PUDSEY
GRAMMAR SCHOOL

EST.1905

KNOWLEDGE ORGANISER

YEAR 10

Student Name: .....

Year and Form: .....

★ RESPECT ★ RESILIENCE ★ INTEGRITY ★ COMPASSION ★ AMBITION

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ART & DESIGN

GCSE Fine Art: AO1 Develop

Develop- AO1

This means you develop ideas/themes through researching different artists. Artist research pages must contains the following:

1.Artist title and written analysis of their work

2.Artist copy: this can be a section or the whole image (a direct copy)

3.Primary photographs

4.Artist response – work in the artists style using your own images

Content

The content is the subject of a piece of work.

- What is it? What is it about? What is happening?
- Is it a portrait? A landscape? Abstract?
- What does the work represent?
- The title - what does the artist call the work?
- Does the title change the way we see the work?
- Is it a realistic depiction?
- Have any parts been exaggerated or distorted? If so, why?
- What is the theme of the work?
- What message does the work communicate?

Context

This refers to how the work relates to a particular time, place, culture and society in which it was produced.

- When was it made? Where was it made? Who made it?
- Who was the work made for?
- What do you know about the artist?
- How does the work relate to other art of the time?
- Does the work relate to the social or political history of the time?
- Can you link it to other arts of the period, such as film, music or literature?
- Does the work relate to other areas of knowledge, such as science or geography?

Mood

Mood means looking at how the artist has created a certain atmosphere or feeling.

How does the work make you feel?
Why do you think you feel like this?
Does the colour, texture, form or theme of the work affect your mood?
Does the work create an atmosphere?

Process

Looking at process means studying how the work was made and what techniques were used.
What materials and tools were used to make the piece?
What is the evidence for this?
Do sketchbooks provide any clues as to how the work developed?

GCSE Fine Art: AO2 Refine

Refine– AO2

This means you will refine your ideas by experimenting with different materials. This may include the use of the following within your sketchbook:

1.Pencil
2.Biro
3.Mark making
4.Colour
5.Water colour paints
6.Acrylic paints
7.Oil paints
8.Pencil crayons
9.Collage
10.Charcoal
11.Oil pastels
12.Chalk pastels
13.Drawing inks
14.Mix media work
15.Mono printing
16.Monochrome pieces
17.Textured pieces
18.Fine liner work
19.Pattern work
20.Photo-manipulation
21.Own photographs

Composition Techniques

There are a number of different ways composition can be developed: Move objects around in a still life or change the pose in portraiture or figure composition.

- Try different arrangements, e.g. linear, triangular or circular compositions
- Change how natural, organised, busy or sparse your composition is.
- Use different amounts of negative space, showing more or less background
- Experiment with leading lines to draw the viewer's eye into the composition
- Change the height and angle of your viewpoint
- Use frames within frames e.g. looking through objects to frame elements of the composition
- Create a cropped composition by zooming in to a specific area.
- Try different backgrounds

Refining Ideas

After your initial development you should select an idea and work on refining it. Refinement is the improvement of the idea. It does not involve radical changes, but is about making small changes which improve the idea in some way. This might be done by modification of the composition – e.g. replacing one object with another or changing a pose slightly…

- Variation of a technique – e.g. trying oil pastel rather than painting to achieve an expressive style
- Adaptation of the idea – e.g. including some detail in the foreground of a landscape to add more depth and distance
- Alteration of an aspect – e.g. arranging objects in a triangular composition instead of a linear grouping, or changing the colour of the sky in a coastal scene to achieve a more dramatic atmosphere
- Enhancing an element of the idea – e.g. improving the application of a particular technique, or harmonising the background colours with other aspects of the composition
- Fine-tuning a technique or an aspect of the composition.
- Tweaking the positioning of a subject to make the composition more balanced, or to create more tension, as appropriate.

GCSE Fine Art: AO3 Record

Record – AO3

This means you will use different methods to record your ideas and draw from observation. This may include the use of the following within your sketchbook.

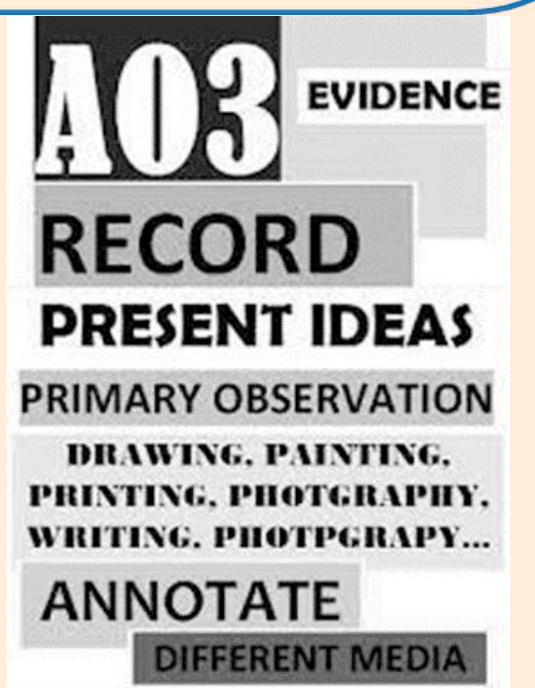
1.Photographs
2.Drawings
3.Paintings
4.Mix media
5.Written analysis of your own work and the work of others
6.Images of arts work
7.Artist studies
8.Descriptions of your work and the work of others
9.Compositions of different ideas for personal response

You can use a range of different materials

1.Pencil
2.Biro
3.Mark making
4.Colour
5.Water colour paints
6.Acrylic paints
7.Oil paints
8.Pencil crayons
9.Collage
10.Charcoal
11.Oil pastels
12.Chalk pastels
13.Drawing inks
14.Mix media work
15.Mono printing
16.Monochrome pieces
17.Textured pieces
18.Fine liner work
19.Pattern work
20.Photo-manipulation
21.Own photographs

Composition using Technology

Taking photographs of different arrangements can help development:
You can try out different viewpoints and arrangements quickly.
It is easy to change between landscape and portrait format to try different effects.
The camera's viewfinder can be used to 'frame' compositions and preview the result.
Working from photographs can be more practical for subjects that might move or where conditions might change.
New compositions can be created by cropping existing images digitally.
Remember that artists use photography as a tool to record visual information.
It is still important to create your own personal response to the image by experimenting with materials and techniques.



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BUSINESS STUDIES

Business GCSE

The dynamic nature of business

Reasons new business ideas come about:

- Changing technology
- Changing consumer needs
- Obsolescence

The role of entrepreneurship

- What entrepreneurs do
- Have an idea
- Take a risk
- Organise the resources to set up a business
- Employ people
- Make business decisions
- Establish and grow a successful business

The importance of added value

Adding value is important to a business for a number of reasons. A business must decide how best to combine the features of its products to add value.

The added value of a product goes towards paying off a company's fixed costs. The higher the added value, the sooner costs can be paid off and the quicker a business will make a profit.

- Ways to add value:
- More convenience
- Unique selling point
- Better design
- Improved quality
- Branding
- More convenience
- Greater speed of service

Meeting customer needs

- Price
- Choice
- Convenience
- Quality

Risk and reward

Before an entrepreneur starts their own company, they will consider the risks and rewards associated with it.

Risks

- Business failure- through poor cash flow, fall in sales revenue or the actions of competitors
- Financial loss – and owner may lose the capital they invest in the business if it fails. This could include their personal belongings if the business has unlimited liability
- Lack of security- Not working for someone else means no guaranteed income, sick pay or holidays

Rewards

- Business success- Personal satisfaction, excellent product/services, growth, and awards and recognition
- Profit- Where revenue exceeds costs over a period of time
- Independence- Many business owners will value the freedom of working for someone else

Ways to compete

1. Wider product range
2. Better customer service
3. Stronger brand image
4. Higher quality
5. More convenient food
6. Lower prices
7. Better design

Consumer- someone who buys and uses goods and services
Demographics- relating to the structure of a population
Entrepreneur- A person who owns and runs their own business. They are risk takers who have an initial idea and the willingness and confidence to see it through
USP- something that makes a product or service stand out from its competitors
Enterprise- A person or organization with the purpose of producing goods and service
Enterprise skills- Skills that successful entrepreneurs share
Customer need- What customers want from a product
Market research- The process of gathering information about the market and customers' need and wants in order to help inform business decisions
Primary research- Collecting information that did not exist before.
Secondary research-S Gathering secondary data which already exists
Qualitative data- information about people's opinions, judgements and attitudes
Quantitative data- Data that can be expressed as numbers and statistically analysed
Market segmentation- A group of buyers with similar characteristics and buying habits
Market maps- A diagram that can be used to position and compare products in a market
Product differentiation- Making a product different from others in some way
Competitive markets- A market is competitive when there are a large number of businesses relative to the number of potential customers
Aims- The general goals that a business sets. An aim can be the purpose for a business's existence
Objectives- are more specific than aims, but they contribute to a business achieving its aims. Objectives can be financial or non financial
Repeat purchase- When a customer tries a product and likes it so they buy it again

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BUSINESS STUDIES

Business GCSE

<u>Financial aims and objectives</u>
survival, profit, sales, market share, financial security
<u>Non financial aims and objectives</u>
social objectives, personal satisfaction, challenge, independence and control

Short term sources of finance
- overdraft
- trade credit

Long term sources of finance
- personal savings
- venture capital
- share capital
- Loans
- retained profit
- crowdfunding

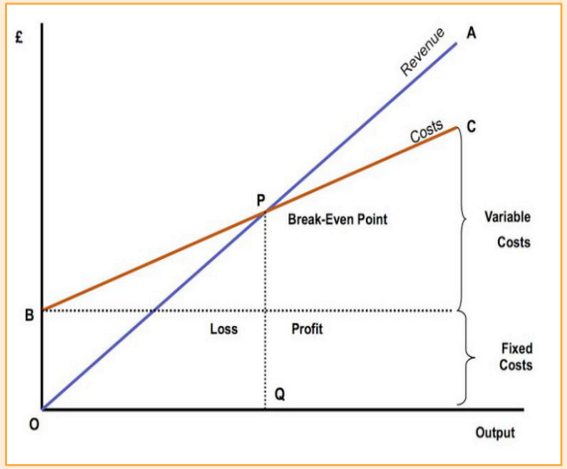
The importance of cash flow
- to pay suppliers, overheads and employees
- to prevent business failure (insolvency)

Benefits of break even analysis
- Aids planning
- Can set staff sales targets
- Can see the impact of cost changes

Drawbacks
- Assumes fixed costs do not change
- Assumes everything is sold
- Assumes everything is sold for the same price

Whilst it is a useful tool, it should be used in conjunction with other planning tools.

Key formulae
Revenue
Amount sold x selling price
Total cost
Fixed + variable costs
Profit
Revenue - total cost
Break even
Fixed cost/contribution
Contribution
Selling price - variable cost
Margin of safety
Projected sales - break even point
Net cash flow
Inflows- outflows
Closing balance
Net cash flow + opening balance
Market share
Share of the market/ total market size x 100
Average Revenue
Add up all the revenues and divide by the no. of years



Revenue- money coming into the business from sales
Fixed cost- a cost that does not increase in line with production
Variable cost- A cost that will increase inline with production
Profit- Money left after all costs have been paid
Interest- Money paid by the bank on savings or to the bank for borrowing
Break even point- The number of units a business needs to sell to cover their costs
Margin of safety- The number of sales a business can drop before it goes below the break even point
Financial objectives- Goals the business have relating to money
Non financial objectives- Objectives the business have that are not related to money ie acting ethically
Cash inflow- The money flowing into a business
Cash outflow- Money flowing out of the business
Net cash flow- Inflows - outflows
Short term finance- Money that is borrowed and is paid back within 12 months
Long term finance- Funds that are paid back for longer than 12 months
Overdraft- A form of borrowing where customers are allowed to spend more than they have in the bank
Trade credit- Buying supplies now and paying for them in the future
Share capital- Money gained from selling shares
Retained profit- money kept from last year for future use
Venture capital- Money gained from a venture capitalist company who are experts in investing in business
Loans- A long term source of finance where the bank loans a large amount and is repaid monthly
Crowd funding- Raising funds from the public through websites such as kickstarter often in return for discounted goods

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BUSINESS STUDIES

Business GCSE

Stakeholders

Stakeholders is someone or something that has an interest in a business.

Such as: the local community, customers, owners, shareholders, rival businesses, employees, managers and the Government.

Technology and Business

Technology changes quickly, meaning a business needs to change quickly to adapt to the market around them.

Benefits: staying competitive, increases efficiency and better customer reach.

Drawbacks: if not done could lead to business failure, could become irrelevant, it can be expensive to maintain the newest technologies..

Principles of Consumer Law

Law to protect consumers from receiving poor quality products or products that are wrongly advertised.

Benefits: business are less likely to be fined if they follow the law, compliant businesses could have more loyalty from customers as they trust, good publicity.

Drawbacks: Businesses need to keep up to date with the law, laws can be restrictive, changing products and policy with the law can be costly.

The Economy and Business

The level of demand in an economy refers to the spending that takes places, by governments or consumers. If spending increases businesses are more likely to be doing well this works the other way round too.

Different things could change the levels of demand such as:

Interest rates – if they fall borrowing and demand will increase.

Changes in exchange rates – if the pound gets weaker foreign demand will increase.

Consumer income – when people are earning more they have more disposable income.

Principles of employment law

Fair recruitment, fair pay, no discrimination health and safety in the workplace and fair dealing with discipline.

Companies need to be aware of different people and their needs, a business should be aware of the laws around having employees and the expectations to protect those same employees.

This can be costly for a business, especially for protective equipment or paying the minimum wage. However, customer will see compliance as a positive thing.

Unemployment and Inflation

Unemployment exists when people who want to find work cannot do so.

High levels of unemployment makes it easier for businesses to recruit but over time the skills they need will no longer exist in the market. With many people out of work demand for certain products will drop. This will mean sales and revenue for many companies will fall.

Inflation is the change in average levels of prices in the economy. A freddo used to be 5p!!!

Impact of inflation on a business:

A sharp rise in the rate of inflation will cause a businesses cost to rise unexpectedly. This can have a direct impact on the profits of that business.

Consumers costs rise when the rate of inflation rises . This reduces consumers disposable income, meaning they have to buy fewer goods and services from the same business. When an increase in inflation causes the business costs to rise the business has two choices. can either absorb the costs onto its customers by raising prices. Some essential products receive funding from the government as to keep them at the same price for all.

Key Words:

Stakeholder – Someone or something that has an interest in the business.

Shareholders – Someone that owns percentage share within a business. They are also classed as stakeholders.

Competitive – When you as a business can challenge all the businesses for share of the market.

Efficiency – Doing things in the most time and/ or cost effective way.

Legislation – the laws are business has to abide by.

Compliance – Following the rules without need for intervention.

Unemployment – This is when people who want to find work cannot do so.

Interest rates – Interest rates is a percentage read set by the Bank of England that covers the cost of borrowing.

Consumer income – This is the amount consumers receive through things such as work or investment.

Taxation – An amount charged by the government to fund public services.

Inflation – Inflation is a change in the average levels of prices overtime.

Demand – Demand is the amount of something that is wanted either by the government, consumers or international investors.

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Term 1 Growth and Development

	0-18 months	18 months -3 years	3-5 years
Physical development	A baby is born with infant reflexes in order to help them to survive By 3 months old, these reflexes disappear and babies make purposeful movements, such as moving their heads and watching their fingers As babies grow, they start to develop in strength. By 6 months old, most babies can sit with support, and roll. By 9 months, they might be able to crawl and pass toys between their hands At around 12 months babies will start to walk with support and start to feed themselves finger food At 15 months old, most children can walk and hold things purposefully	At 18 months children move confidently, walking steadily and stopping. They will begin to climb stairs and ride sit and ride toys By 2 children can run at speed safely. They will throw and catch a ball and will draw circles and lines using a crayon At 2 years and 6 months, children can jump from a step, kick a large ball and copy lines	At 3 children can balance on one foot, ride a tricycle using the pedals, and hold a pencil By 4 children run, avoiding obstacles. They have good balance and can draw a recognisable person At 5 children can run, hop, skip and play ball games. They not have good control when writing and drawing
Cognitive and intellectual development	At birth babies senses are developing By 3 months, they have more alert, wakeful periods and will recognise familiar routines such as feed times Between 6 and 9 months babies will recognise familiar objects and people and respond to familiar voices By 12 months old, children know their own name and will look when called. They will copy adults, such as clapping hands	At 18 months children can point to their body parts and are becoming more curious By 2 children recognise pictures in books and enjoy simple make believe games At 2.5 children will be starting to become aware of their name. They will start to name familiar people and objects	By 3 children are becoming more aware of colours and can sort and order by categories By 4 children can count to 10 and will sing songs and nursery rhymes, they can solve simple puzzles By 5 children can do simple maths sums and they start to become more competent in reading and writing
Communication and language development	Babies cry when they are newborn as this is the only way they can communicate At around 6 weeks old, babies will start to smile At around 6 months old, babies start to babble. They laugh and giggle and make sound to attract attention By 12 months old, children are using single words and pointing to explain what they want. They can understand simple instructions At 15 months children can name familiar people and objects	At 18 months children will say a few words such as mummy and daddy. They will understand more of what is said to them and repeat words that they hear By 2 children will be using around 50 words. They might even join words together At around 2.5 children will know about 200 words and will be using some simple sentences	At 3 children speak and use correct sentences. They understand simple stories and enjoy stories By 4 children talk about past events and things they will do in the future. They enjoy making people laugh by telling jokes. They ask questions and listen intently At 5 children speak fluently. They have a vast vocabulary and understand complicated instruction
Social development	At 3 months old babies might start to smile when given attention By 6 months old babies start to recognise familiar faces and may be wary of strangers By 9 months babies might cry at strangers At 12 months children like to play games such as peek a boo At 15 months children are less dependent on their carers but can become jealous of siblings	By 18 months children start to understand terms such as ‘you’, ‘my’ and ‘mine. They will enjoy copying parents and carers By 2 some children can dress and undress with some help. They are beginning to learn about toilet training At 2.5 children can use a spoon to feed themself. They will play with others but might find sharing difficult	At 3 children will start to play with others and will be able to take turns At 4 children are aware of others and are starting to become sensitive to their feelings. Their independence increases and they develop a sense of humour By 5 children choose friends based on characteristics they like. They know there are rules to follow. They enjoy games and desire to win.
Emotional development	Newborn babies will cry for attention but start to settle quickly. They will turn their head and smile as they build a bond with their parents At 6 months babies prefer to be with their familiar parent and carer. They recognise the different emotions people show in their faces and prefer to look at a happy face At 9-12 months babies become cautious of strangers and want to be with their parent/carer At 15 months babies become more independent	At 18 months children find it hard to regulate their emotion At 2 children have tantrums as they struggle to cope with strong emotions By 2.5 children start to test boundaries and deliberately not do as they are told. They are developing their own identity	The 3 year old is more patient and can wait for their desires to be met. They co-operate with others such as helping tidy up. At 4 children are confident and able to do things themselves, such as feed and get dressed Children at 5 begin to form close friendships and are becoming able to recover from upset

Factors impacting growth

Physical factors in pregnancy
Maternal nutrition and exercise
Effects of parental drug or substance misuse
Premature birth

Physical factors that impact on children's overall development
Disabilities and additional needs
- Hearing impairment
- Visual impairment
- Cerebral palsy
- Down's syndrome

Health status
- Eczema
- Asthma
- Repeated short term illness; colds, ear infections and vomiting and diarrhoea
- Obesity

Diet and exercise
- A healthy diet
- Exercise

Environmental factors that impact overall development
Housing
Housing needs- when families do not have suitable housing
Areas of deprivation- Areas where there are potential health risks due to poverty, unemployment and lack of financial investment

The home
Stability
Contact with extended family
Parental conflict
Parents mental health
Drugs, alcohol and smoking
Parental health

Social factor impacting growth
Race- racial and cultural discrimination can have a huge impact on a young child. Children might become shy and withdrawn, feel isolated from the people and the community they live in, find it difficult to form relationships, have a lack of identity and confusion over who they are which affects their self esteem and be less likely to want to join in activities and mix with others
Disability- A child with a disability could be discriminated against intentionally or indirectly
Home situation- Everyone's home is different and it is important for children to hear positive representations of their home environments

Social factors impacting overall development
Relationship with primary carers- It is important that children form close attachments to their main carers. This helps them to feel supported and loved
Warmth and affection- Babies love and want to be cuddled. As children get older, practitioners teach them about boundaries and children become more sparing with their affection
Giving children attention- Parents and carers need to be available for children. This is because eye contact and attention is important if children are going to form good attachments and have good language and communication skills
Being an only child- Can make it difficult when children start nursery as they are not used to sharing
New baby- The arrival of a new baby may make a child regress, jealous, become over protective or throw temper tantrums
Large families
Step- siblings
Relationships with extended family

Financial factors
Low income
Access to good early education experiences
Support for families on low income
Families on high income

Access to services
Dentists
Health visitors
Early years education
Experiences outside the home

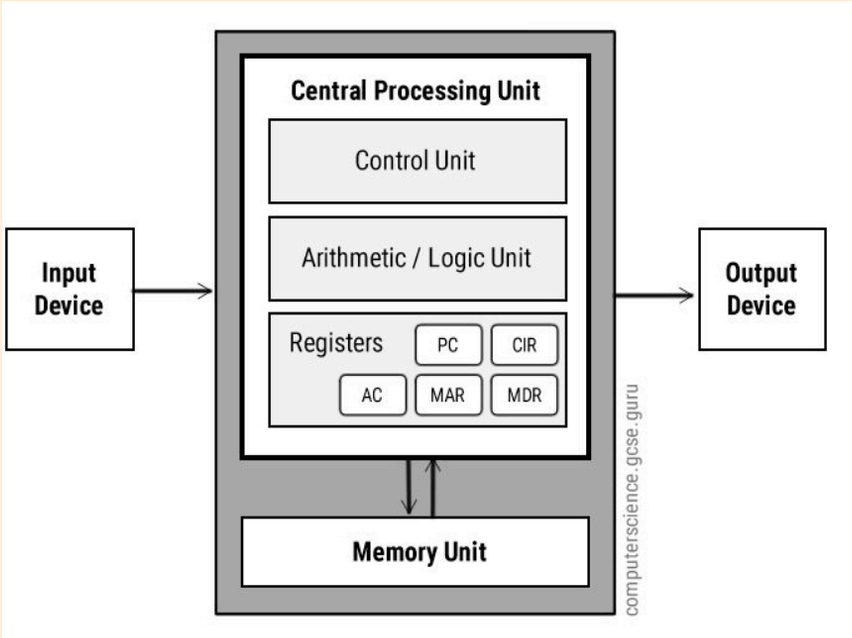
Key terms
Foetus- offspring and is what a human baby in the womb is called after 8 weeks
Spina bifida- caused when the spine and spinal cord of a baby in the womb fail to develop properly
Placenta- A circular organ in the uterus of a pregnant woman that nourishes and maintain the foetus through the umbilical cord
Premature- born before the expected date of arrival. Medically this is before 37 weeks of pregnancy
Congenital- A condition that a child is born with
Chronic- Long lasting health condition
Stable- secure, even and well balanced
Conflict- A serious or violent argument
Prescription drugs- medication that is prescribed for a person by a medical professional
Illegal drugs- Drugs that are not prescribed and have no benefit for health
Regress- Return to an earlier state or stage of development
Rivalry- competitiveness over the same objective or over someone's attention
Welfare state- The system for protecting health and wellbeing in the UK. This includes financial and social support, for example through pensions and benefits
Food bank- A charity that provides food for free to people in need
General anaesthetic- A state of being unconscious controlled by a medical professional
Isolated- Being alone and away from others for too much of the time

Learning through play

Birth - 2 years	2-3 Years	3-5 Years
Unoccupied play Occurs between birth and 3 months. It is how babies learn about their bodies and begin to understand how to control their movements. Movements of arms and legs help to develop gross motor skills	**Spectator/onlooker play** Takes place round two and watching children is central to this stage of play. Children are beginning to explore the world around them but lack the skills to join in with others.	**Associative play** By this age children have developed a sense of what being social is. They have started developing friendships and have a clear preference for who they want to play with. They are now more cooperative; the children are able to wait for their turn and share toys. Vocabulary has increased and children enjoy asking questions as part of their play
Solitary play At this age children are not curious about what others are doing and do not show an interest in playing with their peers. They will often sit with a toy and repeat actions	**Parallel play** Around the age of 2-3 children move on from simply observing others to sitting near them and playing alongside them. This is referred to as parallel play. A child will play in close proximity to another child but will not join in play with them	**Co-operative play** Occurs from 4 years onwards. By this age the children have acquired the necessary skills to be able to interact with each other for the purpose of play/ They will have interest in both the activity and the other children involved. Key features of co-operative play could include: • Sharing • Creating and following rules • Turn- taking • Negotiation

Key terms
Social skills- used when interacting with others
Unoccupied play- an early form of play, where a baby does not interact with others and makes movements with their body
Solitary play- Playing alone
Spectator/onlooker play- watching others play but not joining in
Parallel play- Playing alongside others but not playing with them
Associative play- Sharing resources but playing alone
Co-operative play- When children are playing together
Locomotor- Relating to physical movement
Sensory- relating to one or more of the senses
Symbolise (of an object) to represent something else
Investigative- Finding new information or facts
Construction- Building or creating something new

Computer Architecture



- The **Von Neumann** architecture consists of a:
  - Control Unit (CU)
  - Arithmetic and Logic Unit (ALU)
  - Memory Unit (typically RAM)
  - Inputs and Outputs
- It is based on the concept of the stored-program concept.
- Both instruction data AND program data are stored in the same memory space in binary form.
- There is no way to know if the pure binary held in memory is representing instructions or data simply by looking at it.

- **Control Unit (CU):** executes instructions and controls the flow of data in the CPU.
- **Program counter:** holds the memory address for the instruction of each cycle.
- **Arithmetic Logic Unit (ALU):** does all of the calculations and logic operations.
- **Accumulator:** holds the result of any calculations in the ALU.
- **MAR (Memory Address Register):** holds the address about to be used by the CPU.
- **MDR (Memory Data Register):** holds the actual data or instruction being processed by the CPU.

- **Computer systems** take data (input), process it and then output it.
- **Embedded systems** are computers built in to other devices like washing machines. They are dedicated to a single task so they are efficient.
- **Clock speed:** the number of instructions a processor can carry out per/second. Higher clock speed = faster CPU.
- **Number of Cores:** The more cores a CPU has the more instructions it can carry out at once (multitasking). More cores = faster processing.
- **Cache size:** A larger cache gives the CPU faster access to more data

Factors affecting speed of CPU

Clock speed

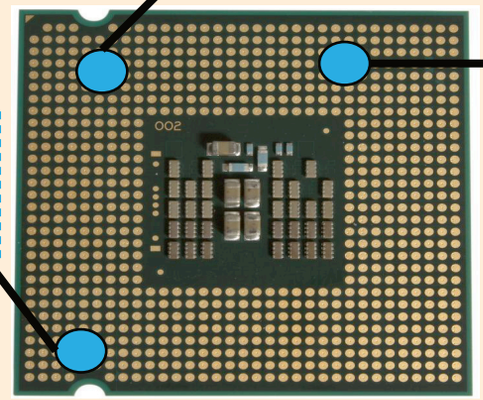
Cycles per second measured in hertz.

Cache size

Cache is a small amount of memory in the CPU. When an instruction or data is fetched from RAM it is copied into the cache so if it is needed again soon after, it can be fetched from the cache instead which is much quicker than going back to main memory.

The number of duplicate CPUs on a single chip.

Number of cores

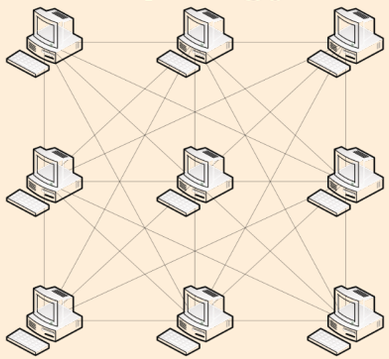


Computer Networks

Network Hardware

Router 	A router sends data between networks. It is needed to connect a local area network to a wide area network (Internet).
Switch	A switch sends data between computers on a local area network.
Wireless Access Point	Wireless access point allows wireless-enabled devices to access the network without cables.
Network Interface Controller (NIC)	A network interface controller (NIC) connects a device to a wired or wireless network connection.
Transmission Media (Cables) 	Connections between desktop computers and a switch are usually made with unshielded twisted pair (UTP) copper cable. Longer distance cables and wide area networks are usually connected with fibre optic cable.

Mesh Topology



In a star network, each device on the network has its own cable that connects to a switch or hub. This is the most popular way of setting up a LAN. You may find a star network in a small network of five or six computers where speed is a priority. Very reliable due to a dedicated connection to each device, although expensive to set-up and requires specialist knowledge.

In a Mesh network, each device has a direct connection to all other devices on the network. Each device has equal importance on the network, so data can take multiple routes to its destination in the event of a device failure. Due to each device requiring a connection to all other devices, it can be impractical to use a Mesh topology in a large network.

These factors can impact on network performance:

- **Bandwidth:** The more bandwidth, the more data that can be transferred at a time.
- **Number of Users**: Having a lot of people using a network means lots of data is being transmitted which can slow it down.
- **Transmission Media:** Wired connections are faster than wireless.
- Fibre optic cables are faster than copper cables. Wireless
- **Factors:** wireless can be affected by walls, distance, signal quality and interference from other devices. Topology: The layout of a network can impact on its performance.

Protocols are the rules for how devices communicate and transmit data across a network. Every device has a MAC address so that it can be identified on a network. Eg: 98-1C-B3-09-85-15 IP addresses are used when sending data between networks. They can be static (permanent) or dynamic (different each time the device connects).

- **TCP/IP:** Used to send data between networks in packets.
- **Transmission Control Protocol (TCP):** Splits the data into packets and re-assembles. Checks data is sent correctly.
- **Internet Protocol (IP)**: does the packet switching
- **Hyper Text Transfer Protocol (HTTP):** for accessing websites
- **HTTPS:** The secure version of HTTP
- **File Transfer Protocol (FTP):** Moves files between devices
- **Post Office Protocol (POP3):** Retrieves emails from server. Once you download the email the server copy is deleted.
- **Internet Message Access Protocol (IMAP):** Retrieves email from server. Email is kept on server, you see a copy

Programming & Algorithms

What is an Algorithm?

An algorithm is a logical, step-by-step set of instructions used to solve a problem.

Algorithms: Pseudocode vs Flowcharts

Pseudocode is not a programming language, it is a simple way of describing a set of instructions that does not have to use specific syntax. Writing in pseudocode is similar to writing in a programming language. Each step of the algorithm is written on a line of its own in sequence.

```
01  x = 0
02  while True
03      print x
04  endwhile
```

A **flowchart** is a diagram that shows an overview of a program. Flowcharts normally use standard symbols to represent the different types of instructions . These symbols are used to construct the flowchart and show the step-by-step solution to the problem. Flowcharts are sometimes known as flow diagrams.

Flowchart Symbols

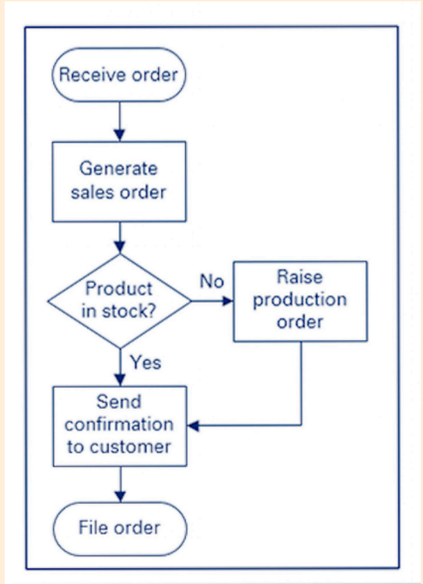
→	Line	▱	Input/ Output
▭	Process	◇	Decision
▭ with double bars	Sub program	⬭	Terminal

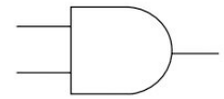
Variables and Constants

- **Variable** - A value that may change when the program is running. Variables can be local or global. Local Variable – a variable which can only be used within the structure they are declared in.
- **Global Variable** – a variable which can be used in any part of the code after they are declared
- **Constant –** A value which cannot be altered as the program is running.

Programming Constructs

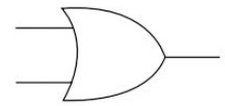
- **A Sequence** is when there are programming steps that are carried out one after another.
- **Selection** is where there are different paths in your code eg: IF, ELIF, ELSE
- **Iteration** is when there is repetition (loops) in code. This could be a WHILE loop (do something WHILE a condition is met) or a FOR loop (do something for a set number of times)



Boolean Operators	Logic Gate Symbol
AND *(Conjunction)*	

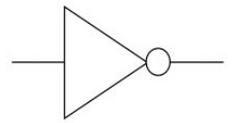
AND		
A	B	A AND B
0	0	0
0	1	0
1	0	0
1	1	1

An AND gate can be used on a gate with two inputs. AND tells us that both inputs have to be 1 in order for the output to be 1.

OR *(Disjunction)*	

OR		
A	B	A OR B
0	0	0
0	1	1
1	0	1
1	1	1

The OR gate has two inputs. One or both inputs must be 1 to output 1, otherwise it outputs 0.

NOT *(Negation)*	

NOT	
A	NOT A
0	1
1	0

A NOT gate has just one input. The output of the circuit will be the opposite of the input. If 0 is input, then the output is 1. If 1 is input, then 0 is output.

COMP 1 / COMP 2 - Controlled Assessment Key Content

User Interface

Graphical user interface (GUI)	The OS on most computers and smartphones provides an environment with tiles, icons and/or menus. The user interacts with images through a mouse, keyboard or touchscreen.
Command line interface (CLI)	An OS also provides a method of interaction that is non-graphical, called the command line interface (CLI). This is a text-only service with feedback from the OS appearing in text
Menu-Driven Interface	The menu-driven user interface provides you with a range of commands or options in the form of a list or menu displayed in full-screen, pop-up, pull-down, or drop-down. An ATM is an example of a menu-driven interface.

Design Principles

Colour	Using different colours and house style (A house style is a consistent colour scheme applied to a design)
Font	Ensuring text style/style is readable use of sans serif fonts for screen reading
Language	using appropriate language for user needs, e.g. age-appropriate language using language that is appropriate for user skill level
User perception of	colour, e.g. green to indicate go/successful interactions, orange to indicate warnings, red to indicate stop/errors sound, e.g. positive high-pitched sounds, negative low-pitched sounds
Retaining user attention	grabbing attention, e.g. pop-up messages, flashing graphics, sound, animation ensuring the screen is uncluttered clearly labelled items/features

Data and Information

Data	Data is - no meaning, no structure, no context and unprocessed.
Information	Information is - has meaning, has structure, has context and is processed.
Primary Source of Information	immediate, first-hand accounts of a topic, from people who had a direct connection with it. Examples include: Letters, diaries, minutes, photographs, artifacts, interviews, and sound or video recordings
Secondary Sources of Information	Secondary sources provide second-hand information and commentary from other researchers. Examples include journal articles, reviews, and academic books. A secondary source describes, interprets, or synthesizes primary sources.

Data Validation and Verification

Range Check	A range check is commonly used when you are working with data which consists of numbers, currency or dates/times.
Type Check	A type check will ensure that the correct type of data is entered into that field.
Lookup Check	A lookup check provides a list of valid data to be entered into a field.
Presence Check	A presence check makes sure that a critical field cannot be left blank, it must be filled in. If someone tries to leave the field blank then an error message will appear
Length Check	A length check can also be set up to allow characters to be entered within a certain range.

COMP 1 / COMP 2 - Controlled Assessment Key Content

Project Keywords

Audience	Group of people who will use the product. This could include age, culture, status
Project Plan	defines project objectives, tasks and sub-tasks with time frames to start and end, identifies what resources will be needed
Gantt Chart	A Gantt chart is a graphical representation of activity against time. It plans work around deadlines and properly allocate resources
Pert Chart	A PERT chart is a visual representation of a series of events that must occur within the scope of a project's lifetime.
Moodboard	Mood boards are physical or digital collages that arrange images, materials, text, and other design elements into a format that's representative of the final design style.
Mindmap	A mind map is a graphical way to represent ideas and concepts. It is a visual thinking tool that helps structuring information, helping you to better analyze, comprehend, synthesize, recall and generate new ideas.
Storyboard	Visual representation of a design for a user interface outlining key features, tools, layouts and structure. Identification of colours, fonts and colours to be used.
Smart Targets	SMART goals stands for Specific, Measurable, Achievable, Relevant, and Time-Bound
Contingency Plan	is a course of action that would take if an unexpected event or situation occurs, outlining a plan of additional actions
Test Plan	A plan that outlines a series of tests to obtain the efficiency of a system

Google Sheet Keywords

Cells/Cell Referencing	A **cell** is a rectangle or block housed in a worksheet. Any data that you want to enter into your worksheet must be placed in a cell
Function	**Functions** pre-built into Sheets They are designed to help simplify potentially complex formulas in a worksheet., EG **SUM, AVERAGE, MAX, OR MIN**
Formula	A sequence inside a cell that is used to produce a value. It must begin with an equal **(=) sign.** This could be a mathematical equation, cell references, functions or operator. A formula is also known as an **expression.**
Countif	can be used to count cells that contain dates, numbers, and text.Eg, **=countif(D1:D10,"Data)** will count the word Data in a range of cells
Macro	are small programs you create inside of Google Sheets without needing to write any code. Usual written in **Visual Basic Code**
Conditional Format	Formatting is applied only when the cell meets determined criteria such as duplicate values or values above or below a threshold.
Data Validation	This feature helps to prevent incorrect data from being entered into your worksheet. This most commonly used to create drop-down lists for common terms.
IF statement	The IF function runs a logical test and returns one value for a TRUE result, and another for a FALSE result. **For example, to "pass" scores above 70: =IF(A1>70,"Pass","Fail").**
Pivot Tables	A function that allows you to compare two sets of data, from a given set of fields/records and produce a charts/graphs to visual represent that data.

COMP 1 / COMP 2 - Controlled Assessment Key Content

User Interface	A type of system that provides a menu based or interface for users to interact with.
Navigation System	A system within an interface which allows the interaction of a user to navigate from one menu to another through the use of tools or features.
User requirements	A set of guidelines from a client or user which outlines the intent or requirements needed for a system, eg a navigation system or colourful etc.
Survey	Data collection surveys collect information from a targeted group of people about their opinions, behavior, or knowledge of a topic
Questionnaire	includes specific questions with the goal to understand a topic from the respondents' point of view. Questionnaires typically include closed-ended, open-ended, short-form, and long-form questions.
Strengths	Process of identifying the positives or good points of a system based on a given set of requirements
Weaknesses	Process of identifying the negative or bad points of a system based on a given set of requirements
Improvements	A process of making changes to a system based on identification of negatives in order to update, change or enhance
Project constraints	Problems encountered in completing the project, Not meeting deadlines, overrunning on tasks, Missing minor tasks
Design principles	A list of principles which include, colour, font, language, user perception.

Data Analysis	Data analysis is a process of inspecting, cleansing, transforming, and modelling data with the goal of discovering useful information, informing conclusions, and supporting decision-making
Pattern	A pattern is the repeated or regular way in which something happens or is done
Trend	A trends is a similarity of events or actions within a given set of data. This could be highest or lowest figures showing a repeating event
Data Duplications	occurs when an exact copy of a piece of data is created due an error or incorrect use of formulas/functions
Data Anomalies	are inconsistencies in the data stored in a spreadsheet as a result of an operation such as update or function not working properly
Dashboard	A summary of data outlining information in a logical structure, on a spreadsheet with charts/graphs to represent data (See below)

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KNOWLEDGE ORGANISER

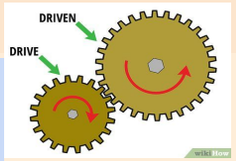
YEAR 10

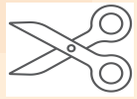
DESIGN TECHNOLOGY

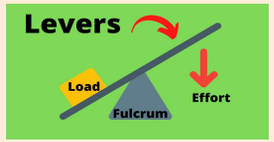
Mechanisms, Polymers, New Technologies

Mechanical devices - produce different sorts of movement that change the magnitude and direction of forces. To transform input motion and force into a desired output motion and force.

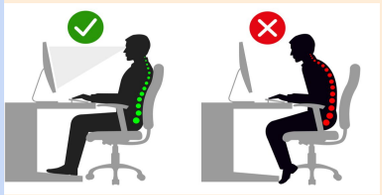
Mechanical systems - Increase or decrease speed of movement rotation; Change magnitude/direction of force,movement, rotation. Function of mechanical products: pulley systems, e.g. curtain rails, sewing machine; **gear systems**, e.g. whisk, hand drill; **levers & linkages**, e.g. scissors; **rack & pinion**, e.g. chair lift; **cams**, e.g. automata toys

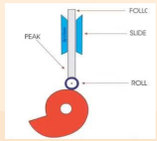






Thermoforming and thermosetting polymers
Polymers can be made from both natural and synthetic resources. Polymers are sold as sheet, film, bar, rod and tube - Stock form. The differences between a thermoforming (thermoplastic) it can be reheated and reshaped whilst thermosetting material once heated and set it cannot be reheated and reshaped. **Properties of polymers**: weight, hardness, elasticity, conductivity/insulation, toughness and strength. **The types of thermoplastics**: polythene(HDPE/LDPE), polystyrene(PS), polypropylene(PP) and PVC, PET. **The types of the thermosetting plastics**: UF (urea formaldehyde), MF (melamine formaldehyde), PR (polyester resin) and ER (epoxy resin).





Design Focus: Philippe Starck – product designer: Apple - Technology: Airbus –aeronautical designer, manufacturer: Dyson - Designer, Manufacturer: Matthew Williamson - fashion/interior designer

Ergonomics the study of the interaction between the human body, products & the surrounding environment. It is a key factor in design from furniture to handheld gadgets.

Scales of Production The different methods of production depend on the type of product being made, one off, batch, mass and continuous production.

How the critical evaluation of new and emerging technologies informs design decisions. Ethics and the environment & the effects that Global production has on culture and people.Sustainability & environmental issues when designing and making. Social, cultural, economic and environmental responsibilities in designing and making of products. The **SIX R's** of sustainability; rethink, reuse, recycle, repair, reduce and refuse. **Life Cycle Analysis** to determine the environmental impact of a product. **Fair-trade** policies and **carbon footprint** and the **Ecological footprint** we leave. Modern ways forward for businesses, **Enterprise, crowdfunding, Virtual marketing & retail, Cooperatives, Fairtrade. Technology Push, Market Pull.** Changes to how people work. Developments in Automation & Robots, Buildings, **CAD, CAM, CNC** and there *advantages and disadvantages*. **Flexible Manufacturing systems (FMS)**, **Lean Manufacturing & Just in time,** and there *advantages and disadvantages*. Manufacturers considering environmental and sustainable issues through **Life Cycle Assessment**, pollution and global warming, and examples of how manufacturers are continuously looking for improvement and efficient working. Finite and non-finite resources, waste disposal.

Culture & Societies have different needs, wants and values. Consumer choice and Legislation and **consumer rights** have to keep up with new technology, the latest is the Consumer Rights Act 2015.

Selecting Materials - Looking at Functionality, Environmental factors, Availability of materials, Cost (from raw materials, manufacturing, packaging, shipping costs as well as the selling price), Cultural Factors, as well as Social and Ethical factors, for examples FSC logo on wood. Aesthetics, Ergonomics, and need of customer and end of use/product life disposal and reclaiming.

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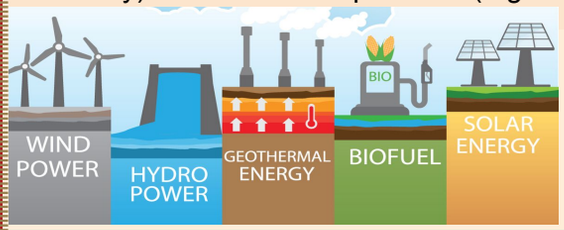
KNOWLEDGE ORGANISER

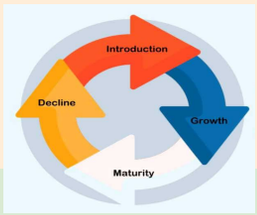
DESIGN TECHNOLOGY YEAR 10

Energy Generation, Timber, Paper and Board, Technologies

Energy Generation

Energy is generated and stored in order to make products and to power systems. The types of renewable and non-renewable energy sources are: **wind, solar, geothermal, hydroelectric, wood/biomass, wave, coal, gas, nuclear and oil.** There are, *advantages and disadvantages* surrounding the use of fossil fuels: coal, oil and gas. Using renewable energy sources in modern manufacturing production systems e.g. the use of solar panels and wind turbines in manufacturing sites. Renewable energy sources for products: wind-up and photovoltaic cells. Energy generation and storage in a range of contexts: motor vehicles (e.g. petrol/diesel, electricity) and household products (e.g. battery, solar, mains).





New and Emerging technologies

Impact of new and emerging technologies on: industry, enterprise, sustainability, people, culture, society, the environment, production techniques and systems.

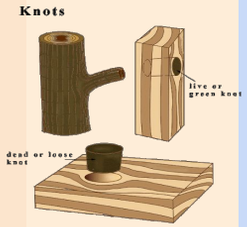
M**arket pull** – responding to demands from the market;

Technology push – development in materials and components, manufacturing methods; consumer choice – consumers wishing to own the latest technologies/products;

The Product Life Cycle; Global production and its effects on culture and people; Legislation to which products are subject; Consumer rights and protection for consumers when purchasing & using products; Moral & ethical factors. Sustainability: meeting today's needs without compromising the needs of future generations; *Advantages & disadvantages* of using computer aided design (CAD) & computer aided manufacture (CAM)

Paper and board

Properties:- **strength, folding ability, surface finish and absorbency.** Papers, cards and boards can be laminated to improve strength, finish and appearance. S**tandard ISO sizes** of paper A4, A3 etc. Grammage i.e. **grams per square metre (gsm)** to measure weight of paper. **Microns** to measure thickness of card. Recycled materials to manufacture papers and boards. The aesthetic and functional properties of common papers, cards and boards: **layout paper, tracing paper, copier paper, recycled paper, corrugated board, cartridge paper, mounting board and folding boxboard.**



Natural and manufactured timber

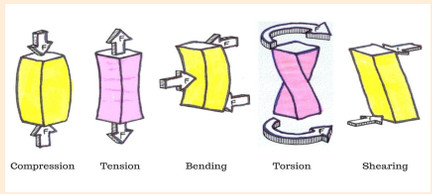
Properties of hardwoods, softwoods and man-made boards: **toughness, flexibility, grain structure, strength, absorbency, surface finish, colour and hardness.** **Natural** timber is harvested from **deciduous** (hardwoods) trees - beech, oak, mahogany, balsa and jelutong and **coniferous** (softwood) trees **-** scots pine, western red cedar and parana pine. **Defects**: shrinkage, splits, shakes, knots, fungial attack. It is available in the following forms: **plank, board, strip, square, and dowel**. They can be identified by: **weight, colour, grain, texture, durability and ease of working.** **Manufactured** timbers are made from natural timbers and made from **particles/fibres or laminates**. Available in **standard sizes & forms**: plywood, MDF (Medium Density Fibreboard), chipboard, hardboard & veneered boards. **Timbers are** protected using different finishes and for aesthetics (What it looks like).

Shaping/joining Timber: Tools & equipment to mark out, hold, cut, shape, drill & form laminates of natural timbers and manufactured boards. The pillar drill, jigs and formers to ensure accuracy in the process of drilling, bending, cutting wood materials. Material joining can be **permanent or temporary**. Permanent jointing, veneering, laminating and steam bending. Joints as **frame or box construction**. Frame: mitre, dowel, mortise and tenon, halving and bridle joint. **Box/carcass:** butt, lap, housing, dovetail & comb joint. **Adhesives:** PVA (wood to wood), contact adhesive & epoxy resin (wood to other materials). **Temporary**: screw (countersunk and round head) & knock down fittings.

Metals, Electronics, Textiles, Smart materials, Forces

Smart Materials, Composites and Technical Textiles

Electroluminescent film or wire i.e. **LCD**. Quantum Tunnelling Composite **(QTC)** - when used in circuits the resistance changes under compression. **SMA** – shape memory alloys. **Polymorph**. Smart fibres and fabrics that respond to the environment or stimuli: photo-chromic; thermo-chromic; micro-encapsulation; biometrics. **Carbon Fibre, Kevlar and GRP**. **Interactive textiles** that function as electronic devices and sensors: circuits integrated into fabrics, such as heart rate monitors; wearable electronics such as mobile phones or music player, GPS, tracking systems and electronics integrated into the fabric itself. **Micro-fibres** in clothing manufacture. **Phase changing materials**: breathable materials; proactive heat and moisture management. Sun protective clothing. Nomex. Geotextiles for landscaping. Rhovyl as an antibacterial fibre.



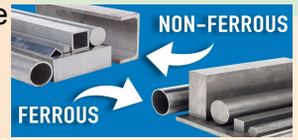
Electronics components and systems

Electronic systems Sensors & control devices respond to a variety of inputs, and produce a range of outputs. Graphical conventions (what they look like) circuit diagrams, block diagrams and flowcharts. **The 'systems' approach** – input; process; output. Principles of a control system: **input data** from a sensor: light dependent resistor (LDR), thermistor; **processing** by control devices: semi-conductor, IC, microprocessor or computer; **output** where a signal is received that will perform a desired function: buzzer, light emitting diode (LED). Feedback systems. Control devices that include counting, switching and timing.

The use of programmable components to enhance & customise their operation. Sub routines or macros in control systems. Programmable **microcontrollers** to control a range of systems, interface with other devices & reprogrammed repeatedly. The benefits & limitations. **Programmable Interface Controllers (PIC)**.

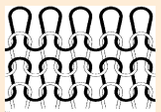
Metal

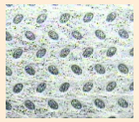
Ferrous metals, nonferrous metals and **alloys**. Properties of metals: **hardness, elasticity, conductivity, toughness, ductility, tensile strength and malleability.** Metals are sold as **sheet, bar, rod, tube and angle**. **Ferrous metals**: cast iron, Ferrous Alloys: mild steel, medium carbon steel and high carbon steel. Ferrous metals require a protective finish. **Non-ferrous metals**: aluminium, copper, silver & gold. Non-ferrous metal Alloys: brass, bronze, pewter etc. **Alloys** of metals are a base metal mixed with other metals or non-metals to change their properties or appearance. Ferrous and Non-ferrous metals may require a protective finish also to improve the aesthetic appeal.



Textiles

Natural, synthetic, blended and mixed fibres, and the fabrics: **woven, non-woven and knitted textiles**. The raw materials of textiles are classified according to their source. **Natural polymers**: **Animal polymers**: wool/fleece – mohair, cashmere, angora, alpaca, camel (hair). **Insect polymers**: silk. **Plant polymers**: cotton, linen hemp, jute, rayon, viscose. **Manufactured polymers**: **Synthetic**: polyester, polypropylene, nylon, acrylic, elastane, lycra, aramid fibres. **Microfibres** – Tactel, Tencel (Lyocell). The properties of textiles fibres: **strength, elasticity, absorbency, durability, insulation, flammability, water-repellence, anti-static and resistance to acid, bleach and sunlight. Blending and mixing fibres** improves the properties and uses of yarns and materials.





The impact of **forces and stresses** on materials and objects and the ways in which materials can be reinforced and stiffened. **Stock forms**, types and sizes in order to calculate and determine the quantity of materials or components required. The impact on the **environment** of deforestation. Ecological and social footprint. Changing society's view on waste, encourage recycling. Living in a greener world. Life-cycle analysis of a material or product.

Food, Nutrition and Health

Eat Well Guide and Government Guidelines

The Eatwell Guide shows the proportions of food groups that should be eaten daily in a well-balanced diet. There are 8 main government guidelines for a healthy diet

1. Base your meals on starchy carbohydrates
2. Eat lots of fruit and veg (5-7 portion a day)
3. Eat plenty of fish, including oily fish
4. Cut down on saturated fat and sugars
5. Eat less salt – no more than 6g a day
6. Get active and maintain a healthy weight
7. Drink 6-8 glasses of water a day
8. Always eat a healthy breakfast

Energy Balance

- Energy balance is when you use the same amount of energy that you intake through food. This results in weight maintenance.
- Too much energy intake can result in weight gain.
- Too little energy intake can result in weight loss and lethargy.
- You can work out how much you should be eating: BMR x PAL = EAR
- Guidelines suggest at least 60 minutes of activity a day.

Macronutrients

- **Protein:** Essential for growth, repair and maintenance of a healthy body. Make up the structure of cells in the body.
- **Fat:** Most concentrated source of energy. Used in the structure of every cell in the body. Supplies fat soluble vitamins (A/D/E/K) as well as essential fatty acids. Provides protection to organs in the body and warmth.
- **Carbohydrates:** Main source of energy in the diet.

Dietary Fibre

The body needs fibre to help keep the digestive system moving.

Water

The body needs water for:

- Normal brain function
- Decreased risk of kidney problems
- Normal blood pressure
- Help with bowel movement
- Regulate body temperature
- Maintain hydration
- Making body fluids
- 6-8 glasses of water should be drank every day.

Vitamins and Minerals

- Vitamins A/D/E/K = Fat soluble
- Vitamins B group/C = Water soluble
- Minerals = Calcium / Iron / Sodium / Fluoride / Iodine / Phosphorus
- Needed in the body to heal wounds, strengthen bones, support the immune system, convert food into energy and repair cell damage.

Life Stages

- **Children:** 1-3 years grow quickly so needs a well balanced diet for development. Toddlers are very active and need a good supply of fat for energy, this also helps with brain and nervous system development. New foods should be introduced in an attractive and appealing way. They should avoid sweets, fizzy drinks, sugary foods. Rapid growth.
- **Teenagers:** Rapid growth and puberty occurs. They need a higher amount of nutrients and energy. Boys need protein for muscle growth. Girls need more iron to replace blood loss during menstruation, they are prone to iron-deficiency anaemia.
- **Adults and Older People**: Adults need to maintain a healthy balanced diet to keep the body working properly and prevent diet-related problems. In older people, energy requirements decrease so they need smaller portions and less calories. They must keep hydrated and drink plenty of fluids. Osteoporosis may occur and so a diet high in calcium and vitamin D is needed to strengthen bones.

Dietary Needs

Specific Groups…

- Vegetarian / vegan diet
- Coeliac diet
- Lactose intolerance diet
- High fibre diet
- Low sugar diet
- Fat reduced diet
- Low salt diet

Diet-Related Diseases…

- Obesity
- Cardiovascular disease
- Coronary heart disease
- Skeletal disease
- Tooth decay
- Iron deficiency (anaemia)
- Type 2 diabetes

Food Science & Food Safety

Why do we cook food?

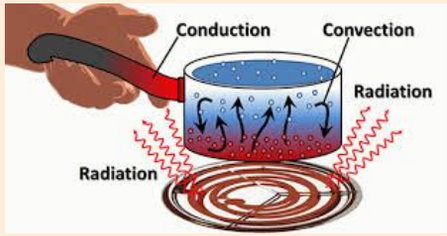
- Make it safe to eat.
- To change it from raw to cooked.
- To make it more palatable, improving texture, developing flavours and improving colour.
- To extend the shelf life of a product.
- To make it easier for us to digest.
- To give variety to the diet.

Heat Transfer

Conduction: Transferring heat through a solid object into food.

Convection: Transferring heat through a liquid or air into food.

Radiation (Microwave): Transferring heat by infrared waves that heat up what they come into contact with a solid object.

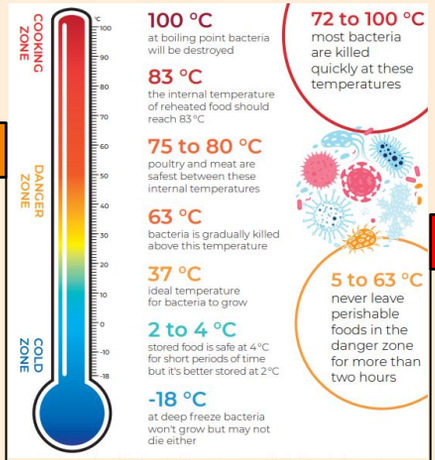


Different methods of cooking

- **Moist cooking methods** – boiling, braising, poaching, simmering, steaming and stewing.
- **Methods using oil** – shallow frying, deep fat frying, roasting, stir frying and sauteing.
- **Methods using dry heat** – grilling, dry frying, toasting and baking.

Food spoilage and contamination

- **Food poisoning** – an illness caused by pathogenic micro-organisms which have contaminated some food, e.g. salmonella in undercooked chicken.
- **Pathogenic** – something that is capable of causing illness in people.
- **High-risk foods** – foods that contain a lot of moisture and nutrients such as protein and easily allow pathogenic micro-organisms to grow and multiply, particularly bacteria.
- **Enzymic browning** – the discolouration of a fruit or vegetable due to the reaction of enzymes with plant cell substances and oxygen.
- **Cross-contamination** – how bacteria are spread from one source (place) onto some food.
- **Danger zone** – the range of temperatures (5°C to 65°C) that are just right for bacteria to multiply rapidly.



Functional and chemical properties of food

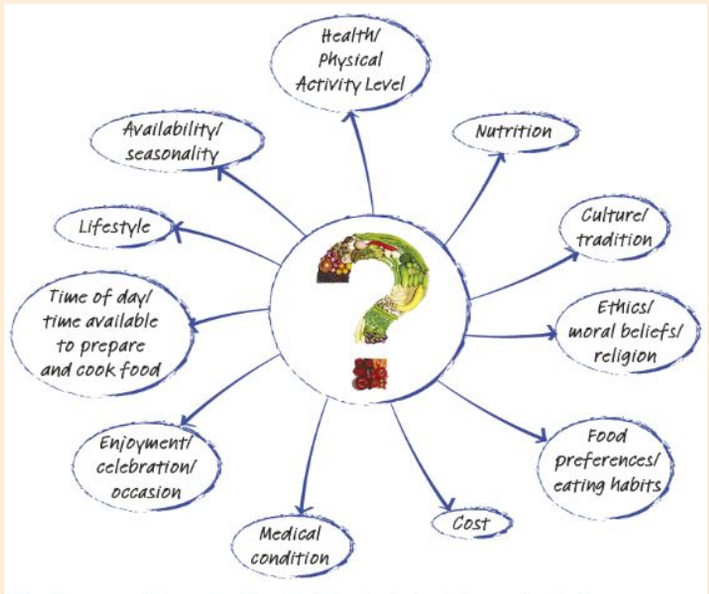
- **Denaturation** – the chemical bonds have broken and the protein molecule has unfolded and changed shape.
- **Coagulation** – the joining together of lots of denatured protein molecules, which changes the appearance and texture of food.
- **Gluten** – formed from two separate proteins glutenin and gliadin, which combine when liquid is added to flour.
- **Gelatinisation** – the swelling of starch granules when they are cooked with a liquid to the point where they burst and release starch molecules.
- **Dextrinisation** – the breaking up of starch molecules into smaller groups of glucose molecule when they are exposed to dry heat.
- **Caramelisation** – the breaking up of sucrose (sugar) molecules when they are heated, which changes the colour, flavour and texture of the sugar as it turns into caramel.
- **Plasticity** – the ability of a fat to soften over a range of temperatures and be shaped and spread with light pressure.
- **Shortening** – the ability of fats to shorten the length of gluten molecules in pastry.
- **Aeration** – the ability of some fats to trap air bubbles when beaten together with sugar.
- **Emulsification** – either, keeping drops of oil or fat, suspended in a liquid and preventing them from separating out; or keeping drops of water suspended in an oil or fat and preventing them from separating out.
- **Raising agent** – an ingredient or process that introduces a gas into a mixture so that it rises when cooked.

Food spoilage and contamination

- **Shelf-life** – how long a food product will last before it becomes unsafe/unpalatable (unpleasant) to eat.
- **Use-by date** – the date by which high-risk/perishable foods should be eaten.
- **Best before date** – after this date, a non high-risk food will still be safe to eat, but not be at its best quality.

Food Choice & Food Provenance

Factors that affect food choice



Food Labelling and marketing

- **Target group:** a specific group of similar people.
- **Nutritional profile:** the types and amounts of different nutrients a food contains.
- **Marketing:** advertising and promoting a food product to encourage people to buy it.

Environmental impact & sustainability

Food Provenance: Where foods and ingredients originally come from.
Grown ingredients: Plants grown for food (herbs, fruits, cereals).
Reared ingredients: Animals, birds and fish specially bred in captivity and brought up to be ready to eat.
Gathered ingredients: Plant foods gathered from the wild for eating.
Caught ingredients: Animals, birds, fish and shellfish hunted and caught from the wild for eating.
Intensive farming: Growing or rearing large numbers of plants or animals in one place.
Organic farming: Producing food using manure, compost and natural methods rather than chemical.
Genetic Modification: Scientific technique that enables foods to have unique characteristics.
Greenhouse gases: Form an insulating layer around the earth's atmosphere, which traps heat, raises the earths temperature.
Carbon footprint: A measure of the contribution of something to the emission of greenhouse gases.
Climate change: Changes in the earth's temperature that can lead to unusual and extreme weather conditions.
Fossil fuels: Fuels such as coal, oil and gas that were created over millions of years by fossilised plants and animals.
Non-renewable energy: Energy produced from fossil fuels that cannot be renewed once they are used up.
Food security: The ability of people to buy sufficient safe, nutritious and affordable food.
Sustainability: Producing food in a way that can be maintained over a long period of time and protects the environment.
Fairtrade: A foundation set up to ensure that food producers in developing countries get paid fair prices.

Dietary laws for different religions

Buddhism,Christianity ,Hinduism,Islam, Judaism,Sikhism, Rastafarianism

Sensory evaluation

- **Sensory analysis** is a way of measuring the sensory qualities of food.
- **How the senses affect what we choose to eat .** Five senses – sight, smell, taste, touch and sound. All senses work together.
- **How different tests are used:** Preference tests, discriminatory tests and grading tests.

British and international cuisine

What 'cuisine' means… A style of cooking and eating that is found in a particular country or region of the world.
Features of a cuisine …

- Particular foods and ingredients that are used (often locally grown).
- Particular (traditional) ways of preparing and cooking foods.
- Particular (traditional) cooking equipment that is used.
- Particular (traditional) ways of presenting, serving and eating the food.

Processing and production

Primary processing: When foods are processed straight after harvest or slaughter, to get them ready to be eaten or ready to be used in other food products.
Secondary processing: When primary processed foods are either used on their own or mixed with other foods and turned into other food products.

DEVISING DRAMA

Devising Drama

Drama conventions

Key Word	Definition
Aside	Lines spoken by an actor to the audience and not supposed to be overheard by other characters on stage.
Chorus	When actors perform as an ensemble, very often performing as the same character, comment on the action or moves the plot on
Cliffhanger	Is an unexpected ending that leaves the audience wanting to know more
Direct address	When the character talks directly to the audience. No other characters can hear. The character reveals information on the situation, their emotions, moves the drama on or use of dramatic irony.
Dramatic pause	The Dramatic Pause is a beat or two of silence with no dialogue and little or no music/background sound. Usually done to heighten the anticipation before the reveal
Ensemble	A group of actors/people performing together
Flash back	Shows something that happened before that point in the story
Flash forward	Shows a scene or an event that will happen later in the story

Intentions

Key Word	Definition
Performance intention	What you want the audience to think or feel about your performance. The overall meaning or message
Scene intention	What information you want the audience to know
Character intention	What you want the audience to think or feel about your character

Character development

Role on the Wall	Visually map out a character's emotions and actions describe the character's personality, interests and objectives
Hot Seating	Actors are asked questions while in character to develop a deeper understanding of their characters personality and thoughts

Drama conventions

Key Word	Definition
Marking the Moment	A dramatic technique used to highlight a key moment in a scene or improvisation. Slow-motion, a freeze-frame, narration, thought-tracking, music or lights
Monologue	A speech performed by an actor on their own, expressing the characters thoughts, emotions and the situation they are in
Narrator	Role designed to tell the story or provide accompanying information. 1. Narrator stands at the side 2. Actor comes out of character and narrates 3. Character narrates
Slow-motion	A choreographed moment where the actors make it look like time is moving slowly. It is a great way of highlighting important or dramatic moments
Spoken thought	The character tells the audience their thoughts at that moment
Still Image	Is a frozen image where the actors must use their facial expression, body language, levels and proxemics to communicate the moment. Actors can not move or talk

WRITTEN EXAM

Genre

Key Word	Definition
Genre	A way of categorising different types of drama. A play may be categorised using multiple types of genre.
Comedy	Is a type of performance genre that is amusing and satirical in its tone, mostly having a cheerful ending. The audience normally finds it funny and laughs at the character or situations.
Documentary Theatre	Theatre that uses pre-existing documentary material as source material for stories about real events and people,
Horror	A play that are intended to shock or frighten
Melodrama	a dramatic work in which events, plot, and characters are sensationalized to elicit strong emotional reactions from the audience.
Musical Theatre	Drama in which singing and dancing play an essential part.
Theatre in Education	Often abbreviated to T.I.E. The use of theatrical techniques to educate, covering social issues or topics on the school's syllabus.
Tragedy	Sad events take place during the performance that the character must get over. The story can end in a sad way

Written structure

Key Word	Definition
Point	What was done? (Example of what happened in the moment)
Evidence	**How** was it done? (What skills & techniques were used?) **Why** was it done like that? (Justify & analyse your choices)
Evaluate	**What** was successful and **why**? (Reflect on the success of this moment) **How** could it be improved and why? (Give a suggestion of improvement. Justify your answer)
Audience	**What** was the **impact** on the audience? (What was your intention? How did the audience react?)

Style

Key Word	Definition
Style	Style refers to the way the actors perform, the visual characteristics of the setting and costumes, and the choice of conventions used.
Naturalistic	A performance that attempts to replicate nature and present events and characters on stage as in real life. Naturalism attempts to hold up a mirror to nature and give the illusion of characters as actual people in real-life situations using everyday language
Physical Theatre	Performances which incorporate dance elements into a dramatic theatre performance.
Masked	Where actors wear masks to communicate a character
Non-naturalistic /stylised	The work has been stylised. The performance avoids representation of the objects and appearances of the natural world
Abstract	Is centred around the concept of representing situations and emotions, as opposed to acting them out in a realistic way.

WRITTEN EXAM

Characterisation skills

Key Word	Definition
Character	The role the actor plays
Body Language	How you communicate your character's emotions through the use of your body
Character Intention	What you want the audience to think or feel about your character
Facial Expressions	How you communicate your character's emotion using your face
Gestures	Movements of a particular body part, often the hand, to display meaning
Physicality	How actors use their facial expressions, body language, walk amd stanze to show emotion, characteristics and age of their character
Red cross	An actor facing forward so the audience can see their facial expression and body language
Proxemics	The distance between the actor & actor, actor & audience or actor and object and what that communicates
Staying in role	Staying in role for the whole performance
Corpsing	Laughing, talking or breaking role when performing

Vocal skills

Key Word	Definition
Vocal skills	The way you use your voice to communicate your character's emotions.
Accent	The way you speak based on where you're from e.g. Scouse accent from Liverpool
Articulation	Clear and precise speech ensuring letters are clear
Projection	To speak loudly and clearly without shouting
Pace	The speed at which you talk e.g rushing and speaking quickly if you character is excited or scared
Volume	How loudly or quietly you speak

Theatre makers roles

Key Word	Definition
Actor	The person that takes on a character in a performance
Choreographer	The person that creates and instructs on the dance or movement of a performance
Director	The person that is steering and leading the performance, they contribute to each element and work with both the creative and performance elements of the play

Design

Costume	The person that decides and imagines the costumes worn by characters in the play
Hair and Make up	The person that decides and imagines the hair and makeup for the characters in the play
Lighting	The person that decides what lighting the play needs to show the correct meaning
Set	Decides what scenery and backdrops will feature on the stage
Sound	Responsible for everything related to sound for a given production. This includes pre-recorded music, sound effects, live voices, musical instruments.

An Inspector Calls

Vocabulary	Definition
Morality	Principles concerning the distinction between right and wrong or good and bad behaviour
Misogyny	Feeling, showing hatred or prejudice against women
Social inequality	Disparity in the access to resources and domains (education, workplace, health care).
Conscience	A person's moral sense of right or wrong, viewed as a guide to their behaviour

Contextual idea	Explanation
Patriarchal society	A society in which positions of power and privilege are dominated by men.
Capitalism	Economic system based on private ownership; often leads to exploitation of the poor to gain wealth for the rich.
Socialism	The belief that people must look out for one another and those with wealth have a responsibility to support others.
Welfare state	Established in 1945 after WWII. Designed to support citizens for their whole life with free education and healthcare.

Key Quotation	Context of quotation
'A man has to mind his own business and look after himself'	Mr Birling speaking to Gerald and Eric in Act 1.
'Community and all that nonsense'	Mr Birling speaking to Gerald and Eric in Act 1.
'lower costs and higher prices'	Mr Birling says this about the benefit of Sheila and Gerald's engagement in Act 1.
'It's better to ask the earth than to take it.'	Inspector Goole challenges Mr Birling in Act 1.
'But these girls aren't cheap labour – they're people.'	Sheila challenges her father's view of employees in Act 1.
'So I'm really responsible?'	Sheila reflects on her role in Eva Smith's death.
'I hate those hard-eyed dough-faced women.'	Gerald shares his views on the women at The Palace Bar in Act 2.
'If men will not learn that lesson, then they will be taught it in fire and blood and anguish.'	Inspector Goole delivers his final message to the Birling family.
'Because you're not the kind of father a chap could go to when he's in trouble'	Eric speaks to his father in Act 3.

‘Speech Writing’

Vocabulary	Definition
Salutation	A greeting to open with that shows your awareness of the ‘form’ you are writing in: ‘Good afternoon everyone’.
Valediction	The action of saying farewell: ‘Thank you for listening’.

Complex sentence starter openers:
Whilst…
Although…
Despite…
Even though…
Indeed…
Of course...
In spite of…

Introducing facts and statistics:
A recent study revealed…
A poll of…
Research conducted by…
A mental health poll…

Emotive verbs:
Exposes
Reveals
Amplifies
Unveil
Betray
Eradicate
Scrutinize
Diminish
Overshadow
Advance
Revitalise
Reform
Amend

	Skill	Definition	Example
Word Level	**Direct Address**	Directly addressing reader or listener by using the second person pronoun ‘you’.	‘It is time that you took this issue seriously.’
Word Level	**Collective pronoun**	A noun used to group people or things together.	We – our – us
Word Level	**Adverb**	A word used to add description to a verb.	**Openers**: Naturally, …/Consequently, …/Undeniably, …/Obviously, …/Clearly, …/Surely,…/Arguably, … **Within a sentence:** precisely/of course/extremely/very/doubtless/certainly/nevertheless, indeed
Sentence Level	**Declarative**	A sentence that is a statement.	‘Exams damage the mental health of teenagers worldwide.’
Punctuation	**Brackets & Dashes**	Used to add extra linked information that doesn’t change the meaning of the sentence. It can add emphasis and tone.	1. ‘Teenagers (especially those under 16) should not be pressured into any part time work.’ 2. ‘Privilege – in its many forms- benefits those who meet its standards, often without their knowledge.’
Literary Device	**Rhetorical repetition**	Repetition of a word or phrase at the beginning, or end, of two or more sentences for a particular effect.	1. ‘Together…Together…Together…’ 2. ‘Imagine…Imagine…Imagine’ 3. ‘We must…We must…We must…’
Literary Device	**Statistic**	Statistical information you use in your writing to persuade the reader/listener.	‘In fact, 73% of girls aged 17 to 19 believe that they need to change their physical appearance .’
Literary Device	**Rhetorical question**	A question asked to create a dramatic effect or to make a point rather than to get an answer.	1. ‘Where is the justice?’ 2. ‘Do you feel trapped and weighed down by society’s expectations of you?’
Whole text level	**Topic Sentence**	A sentence at the start of the paragraph that introduces the main topic of the paragraph.	‘Overexposure to social media platforms amplifies the pressure to conform that young people experience.’

Macbeth

Vocabulary	Definition
Weird	Suggesting something supernatural; unearthly. Archaic meaning - connected with fate.
Regicide	The action of killing a king.
Soliloquy	A speech in a play that the character speaks to himself or herself or to the people watching rather than to the other characters.
Hubris	Excessive pride or self confidence.

Contextual idea	Explanation
James I	First King of England and Scotland. Wrote a text about the threat of witchcraft.
Witchcraft	Belief in witches, the devil, evil spirits. Witches could control the elements and often had familiars (animals).
The Gunpowder plot.	Attempt to overthrow James I in 1605 by blowing up the houses of parliament. The plot failed.
The Divine Right of Kings	Belief that the king had been chosen by God and were his representatives on Earth. Kings had absolute power.

Key Quotation	Context of quotation
'Brave Macbeth – well he deserves that name'	The Captain describes Macbeth and his role in battle to King Duncan in Act 1 Scene 2.
'Stars hide your fires, let not light see my black and deep desires.	Macbeth begins to acknowledge his ambitions to become king in Act 1 Scene 4.
'Unsex me here/And fill me from the crown to the toe topfull/Of direst cruelty'	After hearing the news of the prophecies from Macbeth, Lady Macbeth calls on the 'spirits' to take away her femininity in Act 1 Scene 5.
'look like th'innocent flower/But be the serpent under 't''	Lady Macbeth tells her husband to be duplicitous when he greets King Duncan in Act 1 Scene 5.
'Infirm of purpose!/Give me the daggers.'	Lady Macbeth takes control when Macbeth brings the murder weapons back to their chamber.
'Will all great Neptune's ocean wash this blood/ Clean from my hand?'	Macbeth is horrified by the blood on his hands after killing King Duncan.
'O, full of scorpions is my mind, dear wife!'	Macbeth is troubled in Act 3 Scene 2.
'All my pretty ones?/Did you say all?'	Macduff receives the news that Macbeth has had his family murdered.
Here's the smell of the blood still: all the perfumes of Arabia will not sweeten this little hand.'	Lady Macbeth is sleepwalking in Act 5 Scene 1 and is haunted by the things that she and Macbeth have done.
'Dead butcher and his fiend-like queen'	Malcolm describes Macbeth and Lady Macbeth after their deaths in Act 5 Scene 9.

Descriptive Writing

Colour adjectives:
Blue: Aquamarine, turquoise, cyan, azure, cornflower, lapis, cobalt, navy, indigo, Oxford blue, blueberry.
Green: Rosemary, sage, lime, jade, mint, teal, avocado, olive, juniper.
Pink: Fuchsia, coral, salmon, pastel, blossom, apricot.
Yellow: Dandelion, turmeric, saffron, canary, lemon, sunflower, buttercup, mustard, ochre.
Orange: Tangerine, marigold, apricot, marmalade, amber, ginger, clementine.
Purple: Violet, heather, lavender, grape, plum, verbena.

Sinister atmosphere colour adjectives:
Grey: Iron, titanium, aluminium, granite, stone, slate, marble, pewter.
Black: Obsidian, jet, coal, charcoal, ebony, carbon.
Red: Crimson, maroon, blood, vermillion, magenta, poppy, scarlet, strawberry.
Brown: Chestnut, almond, brazil, hazelnut, mahogany, walnut, oak.

	Skill	Definition	Example
Word Level	**Fragment**	A sentence that is missing either its subject or its main verb.	1. 'Naked. Bare. Defenceless.' 2. 'They paused. They watched. They waited.' 3. 'Fog. Fog everywhere. Fog lingered. Fog massed.' 4. 'Unhindered. Untethered. Unbound.'
Word Level	**Verb**	A word used to describe an action, state, or occurrence.	Howled, pattered, dripped, fell, showered, waterlogged, flooded, pounded, pummelled, whistled, attacked, assaulted, oozed, swamped, smouldered, swirled, dispersed.
Word Level	**Adverb**	A word used to add description to a verb.	Eagerly, hurriedly, surreptitiously, carefully, rapidly, daily, extremely, brightly, bravely, gracefully, gleefully, merrily, solemnly, silently, victoriously.
Word Level	**Adjective**	A descriptive word used to modify a noun.	**Trees:** Naked, bare, spiked, fierce, slender, mottled, bent, gnarled, drooping, looming, pointed, jagged, luscious, vibrant, blooming, barbed, serrated, spiny. **Night**: Impenetrable, darkened, inky, unlit, dusky, overcast, dim, twilight, murky, star-lit, moon-lit, tenebrous, gloaming, sombre, misty. **General:** swollen, stuffy, unrestrained, recumbent, congested, monstrous, gruelling, deceptive, balmy, formidable, impetuous, wrathful.
Word Level	**Preposition**	A word that shows the location of the object/focus.	'Wedged between each stone', 'Deep within…', 'Within the…', 'On the top of…', 'In the…', 'Tucked away…', 'Under the…', 'In the distance…', 'Amongst the…'
Word Level	**Oxymoron**	Two contradictory or opposite words appearing side by side.	'sweet sorrow', 'deafening silence', 'organised chaos', 'bittersweet', 'loving hate', 'intense apathy', 'quiet rage', 'friendly fire'
Literary Device	**Alliteration**	The occurrence of the same letter at the beginning of closely connected words.	'Bitter breeze', 'shimmering sunlight', 'rapidly rearranging…', 'sudden successive streaks', 'babbling brooks', 'completely crushed', '…hovering in heavenly harmony', 'towering trees', 'crippling cold', 'heavy heat', 'claustrophobic closeness'
Literary Device	**Personification**	A description or action for a non-human thing that a human can do.	'its intertwining hide', 'unsuspecting cotton clouds', 'the natural world refused', 'the trees have defied…beaten…championed the…', 'encircling the moongate, ivy…', 'consumed', 'threatened'
Literary Device	**Simile**	A comparison of two unlike things using the words 'like' or 'as'.	'Bellowing like a great ape in the vicious jungle…', 'Crawling like a lingering serpent ready to pounce…', 'the cold sets upon the trees like a thief in the night', 'the impetuous wind is like a starved lion', '…like a monstrous hot-blooded serpent',

Anthology Poetry

Poem	Key Quotation	Relevant context
Ozymandias	‘Look on my works ye Mighty, and despair’	Based on Egyptian Pharaoh Ramesses II.
London	‘The mind forg’d manacles.’	Sett during a time where there was poverty, child labour and war with France.
The Prelude	‘a huge peak, black and huge, as if with voluntary power instinct, upreared its head.’	Wordsworth was a Romantic poet writing about themes including the power of the natural world.
My Last Duchess	‘That's my last Duchess painted on the wall, Looking as if she were alive.’	Loosely based on the Italian Duke of Ferrara. Written from his perspective, talking to a messenger about arranging his next marriage.
The Charge of the Light Brigade	‘Into the jaws of death, mouth of hell.’	During the Crimean war, a miscommunication sent the light brigade into battle against cannons. It was a huge catastrophe and many died.
Exposure	‘Our brains ache, in the merciless iced east winds that knive us’	Owen wrote about the terrible conditions soldiers faced in the trenches.
Storm on the Island	‘spits like a tame cat turned savage’	The poem is set around a story of a small isolated cottage near the sea in a storm and the exposure to the elements.
Bayonet Charge	‘He lugged a rifle numb as a smashed arm’	The poem is about a nameless soldier going over the top in the trenches.
Remains	‘His bloody life in my bloody hands.’	The poem is written from the perspective of a soldier stationed in Iraq or Afghanistan
Poppies	‘I was brave, as I walked with you, to the front door’	The poem looks at a mother of a son who has grown up and gone to war.
War Photographer	‘Spools of suffering set out in ordered rows.’	The poem is written about a war photographer who has returned home and is developing his photos.
Tissue	‘Maps too. The sun shines through their borderlines, the marks that rivers make’	The poem is written from the point of view of someone today looking out at the conflict: destruction, war and politics, money and wealth.
The Emigree	‘I am branded by an impression of sunlight’	The poem explores the memory of the poet and their experiences in a far off city they spent time in as a child.
Checking Out Me History	‘Bandage up me eye with me own identity’	The poem explores the theme of identity and gives examples of powerful black figures from history, often involved in conflicts themselves in one way or another.
Kamikaze	‘his brothers waiting on the shore built cairns of pearl-grey pebbles’	The poem is set around the events of a kamikaze pilot flying to war and then turning back before it was too late.

Article Writing

Discourse markers:

Importantly	At the start	Although
Significantly	Firstly	Whereas
In particular	Secondly	However
Addition	Thirdly	On the other hand
Furthermore	Next	In contrast
Additionally	Meanwhile	
In addition	Subsequently	
As well as	Finally	
	In conclusion	

Sentence stems to learn:

-Research, funded by _____, has revealed that….
-Consequently, many people have found that…
-Differing variables must be considered…
-Perhaps it might be fair to….
-Often the challenges are numerous…
-Every year hundreds…
-Over recent decades many experts have…
-A reasonable conclusion might be…
-Critically important is…
-Despite definitions varying, it is possible to…

Steps to success

- Think about the PAF
- Open with a welcome/greeting – e.g. 'Good afternoon ladies and gentlemen' or 'Fellow classmates'
- Outline what the speech will be about: 'I will talk to you about…
- Make 3/4 key points and expand on them.
- Conclusion to summarise ideas
- End acknowledging the audience: 'Thank you for listening'.
- CAFOREST techniques

	Skill	Definition	Example
Word Level	**Direct Address**	Directly addressing reader or listener by using the second person pronoun 'you'.	'It is time that you took this issue seriously.'
Word Level	**Modal verbs**	An auxiliary verb that expresses possibility or necessity.	Can, could, may, might, must, ought to, should, shall, will, would.
Sentence level	**Rhetorical question**	A question asked in order to create a dramatic effect or to make a point rather than to get an answer.	**Should we really accept that this is our best?**
Whole text level	**Drop paragraph**	An opening paragraph where your reader is 'dropped' into a scenario.	Picture this: it's midnight and Bob is still hunched over his desk working through the never ending mountain of homework.'
Literary	**Scare quotes**	Quotation marks placed round a word or phrase to draw attention to an unusual or arguably inaccurate use.	The soldiers are closing in on the 'safe' section of the city.
Literary Device	**Epiphora**	A rhetorical term for the repetition of a word or phrase at the end of successive clauses.	'of the people, by the people, for the people'
Literary Device	**Metaphor**	A figure of speech that describes an object or action in a way that isn't literally true, but helps explain an idea or make a comparison.	'Young people are goblins forced to stay indoors and complete homework rather than experiencing the freedom historically associated with being a teenager.'
Literary Device	**Semantic field**	A set of words that share a common theme and are linked by meaning.	'The ceaseless battle against the barrage of homework begins in earnest every evening.'
Literary Device	**Rule of three**	Three adjectives or phrases placed next to each for effect.	'It is pointless, unnecessary and damaging.'

Component 1A

Business/Enterprise - A business is an organization that offers for exchange, the goods and services that satisfy consumers wants and needs

Customer - Customers the purchaser of a product/service that could be resold

Consumer - The end buyer or user.

Goods - Products are physical, tangible items

Services - Services are non- physical and intangible

Need - A need is something that is essential to survive.

Want -A want is a luxury item that we desire.

Aims - A broad statement of what a business would like to achieve over a long period

Objective - A specific target for a business to meet.

Entrepreneur - Person who sets up their own enterprise.

Small and Medium Enterprises (SMEs) Micro enterprises (employ up to 10 people
Small enterprises -11-49 people
Medium enterprises -50 -249 people

Enterprise aims:

Profit

Survive

Expand

Improve quality

Increase sales

Why an enterprise might fail:

Don't listen to customers

Not unique

Not enough cash

Qualities/characteristics/mind-set – the features that belong to them and make them recognisable.

Confident, resilient, adaptable, innovative, proactive, focused, dedicated, motivated, passionate, competitive, inspirational, enthusiastic, reflective, honest, driven,

Types of Ownership

Sole Trader – runs or owns their business as an individual and they are self-employed.

Advantages

Easy to set up, You make all of the decisions, You decide what happens to the profits

Disadvantages

You have to work long hours

Unlimited liability – If something goes wrong or the business goes into debt, you are responsible.

Made up of two or more sole traders. Partners have an equal say in making decisions and an equal share of the profits unless they have some form of agreement.

Partnership – owned an run by two or more people.

Advantages

More owners means ore ideas and more people to share the decisions. More owners means more capital (money) can be put into the business.

Disadvantages

Each partner is legally responsible for what the other partner does.

Most partnerships have unlimited liability too. More owners mean more disagreements as there are more than one boss.

Methods the business can use to add value:

Branding
Design
Quality
Convenience
USP

Skills –Interpersonal, communication, planning, time management, technical, prioritising, problem solving, negotiating, managing risks, leadership, listening, creative, business, numeracy, literacy, practical, job/industry specific.

Component 1B

Purpose of Market Research

1. To reduce risk
2. To understand the market
3. To promote the business
4. To help in the decision making
5. To gain customers views and understand their needs
6. To inform product development

How market research is done:

Step 1: **carrying out** market research. Here the firm will make decisions about its aims and research methods.

Step 2: **doing** the research. Here the firm will need to decide on the sample size.

Step 3: **analysing** the research. Here the firm will need to decide how it's going to use the information. Have the aims been fulfilled? They will highlight any trends.

Qualitative Research: based on <u>opinions, attitudes, beliefs and intentions.</u>

Aims to understand why consumers behave in a certain way or how they may respond to a new product. Given that these opinions are often obtained from small numbers of people, the findings are not necessarily statistically valid. However, such data can highlight potential issues which can be explored in quantitative research.

Focus groups and interviews are common methods used to collect qualitative data. This kind of data is often revealing and useful, but it is costly and time consuming to collect, particularly for a start-up or small business.

Primary (Field) Market Research

Where a business will gather data from its source for its own specific reasons

Methods	1. Observations 2. Questionnaires 3. Surveys 4. Focus Groups 5. Consumer trials
Advantages	• Relevant and up to date • Specific to the business • Only available to the business
Disadvantages	• Can be costly and time consuming • Poor design could produce biased results

Secondary (Desk) Market Research

Where a business uses data and information that have already been generated previously.

Methods	1. Internal data 2. Books/newspapers/Trade magazines 3. Competitors data 4. Government publications and statistics 5. Purchased research material (e.g. Mintel)
Advantages	• Quicker to collect • May be gathered on a much larger scale • Can be very cheap or even free to access
Disadvantages	• Might be outdates and therefore inaccurate • Data might not be relevant • Data might be biased.

Quantitative research: based on larger samples and is therefore more statistically valid

The results of quantitative research will generally be in numerical form – for example:

- 70% of potential customers use the internet to buy their hotel accommodation in Dorset.
- 3 out of 5 customers will buy a new food product after being offered a free in-store sample.
- The main methods of obtaining quantitative data are the various forms of survey – i.e. telephone, postal, face-to-face and online.

Component 1C

External factors which may impact an enterprise might be:

- Cost of energy (variable costs) – Gas, Electricity, Oil
- The cost of raw materials – producing the product.
- The cost of borrowing money – Paying interest.
- Rent on a premises – if rent goes up.

MARKETING (External factor)
- Marketing costs a lot of time and money and these costs can also fluctuate.

SELLING COSTS (External factor)
- When selling the enterprise must consider wages, packaging the goods and delivering the goods.

GOVERNMENT REGULATIONS
- Costs can also rise when governments make changes such as to wages, taxation and pensions.

What are common aims of SMEs?

- Survival
- Breaking even
- Making a profit
- Meeting customer needs

Reasons for SME success?

Hard work and effort
Determination
Resilience
Ability to develop and train staff
Ability to motivate staff
Providing a good service
Meeting and exceeding customer needs
Relevant skills and experience

Customer satisfaction: Measuring customer satisfaction is done by looking at whether the enterprise has a good reputation.
Survival: This means continuing to operate for a long time after the enterprise has started.
Making a living: If an entrepreneur is happy and conformable financially then they're a success.
Profit: This is the revenue left after all costs have been taken away.

Customer satisfaction: Has the enterprise established a good reputation.

S	**Strengths of an enterprise** • They might keep customers satisfied. • They might offer a good quality service.
W	**Weaknesses of an enterprise** • Staff members might lack training. • Their improvement plan might not be effective.
O	**Opportunities the enterprise might want to exploit** • These are different for each enterprise depending on what their strengths and weaknesses are.
T	**Threats on an enterprise** Anything which might prevent success :Changes in tastes New competitors entering the market

Understanding the market	• Who are the competition? • What makes our product unique?
Satisfying customers	• What is the quality of the product? • How is the product priced?
Planning / Financing	• How / When can orders be taken? Online? In person?
Marketing and promoting	• Are budgets getting used effectively? Do we advertise?
HR Costs	• Examples: Advertising for a new role/ cover/training.

Political	**E**conomic	**S**ocial	**T**echnological
Legislation New party in power Effect of wars, tax, environment	Employment levels Exchange rates (import / exports) Wage levels	Fashion Trends Ethical Issues	Developments in computing Mobile device developments

Revenue is how much an enterprise earns from selling its goods and services.

Factors that impact on REVENUE

Competitors
What are competitors doing which might impact your revenue?
What new enterprises are coming into your market?
How can you attract customers or encourage repeat purchase?

Consumer Confidence
This means how much confidence consumers have in the economy.
- If the economy is growing peoples jobs will be safe and they'll spend.
- If the economy is in recession people will be uncertain.

Consumer behaviour
Consumer tastes have an impact on revenue - this creates a social pressure on enterprises to change their product portfolio.

Consumer legislation
Things which enterprises sells are: Banned – they become illegal
T&Cs change – for example how goods can be packages/promoted

Resource Management

Food	Water	Energy
Without enough nutritious food, people can become **malnourished**. This can make them ill. This can prevent people working or receiving education.	People need a supply of **clean and safe water** for drinking, cooking and washing. Water is also needed for food, clothes and other products.	A good supply of energy is needed for a basic standard of living. People need **light and heat** for cooking or to stay warm. It is also needed for industry.

Food in the UK

The UK imports about 40% of its food. This increases people's **carbon footprint**. There is growing demand for greater choice of **exotic foods** needed all year round. Foods from abroad are more affordable. Many food types are unsuitable to be grown in the UK.
Agribusiness - Farming is being treated like a large industrial business. This is increasing food production.
Sustainable Foods - Organic foods that have little impact on the environment and are healthier have been rising. Local food sourcing is also rising in popularity.

Water in the UK

The average water used per household has risen by 70%. This growing demand is predicted to increase by 5% by 2020.
Deficit and Surplus - The north and west have a water surplus (more water than is required). The south and east have a water deficit (more water needed than is actually available). More than half of England is experiencing water stress (where demand exceeds supply).
Water Transfer - involves moving water through pipes from areas of surplus (Wales) to areas of deficit (London).

Energy in the UK

The UK consumes less energy than compared to the 1970's despite a smaller population. This is due to the decline of industry. The majority of UK's energy mix comes from fossil fuels. By 2020, the UK aims for 15% of its energy to come from renewable sources.

Keyword	Definition
Agribusiness	**Farming is being treated like a large industrial business. This is increasing food production.** + Intensive farming maximises the amount of food produced. + Using machinery which increases the farms efficiency. - Only employs a small number of workers. - Chemicals used on farms damages the habitats and wildlife.
Sustainable Foods	**Organic foods that have little impact on the environment and are healthier have been rising.** **Local food sourcing is also rising in popularity.** • **Reduces emissions** by only eating food from the UK. • **Buying locally sourced** food supports local shops and farms. • A third of people **grow their own food**.
Carbon footprint	A measurement of all the greenhouse gases we individually produce
Food miles	The distance covered supplying food to consumers
Energy mix	The range of energy sources of a region or country
Fossil fuels	A natural fuel formed in the geological past from the remains of living organisms
Surplus	When supply of a resource (such as food, water and energy) is higher than the demand. For example if you have a demand for 100 million litres of water but you have a supply of 500 million, you have a surplus of 400 million litres.
Deficit	When demand of a resource (such as food, water and energy) is higher than the supply. For example if you have a supply for 100 million litres of water but you have a demand of 500 million, you have a deficit (shortage) of 400 million litres.
Consumption	The act of using up resources or purchasing goods and produce.
Carry Capacity	A maximum number of species that can be supported.

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KNOWLEDGE ORGANISER

YEAR 10 TERM 2

GEOGRAPHY

Physical Landscapes in the UK

Key Definitions:

Abrasion: an area damaged by scraping or wearing away.

Attrition: The particles are knocked about as they are transported, and they gradually become more rounded and reduced in size.

Erosion: the process of eroding or being eroded by wind, water, or other natural agents.

Freeze-Thaw Weathering: water enters the cracks during the warmer day and freezes during the colder night. As the water turns into ice it expands and exerts pressure on the surrounding rock.

Hard engineering - Management strategies which involve major construction work, they are often obtrusive.

Hydraulic Action: The sheer force of the water by itself can erode material.

Mechanical Weathering: the process that breaks rocks apart without changing their chemical composition.

Saltation: material bounced along the bed of the river.

Soft engineering - Management strategies which work with the natural coastal processes

Solution: some rocks such as limestone are subject to chemical attack and slowly dissolve in the water.

Traction: the rolling or sliding of particles along a stream bed by running water, over the ground surface by wind, or on a beach by waves and currents.

River Landforms

Stage	Main activity	Main features
Upper course (steep gradient)	Vertical (downward) erosion	Source, tributaries, V-shaped valley, interlocking spurs, waterfalls, rapids, gorges
Middle course (gentle gradient)	Lateral (sideways) erosion starts, transportation	River beaches (slip-off slopes), meanders, river cliffs
Lower course (very low gradient)	Deposition	Floodplains, levées, delta,

Coastal Landforms

Type	Main landforms
Erosional Landforms	Cliffs, wave-cut platforms, headlands, bays, cracks, caves, arches, stacks and stumps.
Depositional Landforms	Beaches, spits, tombolos,

Case Studies

Rivers	Banbury Floods It has a history of large floods that have shut down the town's railway station and local roads. In 1998 the cost of the flood was £12.5 million and 150 homes and business have been affected. £18.5 million has been spent on the flood alleviation scheme.
Coasts	Holderness Coast The Holderness Coastline is one of Europe's fastest eroding at an average annual rate of around 2 metres per year. This is around 2 million tonnes of material every year. Approximately 3 miles (5kms) of land has been lost since Roman times including 23 towns/villages.

Urban Issues and Challenges

Key terms:

Brownfield site: Land that has been used, abandoned and now awaits some new use.
Greenfield site : A plot of land, often in a rural or on the edge of an urban area that has not yet been subject to any building development.
Inequalities: Differences between poverty and wealth, as well as in people's' wellbeing and access to things like jobs, housing and education.
Integrated transport systems: When different transport methods connect together, making journeys smoother and therefore public transport more appealing.
Rural-urban fringe: A zone of transition between the built-up area and the countryside, where there is often competition for land use. It is a zone of mixed land uses, from out of town shopping centres and golf courses to farmland and motorways.
Sanitation: Measures designed to protect public health, including the provision of clean water and the disposal of sewage and waste.
Social deprivation: The degree to which an individual or an area is deprived of services, decent housing, adequate income and local employment.
Squatter settlement: An area of poor-quality housing, lacking in amenities such as water supply, sewerage and electricity, which often develops spontaneously and illegally in a city in an LIC.
Sustainable urban living: A sustainable city is one in which there is minimal damage to the environment, the economic base is sound with resources allocated fairly and jobs secure. Sustainable urban living includes several aims including the use of renewable resources, energy efficiency, use of public transport, accessible resources and services.
Urban greening: The process of increasing and preserving open space such as public parks and gardens in urban areas.
Urbanisation: The process by which an increasing percentage of a country's population comes to live in towns and cities.
Urban regeneration: The revival of old parts of the built-up area by either installing modern facilities in old buildings (known as renewal) or opting for redevelopment (ie demolishing existing buildings and starting afresh).
Urban sprawl: The unplanned growth of urban areas into the surrounding countryside.

NEE Case Study: Rio De Janeiro
Social Opportunities: Cultural diversity, Education, Community and Culture.
Economic Opportunities: Industry, tourism and sport.
Environmental Opportunities: Beaches and urban forests.
Social Challenges: Migration, Housing, Transport, Education, Healthcare, Crime.
Economic Challenges: Poverty, Job opportunities (informal job sector).
Environmental Challenges: Urban Sprawl, Pollution, Waste Disposal.
Favela Bairro Project: In the 1990s, the Favela Bairro Project was set up to help improve life in the favelas. This work has been carried out with government funding to provide facilities like electricity, sewage systems, rubbish collection and public transport.

UK Case Study: Bristol
Social Opportunities: St Paul's Carnival, construction of bars/clubs/museums
Economic Opportunities: Investment from high-tech firms, building of shopping centres,
Environmental Opportunities: Urban Greening, gentrification of brownfield sites.
Social Challenges: Housing shortages, social inequality, social exclusion.
Economic Challenges: Low-skilled jobs are harder to access. Services being moved away from the inner-city impacts the most deprived.
Environmental Challenges: Dereliction, waste and pollution, urban sprawl.
Bristol is one of the UK's ten core cities and is considered to be of major importance to the economy and development of the UK.

Sustainable City: Freiburg
Freiburg is in west Germany. The city has a population of about 220,000. In 1970 it set the goal of focusing on social, economic and environmental sustainability.
The city's waste water allows for rainwater to be retained.
The use of sustainable energy such as solar and wind is becoming more important. Freiburg is a world leading city in the development of solar panels and the associated industries. Over 10000 people are employed in this sector by 1500 different companies.
40% of the city is forested with many open spaces, clean air and reducing flood risk.

Freiburg: Transport
The city has an integrated traffic plan (ITP) which is updated every 10 years. The most important part of Freiburg's ITP is the tram network. This provides cheap, efficient and accessible public transport.
Compared with other German cities, Freiberg has a low car density.
400 km of cycle paths with 9000 bike parking spaces including "Bike and Ride" facilities at railway stations.
Restrictions on car parking spaces (each one costs £20,000)
As a result of Freiburg's transport plan (ITP), tram journeys have increased by over 25,000 in one year, while car journeys have decreased by nearly 30,000.
70% of the population live within 500m of a tram stop.

Human Lifespan Development

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

P.I.E.S.

Physical - Physical growth, muscles, strength, balance, co-ordination, illness, health.
Intellectual - Development of thinking and language skills, brain development.
Emotional - Development of feelings, emotions, sense of self and understanding of others.
Social - Forming relationships, socialising and communicating with others.

Factors Affecting Growth and Development

Physical Factors - Inherited conditions / experience of illness and disease / mental ill health / physical ill health / disabilities / sensory impairments.
Lifestyle Factors - Nutrition / physical activity / smoking / alcohol / substance misuse.
Emotional Factors - Fear / anxiety and worry / upset and sadness / grief and bereavement / happiness and contentment / security / attachment.
Social Factors - Supportive and unsupportive relationships with others / social inclusion and exclusion / bullying / discrimination.
Cultural Factors - Religion / gender roles and expectations / gender identity / sexual orientation / community participation / race
Environmental Factors - Housing needs, conditions, location / home environment – living with a high level of parental conflict, experiences of abuse and neglect / exposure to pollution – air, noise and light.
Economic Factors - Employment situation / financial resources – income, inheritance, savings.

Life Stages

Infancy (birth to 2 years): ***Physical:*** rapid physical growth of weight and height, development of gross and fine motor skills, same pattern of growth and development but at different rates. ***Intellectual***: rapid development of language and thinking skills such as memory/recall. ***Emotional:*** attachments are formed, emotional wellbeing is based on bonding/attachment, security and contentment. ***Social:*** strong dependence on adults/carers, socialisation through family, engage in solitary play.

Early childhood (3–8 years):*Physical:* continued growth of weight and height, mastery of gross and fine motor skills. ***Intellectual:*** increased curiosity, language fluency develops, strong grasp of memory/recall. ***Emotional:*** increased independence, wider range of relationships are formed,emotional wellbeing is based on attachment, security and contentment. ***Social:*** social circle widens and close friendships are formed, socialisation continues through family, friends and carers, social play develops.

Adolescence (9–18 years): ***Physical:*** puberty, differences between males and females, primary and secondary sexual characteristics. ***Intellectual:*** complex and abstract thinking develops. ***Emotional:*** independence increases further, more freedom to make own decisions, concerns over self-image and self-esteem may increase, wellbeing is based on attachment, security and contentment. ***Social:*** wide range of formal/informal relationships develop and have influence, intimate relationships are formed.

Early adulthood (19–45 years): ***Physical:*** peak physical fitness, full height reached, sexual maturity reached, women at their most fertile. ***Intellectual:*** mastery of abstract and creative thinking, careers become important, may return to education. ***Emotional:*** independent living and control over own lives. ***Social:*** intimate and long-lasting relationships are formed.

Middle adulthood (46–65 years): ***Physical:*** end of this life stage the ageing process begins, menopause for women. ***Intellectual:*** use knowledge and experience for decision making, may retire. ***Emotional:*** experience changes in self-image and self-esteem linked to retirement or ageing. ***Social:*** may have more time to socialise.

Later adulthood (65+ years): ***Physical:*** ageing process continues, decline in strength and fitness, loss of mobility, loss of muscle tone and skin elasticity. ***Intellectual:*** may experience decline in cognitive ability such as loss of memory/recall. ***Emotional:*** may start to become more dependent on others, emotional wellbeing is based on attachment, security and contentment. ***Social:*** may experience bereavement and reduction of social circle.

Life Events

Learning outcome B: Understand how individuals deal with life events.

Different Types of Life Event

Health and wellbeing
- Accident/injury.
- Physical illness.
- Mental and emotional health and wellbeing.

Relationship changes
- Entering into relationships.
- Marriage, civil partnership, long-term relationship.
- Divorce, separation for non-married couples.
- Parenthood.
- Bereavement.

Life circumstances
- Moving house, school or job.
- Exclusion from education.
- Redundancy.
- Imprisonment.
- Changes to standards of living.
- Retirement.

Circumstance - A situation which a person may find themselves in.
Adapt - Getting used to a change, making adjustments.
Informal (Support) - Casual, relaxed, family or friend.
Formal (Support) - Offered by professionals such as GPs.

Coping with Change Caused by Life Events

When an individual experiences a life event, they may adapt easily or they may require support to help them. People who experience the same life event can have two different ways of coping and adapting.

The character traits that influence how individuals cope
- Resilience.
- Self-esteem.
- Emotional intelligence.
- Disposition – a person's character traits, e.g. positive, negative.

The sources of support that can help individuals adapt
- Family, friends, neighbours, partners.
- Professional carers and services.
- Community groups, voluntary and faith-based organisations.
- Multi-agency working, e.g. social services working with mental health trust, children's services working with the justice system.
- Multidisciplinary working, e.g. a health visitor working with a GP, psychiatric nurse with an occupational therapist.

The types of support that can help individuals adapt:
- Emotional support.
- Information, advice, endorsed apps.
- Practical help – financial assistance, support with childcare, domestic chores, transport.

Types of Support

Effective support is not about making decisions for people. It is about giving them the confidence they need to adapt using support to help them.

Informal support is given by partners, family and friends and is often the first level of support that a person receives. Informal support is usually given alongside formal support. Informal support can help with:
- Reassurance.
- Encouragement.
- Advice.
- A sense of security.
- Someone to talk through options.
- Practical help.

In some situations people may need **formal support**. This is provided by professionals who have skills and experience to understand and support each person's needs. Formal support can include:
- Statutory care services:provided by the state.
- Private care services: privately funded.
- Charitable organisations: non-profit making.

Health and Social Care Services and Barriers

Learning outcome A: Understand the different types of health and social care services and barriers to accessing them.

Healthcare Services

Health conditions

- Arthritis.
- Cardiovascular conditions.
- Diabetes (type 2).
- Dementia.
- Obesity.
- Respiratory conditions.
- Additional needs – sensory impairments, physical impairments, learning disability.

Health services

- Primary care – GP surgeries, dental care, out-of-hours services, telephone services, accident and emergency department.
- Secondary care – specialist medical care to include rheumatology, respiratory medicine, cardiology, endocrinology.
- Tertiary care – specialist medical care to include oncology, transplant services.
- Allied health professions – physiotherapy, speech and language therapy, occupational therapy, dietetics.
- Multidisciplinary team working – how services work together, including referrals between services.

Social care Services

Social care – help with day-to-day living because of illness, vulnerability or disability.

Social care services

- Services for children and young people – foster care, residential care, youth work.
- Services for adults or children with specific needs (learning disabilities, sensory impairments, long-term health issues) – residential care, respite care, domiciliary care.
- Services for older adults – residential care, domiciliary care.

Additional care

- Informal care – given by relatives, friends, neighbours, partners.
- Voluntary care – community groups and faith-based organisations, charities.

Barriers to Accessing Services

Barriers: something unique to the health and social care system that prevents an individual to access a service.

Physical barriers – issues getting into and around the facilities.
Ways to overcome: ramps, wider doorways, accessible toilets/rooms, stair lifts, hoists.
Barriers to people with sensory disability – hearing and visual difficulties.
Ways to overcome: hearing loops, British Sign Language, communication cards, large print, braille.
Barriers to people with different social and cultural backgrounds – lack of awareness, differing cultural beliefs, social stigma, fear of loss of independence.
Ways to overcome: awareness campaigns, posters and leaflets, clinics, choice of service provider, community and faith groups.
Barriers to people that speak English as an additional language or those who have language or speech impairments
Ways to overcome: literature in other languages, interpretation services, longer appointments, use of advocates, staff training and awareness of common speech and language difficulties.
Geographical barriers – distance of service provider, poor transport links.
Ways to overcome: local community transport schemes, home / community visits, community clinics, telehealth schemes.
Text barriers to people with learning disabilities
Ways to overcome: use of advocates, use of Learning Disability Nurses and support workers, ‘Quiet Clinics’, quiet waiting areas, longer appointment times, communication cards, ‘easy read’ texts.
Financial barriers – charging for services, cost of transport, loss of income while accessing services.
Ways to overcome: NHS exemption certificates, Low Income Scheme, NHS vouchers, NHS Healthcare Travel Costs, charitable schemes such as community transport.

Crime and Punishment 1000-Modern Day

Medieval (1000-1500)	Early Modern (1500-1700)	Industrial Revolution (1700-1900)	Modern (1900-present day)
Theft usually small items **Drinking in public** **Not attending Church** is a crime as people are very religious **Forest Laws** stop hunting in King's forests	**Witchcraft** usually women targeted **Poaching** grows due to poverty **Vagrancy** increases as people move looking for work **Heresy** accusations increase due to religious turmoil	**Smuggling** increases to avoid tax, Hawkhurst gang **Tolpuddle martyrs** are punished for creating a union **Highway robbery** increases then declines	**Car crimes** increase due to new tech Drug smuggling **Race Relations Act** makes racism a crime **Conscientious Objectors** as people refuse to fight in WWI and WWII **Terrorism** such as IRA in 80s or ISIS
Wergild paid to victim **Mutilation** for repeat offenders **Corporal punishment** physical harm **Capital punishment** for most serious crimes **Murdrum fine** to protect Normans - payment to all Normans	**Transportation** to America **Hung, Drawn and Quartered** is new type of capital punishment **House of Correction** for vagabonds **Carting** through streets **Bloody Code** makes 200+ crimes punishable by death	**Transportation** to Australia **Bloody code is ended** as seen as ineffective as crime rates rise **Prison** becomes most common punishment **Separate system and silent system** attempt to make prisons more effective	**Community Service** an example of a non-custodial sentence **Death Penalty is ended** **Borstals** for Young offenders, they were closed in 1980s **Youth Detention Centre** for young offenders, provided military like regime for a "Short, Sharp, Shock"
Hue and cry local people catch thieves **Tithing** group of 12 each responsible for others **Trial by local jury** to decide guilt **Sanctuary** allows accused to hide in church for 40 days **Benefit of clergy** to avoid death penalty **Church courts** for clergyman **Trial by ordeal** to allow God to decide guilt, ended in 1215 **Trial by combat** added to trial by ordeal by Normans **Sherriff** to work across a county catching criminals **Coroner** to investigate suspicious deaths	**Justices of the Peace** usually a lord can hand out fines **Habeas Corpus** gives right to fair trial **Manor Court** for less serious crimes **County Assize** for serious crimes royal judge **Town Watchmen** to help stop crime in growing towns **Rewards** causes a growth in thief takers	**Customs officer** to catch smugglers but few of them **The Bow Street Runners** set up by Fielding brothers act as a local law enforcement and inspire creation of police **The Metropolitan police force** set up in 1829 to tackle rising crime in cities	**National police force** with more officers and women involved **New technology** like ANPR, PNC, DNA, CCTV help police to catch criminals **Community Support Officer** to help provide greater numbers in police force **Youth Court** for young criminals **Parole** lets people out of prison earlier for good behaviour
Henry II shows balance between power of King and Church **Local community** v important to law enforcement **William the Conqueror** takes over England and introduces new laws	**Matthew Hopkins** witchfinder general 200 people killed **Guy Fawkes** a Catholic executed for treason / heresy **Religious turmoil** between Catholics and Protestants **Printing press** pamphlets made spreading fear of crime	**Robert Peel** creates police and ends Bloody Code **Elizabeth Fry and John Howard** campaign for prison reform **The Enlightenment** makes people want to rehabilitate **Growth of cities** makes crime rates increase	**Roy Jenkins** ends capital punishment **Derek Bentley** wrongly executed for murder **Liberal attitudes** make people want to rehabilitate even more **Immigration** to UK increases after WWII

Whitechapel 1870-1900

Key Individuals

George Peabody funded 11 blocks of flats affordable housing in East End

Charles Booth found that 35.7% of population lived in poverty in the East End

Jack the Ripper name given to individual thought to have killed at least 5 women

Charles Warren MET Commissioner who oversaw police force as reputation declined. Blamed for not catching Jack the Ripper

George Luske founder of the Whitechapel vigilance committee, set up local people trying to catch Jack the Ripper

Problems in Policing Whitechapel for H Division

- **The environment** – dark and narrow alleyways
- **Alcohol –** pubs sold strong alcohol cheaply. This often fueled violence and became an addiction
- **Prostitution** – some women had to turn to prostitution to survive. They were vulnerable to violence and abuse
- **Gangs** – professional gangs of thieves and pickpockets. Well trained in stealing and committing crime often.
- **Poverty** – High levels of poverty meant that people turned to crime in order to feed their families
- **Lodging Houses** – temporary accommodation meant people had no fixed address
- **Vigilance Committee**– disrupted police investigations

The Media

- They caused problems for the police as media coverage encouraged people to come forward with information, but it attracted hoax letters and false theories on the identity of the killer.
- It stirred up racial hatred, leading to violence
- It added to the pressure on the Police by criticizing the investigation.

Attitudes Towards the Police

- Attitudes varied. The police still had some people's trust.
- Many working class people felt that the police were against them and only worked for middle and upper classes.
- Failure to catch Jack the Ripper made them less popular
- Trial of the Detectives associated them with corruption

Problems Catching Jack the Ripper

- **Bloodhounds-** they would often pick up the wrong scent, potentially of one of the women's customers
- **Sketches-** many people at the time were drunk making the sketches unreliable
- **Racism/xenophobia-** witnesses gave false accounts believing Jack the Ripper to be Jewish due to negative attitudes towards immigrants
- **Communication-** The different parts of the police force (H division Vs City of London) refused to work together effectively and did not share evidence

Key Words

Anarchism - belief in the abolition of all government

Socialism - public or collective ownership

Rookeries - densely populated, low-quality housing

Lodging Houses - cheap accommodation

Brothels - a place where people engage in sexual activity with prostitutes

Workhouse - those unable to support themselves were offered accommodation and employment

Fenian – fighting for Irish independence

Anti-Semitism – hatred/prejudice of Jews

Beat – patrolling a set route of streets

Poor Relief - financial assistance given to the poor

H Division – policed the area of Whitechapel

Sweatshops - a factory or workshop, especially in the clothing industry

Dear Boss - Letter sent to the Police thought written by Jack the Ripper

Weimar and Nazi Germany 1919-1939

1. Origins (1918-1919)

1.Armistice - November 1919
2,Kaiser abdicates - November 1919
3."German Revolution"
4.New constitution
5.Very democratic
6.Reichstag, Chancellor, President
7.Proportional Representation and Article 48
8.Coalition governments

2. Early challenges (1919-23)

9.Treaty of Versailles 1919
10.Blame - Article 231 War Guilt
11.Reparations - £6.60 billion
12.Army reduced to 100,000
13.Territory removed e.g. colonies
14.Spartacist Uprising 1919
e.g. Rosa Luxembourg / Communist
15.Kapp Putsch 1920 (failed, just!)
e.g. Right-wing nationalists
16.Freikorps - ex soldiers
17.French invasion of the Ruhr 1923
18.Hyperinflation 1923

3. "Golden Years" (1924-1928)

19.Gustav Stresemann - Foreign Min
20.Rentenmark
21.Dawes Plan - loans from USA
22.Young Plan - reduced debt 20%
23.Locarno Pact - respect borders
24.Kellogg Briand Pact - 64 countries
25.League of Nations - 1925
26."Dancing on a volcano"
27.Cabaret, Bauhaus, art, culture
28.Freedom for women
29.Rising living standards

4. Early Nazi Party (1919-23)

30.Founded 1919
21.German Workers Party- DAP
22.Hitler joined 1920 (NSDAP)
23.Made up of ex-soldiers
24.Nationalist, racist ideology
25.Anti-communist, anti-semitic
26.Anti-democratic
27.25 Point Programme
28.Munich, Bavaria
29.Munich Putsch 1923
30.Prison - Mein Kampf

5. Nazi Lean Years (1924-1928)

31.1926 Bamburg Conference
32.Hitler takes back control
33.New strategy: win elections
34.Goebbels - propaganda
35.Hitler Youth created
36.Nazi Women's League created
37.Limited votes - 1928 - 2.8%

6. Nazi Growth (1929-33)

38.Wall Street Crash - 1929
39.6 million unemployed by 1933
40.17 million people on the dole
41.Nazis biggest party by 1932
42.Communists grew - helps Nazis
43.Propaganda "work and bread"
44.Hitler's speeches - charismatic
45.Political breakdown
46.Von Bruning - "Hunger Chancellor"
47.Von Papen - schemed with Hitler
48.President Hindenburg is persuaded
49.Hitler Chancellor Jan 1933

7. Creating a dictatorship (1933-1934)

50.Reichstag Fire - Feb 1933
51.Removing the Communists
52.Enabling Act - Mar 1933
53.Banning political parties 1933
54.Banning trade unions 1933
55.Censoring the press 1933
56.Night of the Long Knives 1934
57.Ernst Rohm executed
58.Death of Hindenburg
59.Oath of Army
60.Catholic Church - Concordat 1933
61.Nazi Reich Church 1936
62.Legal system: "People's Courts"

8.Nazi Control (1933-39)

63.SS - Heinrich Himmler
64.Concentration Camps (Dachau)
65.SD - Intelligence Service
66.Gestapo and informants
67.Persecution of political opponents
68.Propaganda - Goebbels
69.Mass rallies
70.Art, books, cinema
71.Film: "The Eternal Jew"
72.Berlin Olympics 1936

9. Opposition (was limited)

73.Edelweiss Pirates
74.Swing Youth
75.Martin Niemoller
76.Confessional Church
77.Limited strong opposition
78.Assassination attempt e.g,
79.George Elser 1939

10. Life in Nazi Germany: Women and young people

80.3 Ks - Kinder, Kuche, Kirche
81.Traditional role for women
82. Motherhood Cross
83. Marriage Loans
84. Lebensborn programme
85. Aryan women celebrated
86. Hitler Youth
87. League of German Maidens
88. School curriculum e.g. Eugenics, History books changed.

11. Life in Nazi Germany: Employment

89.National Labour Service (RAD)
90.Public Works e.g. autobahns
91."Invisible" unemployment
92.Conscription
93.Rearmament
94.Women back to work 1938
95.Strength Through Joy

12. Life in Nazi Germany: Persecution of minorities

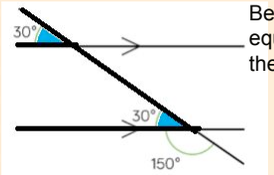
Anti-Semitism
99. Boycott of shops 1933
100. Nuremberg Laws 1935
101. Removal of citizenship
102. Marriage restrictions
103. Kristallnacht Nov 1938
104. Synagogues destroyed
105.Other groups:
Mentally/physically disabled - euthanasia programme
106.Gypsies, homosexuals, Jehovas Witnesses

Similarity

Enlarge	To make a shape bigger (or smaller) by a given multiplier (scale factor)	**Constant**	A value that remains the same
Scale Factor	The multiplier of enlargement	**Cosine ratio**	The ratio of the length of the adjacent side to that of the hypotenuse. The sine of the complement.
Centre of enlargement	Centre of enlargement: the point the shape is enlarged from	**Sine ratio**	The ratio of the length of the opposite side to that of the hypotenuse.
Similar	When one shape can become another with a reflection, rotation, enlargement or translation.	**Tangent ratio**	The ratio of the length of the opposite side to that of the adjacent side.
Congruent	The same size and shape	**Inverse**	Function that has the opposite effect.
Corresponding	Items that appear in the same place in two similar situations	**Hypotenuse**	Longest side of a right-angled triangle. It is the side opposite the right-angle.

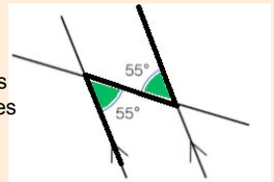
Angles in parallel lines

Alternate angles



Because alternate angles are equal the highlighted angles are the same size

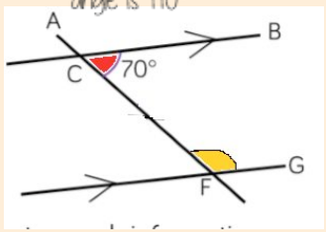
Corresponding angles



Because corresponding angles are equal the highlighted angles are the same size

Co-interior angles

Because co-interior angles have a sum of 180° the highlighted angle is 110°

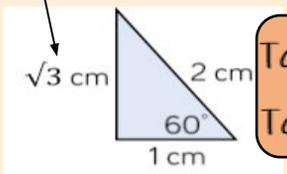


Os angles on a line add up to 180° co-interior angles can also be calculated from applying alternate/ corresponding rules first

Key angles

Because trig ratios remain the same for similar shapes you can generalise from the following statements.

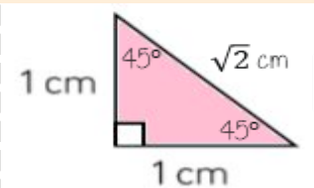
This side could be calculated using Pythagoras



$\tan 30 = \frac{1}{\sqrt{3}}$ $\tan 60 = \sqrt{3}$

$\cos 30 = \frac{\sqrt{3}}{2}$ $\cos 60 = \frac{1}{2}$

$\sin 30 = \frac{1}{2}$ $\sin 60 = \frac{\sqrt{3}}{2}$



$\tan 45 = 1$

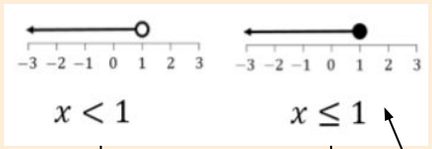
$\cos 45 = \frac{1}{\sqrt{2}}$

$\sin 45 = \frac{1}{\sqrt{2}}$

Developing Algebra

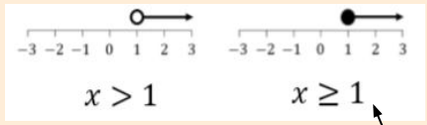
Solution	A value we can put in place of a variable that makes the equation true	**Variable**	A symbol for a number we don't know yet
Equation	An equation says that two things are equal - it will have an equals sign =	**Expression**	Numbers, symbols and operators grouped together to show the value of something
Identity	An equation where both sides have variables the cause the same answers	**Linear**	An equation or function that is the equation of a straight line
Intersection	The point that two or more lines meet	**Inequality**	An inequality compares two values showing if one is greater than, less than or equal to.
Substitute	Replace a variable with a numerical value	**LCM**	Lowest common multiple (the first time the multiples of two or more numbers match)
Eliminate	To remove a variable from a question	**Coordinate**	A set of values that show an exact position

Solutions on a number line



Both represent values less than 1

Includes the value 1



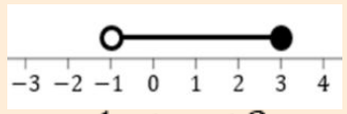
Both represent values more than 1

Includes the value 1

Includes the value it sits above

Does NOT include the value it sits above

Values less than or equal to 3 but also more than -1



$-1 < x \leq 3$

This includes the integer values 0,1,2,3

Geometry

Cardinal directions	The directions of North, South, East and West	**Angle**	The amount of turn between two lines around their common point
Bearing	The angle in degrees measured clockwise from North	**Perpendicular**	Where two lines meet at 90 degrees
Parallel	Straight lines always the same distance apart and never touch. They have the same gradient.	**Clockwise**	Moving in the direction of the hands of a clock
Construct	To draw accurately using a compass, protractor and a ruler or straight edge.	**Scale**	The ratio of the length of a drawing to the length of the real thing
Protractor	An instrument used in measuring or drawing angles	**Compass**	An instrument used to draw curved lines and circles
Circumference	The length around the outside of the circle – the perimeter	**Area**	The size of the 2D surface
Diameter	The distance from one side of a circle to another through the centre	**Radius**	The distance from the centre to the circumference of the circle
Tangent	A straight line that touches the circumference of a circle	**Chord**	A line segment connecting two points on the curve
Frustrum	A pyramid or cone with the top cut off	**Hemisphere**	Half a sphere
Surface area	The total area of the surface of a 3D shape.	**Direction**	The line our course something is going
Magnitude	The magnitude of a vector is its length	**Scalar**	A single number used to represent the multiplier when working with vectors
Column Vector	A matrix of one column describing the movement from a point	**Resultant**	The vector that is the sum of two or more other vectors

Sector area = $\frac{\theta}{360} \times$ area of circle

Volume Cylinder = $\pi r^2 h$

Arc length = $\frac{\theta}{360} \times$ circumference

Volume Sphere = $\frac{4}{3}\pi r^3$

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

Proportions and proportional change

Ratio	A statement of how two numbers compare	**Equivalent**	Of equal value
Proportion	A statement that links two ratios	**Integer**	Whole number, can be positive, negative or zero.
Fraction	Represents how many parts of a whole.	**Denominator**	The number below the line on a fraction. The number represent the total number of parts.
Numerator	The number above the line on a fraction. The top number. Represents how many parts are taken	**Origin**	(0,0) on a graph. The point the two axes cross
Gradient	**T**he steepness of a line	**Multiplier**	The number you are multiplying by
Exponent	**H**ow many times we use a number in multiplication. It is written as a power	**Compound interest**	Calculating interest on both the amount plus previous interest
Depreciation	A decrease in the value of something over time.	**Growth**	Where a value increases in proportion to its current value such as doubling.
Decay	The process of reducing an amount by a consistent percentage rate over time.	**Event**	One or more outcomes from an experiment
Outcome	The result of an experiment.	**Intersection**	Elements (parts) that are common to both sets **Union:** the combination of elements in two sets.
Union	The combination of elements in two sets.	**Expected value**	The value/ outcome that a prediction would suggest you will get
Universal set	The set that has all the elements	**Systematic**	Ordering values or outcomes with a strategy and sequence

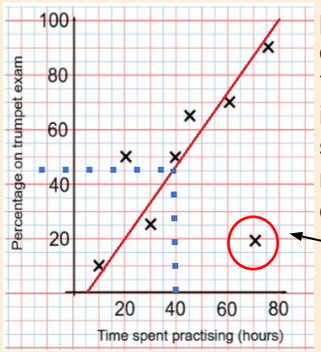
Collecting, representing and interpreting data

Population	**T**he whole group that is being studied	**Sample**	A selection taken from the population that will let you find out information about the larger group
Representative	A sample group that accurately represents the population	**Random Sample**	A group completely chosen by change. No predictability to who it will include.
Bias	A built-in error that makes all values wrong by a certain amount	**Primary Data**	Data collected from an original source for a purpose.
Secondary Data	Data taken from an external location. Not collected directly.	**Outlier**	A value that stands apart from the data set
Mean	A measure of average to find the central tendency… a typical value that represents the data (add all the values and then divide by the number of items)	**Median**	The value in the center (in the middle) of the data
Mode	This is the number OR the item that occurs the most (it does not have to be numerical)	**Range**	The gap between the highest and lowest values in the data set

Using a line of best fit

Interpolation is using the line of best fit to estimate values inside our data point.

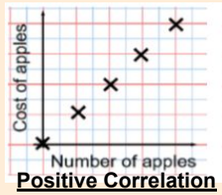
e.g. 40 hours revising predicts a percentage of 45.



Extrapolation is where we use our line of best fit to predict information outside of our data.
This is not always useful – in this example you cannot score more that 100%. So revising for longer can not be estimated

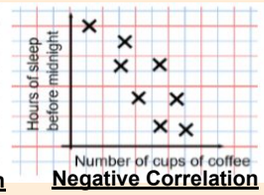
This point is an "**outlier**" It is an outlier because it doesn't fit this model and stands apart from the data

Linear Correlation



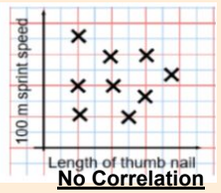
Positive Correlation

As one variable increases so does the other variable



Negative Correlation

As one variable increases the other variable decreases



No Correlation

There is no relationship between the two variables

Using number

Truncate	To shorten, to shorten a number (no rounding), to shorten a shape (remove a part of the shape)	**Round**	Making a number simpler, but keeping its place value close the what it originally was
Credit	Money that goes into a bank account	**Debit**	Money that leaves a bank account
Profit	The amount of money after income - costs	**Tax**	Money that the government collects based on income, sales and other activities.
Balance	The amount of money in a bank account	**Overestimate**	Rounding up – gives a solution higher than the actual value
Underestimate	Rounding down – gives a solution lower than the actual value	**Factor**	numbers we multiply together to make another number
Multiple	The result of multiplying a number by an integer.	**HCF**	Highest common factor. The biggest factor that numbers share.
LCM	Lowest common multiple. The first multiple numbers share.	**Arithmetic**	**A s**equence where the difference between the terms is constant
Geometric	A sequence where each term is found by multiplying the previous one by a fixed nonzero number	**Sequence**	lems or numbers put in a pre-decided order
Standard Form	**(Index) Form:** A system of writing very big or very small numbers	**Commutative**	an operation is commutative if changing the order does not change the result.
Base	The number that gets multiplied by a power	**Power**	The exponent – or the number that tells you how many times to use the number in multiplication
Exponent	The power – or the number that tells you how many times to use the number in multiplication	**Indices**	The power or the exponent.
Negative	A value below zero.	**Coefficient**	The number used to multiply a variable

$a^m \times a^n = a^{m+n}$

$a^m \div a^n = a^{m-n}$

$(x^a)^b = x^{ab}$

$x^0 = 1$

VISUAL IDENTITY

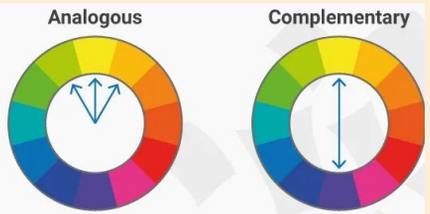
PURPOSES OF BRAND IDENTITY
RECOGNITION/FAMILIARITY
ESTABLISH A BRAND
DEVELOP AN IDENTITY
COMMUNICATE VISUALLY

BRAND POSITIONING
ECONOMY
MID RANGE
HIGH END

COLOUR THEORY

ANALOGOUS are three colours that would be next to each other on the colour wheel.
COMPLIMENTARY are two colours opposite to each other on the colour wheel
HUE is another word for colour.
SATURATION is the intensity of the colour or hue.

Examples
BLUE authority, trust, science. **GREEN** nature, calm, environment.
RED power, passion, courage. **YELLOW** optimism, youth, fresh.
BLACK mystery, sophisticated. **WHITE** purity, clean, innocent.



TYPOGRAPHY

SERIF SANS SERIF SCRIPT

SERIF	SANS SERIF	SCRIPT
Formal	Informal	Personal
Fancy	Casual	Handwritten
Traditional	Modern	Unique
Printed	Screen	

DOCUMENT	CONTENT
MIND MAPS & SPIDER DIAGRAMS	**Central node** (main theme) **Sub-nodes** (with branches) **Topics** (keywords) **Images** **Colour**
MOOD BOARDS	**Images** (photographs, graphics, logos) **Colours** (and scheme) **Text** (fonts, styles, quotes)
VISUALISATION DIAGRAMS	**Images** (sketches, graphics, logos, to scale) **Colours** (scheme) **Text** (fonts, style, text examples, titles, size, position) **Annotations** (to communicate ideas) **Dimensions** (to clarify use of graphic)

TARGET AUDIENCE

(must be specific)

- **Age Range** (e.g. 18-24)
- **Social Class** (see below)
- **Gender** (e.g. one, both)
- **Psychometrics** (e.g. Explorer)

ASSET TABLE

PROPERTIES
- File Type
- File Size
- Pixel Dimension
- Resolution
- Colour Space

SOURCE
- Name website not Google
- Self made

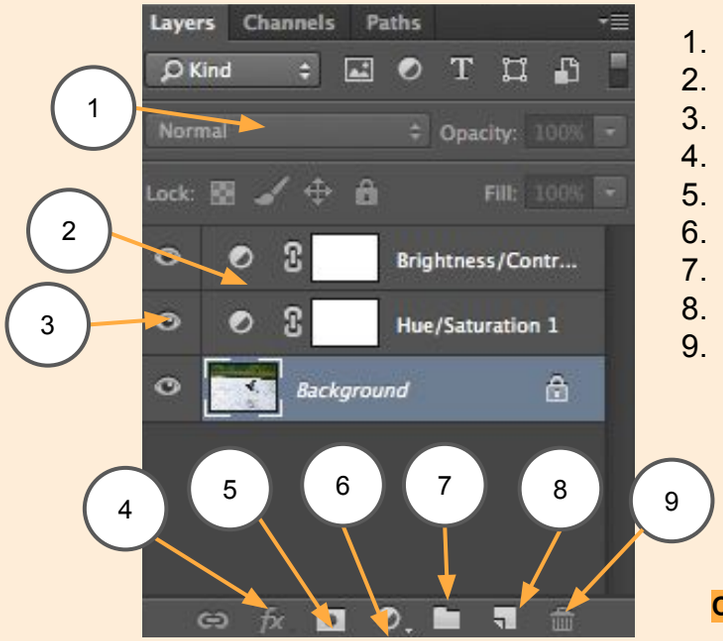
LEGAL
Copyright
- Protects creative works
  - Copying
  - Adapting
- Seek permission before use

Royalty
- Payments to use someone else's work

Stock Images/Graphics
- Allowed to use without needing to pay

USE
- Where will the asset be used?
  - Page
  - Location
- How it will it be used?
- What is the intended impact of the asset?
- How big/small will it be?

PHOTOSHOP



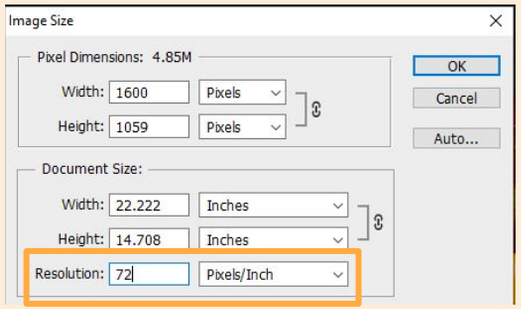
1. Blending Modes.
2. Layers
3. Toggle Hide Layer
4. Add effects to Text
5. Create a Mask
6. Add Adjustment Layer
7. Group layers into folders
8. Create New Layer
9. Delete Layer

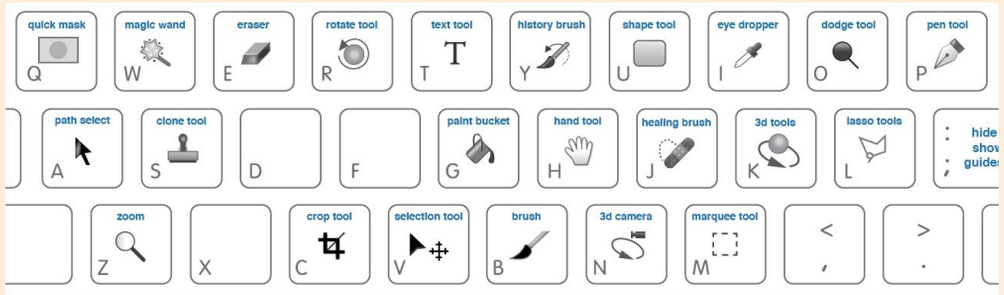
COMMON PHOTOSHOP SHORTCUTS

Screenshot CMD+SHIFT+4
CMD+T = Change Size
CMD+D = Deselect
CMD+0 = Fit to screen
CMD+ - = Zoom Out
CMD++ = Zoom In
[= Small Brush
] = Big Brush
Spacebar = Navigate

CHANGING RESOLUTION

Image > Image Size
72 PPI Screen 300 PPI Print





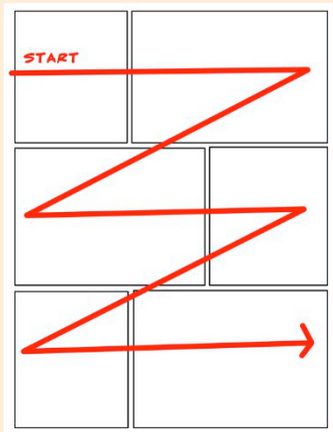
PPI /PIXELS PER INCH)	The measurement of **resolution**. The number of pixel that fit into an square inch.
RESOLUTION	The density of pixels in a square inch. **300ppi PRINT** **72ppi PRINT**
PIXEL	Tiny squares store image data. Many pixels bunched together create an image - like a mosaic.
PIXEL DIMENSION	The **number** of pixels (height x width).
COMPRESSION	Removing data to decrease the **file size**.
LOSSY COMPRESSION	**Loses data** in order to significantly reduce file size - most popular consumer file types.
LOSSLESS COMPRESSION	Keeps most data but **reduces file size**. Popular for high quality prosumer file types.
UNCOMPRESSED	**No compression** takes place; resulting in the maximum quality. Raw files used by producers.
VECTOR	Using math equations to create lines and shapes. Can be **scaled** with no loss in quality.
RASTER	An image built up of **pixels**.
ALPHA CHANNEL	**Transparency** within an image.

R095 Comics and Characters

Types of characters	Character conventions
Cartoon	Appeal to young people. Bold colours, outlines
Doodles	Quickly drawn, simple but well thought out
Photorealistic	Tend to be 3D realistic. Human characters
Minimalistic	Simplified shapes, less expression and detail
Protagonist	Main character, often the hero
Antagonist	Main character, often the villain
Proportions	Scale of body parts, creates style e.g. oversized heads
Tropes	Similar to stereotypes used in comics e.g superhero cape
Anthropomorphism	Applying human characteristics to nonhuman objects/animals
Manga	Large eyes to convey emotions, small mouth and nose, distinctive hairstyles and childlike appearance

SCRIPT	**Slugline** (INT / EXT Location Time) **Direction** (what happens in scene) **Character names** (centred) **Dialogue** between characters (centred) **Transition** (fade in/out, fade to black, wipe etc)
STORYBOARD	**Camera shots** (close up, mid, long) **Camera movement** (pan, tilt, zoom) **Camera angles** (over the shoulder, low / high angle) **Timings / durations**. **Location**. **Sound**. **Scene numbers**. **3 of the above in each box under the sketch.**

Narrative Terms	Definitions
Story Flow	The path of the story from beginning, middle and end
Panel	A container used to hold one scene
Focal Point	The place in the panel to draw audience's attention
Onomatopoeia	A word that sounds like the thing it is describing
Narration Captions	Captions to share information with the audience
Speech Bubbles	Convey the character's dialogue
Todorov	Linear narrative theorist
Exposition	The beginning of the story. Setting the scene
Climax	Peak of the action the story has been leading to



Theme 1: self & family

Je m'entend*s* avec	I get on well with
Je me dispute avec	I argue with
À l'avenir je ne veu*x* pas …me mari**er**	In the future I don't want… to get married
Quand j'étais petit(e)	When I was small
Demain nous allon*s* faire de l'équitation	Tomorrow we are going to do horse riding
Hier j'**ai** écout**é** de la musique sur mon ordinateur/portable	Yesterday I listened to music on my computer/mobile

Les Adjectifs de Personalité

Il est / elle est - he is/she is
Ils sont / elles sont - they are
Qui est /sont - who is/are

agaçan*t*(e) - annoying
aimable - likeable
bavar*d*(e) - talkative
égoïste - selfish
fidèle - loyal
for*t*(e) - strong
compréhensif(-ve) - understanding

méchan*t*(e) - nasty/mean
paresseu*x*(-euse) - lazy
sage - well behaved/wise
sensible - sensitive
têtu(e) - stubborn
travailleur(-euse) - hardworking

La Description Physique

j'**ai** le*s* cheveu*x* - I have… hair
j'**ai** le*s* yeu*x* - I have… eyes
cour*ts*, long*s*, mi-long*s* -short, long, medium length
raide*s* - straight

je porte des lunette*s* - I wear glasses

une moustache - a moustache
une barbe - a beard

de taille moyenne - of average height
mince/gro*s*(se) - slim/fat
beau/belle - beautiful
joli(e) - pretty
moche - ugly

Mes Temps De Loisirs/La Technologie

je v**ais** faire de la natation - I am going to do (go) swimming
J'ai fait de la natation
je v**ais** all**er** au cinéma - I am going to go to the cinema
je v**ais** voir un spectacle - I am going to see a show
je v**ais** venir chez-toi - I am going to come to your house

je télécharge - I download
je regarde de*s* clip*s* vidéo - I watch videos
je joue à de*s* jeu*x* - I play games
je f**ais** des recherches - I do research
je f**ais** des achat*s* - I buy things
j'écri*s* des article*s* pour mon blog - I write articles for my blog
je li*s* - I read
les réseau*x* sociau*x* -social media
je met*s* me*s* photo*s* sur Instagram - I put my photos on Instagram

il e*st* facile de… - it is easy...
en ligne - online
partag**er** - to share
il e*st* dangereu*x* de… - it is dangerous…
partag**er** se*s* détail*s* personnel*s* - to share your personal details
pass**er** trop de temp*s* sur Internet - to spend too much time on the internet
tchatt**er** en ligne avec des inconnu*s* - to chat online with strangers
Il e*st* important de… - it is important…
faire du sport - to do sport
pass**er** du temp*s* avec sa famille - to spend some time with your family
retrouv**er** se*s* amis en vrai - meet up with your friends in real life

Theme 2: House & Home

Ma famille et moi habitons à la campagne/montagne	My family and I live in the countryside/mountains
Dans ma ville il y a une bibliothèque et on peut aller au stade	In my town there is a library and you can go to the stadium
Je dirais que c'est triste/déprimant/affreux/nul/désagréable	I would say that it's sad/depressing/awful/rubbish/unpleasant
L'année dernière nous sommes allés aux États-Unis	Last year we went to the USA
L'été prochain je vais aller en vacances avec mes amis	Next summer I am going to go on holiday with my friends
D'habitude nous restons dans une auberge de jeunesse	Usually we stay in a youth hostel

Small but important key words:

En - in/at/to for
Countries ending in e & most transport

Dans - in for
Compass points & inside something (like a house)

À - in/at/to for A city or part of a city /a venue
Au - at the (masc) **À la** - at the (fem)
Un/une - a **le/la/les/l'** - the

Verbs in 3 tenses + infinitive

Voyager /visiter to travel/ to visit
J'ai voyagé/visité - I travelled/ visited
Nous avons voyagé/visité - we travelled / visited
Je voyage/viste - I travel/ visit
Je vais voyager/visiter - I'm going to travel/visit
Je voyagerai /visiterai- I will travel/ visit

Rester - to stay
Je suis resté- I stayed
Nous sommes restés - we stayed
Je reste - I stay
Je vais rester - I'm going to stay
Je resterai - I will stay

Faire - to do/make (go for activities)
J'ai fait/nous avons fait - I did/ we did
Je fais / nous faisons - I do/ we do
Je ferai - I will do

C'était - it was **j'étais** - I was
C'est - it's **je suis** - I am
Ce sera - it'll be **je serai** - I will be

Useful phrases to talk about your area

Il y a = there is/there are
Il n'y a pas assez de = there are not enough
Il n'y a plus de = there is no longer
Il n'y a rien pour les jeunes = there is nothing for young people
Pour les touristes il y a/nous avons - for the tourists there is/we have

Beaucoup de monde/voitures = a lot of people/cars
Il y a beaucoup de pollution - there is a lot of pollutio
trop de circulation/de gens = too much traffic/too many people

Tellement de gens au chômage = so many people unemployed

Toujours des déchets par terre = always rubbish on the floor
Il y avait - there was/were **il y aura** - there will be

Adjectives to describe a town

Ce qui me plaît c'est qu'il y a = What I like is that there is/are

En hiver/ en été on peut = In winter/ summer you can

C'est propre/ tranquille/ animé/pittoresque = it's clean/ calm/ lively/picturesque

Le paysage - the landscape

Les transports en commun sont bons/bruyants/cher/bon marché = the public transport is good//noisy / expensive/cheap

Theme 3: Education & future plans

Je suis fort(e)/faible/doué en + subject	I am strong/weak/talented in + subject
Ma matière préférée est l'anglais	My favourite subject is English
La prof est bon/ sympa/ marrant) /sévère/ gentli	The teacher is good/ nice/ funny/ strict/ kind
À l'école primaire **j'avais** beaucoup d'amis	At primary school **I had** a lot of friends
L'année prochaine **je voudrais faire** un voyage scolaire	Next year **I would like to do** a school trip
L'année dernière **j'ai étudié**…/ **j'ai fait**	Last year **I studied**… / I **did**

Au collège- verb phrases

Étudier - to study
Apprendre - to learn
Comprendre - to understand

J'étudie/j'apprends /je comprends= I study / I learn/ I understand

L'année dernière **j'ai fait/étudié** … - last year I did/studied…

L'année prochaine **je vais étudier/apprendre** - next year I'm going to study/ to learn

L'année prochaine **j'étudierai/j'apprendrai -** next year I will study/ will learn

Nous avons un cours de - we have a lesson of…

Seqeuncing vocabulary
Après - after **puis -** then **suivi de** - followed by
Avant - before

Les bâtiments et plus - buildings and more

On commence à = we start at
Huit heures et demie - 8.30
On a une heure pour le déjeuner = we have an hour or lunch

Adjectives
intéressant/ passionnant/ ennuyeux/ facile/ fascinant/ dur/ utile/ inutile/ = It is interesting/ exciting/ boring/ easy/ fascinating/ hard/ useful/useless

Les bâtiments - the buildings
Le gymnase = sports hall
Le *h*all = (assembly) hall
Le terrain de sport = sports ground
La bibliothèque = library
La cour de récréation = playground
La piscine = swimming pool
Les labos = science labs
Les salles de classe = classrooms
Les vestiaires = changing rooms

Le règlement scolaire

Il faut / il ne faut pas= you must / you must not
Être à l'heure = be on time
Faire les devoirs = do homework
Porter l'uniforme scolaire = wear school uniform
Il est interdit de/de' = it is forbidden to
Tricher pendant un contrôle = cheat in a test
Mâcher du chewing-gum = chew gum
Porter des bijoux/trop de maquillage = wear jewellery/too much makeup
Harceler d'autres élèves = bully other pupils
Sortir de l'école pendant l'heure du déjeuner = leave school during the lunch hour

Opinions of school rules
Selon moi les règles sont… = according to me, the rules are…
Raisonnable/ logique = reasonable/ logical
Juste/ injuste = fair/ unfair
Ridicule/ frustrant = ridiculous/ frustrating

C'est/ce n'est pas dangereux = it is/is not dangerous
Il faut respecter les autres = you must respect others
La mode n'a pas de place à l'école = fashion has no place at school

C'est/ce n'est pas important = it is/is not important
L'école, c'est pour apprendre = school is for learning

Une heure de retenue/de colle = An hour of detention

Theme 1: self & family

Me llevo bien con/me divierto con mi padre/mi madre	**I get on well** with/have fun with my dad/my mum
Cuido de mi hermana menor/mayor	I look after my younger/older sister
En el futuro no quiero casarme	In the future I don't want to get married
Mis padres se divorciaron cuando era pequeño/a	My parents got divorced when I was little
Mañana **vamos a** montar a caballo	Tomorrow **we are going** to do horse riding
Leo mucho en línea	I read a lot online
Ayer **escuché** música en mi ordenador	Yesterday **I listened** to music on my comp

Adjetivos de Personalidad

se ve/parece - he/she/it seems
un(a) buen(a) amigo(a) es - a good friend is

Ser / soy/ somos/son - To be/ I am / we are / they are
molesto(a) - annoying
amable - likeable
hablador(a) - talkative
egoísta - selfish
leal - loyal
fuerte - strong
celoso(a) - jealous
malo(a)/cruel - nasty/ mean
perezoso(a)/vago(a) - lazy
bien educado(a)/sabio(a) - well behaved/wise
sensible - sensitive
terco(a) - stubborn
trabajador(a) - hardworking
comprensivo(a) - understanding
honesto(a)/sincero(a)/honrad(o) - honest
extrovertido(a)/introvertido(a) - extroverted/ introverted

La Descripción Física

tengo el pelo…corto, largo, mediano/liso/ondulado/rizado/calvo **I have** short, long, medium length/- straight/wavy/curly/ bald hair

Tiene los ojos azules, verdes, marrones, negros, pelirrojo, castaño, gris, marrón -… He/she has lue, green, brown, black, red, chestnut, grey, brown eyes.
llevo gafas - I wear glasses
tengo granitos/pecas - I have spots/freckles
un bigote/una barba - a moustache /a beard
bajo(a)/alto(a) - short/tall
delgado(a)/gordo(a) - slim/fat
guapo(a)/hermoso(a) - beautiful
lindo(a)/bonito(a)/precioso(a) - pretty
feo(a) - ugly

Mi tiempo Libre/ La Tecnología

voy a hacer la natación - **I am going to do (go)** swimming
voy a ir al cine - **I am going to go** to the cinema
voy a ver un espectáculo - I **am going to see** a show

una película de horror, una pelí policial, una pelí romántica, un dibujo animado - a horror film, a detective film, a romantic film, a cartoon
una canción/la letra - a song/lyrics
en Internet - on the internet
descargo/bajo la música y creo listas de reproducción - I download music and I create playlists
veo video clips - I watch videos
juego juegos - I play games

Activities online

compré/compro/ voy a comprar cosas en línea - I bought. I buy/ I'm going to buy things online
escribo artículos para mi blog - I write articles for my blog
leo los correos electronicos - I read my emails
voy a las redes sociales - I go on social media

es fácil/difícil de… - it is easy/difficult to...
mantenerse en contacto con amigos - to stay in contact with friends
compartir fotos - to share photos
es peligroso… - it is dangerous…
compartir datos personales - to share your personal details

Disadvantages of technology

es importante hacer deporte… - it is important to do sport
pasar tiempo con la familia - to spend some time with your family
encontrar a tus amigos en la vida real/cara a cara - meet up with your friends in real life/face to face

Theme 2: House & Home

Mi familia y yo vivimos en el campo/en las montañas	My family and I live in the countryside/mountains
En mi ciudad hay una biblioteca y se puede ir al estadio de fútbol	In my town there is a library and you can go to the stadium
He vivido allí durante (por) cinco años	I have lived there for five years
El año pasado **fui** a los Estados Unidos (EE.UU.)	Last year **we went t**o the USA
El verano que viene (proximo / siguiente) **voy a ir** de vacaciones con mis amigos/amigas	Next summer **I am going to go** on holiday with my friends
Normalmente/generalmente/por lo general **nos quedamos** en un albergue juvenil	Usually/ in general **we stay** in a youth hostel

Ciudad de pesadilla (disadvantages of town)

El problema es… = the problem is…
No hay suficientes (espacios verdes) = **there aren't** enough (green spaces)
Ya no hay/ no hay más (cine) = there is no longer a cinema
No hay ni (parque) ni (patio de recreo) = there is neither (a park) nor (a playground)
Solo hay (una tienda) = there is only (one shop)
No hay nada para los jovenes = there is nothing for the young
No hay mucho que hacer = **there's not a lot t**o do
Hay… = there is/there are...
Mucha gente/muchos coches = a lot of people/cars
Demasiado tráfico/gente = too much traffic/too many people
Tanto ruido/tanta gente en paro/tantos desempleados = so much noise/so many people out of work
Siempre basura en el suelo = always rubbish on the floor
No estoy contento/a con mi barrio/ciudad = I'm not happy with my district/town

Ciudad de los sueños (advantages of town):

Lo que me gusta es que hay = What I like is that there is/are

En invierno/verano **se puede** = In winter/summer **you can**

Está limpio tranquilo ocupado= it's clean/ calm/ lively

El transporte publico es bueno = the public transport is good

Hace buen tiempo = the weather is good

De vacaciones- holiday routines and travel

Voy **a** Francia/ **a** Gales/ **a los** Estados Unidos = I go to France/Wales/the USA

Voy a viajar en = I'm going to travel by
Viajo en = I travel by
Viajé en = I travelled by

Me quedo en = I stay in

Me voy con mi familia/solo = I go with my family/ alone
Fui con = I went with
Me levanto temprano = I get up early
Nos acostamos tarde = we go to bed late
Descanso/me preparo = I rest/ I get ready
Me visto = I get dressed

Me banno/nado en el mar= I bathe/ swim in the sea
Voy a dar un paseo = I go for a walk
Salgo a un restaurante = I go out to a restaurant

Se puede visitar Madrid/ hacer la escalada/ visitar los museos= **you can** visit Madrid/ go climbing/ visit museums
Es/era/fue/va a ser/será/sería = It is/ It was/it's going to be It will be/it would be

Useful adjectives
increible/lujoso = tremendous/luxurious
maravilloso/emocionante = wonderful / exciting
pintoresco/relajante= picturesque/restful
Tranquil = quiet/calm

Theme 3: Education & future plans

Soy fuerte/debil/bueno en matemáticas dado que lo encuentro pan comido/ muy exigente	I am strong/weak/talented in maths because I find it easy/ very challenging
Mi asignatura favorita es el inglés ya que mi profe enseña bien	My favourite subject is English because my teacher teaches well
El/la profe es bueno(a)/ simpatico(a)/ gracioso(a)/ severo(a)/ agradable/ impaciente	The teacher is good/ nice/ funny/ strict/ kind/ impatient
En la escuela primaria tenía mucho más tiempo libre/muchos amigos/menos deberes	At primary school I had a lot more free time/ a lot of friends/ less homework
El año que viene me gustaría participar en un viaje escolar	Next year I would like to part in a school trip
El año pasado gané un premio por mis esfuerzos en clase/un torneo de fútbol	Last year I won a prize for my efforts in class/a football tournament

<u>En la escuela primaria/ el colegio / En el instituto</u>

Estudié = I studied
Estudiaba= I used to study (imperfect)
Estudio = I study
Voy a estudiar = I'm going to study
Estudiaré = I will study
Estudiaría = I would study (conditional)

Las empresariales/el comercio = business studies
El dibujo/las artes plásticas = art/fine art
El francés= French
Las lenguas/los idiomas = languages
La química = chemistry
El alemán = German
El inglés = English
El arte dramático/el teatro = drama
La economía/las ciencias económicas = economics
La educación física y deportiva = PE

<u>Opinions and school buildings</u>

Lo encuentro = I find it
interesante/emocionante = interesting/exciting

aburrido/fácil = boring / easy

fascinante/difícil = fascinating/difficult

fútil/inútil =useful/useless

<u>Areas of school</u>

La biblioteca = library
Elc comedor/ La cantina = canteen
El patio de recreo = playground
La piscina = swimming pool
Las aulas = classrooms
Los vestuarios = changing rooms

<u>Las normas escolares- school rules</u>

Hay que/no hay que = you must/you mustn't
Llegar a tiempo = be on time
Hacer los deberes = do you homework
Llevar un uniforme escolar = wear a school uniform
Hacer el bachillerato = to do A Levels

Está prohibido de = it is forbidden to
Saltarse clases = miss lessons
Comer chicle = chew gum
Usar el móvil en clase = use your mobile in class
Llevar joyas/piercings/demasiado maquillaje = wear jewellery/ piercings/ too much makeup
Acosar a otros estudiantes = bully other pupils

El uniforme…mejora la disciplina/limita la individualidad = improves discipline/limits individuality

Lo encuentro = I find that
Razonable/sensato/lógico = reasonable/ sensible/ logical
justo/injusto = fair/ unfair
Ridículo/frustrante = ridiculous/ frustrating

porque/visto que/puesto que = because
Es/ no es peligroso = it is/is not dangerous
No somos bebes = we're not babies
La moda no tiene cabida en el insti = fashion has no place at school

Es/no es importante = it is/is not important
El instituto es para aprender = school is for learning

Component 1 - Music theory

Instrumentation
Brass: trumpet, tuba, trombone, french horn
Woodwind: flute, clarinet, saxophone, bassoon, bass clarinet, piccolo, oboe
Strings: violin, viola, cello, double bass, harp
Percussion: drums, tambourine, xylophone, glockenspiel, piano,
Technology - turntable, synthesiser

Instrument techniques
Strings: plucking (pizzicato), arco (playing with a bow), strumming, slap bass
Percussion: drum rolls, shaking, plucking, scraping, striking
Woodwind: pitch bend, flutter tongue, double tonguing
Brass: playing with a mute, hand slide, double tonguing,
Vocals: vibrato, scat singing, pitch bend,

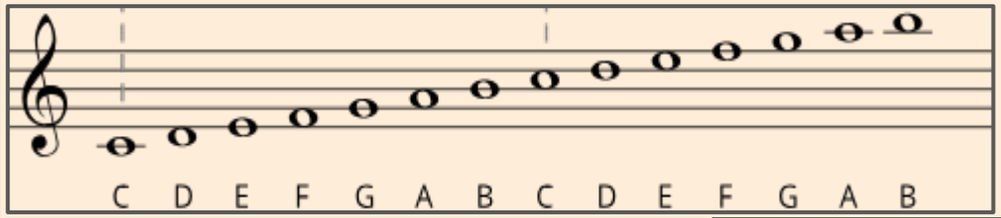
Ensemble types:
Duet - 2 performers
Trio - 3 performers
Quartet - 4 performers
Band - lead guitar, rhythm guitar, bass guitar, drums, vocalist
Jazz band - rhythm section (drums, piano, guitar etc) and melodic section (brass, vocals, saxophone)

Timbre: the sound/tone of an instrument

Electronic sound effects
Reverb: electronically produced echo effect
Phaser: electronic sound processor used to filter a signal by creating peaks and troughs in the frequency
Delay: time based audio effect creating a repetition of the original
Distortion: modifying the original sound and altering the quality

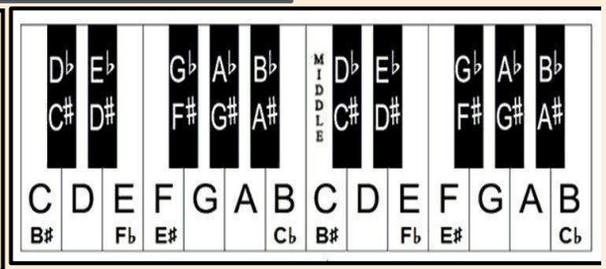
Texture

Solo: 1 performer
Homophonic: same rhythm, different pitches (harmony)
Monophonic: 1 part/all doing the same thing
Polyphonic: playing different pitches and rhythms together
Unison: everyone doing the same thing at the same time



Structure/Form

Strophic form: song structure - e.g. verse, chorus etc.
12 bar blues: chord pattern of I I I I, IV IV I I, V IV I I
Through-composed: all verses have a different melody
ABACADA: returning to the original section each time
AB: Binary form - 2 contrasting sections
ABA: Ternary form - 3 sections, repeat of section A



Melody - main tune in a piece of music

Tonality - key of the music
Major: happy/cheerful/positive feel
Minor: sad/sinister/dark feel
Atonal: no sense of key

Scales
Semitone (S): closest distance between two notes C-C# or E-F
Tone (T): 2 semitones e.g. C-D or E-F#
Major scale: 8 notes in the pattern of T T S T T T S
E.g. C D E F G A B C
Minor scale: 8 notes in the pattern of T S T T S T½ S
E.g. A B C D E F G# A
C major blues scales: C Eb F Gb G Bb C
Pentatonic scale: 5 notes in the pattern of 1st 2nd 3rd 5th 6th

Melodic techniques
Conjunct: melody that moves stepwise (notes close to one another)
Disjunct: melody that moves in leaps (notes not next to each other)
Chromatic: music created with notes outside the key of the music
Diatonic: music created using the notes from the key of the music
Repetition: using the idea again
Ostinato: continuously repeated pattern of notes
Sequence: same thing repeated at a higher/lower pitch
Ornamentation: decorations to a melody, e.g. trill
Motif: a short musical idea on which a piece can be built
Riff: repeated pattern that forms the basis for a piece
Hook: catchy and memorable part of a song
Improvisation: making the music up as you go along

Rhythmic techniques

Metre: how many beats in a bar
BPM: Speed - beats per minute
Syncopation: emphasis on the off beat in a bar
Polyrhythms: different rhythms playing together
Hemiolas: playing 3 beats in the time of 2
Rhythmic displacement: repeating an idea, but putting emphasis on different beats each time

Harmony
Major triad: 3 notes of a major chord (Root + 4st + 3st)
Minor triad: 3 notes of a minor chord (Root + 3st + 4st)
Power chord: 2 note chord (root and 5th)
7th chord: triad + 7th note of the scale
Broken chords: notes of the chords play separately
Arpeggios: 1st, 3rd, 5th, octave

Component 1 - Musical Styles

1940's - Jazz
Instruments: Trumpet, Saxophone, Double Bass, Piano, Drums

BPM: 120 - 130

Features: Improvisation, Call and Response, syncopation, swing and creative freedom

Influences: Ragtime & Blues

Influential Artists: Duke Ellington, Ella James

1950's - Rock & Roll
Instruments: Electric guitar, bass, drums, vocals

BPM: 160+

Features: Verse and chorus structure, 4/4 beat

Influences: Jazz, Blues & Gospel

Influential Artists: Elvis Presley, Little Richard, Chuck Berry

1960's - Psychedelia
Instruments: Mellotron, Sitar, Harpsichord

BPM: 55 - 80

Features: Experimental record techniques, long hypnotic melodies, absurdist lyrics

Influences: Folk, Jazz and Blues

Influential Artists: The Beatles, Jimi Hendrix Experience

1970's - Disco
Instruments: brass, electric piano, synthesizers, and electric rhythm guitars

BPM: 110 - 135

Features: Syncopation, Four on the floor beats, falsetto vocal lines

Influences: funk, psychedelic soul, pop

Influential Artists: The Bee Gees, ABBA, Gloria Gaynor

1980's - Rock
Instruments: lead guitar, rhythm guitar, bass guitar, and drums

BPM: 90 - 120

Features: guitar-led, with a fairly simple chord progression, Overdriven guitars, Personal lyrical content

Influences: Rhythm and blues, rock and roll

Influential Artists: AC-DC, Guns & Roses, Aerosmith

1980's - New Wave
Instruments: Electric guitar, bass guitar, drums, synthesizers, vocals, cowbell

BPM: 110 - 145

Features: electronic sounds, distinctive visual style, hoppy rhythm guitars, fast tempos keyboards, stop-start song structures

Influences: Glam Rock, Disco, Pop

Influential Artists: Talking Heads, A-HA

1990's - Britpop
Instruments: Acoustic guitar, piano, drums, bass, vocals

BPM: 100 - 120

Features: distorted guitars, a lack of lead guitar , simple vocal lines, lyrics about everyday life.

Influences: Alternative rock, British Invasion

Influential Artists: Oasis, Blur, Suede & Pulp

2000's - EDM
Instruments: bass drum, turntables, sampler, keyboards, guitar, synthesizers, keyboard

BPM: 115 (House) - 140 (Dubstep)

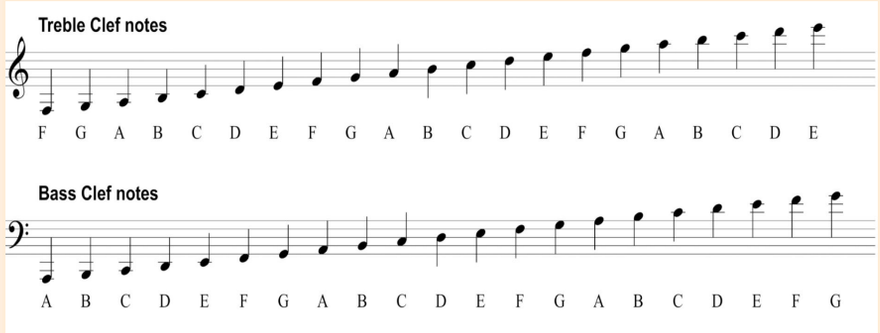
Features: deliberately inorganic sounds and timbres, rhythmic pulse, and high and steady tempo, building to a drop

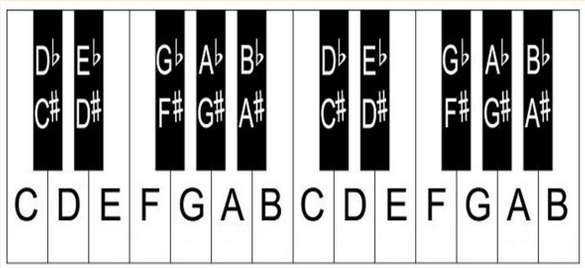
Influences: Disco, Funk and Soul

Influential Artists: Daft Punk, Avicii

Genre: a style or category of art, music, or literature
Trend: what is popular at a certain point in time
Influence: to affect or change someone or something in an indirect but usually important way
Tonality: whether music sounds happy or sad
Structure: how a piece of music is arranged

Music - Production





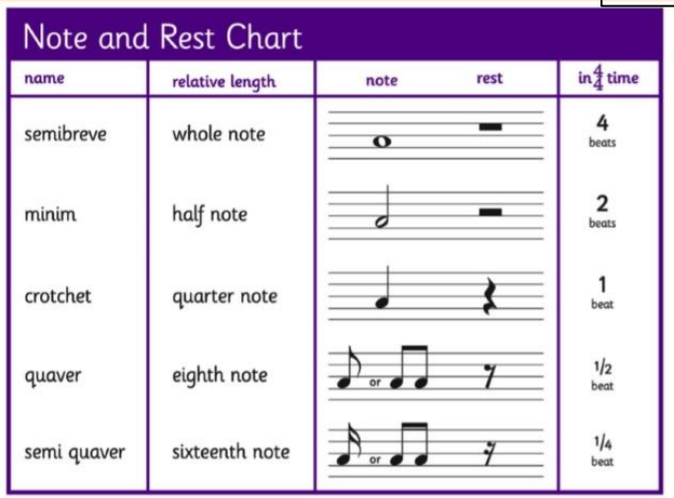
Sonic features

Instrumentation: instruments used and their techniques
Timbre: sounds the instruments make
Texture: number of parts and how they play
Production: technology and techniques used

GarageBand

Shortcuts
The shortcut button on Garageband is Command (cmd ⌘) on mac keyboards, and the windows key ( ) on PCs

Hold Command - Pencil tool (Create tool)
Hold Command + Z - Backspace (Undo last action)
Hold Command + T - Cut note clip at playhead
Hold Alt and drag - Copy
Drag from bottom of note clip - Extend or make shorter
Drag from top of note clip - Loop (copies)



Garageband Piano Roll number of boxes

16 boxes

8 boxes

4 boxes

2 boxes

1 box

Tips

- Before you begin a new project, it is often a good idea to **arrange your track:**
  Go to Track > Show arrangement track
  Press the plus button to add a section
  Click on your new section and rename it what you want to it be called
- Use the **quantise function** to put things in time for you:
  Just highlight the notes, and click the Q button on the right hand side of the piano roll
- **Colour code your tracks** to be able to navigate your project easier:
  Right click the instrument track and select "Assign track colour"
- Use the **loop** function to continually repeat a certain section:
  Drag the yellow bar above the instrument tracks across the section you want to loop

- When inputting chords remember this formula for major and minor:
  Major: Root, up 4 semitones, up 3 semitones
  Minor: Root, up 3 semitones, up 4 semitones

Production

Sampling: taking an element of a pre-existing recording and manipulating this for use in your own composition

FX: stands for 'effects'. Used to mix music, add interest, and create different types of sounds

Looping: a section of music that repeats itself continuously

Quantise: moving notes on a DAW to ensure timing accuracy

Sequencing: putting sections of a piece or ordering a series of actions within a piece of music in a DAW

Turntablism: Using DJ equipment to manipulate sounds, create new music, sound effects, mixes and other beats

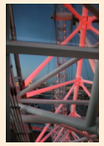
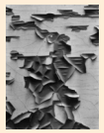
Automation: setting DAW up to perform tasks automatically

THE BASICS part 1 - GCSE Photography

EXAMPLE PROJECT CHECKLIST

1. Front cover
2. Mind-Map
3. Statement of Intent
4. Photographer research (Timeline, Bio, Kit Bag, Key Project, Titles & Dates)
5. Written / Visual Analysis
6. Recreation Contact Sheets
7. Own Shoot C.Sheets
8. Photoshop Edits / Adjustments (Screenshots & Variations)
9. Reshoots
10. Photography Display Ideas
11. Final Ideas
12. Layout Ideas
13. Final Layout
14. Project Evaluation

VISUAL ELEMENTS


LINE

TEXTURE

SHAPE
FORM

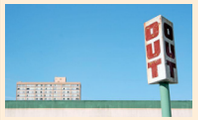

COLOUR

SPACE


LIGHT & SHADOW
FOCUS

COMPOSITION


RULE OF THIRDS

LEADING LINES


BALANCING ELEMENTS


SYMMETRY
VIEWPOINT
S SHAPE


DEPTH

DIAGONALS
FRAMING

USEFUL KEYBOARD SHORTCUTS
For Google Drive & Photoshop CS6

Google Drive

Cmd > Shift > 4 = Screenshot

Cmd > X = Cut

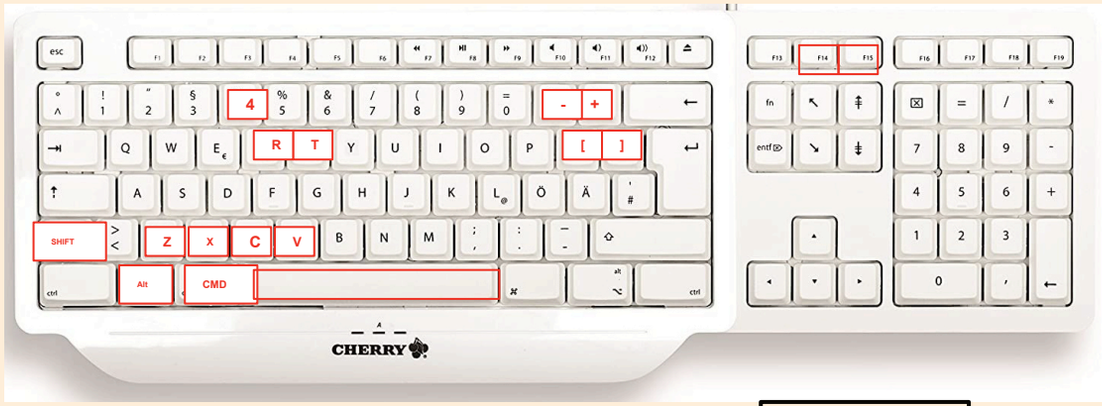
Cmd > C = Copy

F14 & F15 = Brightness

Alt > 3 = # symbol

Hold Shift = When resizing an image

Cmd > V = Paste



Cmd > Alt > Z = Multiple Undo

Cmd > + = Zoom In

Cmd > T = Transform

[ ] Brackets = Tool size up & down

Cmd > R = Ruler

Cmd > - = Zoom Out

Hold Spacebar = Manoeuvre with mouse

Cmd > Z = Undo

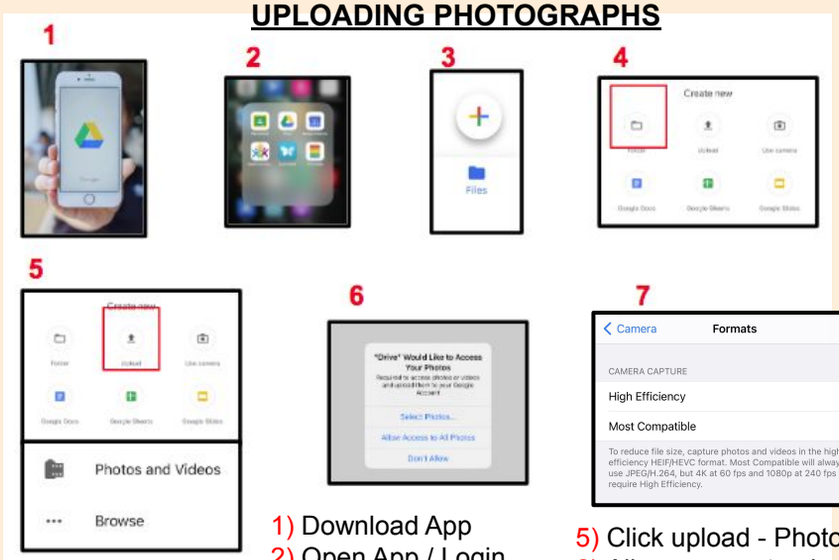
THE BASICS part 2 - GCSE Photography

USING A CAMERA

1) Shutter Release button
2) Mode Dial (for Auto/Manual)
3) Settings Dial
4) On/Off switch
5) Flash Button

6) Display button (look at settings)
7) LED screen view (for TRIPOD)
8) Viewfinder
9) Playback button
10) Menu button

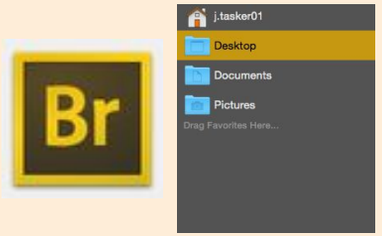
UPLOADING PHOTOGRAPHS



1) Download App
2) Open App / Login
3) Files then Plus icon
4) Create folder

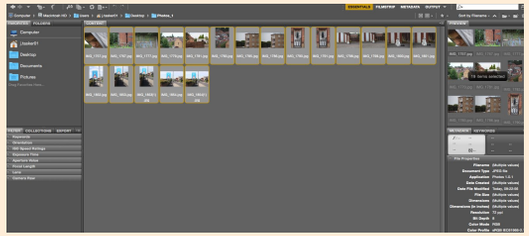
5) Click upload - Photos
6) Allow access to photos
7) Change to JPEG

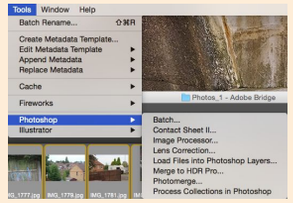
CREATING CONTACT SHEETS - ADOBE BRIDGE



1) Having successfully downloaded your pictures from your Camera. Load up **Adobe Bridge** and select your **Desktop** (on the left hand side)

2) Once you have selected your **Desktop**, find the **folder** containing your images from your shoot. Hold down **cmd and click** on the images you want in your contact sheet

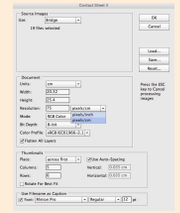


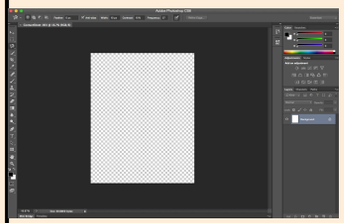


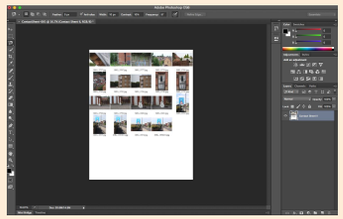
3) On the top bar go up **to 'Tools' > 'Photoshop' > 'Contact Sheet II'** and click (this will load up Photoshop)

4) On Photoshop, this message will come onto your screen. Halfway down just make sure you change **the Resolution** to '**pixels/inch'**

Units > cm / Width: 20.32 / Height: 25.4 / Resolution: 300 pixels/inch







2) Be patient; this screen will start to load up**. Do not click anything** until you can see your image thumbnails.
This is what your contact sheet should eventually look like
Save to **Desktop** and the **Format should be JPEG**.

UNIT R183: Nutrition & Sports Performance

Topic 1 - Nutrients needed for a healthy, balanced nutrition plan

Characteristics of a balanced nutrition plan & the role of nutrients

- Meeting requirements of an individual
- Includes food from all food groups
  - **Carbohydrates:** give a quick supply of energy **-** rice, potatoes (complex) oranges, biscuits (simple)
  - **Fats:** give a slow supply of energy & transports some vitamins **-** vegetable oil, lard (bad fats) nuts, salmon (good fats)
  - **Proteins:** repair muscle damage **-** meats, pulses, beans
  - **Fibre:** helps digestion & prevents constipation **-** cereals, wholemeal bread
  - **Vitamins and minerals:** strengthen bones & maintain healthy immune system **-** fruit and vegetables
  - **Water:** keeps the body hydrated, regulates temperature & helps remove waste products - water based drinks
- **Contains a variety of foods**
- **Suits the needs/tastes of the individual**

Topic 2 - Applying different dietary requirements to varying types of sporting activity

Endurance/Aerobic activities (long distance running, rowing)

- **Before:** Hydration / Carbo-loading
- **During:** Maintain hydration & carbohydrate levels
- **After:** Rehydrating / Replenish nutrients

Short, intense/Anaerobic Activities (100m, HIIT training)

- **Before:** Use of carbs (not carbo loading) / use of proteins
- **During:** half time or timeout - energy for short, sharp bursts
- **After:** Rehydrate immediately / Replenish nutrients

Strength Based Activities (weightlifting, rugby)

- **Before:** High in protein / Limit excess body fat
- **During:** half time or timeout - refuel nutrients
- **After:** Rehydrate immediately / Replenish nutrients

Topic 3 - Developing a balanced nutrition plan for a selected sporting activity

Design & Develop a balanced nutrition plan

- Gather details - age range / allergies / cultural beliefs / food budget / cooking skill / activity / current nutritional info
- Adapt nutrition plan to suit a sporting activity
  - Add or remove relevant nutrients / Change timings / Portion sizes / Amount of meals

Key factors when considering success / impact of a nutrition plan

- Identify the nutritional changes that can be made
  - E.g. added protein for muscle repair / reduced fat for weight loss
- Suitability and organisation of nutrition plan
  - Portion sizes / timings of meals / amount of meals / liquid intake
- Review the potential success
  - Performance/training - energy levels, components of fitness improvement, weight loss/gain

Topic 4 - How nutritional behaviours can be managed to improve sports performance

Overeating

- Effect on component of fitness - speed, agility, flexibility and stamina
- Increased nutrients - starchy carbohydrates, vitamins & minerals
- Performance benefits - increase muscle mass, weight gain (e.g. for weightlifting & rugby)

Undereating

- Reduced energy levels / Reduced concentration / Weight management

Dehydration

- Overheating / Reduced performance level / Reduced bloated feeling / Reduced water retention - weight categories can be achieved e.g. boxing

Unit R181: Applying the Principles of Training

Topic 1 - Components of fitness applied in sport

Components of fitness

- Cardiovascular endurance - the ability to exercise for long periods without tiring (Long distance running & football)
- Muscular endurance - the ability of muscles to sustain repeated contractions without getting tired (Tennis & swimming)
- Speed - the ability to move all or part of the body quickly (Sprinting & ice hockey)
- Strength - the extent to which muscles can contract against resistance (Weightlifting & wrestling)
- Power - exerting muscular strength rapidly, a combination of speed and strength (Rugby & Javelin)
- Agility - the ability to move quickly and change direction under control (Football & basketball)
- Balance - the ability to maintain a given position when moving or stationary (Cycling & surfing)
- Flexibility - the ability to move joints through an ample range of motion (Gymnastics & diving)
- Coordination - the ability to select the right muscle at the right time with intensity to achieve proper action (Golf & Squash)
- Reaction time - the time taken to initiate an action or movement (Fencing & baseball)

Fitness tests used to measure components of fitness

- Cooper run / Press up test / 35m sprint test / Burpee test / Standing long jump / Illinois agility test / Standing stork test / Sit & reach test / Hand-eye coordination test / Ruler drop test
- Collecting & interpreting results of fitness tests
  - Normative data / Validity / Reliability
  - Results from tests / Advantages & disadvantages of tests
- Strengths & areas of improvement for each component
- Devising skill based fitness tests e.g dribbling at speed

Topic 2 - Principles of training in sport

Principles of training and goal setting

- SPOR principle
  - Specificity
  - Progression
  - Overload
  - Reversibility
- FITT principle
  - Frequency
  - Intensity
  - Time
  - Type
- SMART goals
-

Methods of training and their benefits

- Training methods
  - Continuous training / Fartlek training / Interval training / Circuit training / Plyometrics / Weight or resistance training / HIIT (High Intensity Interval Training)
- Advantages & disadvantages
- Appropriateness of each method
- Characteristics of aerobic exercise
  - Lower intensity / Longer duration / Higher oxygen consumption / Methods of training aerobically
- Characteristics of anaerobic exercise
  - Higher intensity / Shorter duration / Lower oxygen consumption / Methods of training anaerobically

Key Terms

-***Validity***: Whether or not the test measures what it claims to measure.
-***Reliability***: Test conditions must always be identical to get accurate results.
-***Normative data***: How results of a fitness test compare to average results.
-***Aerobic***: Body utilises oxygen, exercises should be steady and not too fast.
-***Anaerobic***: Fuels body without oxygen, exercises in short, fast bursts.

Unit R181: Applying the Principles of Training

Topic 3 - Organising and planning a fitness training programme

Considerations to inform planning
- Facilities & equipment
- Safety & risk assessments
- Aims, goals & objectives
- Current fitness levels & injuries
- Organisation
- Environment
- Skills to be improved

Applying Principles of training
- SPOR
- FITT

Elements of training programmes
- Suitable warm up & cool down
- Activities/main content of programme
- Duration of plan
- Duration of sessions
- Equipment and facilities
- Coaching points
- Adaptation of programme based on each session & mid term testing

Monitoring progress & adapting programme
- Using pre & mid term tests to adapt/improve a programme

Recording results from fitness training programme
- Post programme tests
  - Skill based tests
  - Fitness tests
- Achievement recognised
  - Meeting SMART goals
  - Results from tests

Topic 4 - Evaluate own performance in planning and delivery of a fitness training programme

Reflections on the fitness training programme
- Goals set
- Training methods used
- Fitness component links correctly to skill tests

Strengths and areas for improvement of the the fitness training programme
- Reasons for success and failure
- Strengths e.g. progression of training to make more difficult
- Improvements e.g. length of training programme or variety of training

Further development suggestions for improvements to the fitness training programme
- How the success rate of the programme could be improved if it were repeated e.g. level of fitness would be improved, performance would be improved

Key Terms

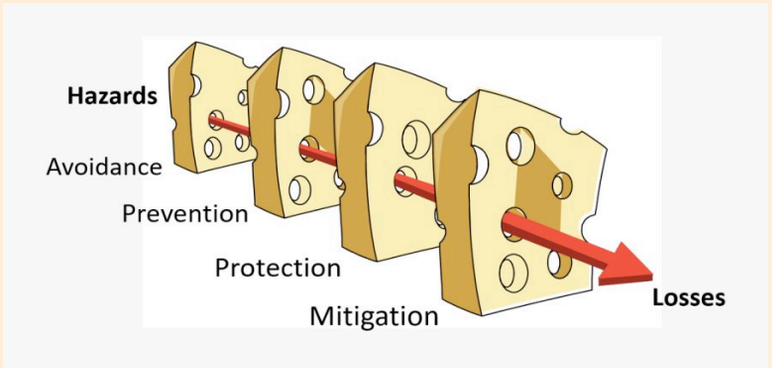
-***Specific*:** Targets must be to the point e.g. to take 0.5 seconds off my 800m run time.
-***Measurable***: Must be measured and compared e.g. time runs every training session for the next five weeks of training
-***Achievable***: The target must be challenging but reachable e.g. coach & participant devised the training around improving leg strength, power and reaction time.
-***Realistic***: Must be matched to the performers skill level e.g. agreed that 0.5 seconds off my personal best is realistic.
-***Time-bound*:** Set for a particular time to be completed e.g. completing the training programme four times a week for the next five weeks to achieve the targets set.

Health & Wellbeing

Term 1: Health and wellbeing	
Legal Drugs	Legal drugs are drugs you can buy over the counter at a shop or pharmacy
Illegal Drugs	These are drugs that are illegal to carry, take or sell
Prescription	These are drugs that HAVE to be prescribed by your doctor. You cannot buy them over the counter
Drug misuse	There's also another common term called “drug misuse” that is often mentioned when talking about substance use or abuse. Drug misuse refers to the use of a substance for a purpose that is not consistent with legal or medical guidelines, most often with prescription medications
Addiction	Addiction is a biopsychosocial disorder characterized by repeated use of drugs, or repetitive engagement in a behaviour such as gambling, despite harm to self and others
Narcotics	A drug or other substance that affects mood or behaviour and is consumed for non-medical purposes, especially one sold illegally
Anabolic steroids	Anabolic steroids are manufactured drugs that mimic the effects of the male hormone testosterone. Anabolic steroids are prescription-only medicines that are sometimes taken without medical advice to increase muscle mass and improve athletic performance
Benzodiazepines	Benzodiazepines act as a sedative – slowing down the body's functions – and are used for both sleeping problems and anxiety. They work by increasing the effect of a brain chemical called GABA
Consent	Consent occurs when one person voluntarily agrees to the proposal or desires of another. It is a term of common speech, with specific definitions as used in such fields as the law, medicine, research, and sexual relationships

Addiction:

Many people don't understand why or how other people become addicted to drugs. They may mistakenly think that those who use drugs lack moral principles or willpower and that they could stop their drug use simply by choosing to. In reality, drug addiction is a complex disease, and quitting usually takes more than good intentions or a strong will.



Impacts of drug abuse

- Harmful to an unborn foetus
- Can lead to violence
- Can lead to sexual assault
- Impacts on finances to fund an addiction
- Loss of friends and family

Places that offer support:

- NHS: https://www.nhs.uk/live-well/healthy-body/drug-addiction-getting-help/
- Mind:https://www.mind.org.uk/information-support/guides-to-support-and-services/addiction-and-dependency/addiction-and-dependency-resources/

Relationships

Term 3: Relationships	
Online sexual harassment	Online sexual harassment encompasses a wide range of behaviours that use digital content on a variety of different platforms (private or public). It can make a person feel threatened, exploited, coerced, humiliated, upset, sexualised or discriminated against
LGBTQ+	LGBT is an initialism that stands for lesbian, gay, bisexual, and transgender. It has been in use since the 1990s.
'Coming out'	Coming out of the closet, often shortened to coming out, is a metaphor for LGBT people's self-disclosure of their sexual orientation or of their gender identity
Gender	The state of being male or female socially or culturally
Sex	The state of being male or female biologically.
Transgender	Used to describe someone who feels that they are not the same gender as the physical body they were born with, or who does not fit easily into being either a male or a female
Gender Neutral	Identities not easily categorized as masculine or feminine. Often a blend of the two
Identity	Identity is the qualities, beliefs, personality, looks and/or expressions that make a person or group
Intimate Relationship	An intimate relationship is an interpersonal relationship that involves physical or emotional intimacy
Love	A feeling of strong or constant affection for a person
Intimacy	Intimacy is closeness between people in personal relationships. It's what builds over time as you connect with someone

Why study this in school?

Including LGBT issues into sex education programs can reduce homophobic bullying, improve the health of LGBT people, and decrease instances of problems common in LGBT students such as depression and low self-esteem. School will always support all students.

Types of online sexual harassment:

- Sexual Images received or distributed
- Videos
- Persistent messages,
- Sharing of explicit web pages

Places that offer support:

- Trusted adults
- School safeguarding team
- https://www.stonewall.org.uk/
- https://www.allsortsyouth.org.uk/resources
- https://mermaidsuk.org.uk/

Careers

Term 5: The Wider World	
CV	Curriculum Vitae – This essential document is a potential employers first impression of you on paper, summing up your education, skills and work experience to date
Personal Skills	Personal skills, also called soft skills, people skills, or interpersonal skills, are a person's attributes or traits that relate to social interaction in a variety of ways. They are also highly transferable, since your attitude, personality, and work style automatically follow you to any and every company you work for. Personal skills are harder to develop, making them very valuable to hiring managers
References	References are people who can talk about your work experience, work habits, character and skill
Resilience	The capacity to recover quickly from difficulties
Aspirations	A hope or ambition of achieving something
Options	The choices you make when finishing your GCSEs and A-Levels.
STEM	Science, technology, engineering and maths
Gendered Careers	The outdated idea that somehow certain subjects/professions are better suited to a particular gender
Engineering	The branch of science and technology concerned with the design, building, and use of engines, machines and structures

What makes a good CV?

- Get the personal information right
- Presentation is key
- No more than 2 pages of A4
- Clearly read and understand the job description
- Tailor the CV to the role
- Think about the most applicable skills
- What makes you interesting?
- Have you got relevant experience
- Have you got transferable skills?
- Have you included references?
- Keep it up to date

Why choose STEM?

As well as being useful and interesting, STEM jobs pay well.. The rates of employment are also better for STEM graduates, and STEM graduates earn an average of £270,000 more over the course of their careers than non- STEM graduates.

Places that offer advice:

- Trusted Parent
- School team
- https://nationalcareers.service.gov.uk/
- https://www.prospects.ac.uk/careers-advice
- https://www.startprofile.com/

St. Mark's Gospel

The Life of Jesus: Key Terms	
Christ	Means 'the anointed one'/Messiah. The belief that Jesus was the promised saviour
Crucifixion	The death of Jesus; a form of the death penalty used by the Romans.
Historicity	Whether something (eg a gospel text) is considered to be historically authentic.
Miracle	An event that contradicts the laws of nature, and is usually thought to be impossible, (eg being raised from the dead).
Passion	The suffering of Jesus in his final days (which he foretold several times).
Resurrection	Being raised from the dead; the event three days after the crucifixion when it is believed that God raised Jesus from the dead.
Secular	Non-religious beliefs, practices and sources of authority.
Son of David	A title for Jesus used in Mark's Gospel, showing his descent from a Jewish king.
Son of God	A title for Jesus used in Mark's Gospel, emphasising his divinity.
Son of Man	A title that Jesus used for himself, which refers to both his suffering as a human and to the authority given to him by God
Transfiguration	When Jesus' appearance was changed into a more spiritual form; Peter, James and John saw his transfigured form talking to Moses and Elijah.
Trial	A criminal proceeding that takes place before a judge, involving questioning and evidence relating to the crime committed; Jesus faced trials before Pilate and the Jewish authorities during his Passion.

St Mark's Gospel as a source of spiritual truth: Key Terms	
Anointing	Religious ritual action which involves being touched or marked with oil/other sacred substance; the event in Mark 14 when a woman poured expensive perfume on Jesus' head.
Ascension	Going or being taken up; the event in Mark 16 forty days after the resurrection when Jesus returned to glory in heaven.
Commandment	A law or rule that must be followed.
Commission	Being given a job or duty; the event in Mark 16 when the risen Jesus told his disciples to preach the good news throughout the world.
Denial	To state or claim that something is not true; the event in Mark 16 when Peter stated three times that he did not know Jesus.
Discipleship	Following Jesus.
Disregarded	To be ignored or excluded.
Faith	Having complete belief, trust and confidence in something; having belief in God and Jesus.
Haemorrhage	The escape of a large amount of blood, often the result of an injury or illness.
Kingdom of God	The reign of God over the earth.
Leprosy	Infectious skin disease; in biblical times people with leprosy were made to live outside the towns and cities.
Parable	A story about everyday life that Jesus told to teach a religious truth
Secular	Non-religious beliefs, practices and sources of authority.
Widow	Woman whose spouse has died

Christian Beliefs & Practice

Christian Beliefs: Key Words	
Ascension	Jesus returning to be with God in heaven after the crucifixion
Atonement	Making things better after sinning, asking for forgiveness from God
Benevolent	God's nature as all-loving
Crucifixion	Jesus' execution by the Romans on the cross
Incarnation	God becoming flesh in the form of Jesus Christ
Just	God's nature as fair
Omnipotent	God's nature as all-powerful
Original Sin	The built-in tendency to do wrong which comes from Eve's disobedience
Resurrection	Jesus returning from the dead after he was crucified
Salvation	Being saved from sin and given eternal life in heaven by God
Sin	Any thought or action which goes against God's will
Trinity	God's nature as three-parts-in-one, the Father, Son and Holy Spirit

Christain Practice: Key Words	
Believer's Baptism	Service where those old enough to decide for themselves are welcomed into the church
Christmas	Christian festival which celebrates the incarnation (birth) of Christ
Consecration	When a priest blesses bread and wine in order to use it for Eucharist
Easter	Christian festival which celebrates the resurrection of Christ
Eucharist	Service where bread and wine is received by Christians to remember Jesus' sacrifice
Evangelism	Spreading the word of God through action or speech
Infant Baptism	Service where babies are welcomed into the church with holy water
Liturgical Worship	Formal worship with set prayers, hymns and Bible readings
Mission	The calling to spread the word of God and evangelise
Non-liturgical worship	Worship with no set pattern, may have modern music and sermons
Persecution	Hostility and ill-treatment of a group of people
Pilgrimage	Going on a journey to visit a holy site
Prayer	A communication with God, can be private or during worship
Reconciliation	Restoring friendly relations after a conflict or falling out

Islamic Belief & Practice

Islamic Beliefs: Key Words	
Adalat/justice	Part of the nature of God in Shi'a Islam; the belief that God is fair.
Akhirah (life after death)	Belief in a new stage of life after death.
Day of Judgement	The day when Allah will decide about individual deeds and on reward or punishment.
The Gospel	Holy book /source of authority ; literally 'good news' and it is the good news about Isa (Jesus), who was a prophet of Islam.
Greater jihad	The personal struggle of every Muslim to live by the teachings of their faith.
The imamate	One of the Five Roots of Usul-ad-Din, 'Leadership.' Shia belief in the twelve imams who succeeded Muhammad as the leaders of Islam.
Immanence	The belief that God is close to humanity ad involved in the world.
Jihad	'To struggle'. The personal or collective struggle against evil.
The Night of Power	The night on which Muhammad received the first revelations of the Qur'an.
Predestination	One of the Six Articles of Faith in Sunni Islam; the belief that everything that happens has been decided already by Allah.
Resurrection	One of the Six Articles of Faith and Five Roots of Usul ad-Din; belief that after death, all people will be raised from the dead to face judgement.
Risalah (Prophethood)	One of the Six Articles of Faith and Five Roots of Usul ad-Din; belief in the prophets as messengers sent by God to communicate to people.
Tawhid (the Oneness of God)	One of the Six Articles of Faith and Five Roots of Usul ad-Din; the oneness and unity of Allah.

Islamic Practice: Key Words	
Ablution (wudu)	Ritual washing before prayer.
Ashura	Important festival in Shi'a Islam, to commemorate the martyrdom of Hussein (Muhammad's grandson).
The Five Pillars	Important duties for Sunni Muslims which support the main principles of Islam. Shahadah, salah, zakah, sawm and hajj.
Friday prayer/Jummah	Friday prayers in the mosque, where a sermon (khutbah) is heard.
Giving alms	Giving alms means giving to those in need, eg money, food, time. A key practice in Islam; one of the Five Pillars/Ten Obligatory Acts (Zakah).
Hajj	One of the Five Pillars/Ten Obligatory Acts; pilgrimage to Makkah.
Id-ul-Adha	Festival; celebration of the Prophet Ibrahim's willingness to sacrifice his son for Allah.
Id-ul-Fitr	Festival; celebration that comes at the end of Ramadan and marks the end of fasting.
Khums	One of the Ten Obligatory Acts in Shi'a Islam; practice of alms giving.
Pilgrimage	A religious journey to a holy site/sacred place, it is an act of worship and devotion.
Ramadan	Month during which Muslims fast (sawm) from dawn to sunset.
Salah	Prayer; one of the Five Pillars/Ten Obligatory Acts.
Sawm	Fasting from dawn to dusk during Ramadan; one of the Five Pillars/Ten Obligatory Acts.
Zakah	One of the Five Pillars and Ten Obligatory Acts; giving alms.

Islamic Belief & Practice

Islamic Beliefs: Key Words	
Adalat/justice	Part of the nature of God in Shi'a Islam; the belief that God is fair.
Akhirah (life after death)	Belief in a new stage of life after death.
Day of Judgement	The day when Allah will decide about individual deeds and on reward or punishment.
The Gospel	Holy book /source of authority ; literally 'good news' and it is the good news about Isa (Jesus), who was a prophet of Islam.
Greater jihad	The personal struggle of every Muslim to live by the teachings of their faith.
The imamate	One of the Five Roots of Usul-ad-Din, 'Leadership.' Shia belief in the twelve imams who succeeded Muhammad as the leaders of Islam.
Immanence	The belief that God is close to humanity ad involved in the world.
Jihad	'To struggle'. The personal or collective struggle against evil.
The Night of Power	The night on which Muhammad received the first revelations of the Qur'an.
Predestination	One of the Six Articles of Faith in Sunni Islam; the belief that everything that happens has been decided already by Allah.
Resurrection	One of the Six Articles of Faith and Five Roots of Usul ad-Din; belief that after death, all people will be raised from the dead to face judgement.
Risalah (Prophethood)	One of the Six Articles of Faith and Five Roots of Usul ad-Din; belief in the prophets as messengers sent by God to communicate to people.
Tawhid (the Oneness of God)	One of the Six Articles of Faith and Five Roots of Usul ad-Din; the oneness and unity of Allah.

Islamic Practice: Key Words	
Ablution (wudu)	Ritual washing before prayer.
Ashura	Important festival in Shi'a Islam, to commemorate the martyrdom of Hussein (Muhammad's grandson).
The Five Pillars	Important duties for Sunni Muslims which support the main principles of Islam. Shahadah, salah, zakah, sawm and hajj.
Friday prayer/Jummah	Friday prayers in the mosque, where a sermon (khutbah) is heard.
Giving alms	Giving alms means giving to those in need, eg money, food, time. A key practice in Islam; one of the Five Pillars/Ten Obligatory Acts (Zakah).
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Christian Beliefs & Practice

Christian Beliefs: Key Words	
Ascension	Jesus returning to be with God in heaven after the crucifixion
Atonement	Making things better after sinning, asking for forgiveness from God
Benevolent	God's nature as all-loving
Crucifixion	Jesus' execution by the Romans on the cross
Incarnation	God becoming flesh in the form of Jesus Christ
Just	God's nature as fair
Omnipotent	God's nature as all-powerful
Original Sin	The built-in tendency to do wrong which comes from Eve's disobedience
Resurrection	Jesus returning from the dead after he was crucified
Salvation	Being saved from sin and given eternal life in heaven by God
Sin	Any thought or action which goes against God's will
Trinity	God's nature as three-parts-in-one, the Father, Son and Holy Spirit

Christain Practice: Key Words	
Believer's Baptism	Service where those old enough to decide for themselves are welcomed into the church
Christmas	Christian festival which celebrates the incarnation (birth) of Christ
Consecration	When a priest blesses bread and wine in order to use it for Eucharist
Easter	Christian festival which celebrates the resurrection of Christ
Eucharist	Service where bread and wine is received by Christians to remember Jesus' sacrifice
Evangelism	Spreading the word of God through action or speech
Infant Baptism	Service where babies are welcomed into the church with holy water
Liturgical Worship	Formal worship with set prayers, hymns and Bible readings
Mission	The calling to spread the word of God and evangelise
Non-liturgical worship	Worship with no set pattern, may have modern music and sermons
Persecution	Hostility and ill-treatment of a group of people
Pilgrimage	Going on a journey to visit a holy site
Prayer	A communication with God, can be private or during worship
Reconciliation	Restoring friendly relations after a conflict or falling out

Euthanasia

Assisted suicide	Helping someone to end their life. Currently illegal in the UK.
Active Euthanasia	Something is done to a person to make them die more quickly e.g. given drugs to bring about death
Euthanasia	The painless killing of a terminally ill patient
Passive Euthanasia	Any form of treatment that might extend someone's life is withdrawn e.g. switching off a life support machine. Currently legal in the UK.
Quality of Life	How easy or difficult someone's life is – e.g. cancer causes a low quality of life
Sanctity of Life	The belief that all life is sacred as man is made in God's image

Religious Attitudes to Euthanaisia

Christianity	Islam	Judaism	Hinduism
'You shall not murder'	'No one can die except by God's leave, at a term appointed'	'There is no God but me. I put to death, and I bring to life'	'The one who tries to escape from the trials of life by committing suicide will suffer even more in the next life'
Life is a sacred gift from God and should not be interfered with. However, some Christians believe that the Bible teaches compassion and respect. Therefore, someone should not be forced to suffer unnecessarily. The Catholic Church is strongly opposed to euthanasia and believes that it is a crime against life.	All human life is given by Allah, and Allah decides how long each person will live. Life is a test, and those who are suffering should turn to Allah. However, in circumstances, where death inevitable, the patient should be allowed to die without unnecessary procedures.	Only God has the right to give life and take away, even when it has become a burden rather than a blessing. Although Judaism is opposed to voluntary euthaniasia and suicide, some Jews believe that passive euthanaisia is permissible if further treatment is going to cause suffering.	Euthanaisa causes the soul and body to separated at an unnatural time, disturbing the timing of the cycle of death and rebirth. Suffering is a part of karma from previous lives and should be experienced fully and not interfered with.

Case study

Tony Nicklinson, a man with a condition called **locked-in syndrome**, who fought for the right to legally end his life, died on 22 August 2012.
The 58 year old was paralysed from the neck down after suffering a stroke in 2005 and described his life as a 'living nightmare'. In the week before his death, Mr Nicklinson lost his High Court case to allow doctors to end his life. From that point he refused food.

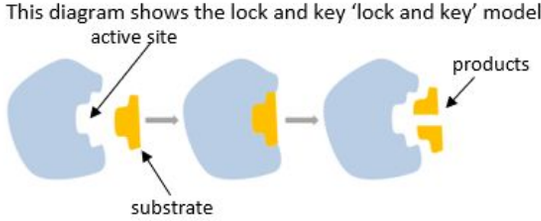
Principles of Organisation

Key Definitions	
Organisation	A hierarchy of biological systems. Cells form tissues, tissues form organs, organs form organ systems
Enzyme	A protein which acts as a biological catalyst. Proteins are made up of amino acids folded into specific shapes
Carbohydrase	Break down carbohydrates into sugars. Amylase breaks down starch (carbohydrate) into glucose (sugar)
Protease	Break down proteins into amino acids
Lipase	Break down lipids (fats) into glycerol and fatty acids
Bile	An alkaline solution which neutralises stomach acid in the small intestine and emulsifies fats (give them a larger surface area)
Heart	Made up of muscle tissue. It is a double pump designed to deliver blood to the lungs and the rest of the body.
Lungs	Are adapted for efficient gas exchange
Artery	Blood vessel that carries blood away from the heart
Vein	Blood vessel that carries blood towards the heart
Capillaries	Blood vessels that connect arteries and veins to tissue to allow gas and substance exchange
Blood	A tissue consisting of red blood cells, white blood cells, plasma and platelets.

How Enzymes Work

The active site is a specific shape, allowing only one substrate to fit into it. Different enzymes are needed to catalyse different reactions.

This diagram shows the lock and key 'lock and key' model. It is over simplified – actually the active site can change shape slightly to allow a tighter fit with the substrate. This is called the 'induced fit' model.

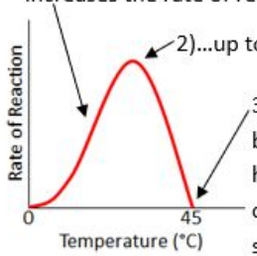


Effect of Temperature

1) Increasing temperature increases the rate of reaction...

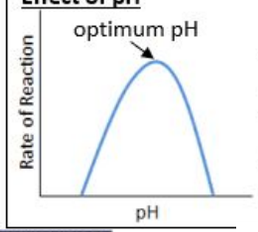
2)...up to a point – the **optimum** temperature

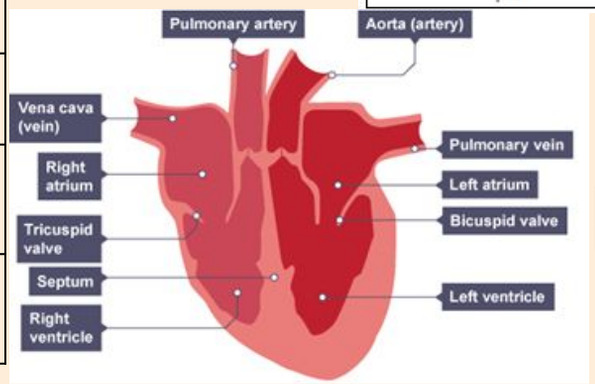
3) At high temperatures the enzymes become **denatured** – the bonds holding the enzyme together break, changing the shape of the active site so the substrate cannot fit.

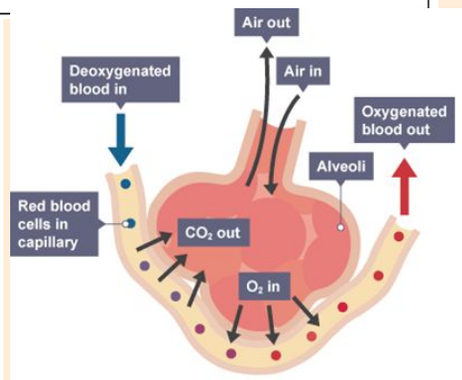


Effect of pH

If the pH is too high or too low it can weaken the bonds that maintain the shape of the enzyme.
This causes the active site to change shape (denature) so the substrate cannot fit.



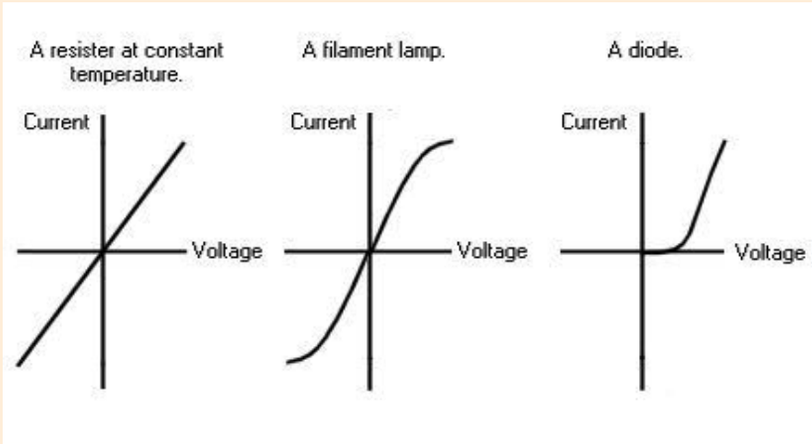


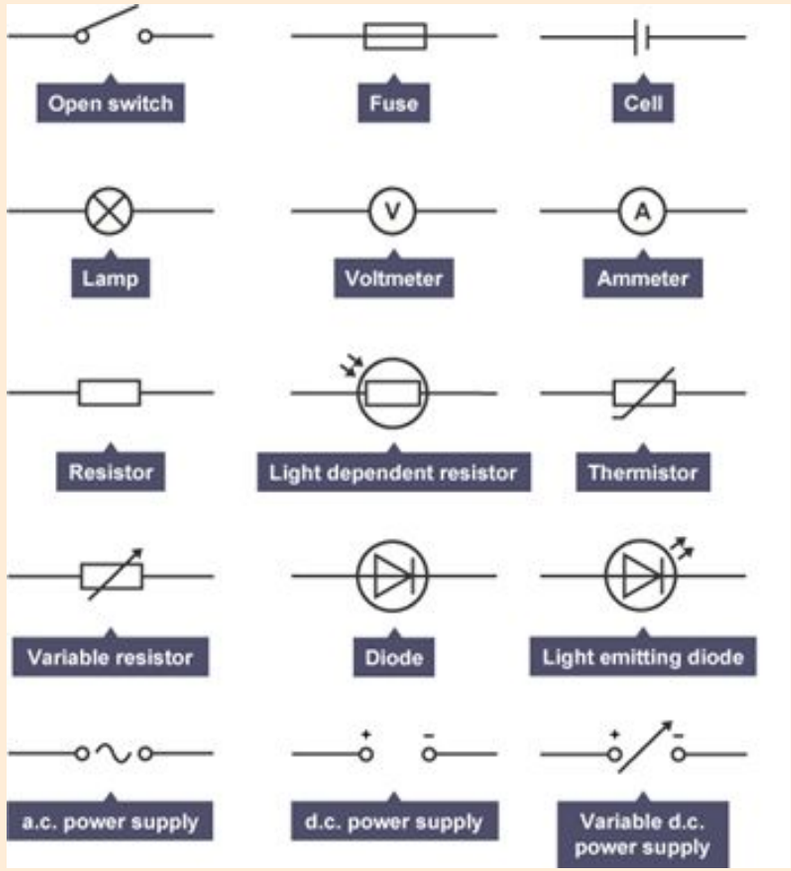


Electricity

Key Definitions	
Potential difference (p.d.)	A measure of the electrical work done by a cell (or other power supply) as charge flows round the circuit. Potential difference is measured in volts (V).
Electric current	A flow of electrical charge. The size of the electric current is the rate at which electrical charge flows round the circuit.
Resistor	A component that acts to limit the current in a circuit. When a resistor has a high resistance, the current is low.
Directly proportional	When two quantities are directly proportional, doubling one quantity will cause the other quantity will cause the other quantity to double. When a graph is plotted, the graph line will be straight and pass through the origin.
Inversely proportional	When two quantities are inversely proportional, doubling one quantity will cause the other quantity to halve
Ohmic	The current flowing through an ohmic conductor is proportional to the potential difference across it. If the p.d. doubles, the current doubles. The resistance stays the same.
Non-ohmic	The current flowing through a non-ohmic resistor is not proportional to the potential difference across it. The resistance changes as the current flowing through it changes.

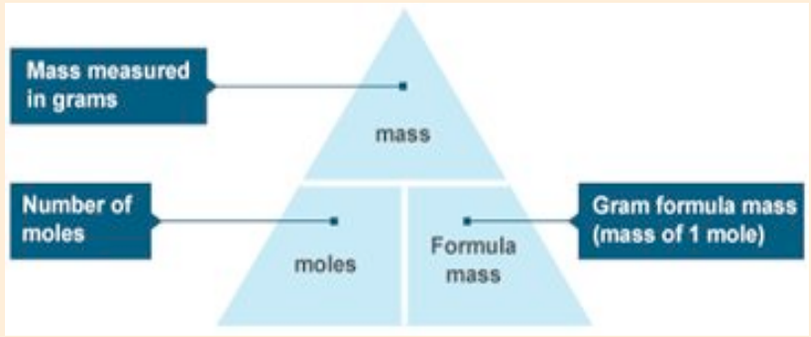
$P = V \times I$	power = voltage x current.
$V = I \times R$	voltage = current x resistance.
$Q = I \times t$	charge = current x time.
$E = V \times Q$	energy = voltage x charge.
$E = V \times I \times t$	energy = voltage x current x time.

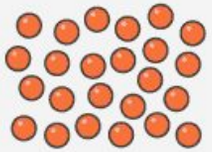


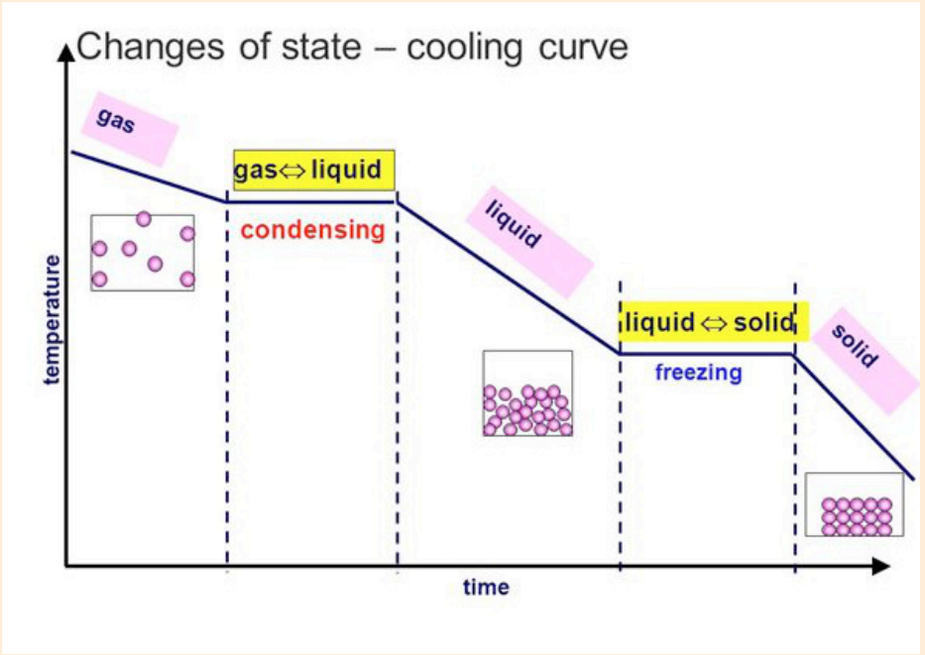


Quantitative Chemistry and Particle Model

Key Definitions	
Relative atomic mass	The average mass of atoms of an element, taking into account the mass and the amount of each isotope it contains.
Relative formula mass	The sum of the relative atomic masses of all the atoms in the formula.
Mole	Measurement of the amount of a substance.
Avogadro constant	The number of atoms, molecules or ions in one mole of a given substance (6.02×10^{23}).
Thermal decomposition	Reaction where high temperature causes a substance to break down into simpler substances.
Excess	When the amount of a reactant is greater than the mount that can react.
Limiting reactant	The reactant in a reaction that determines the amount of products formed. Any other reagents are all in excess and will not react.



	Solid	Liquid	Gas
Arrangement of particles	Close together Regular pattern	Close together Random arrangement	Far apart Random arrangement
Movement of particles	Vibrate on the spot	Move around each other	Move quickly in all directions
Diagram			



Equations

$\rho = m/v$ Density = Mass ÷ volume

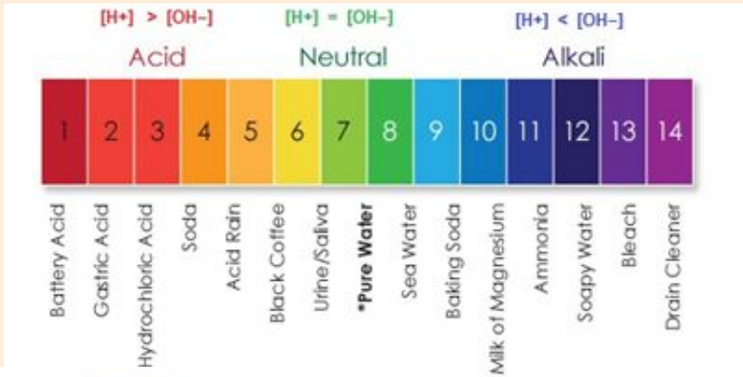
$\Delta E = mc\Delta\theta$

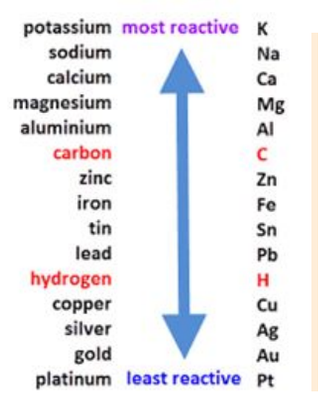
Change in thermal energy = mass x specific heat capacity x temperature change

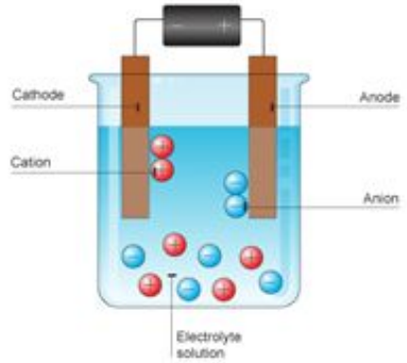
$E = mL$ Energy required to change state = mass x specific latent heat

Chemical and Energy Changes

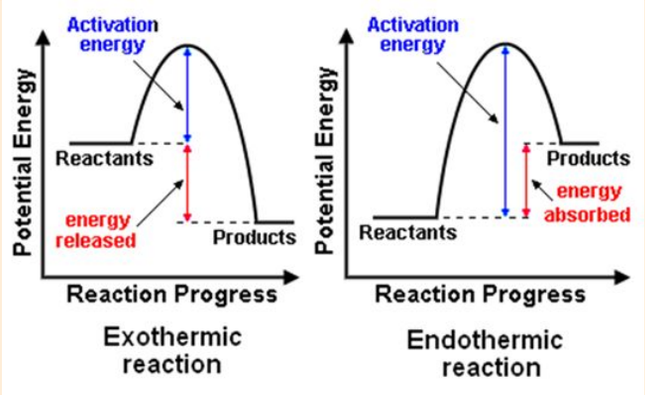
Key Definitions	
Displacement reaction	Reaction where a more reactive element takes the place of a less reactive element in a compound
Oxidation	A reaction in which a substance loses electrons (gains oxygen)
Reduction	Reaction in which a substance gains electrons (loses oxygen)
Ore	A rock from which a metal can be extracted for profit
Acid	Solution with a pH less than 7; produces H^+ ions in water
Alkali	Solution with a pH more than 7; produces OH^- ions in water
Aqueous	Dissolved in water
Strong acid	Acid in which all the molecules break into ions in water
Weak acid	Acid in which only a small fraction of the molecules break into ions in water
Neutralisation	A reaction that uses up some or all of the H^+ ions from an acid
Electrolysis	Decomposition of ionic compounds using electricity
Exothermic reaction	Reaction where thermal energy is transferred from the chemicals to the surroundings and so the temperature increases
Endothermic reaction	Reaction where thermal energy is transferred from the surroundings to the chemicals and so the temperature decreases
Activation energy	The minimum energy particles must have to react





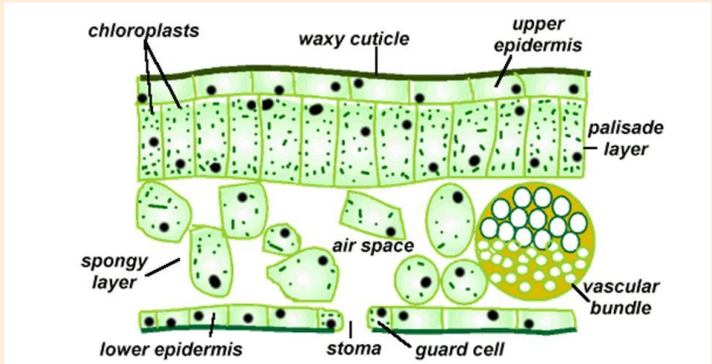


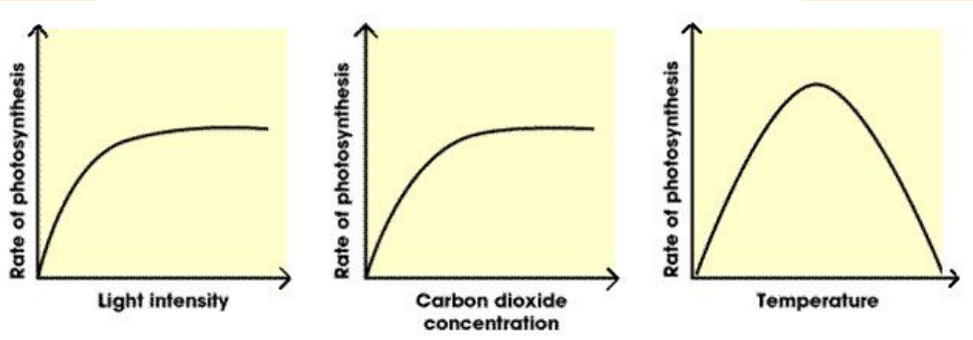
Acid + Alkali -> salt + water
Metal + acid -> salt + hydrogen
Metal oxide + acid -> salt + water
Metal carbonate + acid -> salt + water + carbon dioxide



Bioenergetics

Key Definitions	
Photosynthesis	The process by which plants use sunlight to produce glucose. Happens in chloroplasts
Limiting factor	These are conditions which affect the rate of photosynthesis e.g temperature, carbon dioxide concentration, light intensity.
Palisade Mesophyll	Contains the palisade cells and is where the majority of photosynthesis takes place
Epidermis	The outer layer of the leaf, the bottom layer contains the stomata, which are controlled by the guard cells
Chloroplasts	Contain chlorophyll, to absorb light energy, for photosynthesis.
Transpiration	The flow of water through the xylem of a plant
Respiration	The process by which living things release energy from glucose. Happens in mitochondria
Aerobic	In the presence of oxygen
Oxidation	A reaction that uses oxygen
Anaerobic	In the absence of oxygen
Oxygen debt	The amount of extra oxygen the body needs after exercise to break down lactic acid
Metabolism	The sum of all the chemical reactions that happen in an organism





glucose + oxygen → carbon dioxide + water + energy

$C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O + ATP$

glucose → lactic acid + energy

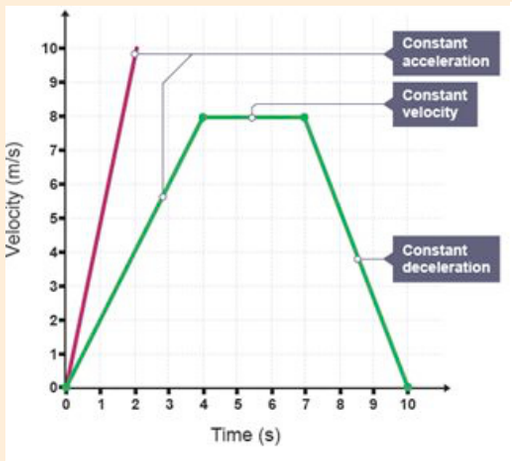
$C_6H_{12}O_6 \rightarrow 2C_3H_6O_3$ + energy

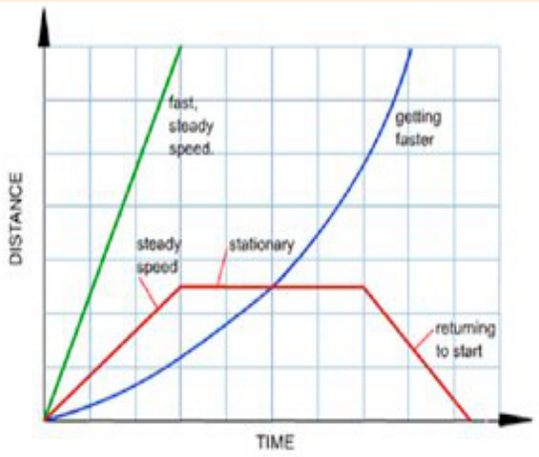
	Aerobic	Anaerobic
Oxygen	Needed	Not needed
Glucose breakdown	Complete	Incomplete
End product(s)	Carbon dioxide and water	Animal cells: lactic acid. Plant cells and yeast: carbon dioxide and ethanol
Energy released	Relatively large amount	Relatively small amount

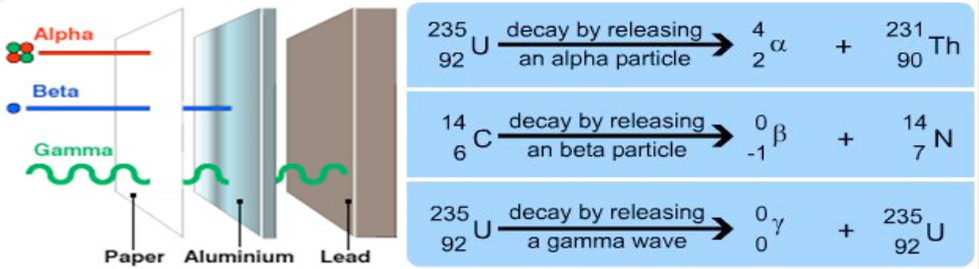
Forces and Motion and Atomic Structure

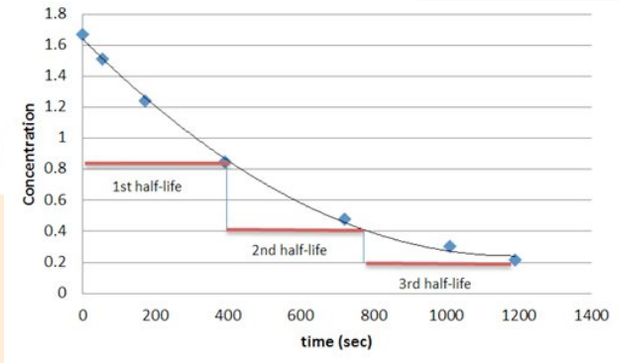
Key Definitions	
Terminal velocity	When the weight of a falling object is balanced by resistive forces.
Inertia	Inactivity. Objects remain in their existing state of motion – at rest or moving with a constant speed in a straight line – unless acted on by an unbalanced force.
Thinking distance	The distance a car travels while the driver reacts.
Braking distance	The distance a car travels while the car is stopped by the brakes.
Stopping distance	The sum of the thinking distance and braking distance
Closed system	A system with no external forces on it.

Isotope	Atoms with the same number of protons but a different number of neutrons.
Alpha particle	A particle formed from two protons and two neutrons.
Beta particle	A fast moving electron.
Gamma ray	An electromagnetic wave.
Geiger-Müller (GM) tube	A device which detects ionizing radiation. An electronic counter can record the number of particles entering the tube.
Half-life	The time taken for the number of nuclei in a radioactive isotope to halve. In one half-life the activity or count rate of a radioactive sample also halves.
1 Becquerel (1Bq)	An emission of 1 particle per second



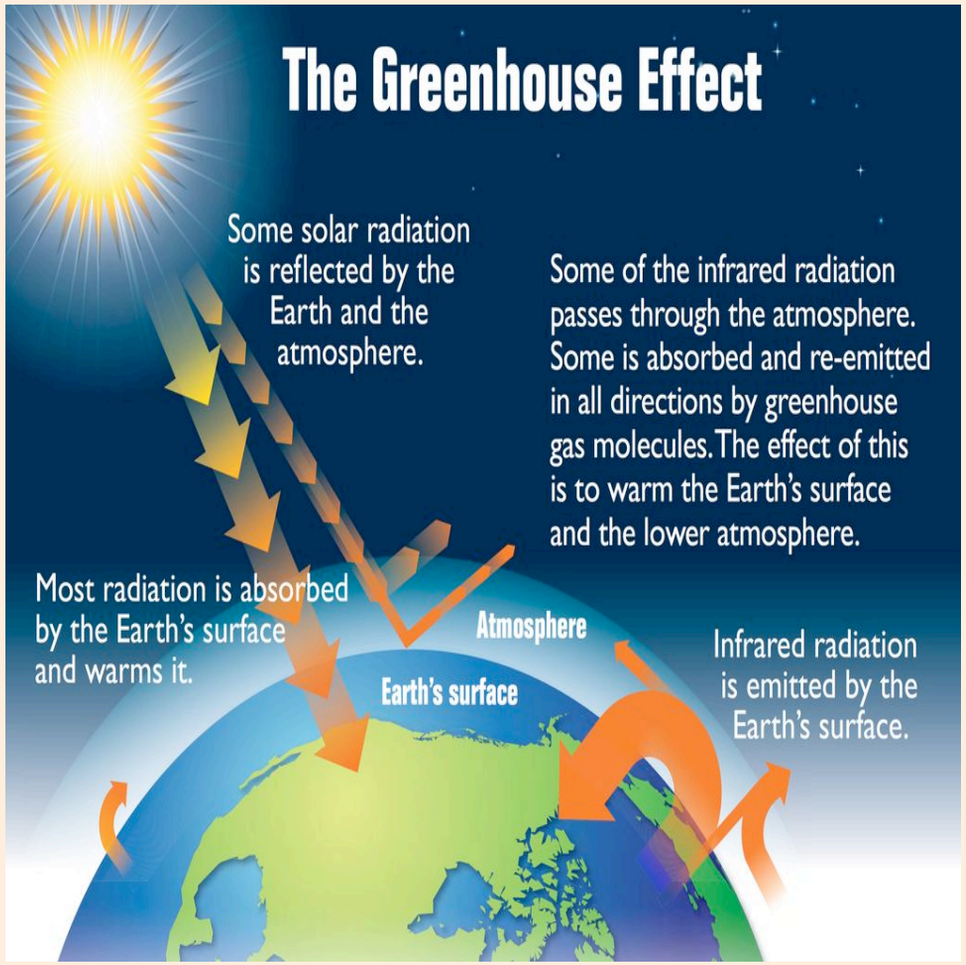






s = d ÷ t speed = distance ÷ time.
a = (v-u) ÷ t acceleration = change in velocity ÷ time.
F = m x a Force = mass x acceleration.
p = m x v momentum = mass x velocity.

Earth Chemistry



Greenhouse gas	A gas that absorbs long wavelength infrared radiation given off by the Earth but does not absorb the suns radiation.
Global warming	An increase in the temperature of the Earths surface.
Carbon footprint	The amount of carbon dioxide and other greenhouse gases given out over the full life cycle of a product, service or event.
Carbon neutral	Fuels and processes whose use results in zero net release of greenhouse gases to the atmosphere.

Finite resource	A resource that cannot be replaced once it has been used.
Renewable resource	A resource that we can replace once we have used it.
Sustainable development	Using resources to meet the needs of people today without preventing people in the future from meeting theirs.
Life cycle assessment	An examination of the impact of a product on the environment throughout its life.
Ore	A rock from which a metal can be extracted for profit.
Phytomining	The use of plants to absorb metal compounds from soil as part of metal extraction.
Bioleaching	The use of dilute acid to produce soluble metal compounds from insoluble metal compounds.
Leachate	A solution produced by leaching or bioleaching.