newspaper reports.

○ **Lifestyle** – Businesses could segment their market based on what their customers' lifestyle is like; this is basically their hobbies, their routines and their habits. Some people enjoy going on holiday abroad each year, this is their lifestyle.

What are the benefits of Market Segmentation?

By segmenting their market, businesses are:

- Able to focus on the wants/needs of specific customers and more likely to meet these wants/needs.
- More likely to make sales because they've focused on specific groups of people (if they segment successfully).
- More able to focus their advertising and other marketing at the right groups of customers – if their market is segmented to include female customers, then the business could choose to advertise in magazines aimed at females, for example.
- More able to produce a specific customer profile, which is a portrait of the business's main target customer.

How do customers vary (how are they different)?

Customers are different/vary because of:

- The amount of money they are **able** to spend
- The amount of money they are **willing** to spend (some customers have more money, but may not be willing to spend this money)
- The **quantity** of products/services they require
- The **quality** of products/services they require
- The **location** in which they want/can purchase items
- The time in which they want to/can purchase items.

What Customer Feedback Techniques are available for business start-ups?

Customer Feedback Techniques are the methods a business uses to allow customers to tell them what they think about their products or services and can include:

- Social Media / Online Communities
- Websites with reviews
- Online surveys
- Customer comment cards
- Comments made to staff members
- Telephone/email surveys
- Email contact forms

Why are Customer Feedback Techniques useful for new business start-ups?

If things aren't going well for a business, customer feedback will give them the reasons why. Taking action could improve sales and help businesses meet customer wants/needs better. Customer feedback also makes people/customers feel they are being listened to.

What is Market Research?

Market Research is the process of finding out what customers want and what they need. Businesses typically carry out Market Research before developing a new product as well as during the testing of the product to get the opinions of their potential customers.

What is the purpose of Market Research?

The purpose of Market Research is to find out what customers want and need – this helps businesses develop products that are more likely to be successful. Research also helps understand customers' tastes and opinions and can change the design or specification of products. Finally, Market Research can also be used to gauge what products are already on the market and what competitors are doing.

What is Primary (field) Market Research?

Primary Research, or Field Research, is when businesses gather their own data and information. This can be done through surveys, questionnaires, focus groups, observations, consumer trials and 'taste tests'. The data gathered is unique to the business and does not already exist.

What are the benefits of Primary (field) Research?

Carrying out Primary Research means that the results are exactly what the business wants to find out, because this research has been tailor made for their own specific needs. Researchers can include everything the business wants to find out from their potential customers.

What are the drawbacks of Primary (field) Research?

Primary Research is usually more expensive to carry out than Secondary Research because the business is creating and analysing everything from scratch. This also means that Primary Research is more time consuming to carry out.

What is Secondary (desk) Market Research?

Secondary Research, sometimes called Desk Research, is when the business uses data or information that already exists. This is not tailor made for the business. Methods of Secondary Research include Internet research, books, newspapers and data already collected by competitors, the Government or other sources of statistics.

What are the benefits of Secondary (desk) Market Research?

Secondary Research is quicker to complete, because the data has already been collected and, in some cases, analysed.
Secondary Research is also cheaper to carry out – looking in newspapers for competitor research is clearly cheaper than preparing, carrying out and analysing a questionnaire, for example.

What are the drawbacks of Secondary (desk) Market Research?

The data that is used when completing Secondary Research is not unique and not specific to the business's needs, unlike when Primary Research is carried out. Secondary Research doesn't allow businesses to ask further questions to those that took part in the research either.

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Forms of Ownership for Business Start-ups…

Sole Trader

○ **Number of Owners:** 1 (one owner, but can have employees working there)

○ **Legal Requirements to Start:** Register as self-employed with HMRC; (HMRC is the Government department in charge of collecting tax).

○ **Liability:** Unlimited Liability – the debts are the responsibility of the owner (disadvantage).

○ **Decision Making:** The owner is responsible for all the business's decisions (advantage).

○ **Distribution of Profits:** The owner chooses what to do with any profits made (advantage).

Partnership

○ **Number of Owners:** 2 minimum

○ **Legal Requirements to Start:** Register with HMRC. A Deed of Partnership is also usually drawn up to state how the business will operate.

○ **Liability:** All partners will have Unlimited Liability. They will all be responsible for any debt the business may have (disadvantage).

○ **Decision Making:** Decision making is shared between partners; this is usually included in the Deed of Partnership. This can be a disadvantage if owners fall out over decisions.

○ **Distribution of Profits:** % share will be agreed within the Deed of Partnership (shared profit is a disadvantage of this type of ownership).

Limited Liability Partnership (LLP)

○ **Number of Owners:** 2 minimum

○ **Legal Requirements to Start:** Register with HMRC and complete an LLP Agreement that outlines how the LLP will be run.

○ **Liability:** Partners have Limited Liability. They only stand to lose what they have invested if the business gets into financial difficulty (an advantage of this type of ownership).

○ **Decision Making:** This will be decided when the business is formed and written in the LLP Agreement.

○ **Distribution of Profits:** Again, this will be in the LLP Agreement.

What is liability (in terms of Business Ownership)?

Liability means responsibility and it refers to whether owners will be responsible for the debt of a business, should it get into financial difficulty.

Limited Liability…

If an owner has Limited Liability, they will only lose what they have invested in a business. Shareholders in companies have limited liability – if they invested £500, and the business failed and owed money, they would only lose their £500 – they wouldn't have to cover any more of the debt, even if the business owned millions.

Unlimited Liability…

This is a risk for a business owner as, if they have Unlimited Liability, they are responsible for all the debts of a business. This means that if their business fails and owes people money, they will have to cover this debt, even if it means losing their personal possessions.

What is a franchise?
A franchise is when someone buys the rights to an existing business's name to run as their own business. Basically, they're setting up their own business but using the name and ideas of an existing business.

Benefits of owning a franchise…
The franchisee (who buys the franchise) will benefit from guidance and help from the franchisor (who sells the rights to their business name). The business idea is already a success, so they could be more likely to succeed than if setting up on their own. They will also benefit from any advertising the franchisor does.

Drawbacks of owning a franchise…
Franchisees have to pay the franchisor for the rights to their name – this is more expensive than setting up a new business. Franchisees must also pay royalties to the franchisor on a regular basis. It is also unlikely the franchisee can make changes to the business format.

What is Capital?
Capital is the name given to the money that is used to start-up a new business or to launch a new product.

Sources of Capital…

○ **Own Savings** – This is the owners' own money. This method doesn't involve interest but are limited by how much savings they have.

○ **Friends & Family** – Borrowing from friends or family may not include interest or paperwork but can lead to friction if not paid back.

○ **Loans** – Loans from banks or other organisations can help raise capital quickly but will have interest added to the amount paid back.

○ **Crowdfunding** – This is where lots of a people (sponsors) pledge small amounts of money, usually online. This can be slow to raise the amount of capital needed but doesn't involve interest payments.

○ **Small Business Grant** – Sometimes Governments give grants to encourage businesses to set up. Grants often involve no interest payments but strict criteria needs to be met and funds are limited.

○ **Business Angels** – Investors on the TV show 'Dragons Den' would be considered Business Angels. They invest in a business idea in exchange for a share of profits and/or part ownership of the business.

What is a Business Plan?
A Business Plan is a document that is drawn up before a business is launched to describe the new business idea.

What should a Business Plan contain?

- Business Aims and Objectives (what it wants to achieve/when)
- Business Strategies
- Business Operations (how will the business be run on a daily basis. Who owns the business? Who will make decisions?)
- Sales Plan
- Marketing Plan (marketing, promotions and advertising?)
- Financial Forecasts (cash flow forecasts – how much money is predicted to come in and go out each month? How much profit does the business predict it will make in the first year/over a longer period?)

Why is it important for new start-ups to have a Business Plan?
New businesses can be difficult to set up and, unfortunately, most will fail. Having a Business Plan *should* reduce the risk of failure, especially if the plan is detailed and realistic, as all eventualities will be planned for. A Business Plan is also used to share the business's ideas with third parties – it is unlikely, for example, that a bank will lend money to a new start-up without a detailed plan that includes financial forecasts.

What are Costs?

Costs are the things businesses have to pay for in order to produce a product or provide a service.

What are Fixed Costs?

Fixed costs are things a business pays for that do not change depending on the amount of a product a business makes – so these costs stay the same no matter how many products a business produces.

Examples of Fixed Costs for a Cake Shop...

Rent for the shop would be a fixed cost because the cost will stay the same no matter how many cupcakes are produced and sold. The shop's insurance, staff wages and phone bill will also be examples of fixed costs.

What are Variable Costs?

Variable costs are the costs a business pays that change depending on how many products a business produces – these costs increase when more products are made.

Examples of Variable Costs for a Cake Shop...

The ingredients used in the cakes would be an example of a Variable Cost because this cost will increase if more cakes are made. The packaging for the cakes will also be a variable cost, if more cakes are made and sold then more packaging will be required.

How are Total Costs calculated?

Total cost is just the fixed costs plus the variable costs. You will, however, need to account for the number of products made when including variable costs.

For example, if the shop's fixed costs are £1000 and their variable costs are £0.20 per cupcake, their total costs when they produce 500 cupcakes will be:

Fixed Costs + (Variable Cost Per Unit x Units Produced)

£1000 + (£0.20 x 500)

£1000 + £100 = **£1100 Total Costs**

How to calculate Total Costs for 400 cupcakes when Fixed Costs are £2000 and Variable Costs are £0.45 per unit...

£2000 + (£0.45 x 400)

£2000 + £180 = **£2180 Total Costs**

What is Revenue?

Revenue is the money generated from selling products or services. **It is not profit**, but the money coming into a business from sales.

How is Total Revenue calculated?

Total Revenue is calculated by:

Selling Price x Number of Sales

What is Profit?

Profit is the money left over from revenue once costs have been paid – it's the money a business makes once all costs have been covered.

How is Total Profit calculated?

Total Profit is calculated by:

Total Revenue – Total Costs

What is Profit per Unit? How is it calculated?

Profit per Unit is the amount of profit a business makes on just one item sold.

Profit per Unit is calculated by:

Selling Price per Unit – Total Costs per Unit

Example calculations...

Selling Price = £1.20 per cake
Fixed Costs = £350
Variable Costs = £0.20 per cake

- Total Costs for 500 cakes = 350 + (0.20 x 500) = £450

- Revenue for 500 cakes = 500 x 1.20 = £600

- Profit per Unit = £1.20 – (450 ÷ 500) = £0.30

What is Break-even?

Break-even is the point at which a business does not make a profit or a loss – its revenue from sales and its total costs are equal. The number of products that must be produced/sold to reach this point is called the Break-even Point.

How is Break-even calculated?

The formula for Break-even is:

$$\frac{\text{Fixed Costs}}{\text{Selling Price per Unit} - \text{Variable Cost per Unit}}$$

A labelled Break-even graph...
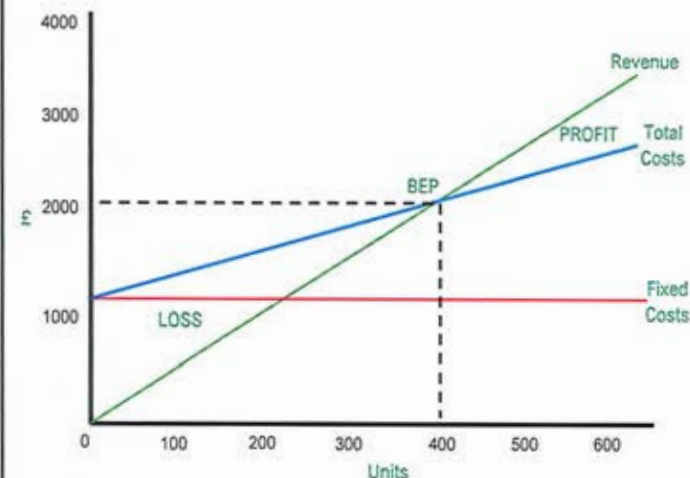
This business's Break-even Point is 400 Units.

Why is Break-even information useful for a business?

Businesses who calculate their Break-even point know what output they need in order to be profitable; so, they know how many products to produce or can generate a sales target in order for them to make a profit.

What does increasing selling prices do to the Break-even Point?

Increasing selling prices will lower a business's Break-even Point, they will need to produce/sell less in order to Break-even.

What impact does increased costs have on the Break-even Point?

An increase in either Fixed or Variable Costs (or both) will result in a higher Break-even Point for a business; they will need to produce/sell more in order to Break-even.

What is the Product Lifecycle?

All products have a life span – this is short for some products or, in the cases of popular products, can be quite long. The Product Lifecycle is a set of stages that a product will go through in its lifetime. It is important to note that not all products go through all stages of the lifecycle.

The Product Lifecycle...

SALES

Saturation

Introduction   Growth   Maturity   Decline

TIME
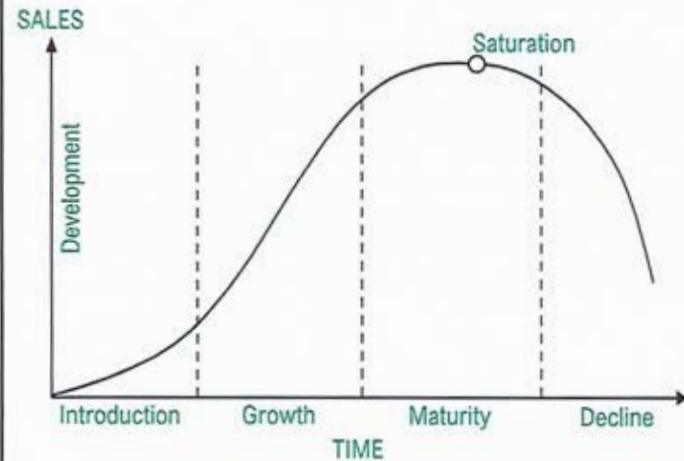
The stages of the Product Lifecycle...

○ **Development** – This is the stage before the product is released. At this stage, the business will be designing and testing the product as well as completing their market research.

○ **Introduction** – At this stage, the product is launched onto the market. Businesses might be advertising the new product a lot at this stage to increase awareness and might include introductory offers. Sales will increase steadily in the introduction stage (if successful).

○ **Growth** – If the launch of the product is a success, it will enter the growth stage (remember not all products go through all stages of the lifecycle, some may decline and never grow). At the growth stage, sales of the product will increase rapidly.

○ **Maturity** – At this stage, most customers have tried or bought the product. New competitors might be on the scene. Sales are at their highest, but the rate of sales growth will slow down.

○ **Decline** – In this final stage, sales decline. If sales decline continues then the product will be withdrawn from the market. If businesses are aware of the Product Lifecycle though, they will be able to extend the life of a product before it enters the decline stage.

What is an Extension Strategy?

An Extension Strategy is the name given to the action a business takes when it identifies a product is close to entering the decline stage of the Product Lifecycle. These actions aim to extend the life of a product, by keeping the product within the maturity stage, and should improve sales.

What Extension Strategies can businesses use?

Businesses could **advertise** their product to remind customers that it exists and to encourage them to purchase it. The **price** of the product could be **reduced**, or the product could be **updated** to encourage new sales. Businesses might choose to explore **other markets** – like targeting a **different audience** or selling in another country. this would expose the product to new customers. The **packaging** of the product could be updated to get customers' attention.

What is Product Differentiation?

As the name suggests, Product Differentiation refers to what is DIFFERENT or what STANDS OUT about the product or service a business is launching. Businesses usually identify what is different about their product in the development stage of the product lifecycle.

How can Product Differentiation be achieved?

- Businesses should try to build a strong brand image for their goods or services.
- Businesses should focus on the **function, cost** and **appearance** of their products (these are variables of the Design Mix Model).

To stand out, business could offer improved/better:
- Design mix (see above)
- Location
- Product Features
- Product Functions
- Better services (delivery etc.)
- After sales services (extended guarantees etc.)
- Design/Appearance of their products
  ...or they could identify a product's **USP**

Differentiation is about the product itself, not the price etc.

What is a USP?

USP stands for **Unique Selling Point**.

This is a specific thing that a business identifies about their product or service that is different (unique). Businesses identify a USP for their products or services to help them DIFFERENTIATE from others on the market.

How can identifying a USP for a product help sales?

If a business identifies a USP for a product or service, they can use this within their advertising. If the market already has existing products or services being sold, having a USP will help a new product stand out and will give customers a reason to change their habits and purchase the new product.

What are the three categories of External Factors that could affect Product Development?

☆ **Technological Developments** – technology is changing and updating at a fast pace. Businesses must keep up to date with these developments or they'll be left behind by competitors. Technology could speed up the manufacturing of products, speed up the design process for new products or impact on customers' preferences.

☆ **Economic issues** – the state of the country's economy can have an impact on whether businesses are likely to develop new products or not. In a **recession**, for example, people are generally struggling to make ends meet and businesses will struggle with sales/survival – they're unlikely to invest in new product development.

If there is an economic **boom** then more people are employed and have money to spend; businesses will make more sales but may struggle to keep up with production of existing products to meet increased demand, so they may not be able to focus as much on developing new products.

☆ **Legal Issues** – businesses need to make sure they understand different laws when developing new products and ensure they do not break any of these laws. Laws could have an impact on the way a product is manufactured or could change the designs of some products to ensure they meet **safety standards** within a particular country. Businesses must ensure they do not break **Copyright** law; so they can't copy other people's work that already exists. They must also ensure they do not copy anyone else's product ideas that are covered by a **Patent** (the business might choose to patent their new ideas to stop others copying them too). Meeting legal obligations could cost the business more to produce a product but will ensure the business is less likely to break laws and therefore should avoid having legal cases brought against them.

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What factors do businesses consider when setting a price for a new product?

- ☼ Income levels of target customers (how much they're able to pay)
- ☼ How much target customers are willing to pay for products
- ☼ The prices competitors are charging for similar products
- ☼ The amount products cost to produce

Why is it important for businesses to consider these factors before setting a price?

If businesses didn't consider what customers are able/willing to spend, then the price set could be too high – this would mean the business loses out on sales. If the product was priced a lot higher than that of the business's competitors, then it would struggle to compete. If the cost of production is not considered, businesses could end up selling a product at a loss.

Methods of Advertising to attract and retain customers...

☼ **Leaflets** – these are small handouts given to customers in the street or posted to people (not specifically addressed to anyone). Businesses use these because they're cheap to make and can be kept by customers if needed (so they can be referred to for the business's phone number, for example). They are, however, often thrown away before being looked at.

☼ **Social Media** – websites/apps such as Facebook, Twitter and Instagram. These are used because they're cheap to advertise and accounts are usually free to create. It is possible to target adverts and specific people. Social Media is not, however, guaranteed to be used by all target customers, particularly older age groups.

☼ **Websites** – multiple pages hosted on the Internet. Websites can be accessed by customers around the world at any time of day. They are, however, less effective if not promoted or not kept up to date.

☼ **Newspapers** – these can be either local (in one area) or national (all around the country). Advertising in newspapers can be expensive but can get a large audience. Newspapers are less effective when targeting younger customers though and adverts are easily lost with the amount of information on any single page.

☼ **Magazines** – magazine advertising can also be expensive but often magazines are based on specific topics or aimed at a specific age group/ gender, so this means it's easy for a business to target their advertising.

☼ **Radio** – Radio is likely the most expensive method of advertising out of the six methods. Adverts can grab people's attention with sound/ music, but customers can't keep any information or might miss parts.

What is a Pricing Strategy?

A pricing strategy is a specific system used to set prices. There are lots of different pricing strategies that businesses can use, and some businesses use more than one on the same product. There are four you need to know for your exam (below). REVISE THEM!

Pricing Strategies...

Competitive Pricing is...

When a business looks at what competitors are charging when considering what price they are going to charge for their products or services. It doesn't necessarily mean they charge a lower price (though they could in order to be competitive).

Psychological Pricing is...

When businesses avoid using round numbers for their prices, instead choosing to end prices with figures like 99p. This gives the psychological impression that the products are not as expensive - £2999 instead of £3000, for example, is only £1 off, but appears cheaper!

Price Skimming is...

When businesses charge a HIGH price for a new product or service because people will be willing to pay for it as it's new and sought after. This price is then lowered over time as other products are released or the product itself becomes more common.

Price Penetration is...

When businesses charge a LOW price when a product or service is first launched and then increase the price over time. This encourages people to give the product or service a chance, with the hope that they'll buy it again. This is a way of changing customers' established buying habits and is used in crowded markets.

Methods of Promotion...

☼ **Discounts** – these are appropriate for all products or services. They help businesses attract customers, who will buy because of a discounted price, and can encourage repeat custom if the price is discounted again at a later date.

☼ **Competitions** – competitions are often used by businesses that advertise on social media. They encourage people to interact with the brand, which can attract new customers.

☼ **Buy one get one free (BOGOF)** – these are suited more to businesses that sell products, rather than services, and to businesses that sell products that people consume (use a lot of) – like groceries. These offers can be expensive for a business as they have to give away an additional product with each sale of a specific product.

☼ **Free gifts/product trials** – where a free gift is given with every purchase or a small 'test' product is offered to encourage customers to try a new product out.

☼ **Point of Sale Advertising** – point of sale refers to the place a product is sold; these are usually adverts within stores or at checkouts.

☼ **Loyalty Schemes** – this promotion method is used for products that people consume a lot of or buy regularly, like coffee. These schemes are mainly used to retain customers, as their loyalty will be rewarded with discounts/freebies.

What is customer service?

Customer service is when a business provides assistance, support or advice to the people that are buying their products or services. Good customer service will mean people are happy to return and can also lead to a good reputation, which can help to attract new customers.

Customer Service Techniques...

☼ **Good Product Knowledge** – customers expect businesses to have staff that know the products they're selling inside out! As more and more people buy online, businesses that offer expert knowledge can compete more with online retailers. This can attract customers.

☼ **Customer Engagement** – this means that the business's employees interact with customers in a polite way and make them feel special. This can help retain customers – if they're happy with the service, they'll likely return.

☼ **After Sales Service** – businesses can offer guarantees on products, maintenance and servicing. All of these additional services will help attract customers but will also mean that customers return to the business.

What is a Functional Area?

A Functional Area is a 'department' within a business. Each department has its own specialisms and responsibilities, known as their functional activities. Functional Areas will often work together, communicating to ensure the business runs smoothly.

Functional Areas / Activities

Human Resources	Marketing	Operations	Finance
Description... The Human Resources Functional Area deals with the business's employees. If you think that this function deals with the PEOPLE, then it should be easy to remember by relating the word HUMAN to PEOPLE within the business.	**Description...** The Marketing Functional Area is responsible for identifying what customers wants and needs are. This Functional Area is then responsible for developing products that meet these wants and needs.	**Description...** Sometimes referred to as the 'Production Department', this Functional Area is responsible for the process that turns inputs (raw materials) into outputs (finish goods) that can be sold to customers.	**Description...** This Functional Area is responsible for everything to do with money in the business. They also organise the financial performance reports on an annual basis.

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Main Activities/Responsibilities...

Human Resources:
- Recruiting employees
- Ensuring the right number of people are working within the business (no shortages, not too many employees)
- Training employees
- Performance management (giving employees targets and checking on how well they're working)
- Health and Safety within the workplace
- Ensuring the business keeps to all laws relating to employment and employees

Marketing:
- Carrying out Market Research
- Finding out customers' opinions
- Gathering feedback from customers
- Developing a marketing mix for the products the business offers.
- The Marketing Mix involves the 4 P's... PRODUCT, PRICE, PLACE and PROMOTION. The marketing function focus on getting this mix right so the product has more chance of success.

Operations:
- Planning how products will be manufactured
- Producing the product or service
- Quality control
- Stock control
- Ordering stock
- Logistics (delivery of stock / finish products)

Finance:
- Budgets
- Organising resources
- Ordering
- Preparing financial statements which will be submitted to HMRC (HMRC is the Government department that deals with tax).
- Reporting on financial performance; if it's a company, these reports will be available for all to see.

What is the difference between function activities in a small start-up business and a large company?

In a small business start-up, all of the above functional activities are likely to be carried out by the same person (if it's a sole trader business) or a handful of people (in a partnership). There won't be dedicated teams of people to do all of the different activities required.

In larger firms, Functional Areas will have big teams of people all working together on specific tasks within the same department. The departments will still communicate with one another, but there is less likely to be shared responsibilities.

Summary of some main activities...

Activity	Functional Area	Activity	Functional Area
Checking Quality of Products	Operations	Manufacturing Products	Operations
Organising delivery of parts	Operations	Advertising Products	Marketing
Carrying out Market Research	Marketing	Paying employees' wages	Finance
Health and Safety	Human Resources	Posting adverts for a job	Human Resources

Food Preparation and Nutrition

What's assessed: Food investigation (30 marks)

Students will investigate the working characteristics and the functional and chemical properties of a particular ingredient through practical investigation. They will produce a report which will include research into 'how ingredients work and why'.

How it's assessed: Written or electronic report (1,500–2,000 words) split into three sections:

1. Students carry out **research** into the ingredients to be investigated
2. Students carry out **practical investigations**, related to the hypothesis or prediction, which demonstrate understanding of how ingredients work and why. Students will record the results of the practical investigation.
3. Students will **analyse and evaluate** the results of the investigation and reflect upon their findings. Explanations will demonstrate how the results can be applied in practical food preparation and cooking.

Marking criteria:	
Section	Students should:
Section A: Researching the task (6 marks) Students carry out research into the ingredients to be investigated.	• analyse the task, explaining the background research • carry out secondary research, using different sources, focusing on the working characteristics, functional and chemical properties of the ingredients • analyse the research and use the findings to plan the practical investigation • establish a hypothesis/predict an outcome as a result of the research findings.
Section B: Investigation (15 marks) Students carry out practical investigations, related to the hypothesis or prediction, which demonstrate understanding of how ingredients work and why**.**	• Investigate and evaluate how ingredients work and why through practical experimentation. Each investigation should be related to the research and have a clear aim which can then be concluded. • The number of investigations will be determined by the complexity of the investigations. • A range of appropriate testing methods should be identified and carried out to record the results eg annotated photographs, labelled diagrams, tables, charts, sensory testing methods, viscosity tests.
Section C: Analysis and evaluation (9 marks) Students will analyse and evaluate the results of the investigation and reflect upon their findings. Explanations will demonstrate how the results can be applied in practical food preparation and cooking.	• analyse and interpret the results of the investigative work. The results will be linked to the research and data explaining the working characteristics, functional and chemical properties of the ingredient(s) • evaluate the hypothesis/prediction with justification • explain how the results/findings can be applied in practical food preparation and cooking.

French

French Year 11 Autumn Term – Mon Collège et Mon Avenir

School Subjects

le français - french

le dessin – art

le commerce - business

la chimie - chemistry

la biologie - biology

la musique - music

la physique - physics

la religion - RS

la technologie – DT

l'allemand – German

l'anglais – English

l'art dramatique – drama

l'EPS – PE

l'histoire- history

l'informatique – ICT

les arts ménagers – home technology

les études des médias – media studies

Ma matière préférée, c'est …..

Je suis faible en…- I am weak at…

Je suis fort(e) en… - I am good at…

Je suis doué en …- I am gifted at…

Le prof est…- The teacher is…

On a trop de devoirs – We have too much homework

Rules and School Uniform

Il faut – you must

Il est interdit de – you are not allowed

être à l'heure – be on time

faire ses devoirs – do your homework

mâcher du chewing gum – chew gum

utiliser son portable en classe – use your phone in class

porter des bijoux – wear make-up

manquer les cours – miss lessons

respecter les règles

Je trouve ça logique / injuste – i find it logical / unfair

La mode n'a pas de place à l'ecole – school has no place in school

Je porte – i wear

un pantalon / un polo / un sweat / une chemise / une jupe / une robe / mes propres vetêments – trousers / a polo shirt / a jumper / a shirt / a skirt / a dress / my own clothes

L'uniforme coûte cher – uniform costs a lot

C'est démodé – it's unfashionable

Tout le monde se ressemble – everyone looks the same

Describing your school and School in France

Il y a – there is

Il existe – there is

Il n'y a pas de –there isn't

le gymnase – gym

le terrain de basket – basketball court

le terrain de sport – sports ground

la bibliothèque – library

la cantine – canteen

la cour – playground

la salle de sport – gym

les labos – labs

les salles de classe – classrooms

les vestiaires – changing rooms

En France, ils redoublent – In France, they resit a year

Les horaires sont plus longues – the hours are longer

Ils portent leurs propres vetêments – they wear their own clothes

J'aime le système français – I like the French system

The Perfect Tense with avoir

To form the perfect you need to use the verb *avoir* in the present tense:

j'ai – i have

tu as – you have

il / elle a – he / she has

on a / nous avons – we have

vous avez – you have

ils /elles ont –they have

You then add the past participle:

-er verbs = é (j'ai joué)

-re verbs = u (j'ai perdu)

-re verbs = i (j'ai fini)

The Perfect Tense with être

There are 14 verbs which use être to form the perfect tense:

The most important verb which uses être is "aller"

Je suis allé – I went

Direct Object Pronouns

To say "him", "her", "them" or "it" you need to use a direct object pronoun. This comes before the verb and changes depending on gender.

Je le déteste – I hate him / it

Je la déteste – I hate her / it

Je les déteste – I hate them

Before a vowel:

Je l'aime – I like him/her/it

The Imperfect Tense

The imperfect tense is used to say what *used to* happen or to describe what something *was like*.

To form the imperfect tense, you take the nous part of the verb in the present tense:

jouer – to play

nous jouons – we play

You then remove the "nous" and the "-ons"

This leaves the STEM

jou

You then add the following endings:

je – ___ais	nous - ___ions
tu – ___ais	vous - ___iez
il / elle / on - ___ait	ils / elles - ___aient

The only verb which has a different stem is "etre". The stem is "et.."

Geography

T1

Landscapes and physical processes

Geography Knowledge Organiser

Find a playlist of explainer clips by scanning or clicking the QR code

CLICK ME

SCAN ME

1.1.1 - Distinctive landscapes
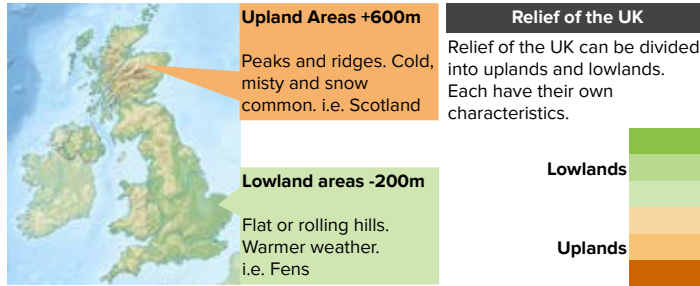
Upland Areas +600m	Relief of the UK
Peaks and ridges. Cold, misty and snow common. i.e. Scotland	Relief of the UK can be divided into uplands and lowlands. Each have their own characteristics.

Lowland areas -200m

Flat or rolling hills. Warmer weather. i.e. Fens

Lowlands
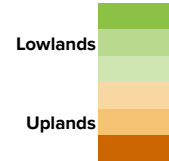
Uplands

Glaciation in the UK

Over many thousands of years, glaciation has made an impression on the UK's landscape. Today, much of upland Britain is covered in u-shaped valleys and eroded steep mountain peaks.

During the ice age

Ice covered areas eroded and weathered landscapes to create dramatic mountain scenery.
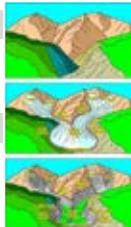
After the ice age

Deep valleys and deposition of sediment revealed

What is a landscape?

A landscape has visible features that make up the surface of the land. Landscapes can be broken down into four 'elements'.

Landscape Elements

Physical	Biological
-Mountains	-Vegetation
-Coastlines	-Habitats
-Rivers	-Wildlife
Human	**Variable**
-Buildings	-Weather
-Infrastructure	-Senses

1.1.2/3 - Human activity

Honeypot site - A location which attracts a large number of tourists who, due to their numbers, place pressure on the environment and local people.
Carrying capacity - The number of people which a region can support without damaging the location and environment.
Visitor pressure - tourists who, due to their numbers, place stress on the environment and local people.

Positives of visitor pressure	Negatives of visitor pressure
Employment opportunities are created to meet the demands of the tourists	Jobs are often seasonal or part time. This makes it harder to support family.
Tourism brings in money and will boost the local economy	There is overcrowding in the peak seasons
There will be upkeep of the area, making it a clean place to live	Businesses are designed for the tourists
Crime can be reduced due to higher levels of employment	There can be congestion on the roads
	Scenic walks and hikes are damaged by footpath erosion

(1.1.3) Management: repairing footpaths

Stone pitching - This technique involves digging stone into the ground to form good solid footfalls. This ancient technique is used extensively in the central fells using stone which is naturally occurring.

Soil Inversion - A digger is used to construct a ditch drain. The soil removed from the drain is placed alongside to create a hard wearing walking surface. Grass seed mix is then sown to encourage vegetation to bind all the works together.

Sheep wool - The fleece is placed between the soil and the stones to prevents the stone from sinking into the soil. This creates a 'floating' path and also absorbs some water to slow surface runoff.

1.2.1 - Processes & landforms (Rivers)

Erosion

Attrition	Rocks that bash together to become smooth/smaller.
Solution	A chemical reaction that dissolved rocks.
Abrasion	Rocks hurled at the base of a cliff to break pieces apart.
Hydraulic Action	Water enters cracks in the cliff, air compresses, causing the crack to expand.

Transportation

Solution	Minerals dissolve in water and are carried along.
Suspension	Sediment is carried along in the flow of the water.
Saltation	Pebbles that bounce along the sea/river bed.
Traction	Boulders that roll along a river/sea bed by the force of the flowing water.

Deposition

When the sea or river loses energy, it drops the sand, rock particles and pebbles it has been carrying. This is called deposition.

Freeze-thaw weathering

Stage One
Water seeps into cracks and fractures in the rock.

Stage Two
When the water freezes, it expands about 9%. This wedges apart the rock.

Stage Three
With repeated freeze-thaw cycles, the rock breaks off.

Weathering

Chemical
Action of chemicals within water dissolving the rock.

Biological
Rocks that have been broken down by living organisms or plant roots.

Formation of a waterfall

1) River flows over alternative types of rocks.
2) River erodes soft rock faster creating a step.
3) Further hydraulic action and abrasion form a plunge pool beneath.
4) Hard rock above is undercut leaving cap rock which collapses providing more material for erosion.
5) Waterfall retreats leaving steep sided gorge.

Formation of floodplains and levees

When a river floods, fine silt/alluvium is deposited on the valley floor. Closer to the river's banks, the heavier materials builds up to form natural levees.
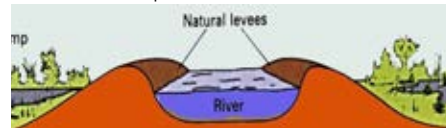
Formation of a meander

A meander is a curve in a river's course formed when erosion and deposition take place on opposite river banks. The two sides of the meander eventually meet and create a straight channel.

Inside bend:
Slowest speed
Deposition
Slip-off slope/point bar

Outside bend:
Fastest speed
Erosion
River cliff/undercut

Formation of a V-shaped valley

River long profile

Upper course

Near the source, the river is flows over steep gradient from the hill/mountains. This gives the river a lot of energy, so it will erode the riverbed vertically to form narrow valleys.

Middle course

Here the gradient get gentler, so the water has less energy and moves more slowly. The river will begin to erode laterally making the river wider.

Lower course

Near the river's mouth, the river widens further and becomes flatter. Material transported is deposited.
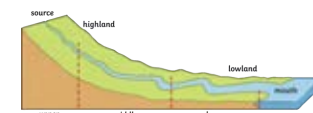
1.2.1 - Processes & landforms (Coasts)

Formation of bays and headlands

Soft rock
Bay
Hard rock
Headland
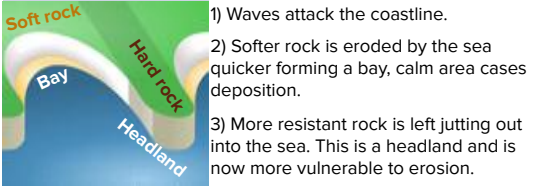
1) Waves attack the coastline.

2) Softer rock is eroded by the sea quicker forming a bay, calm area cases deposition.

3) More resistant rock is left jutting out into the sea. This is a headland and is now more vulnerable to erosion.

Formation of coastal landforms

1. Crack
2. Cave
3. Arch
4. Stack
5. Stump
headland
Wave-cut platform exposed at low tide
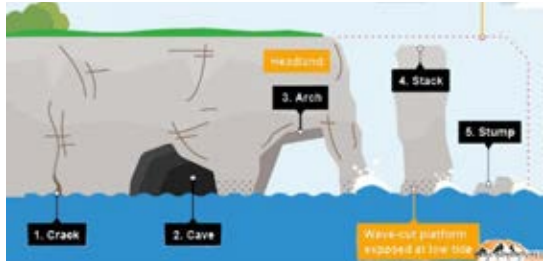
1. Hydraulic action widens cracks in the cliff face over time. Abrasion forms a wave cut notch between HT and LT.
2. Further abrasion widens the wave cut notch to from a cave.
3. Caves at both sides of the headland break through to form arch
4. Weather above/erosion below –arch collapses leaving stack.
5. Further weathering and erosion eaves a stump.

Types of coastline

Concordant
A concordant coastline occurs where the bands of differing rock types run parallel to the coast. The outer hard provides a protective barrier to erosion of the softer rocks further inland. Sometimes the outer hard rock is punctured allowing the sea to erode the softer rocks behind. This creates a cove which is a circular area of water with a relatively narrow entrance way from the sea.

Discordant
Discordant coastline occurs where bands of differing rock type run at right angles to the coast. The different resistance to erosion leads to the formation of headlands and bays.

Bay
Headland
Bay
Headland
Headland

Concordant coast with only 1 rock type

Discordant coast with many rock types

Formation of coastal spits (longshore drift)

Material moved along beach in zig-zag way
Coastline changes direction
Spit curved with change of wind direction
Prevailing winds bring waves in at an angle
Material deposited in shallow, calm water, to form a spit
Spit

1) Swash moves up the beach at the angle of the prevailing wind.
2) Backwash moves down the beach at 90° to coastline, due to gravity.
3) Zigzag movement (Longshore Drift) transports material along beach.
4) Deposition causes beach to extend, until reaching a river estuary.
5) Change in prevailing wind direction forms a hook.
6) Sheltered area behind spit encourages deposition, salt marsh forms.

Mass movement

Mass Movement is the downhill movement of cliff material
Rockfall As the weathering processes weaken the structure of the cliff rock fragments fall away.
Landslide Large blocks of the cliff slide down to the base of the cliff due to erosion weakening the base of the cliff
Slumping When soft rocks like clay become too wet from rainfall and weakened by erosion, the entire cliff face slips down in a curve, making steps in the cliff

Rock fall
Landslide
Slumping

Wave-cut landforms

1. The sea attacks the base of the cliff between the high and low water mark.

2. A wave-cut notch is formed by erosional processes such as abrasion and hydraulic action - this is a dent in the cliff usually at the level of high tide.

3. As the notch increases in size, the cliff becomes unstable and collapses, leading to the retreat of the cliff face.

4. The backwash carries away the eroded material, leaving a wave-cut platform.

5. The process repeats. The cliff continues to retreat.

1.2.2 - Rates of change

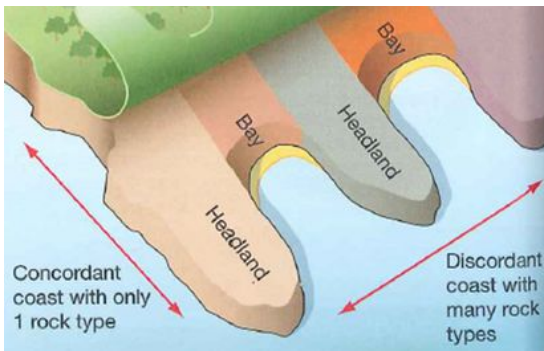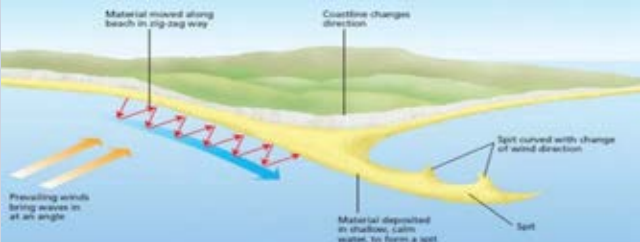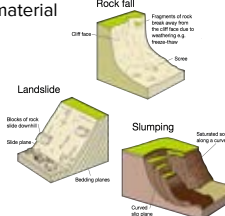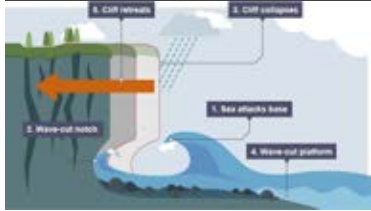### Climate
The rainfall map of the UK shows variations in rain.
Less precipitation occurs in low land areas. East England
Most precipitation occurs in upland areas. Scotland.

These differences mean...
Uplands experience more weathering, erosion and mass movement.

June/July 2007 Precipitation (mm) % of 1961-1990 Average
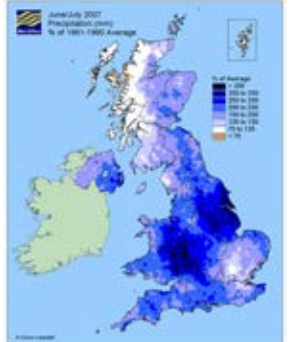
Geology
Some rock types erode faster than others (sedimentary limestone or clays erodes quicker than metamorphic granite). The direction rocks are layered in can also affect this eg. concordant or discordant coastlines

Clay
Loose, soft rock

Granite
Dense, hard rock

Human activity
Humans can increase rates of change such as footpath erosion on cliffs or building on floodplains but humans can also put management in place is slow erosion or transport processes, like dams, groynes, river dredging & afforestation.

1.3.1 - Drainage basins

Hydrological cycle

Condensation
Precipitation
Snow & ice
Air
Transpiration
Evaporation
Run-off
Percolation
Ocean
Water table
Groundwater flow
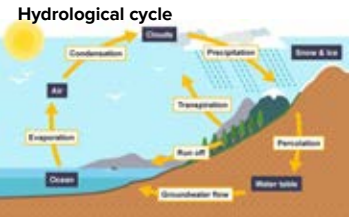
Condensation- when water vapour cools to form clouds
Evaporation- where water is turned into water vapour (gas)
Precipitation- any water that falls from the sky (rain, snow etc)
Interception- vegetation traps water before it reaches the ground
Transpiration- water is evaporated from the leaves of vegetation

Surface runoff- water runs across the ground to a river
Infiltration- water seeps into the soil in the ground
Percolation- water seeps into rock deeper in the ground
Groundwater flow- water flows through the soil and rock in the ground

Drainage basin

Source
Watershed
Confluence
Land
Drainage basin
Tributary
Mouth
Sea
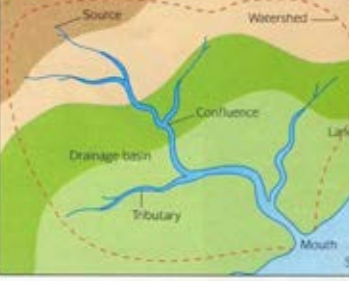
Drainage Basin- is the area of land drained by a river and its tributaries
Watershed- the area of high land forming the edge of a river basin
Source- where a river begins
Mouth- where a river meets the sea
Tributary- a small river or stream that joins a larger river
Confluence- the point at which two rivers meet
Main river channel- main river flow in the drainage basin
Floodplain- flat land on the sides of the river that takes the overflow water

1.3.2 - River flooding

Factors influencing how rivers flood:

Steep Slopes - If the land surrounding a river is steep, rainfall will run quickly across the ground as surface runoff, increasing the river's discharge

Urbanisation - Roads and pavements are built using a tarmac, an impermeable material. Rainfall flows quickly over tarmaced surfaces as it cannot infiltrate into the ground, leading to rapidly increasing discharge

Geology - If a drainage basin has impermeable rock, water is unable to percolate into the rock. As a result, the rainfall flows into the river via throughflow and surface run off

Heavy or prolonged rainfall - A high volume of rainfall will cause a river's discharge to increase rapidly, increasing the chances of the river bursting its banks

Vegetation - Trees intercept rainfall as it falls from the sky. If there is a lack of vegetation, more rainfall reaches the ground and eventually the river, seeing a large increase in discharge

1.3.3 - Flood management

Hard Engineering - Hard engineering management involves using artificial structures, such as dams and embankments which try to control rivers. They tend to be expensive.

Soft Engineering - Soft engineering management is a more natural approach to manage flooding, it does not involve building artificial structures, but takes a more sustainable approach to managing the potential for river flooding.

River defences	
Hard Engineering	
Channel straightening	Removing meanders, increases velocity to remove flood water.
Artificial Levees	Man-made banks heighten river so flood water is contained.
Channel widening	Makes river wider to increase capacity for a flood.
Soft Engineering	
Afforestation	Planted trees soak up rainwater, reduces flood risk.
Managed Flooding	Naturally let some areas flood to protect settlements.

Home study questions

DEVELOPING
Describe how tourists can have benefits and negatives to honeypot sites **[3 marks]**

Explain why a waterfall migrates backwards the source **[4 marks]**

SECURING
Analyse the pattern of average precipitation (rainfall) in the UK (1.2.2) **[6 marks]**

Explain the difference between discordant and concordant coastlines **[4 marks]**

MASTERING
'Urbanisation is the most significant factor in flooding' **To what extent** do you agree with this statement? **[8 marks]**

Sketch and annotate the formation of a spit **[6 marks]**

CHALLENGE
Create a spider diagram to show how all the erosional processes and landforms of rivers and coasts are linked

Draw out a river long profile and **label** where the different landforms and processes would usually occur

T2

Rural-urban links

Geography Knowledge Organiser

2.1.1 - Rural-urban continuum

A **rural-urban continuum** is the gradual change from a very built up urban area (like a large city) through to rolling countryside and sparsely populated villages. There is no clear line between urban and rural, as represented by the diagram

EMR: Extended Metropolitan Region MUR: Mega Urban Region

Service provision
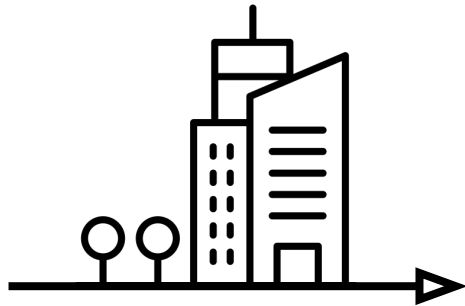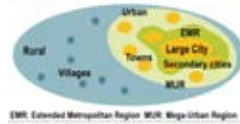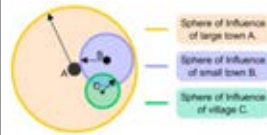
As we move along the continuum from the most rural to the most urban locations, the number of services provided by each settlement increases. For example, in a small village there is likely to be a post office and a. However, in a large city there are a large number of shops, supermarkets, banks, hospitals and entertainment providers.

A **sphere of influence** is the area around the settlement from which people are attracted to visit or work due to the services the settlement provided. Large cities have more services so have a larger sphere of influence in the area

Counter-urbanisation

The movement of people from urban to rural areas to live.
Reasons for counter-urbanisation:
Housing - cheaper & bigger
Transport - improved roads and increased car ownership
Employment - more workplaces now located on urban-rural fringe
Environmental factors - less noise and air pollution

Impact of counter-urbanisation:
Higher house prices - increased demand
Decrease in traditional services - (village shops) residents now shop in urban areas
Increase need for local schools
Traffic congestion

Commuting - People often choose to live in cheaper rural areas and commute to work rather than paying higher urban prices, or just work from home

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2.1.2 - Changing rural areas

Rural change

Counter-urbanisation, sphere of influences and technological change has lead to:
- Reduction or change in employment opportunities in rural area
- Closure of rural services like banks and post offices
- Increase in house prices rural areas, especially in accessible "commuter belt"
- Increased "second" home ownership
- Some locals can no longer afford local houses
- Reduction in bus services

Some of the more remote rural areas have experienced lots of negative changes. These include depopulation and deprivation. Deprivation is often characterised by a lack of public transport, healthcare and education.
Spiral of deprivation

Sustainable rural community

Things that need to be considered when creating a sustainable community;
Availability of jobs – encourage jobs based in rural areas by encouraging more companies to locate there
Education – ensuring local schools remain open
Healthcare – ensure all locals can access healthcare (transport links to cities)
Village services – encouraging shops, pubs and post offices to remain open
Transport – ensuring public transport runs regularly and can be accessed by all
Internet – ensure fast and reliable broadband

2.2.1 - Changing population

UK population change factors

Social	Economic	Political
Healthcare - free and accessible for all, so people are living longer **Marriage/culture** - People are marrying later and having a family later, reducing the number of children they can have	**Careers** - many women now chose to have a career, than start a family **Maternity pay** - Getting paid while looking after a newborn child encourages more people to have children	**Contraception** - is widely available **Mat-/Pat-ernity rights** - Mothers and Fathers now have the rights to paid leave to care for a newborn, so encouraging more people to have children

UK migration

Migration to the UK	Migration within the UK
Stable government More available jobs Good healthcare system Already have family in the UK Good education system Better rates of pay	Cost of housing cheaper somewhere else Change in lifestyle - retiring to a rural area Searching for work - more jobs in a cities Moving to reduce the commuting time - live closer to work Moving closer to family for care needs

UK's ageing population

Causes	Social/Health effects	Economic effects
Low birth rate and low death rate means we have more people living for longer (high life expectancy). The UK now have more people aged 60+ than ever before	- OAPs have more health issues, straining NHS - Increased demand for care homes and carer services - More people living longer increases demand for homes	- Not enough working aged population to pay taxes - Healthcare, free public transport etc costs the state more money - Pension costs for government increases

---

2.2.2 - UK towns and cities

Egan's wheel

Egan's wheel outlines the criteria that needs to be met for a community to be sustainable. There is a social, economic and environmental focus. All of these categories must be met in order to have a sustainable community in urban and rural places.

Greenfield development

Greenfield sites are those that have not been built on before.

They are easier and cheaper to build on as there's nothing to knock down and there's more land available.

But this isn't sustainable as it is destroying the natural environment and animal habitats.

Brownfield development

Brownfield sites are those that have been built on before and is often derelict.

Planning permission is often easy to obtain and there are already existing services.

This is a more sustainable method of development however space is often limited and it can be expensive.

2.2.3 - Changing retail

Retail change in the UK

Economic factors	Cultural factors	Technological factors
More home delivery firms making deliveries cheaper, congestion in cities, free parking in out of town centres, high city centre parking costs	Car dependant society, habit of bulk buying weekly or monthly shops	Development of high speed broadband, improved websites that can be used to compare prices, internet banking

Out of town centres

Benefits	Costs
Large free parking areas Less congestion at out of town location Quick and easy access (near motorway network) Often room for expansion Near suburban housing	Can cause decline in city centre Can increase congestion out of town Often has the same chain stores at out of town centres – so does not support smaller independent shops. Land use conflicts in out of town areas – areas in high demand from business parks and golf courses

Internet shopping

Benefits	Costs
Convenient and often cheaper Can buy products not available locally Can buy at any time or any location Less time consuming Traffic congestion is reduced Jobs created for those delivering products	Not everyone, (the elderly) have internet Goods might be difficult to return City centre shops might close, leads to jobs losses and decline More delivery vans = more congestion Using bank details can lead to fraud

2.3.1 - Global urbanisation

Distribution of global cities

As a result of globalisation, places around the world are now more connected than ever before. **Global cities** have become key globally connected places.

Although global cities are distributed widely across the world it is not an even distribution. For example;

North America, Western Europe and South Asia have clusters of global cities
Africa has very few
India has 8
China has 14

Changes over time
The rate of urbanisation varies across the world. In many HICs the period of rapid urbanisation occurred back in the 1800s, whereas many LICs are experiencing it at the moment.

2.3.2 - Urbanisation in global cities

London (HIC global city)

Reasons for growth
Natural population change – from the migrants and young workers who were attracted to the city for work
Migration – the UK attracted many from ex-colonies as well as people from other EU countries
Connections – London is the financial capital of UK and for most of the global finances too. It has the stock exchange. It is also home to large MNCs. London is also a major trading and transport hub.

Way of Life
The UK has huge numbers of cultures and races, as well as white British people there are huge numbers of migrants from India, Pakistan, Bangladesh, Canada, USA, Kenya, Zimbabwe and other ex-British colonies
London houses a major world financial centre and a range of business specialisms which attract a highly skilled workforce.
However London's unemployment rate was one of the highest in the UK

Challenges

Poverty
Often people who live in inner-city areas experience a poor quality of life. This is because the inner-city is typically a zone with older housing and declining industry. There is a lack of housing provision; access to services; access to open land;safety and security.
Traffic Issues
London has massive problems with congestion. From the 1950s, car ownership has grown at a very quick rate. The increasing population of the city has meant roads are crowded and transport services such as the underground and buses struggle to cope
Urban decline
Some areas of a London suffers from out-migration of people and businesses, derelict buildings, high unemployment. This was common in the inner cities of the UK in the 1980s, leading to further poverty in these areas.

Mumbai (NIC global city)

Reasons for growth
Natural population change – in 1974 the fertility rate was 4, although this has now reduced to 1.8. Natural change was therefore a big factor in the 1970's and 1980s but less so now.
Migration – the pull factors for Mumbai are cheap rail travel, jobs and better education. The push factors from the surrounding countryside are poor standards of housing, healthcare and sanitation.
Connections – Mumbai is the financial capital of India and home to the stock exchange. It is also home to large MNCs.

Informal sector
Wages are low = families unable to save and cannot afford to send children to school = children fail to get an education and forced to work in informal sector
Informal workers don't pay tax = government does not raise income and cannot afford to invest in schools or hospitals = **children fail to gain a good education** and forced to work in the informal sector.

Way of Life
Mumbai is a city of contrasts. One obvious one is the difference between rich and poor. Many well education people live in expensive properties while the majority of the city live in slums and work in the informal economy (in roles such as street vendors and rubbish collectors)

In the slims there is a lack of sanitation, adequate housing and open sewers are just some of the issues that face people living in these areas. Disease often spreads quickly due to the conditions and lack of health care facilities.

Challenges
Reducing poverty and deprivation – with such a large proportion of people living in slums. Education opportunities for these people are being increased, in addition to improved healthcare and sanitation.
Housing – the majority of people live in slums, are pavement dwellers or live in crawls (four or five story tenement buildings with shared facilities). These areas suffer from overcrowding and the risk of fire, flooding or collapse.

1.3.3 - Connected global cities

Global Cities are connected to each other and other places around the world by:

Finance and Trade - global cities are the world's financial centres as banks locate their head offices in these cities and decisions regarding world trade are made here. This makes them very important places for the economy.

Migration and Culture - global cities attract economic migrants from all over the world. This pattern of migration results in cultural diversity which means that new languages, traditions, foods, celebrations and religions are brought to the country. For example in London over 250 languages are spoken.

Governance and Decision-Making - global cities are home to some of the most influential businesses and companies in the world where decisions made can influence the rest of the globe. For example the UN has headquarters in New York and yet employs 41,000 people worldwide.

Ideas and Information - global cities are home to many of the world's largest television and film industries, broadcasting all across the globe.

Transport Hubs - global cities are home to some of the world's largest airports which allow for the movement of people, goods and tourists across the globe. For example about 158 flights arrive at Dubai International Airport.

Home study questions

DEVELOPING
Define what an rural-urban continuum is **[2 marks]**

Explain how the spiral of deprivation leads to depopulation **[4 marks]**

SECURING
Analyse the distribution in global cities around the world (2.3.1) **[6 marks]**

Explain why building on brownfield sites is more sustainable than on greenfield sites **[4 marks]**

MASTERING
'The challenges associated with an NIC global city are more difficult to solve than those of HIC global cities' **To what extent** do you agree with this statement? **[8 marks]**

Decide why Europe and North America has the most significant concentration of global cities **[6 marks]**

CHALLENGE
Link greenfield and brownfield developments to as many different elements of this module as possible

Create a spider diagram to show how Newcastle is linked to the rest of the world (a connected global city)
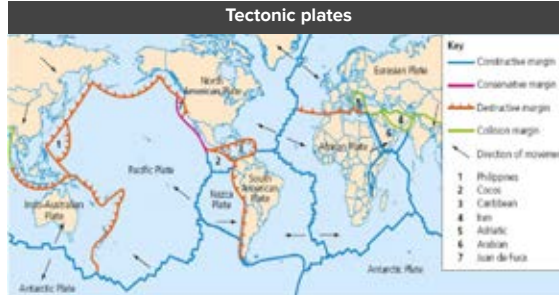
T3

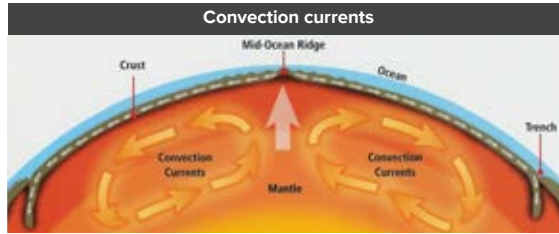# Tectonic hazards

Geography Knowledge Organiser

3.1.1 - Tectonic processes and landforms

Tectonic plates

The earth is made up of a series of layers. The outer layer is called the crust. This is made of 2 different types:
Continental Crust (which is on average 35km thick)
Oceanic Crust (which is much thinner, between 6-8km)

Convection currents

Heat from the core causes **convection currents** in the mantle and these currents slowly move the plates

Tectonic boundaries

Constructive
Mid-oceanic ridge
Oceanic crust — Oceanic crust

Destructive
Deep ocean trench
Fold mountain
Continental crust
Oceanic crust

Conservative
Friction builds up as plates force Past each other.

Hot spot
Pacific Plate
Island chain
Oceanic crust
Magma plume
Mantle

1. Intense radioactivity in the Earth's interior creates a large column of magma (known as a magma plume)

2. The plume rises, melting and pushing through the crust above

3. The plume lies in a fixed position under the plate – as the plate move over it, a series of new volcanoes are created along the plate

3.1.1 - Tectonic processes and landforms

Volcanic landforms

Shield volcano characteristic
Low profile
Wide base
Thin runny lava
Made up of layers of lava
Frequent and gentle eruptions

Stratovolcano characteristic
High profile
Narrow base
Thick, slow lava
Made up of layers of mainly ash
Infrequent and violent eruptions

Feature	How it is formed	Found at
Ocean trench	Where subduction takes place	Destructive
Fold mountain	Continental crust is crushed and folded upwards	Destructive
Ocean ridge	As lava cools a ridge is formed under the sea	Constructive
Rift valley	Where 2 continental plates pull apart	Constructive
Caldera	A large depression or crater formed by large stratovolcanoes or supervolcanoes	Destructive & hotspot
Cinder cone	Bowl shaped crater of a shield volcano	Constructive
Lava tube	Under the ground, basic lava develops a hard crust through which lava flows	Constructive
Geysers	Water in the ground heated by the magma explodes onto the surface	Destructive & hotspot

3.2.1 - Tectonic impacts

Volcano effects
MONTSERRAT 1995-7

Health
- Ash clouds caused breathing problems
- 19 deaths
- 100s injured

Infrastructure
- The capital, Plymouth, has been covered in layers of ash and mud
- Lahars have destroyed large areas urban areas
- The only airport was destroyed

Economy
- Farmland abandoned (significant unemployment)
- Prevented tourism so tourism economy suffered
- Capital city is abandoned and rebuilt in the north

Earthquake effects
HAITI 2010

Health
- 250,000 people died.
- 300,000 people were injured.
- Cholera spread through temporary camps

Infrastructure
- Airport and port damaged
- 30,000 buildings collapsed
- Hospitals and medical centres were destroyed

Economy
- Damage to the main clothing industry
- Tourist industry will take years to recover
- Infrastructure damaged reduced trade, imports and exports

Tsunami effects
SOUTHEAST ASIA 2004

Health
- Over 220 000 deaths
- 650 000 injured
- 5-6 million needing emergency aid

Infrastructure
- 1,000s of railway lines, roads, bridges and airports were destroyed
- Hospitals within 30mi of the coastline were destroyed
- Water supplies contaminated

Economy
- Fishing industry devastated
- Tourism, dropped 80%
- Reconstruction cost billions of pounds

Vulnerability to tectonic hazards

Physical factors
Duration - the longer a hazard lasts the more severe the impact
Predictability -hazards that hit with no warning have a larger impact
Volcanoes
Lava flows - Molten rock flows down the side of a volcano (Local)
Lahars - Volcanic mudflows consisting of a mixture of ash and water (Local)
Pyroclastic flow - Burning clouds of gas and ash (Local)
Ash clouds - Ash thrown into the atmosphere (Regional/National/Global)
Earthquakes
Magnitude - the stronger the hazard the more severe the impacts

Human factors
Wealth - poor people are less able to withstand disasters and recover from it
Education - where populations are able to read and write, written messages can be used to spread warning or give advice about how to cope
Governments - can support education and and can pass building regulations
Age - children and the elderly are more vulnerable
Health - healthy people are more able to cope
Population density - the more people living in the area the more that will be affected
Time of the day - e.g. earthquakes in rush hours have a more devastating effect
Emergency services - richer countries have well trained and well resourced response

3.2.2 - Tectonic management

Earthquakes are difficult to predict but there are some monitoring techniques:
- Laser beams can detect plate movement
- A seismometer is used to pick up vibrations in the earth's crust. These can lead up to an earthquake

Monitoring Techniques used to predict volcanic eruptions include:
- Remote sensing. Satellites monitor gas emissions and thermal imaging can work out the temperature within the volcano.
- Seismometers can pick up movements in the earth which sometimes occur before an eruption.

Tsunami warning system:
- Following the 1960 Chilean earthquake the Pacific countries decided to set up the Pacific Tsunami Warning System (PTWS).
- This is a network of seismometers and ocean buoys that detect earthquakes and ocean movements.
- Warnings are then given to local centres, which warn local people using the TV, radio, text messages and sirens.

Hazard planning strategies

Hazard Mapping highlights areas affected by or vulnerable to earthquakes, volcanoes and tsunamis so planning and money can be targeted at these areas
New building technology can also reduce the impact of earthquakes. Often they are built to absorb the energy and withstand the earth's movement
Emergency planning:
    An exclusion zone can be set up around a volcano
    Lava flows can be diverted
    Emergency services can be trained and given the equipment needed
    People put together emergency kits which include first aid items, blankets etc.

Home study questions

DEVELOPING
Describe how a hot spot creates island arcs **[2 marks]**

Compare the differences between shield volcanoes and stratovolcanoes **[4 marks]**

SECURING
Analyse the distribution of the 3 different plate boundaries around the world (3.1.1) **[6 marks]**

Explain how tsunamis impact the health and infrastructure of a country **[6 marks]**

MASTERING
'Human vulnerabilities are responsible for more deaths than the physical risks associated with tectonic hazards' **To what extent** do you agree with this statement? **[8 marks]**

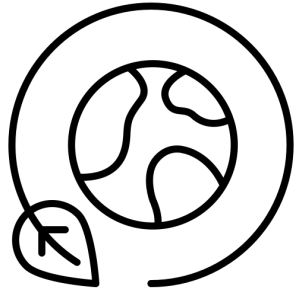**Explain** how tectonic hazards are managed **[4 marks]**

CHALLENGE
Research the responses to the 3 hazard case studies (Montserrat, Haiti and SE Asia) and add these to the space below

Explain how tsunamis are a secondary effect of earthquakes

T5

<u>Weather, climate and ecosystems</u>

Geography Knowledge Organiser

CLICK ME

SCAN ME

5.1.1 - Climate change evidence

Climate Change during the Quaternary Period
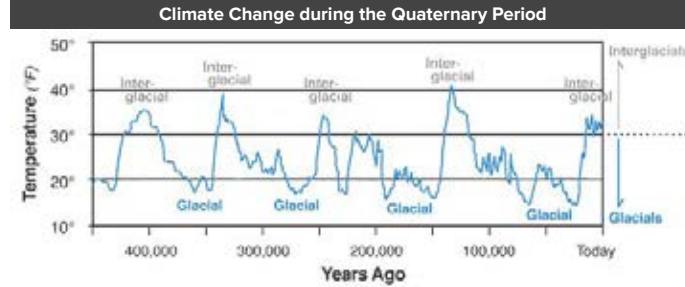
Over a long period of time (the last 400,000 years) there have been natural cycles of cooling and warming. The periods of time the average global temperature was below 15°C are known as **glacials**, and periods of warmth are known as **interglacials**.

Evidence for climate change

Ice cores from the Antarctic show the amount of CO_2 and methane in the atmosphere have changed over the last 420,000 years

Historical records, such as diary extracts

CO_2 levels in the atmosphere

Measurements by the met office show temperature has increased by 0.6°C over the past 100 years.

5.1.2 - Climate change causes

Carbon cycle

- Burning fossil fuels releases carbon into the atmosphere
- Deforestation reduces the potential to store carbon in trees
- When volcanoes erupt ash can cool the planet as it blocks out sunlight & adds carbon to the atmosphere
- Farming animals like cows produce carbon and methane
- Animals breathe out carbon dioxide into the atmosphere

HUMAN

NATURAL

Greenhouse effect

The greenhouse effect is natural but humans have worsened the impacts. Carbon Dioxide and Methane are greenhouse gases which trap heat in the atmosphere. As more gases build up more heat is stored, warming the planet.

5.2.1 - Weather hazards

Global circulation
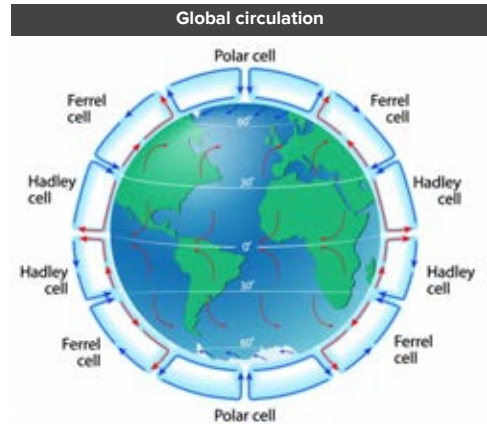
1. At the equator insolation heats the Earth which heats the air above

2. Hot air rises creating low pressure – as it rises it travels north and south

3. This air eventually cools and sinks at about 30° north/south of the equator – this creates high pressure

4. This air then returns to the equator (known as the intertropical convergence zone ITCZ)

Low pressure & tropical storms

Warm air rises because it is less dense. When it reaches the edge of the atmosphere it cannot rise any further and moves north and south. The edge of the atmosphere is cold and so the air cools too. Low pressure can create a hazard called a tropical storm, which is also known as a hurricane, cyclone or typhoon
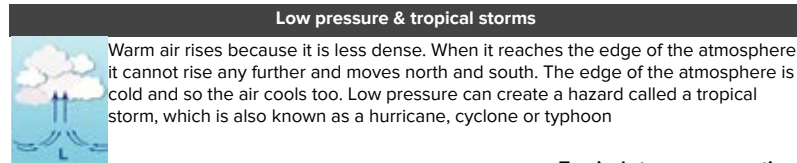
Tropical storm causes (CYCLONE PAM 2015)
Occurred near the island chain of Vanuatu in the South Pacific
Tropical storms can only form over large/deep oceans
Ocean temperatures of at least 27°c
Water depth of at least 50 meters
Gentle winds in the atmosphere to draw air up from water surface

Tropical storm effects (CYCLONE PAM 2015)
11 people died
90000 homeless
Hospitals and schools destroyed
Widespread destruction of fruits, vegetables, root crops and livestock
Stormsurge flooded coastal areas and contaminated freshwater supplies

Tropical storm responses (CYCLONE PAM 2015)
Emergency aid sent by Australia, Fiji, New Zealand and UK
153 temporary school built
Repairs to infrastructure to provide safe drinking water
Blankets & tents given to those made homeless
28 schools used as evacuation centres

Tropical storm cross section

convection currents, eye, cool dense air, hurricane winds and rain, warm moist air

High pressure & droughts

As the air cools in the outer atmosphere it becomes heavier and starts to sink. This air moves back to the ground. This is called high pressure. As the air reaches the surface it starts to warm again and the cycle continues. High pressure can produce a hazard called a drought - a long period of no available water due to intense heat.

Drought causes (CALIFORNIA 2012)
The jet stream was further north that normal, pushing low pressure systems north and allowing high pressure systems to sit over the state creating a heat wave.

Drought effects (CALIFORNIA 2012)
A hosepipe ban was introduced
Homes were destroyed by wildfires
Hydroelectric power dams stopped producing electricity
Crops could not be grown and 17,000 agriculture jobs were lost
Fish died as high temps caused an oxygen decrease

Drought responses (California 2012)
12,500 water metres installed in homes
400,000 water saving toilets installed
3.2 million square feet of turf removed.
50% of Orange County's water supply is now imported from other areas.

5.2.2 - UK weather variations

Weather - the conditions of the atmosphere over a short period of time, often a day
Climate - the weather of a place averaged over a period of time, often 30 years

Factors affecting Climate in the UK

Latitude –the north of the UK has cooler temperatures than the south
Altitude – mountain areas have cooler temperatures. Temperatures decrease by 1°C for every 200m of elevation.
Ocean currents – the North Atlantic drift brings warmer water to the UK, keeping the climate milder in winter and cooler in summer.
Different winds directions also bring different **air masses**:

Pm North westerly brings polar maritime air (cool and showery)
Tm South westerly brings tropical maritime (mild and wet)
Pc Easterly brings polar continental (cold and dry)
Tc South easterly brings tropical continental (warm and dry)
Am Northerly brings arctic air (cold and snow in winter)

Low Pressure (depressions)
Begin in the Atlantic and move east

Brings rain, cloud and wind

Air rises, cools and condenses forming clouds

High Pressure (anticyclone)
Low wind speed, stable conditions with no clouds

In summer they bring hot weather, which may lead to drought

In winter they bring cold (frosty) nights

Microclimate

Physical features - hills, trees can block the wind and sun. Water cools the air
Shelter - Buildings, trees and hills can shelter from the wind
Surface (albedo) - dark surfaces heat up quicker than light surfaces
Buildings - Buildings store up heat and redirect wind direction
Aspect - locations facing south have sun all day, the north doesn't receive sunlight

5.3.1 - Ecosystems

Large scale **ecosystems** are known as **biomes**.

Climate – the most important factor in determining their distribution
Rainfall – the amount and patterns determine the distribution of biomes
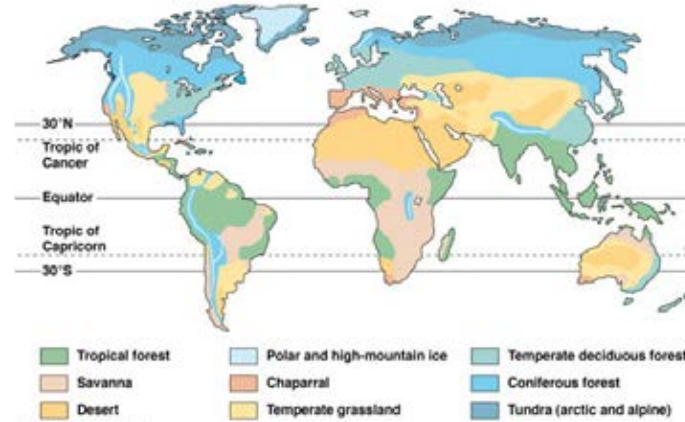**Temperature** – when rainfall is reliable and distributed evenly temperature becomes the most important factor

Other factors can also have an influence e.g.
Tropical rainforests are located either side of the equator where hot and wet conditions allow continuous growth of plants

5.3.2 - Ecosystem processes

Tropical rainforest characteristics

Shrub layer. It is dark and gloomy with very little vegetation.
Under canopy. It is the second level up. There is limited sunlight. Saplings wait here for larger plants and trees to die
Canopy. This is where the upper parts of most of the trees are found. The canopy is typically about 65 to 130 feet (20 to 40 metres) tall.
Emergents. These are the tops of the tallest trees in the rainforest. These are much higher, and so are able to get more light than the average trees in the forest canopy.

Nutrient cycle	Water cycle
The rainforest nutrient cycling is rapid. The hot, damp conditions on the forest floor allow for the rapid decomposition of dead plant material. This provides plentiful nutrients that are easily absorbed by plant roots.	The roots of plants take up water from the ground and the rain is intercepted as it falls - much of it at the canopy level. As the rainforest heats up, the water evaporates into the atmosphere and forms clouds to make the next day's rain.
Carbon cycle	Key services
Rainforests contain about 40 to 50% of the carbon in the biomass, and very little in the soil due to the rapid nutrient cycling	Regulating climate and air quality Preventing Soil Erosion Carbon Storage Provisioning Goods (food, fuel) Flood prevention

Biodiversity

Biodiversity is the variety of plant and animal life in a particular habitat, a high level of which is considered to be important and desirable. The tropical rainforest has a higher level of biodiversity than savannah

5.3.2 - Ecosystem processes

Savanna characteristics

Grasses and trees - The savanna is a grassland with scattered trees and shrubs.
Rainy and dry seasons - Savannas have two distinct seasons in regards to precipitation. There is a rainy season in the summer with around 15 to 25 inches of rain and a dry season in the winter when only a couple of inches of rain may fall.
Large herds of animals - There are often large herds of grazing animals on the savanna that thrive on the abundance of grass and trees.
Warm - The savanna stays pretty warm all year.

Nutrient cycle	Water cycle
Nutrients are cycled quicky during the dry season in the tropical heat. Wildfires are common and nutrients are returned to the soil when vegetation burns.	All most all rain falls during the rainy season. Vegetation quickly absorbs and stores this water for the dry season. Little water is lost by transpiration due to waxy leaves and low surface area of the plants.
Carbon cycle	Key services
Majority of carbon is stored in vegetation with a lesser amount in soil. During dry seasons, wildfires can burn vegetation, releasing CO_2 into the atmosphere.	Preventing Soil Erosion Carbon Storage Provisioning Goods (food, fuel)

Small scale ecosystem: sand dunes

Sand Dunes are a build up of sand around vegetation. This requires loose sand and prevailing winds which blow on-shore. They are formed through a processes known as succession. As plants die and decompose it nourishes the soil making it better quality and now more fragile plants will start to grow.

5.4.1 - Human uses

Gwynt y Môr offshore wind farm
Offshore wind farms are located in the sea close to the shoreline as winds are stronger, unobstructed and do not impose on cities/population as much. Gwynt y Môr is located 15km off the north coast of Wales

The demand for renewable energy is increasing as non-renewables such as coal and gas are depleting

Advantages	Disadvantages
Produces power for 400,000 homes	RSPB says it affects bird migrations and their normal routines
Creates 100+ jobs	National Trust has concerns over affecting heritage and tourism
Helps with global climate change efforts	Locals are opposed as it spoils the natural beauty

5.4.2 - Human impacts

Tropical rainforest uses	Savanna uses

Advantages:
Infrastructure, hospitals and education can be improved
Raw materials, eg tropical hardwoods such as ebony and mahogany, can be sold for a good price abroad.
Large-scale farming brings money into the country and provides food and jobs.
Small-scale farming provides food for rainforest communities.

Disadvantages:
Land clearance for farming, transportation and mining can lead to **deforestation.**
Loss of fertile soils that make farming possible are quickly washed away when the forest is cleared.
Loss of animal habitat occurs when trees are cut down. Hence, deforestation can result in endangering animals and plant life, or even causing them to become extinct.

Advantages:
Small-scale farming provides food for rainforest communities.
Raw materials, eg fuel (firewood)

Disadvantages:
Large areas of grassland have been turned into **farmlands** for growing crops and for rearing cattle.
Animals have been **hunted** for their valuable body parts or for sport.
Loss of fertile soils that make farming possible are quickly washed away when the forest is cleared.

5.4.3 - Ecosystem management

Tropical rainforest management

Selective logging – only cutting down older trees and not rare species. The International Forest Stewardship Council makes people aware of products made from sustainable timber.

Agro-forestry – growing new trees alongside crops

Wildlife corridors – connecting separated areas of forest with strips of vegetation so animals can move between areas

Eco-tourism – encouraging small groups of sustainable tourism. Money made is used to protect the ecosystem and uses local tour guides and companies.

Debt-swaps – HICs cancel debts which LICs have, if they protect their rainforests from over-exploitation

Savanna management

Crop rotation – growing different crops and giving the land time to rest between planting to allow soil to recover nutrients

Afforestation – planting more trees to protect the soil

Drought-resistant crops – Planting genetically modified crops which can withstand long periods of water shortage

Population control – Encouraging people to have fewer children so less crops and water are needed in the area

Home study questions

DEVELOPING
Describe the economic effects of a low pressure hazard **[3 marks]**

Give three ways that humans have influenced the carbon cycle **[3 marks]**

SECURING
Analyse the pattern of temperature change over the last 450 million years (5.1.1) **[6 marks]**

Explain how low pressure systems forms **[3 marks]**

MASTERING
Discuss how sustainable the use of one ecosystem is **[8 marks]**

Explain the factors that influence changes in weather for the UK **[6 marks]**

CHALLENGE
Decide how deforestation would affect the nutrient, water and carbon cycles in the tropical rainforest - present your decision as a paragraph or concept map

Evaluate how successful you think management strategies for the savanna ecosystems are

T6

Development and resource issues

Geography Knowledge Organiser

6.1.1 - Measuring development

Measures of development

Gross domestic product (GDP) - the total value of all goods and services produced within a country
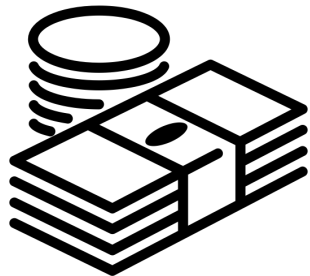**Gross National Income (GNI)** - (per capita) average wage per person
Employment structure - the type of work people do (for example, primary, secondary, tertiary)
Poverty - the % of the population that earn less than $1.90 a day

Limitations of these measures
They only measure wealth and not social factors (like life expectancy)
They do not show inequality in country (gap between rich and poor)
They do not show the cost of living (ie. the amount that can be bought with the average wage)

Development continuum

A development gap exists between richer and poorer countries. The "Brandt" line splits the world into more developed "global north" countries and less developed "global south" countries.

Less developed ————————————— More developed
LIC   Lower middle   Upper middle   HIC

However, the Brandt line is a bit too simplistic. In reality there is a "**development continuum**". This is a sliding scale from super rich countries to the very poor. The World Bank splits countries into 4 categories based on their Gross National Income (GNI):   **HICs** with GNI of $12,736 or above
Upper Middle Countries with GNI between $4126 and $12735
Lower middle countries with GNI of $1046 to $4125
LICs with GNI of $1045 or less

6.2.1 - Uneven development

Causes of uneven development

Trade involves buying goods from other countries (imports) and selling them (exports)
HICs generally export valuable goods such as electronics, cars and financial products. They import cheaper primary products like tea, sugar and coffee.
LICS do the opposite. This means they earn little and remain in poverty

The prices of these products go up and down but HICs tend to have the biggest influence over them. LICs lose out when the price drops, but have little control over it. Increasing this trade and changing the balance of imports/exports is essential for LICs to develop. Some HICs impose tariffs (import costs) and quotas (a limit to the amount of imports) which also affects LICs.

Multinational corporations (MNCs)

MNCs have grown as a result of globalisation. Often they are free to decide where they locate many aspects of their company. The headquarters if usually found in a global city such as London. However, other parts of the company can be located around the world. Factors like, government incentives, location of raw materials, labour costs and reduced costs for buildings and land make a difference.

Advantages of MNCs in LICs	Disadvantages of MNCs in LICs
Created jobs and improved local skills	Investment could be transferred to other countries quickly
Pays higher wages than most local Companies	They has large demand for energy/water
Helped attract more MNCs	They have reputation for workers abuse
Contributes to tax which helped pay for schools, hospitals etc.	They might undermine national culture

6.2.1 - Uneven development

Tourism

As a result of globalisation the tourist industry has grown rapidly. It now accounts for 1-in-11 jobs worldwide. It is increasingly becoming important for low and middle income countries. Rapid growth is due to:
Early retirement & higher life expectancy mean people can spend time travelling
People earn more so have more disposable income
Modern aircraft make is cheaper and quicker
The internet allows people to research destinations

Mass tourism
Where tens of thousands of people going to the same resort often at the same time of year

Enclave tourism
Where tourists pay one price and get all travel, accommodation, food and drink in one place

Cruise holidays
Cruise ships sell all inclusive packages

Advantages of tourism in LICs	Disadvantages of tourism in LICs
Employs thousands directly and hundreds of thousands indirectly, bringing billions to the economy	Many tourist development are partly owned by foreign companies. Some profits leak (send) overseas
Tourism is encouraging new skills and improving language skills of locals	Jobs are seasonal, many people lose their jobs in the wet or winter season
New services such as transport can be used by tourists and locals	The growth of sex tourism can become an issue in some countries
New national parks are being created to protect wildlife and encourage tourism	The arrival of tourists can cause a decline in local cultures, for example loss of language or religious traditions

6.2.2 - Managing development

Aid

Aid is the transfer of resources from a richer country to a poorer country. Different types of aid include:
Bilateral aid – between two countries
Multilateral aid – money donated by richer countries via organisations such as the UN
Short term emergency aid – immediate relief following a natural disaster
Long term development aid – a sustained programme of aid which aims to improve the standard of living
Debt abolition – when richer countries cancel debt owed by poorer countries
Aid from non-governmental organisations (NGO's) – given through charities such as Oxfam.

Advantages of aid for LICs	Disadvantages of aid for LICs
Emergency aid saves lives and reduces misery	Aid can increase dependency on the donor country
Development aid can lead to long term improvements and increase standards of living	Profits from the large projects can go to multinationals and donor countries
Assistance in developing natural resources benefits global economy	Aid doesn't always reach the people who need it and can be kept by corrupt officials
Aid for industrial development creates jobs and aid for agriculture increases food supply	Aid can be spent on prestige projects in urban areas rather than in the areas of real need
Provision of medical training and supplies improves health	Aid can be used as a weapon to exert political pressure on the receiving country

6.3.1 - Water demand

Total water footprint [m³/yr/cap]
550 - 750
750 - 1000
1000 - 1200
1200 - 1385
1385 - 1500
1500 - 2000
2000 - 2500
2500 - 3000
> 3000
No data

Period: (1996-2005)   Data: Mekonnen, M.M. and Hoekstra, A.Y. (2012)
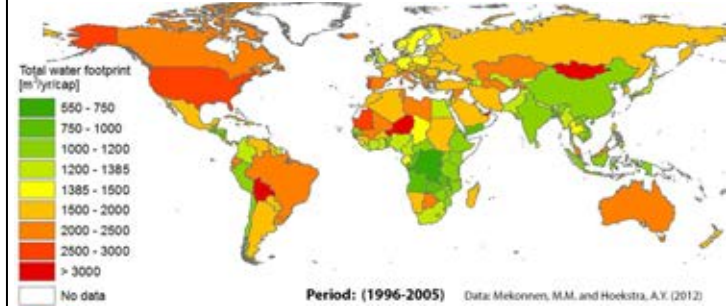
The global consumption of water is rising. This is because:
Population is rising
Economic development - The more developed a nation the more water used
Increased need by agriculture - irrigating crops
I**ndustrial growth** - As more MNCs invest in NICs and LICs the more water needed
Consumerism - HICs use appliances like dishwashers and washing machines

Water footprint - a measure of humanity's use of fresh water and/or polluted
We don't just use water to drink and for hygiene reasons. 70% of our water is used to produce food (crops & animals). Industries use water in 'cooling processes'. Water is need in thing like clothing - fabrics have to be grown.

Water security - the capacity to safeguard the sustainable availability and access to drinking water
The UK generally have excellent access to water all year round. Some places don't, where water isn't clean or alway available. Sometimes it's too expensive to transport or access (economic scarcity) or it's not available due to droughts (physical scarcity).

6.3.2 - Water sustainability

Dams: Dams block the flow of a river, creating a large reservoir to the rear which can be used all year round. Dams can be expensive to build, and the reservoir may flood local settlements and ecosystems.

Water transfers: When water is transferred to from an area that has a surplus of water to an area that is experiencing a shortage. This may be conducted within a country, but it can also be conducted from one country to another. For example, Lesotho transfers water to areas of South Africa experiencing physical water scarcity.

Desalination plants: Desalination is the process by which salt is extracted from water. At these plants, salt is removed from seawater to make it safe to drink. Such plants are extremely expensive to run.

Water conservation: This is when an attempt is made to actually use less water in the first instance. For example, many toilets have dual-flush systems to reduce the amount of water used. In addition, meters may be installed within households so residents can check their water usage

Over-abstraction of groundwater

India is a country that is over extracting its groundwater (the water table is 4m lower than in 2000)

Reasons for this
Some states like Gujarat have a long dry season
Surface stores (like reservoirs) are often polluted
Cheap electricity has encouraged farmers to dig deeper wells
Solutions
The government can build more dams (this is an example of top down development)
Farmers could be encouraged to conserve water e.g. rainwater harvesting (this is bottom up development)

6.4.1 - NIC regional development

India's regional patterns

Northeast has higher levels of poverty (over 30% of people)

South has the least levels of poverty (less than 10%)

The east generally has lower levels of poverty (around 15%)

GDP per region in India

Physical reasons

Northern India is more mountainous and dry, so it has poor soil and climate to grow crops. **The south** has a more humid climate with rains.

Political reasons

Kerala (in the south) funds education and encourages families to have fewer children = better quality of life (less pressure on resources)
Kashmir (in the north) has seen conflicts/wars and is in a mountainous area = not very populated, poor access, dry climate.
**Maharashtra (in the east)** has the capital city and attracts lots of industries like manufacturing and has ports for trade

Cultural reasons

India had a **caste system** (some people had more rights than others). Although it's illegal now it still has an impact on people today with types of jobs people can do.

Girls and women are discriminated against particularly in rural areas
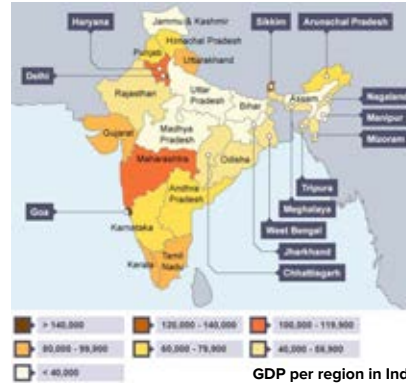
6.4.2 - UK regional development

UK's regional patterns

There is a north-south divide in the UK for development. The divide recognises the social and economic differences between Southern parts of the UK (more developed) and the rest of the UK (less developed).

Economic reasons

With the l**argest markets located in the south-east,** which also includes **good access to European markets**, companies have greatest potential to **maximise profits by locating in the south**.

Social reasons

With over 20 million people of the UK's population living within a one hour commute of London, many **businesses prefer to locate themselves close to their customers**, and within **commuting distance of their staff. Many universities are in the south** of the UK, including Oxford and Cambridge, which provide many workers - who **employers may perceive as being most skilled** and desirable.

Political reasons

Many large companies have headquarters (HQ) in the south-east, making it easier to make crucial decisions. Even though government policy has tried to encourage investment in other parts of the UK it is **still more convenient for other smaller businesses to start up where there is already infrastructure** to support.

6.4.3 - Managing UK development

Positive multiplier effect

Regional inequality can be reduced by investment in deprived areas of the UK. Various strategies have been used in the past which usually includes investing in infrastructure in an area which is deprived to try and promote a **positive multiplier effect**. However, when industries close there is also a **negative multiplier effect**.

National strategies

Giving power to local authorities e.g. regional mayors (Manchester/Leeds)

The **creation of the "Northern Powerhouse"** which is a proposal to boost economic growth in the North of UK, this would attract investment and create skilled jobs in the area

The **improvement of transport links** to the Northern places in the UK. This improves accessibility, attract new investment and therefore may create a positive multiplier effect (eg. HS2)

Relocation of major business and offices, sometimes head offices in other parts of the UK, such as Manchester. This encourages other businesses to invest in the areas

Positive multiplier effect

Local strategies (Newcastle)

Newcastle Enterprise Package - supporting new business

Newcastle Science City - a partnership between Newcastle University, Newcastle City Council and the European Regional Development Fund supporting the innovation and technology sectors

The Millennium Bridge - crossing the river Tyne

Home study questions

DEVELOPING
Outline the measures of economic development **[3 marks]**

Give three reasons why LICs receive less money from international trade **[3 marks]**

SECURING
Analyse the pattern of global water usage (water footprint) (6.3.1) **[6 marks]**

Describe what a water footprint is **[2 marks]**

MASTERING
Evaluate which factor/reason (social, economic or political) is the most significant cause of UK regional inequality **[8 marks]**

Decided whether foreign aid is overall a good or bad thing for LIC development **[8 marks]**

CHALLENGE
Create a concept map to show how MNCs and tourism are linked and how these are also linked to uneven development in LICs/NICs

Research how the High Speed railway 2 (HS2) project will have benefits for the north of England

T7

Social development

Geography Knowledge Organiser

CLICK ME

SCAN ME

7.1.1 - Measuring development

Measures of social development

Life expectancy - The average age a person is expected to live
Literacy rates - % of people in a population that can read or write
Infant mortality rate - Number of babies per 100 live births who die under the age of 1
Average number of people per doctor
Average food (calorie) consumption
Number of homeless people
Deaths from unsafe water and sanitation

Measures of gender development

Gender equality is ways in which a country can be measured through social development. So a comparison between genders is useful, such as:
- **Fertility rate** – The average number of births to a woman in her lifetime
- **Male/female literacy rates**
- **Male/Female life expectancy**
- **Male/female food consumption**
- **Male/female employment rate**
- **Gender development index (GDI)** - measures gender inequalities in three key aspects: *reproductive health, empowerment and economic status*

Human development index (HDI)

A measure of the development in a country taking into account wealth, education and average life expectancy. The human development index (HDI) is calculated from four development indicators and measures a country's progress across a range of factors:
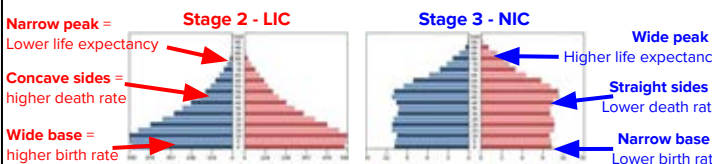- **Average length of schooling in years**
- **Literacy rates**
- **Gross national income (GNI)** - The average income in a country per person

7.2.1 - Development issues in Africa and Asia

Changing birth rates and death rates

Higher birth rates	Lower birth rates	Higher death rates	Lower death rates
Children provide labour on farms **(E)** Large families are seen as a sign of virility **(S)** Women may lack education and stay at home to raise a family rather than work **(S)** A high infant mortality rate encourages larger families to ensure survival of some children **(S)**	People tend to marry later and therefore have reduced child -bearing years **(S)** Women are educated and often follow careers which delay starting families **(P)** The high cost of living means it is expensive to raise children **(E)** Couples prefer to spend money on holidays & cars **(E)**	HIV, Ebola and other diseases are having an impact on death rates in LICs **(S)** In HICs, the increasingly higher proportion of elderly people in ageing societies is leading to an increase in death rates **(S)**	Better healthcare and vaccination programmes are more available to people **(P)** Less physically demanding jobs put less stress on people physically **(S)** People are educated about health and hygiene **(P)** Water supplies are more reliable and cleaner **(P)**

Population structure

Narrow peak = Lower life expectancy
Concave sides = higher death rate
Wide base = higher birth rate

Stage 2 - LIC
Stage 3 - NIC

Wide peak = Higher life expectancy
Straight sides = Lower death rate
Narrow base = Lower birth rate

7.2.1 - Development issues in Africa and Asia

Child labour

It is estimated that there is currently 168 million child workers and 73 million of these are children under the age of ten. Sub-Saharan Africa has the highest number of child workers mainly working on farms farming products such as cocoa and cotton.
- **Poverty** - parents need money or their parents have died
- **No (free) education** - have to pay or no formal education
- **AIDS** - Disease means a lot of middle-aged people are too ill or have died - so children are the only option

Primary education challenges

In 2010 there were 4.98 million children in child labour, whereas by 2011 there were 4.35 million child labourers. The lack of education is a key cause of child labour. Out of the 62% of India's children that do not attend school, 62% of those are girls. The reasons for this include:
- **Poor quality of school buildings**, facilities and teaching.
- **Attitude to women in society**: many families still have an oppressive attitude towards women
- **Many girls are expected to marry young** through arranged marriages.
- The **fear that sexual harassment of girls** may bring dishonour to the girl's family.

Responses to child labour

The International Labour Organisation (ILO) - It collects data from different countries and uses this data to set targets which can be used to monitor progress. The ILO then makes recommendation to individual governments as to how this can be achieved in their country which frequently include:
- **Improving access to education** for all children so that they can succeed in life
- **Creating more trade unions** to prevent and protect against child labour
- **Improving social security systems** so that the poorest in society are supported rather than them relying on their children (sick pay & unemployment benefits)

International refugee movements

Forced migrants are those we call refugees and asylum seekers. They have been pushed out of their homes but there aren't pull factors attracting them to somewhere
Refugee - Someone who has fled their home due to serious risk to life or liberty
Asylum seeker - Someone who has applied to another country for protection/support as a refugee

Causes of forced migration

Lack of food/water - often causes by droughts or blights (plant diseases)
Natural disasters -flooding, earthquakes, tsunamis etc.
War & conflict - either between countries or civil war (inside one country)
Persecution - risk to life or liberty due to politics, sexual orientation, religion, ethnicity

Responses to forced migration

National governments in Europe
- Germany and Sweden see the refugees as victims and have welcomed them to their countries and help them to integrate into their societies
- Austria is trying to limit the number of refugees to 80 a day
- The UK has agreed to accept 20,000 refugees from Syria by 2020 and it will accept more unaccompanied Syrian child refugees

International agreements
With an increasing numbers of migrants from Asia and Africa reaching Europe illegally the following changes have been made:
- In 2016 border controls were temporarily introduced to 7 Schengen countries
- An EU naval operation has been put into place to monitor the Mediterranean Sea to prevent human smuggling and trafficking
- EU member states agreed to provide task forces of national experts and support teams to work in hotspots such as Greece and Italy to expedite refugee screening

7.2.2 - Health issues in Africa

High infant mortality rate (IMR)

Neonatal infection - a high rate of infection from the process of delivering the baby
10% of early childhood deaths are caused by diarrhoea
The **lack of skilled birth attendants** leads to many children dying within 24 hours of being born
Lack of vaccinations and mosquito nets to stop diseases

Human immunodeficiency virus (HIV)

HIV is disease which attacks the body's immune system. Over 70% of people who have HIV live in Africa. Infection rates are higher in urban areas
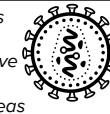
Emotional impact on relatives and families, as well as on the individual **(S)**

Cost involved in treating the disease, eg. drugs means that most people go without treatment **(E)(S)**

Those infected will not eventually be able to work, lowering the productivity and potential wealth of a country **(E)(P)**

Leads to fewer jobs and less wealth in a country **(E)**

Children may be left without parents and brought up by their grandparents **(S)**

Malaria

Malaria is a disease passed on by parasites in mosquitoes. Infection rates are higher nearer water sources like lakes & rural areas. Children and pregnant women are most at risk

Large number of children aged under five die **(S)**

Adults are too weak to work which leads to a loss of productivity **(E)**

People remain poor and do not have a lot to eat **(S)(E)**

A country's limited resources are used up in health care rather than in education or improving services **(E)(P)**

Tourists may be less likely to visit a country so there is less revenue **(E)**

7.2.2 - Health issues in Africa

Health issues responses

Investment in medical care and treatment in hospitals (**HIV/Mal**)

Health campaigns (adverts) about risks and prevention (**HIV/Mal**)

Free condoms (**HIV**) and mosquito nets for beds (**Mal**)

UN's AIDS Fast Track programme - leading education & funding (**HIV**)

UN's 'roll-back malaria' programme which leads a worldwide government response (**Mal**)

The '**Roll Back Malaria**' initiative had over 500 partners working together to provide a co-ordinated response to the disease. One of the UN's Millennium Development Goals is that the incidence of the disease should have reduced by 2015. Today the UN fast track strategy is aiming to end the epidemic by 2030 through contraception, education and medication.

Top-down approach	Bottom-up approach
Decisions are made at governmental level and usually involve a high cost. Communities likely to be affected by the decisions have no say as to what is done.	Decisions are made by the local communities that they will affect. They try to help communities by helping them to help themselves.
The advantages of these types of schemes are that they may be part of a strategic plan which aims to develop the infrastructure of the country. However, the frequently lead the country into debt and the jobs that are created are often not for the local community.	The advantages of these types of schemes are that they are small scale and so cost much less, are more sustainable and usually meet the needs of the local community better.

Home study questions

DEVELOPING
Describe the economic effects of a low pressure hazard **[3 marks]**

Explain why using HDI is better than GDP or GNI for measuring development **[4 marks]**

SECURING
Analyse the differences between the stage 2 and stage 3 population pyramids (7.2.1) **[6 marks]**

Explain why infant mortality rate (IMR) is an important factor to judge development **[3 marks]**

MASTERING
Evaluate how successful the responses have been in stopping international refugee movements into Europe **[8 marks]**

Discuss why poverty and poor development often leads to more child labour **[6 marks]**

CHALLENGE
Discuss how diseases like HIV and malaria can have significant impacts on a country's social and economic development. Record your discussion as a paragraph or spider diagram

Evaluate whether top-down or bottom-up approaches are better for improving the health development of LICs

Graphic
Design

Graphic Design: Unit 3

Responding to a graphic design brief

Name …………………………………………….

Unit 03 Responding to a graphic design brief

You will analyse the requirement of a graphic design brief. You will understand the requirements and develop some possible ideas to meet the brief. You will further develop an idea and present your final graphic design. Finally, you will analyse your work and review how you have met the brief.

Example Design Brief

A new brand of children's toothpaste is being released Called 'Bite White'. It is strawberry flavoured and aimed at children under 10.

The client requires a graphic design for the toothpaste packaging that includes typography and imagery suitable for the target market.

Unit 3 LO1 task Analysis

Your Tasks

- You will need to **research existing products** and analyse them. Find some examples of childrens toothpaste graphics and list things they have in common such as colours used, the kind of lettering/typography and the kind of imagery used.

- You will need to **analyse the brief**, which means re writing it in your own words to show you understand what it is asking you to do. This can be a paragraph or a list of bullet pointed requirements that you need to do in order to complete a successful design and "meet the brief".

- You will need to produce at least 4 **initial ideas** for the design. You don't need to design the box or tube or the toothpaste itself just the graphics that will go on all aspects of the packaging and advertisements, websites etc. these initial designs should be small "thumbnail" sketches, not full page detailed drawings, and should include some annotation/notes to explain how they meet the brief.

The Telford
Langley School

Brief

A new brand of children's toothpaste is being released Called 'Bite White'. It is strawberry flavoured and aimed at children under 10. The client requires a design for the toothpaste packaging graphics that includes typography and imagery suitable for the target market.

Brief Analysis

The client is a brand of toothpaste called Bite White, I have been given the task of producing graphics suitable to be used on the toothpaste packaging tube and that can be added to any other branding material such as the box it comes in. Within this design I need to include the flavour of the toothpaste which in this case is strawberry. In addition to this I must take into account the target audience which is children under the age of 10, due to this the imagery and typography I use in my design must be aimed at children of this age therefore I know the brand will reach its target market when selling.

Market Research

After a detailed google search of children's toothpastes I compiled some designs I feel have similar aspects and use of graphics my client is looking for. These will help inspire me to include specific elements that were successful and avoid those that I feel are not fit for purpose.

Initial Ideas

In my initial ideas I have included cartoon like characters to appeal to children, soft lettering like on the examples I looked at and imagery/ typography as required in the brief

The learner will:

Understand the requirements of a graphic design brief

The learner must know how to:

- respond to a brief
- develop ideas

Grading descriptors	Example
Pass: Makes accurate conclusions based on <u>some</u> information	Learners will analyse the brief and demonstrate their understanding of its requirements. Their conclusions will be accurate but will only take into account some of the client's requirements. The ideas developed in response to the brief will only be based on some of the client's requirements.
Merit: Makes accurate conclusions based on <u>all</u> the information	Learners will analyse the brief and demonstrate their understanding of its requirements. Their conclusions will be accurate and take into account all of the client's requirements. The ideas developed in response to the brief will be based on all of the client's requirements.
Distinction: Makes accurate conclusions <u>weighing up</u> the all the information	Learners will analyse the brief and demonstrate that their understanding is based on an examination of all of its requirements. Their conclusions will be accurate and effectively balance all of the client's requirements. The ideas developed in response to the brief will successfully resolve all of the client's requirements.

Task	PLC	Teachers ACT Comment
Research Existing Products	I have gathered some images of existing products	
Analyse the brief	I have re written the brief in my own words	
	I have bullet pointed the client requirements	
	I have written a paragraph to confirm the clients requirements.	
Initial ideas	I have drawn one initial idea	
	I have drawn more than one initial idea	
	I have drawn 4 initial ideas	
	I have annotated my ideas to explain how they meet the brief.	

Graphic design Unit 3 LO2

You can now produce your final graphic design based on one of your initial ideas.
You must demonstrate:
☐ technical skills
☐ effective use of resources

Refine and fully develop one of your ideas from LO1 to a final design.

You will be assessed on the graphic design. You are not required to produce or mock up any actual packaging but you must explain what you are doing and how you do it as you go.

Tasks:

Planning - Write a step by step plan or draw a flow chart of how you intend to produce your final design weather it is on computer or hand drawn. Explain what problems you expect to run into when you start your design.

Efficient use of design technology – explain how you intend to go about your design. If you are drawing it by hand say why you chose to do it that way, what equipment you are going to use and why you think it is an efficient way to work. If you are doing your design on computer say what programs you are going to use and why you chose them.

Use of materials and application of processes – Explain what you are doing at every step of the way. Take screenshots on computer or photograph your drawings and explain what your are doing and how you are doing it. This will prove to the examiner that you have the skills needed to be a good graphic designer.

Always refer back to the brief when you are designing and label your designs to highlight the key points you identified in LO 1. this will prove to the examiner that you are responding to the brief.

Design Brief
A new brand of children's toothpaste is being released Called 'Bite White'. It is strawberry flavoured and aimed at children under 10.
The client requires a graphic design for the toothpaste packaging that includes typography and imagery suitable for the target market.

Task 3 – Development

Here is the beginning to my final designs process I drew toothpaste box mockups on 2d design so I could see my graphics on a product.

I then started adding all my graphics onto the designs using a variety of different tools found in photoshop.

I finally saved the file as a png and have the mockup readily available alongside the graphics for my client.

Task 4 – Final Designs

Here are my final graphics I have created alongside how they look on a product by use of mockups I designed myself. I experimented with imagery, colour, composition and typography to reach my final graphics. I paid attention to the brief strictly throughout the design process to ensure that my designs were fit for the client. I used a cartoon strawberry character which I developed to represent the flavor of the toothpaste which was mentioned within the brief, I believe this implementation was successful and shows the products flavoring through use of imagery. I then created typography for the name chosen by the client, I experimented with several font types and colour schemes however white was the one I stuck to because it is a colour which connotates with clean and healthy teeth. Finally the brief made clearly the age demographic for this project therefore I chose a cartoon font, cartoon strawberry and a cartoon effect to compliment the character. These all tied in to create a design with bright colours that pop out that a child will be drawn to with the additional cartoon style it gives them something relatable which they see often which not only intrigues them but makes them trust a brand.

Grading descriptors	Example
Pass: Completes and presents tasks following the brief with <u>some</u> degree of accuracy Selects and uses technical skills	The developed final idea will be accurate and relevant to meeting the brief. The learner will show selection and application of technical skills and effective use of resources in the execution of the final graphic design idea.
Merit: Completes tasks <u>mostly</u> accurately following the brief Selects and uses a combination of the <u>most appropriate</u> technical skills and processes	The developed final idea will be mostly accurate and relevant to meeting the brief. The learner will show effective selection and application of technical skills and effective use of resources in the execution of the final graphic design idea. However, this may not be consistently applied.
Distinction: Completes tasks <u>accurately meeting all of the requirements of</u> the brief Selects and uses a combination of the most appropriate relevant skills, equipment, materials <u>and</u> processes	The developed final idea will be accurate and relevant in meeting all the requirements of the brief. The learner will show the most effective selection and application of technical skills and effective use of resources in the execution of the final graphic design idea. These will be consistently applied throughout the production of the final design idea.

Technical skills	Personal Learning Checklist	ACT Comment
planning a graphic design activity	Write a step by step plan or draw a flow chart of how you intend to produce your final design.	
anticipating difficulties	Explain what problems you expected to run into when you started your design.	
considering the most efficient use of technology	Explain why you chose the software or drawing equipment you used to produce your design.	
Use of materials and application of processes	• Use Photoshop to edit images into your design • Take screen shots that show what you did – step by step. Or • Draw your design by hand. • Take photographs at different stages and explain your techniques	

The Telford
Langley School

Graphic design Unit 3 LO3

You can now review your final graphic design based on the final outcome compared to the brief.

Evaluate:
- the final outcome
- the purpose and impact of the graphic design
- effective use of resources
- what went well and not so well

Grading descriptors	Example
Pass: Describes the processes involved <u>and</u> identifies <u>some</u> aspects of what went well/not so well	Learners can describe the processes used to create their work, the purpose and impact, effective use of resources and how problems were solved in relation to the design brief. Learners can identify some of what went well/not so well in relation to the design brief, although this may not be detailed.
Merit: Describes the processes involved and <u>identifies</u> what went well/not so well	Learners can describe the processes used to create their work, the purpose and impact, effective use of resources and how problems were solved in relation to the design brief. Learners can identify some of what went well/not so well in relation to the design brief, this will be sufficiently detailed.
Distinction: Describes the processes involved and <u>identifies</u> what went well/not so well <u>and any</u> opportunities for development	Learners can describe the processes used to create their work, the purpose and impact and their effective use of resources. The learners describe how they approached and resolved the challenges presented by the brief. Learners can identify some of what went well/not so well in relation to the design brief, this will be sufficiently detailed. The learner describes opportunities for development or improvement of their graphic design.

Design Brief
A new brand of children's toothpaste is being released Called 'Bite White'. It is strawberry flavoured and aimed at children under 10.
The client requires a graphic design for the toothpaste packaging that includes typography and imagery suitable for the target market.

Evaluation

Here are my final graphics I have created alongside how they look on a product by use of mockups I designed myself. I experimented with imagery, colour, composition and typography to reach my final graphics. I paid attention to the brief strictly throughout the design process to ensure that my designs were fit for the client. I used a cartoon strawberry character which I developed to represent the flavor of the toothpaste which was mentioned within the brief, I believe this implementation was successful and shows the products flavoring through use of imagery. I then created typography for the name chosen by the client. I experimented with several font types and colour schemes however white was the one I stuck to because it is a colour which connotates with clean and healthy teeth. Finally the brief made clearly the age demographic for this project therefore I chose a cartoon font, cartoon strawberry and a cartoon effect to compliment the character. These all tied in to create a design with bright colours that pop out that a child will be drawn to with the additional cartoon style it gives them something relatable which they see often which not only intrigues them but makes them trust a brand.

Evaluation PLC

Evaluation point	Personal Learning Checklist	ACT Comment
Describe the processes used to create your final design	Explain how you made you final logo. Detail all software and tools you used to make it as well as your techniques.	
Explain how your work is effective and has impact	Write about how well your logo gets across the theme of children's strawberry toothpaste. How does it stand out?	
Explain how you used resources such as pencils, paints or computers effectively.	Explain how you used the software or drawing equipment you used to produce your design and comment on how effective it was..	
Identify what went well and even better if	• Write a detailed paragraph on good and bad points of the project and your final outcome.	
Identify opportunities for development.	Write about how you would improve your design if you were to continue working on it or if you were to start again.	

Health and Fitness

Year 11 Health & Fitness Autumn Knowledge Organiser

Health Component Of Fitness	Component	Definition	Sporting Example	Test
	Muscular Endurance	The ability of a muscle group to repeat a movement for a prolonged period.	Push Ups in Circuit Training	Sit Up Test
	Flexibility	Range of movement around a joint.	Splits in Gymnastics	Sit and Reach
	Body Composition	Describes the percentage of fat, bone, muscle and water in the body.	Endomorph- sumo wrestling Mesomorph- swimming Ectomorph- marathon running	Skinfold Caliper Test
	Muscular Strength	The amount of force a muscle can exert against a resistance.	Weightlifting	Hand Grip Dynamometer
	Cardiovascular Endurance	The ability to exercise the whole body for prolonged periods. This involves the cardio (heart) and vascular (blood vessels).	Running at the end of a netball match	12 minute cooper run

Sport/ Skill Component Of Fitness	Component	Definition	Sporting Example	Test
	Agility	The ability to change the position of the body quickly and to control the movement of the whole body	Rugby player dodging a defender	Illinois Agility Run
	Balance	The ability to retain the centre of mass over the body above the base of support	Handstand in Gymnastics	Standing Stork
	Coordination	The ability to use two or more body parts together	Batsman striking the ball in cricket	Hand Wall Toss Test
	Power	The ability to undertake strength performances quickly Strength x Speed =	The jump phase of the Long Jump	Standing Long Jump
	Reaction Time	The time in between stimulus and the onset of movement	A sprinter responding to the start gun	Ruler Drop
	Speed	The rate at which an individual is able to perform movement.	Running the 100m	30 metre sprint

F – **FREQUENCY**   how often you train
I – **INTENSITY**   how hard you train
T – **TIME**   how long you train
T – **TYPE**   type of activity you do

Health and Fitness

Definitions

Health - a state of complete physical mental and social well being, not merely the absence of disease.

Fitness - the ability to meet the demands of the environment.

Fitness → Healthy ✓ ?

Healthy → Fitness ✓ ✓
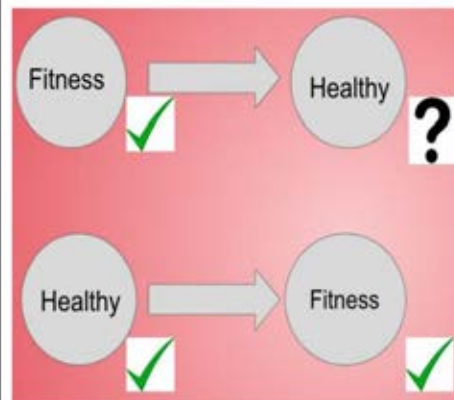
You can be fit and not healthy because you might not have social and mental health.

To be healthy you have to be fit because you need to have the physical side.

S – SPECIFICITY
P – PROGRESSION
O – OVERLOAD
R – REVERSIBILITY
T – TEDIUM

- SPECIFICITY– making the training specific to the needs of the sport or individual.
- PROGRESSION– gradually increasing the training that you are doing.
- OVERLOAD– doing more training
- REVERSIBILITY– any training gains can be lost if training does not continue.
- TEDIUM– training needs to keep the athlete motivated.

Health and social care

Health & Social Care Knowledge Organisers

Unit 2: Equality & Diversity

LO1: Concepts of equality, diversity and rights, and how these are applied in the context of health, social care and child care environments.

What is the meaning of equality, diversity and rights?

Equality:
To ensure that a person is treated fairly, had the same opportunities regardless of differences and treated according to their individual needs.

Promoting equality means that individuals are not discriminated against due to their differences like; gender, race, age or disability.

Empowerment: Care workers enabling and supporting individuals to be in control of their lives.
Independence: Not relying on others, having the freedom to make your own decisions.
Inclusion: Ways of working that provide individuals with equal opportunities so that they are involved and feel they belong.
Respect: Having regard for the feelings, wishes or rights of others.
Dignity: Care that promotes and does not undermine a person's self-respect.
Legislation: A collection od laws passed by parliament which states the rights and entitlements of the individual. Law is upheld through the courts.

Diversity:
This encompasses recognizing and respecting individual differences.
Examples of differences include:
- Faith
- Beliefs
- Race
- Customs
- Sexuality

Valuing diversity involves accepting and respecting differences by seeing everyone as unique individuals.

For individuals using care services, the benefits of staff understanding diversity in care settings include:
- ✓ Empowerment
- ✓ Independence
- ✓ Inclusion
- ✓ Respect
- ✓ Dignity
- ✓ Equal opportunity
- ✓ Access and participation

Aspects of Diversity
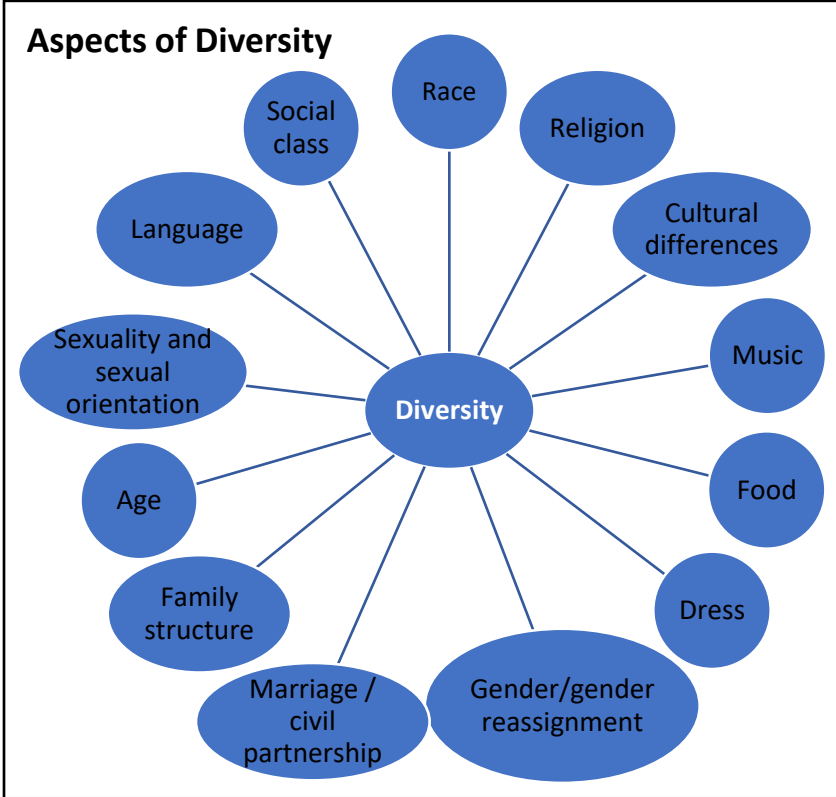
Right	Explanation
Choice	Gives individuals control over their lives and increases self-esteem as it promotes independence and empowerment.
Confidentiality	Means private information should be shared with those directly involved with an individuals care.
Protection from abuse & harm	Care settings and practitioners should have safeguarding procedures and safety measure & know and adhere to legislation.
Equal & fair treatment	Individuals working in health, social care or child care services should be treated within the law
Consultation	Individuals using health, social care or child care services should be asked for their opinions and views about their care & treatment & should inform the care they receive.
Right to life	An individual's life is protected by human rights law; everyone's right to life should be valued and respected.

What are values of care?

The values of care are core principles that underpin the work of those providing health, social care and child care services. They are a set of guidelines and ways of working for care settings and their staff.

Applying he values of care ensures that individuals using health, social care and child care environments receive appropriate care, do not experience discriminatory attitudes, and have diversity value and their rights supported.

Values of care in health & social care services.

The values of care in health & social care services focus on:
- Promoting equality and diversity
- Promoting individual rights and beliefs
- Maintaining confidentiality

Keywords

Need-to-know-basis:
Information is shared only with those directly involved with the care and support of the individuals. Access to information is restricted to those who have clear reason to access it when providing care and support for an individual.

Applying values of care in health and social care settings.

Value of Care	Examples of applying the value of care…
Promoting equality and diversity	**Equality:** • Access to care services provided for everyone: wheelchair ramps, hearing loop, information leaflets, provided a range of different formats (large print, braille, easy read, different languages). • Staff using non-discriminatory language; any incidents of discriminatory behavior is appropriately challenged. • Care settings having and following an equal opportunities policy. **Diversity:** • Offering choice, e.g. menus with a range of options catering for all needs; vegetarian, vegan, kosher, gluten free etc. • Care home residents being offered a variety of different activities and outings to take part in.
Promoting individual rights and beliefs	**Rights:** • Mobility, dietary and communication needs met. • Ensuring all areas and resources in care settings are accessible to all. • Female staff available to meet cultural requirements e.g. female doctor. • Consulting with an expectant mother about whether she would prefer a home or hospital birth. **Beliefs:** • Cultural and religious dietary needs met, e.g. menus with options like halal and kosher. • Providing a prayer room. • Residential settings celebrating a range of different festivals, like; Eid, Chinese New Year, Christmas and Hanukkah.
Maintaining Confidentiality	Private information shared by care workers only on a need to know basis, e.g. information about a patient's illness and treatment would be shared only with the practitioners directly involved in working with that person, not told to all of the staff. Information like patients records kept securely in a locked filing cabinet or password protected electronic records so that access is limited to authorized staff.

Values of care in child care services

The values of care in child care services are:

- Making the welfare of the child paramount.

- Keeping children safe and maintaining a healthy environment.

- Working in partnership with parents, guardians and families.

- Encouraging children's learning and development.

- Valuing diversity.

- Ensuring equality of opportunity.

- Anti-discriminatory practice.

- Maintaining confidentiality.

- Working with other professionals

PAT Testing: Portable Appliance Testing is the term used to describe the checking of electrical appliances and equipment to ensure they are safe to use.

GP: General Practitioner, the doctor at the local surgery.

Keywords

Exam Tip:
If an exam question asks you to describe ways, then you have to write about more than one.
If you describe two or three correctly you will achieve high marks. If you only mention one, you will be limited to half marks!

Value of Care	Examples of applying care values in child care settings
Making the welfare of the child paramount.	Safe guarding policy and protection procedures in place, i.e. child protection officer -named person, first point of contact for staff if there are concerns about a child's welfare. Paramountcy principle is where the child's needs come first and the setting should use a child-centered approach. Children must never be humiliated, abused or smacked. All volunteers and staff must have a DBS check – criminal record checks carried out by the Disclosing and Barring Service to help prevent unsuitable people working with children.
Keeping children safe and maintaining a healthy environment.	Security measures in place to control access, i.e. staffed reception, staff lanyards, visitor badges, keypad entry systems, CCTV at external entrances etc. All electrical equipment has to be **PAT** tested to ensure it is in good working order. Regular maintenance checks on all equipment, furniture and toys to check for faults or damage that could cause injury. Food provided in the settings should meet health eating guidelines.
Working in partnership with parents, guardians and families.	Successful relationships between parents and practitioners support the best outcomes for the child. Daily diaries for nursery children are kept by staff to inform parents what activities have been done each day. Informal chats with parents when children are dropped off and collected. Praise certificates, parent information evenings held to discuss issues or problems. Effective communication helps parents to be involved in what is happening with their child at the setting.
Encouraging children's learning and development.	Primary schools, nurseries and playgroups should provide a range of activities appropriate for the children's ages and abilities, enabling all to participate and learn, children's progress should be monitored so support or extension activities can be provided. Toys, equipment and games should be accessible for all children in the setting. Special equipment or support should be provided if needed, i.e. an LSA for a child with a physical or learning disability.
Valuing diversity.	Displays, toys, resources in nurseries, playgroups and primary schools should reflect different cultures and beliefs. A wide range of festivals could be celebrated with children i.e. Diwali, Hanukah, Eid, Christmas etc. Food options should come form a range of cultures and to meet dietary needs – vegan, vegetarian and allergies like dairy or gluten intolerance.
Ensuring equality of opportunity.	Activities and tasks should be differentiated to meet children's individual needs, enabling each child to progress and achieve their potential. All areas of the setting and activities are accessible to all children making adaptations – i.e. ramps, adjustable height tables, easy read books, information in a range of languages (appropriate to those attending the setting) etc.
Anti-discriminatory practice.	All children should be treated fairly; staff should not have 'favourites'. Any discriminatory actions or comments by children, staff or parents/carers should be challenged. Ensure no one is excluded from activities, make them accessible for all. Staff should be good role models by demonstrating inclusive behavior.
Maintaining confidentiality.	Private information must be shared by child care workers only a 'need to know' basis. For example, information about a child's parent being seriously ill would be shared with the teachers directly involved in working with the child, not told to all staff. Information like a child's progress record must be kept securely in a locked filing cabinet or password protected if electronic so access is limited.
Working with other professionals.	Information has to be shared openly in certain circumstances, this has to be done sensitively with a group of practitioners involved in the care of the child. For example, a child protection case – a teacher, social worker and the police may be involved in discussing this situation.

There are a range of support networks available that can help people by providing advice, information and practical support.

Support Networks

Advocacy Services:

Individuals who may need an advocate include; young children, those with a learning or physical disability, a condition like Alzheimer's or assessed and identified as lacking mental capacity or having mental health problems.

How does an advocate support an individual?
These are examples of how an advocate can support someone:
- ✓ Going with an individual to meetings, or attending for them.
- ✓ Helping an individual find and access information.
- ✓ Writing letters on the individual's behalf.
- ✓ Speaking on behalf of the individual at a case conference to express their wishes.

Situations involving advocacy support:
- At a care plan meeting for an 18 year old with a learning disability, who wants to leave home and live in supported housing – a member of the community mental health team represents the individual in order to ensure the individual's rights are maintained.
- A volunteer form a charity like MIND or SEAP helps with an application for disability benefits to make sure the individual's rights and entitlements are supported.
- A family friend could represent an older person with dementia by speaking about their needs with a hospital social worker when a care plan is being discussed, to make sure the older person's best interests have been respected and supported.

What will an advocate do? / Not do?

What will an advocate do?	✓ Be completely independent and represent the individual's views ✓ Ensure the rights and needs of an individual are recognized ✓ Make sure that an individual's wishes and views are represented ✓ Speak on behalf of an individual who cannot speak for themselves ✓ Act in the best interests of the person they are representing
What won't an advocate do?	X Judge the individual X Give their own personal opinion X Make decisions for the individual

Support Groups:
There are many UK charities and support organisations – Mind, Age UK, Headway, Rethink Mental Illness, Macmillan Cancer Support. These groups help to empower individuals to take back control of their lives when they have, or are caring for an individual with an illness, long term condition or disability.
There are local and national support groups where people with similar experiences or concerns can meet and provide each other with support, advice, encouragement, comfort, information and share coping strategies.
It gives people a chance to talk to others who understand as they have experienced it themselves.

Informal Support:
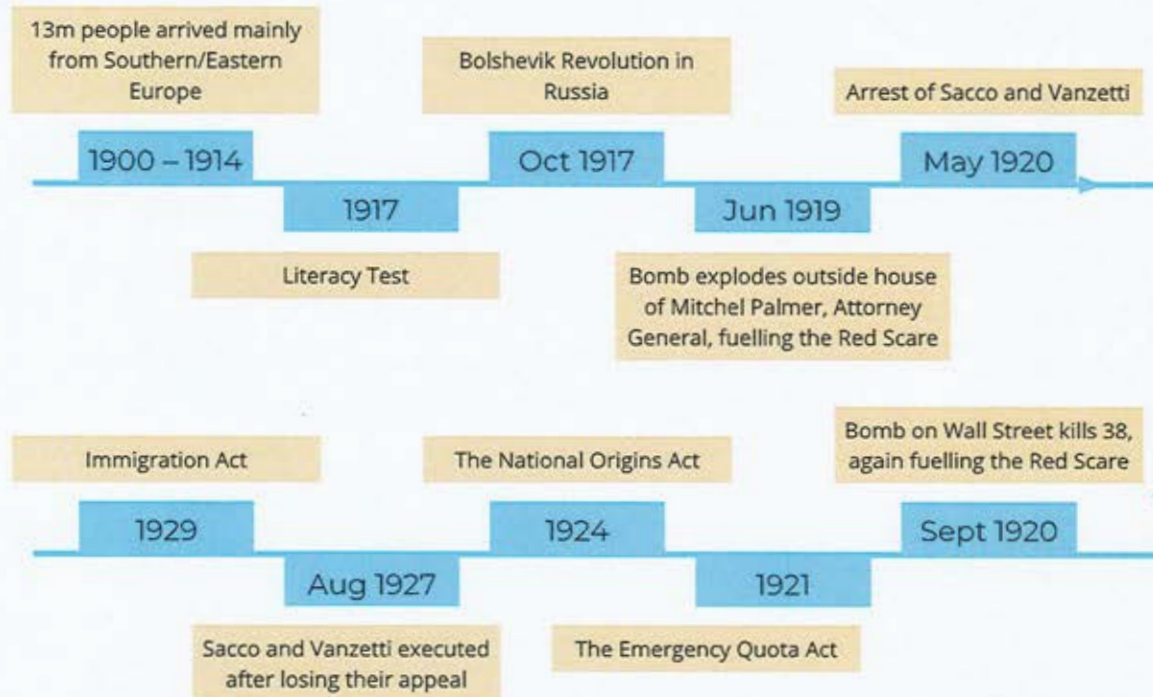Informal support is care given by those not paid to do so and are not professionally trained care workers – friends, family, neighbours. This could take the form of helping with daily tasks like;
- Personal care – showering, bathing, getting dressed
- Shopping
- Collecting prescriptions
- Preparing meals
- Laundry
- Having a chat and keeping them company
- Mowing the lawn
- Cleaning

History

Timeline of events

13m people arrived mainly from Southern/Eastern Europe	
1900 – 1914	
1917	
Literacy Test	

Bolshevik Revolution in Russia

Oct 1917

Jun 1919

Bomb explodes outside house of Mitchel Palmer, Attorney General, fuelling the Red Scare

Arrest of Sacco and Vanzetti

May 1920

Bomb on Wall Street kills 38, again fuelling the Red Scare

Immigration Act	The National Origins Act	
1929	**1924**	**Sept 1920**
Aug 1927	**1921**	
Sacco and Vanzetti executed after losing their appeal	The Emergency Quota Act	

Key words

Melting Pot	people from different countries 'blending' together
Open Door Policy	accepting immigrants from various countries
Push factors	reasons people want to leave their own countries
Pull factors	factors that attracted people to the USA
Ellis Island	70% of immigrants arrived at Ellis Island near New York
WASP	white Anglo-Saxon Protestant
Red Scare	concern regarding the spread of communist and socialist ideas
Xenophobia	dislike of, or prejudice against people from other countries.
Communism	system where property is owned by community
Palmer Raids	series of arrests of thousands of suspected Communists

The Red Scare

- Many Americans were frightened by the Communist Revolution that had happened in Russia in October 1917.

- Many Americans feared that communist and anarchist ideas would spread. They viewed immigrants with increasing suspicion and became increasingly xenophobic.

- There were over 3,000 cases of industrial strikes in 1919, including the Boston Police force.

- Feelings of anger and animosity arose towards communists and many Americans believed that some of the events of 1919 and 1920 were linked to communism.

- In September 1920, a bomb exploded on Wall Street killing 38 people, and another bomb destroyed the front of the Attorney General, A. Mitchell Palmer's house.

- These events gave rise to the Red Scare and fear that communism was a real danger that threatened the American way of life.

The Palmer Raids

- United States Attorney General, A. Mitchell Palmer organised attacks against left wing organisations. Palmer spread rumours about the **Red Scare** saying that there were around 150,000 communists living in the country (0.1 per cent of the population).

- As many as 6,000 were arrested and held in a prison without a hearing and hundreds were deported. The Palmer Raids were a response to imaginary threats. Eventually they were released and the Red Scare receded.

Key Question 1 : Why did immigration become such a major issue in American society?

Melting Pot

- The **Open Door policy** hoped America would be a **melting pot** and the immigrants would be workers that would make the country richer. By 1919, more than 40 million people had arrived.

- The aim of the Open Door policy was to make immigration as easy as possible. There was a mixture of people living in America during this period such as the early immigrants, Native Americans, Black Americans, Eastern and southern Europeans, Hispanics and Asian people.

- A combination of **push and pull** factors made people immigrate to the USA. The push factors made people want to leave their own countries, and the pull factors attracted them to the USA. For example; escaping from poverty in their own country, escaping from political and economic persecution, a promise of religious tolerance and a chance to practice their faith safely, a plentiful supply of land and the hope of owning property, creating a better life, a spirit of adventure, going to a country of opportunity and equal opportunity.

- Most of the immigrants travelled by sea, and more than 70 per cent arrived on Ellis Island near New York. During the busiest periods, as many as 5,000 people a day arrived there. Most were young - in 1900 the average age was 24. The first view the immigrants saw as they arrived in America on their way to Ellis Island was the Statue of Liberty.

Important concept

The notion of the 'melting pot' and the 'open door' had served is purpose once the American economy was the strongest in the world. After that, a combination of the Red Scare and immigrants arriving from poorer parts of the world meant that the open door began to close.
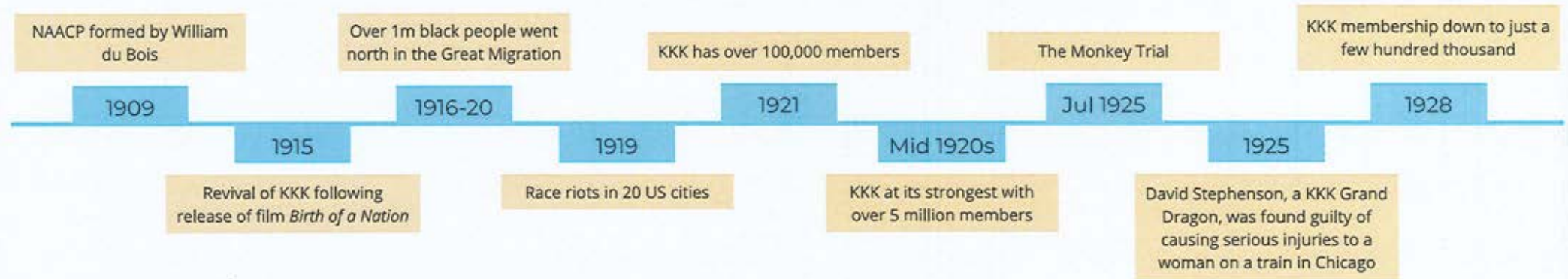
Restricting Entry

- With the number of immigrants increasing, some Americans began to question the government's Open Door policy.

- Immigrants had tended to come from northern and western Europe and were White Anglo Saxon Protestants (WASPs). Between 1900 and 1914, 13 million arrived, mainly from southern and eastern Europe – Italy, Austria-Hungary, Russia, Western Poland and Greece.

- People started feeling angry towards these 'new' immigrants because they were often poor, illiterate and many were Roman Catholics or Jews, therefore from a different cultural and religious background.

- The fear of communism spread following the Bolshevik revolution in 1917 which led to the Red Scare.

- As a result, the US Congress passed laws to restrict immigration and each law in turn was more severe than the previous one.

- **Literacy Test, 1917** – a series of reading and writing tests. Many of the poorer immigrants had received no education and therefore failed the tests and were refused entry.

- **The Emergency Quota Act, 1921** - restricted the number of immigrants to 357,000 per year, and also set down a quota - only 3 per cent of the total population of any overseas group already in the USA in 1910 could come in after 1921.

- **The National Origins Act, 1924** – This law cut the quota of immigrants to 2 per cent of its population in the USA in 1890.

- **Immigration Act, 1929** – This made the quotas of the 1924 act permanent and restricted immigration to 150,000 per year.

Sacco and Vanzetti

- In May 1920, two Italian immigrants, Sacco and Vanzetti, were arrested for armed robbery of a shoe factory, during which two people were killed.

- They had radical anti-government pamphlets in the car when they were arrested and both owned guns. They could not indisputably prove where they had been on the day of the murders.

- From the beginning, public opinion was against them because of their political ideas and because they were immigrants.

- Although 61 witnesses said they had seen them, the defence had 107 witnesses alleging that they had seen them somewhere else when the crime was committed.

- During the court case in May 1921, Judge Webster Thayer was rather openly prejudiced against the two men. They were found guilty.

- Although a man named Celestino Madeiros later admitted that he had committed the crime, Sacco and Vanzetti lost their appeal.

- In August 1927, they were both executed by electrocution in Charlestown prison.

- This case highlighted the attitudes and discrimination immigrants experienced.

Key Question 2 : Was America a country of religious and racial intolerance?

Timeline of events

| NAACP formed by William du Bois | Over 1m black people went north in the Great Migration | KKK has over 100,000 members | The Monkey Trial | KKK membership down to just a few hundred thousand |

| **1909** | **1916-20** | **1921** | **Jul 1925** | **1928** |

| **1915** | **1919** | **Mid 1920s** | **1925** |

| Revival of KKK following release of film *Birth of a Nation* | Race riots in 20 US cities | KKK at its strongest with over 5 million members | David Stephenson, a KKK Grand Dragon, was found guilty of causing serious injuries to a woman on a train in Chicago |

Key words

Bible Belt	a religious area in the southern states of the USA
Evolution	scientific theory of how humans evolved
Rope Law	members of the Ku Klux Klan killed black people by hanging them without trial (lynching) and often took the law into their own hands
Jim Crow Laws	the names of the laws that introduced segregation in the south (the laws which kept black and white people apart)
Segregation	laws separating black and white people in public places in society
WASP	refers to the group known as: White Anglo Saxon Protestants

Important concept

The 'nation of contrasts' is clear within the issues of religion and race. On the one hand, fundamentalism and racism point that America was a nation of intolerance at this time. But organisations such as the American Civil Liberties Union and National Association for the Advancement of Colored People show that determination for a more progressive society was strong. Perhaps geography, age and class are where the contrast were.

The Monkey Trial

- Bible Belt Christian fundamentalists organised a campaign against the teaching of Darwin's theory of evolution in American schools.

- The campaign was a success as in 1925, a new law was passed in six states, including Tennessee, prohibiting the teaching of Charles Darwin's **evolution**.

- The American Civil Liberties Union (ACLU) were outraged by the ban. One Biology teacher – Johnny Scopes, from Dayton Tennessee - ignored the new law and taught his pupils Darwin's ideas, he was taken to court.

- The court case received a great deal of publicity in the media. Clarence Darrow was Scopes' lawyer, while the lawyer for the Fundamentalists was William Jennings Bryan. The case was known informally as the Monkey Trial.

- Scopes was found guilty of teaching the theory of evolution to his pupils and was fined $100 (approximately $1,400 in today's money).

- By 1929, six states in the Bible Belt, in the most southern parts of the country, had passed laws against teaching the theory of evolution. It was now possible that some children in America would grow up not knowing anything about this theory.

- More importantly the case showed a different side to America from the one portrayed in the so called **Jazz Age**.

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Key Question 2 : Was America a country of religious and racial intolerance?

Who were the KKK?

- The Ku Klux Klan were an American White supremist hate group in the southern states in 1865 at the end of the American Civil War. The group believed that white people were better and wanted to see black people remain as slaves.

- The movement was revived in 1915 by William J Simmons following the release of the film *Birth of a Nation*. It grew quickly and by 1921 it had over 100,000 members. By the mid 1920s the movement was at its strongest with 5 million members.

- Only **WASPs** could join the Klan. The KKK discriminated against black people, Roman Catholics, Jews and Mexicans.

- Members of the Klan often killed black people by **hanging without trial** (lynching) – **Rope Law**. Sometimes the local police could not protect the victims and even took part in the killings.

- Those responsible were not brought to justice very often, and Klan members knew that their friends in the courts would not find them guilty.

- It was difficult for the government to change the attitudes of white people in the south and politicians were scared of losing votes.

- In 1925, David Stephenson, the Klan Indiana Grand Dragon, was found guilty of causing serious injuries to a woman on a train in Chicago.

- The membership of the Klan fell to a few hundred thousand by 1928.

Black Communities and other racial minorities

- As a result perhaps of high levels of immigration, at the beginning of the 20th century, there was more racial prejudice towards those who were not considered 'real' Americans.

- In 1900, there were 12 million black people living in the USA and 75 per cent of them lived in the south.

- Although slavery had been abolished in the 1860s, white people controlled southern states using **Jim Crow laws** to **segregate** the black population and discriminate against them. These laws prevented them from voting, gaining a good education and decent jobs.

- The majority of black Americans were not able to profit from the flourishing economy of the 1920s and early 1930s. This was especially true in the southern states where the economy was based on agriculture and crop prices fell throughout the 1920s and early 1930s.

- Industrial development had created a demand for manufactured goods and jobs were created in the industrial cities of the north.

- Between 1916-1920 almost 1 million black people went north in the Great Migration to cities like Chicago, New York and Detroit in search of work. Although there were no Jim Crow laws, black Americans were still treated as second class citizens in the northern cities. Due to low wages they lived in poor neighbourhoods, like Harlem in New York, called **ghettos**.

- In 1919, there were riots in 20 US cities as racial tension between black and white people increased. This was one of the factors that sparked the increase in the membership of the Ku Klux Klan (KKK).

The response of the black people

- Various groups fought for the cause of black people during this period. By 1900, a former slave, **Booker T Washington** opened the **Tuskegee Institute** in Alabama to provide education and training for black people, believing that they had to make economic progress before making political progress.

- The **Harlem Renaissance** in New York developed talented black Americans such as singers, musicians, artists and authors.

- **The National Association for the Advancement of Coloured People (NAACP)**, established in 1909 by **William du Bois**. The NAACP focussed on opposing racism and segregation through legal methods and holding non-violent activities, such as marches and protests.

- **The Universal Negro Improvement Association (UNIA)**, established in 1914 by **Marcus Garvey**. UNIA members were more militant. Garvey encouraged black people to establish their own businesses and to employ black people only. He also encouraged them to return to their homeland, Africa. Black is beautiful was his most famous slogan.

- William du Bois and Marcus Garvey both tried to improve conditions for black people, but their methods were so different that they became sworn enemies.

Key Question 3 : Was the 1920s a decade of organised crime and corruption?

Timeline of events

Eighteenth Amendment to the Constitution	John F. Kramer appointed as Prohibition Commissioner	Up to 100,000 illegal bars operating in New York alone	Saint Valentines' Day Massacre	Capone sent to prison for tax evasion
16 Jan 1920	1921	1925	Feb 1929	1931

Mar 1921	1924	1927	1927-1931
Warren G. Harding becomes President	Congress begins investigating corruption in the Harding administration	Albert Fall imprisoned for Teapot Dome Scandal	227 gangland murders went unpunished

Key words

Prohibition	period of American history where selling alcohol was outlawed
Anti-Saloon League	organisation that pressured for prohibition
Speakeasies	illegal bars
Bootleggers	people who continued to distribute alcohol
Moonshine	homemade, illegal alcohol
Organised crime	organised illegal activities
Corruption	dishonest or fraudulent conduct by those in power, typically involving bribery
Teapot Dome	this was the biggest scandal during Harding's term, politicians leased the government's land to oil companies for money.

Important concept

Behind the glamour and wealth of the 1920s lay an underbelly of corruption. Had the laissez-faire approach towards the economy seeped into a laissez-faire attitude to other aspects of society? Certainly corruption was not dealt with efficiently during this period, especially when it was generating huge sums of money.

Government Corruption

- In 1920 Warren Harding was elected President of the USA. He gained a reputation as a weak manager for giving important and influential posts to friends and peers who were members of his cabinet. The Ohio Gang was a group of politicians who were in positions of power during Harding's administration. They betrayed the public's trust in several scandals.

- At the beginning of 1924, soon after Harding's death, Congress began investigating reports of corruption and bribery during Harding's administration. Several members of the Gang were charged and imprisoned for corruption.

- Charles R. Forbes was found guilty of fraud, conspiracy and bribery in the Veterans' Bureau.

- In 1927 Albert B. Fall, who Harding had appointed secretary of the interior, was found guilty, fined $100,000 and imprisoned for his part in the Teapot Dome scandal and the Elk-Hills oil fund scandal.

- Harry M. Daugherty, who had been Attorney General, was found guilty of selling alcohol illegally and giving licences and pardons to offenders.

Organised Crime

- In every city, gangsters would try to control the supply of alcohol. Groups would fight each other for control of specific areas.

- Dion O'Bannion controlled the bootleg business in the south of Chicago and John Torrio in the north. Al Capone was originally part of Torrio's gang before he took over.

- The mayor of Chicago, 'Big' Bill Thompson, was under the influence of Torrio's gang and encouraged others to turn a blind eye.

- Although Chicago was most notorious, Dutch Schultz was in control in New York and Chester La Mare controlled Detroit.

- The Saint Valentine's Day Massacre of 1929 was the climax of the gangster wars between Bugs Moran and Al Capone. Capone's men murdered 7 of Bugs Moran's gang while dressed as police officers. It seemed like things had gone too far.

- The authorities could not find enough evidence to convict Al Capone. He was eventually found guilty of tax evasion in 1931 and sent to prison.

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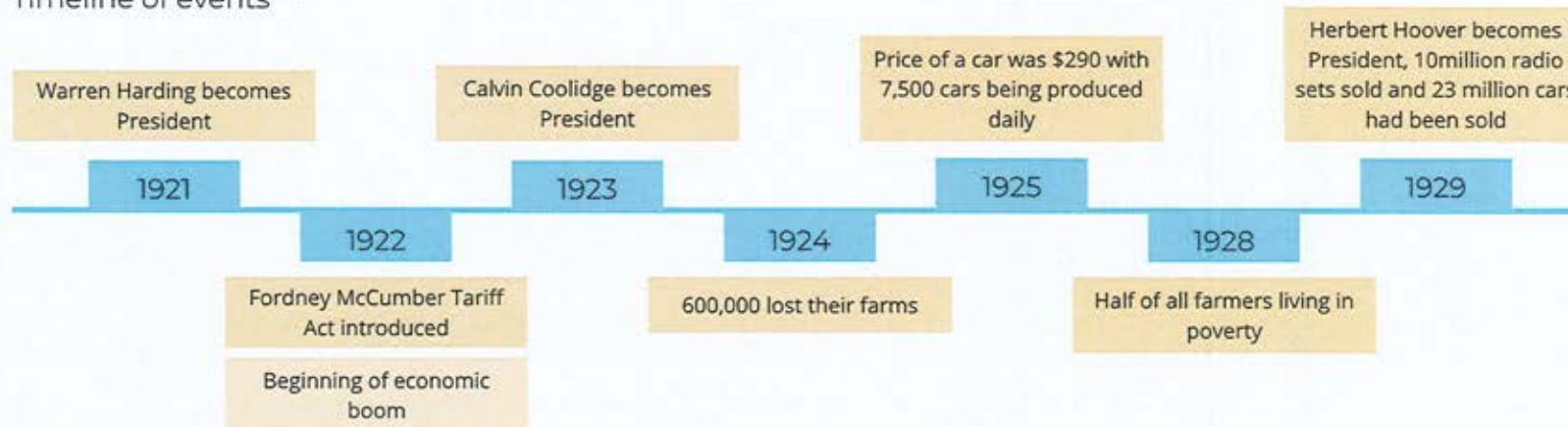Key Question 3 : Was the 1920s a decade of organised crime and corruption?

The Age of Prohibition

- A number of organisations, collectively known as 'the dries', for example, the Anti-Saloon League and the Women's Christian Temperance Union, and some religious groups such as the Methodists and the Baptists put pressure on the government to prohibit the production and sale of alcohol. They claimed that alcohol was the work of the devil and that it disobeyed Christianity. They said it increased crime, days off work, wife-beating and child abuse.

- They were successful as on 16 January 1920 the Eighteenth Amendment to the Constitution came into force, making it illegal to sell alcohol in the USA.

- The purpose of the Volstead Act of 1919 was to implement the Eighteenth Amendment and to set punishments for breaking the new law.

- However, it was difficult to enforce the Volstead Act. Demand for alcohol remained high so gangsters sold it illegally and made significant money from doing so. As a result, gangs fought to control this, and other trades, such as protection rackets and gambling dens. As gangsters started selling alcohol, organised crime started.

- The people who sold alcohol were called Bootleggers, e.g. Al Capone.

- Rum-runners smuggled alcohol into the USA from Canada and Mexico.

- Moonshiners distilled their own alcohol at home.

- Illegal drinking bars called speakeasies opened and by 1925 there were over 100,000 of these in New York alone.

- There was more corruption as gangsters bribed police officers, judges and politicians to turn a blind eye to their illegal activities.

- The legal system could not cope and so the government tried to solve the problem by appointing a Prohibition Commissioner, John F. Kramer, in 1921. Before long he established a cohort of 3,000 agents.

- In 1924 the Investigation Bureau (later called the FBI) was established under J. Edgar Hoover. His men had tougher methods.

- Attempts to try to enforce the Prohibition Act failed. There were not enough agents and they were on low salaries and easy to bribe. It was impossible to persuade drinkers to change a habit of a lifetime.

Government Corruption

- In 1920 Warren Harding was elected President of the USA. He gained a reputation as a weak manager for giving important and influential posts to friends and peers who were members of his cabinet. The Ohio Gang was a group of politicians who were in positions of power during Harding's administration. They betrayed the public's trust in several scandals.

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Key Question 4 : What were the causes of economic boom?

Timeline of events

1921	Warren Harding becomes President
1922	Fordney McCumber Tariff Act introduced / Beginning of economic boom
1923	Calvin Coolidge becomes President
1924	600,000 lost their farms
1925	Price of a car was $290 with 7,500 cars being produced daily
1928	Half of all farmers living in poverty
1929	Herbert Hoover becomes President, 10million radio sets sold and 23 million cars had been sold

Important concept

The economic boom was caused by a number of factors combining simultaneously. Some of those factors were based on luck (plentiful natural resources, European contras stalling) but some were down to innovative thinking and decision making (mass production and protectionism). However, some felt this boom was not built on stable foundations.

Key words

Assembly line	a series of workers and machines in a factory by which a succession of identical items are progressively assembled
Boom	a period of prosperity in the economy, the economy was doing well and many people benefited
Fordney McCumber Tariff Act	taxes were imposed on goods from abroad in order to encourage people to buy American goods, this is an example of protectionism
Hire purchase and credit	a way of borrowing money, the ability to get the goods and pay back over a period of time
Laissez-faire	translated as 'leave well alone' or 'let the people choose', a government policy of interfering as little as possible in the economy
Mass production	a method of producing goods on a large scale and quickly
Rugged individualism	personal liberty and free competition and the idea that people should be self-reliant
Trade union	organised associations that protect the interests of workers when negotiating hours, wages, conditions, etc. may also be known as labour unions

America's assets and development

- The USA had a supply of natural resources; timber, iron, coal, minerals, oil and land. Immigrants provided a cheap work force.

- European economies suffered during WWI but the USA experienced significant growth. US banks loaned money to Europe and businesses sold much needed goods. From 1922, the USA experienced an unprecedented economic boom.

- During the 1920s the electricity industry experienced a huge boom. By 1929 the majority of houses in America had electricity and 70 per cent of them used it for lighting purposes.

- Electrical power drove machinery in factories making it possible to introduce mass production to a number of factories.

- The car industry is the best example of mass production. Henry Ford was a pioneer, producing affordable cars for the people of America. As he produced more and more cars, he could reduce his prices. In 1908, the price of a car was $850. By 1925 the price of a car was around $290.

- By 1929, Americans owned 23 million cars. Workers earned good wages ($5 per day), thousands of jobs were created, roads and petrol stations were built, as were hotels and restaurants.

- Systems of hire-purchase and credit were introduced. This meant that a person could buy something by paying for it on a monthly basis.

- Advertisements were placed on roadsides, on the radio, in newspapers and in cinemas and chain stores appeared for the first time, e.g. J P Penney. Catalogue shopping also became fashionable as it was a convenient way of buying goods.

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New consumer society

- The biggest economic growth was in new industries such as chemicals, electrical goods and cars. The introduction of electricity in the home triggered a huge expansion in the household electrical goods industry.

- In 1919, 60,000 radio sets had been sold, but in 1929, 10 million were sold. There was a similar growth in sales of telephone equipment, from 10 million in 1915 to 20 million in 1930.

- America's building industry was busier than it had ever been during the 1920s. This was partly due to the demand for new factories and new office buildings for banking, insurance and advertising companies. This was the age of the skyscraper – companies wanted to demonstrate their power and importance by building the tallest and grandest offices.

- It was Ford's idea to build a car on an electrical assembly line. The car would move slowly along the line with each worker only doing one specific task. In this way, it would be possible to build a Ford Model T car in an hour and a half instead of 13.5 hours. By the mid-1920s, 7,500 cars were being produced daily - one car every 10 seconds!

- The car changed America in every way. It led to the construction of new roads and suburbs. People's way of life was changing in a big way. The development of the car industry sparked a growth in other industries, e.g. cars used 90 per cent of America's petrol, as well as 80 per cent of the country's rubber and 75 per cent of its glass.

Attitudes and policies of Republican presidents

- There were three Republican presidents during the 1920s. The policy of these Republican presidents was that government should leave the economy alone – they adopted a **laissez-faire** (free market) policy. This meant that big businesses were free to expand without being held back by the government.

- **Warren Harding (1921-23)** promised a return to normality. He reduced taxes to give businesses more money to grow, and in 1922, he introduced the **Fordney-McCumber Tariff Act** which imposed a tax on goods from foreign countries. This made foreign goods more expensive than domestic goods, and so this encouraged Americans to buy American goods only. The name for this policy was **protectionism**.

- 'Business is America's business,' said **Calvin Coolidge (1923-29)**. Although he didn't do much (his nickname was 'Silent Cal'), Americans believed he was a good president because of the strength of the economy. He had a huge respect for businessmen and adhered to the **laissez-faire** policy.

- **Herbert Hoover (1929-32)** became president in 1929 following his promise to put a chicken in every cooking pot, and a car in every garage. Hoover believed in laissez-faire, but also in **rugged individualism**. This meant that people should not depend on the government for help - they should solve their own problems by working harder. Hoover lost the next presidential election in 1932 because of this viewpoint - it was too severe - especially after the Wall Street Crash and Depression.

How did this prosperity affect American society?

- Farmers were producing too many crops causing prices to fall and farmers borrow money from the banks. Eventually many had to sell their farms and go looking for work

- By 1928 half of all USA farmers were living in poverty. 600,000 farmers lost their farms in 1924 alone.

- Black people suffered, especially in the southern states, where the majority worked on small farms as labourers or **sharecroppers** and lived in real poverty.

- Segregation, due to **Jim Crow laws**, and the presence of the **KKK** in the southern states, made life even harder and many black people migrated to northern cities like New York, Detroit and Chicago to find work in the new industries. Conditions remained hard for the majority of those who migrated north as they lived in ghettos and were often "the last hired and first to be fired".

- The unemployment rate amongst new immigrants remained high. Many were willing to work in any kind of job for very low wages.

- The traditional industries failed to respond to the new mass production. Also, following a reduction in the powers of **Labour Unions**, the workers were not in a position to be able to claim better wages and working conditions in the old industries.

- Coal prices fell and thousands had to be made redundant. **Ship building** was another major industry that had to make thousands redundant.

- New synthetic fibres were being developed, such as rayon. This became a very popular substitute to cotton. It was possible to produce rayon in factories where fewer workers were needed. Many textile mills were forced to close down.

Key Question 5 : What factors led to the end of prosperity in 1929?

Timeline of events

Value of stock market was $27 billion	Value of stock market was $87 billion	Black Thursday – 12.8m shares sold	2.5m Americans out of work
1925	**1929**	**24ᵗʰ Oct 1929**	**End of 1929**
1926	**Sept 1929**	**29ᵗʰ Oct 1920**	
House prices began to fall	Financial experts warned the economy was slowing down	16m shares sold at very low prices	

Important concept

Just as the boom was caused by a number of factors combining, so too was the crash, with some of causes of the boom ended up leading to the crash, over production of goods and rising stock markets being an example. The long term causes were always there, yet only when people began to realise the precarious nature of the economy did the market crash at the end of the peirod. And what a crash it was!

Key words

Black Thursday	24 October 1929 - the start of the Wall Street Crash, a 'black' day economically.
Consumer Goods	goods that are used as an end in themselves and not for the production of other goods, e.g. vacuum cleaner, fridge and radio
Great Depression	a prolonged economic downturn, beginning after the Wall Street Crash, that affected the whole world
On the margin	people borrowing money in order to be able to buy shares
Shares	financial stakes in a company or business
The stock market	a centre where shares are bought and sold
Wall Street crash	the economic downturn on the American stock market in 1929

How did this prosperity affect American society?

- A number of financial experts warned that the American economy was slowing down and in September 1929 some investors started selling **shares** in large numbers. Many people started feeling nervous and investors went into panic and rushed to sell their shares.

- On 24 October 1929, now referred to as **Black Thursday**, 12.8 million shares were sold. Thousands of people saw their fortune, or any money they had in the bank, disappear. On 29 October 1929, 16 million shares were sold at very low prices. **The Stock Market** in New York had collapsed.

- **The Roaring Twenties** came to a sudden end. Investors lost their money in the Crash and could not pay their debts. Many banks closed, ordinary people lost their savings and people lost all hope for the future.

- People could no longer buy consumer goods like cars and clothes. As a result, workers were made redundant, other workers' wages were cut and unemployment rose to very high levels. By the end of 1929, 2.5 million Americans were out of work.

- This was the start of the **Great Depression** of the 1930s.

Long and short term causes
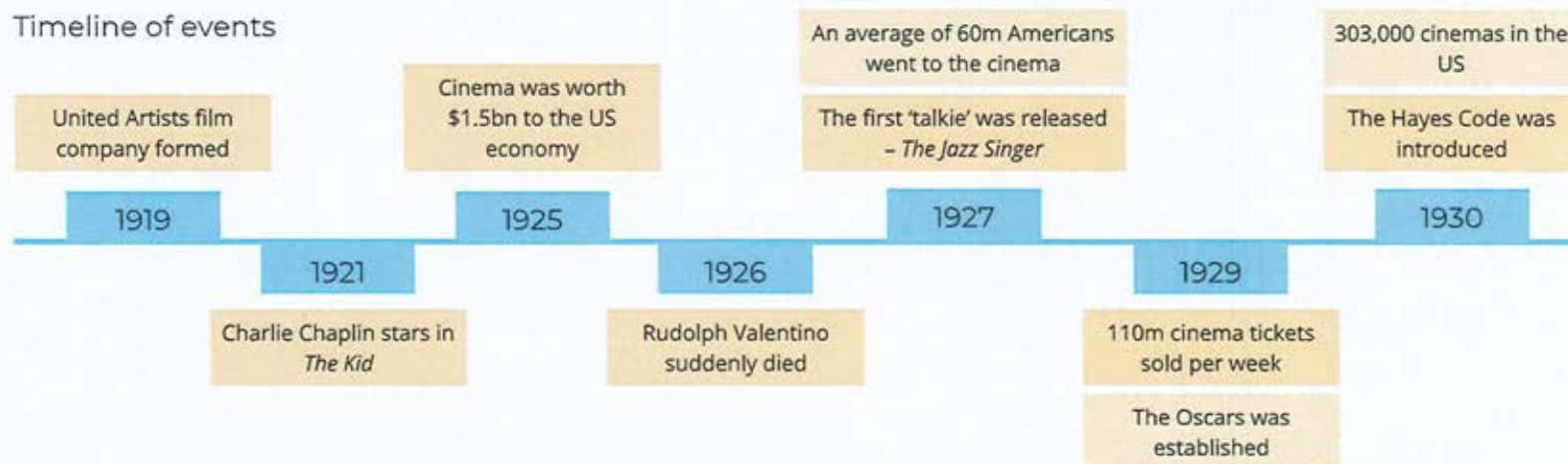
Longer term causes

- **Overproduction in agriculture** - as farming techniques improved and demand from Europe dropped, farmers were producing too much food. This caused a fall in prices, and drop in profits, so thousands of farmers had to sell their farms.

- **Overproduction in industry/falling demand for goods** - by the end of the 1920s there were too many **consumer goods** unsold in the USA. Not everyone in America was rich. Those that could afford to buy cars, refrigerators etc had already bought one, but approximately 60 per cent of Americans could not. The supply was bigger than the demand.

- **Buying on credit** - some of the country's poorer people bought goods on credit and as a result, a great deal of them owed money to shops and large companies. Many of these companies subsequently went into financial difficulties as the poor failed to pay their debts.

- **Commerce** - by the end of the 1920s, America tried to sell its surplus goods to European countries. But, in response to the **Fordney-McCumber Tariff Act**, European countries had imposed a tax on American goods. So American goods were too expensive to buy in Europe and, as a result, there wasn't much trade between America and European countries.

- **Property prices** - house prices increased a great deal in the early 1920s. But after 1926, house prices fell leaving a number of Americans owning houses that were worth less money than what they had paid (and borrowed from the bank) for it. This is called negative equity.

- **Too many small banks** - due to **laissez-faire** policies banks were not tightly regulated meaning there were only a few rules to follow to run a bank. There were many small banks that did not have the financial resources to cope with the rush for money when the **Wall Street Crash** happened. A number of banks had to close leaving thousands of customers with no money and no confidence in the banking system.

Short term reasons

- **The Stock Market** - throughout the 1920s the prices of shares had increased to unrealistic levels. People continued to buy shares as they were making huge profits from them. By 1929 over 20 million people had invested in shares. The value of the stock market had more than tripled from $27 billion in 1925 to $87 billion in 1929.

- **Over speculation** - as it was easy to borrow money, many people would buy shares **on the margin** - which meant borrowing money to buy shares and then holding on to them until they were worth more than the debt. Approximately 75 per cent of the purchase price of shares was borrowed in 1929. Then they would sell the shares, pay off the original debt and make a profit.

- **Loss of confidence and a sudden fall in prices** - the Wall Street Crash.

Key Question 6 : How did popular entertainment develop during this period?

Timeline of events

1919	United Artists film company formed
1921	Charlie Chaplin stars in *The Kid*
1925	Cinema was worth $1.5bn to the US economy
1926	Rudolph Valentino suddenly died
1927	An average of 60m Americans went to the cinema; The first 'talkie' was released – *The Jazz Singer*
1929	110m cinema tickets sold per week; The Oscars was established
1930	303,000 cinemas in the US; The Hayes Code was introduced

Important concept

Perhaps the term 'roaring twenties' best applies to popular entertainment of the time. The seemingly strong economy meant that the glamour of cinema could be realised by many through fashion, parties, jazz clubs and dancing. This combination of greater wealth, new fashion, new music and an exciting 'speakeasy' culture certainly changed the cultural landscape for many.

Cinema

- The cinema was the most exciting development of the time. It influenced people in a number of ways - both in terms of fashion and the way in which people behaved.
- Every small town had a cinema and many Americans, with increased leisure time and disposable income due to changes in working patterns, could go several times a week as it was reasonably cheap.
- During the early 1920s, every movie was silent. Cinemas used to employ musicians to play the piano or electric organ during the films.
- **Hollywood** was the perfect place for outdoor filming as it was located near Los Angeles in the heart of a part of America that had a very dry and sunny climate. It also had a variety of landscapes such as mountains and coastline.
- The major movie companies in Hollywood during this period were Paramount, Warner Bros and MGM. By **marketing** their range of different movies extensively – cowboy movies, detective stories, comedies and romantic movies – they succeeded in generating a huge interest in the movie stars.
- The cinemas were luxurious and pleasant places in which Americans could socialise, and they could get to them easily in their cars.
- The stars also contributed to the increase in the popularity of the cinema. The Italian, Rudolph Valentino, was a very popular actor and his role in *The Sheikh* (1921) made him a sex symbol. He was a star and appeared in many of the early films, earning $1 million. When he died suddenly in 1926, his fans were grief-stricken and a number of women committed suicide.
- Charlie Chaplin was a very influential figure and was one of the founders of the United Artists film company with Mary Pickford, Douglas Fairbanks and D W Griffith in 1919. He was also a famous actor, starring in silent films such as *The Tramp* (1915) and *The Kid* (1921). He was instantly recognisable with his tramp-like image and preferred the craft of the silent movie rather than the **talkies** that came later.
- Arguably women like Clara Bow, the original 'It Girl', were the Hollywood stars that had the most influence on society at the time. She played the part of a **flapper** in a number of films, and influenced many young girls to behave in the same way. She was the most popular actress in 1928 and 1929.
- Actors such as Gloria Swanson and Buster Keaton were also influential.

Key words

Flapper	the term used to describe a liberated, young, fashionable woman in 1920s America whose behaviour would have been considered unconventional
Hollywood	a centre in California for film creation and production
Silent Films	films with no sound
Talkies	films with sound
The Roaring Twenties	a period during the 1920s when people enjoyed cultural and economic developments
Flapper	the term used to describe a liberated, young, fashionable woman in 1920s America whose behaviour would have been considered unconventional
Hollywood	a centre in California for film creation and production

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Key Question 6 : How did popular entertainment develop during this period?
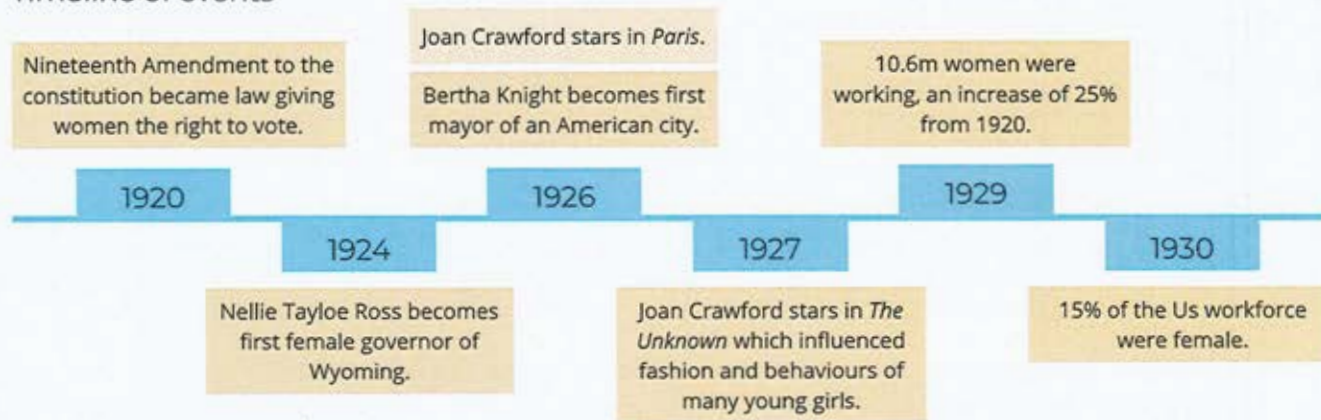
The 'Talkies'

- In 1927 an average of 60 million Americans went to the cinema on a weekly basis. This increased to over 100 million by 1929.

- The increase was partly due to the development of audio films in 1927, with Al Jolson starring in *The Jazz Singer* (1927) marking the beginning of the era of the talkies. The increase was also down to Hollywood's success in producing 500 films per year.

- The 1920s was also the era of the cartoon, with *Felix the Cat* (1925) and *Mickey Mouse* (1928) gaining popularity among people of all ages.

- In 1929 The Oscars were established to honour film stars.

- But not every American was happy with the new cinemas.

- The Hays Code was drawn up in 1930. In accordance with this code, scenes of nudity and dancing of a sexual nature were prohibited, a kiss could last for no more than seven metres of film, adultery was not to be portrayed in a good light, clergymen were not to be ridiculed and films should condemn killing.

- Some people, especially religious people, were very concerned about a lack of morals and the influence of the films on young people.

Popular music and culture

- Some referred to the 1920s as **The Roaring Twenties**. People had more money to spend and more time to listen to the music of the time.

- Jazz originated from the southern states of the USA, from the blues and ragtime music of the black people. Jazz was much more rhythmic and lively, and it was easy to dance to. This led to young people smoking, drinking and, according to some, behaving indecently. College students, especially, were willing to challenge their parents' values and lifestyle.

- A number of black musicians became very famous, including Louis Armstrong and Bessie Smith, The Empress of the Blues. But racism was still a major problem during this period. When Bessie Smith had a serious car crash in 1937, she was taken to a hospital that was for white people only. The hospital refused to treat her because she was black and she died.

- Listening to the radio was arguably the most popular form of entertainment. Mass production, the spread of electricity and buying on hire-purchase meant that approximately 50 million people, that's 40 per cent of the population, had a radio set by the end of the 1920s.

- Also, as the popularity of jazz increased, more people bought radios, records and gramophones so that they could listen to jazz any time they wanted to.

- People could also listen to their favourite team taking part in sports matches, The radio was able to grow and succeed because companies paid to advertise their products on the medium.

- More daring dances became popular after World War One. These resulted from swing dancing that developed alongside jazz music, and so black people had a huge influence.

- Dances such as the **Charleston** and the **Black Bottom** became very popular with young people.

- Because many of these new dances were sexually suggestive, parents were shocked by their children's enthusiasm to dance them.

- The Lindy Hop also became a popular dance – this dance honoured **Charles Lindbergh** for crossing the Atlantic in an aeroplane in 1927. Jazz had been prohibited in a number of cities, for example New York and Detroit. So, the performances moved to the speakeasies, making the young people even more determined to rebel.

Knowledge Organiser : The Development of the USA 1910-1929 (Unit 2)

Key Question 7: How did the lifestyle and status of women change during this period?

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Timeline of events

Nineteenth Amendment to the constitution became law giving women the right to vote.	Joan Crawford stars in *Paris*. Bertha Knight becomes first mayor of an American city.

10.6m women were working, an increase of 25% from 1920.

1920

1926

1929

1924

1927

1930

Nellie Tayloe Ross becomes first female governor of Wyoming.

Joan Crawford stars in *The Unknown* which influenced fashion and behaviours of many young girls.

15% of the Us workforce were female.

Key words

Flapper	the term used to describe a liberated, young, fashionable woman in 1920s America whose behaviour would have been considered unconventional
Chaperone	a person who would accompany and look after young women, typically on older relative
'Bob' haircut	short female haircut
National American Woman Suffrage Association (NAWSA)	group campaigning for the rights of women to vote
Anti-Flirt League	group set up to challenge the behaviour of flappers

Important concept

There's no doubt that the status of women changed during the period. Politically, in terms of the vote and greater representation, as well as socially, many women's lives were unrecognisable from those of their mothers' generation. However, this impact was not felt by all. It was certainly a time for change for the middle classes, the young and those in cities but perhaps less so for everyone else.

Changing attitudes towards women

- The general view is that attitudes towards women underwent a significant shift during the 1920s. Before the war, girls were expected to behave modestly and wear long dresses. When they went out, they had to be accompanied by an older woman or a married woman.

- It was totally unacceptable for a woman to smoke in public. Women were employed in jobs that were traditionally associated with women, e.g. servants, seamstresses, secretaries, nursing.

- During the war, women started to be employed in different types of jobs, e.g. factory work, replacing the men who had gone to fight in the war in Europe.

- Organisations such as the **National American Woman Suffrage Association** (NAWSA) had been fighting for decades to get the vote for women. As women had contributed so much to the war effort, it was difficult to refuse their demands for political equality. As a result, the **Nineteenth Amendment** to the constitution became law in 1920, giving women the right to vote. Nellie Tayloe Ross of Wyoming became the first woman to be elected governor of state in 1924.

- There was a change as far as work was concerned too, with an increase of 25 per cent in the number of women working during the 1920s. By 1929, 10.6 million women were working.

- By now, independent women of the middle classes and above had more money to spend. Because of this, advertising companies started targeting women in their campaigns to encourage them to buy their new products.

Key Question 7: How did the lifestyle and status of women change during this period?

Changing attitudes to social etiquette

- Women started to smoke in public. It became acceptable for women to drive cars and take part in energetic sports.
- The young women of the 1920s were referred to as **flappers**. Hollywood films of the period characterised them, and as a result, their behaviour and dress sense was imitated by millions around the world.
- In 1919 women's' skirts were about six inches above ground level, but by 1927 the hems of skirts were up to knee-level. Young women rebelled against the old-fashioned clothes of their mothers' era.
- The corset went out of fashion, and it became all the rage for women to cut their hair in a bob and wear a lot of make-up and jewellery.
- One famous flapper of the time was Joan Crawford. She started her career as a dancer on Broadway before moving to Hollywood to make a name for herself. She starred in films such as *Paris* (1926) and *The Unknown* (1927) in which she became famous for her flapper style. She drank, smoked, danced the Charleston and even kissed on screen. Many young girls admired and copied her style.

Influence of jazz culture

- Jazz wasn't just about the music – there was a wider cultural element associated with it.
- The Jazz clubs played a crucial role in allowing the flappers to express themselves. This is where they could smoke and dance. They also drank illegal alcohol in the speakeasies.
- Instead of dancing the waltz that was popular in the period before the war, people started to enjoy more daring dances such as the Shimmy and the Bunny Hug.
- **Petting parties** began where the flappers would kiss men in public.
- The flappers had their own slang. I have to go see a man about a dog was slang for going to buy whiskey, and a 'handcuff' or 'manacle' was an engagement or wedding ring.
- A number of the flappers' terms are still used today, e.g. 'big cheese' for an important person, 'bump off' for killing someone and 'hooch' for alcohol.
- But not every girl enjoyed the flappers' way of life. Poor women could not afford the new fashions and they didn't have the time to go out and enjoy social events. Black women could not benefit from the changing lifestyle either.
- Women in the **Bible Belt** did not adopt the new way of life. Also, many older women were outraged and some formed the Anti-Flirt Club.
- **It was the young and rich women who enjoyed the new way of life. Older people and religious people rejected the changes, and the poor people could not afford them.**

Interactive Media

R093: Audience demographics and segmentation

The target audience is the set of people who media products are aimed at.

Location

If a local cake shop is only able to deliver cakes up to 10 miles away, the target audience's location would be people who live within 10 miles of the shop. Products may have a target audience that is local, national or international.

Occupation

An occupation is the type of job that an audience does. When segmenting by occupation and audience, the category may be broad, for instance, middle income earners who work in an office.

Education

Audiences are often segmented by the highest level of education they have achieved such as GCSEs, A Levels or degrees. Some publications may specifically aim at an audience with specialist knowledge in an area.

Ethnicity

Ethnic groups are defined as a group of people who have common culture, country, religion or language. Media products may focus on a particular ethnicity. It is important not to offend or alienate anyone which the content of a media product.

Interests

By understanding the hobbies and interests of an audience, media producers can identify what engages them. For instance, an outdoor adventure company has established that most of their customers enjoy horse riding, this is something they might promote on a leaflet.

Age

Age groups may be clearly defined, such as 18-24, or use descriptive terms such as 'teenagers' or 'retired people'.

Gender

Media products may be aimed more towards one gender than another. It is important that advertising and designs do not stereotype gender roles even if the target audience for a product is more likely to be one gender.

Keywords

- Target audience
- Segment
- Occupation
- Ethnicity
- Education
- Interests
- Age groups
- Gender

R094: Components of visual identity

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

Branding

The following are the components that you need to consider when creating a visual identity

⇒ Logo—words and/or images to represent the brand

⇒ Brand name

⇒ Slogan or strapline—a short memorable phrase

Logotype, wordmark, or brandname

Giftgrid
Something for everyone

Tagline or slogan

Icon or mark

Assessment support

You will need to produce a logo to obtain marks for your visual identity in Task 1.

Elements of visual identity

The following elements help to create a visual identity:

Typography
The style of text used

Graphics
This includes photos, images, illustrations, shapes and symbols

Colour palette
The particular group of colours or colour scheme that is to be used across all products

Layout
Layouts may be simple or complex. You will need to consider the audience and purpose of the product to decide which is appropriate

During the assessment:

When creating your visual identity, you will be asked to 'design a visual identity'.

You need to decide which parts of visual identity are required for the product you have been asked to make.

Areas you should consider include:

⇒ Logo

⇒ Name

⇒ Slogan

⇒ Graphical style

⇒ Typography

⇒ Colour palette

⇒ Layout

You will need to show evidence for this in your planning documents such as mood boards, concept sketches, mind maps and visualisation diagrams. Your report will also allow you to record any justifications or decisions.

R094: Concept sketch

A concept sketch is a series of simple freehand drawings or sketches that are used to develop an idea. This may also include some annotations with brief explanations of colour ot the design itself.

Concept sketches are a good way to get basic ideas down on paper. As multiple ideas are created side by side. It is also a good way to compare and consider different potential ideas and select those that can be developed further.

Features of a concept sketch

- Sketches are brief, usually just outlining the ideas.
- These give the feel of the idea rather than any detailed response to the brief.
- Commonly drawn in pencil or pen to quickly create multiple concepts.

Example of a concept sketch for a logo design

Assessment support

A concept sketch is great for showing how you have developed elements of the identity or final graphic. For instance, you may create a concept sketch to show how you developed a logo. All these sketches should be photographed or scanned and added to your report or evidence folder.

You may create concept sketches to show the development of your ideas for your visualisation diagram.

R094: Concepts of graphic design

Graphic design concepts

You should consider the key concepts of graphic design before you plan your final product, including:

Application of visual identity	Typography
Alignment	Use of white space

Use of colour and colour systems

Colour systems

Colours are represented in graphic design using a number of different systems. When setting up a graphic you should choose the most appropriate setting.

Assessment support

Having consistent graphic design concepts help to make your visual identity and final product more cohesive. Ensuring you are well prepared in the pre-production stage will allow the exam board to understand your way of thinking.

Colour trends

Pantone
Pantone is a system that allows colours to be precisely matched. For instance, one spot of colour on a logo may be specified with a pantone colour.

NCS (Natural colour system)
This system allows colours to be specified using the way colours are perceived.

Colour modes

RGB

Red Green Blue

This corresponds to the pixels on a screen. It is used for television and web images.

CMYK

Cyan magenta yellow key (black)

Each colour corresponds to the ink colour used in the print process. This is used in print products such as books,

R093: Health and safety

During all phases of a media production, any health and safety risks and hazards must be considered. Workers need to be mindful of hazards whether they are working at a computer, using photographic equipment or working on a film or television production.

A location recce is a visit to a location that might be used for photography, filming or recording. The purpose of the visit is:

- To check the safety of the site, that the site is accessible and that permission to use the site can be obtained

- Check sound issues—for example, is there any background noise such as heavy traffic

- Check lighting issues—for example, a large building may block the sun from reaching the location, additional lighting will be required

- Check facilities, such as toilets and parking areas

- Decide which shots and camera movement will work with the location

Detailed notes will be made and a series of photographs will be taken to show the potential location from all angles and times of day from reference. This provides information on the suitability of the location and helps to establish if there are any issues with safety and access that need to be incorporated into a risk assessment.

Location recce

Anywhere where media people work, including where crew, actors or the public will be affected, must have a risk assessment. This is a document that identifies potential risks, their likelihood, the harm associated with the risk and how each risk will be

Risk assessment

Risk Assessment

Site Name			Risk-A number	
Project	Stay With Me – Music Video		Name	Jade Clarke
Location	Outside, school site and James' house.		Assistants	
Date Assessed				

What hazards have been identified?	What are the potential injuries or damage? Severity (1, 2 or 3)	What measures have been taken to prevent injury or damage?	Number of people at risk	What additional measures or actions are required?	Who is responsible for action?	
Using a longboard	2, falling off board	Using someone with experience to use this prop	1		Daniel, the main character	R A G

QR codes

R093: Health and safety

During all phases of a media production, any health and safety risks and hazards must be considered. Workers need to be mindful of hazards whether they are working at a computer, using photographic equipment or working on a film or television production.

Examples of risks in television or film production

Moving objects
There are many ways that objects move to create hazards, for example a camera moving through the air or a car chase scene.

How to reduce risk
Get permission to close roads or walkways, make sure operators of cranes are trained and certified

Electrocution
If devices fail or are incorrectly wired, they may create a risk of electrocution.

How to reduce risk
Maintain equipment, only use qualified and trained crew, protect cables from being cut or damaged

Trip hazards
Equipment, such as lighting, will have many electric cables. A track for a dolly camera will also cause a tripping hazard.

How to reduce risk
Cable protectors, mats and ramps over cables, cables will be taped down with gaffer tape (thick strong tape)

Heavy equipment
Care needs to be taken when transporting heavy equipment such as lighting or cameras.

How to reduce risk
Equipment is transported in flight cases that may have wheels, staff are trained in how to safely move equipment

Examples of risks when using computers

Neck/back problems
Having displays at incorrect heights or sitting with bad posture may lead to serious back or neck problems.

How to reduce risk
Have display directly in front of the chair, use a fully adjustable chair, have the display at eye level.

Eye strain
Looking at a display for a long time may result in headaches and aching eyes

How to reduce risk
Look away every 20 minutes, take longer breaks every 2 hours, use the computer in a well lit room.

Keywords
- Health and Safety Act
- Hazard
- Equipment
- Halm
- Reduce
- Risk

QR codes

R093: How style, content and layout are linked to the purpose

A media product usually has a purpose or reason for its development. Some media products will have more than one purpose. The purpose is closely linked to the type of media product.

Advertise

There are a wide range of media products with this purpose including print adverts such as billboards, posters and leaflets, TV/radio advertising as well as online banner advertising on websites and social media.

Educate

Many media products aim to educate. Textbooks combine text, images and photos and are suited to independent study and revision. eLearning products are able to add interaction and video to the learning experience. Apps and games are able to teach through play.

Entertain

Most people spend a large amount of time each day being entertained by media products including TV shows, films, radio broadcasts, books, apps and computer games.

Influence

Media products often aim to influence behaviour. This may be used as part of advertising. It may also be used by governments or schools to promote healthy or safe behaviours.

Inform

Posters are often used to display information such as your location on a map in a theme park. Information leaflets on health or financial products also help to inform.

Keywords

- Purpose
- Advertise
- Entertain
- Educate
- Inform
- Influence

R094: Mood board

Mood boards

A mood board is a collection of images, text and colours that generate ideas for the look and feel of the product. They can be digital, 9created on a computer), or physical.

A mood board is unlikely to include images used in the final product, but instead is there to give an idea for the theme, based on the client brief.

A Mood board is a key part of the planning process and should be created when planning the visual identity for the graphic product.

Creating mood boards

When gathering content for the mood board, aim for a good variety of images, text that illustrates the typography and colours that will give a clear idea of the intended colour palette for the visual identity and digital graphic.

When creating your mood board, use all available space and fill the page. If creating a digital mood board, Photoshop, Affinity Photo, Word and PowerPoint are all examples of appropriate software for achieving this.

A physical mood board may also contain examples of textures and fabric. A digital mood board may contain photos of these.

If you produce a physical mood board, you will need to take a photo of it or scan it to submit it to the exam board.

Physical mood board

Keywords
- Mood board
- Colour
- Physical
- Digital

Assessment support
A mood board will probably be the first planning document you create as it helps to give a feel for the visual identity of all other planning documents you will make. A mood board will include graphics and photos that give a feel for the visual identity, not ones that you will use in the final product.

Digital mood board

R093: Properties of image files

When using image files, you must consider where it will be used as this will alter the technical requirement of the image. For instance, and image used in a printed magazine will need a very high resolution.

Resolution

Resolution is the number of pixels in a given area. It is measured as dots per inch (DPI) for print images and photographs and pixels per inch (PPI) for screen images.

The higher the PPI/DPI the higher the quality image

Printed documents such as books and posters typically use a resolution of 300 DPI. This means that there will be 300 printed dots in 1 inch of the printed document.

Web pages typically use images with a resolution of 72 DPI.

This is the measurement of an image in pixels. It is calculated by multiplying the pixel width by the pixel height. In this example, the image measures 500 wide and 300 pixels high so it has 15,000 pixels in total. A 10 megapixel camera will have 10 million pixels in one photo.

300 pixels
500 pixels
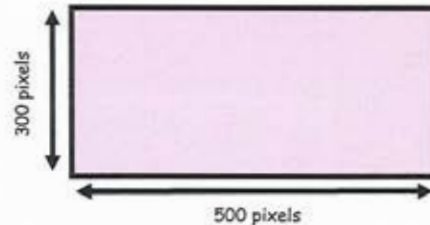
Pixel dimensions

Vector images

Vector images are made up of shapes such as lines, curves and fills. Files are small in size and can be made bigger of smaller without affecting the quality of the image. They are commonly used for icons, logos, diagrams, animations and illustrations. SVG images are vector images.

Vector
SVG

Raster
GIF, JPEG, PNG

Bitmap images, also known as raster images are made of small squares called pixels. File sizes tend to be larger. Images can be made smaller on the screen but if they are enlarged, they will become pixelated or blurry. Bitmap images are widely used in photographs. JPG and TIFF all use bitmap images.

Bitmap images

Keywords

- Resolution
- Dots per inch (DPI)
- Pixels per inch (PPI)
- Pixel dimensions
- Static file format
- JPG
- PNG
- SVG
- TIFF
- Vector
- Bitmap

QR codes

R094: Visual identity design style

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

Business type and brand values

A visual identity design style should reflect the type of business or organisation that is represents. It should help to communicate the values and core principles of the brand.

Comparison of visual identity

Kids Zone offer holiday clubs to young children. They wanted to create a visual identity that communicated feelings of fun, activity and creativity. They made use of bright colours as these would be attractive and appealing to children. The typeface chosen uses a playful decorative font.

By contrast, Royal Swan wanted a visual identity that showed an elegant and refined hotel.

They made use of a gold colour on the swan to suggest luxury. A contrasting dark blue colour was chosen to help give reassurance and trust I the brand. The chosen logo uses simple lines to help give a feeling of a clean, elegant design that is memorable. The choice of a serif typeface for the title helps to communicate a traditional atmosphere, whilst the use of the sans-serif typeface for the strapline 'Boutique Hotel' suggests a modern twist.

During the assessment:

As you develop your product's visual identity, you will need to justify your design choices. Justifying means that you have fully explained your reasons for doing something.

You may do this by annotating designs and/or producing a report.

An advantage of creating a report is that all your evidence will be in one place.

It's a good idea to make a report at the start of the product so that you have somewhere to put everything.

Brand positioning

The brand's position in the marketplace can also be reflected in the visual identity in the visual design style. The style will change depending on whether a brand positions itself as an economy, mid-range or luxury brand.

Notice the visual identity of a brand of baked beans in a supermarket. A standard font, simple graphics and white background all help to give the feeling of an economy brand.

By contrast, a luxury brand of beans may have a stylish label that has been well designed.

R094: Purpose of a visual identity

A visual identity gives customers or users a feeling and perception of the brand, product or service. It helps to visually communicate the values and personality of the brand with audiences or customers.

Brands with a strong visual identity have an emotional connection with users and customers. The visual identity helps to establish a brand, make it stand out and develop brand loyalty over time.

A strong visual or brand identity is important to help customers recognise the brand. A brand's visual identity, including logos, colours, fonts and tone of voice, will be used throughout all of a brand's media products, from their company letterhead to their billboard poster or website. Companies usually have a set of brand guidelines to achieve this. Consistent use of this house style creates familiarity and ensures that the audience or customer recognises and remembers a brand.

Keywords

- Visual identity
- Brand
- Loyalty
- Brand guidelines
- House style

During the assessment:

As you develop your product's visual identity, you will need to justify your design choices. Justifying means that you have fully explained your reasons for doing something.

You may do this by annotating designs and/or producing a report.

An advantage of creating a report is that all your evidence will be in one place.

It's a good idea to make a report at the start of the product so that you have somewhere to put everything.

R093: Work planning and documents used to support ideas generation

A mind map or spider diagram is a way to plan out thoughts and ideas in an organised way. A mind map can be created digitally or be hand drawn.

Purpose of a mind map

- The purpose of a mind map is to outline ideas quickly
- A mind map also shows the connections between different ideas

- Mind maps can be made digitally or hand drawn.
- Digital mind maps can be made on dedicated software (these can also be shared within a design team)

Content of a mind map

- A mind map consists of the main or central idea in the middle
- Nodes are connected to the main idea using lines called branches
- Sub-nodes are connected to the nodes to help organise ideas
- Each node or sub-node includes text and/or images

QR codes

Node

Sub node

Sub node

Node

Main idea

Sub node

Sub node

Node

Sub node

Sub node

Branch
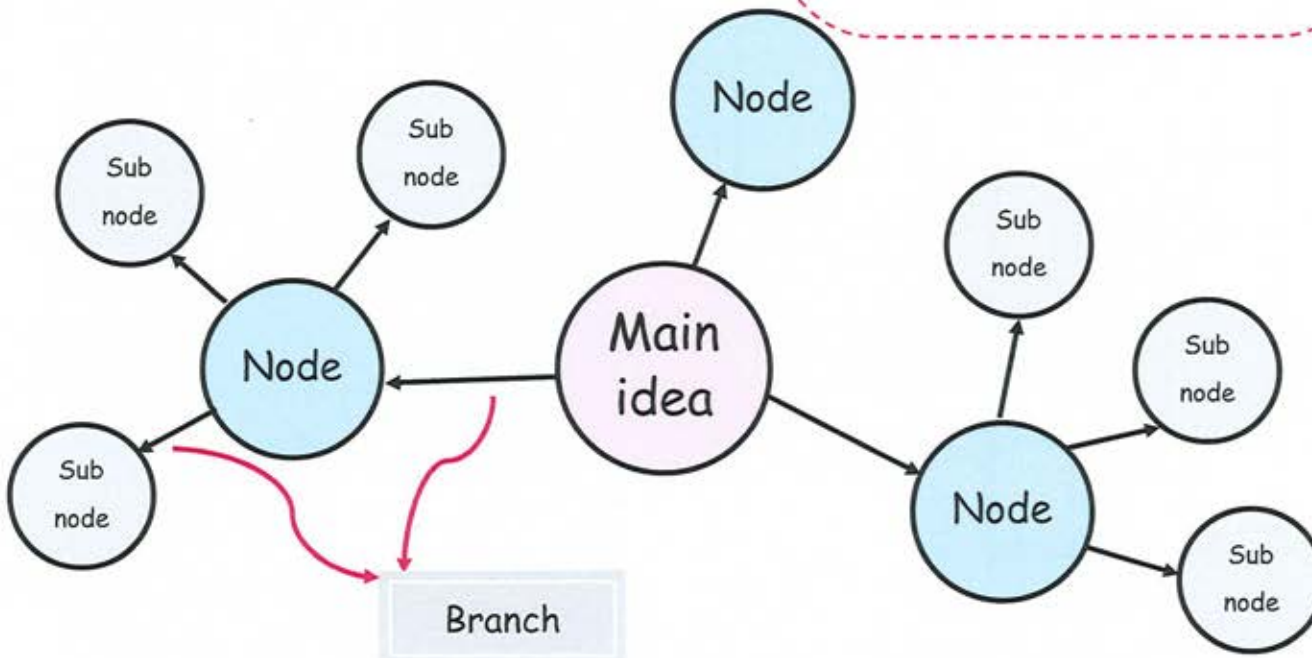
R093: Work planning and documents used to support ideas generation

A mood board is a planning document that assembles a range of materials in order to reflect the potential style of a media product.

Purpose of a mood board

- Develop feeling and style of a product before it is made.
- Giving ideas for the later planning stages
- Refer to when producing the final media product
- Gain feedback from a client or design team

Content of a mood board

Physical mood board

Produced on a large piece of paper or card and contain materials such as photographs, pages cut out from a magazine, fabrics, examples of typography and colour swatches/

Digital mood board

A digital mood board may include digital images, graphics, text, videos and audio files.

Digital mood boards are made in a wide range of software.

Physical mood board

Digital mood board

QR codes

R093: Work planning and documents used to support ideas generation

A visualisation diagram is a rough sketch of a media product. The purpose of a visualisation diagram is to give a representation of how a film product will look including content, layout, font and colour.

TITLE TO MATCH LION COLOUR SIMPLE SERIF FONT

LION IN COLOUR

MOUNTAIN BACKGROUND IN BLACK AND WHITE

FADE TO WHITE

THE ULTIMATE ESCAPE
JULY 5th — WHITE TEXT

DIRECTOR, FILM CREW, MUSIC CREDITS — MAIN FILM CREDITS WHITE TEXT

(PG) — FILM CLASSIFICATION (WHITE)

BLACK BACKGROUND
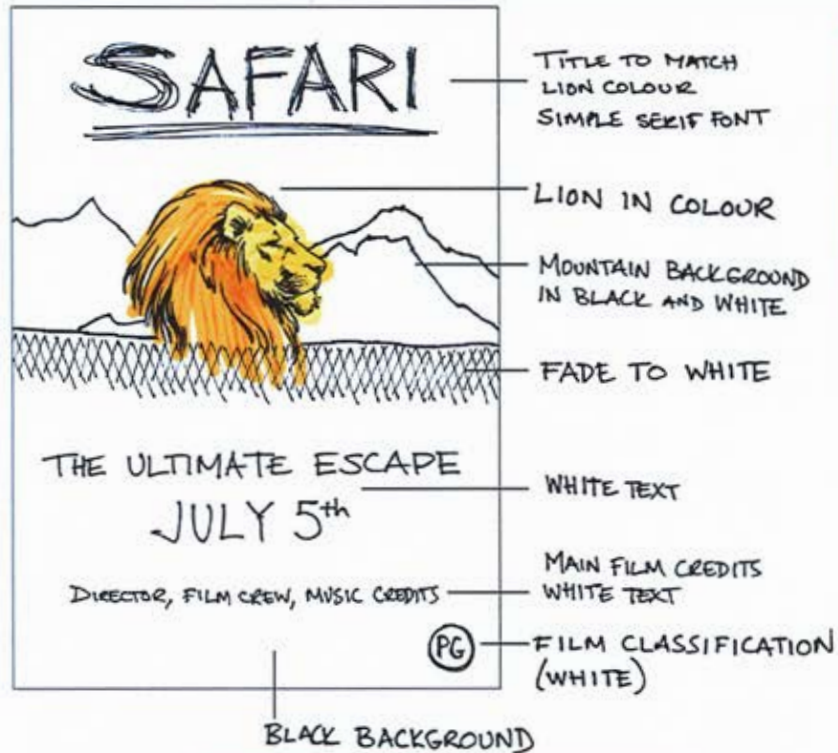
A good visualisation diagram should contain enough detail that a graphic designer could create the product using it.

Sketches of the content

Layout and positioning of assets

Where are the graphics going to go on your product?

Annotations

Labels around your diagram which provide extra information

Specific features

Typical features e.g. magazine cover visualisation diagram would show a front

Software for visualisation diagrams

Word
PowerPoint
Publisher
Photoshop/Affinity

Hardware for visualisation diagrams

Pen
Paper
Coloured pens
Scanner
Printer

Visualisation diagrams are used for:

Brochures or leaflets
Magazines or book covers
Posters
DVD/Blu-ray covers
Comic pages
Web pages
Game screens/characters/environments
Print averts

QR codes

R093: Work planning and documents used to support ideas generation

A wireframe is a planning document that shows the layout and functionality of interactive products such as apps or websites. It also shows how different webpages or screens link to one another.

- The specific content used for text, images and video will likely be dynamic (it will change)

- Images are usually indicated by a box with an X inside it

- Text is usually indicated using lines or dummy text

- Buttons and text boxes are indicated with squares
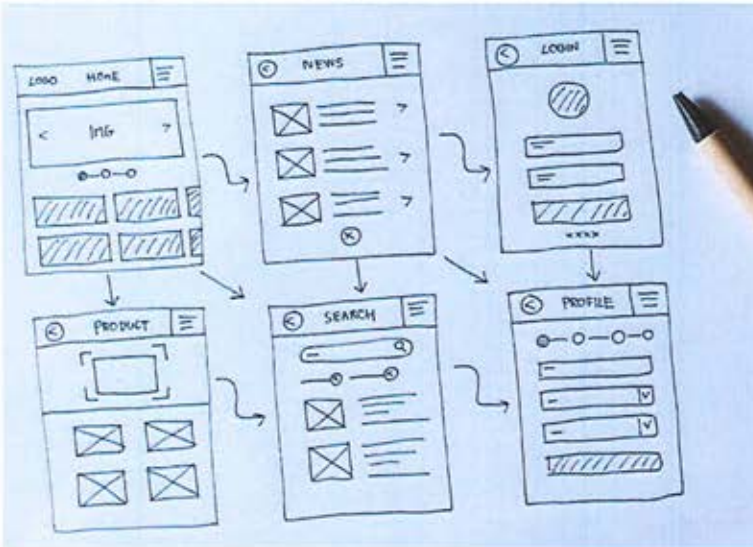
Users of wireframes include:

- Website designers

- Website developers

- UX designers (User experience designers)

- App developers / designers / programmers

QR codes

RO93: Work planning and documents used to support ideas generation

Work plans are used to plan out the different elements that need to be completed within a project. In media there are 3 phases: pre-production (planning), production (creating) and post-production (editing and reviewing)

Components of a workplan

Resources
Resources include the hardware, software and people required to complete the project

Timescales
The time given to each activity and task in the project

Workflow
This is the order in which activities are completed.

Contingencies
Contingencies are a back up plan when problems occur. This is spare time allocated for the unexpected.

Milestones
Milestones are the dates when key parts of the project are complete

Tasks
Tasks are the main phase of the project such as pre-production

Activities
Tasks are broken down into activities. They are smaller parts of a task.

A workplan can be created on Excel or dedicated workplan software.

QR codes

Number and name of the action		2012		2013			
		III	IV	I	II	III	IV
A. Preparatory Actions							
A.1	Experimental data collection campaign during a winter season	■	■	■	■		
A.2	Project Requirements Analysis	■	■				
B. Implementation actions							
B.1	System design			■	■	■	
B.2	System implementation					■	■
B.3	System integration						
B.4	Pilot realization						

Music

JS Bach: Badinerie

Form and structure:
The piece is in **Binary** form (**AB**).

Section A is 16 bars long.

Section B is 24 bars long.

Each section is repeated (**AABB**).

Harmony:
Diatonic; mixture of root position and inverted chords; uses V7 chords and a Neapolitan sixth chord.

Imperfect and perfect cadences are clearly presented throughout. Both sections end with a **perfect cadence**.

Melody:
The movement is based on **two musical motifs**.

Both motifs begin with an **anacrusis**. Motif X is entirely **disjunct** whilst motif Y **combines disjunct and conjunct** movement.

Typical **ornaments and compositional devices** of the period are used including **trills, appoggiaturas** and **sequences**.

Dynamics:
Mostly *forte* throughout, although no markings appear on the score.

On some recordings, **terraced dynamics** (sudden changes) are included.

Metre and rhythm:
Simple duple time – 2/4 – with two crotchet beats in every bar.

Uses **ostinato rhythms** which form the basis of two short musical ideas (X and Y), consisting almost totally of **quavers and semi-quavers**.

Background details:
Composed by **Johann Sebastian Bach** (1685 – 1750), one of the main composers of the **Baroque** era in music.

Badinerie is the last of seven movements from a larger piece called **Orchestral Suite No.2**.

The piece was composed between **1738-1739**.

Instrumentation:
Flute, string orchestra and harpsichord.

The score has five parts (flute, violin 1, violin 2, viola and cello). The harpsichord player reads from the cello line and plays the notes with their left hand whilst filling in the chords with their right hand.

Texture:
Homophonic: melody and accompaniment.

The flute and cello provide the main musical material; however, the 1st violin participates occasionally.

The 2nd violin and viola provide harmony with less busy musical lines.

Tonality:
Section A begins in **B minor** (tonic) and ends in **F# minor** (dominant minor).

Section B begins in **F# minor** (dominant minor) and ends in **B minor** (tonic).

Section A modulates from B minor through **A major** before arriving at F# minor.

Section B modulates from F# minor through **E minor, D major, G major** and **D major** before arriving at B minor.

Tempo:
The tempo is **Allegro** (quick, lively, bright), although not marked on the score.

Toto: Africa

Soft rock

Form and structure:

The piece is in **strophic** or **verse-chorus** form.

Intro	Verse 1 / Verse 2	Chorus 1 / Chorus 2	Link 1 / Link 2	Instrumental	Chorus 3	Outro
1 – 4	5 – 39 / 14 – 39	40 – 57	58 – 65	66 – 82	40 – 92	93 – 96
4 bars	35 bars / 26 bars	18 bars	8 bars	17 bars	22 bars	4 bars

Metre and rhythm:

Simple duple time – 2/2 (split common time) – with two minim beats in every bar.

Uses distinctive **ostinato rhythms** for both riffs, consisting almost totally of **quavers**, with constant use of **syncopation**.

Vocal rhythm looks complex but follows the natural rhythm of the lyrics.

Background details:

Composed by band members **David Paich** and **Jeff Porcaro**.

Recorded by the American rock band Toto in **1981** for their fourth studio album entitled **Toto IV**.

Released in **1982** and reached number one in America on 5 February **1983**.

Genre: **soft rock**.

Harmony:

Diatonic; mixture of root position and inverted chords.

Riff a can be heard during the intro, verses, link sections, instrumental and outro. This riff uses a three-chord pattern: **A – G#m – C#m**.
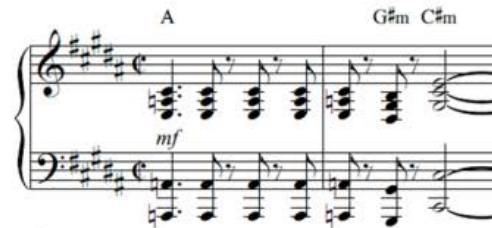
Choruses use a standard chord pattern: **vi** (F#m) – **IV** (D) – **I** (A) – **V** (E).

The **harmonic rhythm** (the rate of chord change) is mostly once per bar.

Melody:

Mostly **conjunct** (moving in step) with a **wide vocal range**.

Riff b uses the **pentatonic scale** (interpreted through E major):

Vocal improvisations occur towards the end of the song.

Texture:

Homophonic: melody and accompaniment.

Tonality:

The majority of the song is in **B major** whilst the choruses are all in **A major**.

Tempo:

The tempo is **moderately fast**.

Instrumentation:

Rock band: drum kit with additional percussion, lead and bass guitars, synthesisers, male lead vocals and male backing vocals.

Dynamics:

Most of the song is **mezzo-forte** (moderately loud) whilst the choruses are **forte**.

FORM AND STRUCTURE ...

is how the music is organised to give it shape and balance.
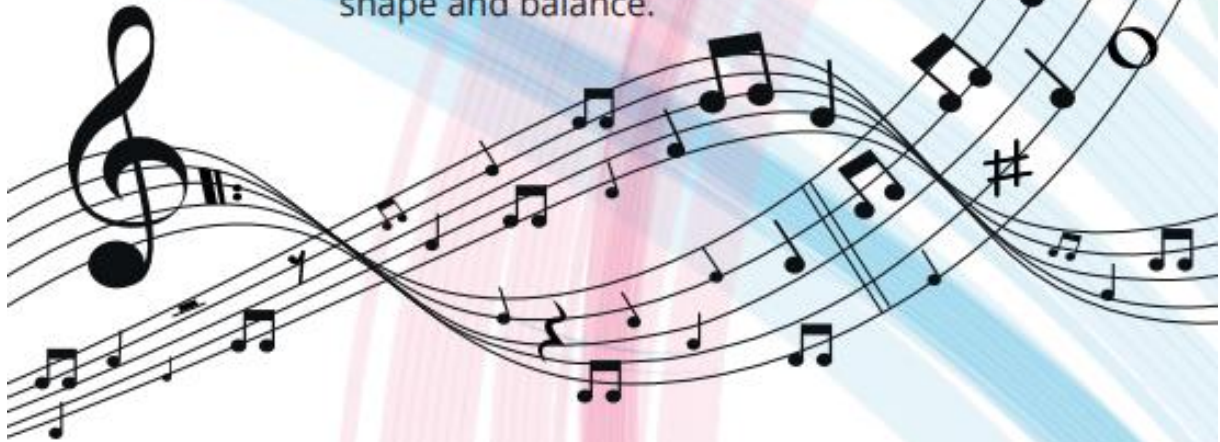
Each section in the music is usually labelled with a capital letter, i.e. A, B, C, and so on.

Binary: A B

Strophic: A A A

32 bar song:
A A B A

Ternary: A B A

Theme and Variation:

Main theme
Variation 1
Variation 2
Variation 3
etc.

Minuet and Trio:

‖: A B :‖:C D :‖A B

Rondo:

A B A C A

12 bar Blues:
A repeated chordal pattern

I	I	I	I
IV	IV	I	I
V	IV	I	I

Some structural sections:

Introduction (Intro) - Opening of a piece which introduces the main ideas.
Outro - Last part of a piece used in 'pop' music.
Coda - Final section of a piece of music.
Bridge - Piece of music that links two other sections together.
Break - Section that offers a contrast or 'break' from the rest of the piece/song.
Verse - Section of a song which has the same music but different lyrics when repeated.
Chorus - Section of a song which has the same music and lyrics when repeated.
Middle 8 - Eight bars in the middle of a song which provide a contrast.

Some structural devices:

Regular phrasing - Melody divided up into balanced, symmetrical phrases.
Irregular phrasing - Melody divided up into unbalanced phrases.
Riff - Catchy idea in 'pop' music which is repeated.
Fill - Idea that fills in the 'gaps' at the end of phrases.
Ostinato - Continuously repeated phrase or idea.
Call and response - Short musical idea followed by an answering phrase.
Loop - An idea continuously repeated by technical means.
Repetition - When an idea is repeated.
Contrast - A change in the music which offers a difference in the musical elements to provide contrast to the initial material.

HARMONY is...created through chords in music.

CONSONANT HARMONY:
when the notes sound 'good' together.

DISSONANT HARMONY:
when the notes 'clash'.

DIATONIC HARMONY
is based on the major / minor scale system - triads are built on every note of the scale:

C Dm Em F   G Am B° C

I   ii   iii IV   V   vi   vii°   I

CHROMATIC HARMONY
Chromatic harmony is far more complex and includes accidentals not belonging to the home key.

Every one of the 7 notes, (or DEGREES) of the scale is given a name:

7th note: **LEADING NOTE**

6th note: **SUBMEDIANT**

5th note: **DOMINANT**

4th note: **SUBDOMINANT**

3rd note: **MEDIANT**

2nd note: **SUPERTONIC**

1st note: **TONIC**

A CADENCE is a progression of two chords, found at the end of a musical phrase.

PERFECT CADENCE: *Uses chords* V → I
Sounds complete and always stops on the tonic chord. Both chords are major.
IMPERFECT CADENCE: *Lands on chord V,* **e.g. I** → **V; ii** → **V; IV** → **V; vi** → **V**
Sounds incomplete. The 2nd chord is always chord V of the key, which is major.
The chord before may be major or minor.
PLAGAL CADENCE: *Uses chords* **IV** → **I**
Sounds complete and finishes on chord I. Both chords are major.
It is sometimes known as the 'Amen' cadence because it is often found at the end of a hymn.
INTERRUPTED CADENCE: *Uses chords* **V** → **vi**
Sounds incomplete. In a major key, it involves a major chord moving to a minor chord. It is sometimes known as a 'surprise' cadence, because it seems as if chord V will resolve to chord I, but it does not - stopping instead on a minor chord.

MELODY is...

a line of musical notes with varying pitches that is satisfying to listen to.

Anacrusis:
a note (or notes) that come before the first strong beat in a piece. Sometimes called the 'up-beat' or 'pick-up'.

Motif:
a short melodic or rhythmic idea.

Leitmotif:
a recurrent musical idea representing a person, place, feeling or idea.

Countermelody:
a 2nd melody played at the same time as the main theme.

Pitch:
whether the musical notes are high, middle-sounding or low.

Range:
the distance from the lowest sounding note to the highest sounding note in a piece of music.

Ornaments:
used to 'decorate' the music, e.g. trill, mordent, turn.

Chromatic:
when the tune moves in semitones (like a chromatic scale).

Pentatonic:
a musical scale based on 5 notes.

Intervals:
distance between 2 pitches

Microtone	smaller than a semitone
Semitone	
Tone / major 2nd	
Major 3rd	
perfect 4th	
Perfect 5th	
Major 6th	
Major 7th	
Perfect 8th (Octave)	

Question and answer phrases:
an initial idea (the questioning phrase) balanced by a 2nd idea (the answering phrase).

Theme:
the main musical idea in a piece of music.

Sequence:
repetition of a musical idea at a higher or lower pitch.

Imitation:
when a musical idea is copied in another part.

Repetition:
when musical ideas are repeated.

Contrast:
when there is some type of difference in the music.

Fanfare:
a musical 'announcement', based on the pitches of a chord.

Blue notes:
the flattened notes in a Blues scale.

Types of scales:
Major, Minor, (up to 4 sharps and flats), Pentatonic, Blues.

Useful terms and their meanings

Conjunct:
Stepwise movement in a melody (scalic).

Disjunct:
When the melodic movement includes lots of leaps or intervals.

Arpeggio / broken chord:
When the notes of a chord are played separately and in succession.

Anticipation note:
When a note of the next chord is played early, preparing for the intended pitch in the chord.

Triadic:
Musical movement that uses the notes of a triad.

Pentatonic melody:
Melody based on a 5–note scale.

METRE

Simple Time
counts crotchet beats in every bar.

𝄞 2/4	=	2 crotchet beats in a bar
𝄞 3/4	=	3 crotchet beats in a bar
𝄞 4/4	=	4 crotchet beats in a bar

Compound Time
counts dotted crotchet beats in every bar.

𝄞 3/8	=	1 dotted crotchet beat in a bar
𝄞 6/8	=	2 dotted crotchet beats in a bar
𝄞 9/8	=	3 dotted crotchet beats in a bar
𝄞 12/8	=	4 dotted crotchet beats in a bar

MUSICAL STYLES
...are the different types of music

AOS 1: Musical Forms and Devices

BAROQUE ERA
(1600 – 1750)

CLASSICAL ERA
(1750 - 1810)

ROMANTIC ERA
(1810 - 1910)

AOS 2: Music for Ensemble

JAZZ AND BLUES

MUSICAL THEATRE

CHAMBER MUSIC

AOS 3: Film Music

Music to accompany film or television scenes - appreciating how musical elements are used to create the mood and atmosphere through engaging with the story.
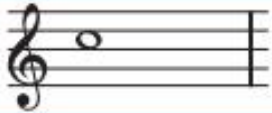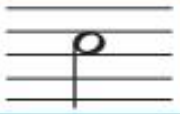
AOS 4: Popular Music

Rock	Hip-Hop
Pop	Ballad
Soul	Reggae
Fusion	Minimalism Bhangra

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Rhythm is ...

the way the time values and patterns of notes are organised and used.

Note	Note name	Rest	
	Semibreve (4 crotchet beats)		
	Minim (2 crotchet beats)		
	Crotchet (1 crotchet beat)		
	Quaver (½ crotchet beat)		
	Semiquaver (¼ crotchet beat)		

Syncopation / 'off-beat' ...is when the strong accent is placed on a normally weak beat.

On the beat ...is when the accents are on the strong beats, e.g. the first beat of the bar.

Dotted notes ...a dot placed after a note adds half the original value to the note.

Triplets ...when 3 equal note values are played in the time of 2 note values.

CHAAL is an 8 note dotted rhythmic pattern found in **BHANGRA**.

Tied notes ... *are two notes of the same pitch joined together by a short curved line called a tie.*

Swing rhythms give a dotted / triplet rhythm feel to the beat.

Driving rhythms are energetic, 'driving' the music on.

Dance rhythms are typical rhythms of any kind of dance.

Rock rhythms are rhythmic riffs and patterns associated with 'rock' music.

SCALES

MAJOR sounds are happy / bright.

MINOR sounds are sad and rather mournful.

Key	Scale
C major	
G major	
D major	
A major	
E major	
F major	
B♭ major	
E♭ major	
A♭ major	

Key	Scale
A minor	
E minor	
B minor	
F# minor	
C# minor	
D minor	
G minor	
C minor	
F minor	

G A B D E

G B♭ C D F

The **major pentatonic** uses notes 1,2,3,5 and 6 of a major scale.

The **minor pentatonic** uses notes 1,3,4,5,7 of the natural minor scale.

Blues scale in C

Chromatic scale on C

SONORITY...

is all about the quality of sounds in music – the types of voices, instruments and technology and how they are used.

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Percussion: Timpani, Drum Kit, Snare Drum, Cymbal, Hand Held Percussion, Glockenspiel, Xylophone, Tabla, Dhol

Rim shot	– when the rim and head of the drum are hit at the same time.
Drum roll	– beats played in a rapid succession.

Brass: Trumpet, French Horn, Trombone, Tuba

Muted	– when mutes are used to 'dampen' the sound.

Woodwind: Flute, Oboe, Clarinet, Saxophone, Bassoon

Slurred	– joining notes 'smoothly'.
Tongued	– notes are separated, sounding 'defined'.

Voices: Soprano, Alto, Tenor, Bass

A cappella	– without accompaniment.
Humming	– vocal sound made with closed mouth.
Syllabic	– one note for each syllable.
Melismatic	– each syllable has a number of notes.
Vibrato	– rapid, slight variation in pitch.
Falsetto	– male voice in a higher range than usual.
Belt	– lower, more powerful part of voice range.
Rap	– words spoken in a rhythmical way.
Scat	– jazz singing, no words or nonsense words.
Backing vocals	– singers providing extra harmonies.

Strings: Violin, Viola, Cello, Double Bass, Harp

Pizzicato	– 'plucked'.
Double stopping	– one instrument playing 2 notes at the same time.
Tremolo	– rapid bowing to give a dramatic effect.
Divisi	– 2 parts in the same musical line.
Arco	– 'bowed'.
Mutes	– used to 'dampen' the sound.

Guitars: Classical / Spanish, Electric + Bass guitars, Sitar, Saranga, Tumbi

Distortion	– effect which 'distorts' notes.
Hammer-on	– finger brought down sharply on a string.
Slap bass	– bouncing strings against the fret board.
Pitch bend	– altering pitch of a note very slightly.

Keyboards: Piano, Organ, Harpsichord
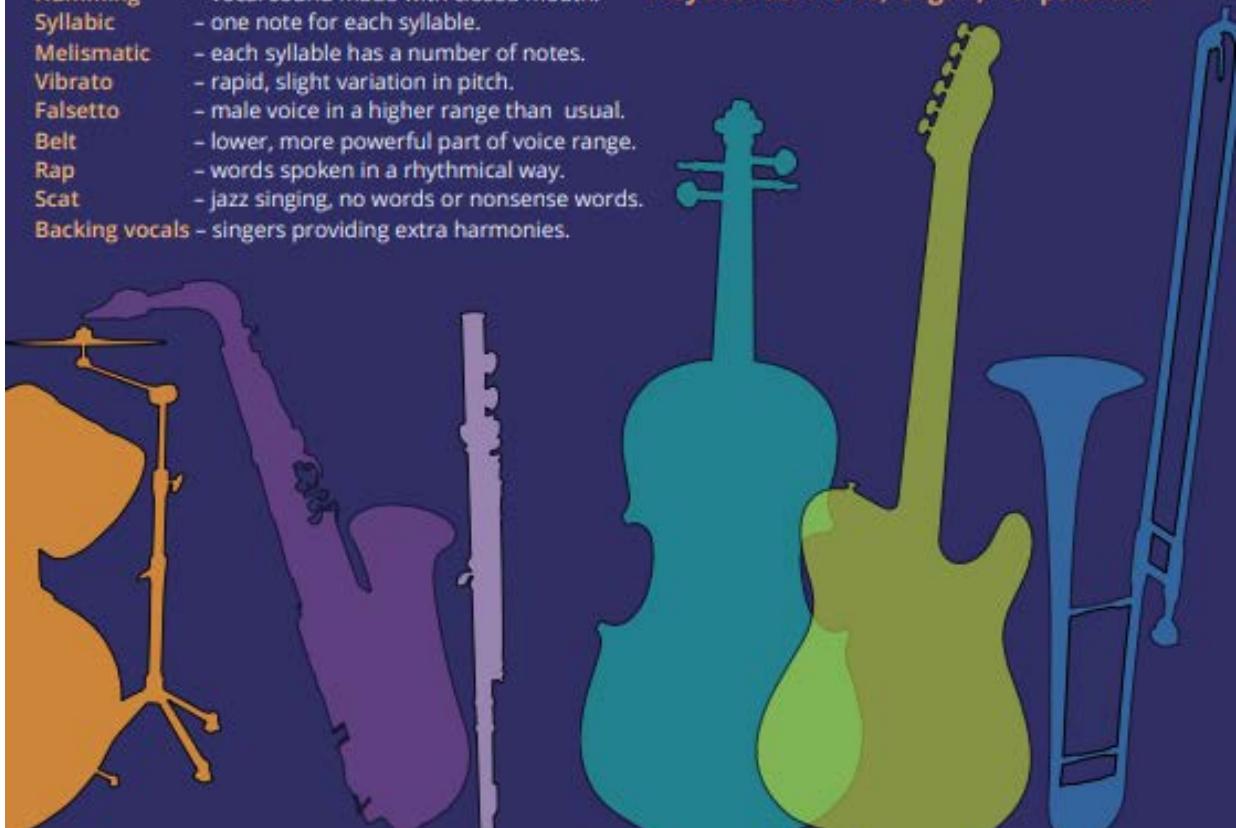
TEMPO is...
the speed of the beat.

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cbac

Allegro Vivace	Fast / Lively / Quick
Moderato Andante	Not too slow / at a moderate pace, a 'walking' speed
Allegretto	Moderately fast
Adagio Lento	Slow / Leisurely

Accelerando gradually getting faster.

Ritardando / Rallentando slowing down.

Rubato a 'freer' interpretation of the tempo.

Pause a symbol which means the note must be held for longer than its original value.

Some other useful terms:

Presto – very quick

Largo – very slow

A tempo – in the original tempo

Ritenuto – in slower time

TEXTURE is...

the way that the melody, chords and musical ideas have been woven together to achieve different effects – the 'layers' of music and how they relate to each other.

Monophonic

A single melodic line with no harmonies or other melodies. It may be sung or played by more than one voice or instrument.

Homophonic

A chordal style, or a melody plus chords, which sometimes provide a rhythmic contrast.

Polyphonic

A more complex style which presents the melody (or melodies) in imitation or in counterpoint.

Unison:
When all parts are playing the same music at the same pitch

Chordal:
When parts move together creating a succession of chords

Drone:
Constantly repeated or sustained note(s)

Stab chords:
Short, 'staccato' chords that add impact and 'punch' to the music

Imitation:
When one part 'copies' another

Counter-melody:
A new melody, combined with the theme

Descant:
A decorative (higher) line added to the main tune

Round:
A short (vocal) canon

Canon:
When the melody is repeated exactly after the first, with some overlapping

Alberti Bass:
A type of accompaniment figure that uses broken chords

Walking bass:
A steady, continuous, mainly stepwise bass line

2-part texture:
Music written for 2-part voices or instruments

♫ + ♫

3-part texture:
Music written for 3-part voices or instruments

♫ + ♫ + ♫

4-part texture:
Music written for 4-part voices or instruments

♫ + ♫

♫ + ♫
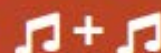
Tonality

is... the key of the music – it depends on the types of scales used.

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You must know the key signatures in all the major and minor keys up to four flats and four sharps. These scales are what the music is based on.

THE PENTATONIC SCALE

This type of scale is made up of five notes within the range of an octave.

order of sharps   *order of flats*
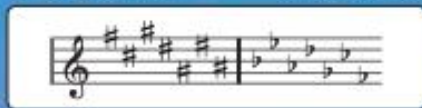
For example:

order of sharps ⟶

F   C   G   D   A   E   B

⟵ *order of flats*

MODULATION is when the music changes key.

Modulation to the dominant is when the music moves from the tonic to the dominant key. The dominant key is based on chord V of the original key, e.g. from C major to G major.

Modulation to the relative minor key is when the music moves from the tonic major key to the relative minor key. The relative minor key is the minor key which shares the key signature with the home key, e.g. the relative minor of C major is A minor.

Modulation to the relative major key is when the music changes from the tonic minor key to the relative major key. The relative major key is the major key which shares the key signature with the home key, e.g. the relative major of A minor is C major.

Key signature	Major keys	Minor keys
No flats or sharps	C major	A minor
1 sharp (F#)	G major	E minor
2 sharps (F#, C#)	D major	B minor
3 sharps (F#, C#, G#)	A major	F# minor
4 sharps (F#, C#, G#, D#)	E major	C# minor
1 flat (B♭)	F major	D minor
2 flats (B♭, E♭)	B♭ major	G minor
3 flats (B♭, E♭, A♭)	E♭ major	C minor
4 flats (B♭, E♭, A♭, D♭)	A♭ major	F minor

Performing Arts

COMPONENT 3 BTEC TECH PERFORMING ARTS (ACTING)

Devise a performance in response to a stimulus provided by the exam board. Both parts of the task (written and performance) will be completed under supervision. There is a 12 week window for all parts to be completed. The component is marked out of 60.

Assessment objectives

AO1 - Understand how to respond to a brief. Discuss and practically **EXPLORE** the stimulus considering: target audience, performance space, planning and managing resources, running time and style of work.
Develop ideas considering: structure of work, style and genre used, skills required, creative intentions.
Work effectively as a member of the group making an individual contribution and responding to the contribution of others.

AO2 – Select and develop skills and techniques in response to a brief.
Demonstrate **HOW** to select and develop skills and techniques that are needed for the performer and whole group and take part in the rehearsal process.

AO3 – Apply skills and techniques in a workshop performance in response to a brief
Contribute to a workshop performance using: vocal, physical and interpretative skills. (18 marks)

AO4 – Evaluate the development process and outcome in response to a brief
Evaluate the process and performance. Consider: the brief, stimulus and contribution from other group members. Reflect on: selection of skills used, individual strengths/areas for improvement, overall and individual contribution to the group, impact of the groups work.

Key vocabulary

Target audience – who you will perform to and why

Performance space – choosing where the performance will take place if not on the stage and why

Running time – length of the performance

Style of work – genre or practitioner who will influence your work

Vocal skills – ability to adapt voice to suit a character

Physical skills – movement, gestures, body language, facial expressions

Interpretative skills – presenting yourself to the audience and creating emotion

Commitment –how much effort you put in individually and as a group

Rehearsal – practicing the performance

Blocking – deciding where an actor should stand

Performance – Showing of the piece of work to the target audience

Evaluate – identify strengths and areas for improvement of both the rehearsal and performance

Characterisation - creating a character through your movement and dynamic choices

PE

Year 11 GCSE PE Autumn Knowledge Organiser

The Telford Langley School

Component 1 Principles of Training

Principles of training: F I R S T O P

Principle	Explanation	Application
F.I.T.T	F = Frequency (how often) I = Intensity (how hard) T = Time (how long) T = Type of training	I train 3 times per week 3 sets of 8 reps of 15kg I train for 60 minutes I use circuit training
Individual Needs	Everybody is different and has different needs. It is important to match training to the requirements of the individual	Ronaldo is a professional footballer he trains 5 days per week. John plays Sunday league football and trains once per week
Reversibility	Just as football improves with training, it can decline if you stop training	Reversibility can be caused by lack of training or injury
Specificity	raining must match the requirements of the activity so that the right muscles and body systems are adapted	A sprinter should train for speed A rower should train using a rowing machine not a treadmill
Thresholds of Training	To improve fitness, you should train within your target zone. Your target zone will depend on the intensity of the activity Aerobic = 60 – 80% max HR Anaerobic = 80 – 90% max HR	Running a 10k is an aerobic activity. You should therefore train in the aerobic training zone of 60 – 80% of the max heart rate
Overtraining	Too much training can lead to injury and prevent improvement. Rest, duration of a session and the intensity are all important when training	Training everyday does not allow enough time for rest for recovery and adaptations
Progressive Overload	Progressive overload is gradually increasing the amount of training so that fitness gains occur, but without the risk pf injury	Week 1 = run for 10 mins Week 2 run for 15 mins

Thresholds of training

Aerobic training zone = 60 – 80% of max HR
Anaerobic training zone = 80 – 90% of

The Karvonen formula

Maximum Heart rate = 220 - Age

Worked example

John is 16 years old
His maximum heart rate = 204 bpm
Aerobic training zone = 60 -80 %
60% = 60 x 204 ÷ 100 = 122 bpm
80% = 80 x 204 ÷ 100 = 163 bpm
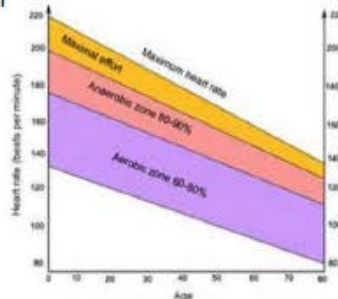
Component 1 Types of Training

Types of Training

	Continuous Training	Fartlek Training	Circuit Training	Interval Training	Plyometric Training	Weight Training
	Is aerobic Has no breaks or rest (20 min or more) Sub-maximal exercise Improves cardiovascular & muscular endurance	Form of continuous training Varies in pace and terrain Aerobic & Anaerobic Improves cardiovascular & muscular endurance	Contains stations organised in a circuit they can be skill or fitness based, aerobic or anaerobic Intensity is measure by circuits, time or repetitions	High intense exercise followed by periods of rest to recover Usually anaerobic can be used in a variety of locations Improves speed but can improve strength and cardiovascular	High Intensity Short duration Breaks between sets (exercises) Involves jumping/bounding Improves power (speed & strength)	Form of interval training Involves reps and sets Weight provides the resistance Improves strength, power and muscular endurance
Advantages	No equipment or facilities Has many health benefits (CHD)	No equipment or facilities Change of pace can be more interesting	Variety of stations generates interest Can be skill or fitness Can easily be adapted	Can be used to improve health and fitness (aerobic & anaerobic) No equipment needed	Develops power quickly No equipment	Can target specific areas of the body Easily adapted for different fitness'
Disadvantages	Boring No change of pace Can cause impact injuries	High intensity can be avoided A safe route may be hard to find	Equipment can be costly Can be time consuming to set up	Can be repetitive and boring Need to plan and keep track of sets	Can cause injury due to high intensity	Can cause injury with poor technique A spotter needed with free weights
Sports	Marathon running cycling swimming	Fotball Rugby Netball	Can be adapted to suit all sports	Usually for speed It can be adapted to other sports	Basketball Long jump Hurdles	Weight lifting rugby shot-put

Aerobics

- Involves continuous activity between 30 – 60 minutes, includes step and aqua aerobics
- Improves Cardiovascular fitness

Body Pump

- Moderate to high intensity, lots of reps & uses barbells
- Improves strength & muscular endurance

Pilates

- Exercises done on a mat, uses resistance and focuses on core strength
- Improves flexibility, balance & strength

Yoga

- Exercise done on a mat
- including relaxation & breathing techniques
- Improves flexibility, balance & strength

Spinning

- Continuous cycling to music
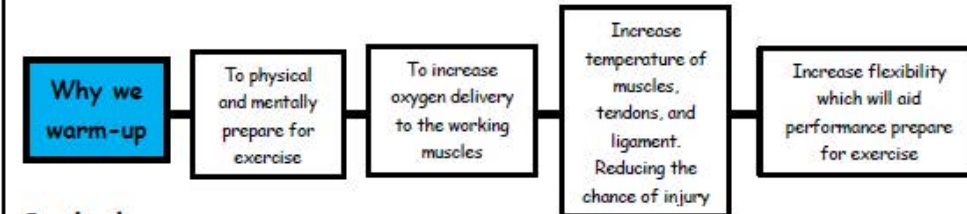- Improves muscular endurance & cardiovascular fitness

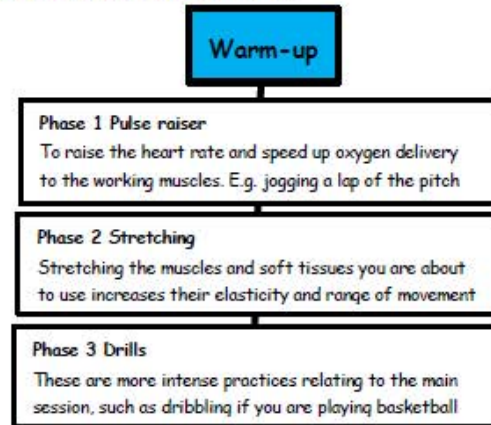# Year 11 GCSE PE Autumn Knowledge Organiser

Component 1 Effective Use of Warm-up & Cool-down

Warm-up

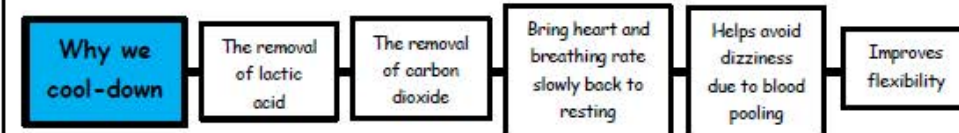A warm-up has three phases:

Warm-up

Phase 1 Pulse raiser
To raise the heart rate and speed up oxygen delivery to the working muscles. E.g. jogging a lap of the pitch

Phase 2 Stretching
Stretching the muscles and soft tissues you are about to use increases their elasticity and range of movement

Phase 3 Drills
These are more intense practices relating to the main session, such as dribbling if you are playing basketball

Why we warm-up → To physical and mentally prepare for exercise → To increase oxygen delivery to the working muscles → Increase temperature of muscles, tendons, and ligament. Reducing the chance of injury → Increase flexibility which will aid performance prepare for exercise

Cool-down:

A cool down has two phases:

Cool-down

Phase 1 Light exercise
e.g. slow jogging at a much lower intensity you have been working

Phase 1 Stretching
Stretch the muscles you have used in the main activity

Why we cool-down → The removal of lactic acid → The removal of carbon dioxide → Bring heart and breathing rate slowly back to resting → Helps avoid dizziness due to blood pooling → Improves flexibility
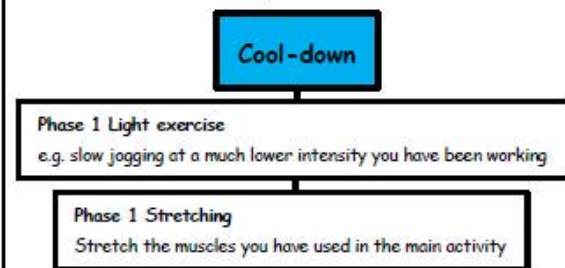
A cool down is **NOT** designed to prevent injury it is to return the body to its resting levels

Component 1 Use of Data

The use of data

Data can be collected in many ways
- Data can be collected on the quality that you see, e.g. how well a skill is performed (qualitative)
- Data can be collected based on numbers e.g. how many press-ups completed (quantitative

Tables:

Below is a table showing lots of data in a normative table for a 12-minute cooper run test. There are lots of numbers, all you have to do is locate the age group and the score. For example, a 17-year-old scored 1750m

Age	Excellent	Above Average	Average	Below Average	Poor
13-14	>2000m	1900-2000m	1600-1899m	1500-1599m	<1500m
15-16	>2100m	2000-2100m	1700-1999m	1600-1699m	<1600m
17-20	>2300m	2100-2300m	1800-2099m	1700-1799m	<1700m
20-29	>2700m	2200-2700m	1800-2199m	1500-1799m	<1500m
30-39	>2500m	2000-2500m	1700-1999m	1400-1699m	<1400m
40-49	>2300m	1900-2300m	1500-1899m	1200-1499m	<1200m
>50	>2200m	1700-2200m	1400-1699m	1100-1399m	<1100m

Trends:

Below is a graph showing trends in obesity of young children aged 2-19. You need to analyse the date and identify the trends in data.
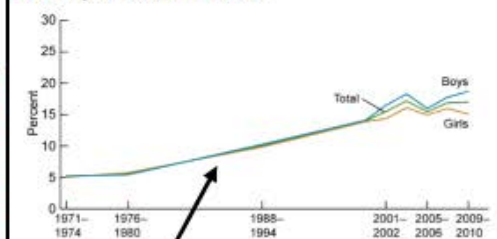
The overall trend is that obesity is rising steadily from 1971-1974 to 2009-2010. It has risen from 5% to 15%. Boys are more obese than girls

Graphs and Charts

Some information that happens over time will be represented as a line graph, such as the correlation between obesity and diabetes over time
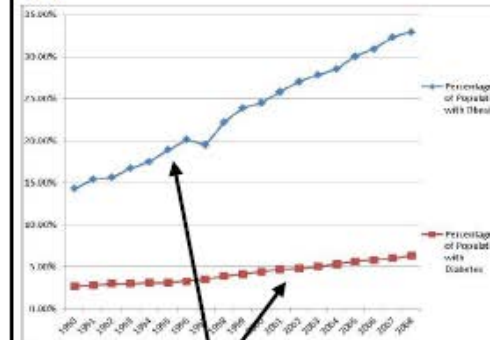
Obesity and diabetes have both risen from 1990-2008.
Obesity levels have risen at a greater rate than diabetes

If you are trying to compare parts of a whole you may use a pie chart such as a pie chart to show the percentage of women who are active, fairly active and inactive.
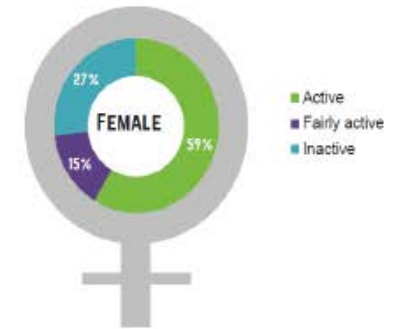
59% of females are active
15% are fairly active
27% are inactive

Year 11 GCSE PE Autumn Knowledge Organiser

Component 1 How to Optimise Training and Prevent Injury

Injury prevention:

Injury prevention	Explanation
PAR-Q	Identify potential health risks such as high blood pressure
Allow recovery time	Prevent overuse injuries by allowing time to rest and recover
Warm-up	Increases elasticity of muscles
Use correct clothing	Clothing can protect different parts of our body
Apply the rules	Rules are there to protect performers from injury
Use correct equipment	Equipment should be checked and appropriate for the age group
Check Equipment	Equipment should be checked so that faulty or inappropriate does not cause injury
Check facilities	Facilities should be checked and to remove obstacles from the playing area
Apply principles of training	Ensure you use progressive overload and are working at the correct intensity & allow rest
Balanced competition	Competition should be balanced in age, weight, skill and sex

Application

Check Equipment When playing plays must check the correct equipment such as padded goal posts. The padded posts reduce the chance of injury if a player runs or fall into them

Correct Clothing Player wears a gum-shield to protect their teeth

PAR-Q Before the player trains they will fill in a PAR-Q to highlight any health problems

Allow Recovery Time After the match the player will rest to allow recovery and adaption. This prevents overuse injuries

Warm-Up Player warms up before they play to ensure the elasticity of muscle so they are less likely to pull or strain them

Apply the Rules Player are not allowed to tackle above the shoulder this prevents injuries to the head such as concussion

Check Facilities Before you play obstacles such as broken glass should be removed from the pitch

Use Correct Equipment Players should use the correct sized and weight of ball to reduce the chance of injury

Balanced Competition Player will only play against his own age, sex, ability

Apply Principles of Training Players should use the correct sized and weight of ball to reduce the chance of injury

Fractures:

Compound	Simple	Greenstick	Stress
Compound or open fractures are when the bone is broken and causes the skin to break	Simple or closed fractures are when the bone is broken but does not break the skin	Greenstick fracture is where the bone breaks at one side and bends on the other. They are common in cildren	Stress fractures is where there is a small crack in the bone usually casused through overuse

Symptoms	Treatment
• Pain • Bruising • Swelling • Misshapen limb	Need to be treate by a doctor who will make sure the bone is properly aligned and imobilised unitil it has healed

A fracture is cause when a force on the bone is greater than the bone itself. A fracture can be caused by a tackle in rugby, or falling from a height in basketball

R.I.C.E.

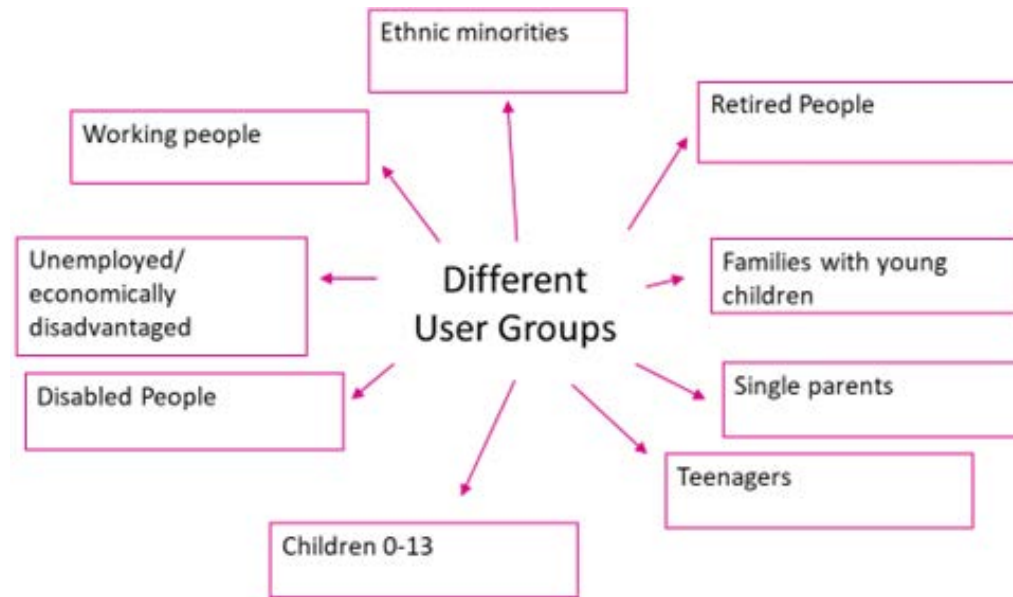|	
1. Rest	Do not use the injured area, allowing time to heal and to prevent further damage
2. Ice	The cold from the ice will help reduce swelling and pain by constricting the blood vessels. Do not apply ice direct onto the skin and not for too long
3. Compress	Apply a bandage to the area to help reduce swelling and provide support. Make sure the bandage is not too tight
4. Elevate	Keep the affected area raise to reduce swelling by reducing the blood flow

Injuries:

Sprain

	Symtoms	Treatment
A sprain is a soft tissue injury where some of the fibres of the ligament are torn	• Pain • Bruising • Swelling	• Rest • Ice • Compression • Elevation

A sprain can occur during a twisting or overstretching the joint

Strain

	Symtoms	Treatment
Strains are a soft tissue injury and is a stretch or tear to the muscle. Sometimes known as a pulled muscle	• Pain • Bruising • Swelling	• Rest • Ice • Compression • Elevation

A strain occur due to overstretching

Tennis/Golfers Elbow

	Symtoms	Treatment
Tennis/golfers elbow is a joint injury where the tendons are inflamed. Tennis elbow the pain is felt on the outside of the elbow Golfers elbow the pain is felt on the inside	• Pain • Swelling	• Rest • Ice • Compression • Elevation

Tennis and golfers elbow are caused by overuse

Torn Cartilage

	Symtoms	Treatment
Cartilage act as cushion at the ends of bones. Torn cartilage is an injury where small tears appear in the cartilage	• Pain • Swelling • Stiffness at the joint	Rest and strengthening exercises

Torn cartilage can happen when you twist forcefully, sudden impact/stopping

Abrasions

	Symtoms	Treatment
Abrasions are minor injuries to the skin and include cuts and grazes	• Pain • Swelling	Abrasions must be cleaned & covered with a sterile dressing. Pressure should be applied if bleeding

Abrasions can occur in any activity due to a knock or a fall

Concussion

	Symptoms	Treatment
Concussion is a mild head/brain injury. It is caused by a blow to the head or by whiplash shaking the brain inside the skull	• Confusion • Dizziness • Unconsciousnes s • Nausea	Seek medical advice and monitor closely to make sure the symptoms do not get worse

Concussion is common in contact sports such as rugby when getting tackled

Dislocation

	Symptoms	Treatment
Dislocation is where one of the bones at a joint comes out of place, e.g. shoulder, knee finger	• Pain • Misshapen joint • Swelling	Seek medical advice because of possible damage to surrounding nerves

Dislocations are often caused by a fall or a blow to the area.

Sports Studies

3 Ways to overcome barriers: Provision, Access, Promotion (PAP)

Provision:
•Programming sessions for use by different user groups (e.g. sessions for wheelchair sports)
•Providing appropriate activity options for the demands of specific user groups (e.g. different age groups want different options)
•Planning of times to suit different user groups (e.g. for parents with young children, midmorning after the school run)

Access:
•Access to facilities (e.g. provision of transport in rural areas, ramps for wheelchair access to buildings)
•Access to equipment (e.g. a hoist for swimming pool access) - sensible pricing/concessions (e.g. reduction of charges for unemployed people or young children)

Promotion:
•Targeted promotion (e.g. by advertising in appropriate places to increase visibility to different user groups)
•Using role models to encourage participation among different user groups
•Initiatives aimed at promoting participation and inclusion (e.g. free swimming for under16s and over-60s)

Possible barriers which affect participation in sport
•Employment/time (e.g. not much free time available)
•Work restrictions and family commitments (e.g. women still seen as bringing up the family and not being involved in sport)
•Disposable in come (e.g. cannot afford cost of participation)
•Accessibility of facilities/equipment (e.g. transport not available, no disabled access)
•Lack of role models (e.g. few ethnic role models, few female role models)
•Provision of activities (e.g. limited activities on offer which do not meet the requirements of the participant)
•Awareness of activity provision (e.g. what is currently available)
•Portrayal of gender issues by the media (e.g. mainly male sports shown on TV, mainly male presenters of sport programmes)

Factors that affect the popularity of a sport: MS RAPPERS
Make sure you are able to give a n example of all

Spectatorship

The more people are viewing sports will increase participation rates of those sports

Media coverage

Some sports channels show sport 24/7, this increases participation in the sports that the media show

Participation

More people participate in sports that have widespread mass participation

Provision

Provision varies in the UK. People cannot participate with little or no provision or access to facilities

Environment

Weather in the UK can impact upon participation rates. There is a lack of snow in the UK for skiing

Roles models

Positive Roles models increase participation in the sport. A lack of role models has a negative impact

Acceptability

Many people believe boxing should be banned as it's dangerous

Success for teams

Sporting success inspires people to take part in the sports such as GB cycling

Why PED's are taken:

• Pressure to succeed as individual

• Pressure to succeed as a Nation

• Improved performance

• Improved strength/stamina or power

• Improved recovery time

• Increased ability to train

• To mask pain/ to relieve pain

• To lose weight

• Beliefs that other are taking drugs

Values promoted through sport:
• Team spirit
• Fair play
• Citizenship
• Tolerance and respect
• Inclusion
• National pride
• Excellence

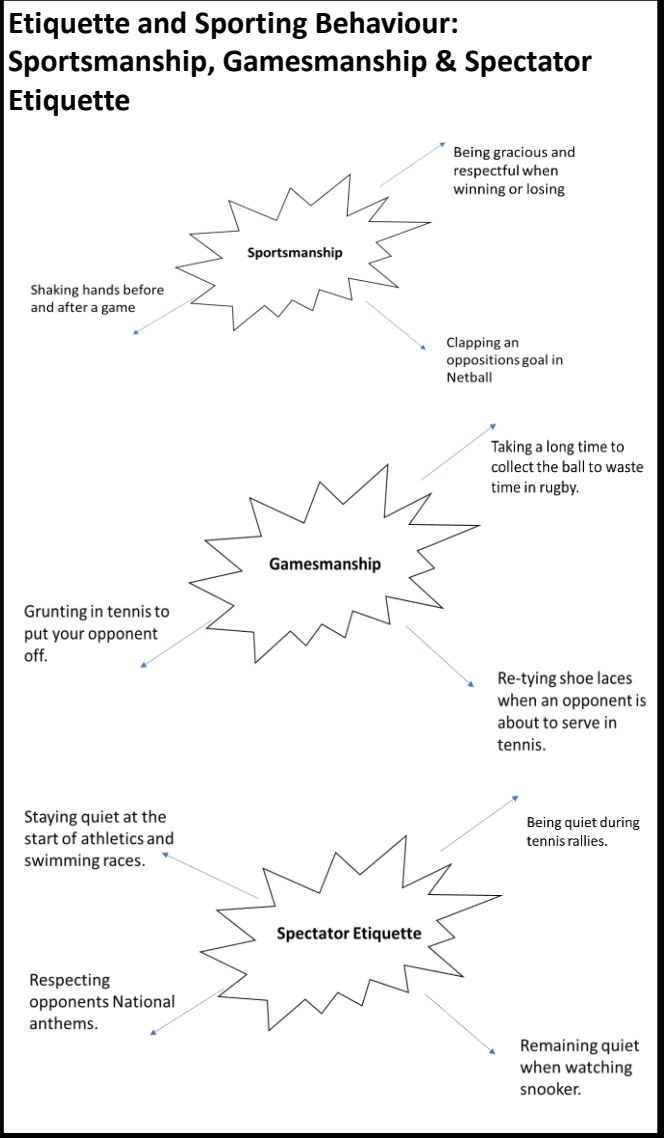## The Olympic Values:
(FRED ICE)
The Olympic Values are:
♦ Friendship
♦ Respect
♦ Excellence
The Paralympic values are:
♦ Determination
♦ Inspiration
♦ Courage
♦ Equality

The Olympic symbol of five interlocking rings is designed to represent :
The five continents that take part

Etiquette and Sporting Behaviour:
Sportsmanship, Gamesmanship & Spectator Etiquette

Sportsmanship
- Being gracious and respectful when winning or losing
- Shaking hands before and after a game
- Clapping an oppositions goal in Netball

Gamesmanship
- Taking a long time to collect the ball to waste time in rugby.
- Grunting in tennis to put your opponent off.
- Re-tying shoe laces when an opponent is about to serve in tennis.

Spectator Etiquette
- Staying quiet at the start of athletics and swimming races.
- Being quiet during tennis rallies.
- Respecting opponents National anthems.
- Remaining quiet when watching snooker.

Year 11 CNAT Sport Autumn Knowledge Organiser

Lance Armstrong – EPO is a type of blood doping that can help improve endurance.

Maria Sharapova - Meldonium –Increase blood flow to the heart, shortening recovery time.

Nesta Carter – Stimulant-They are used by athletes to reduce tiredness and fatigue, and to increase alertness, competitiveness and aggressiveness

Justin Gatlin – Anabolic Steroids- stimulate muscle tissue to grow and "bulk up" in response to training by mimicking the effect of naturally produced testosterone on the body

Dr Richard Freeman (Team Sky & British Cycling)– Ordered testosterone gels

Reasons for taking drugs:
•Pressure to succeed as individual
•Pressure to succeed as a Nation
•Improved performance
•Improved strength/stamina or power
•Improved recovery time
•Increased ability to train
•To mask pain/ to relieve pain
•To lose weight
•Beliefs that other are taking drugs

Reasons against taking drugs:
•Can lead to health problems.
•Can damage kidneys and liver.
•Potential dangerous side effects.
•It is cheating.
•Can become addictive.
•Athlete feels that they can't win without them.
•Dishonest – spectators feel cheated.

Drug Testing:
What is the whereabouts rule from WADA?
WADA need to know where you are at all times, if you leave the country / move house / change training facility you must inform them!

How does the rule work?
All athletes must make themselves available to drug testers for one hour a day between 6 AM and 11PM

The rule is important as you could be called at any time, you will be given a time to attend and you must attend, failure to attend could result in a ban.

Key words:
Annually – Happen every year – Champion League Final, Wimbledon

Biennially – Every second year – Ryder Cup golf event that alternates between Europe and the United States. Events that take place every 4 years the Olympics.

Regular – Happens often at set intervals – E.g. annually or biennially

Recurring – Periodically repeated in the same place – E.g. Formula 1 Grand Prix / Wimbledon.
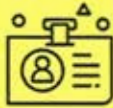
Travel & Tourism

Travel & Tourism - Component 2 Knowledge Organiser

Internal Customers

Definition: "Those who you directly or indirectly work with to ensure excellent service is given to external customers"

- Colleagues and staff with whom you work closely
- Supervisors and managers.
- Directors and Owners.
- Staff at other locations.
- Suppliers

Groups

- Customers might be an in organised group (usually have a leader)
- If the group has a leader work with them to fully understand the groups needs
- Be alert to individual needs if the group doesn't have a group leader as people may want to ask questions

New customers

NEW

- If the organisation is new, then customers are new. You need to keep them coming back for more!
- The organisation will also be unfamiliar with the needs, wants and desires of new customers

Individuals

- Discover whether they will know someone else on the holiday
- If they want to be on their own?
- If they are on holiday, they might want to check in from time to time with a holiday rep.
- Some might want to be left alone.

Business Travellers (Corporate Customers)

- Want quick and efficient service
- They need facilities and support to allow them to do their job
- They might also want something that reflects that of a leisure traveller ie jet lagged customers

Types of Customer

Couples

- Couples may be travelling just as couple or as part of a group
- They may want to have privacy or to join in with others
- We as travel experts need to find this out and cater to their needs

Additional Physical Needs

- Not every disability is visible
- Make sure that their needs are catered for and their disability (physical or mental)
- Can also include dietary requirements

Age Groups

- You will meet different ages of people from the young to the old
- Some adults will want child free zones
- Parents will appreciate help with their infants and young children
- Older generations might appreciate a more formal style of delivery ie sir or madam

Existing Customers

- If the new customer is happy, they will come back.
- The organisation must continue to deliver products and services which the customer wants.
- External changes may also impact on customer wants such as Technology or new destinations etc.

Special Interests

- They usually have special interests
- Find out more about their hobbies to get to know their interests and dislikes to then cater the holiday around them

Important to remember:

Customer service is only possible if everyone in the organisation (whether or not they have direct contact with the external customer) aims to give customer satisfaction. It is like a chain

Families

- Huge part of the travel industry
- Normally have one family member who leads the holiday
- Talking to the children will also help and allows them to share their excitement of their holiday

Culture and Ethnicity

- Prevalent in the inbound sector
- Different ethnicities have different needs and wishes.
- Respect their values and wishes
- Ignorance can lead to people taking offence

Travel & Tourism - Component 2 Knowledge Organiser

Safety
The Health and Safety at Work Act (1974) places a responsibility upon employers and employees to ensure the safety of ourselves and others.
Hotels must have evacuation procedures in every bedroom and coach drivers must remind customers to wear seat belts.

Advice
Customers will look to you for advice. You are considered the expert. Examples might be...
- A train manager might be asked which side to sit on for the best views
- A hotel receptionist is asked how to get to a venue by a customer who missed their coach

Specific Needs
Some customers have special needs. It may be because of a disability. They may need help to an easy access room or a wheelchair to take them to and from their transport. They may need an induction loop to help them hear in public areas, or an escort because they are partially sighted. They might have a dietary issue.

Products and Services
- Make sure you know what products and services your organisation offers and what the benefits of them are.
- Learn about your competitors' products and services so that they can emphasise to your customers what your organisation offers that your competitors don't
- The customer expects the product or service they purchased delivers what your organised promised
- Remember your 3P's (Product, Process and Personal Behaviour)
- It is not just about the flight and hotel that is booked, it is about the personal service you're providing. Are you knowledgeable, friendly and responding appropriately to what they have to say?

Security
Bag checks are now more prominent than ever before due to recent terrorist activities. There is a increase in CCTV, security guards and body and baggage searches. If you are working in the industry, we need to be extra vigilant and reporting anything suspicious

Needs of different types of Customer

Special Requests
Special requests may also increase a customers enjoyment e.g. a bottle of champagne in a bridal suite for a honeymoon couple or a birthday cake arranged for a child's birthday.

Accurate Information
Customers expect accurate information. They need to know that the product/ service meets their needs and how. Examples might be...
Can you give me directions to...?
At what time is the next show starting?
What is the weather forecast for this afternoon?

Health
The customers rely on you to be kept safe, secure and healthy whilst in your care.
You need to alert customers to overseas health requirements. These are usually available from the FCO
SARS, Avian Flu, Swine Flu and Coronavirus has had restrictions on travel, each time this information was shared through the WHO (World Health Organisation)

Assistance
People might require assistance with different things such as...
- Baggage in their holiday destination
- Elderly customers climbing stairs and many more

Travel & Tourism - Component 2 Knowledge Organiser

Verbal Requests
- Verbal requests might be face to face
- They might also be over the Telephone
- Staff must listen carefully to what the customer is saying or asking and be prepared to respond helpfully, knowledgeably and clearly.

Responding to Customer Needs

Written Requests
Much communication in Travel and Tourism is doing via email or websites. However some customers still prefer to communicate by letter and written booking form.
- The style and sometimes the information can differ depending on method of communication
- Make sure that dates are correct
- Make sure you sign the letter off correctly eg yours sincerely, yours faithfully

Recognising unstated needs
Sometimes a customer doesn't realise they have a need, so it is our job to identify those unstated needs. Some examples might include...
A family with children booking a holiday at a travel agent might want a kids club option.
Cabin crew reminding someone to fasten their seatbelt
A cruise ship waiter noticing someone not eating their meal because they are in fact vegetarian and are too shy to request a change.
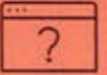
Booking Forms
Many tour operators are now offering online booking forms. We must make sure that they are...
- Easy to read
- Ask all the questions which the organisation needs to be answered
- Provide the information the customer needs
- Is clear and unambiguous

Exceeding Expectations
- Anticipate the customers needs before they ask for it.
- Personalise the experience for the customer, get to know them
- Solve problems imaginatively.
- Think of the halo effect, you might bend down to talk to a child, so that they can be at your eye level. You might ask them the name of the toy they're holding. The child will enjoy this experience and other people will be impressed by what you are doing.

Exploring expectations of different types of customers in the travel and tourism sector

Meeting Expectations
- Your customer has been convinced to buy your product or service.
- You have given them expectations of what that product or service will provide
- They will also have expectations based on previous customer service experiences and what their culture and ethnicity expects.
- Customers expect the information you provide them to be timely and accurate
- They expect their journey to be punctual
- They expect their room to be clean
- They expect their family to be looked after (if applicable)