BOURNEMOUTH SCHOOL

Year 10

Knowledge Organiser 5

Summer Term: 2024-25

Name: Master Copy

Registration Form: 10

✓Hard Work ✓Discipline ✓Smart Appearance ✓Respect

Bournemouth School

Knowledge Organiser: Year 10 Summer

'Knowledge is power' by Francis Bacon

A knowledge organiser provides you with all the most important knowledge you need for each unit of study this half term. Your aim is to transfer all of this information into your long-term memory so you can use it in your lessons and further expand your understanding of this work.

How to use your knowledge organiser (KO):

1. Ensure you have your KO and Homework Learning journal with you at all times in school and when you need to do your homework at home.
2. In lessons when you have covered information that appears on your KO, your teacher will ask you to put a tick next to that section. This means that is now added to what you must learn for homework.
3. Initially, follow your homework timetable to decide what to revise each evening.
4. There are 4 strategies that you can use to revise. They are progressively more challenging so always start with the first in the list.
    a. **Look Cover Write Check**
        i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
        ii. LOOK carefully at the subject and section of your KO you want to revise and try to remember as much as you can. Remember this should be a ticked section.
        iii. Now COVER this information so you can't read it.
        iv. WRITE out what you can remember word for word in your Homework Learning Journal.
        v. CHECK what you have written by comparing it to your KO. Tick each correct word in green pen and correct any errors you have made.
        vi. Repeat this process until you are confident you can remember everything you need.

        AIM:

        You should be able to repeat the information by rote
    b. **Self or peer quizzing**
        i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
        ii. Write out a list of questions you could ask either yourself or a friend about this section of the KO. Write these in your Homework Learning Journal.
        iii. If you are working on your own, cover the KO and write a full answer to each question.
        iv. If you are working with a partner swap books and copy down their questions and have a go at answering them.
        v. Now uncover the KO and with a green pen correct your work.

        AIM:

        You should be able to repeat the information by rote but with a good understanding

c. Playing with words and sentences

i. Identify the subject and section of your KO that you want to revise. This should be one of the ticked sections.
ii. You now want to check how well you have learnt the information in your KO.
iii. Definitions – look at words that are used in this section. Can you write a definition in your own words?
iv. Rephrasing – can you rewrite the sentences or explanations in your own words?
v. Summary – can you summarise the main points of this section of the KO?
vi. Synonyms – can you write synonyms for key words and ideas?
vii. New Sentences – can you write a sentence that includes the key vocabulary or definitions that you have learnt?

AIM

You should be able to use the information in your KO in a flexible and confident way in your writing.

d. Think it, Link it

i. This is a technique to use towards the end of the half term when you are revising all of the KO.
ii. Think of the links or connections between different sections of your KO.
iii. Write these out in your own words in your Homework Learning Journal.
iv. Think about the links between a particular section of your KO and what you have learnt in your lessons. Can you expand on this section by linking it to your wider knowledge?
v. Write this out in your Homework Learning Journal.

AIM

You should be able to link your homework and your lessons to show a confident understanding of the work covered.

Homework Learning Journal

1. Always write the subject and the date when you start your homework.
2. Always write the strategy that you are going to use for your homework.
3. Always use a ruler to underline titles and dates.
4. Use a blue or black pen to complete your homework or a pencil if you need to draw.
5. Use a green pen to complete corrections of your work.
6. **You are expected to complete half a side of your Homework Learning Journal each evening as a minimum.**

Checking:

Your tutor will check your Homework Learning Journal at least once a week. If they are concerned that you aren't doing your homework properly they will offer support and guidance. If you don't respond to this guidance you will be added to the afterschool 'Success club' where a member of staff will help you complete your homework.

DO NOW tasks:

At the start of every lesson you should expect a Do Now task. This is a low stakes retrieval quiz on what you have learnt so far. If you have completed your homework this should be easy. The aim is to get 100% in each of these. If you miss this target occasionally, don't worry. If it happens regularly your teacher will ask your tutor to have a chat and offer you support.

Maths:

Your teacher will set you tasks to complete on Dr Frost Maths. This will be set every week on a Monday and will be collected in and checked on a Friday. If this has not been completed you will be issued a Detention on a Wednesday Lunchtime.

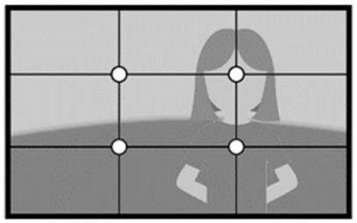
How long should I spend on my homework?

Key Stage 4					
Week 1					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
5 mins	MFL	MFL	Physical Activity	MFL	MFL
10	Maths	English		Maths	English
10	Biology	RS		Chemistry	Physics
10	Option C	Option D		Option A	Option B
55	Reading / Revision	Reading / Revision		Reading / Revision	Reading / Revision
Week 2					
Time	Monday	Tuesday	Wednesday	Thursday	Friday
5 mins	MFL	MFL	Physical Activity	MFL	MFL
10	Maths	English		Maths	English
10	Biology	RS		Chemistry	Physics
10	Option C	Option D		Option A	Option B
55	Reading / Revision	Reading / Revision		Reading / Revision	Reading / Revision

- You should spend about 35 minutes revising your KO each day.
- You should spend 25 minutes either reading or revising each day.
- This timetable is a guide. If you want to spend longer revising one subject that you find more difficult and less time on one you find easy, that is your choice.
- We would like you to spend one evening involved in a physical activity. This might be a sports club, a run, a game of football with friends or just a nice walk with the dog. Ask your PE teacher if you need guidance with this. It doesn't have to be on a Wednesday.
- In the summer term you will complete end of year assessments. Your teacher will give you specific revision activities to complete to guide you in what you need to revise for these tests. This will include all of your KOs for the year but may include some additional resources.

Art Craft & Design **GCSE** Y10 Skulls

PHOTO BASICS

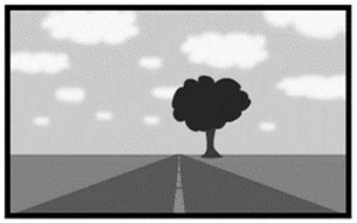


RULE OF THIRDS

The photo is divided by nine boxes. The subject is in one of the intersecting lines, or the circles.

SHUTTER SPEED & APERTURE

These figures are on your SLR camera screen. The higher the number (1/400), the faster the shutter speed. You are able to shoot faster subjects. As your aperture number gets lower (F2.8), more light is allowed into the lens. More light allows you to shoot in lower light situations.



LEADING LINES

The road in this picture serves as a guide that lead your eyes to the subject of the photo

DEPTH OF FIELD

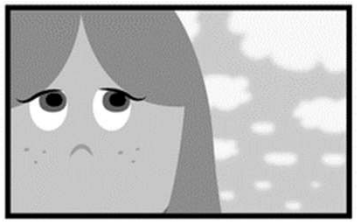
This is when the subject of the photo is completely in focus and the background is blurry. This can be controlled by aperture.

FRAMING

This is when there are objects around the subject that frame the subject, making your eyes more drawn to it.

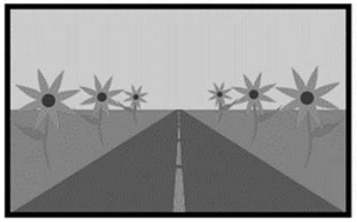
BALANCE

Placing your main subject off-centre, as with the rule of thirds, creates a more interesting photo. You should balance the "weight" of your subject by including another object of lesser importance to fill the space.



VIEW POINT

Before shooting your subject, think about where you will shoot it from. The viewpoint has a massive impact on the composition of a photo, and it can greatly affect the message that the shot conveys.



SYMMETRY

This is when the photo is equally balanced or has a pattern, creating symmetry within the photo. This can be very eye-catching, particularly in situations where they are not expected.

Keyword	Read, cover, write, review
Indian Ink	Also known as Chinese ink, Indian ink stems from one of the oldest and most durable pigments of all time: carbon black. Made from ash mixed with a binder such as water, liquid or glue, various recipes for carbon black can be found as far back in history as the ancient Egyptians and Greeks.
SLR camera	A single-lens reflex camera (SLR) is a camera that typically uses a mirror and prism system (hence "reflex" from the mirror's reflection) that permits the photographer to view through the lens and see exactly what will be captured.
Drawing with light	Light painting, painting with light, light drawing, or light art performance photography are terms that describe photographic techniques of moving a light source while taking a long-exposure photograph, either to illuminate a subject or space, or to shine light at the camera to 'draw'.
ISO	ISO refers to the sensitivity of your camera's sensor to light. If you've ever tried film photography, you may remember ISO. That's because it was also called film speed. Digital ISO works in a similar way to film speed. Essentially, the lower the ISO number (100, for example, is a low ISO), the less sensitive your sensor or film will be to light. The higher your ISO (1,600 and above), the more sensitive your sensor or film
Noise	One important consideration when selecting an ISO is noise or grain. In digital photography, higher ISOs also produce grain. To avoid grain and noise in images, it helps to use the lowest ISO possible by adjusting other settings to compensate.

Biodiversity

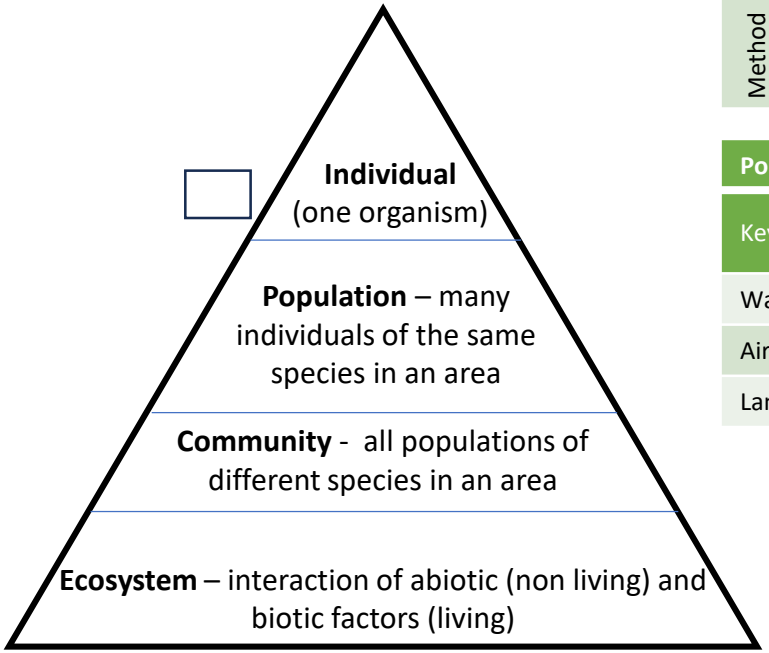
Keyword	Learn	✓
Biodiversity	The variety of all the different species of organisms in an ecosystem.	
Factors that reduce biodiversity	Destruction of peat bogs, destroying habitats, releasing carbon dioxide into atmosphere (global warming), pollution, deforestation	
Methods of maintaining and conserving biodiversity	Breeding programmes, protection and regeneration of habitats, keeping hedgerows in farmers' fields, reduction of deforestation and carbon dioxide emissions, recycling rather than using landfill	

Biotic and Abiotic Factors

Keyword	Learn	✓
Biotic Factors	Availability of food, new predators, new pathogens, other species outcompeting each other.	
Abiotic Factors	Light intensity, temperature, moisture levels, oxygen levels, wind intensity, carbon dioxide levels, soil pH.	

Keyword	Learn	✓
Habitat	The area in which an organism lives	
Competition	Plants compete for light, space, water and mineral ions. Animals compete for food, mates and territory.	
Interdependence	Within a community each species depends on other species for food, shelter, pollination etc	
Adaptations	A feature an organism has that allows it to survive in its ecosystem.	

Levels of Organisation in an Ecosystem



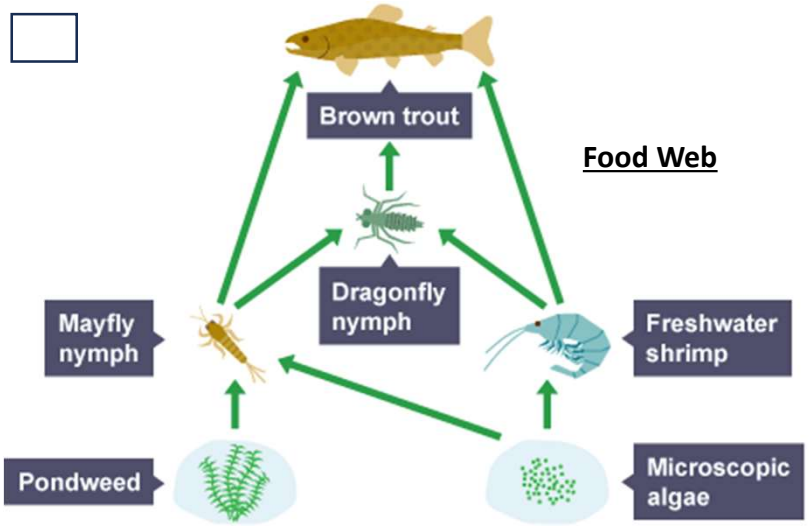
Sampling Techniques

	Transect line	Random Sampling	✓
Use	To determine the distribution of species across an area	Used to count total number of organisms in an area	
Method	1. Place a transect line using a 30m tape measure 2. Place the quadrat at 0m and count organisms. Record distance and organism number in table 3. Move quadrat to 5m and repeat, moving 5m each time 4. Plot a graph to see pattern of results and distribution of species	1. Randomly place quadrat (to avoid bias) and count number of organisms. 2. Repeat 10 times and calculate a mean. 3. Work out area of field and area of quadrat. 4. Calculate total organisms by multiplying mean by number of quadrats that could fit in field	

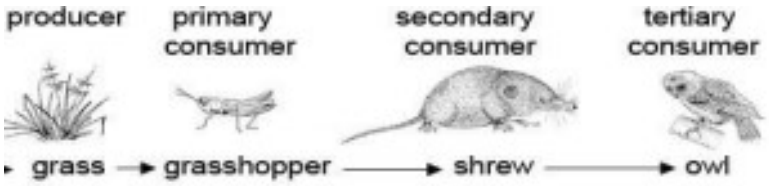
Pollution

Keyword	Learn	✓
Water Pollution	Sewage, fertiliser toxic chemicals	
Air Pollution	Smoke and acidic gases	
Land Pollution	Landfill and toxic chemicals	

Food Web



Food Chain

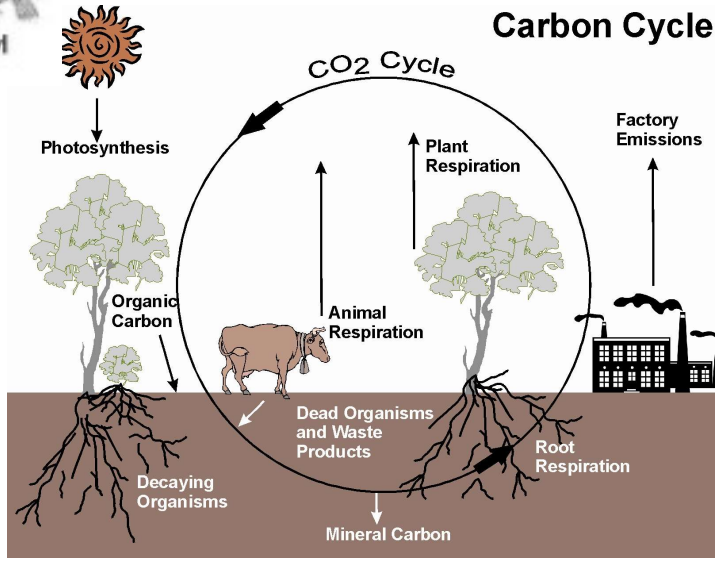


Decomposers are **bacteria and fungi**, which break down dead organisms in a process called **decomposition** or rotting.
They do this by releasing **enzymes** onto the dead matter and afterwards, consume the broken down substances.
Decomposers carry out **respiration** which releases heat, carbon dioxide and water. Therefore decomposers require **oxygen.**
They form a vital role in the **recycling of matter.** When organisms die and decompose plants absorb the broken down nutrients through their roots.

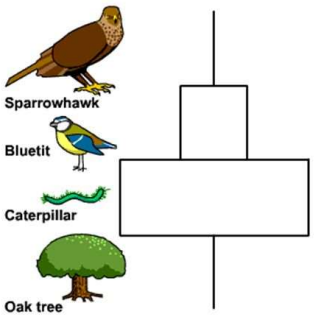
Carbon Cycle

Carbon Cycle		
Keyword	Learn	✓
Storing Carbon	Carbon is stored by Photosynthesis in plants and algae. Peat bogs and the oceans are excellent carbon stores.	
Releasing Carbon	Respiration (plants and animals), combustion (of fossil fuels), Decay and decomposition, destruction of peat bogs	

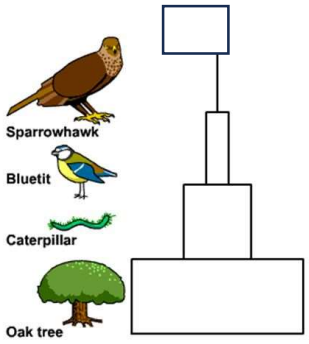
Carbon Cycle



Pyramid of number



Pyramid of biomass



Food Chains

Food Chains		
Keyword	Learn	✓
Producer	Photosynthetic organisms that use the energy from the sun to make their own food (glucose) and produce biomass. Form the base of a food chain.	
Consumer	An organism that eats another organism for food.	
Herbivore	An organism that eats producers. Normally a primary consumer.	
Trophic level	The position of an organism in a food chain, food web or pyramid.	
Food Chain	A sequence of feeding relationships between organisms	
Food Web	A network of food chains. Shows how food chains link together.	
Predator	An animal that hunts, kills and eats other animals for food.	
Prey	Organisms that predators kill for food	

Methods of Promotion

Method	Explanation	Examples	Advantages	Disadvantages	✓
Advertising	There are a number of advertising methods a business can use.	○ Television ○ Newspapers ○ Magazines ○ Billboards ○ Internet (online) ○ Radio	○ Build customer awareness ○ Promote the benefits of your products or services. ○ Communicate information	○ Encourage people to buy products and services they don't really need. ○ They may be misleading. ○ Very costly (especially TV and radio advertising)	
Public Relations (PR)	A business can use **public relations** to increase awareness of the business and its products. This is usually free media coverage such as for the opening of a new store or launch of a new product.	○ Common PR activities include having celebrities opening a new store and supporting a charity or community venture	○ Cheap method of promotion ○ Can create a positive image for the organisation	○ No control over how message is conveyed	
Sales Promotion	These strategies are used by a business to increase sales in the short term	○ discounts ○ buy one get one free ○ competitions and coupons ○ point of sales displays ○ free gifts	○ Effective at achieving a quick boost to sales ○ Encourages customers to trial a product or switch brands	○ Sales effect may only be short-term ○ Customers may come to expect or anticipate further promotions	
Sponsorship	Businesses can increase the profile of the business by sponsoring sport events, sports teams or television programmes.	○ Football shirts such as Emirates sponsoring Arsenal FC ○ Barclays sponsor Premier League Football	○ Increase brand awareness ○ Target new market segments	○ Hard to measure effectiveness of method ○ Can be costly	
Social media	This allows communication with customers about new products or special offers and can be used to take customers to their website.	○ Using social media platforms such as Facebook, Twitter, Instagram or TikTok with a company account to interact with customers	○ Easier to communicate directly with customers ○ Very cheap / cost effective ○ Can improve quality of customer service / customer engagement	○ Inaccurate or inappropriate responses can be shared quickly and easily. This will create bad publicity for the business.	
Personal selling	A salesperson uses his or her skills and abilities in an attempt to make a sale	○ Perfume and cosmetic counters in department stores.	○ Customer Confidence in product from experienced knowledge ○ Can gain feedback to pass on	○ Training Cost. ○ Expensive cost per sale	

Factors affecting promotional mix ✓

Finance available — Competitor Actions

Nature of product or service

Nature of market — Target market

Key term ✓

Promotional mix is a combination of methods including advertising, sales, public relations and direct marketing to achieve a specific marketing goal.

Reasons for promotion ✓

- Inform/remind customers about product
- Create/increase sales
- Create/change image of product
- Persuade customers to buy

Definitions

Key Term	Definition
Producers	This is the maker of the product or service
Wholesalers	These businesses buy products and sell them in smaller quantities to retailers
Retailers	These are the shops that sell goods and service to the final customer
Distribution channel	Method used to get product from producer to final consumer
Indirect distribution channel	Involves intermediaries that perform a company's distribution functions
Intermediaries	More commonly referred to as 'middle men' . Anyone used in the process between producer to consumer.
Direct distribution channel	Where a company sells directly to the end consumer, usually through e-commerce
E-commerce	A method of buying and selling goods and services online

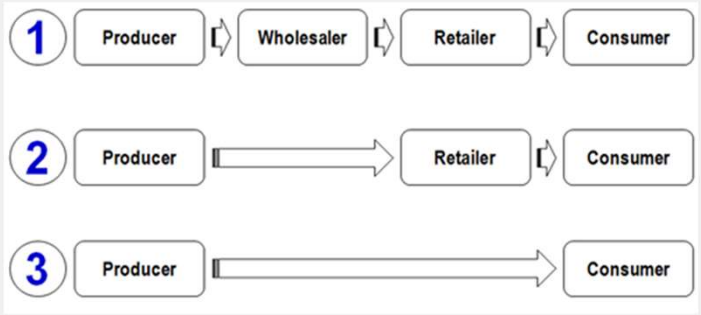
Other Distribution Channels

- **Mail order businesses** do not have any stores, instead they send catalogues to customers who then place orders.
- Some businesses sell their products over the telephone. This is known as **telesales**. Customers can phone the business to place an order or the business can call potential customers to try and convince them to buy them.
- Some businesses sell their products on a website using **e-commerce**. Some sell via mobile devices, which is known as **m-commerce**.

Main Distribution Channels

Distribution channels can be set up in a number of ways:

- Producer → customer
- Producer → **wholesaler** → customer
- Producer → wholesaler → **retailer** → customer



Multi-Channel Distribution Channels

Definition	Advantages	Disadvantages
Where a business uses more than one type of distribution channel. An example would be a high street retailer, such as Next, distributing in store, directly to customer using e-commerce and using catalogues sent via direct mail.	○ Allows more target market segments to be reached ○ Customers increasingly expect products to be available via more than one channel ○ Enables higher revenues – e.g. if retail outlets have no stock, but customer can buy online	○ Potential for channel "conflict" –e.g. competing with retailers by also selling direct ○ Can be complex to manage ○ Danger that pricing strategy becomes confused (in the eyes of customers)

Example of Multi-Channel Distribution: Apple Consumer Electronic Devices

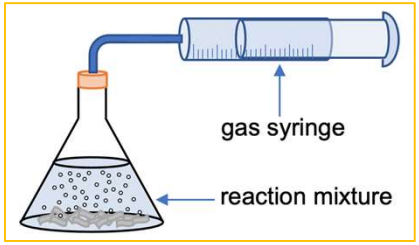
Topic 6a – the rate and extent of chemical change

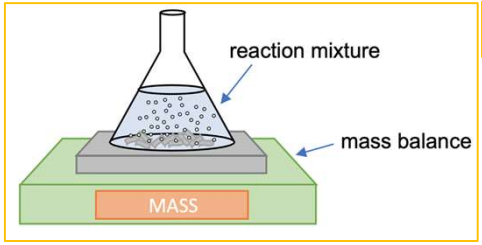
Collision Theory		
Factor	Why does rate increase?	✓
Increase surface area : volume ratio of solids	Collisions occur at the surface so there are more frequent collisions between particles.	
Increase the concentration of solutions and pressure of gases	More particles in a given volume so there are more frequent collisions between particles.	
Increase the temperature	Particles have more energy so there are more frequent collisions **and** each collision is more likely to exceed activation energy.	
Use a catalyst	Provides an alternative pathway for a reaction requiring lower activation energy. Increases frequency of successful collisions.	

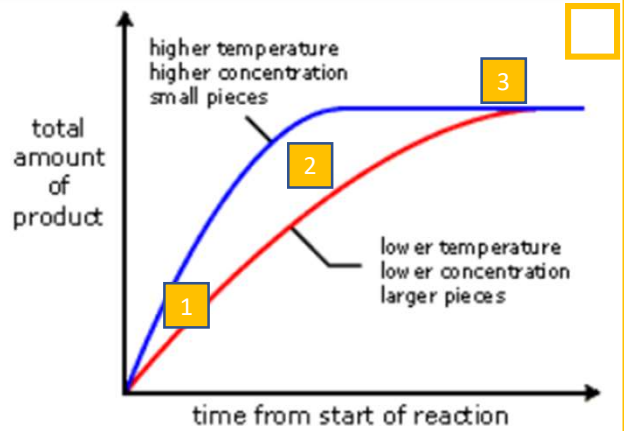
$$\text{mean rate of reaction} = \frac{\text{quantity of reactant used}}{\text{time taken}}$$

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

Product	How to measure
Gas collection	Use a gas syringe
Gas escapes to atmosphere	Measure decrease in mass using a balance
Precipitate formed	Time taken for cross to disappear



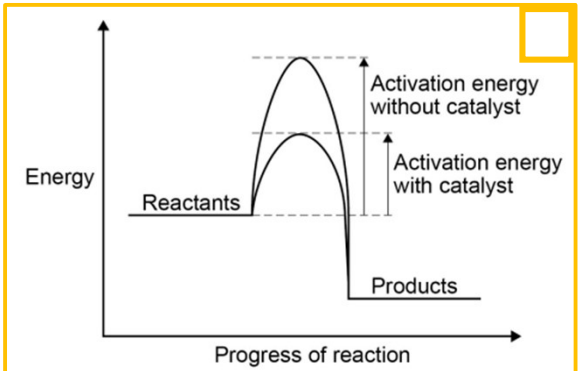




1) Rate is fastest at the start when the concentration of reactants is highest.

2) The rate slows down as reactants are converted into products. The concentration of reactants decreases.

3) The reaction has stopped once ONE of the reactants has been used up.



<u>Measuring rate of reaction at specific times.</u>

1) Draw a tangent to the curve at the required time on your line of best fit.

2) Make the tangent as large as possible

3) Calculate the gradient of the tangent using the formula: Gradient = <u>change in y</u>
change in x

5) State units

Topic 6b – the rate and extent of chemical change

Key term	Definition	✓
Reversible reaction	In some chemical reactions, the products can react together to produce the original reactants. Shown by the symbol: ⇌	
Closed system	A system where no substances can enter or leave.	
Dynamic equilibrium	A system where both the forward and revers reactions are taking place at the same time and the same rate.	
Le Chatelier's principle	If a change is made to the conditions of a system at equilibrium, the position of equilibrium will move to oppose the change.	
Equilibrium position lies to the left	There are more reactants than products at equilibrium.	
Equilibrium position lies to the right	There are fewer reactants than products at equilibrium.	

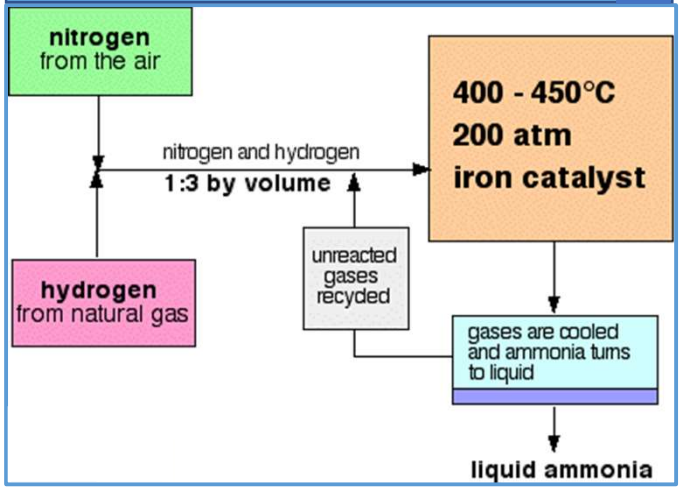
If a reversible reaction is exothermic in one direction, it is endothermic in the opposite direction.

The same amount of energy is transferred in each case.

Changing the conditions of a reaction at equilibrium

Condition	Effect
Increase concentration of reactants	Position of equilibrium moves to the right: the concentration of reactants is reduced. Product yield increases.
Decrease the concentration of reactants	Position of equilibrium moves to the left: the concentration of products is reduced. Product yield decreases.
Increase pressure	Position of equilibrium moves to the side with fewer gas particles: pressure is reduced.
Decrease pressure	Position of equilibrium moves to the side with more gas moles: pressure is increased.
Increase temperature	The position of equilibrium moves to favour the endothermic reaction: heat energy is absorbed and decreases the temperature.
Decrease temperature	The position of equilibrium moves to favour the exothermic reaction: heat energy is released and increases the temperature.

The Haber Process



Nitrogen + Hydrogen ⇌ Ammonia

$N_2 + 3H_2 \rightleftharpoons 2NH_3$

Ammonia is made in the Haber process and is used to make nitrogen based fertilisers.

450°C is a compromise temperature: the forwards reaction is exothermic so a lower temperature favours the forwards reaction, but low temperatures make the rate of reaction too slow.

200 atm is a compromise pressure: there are fewer moles of products so a high pressure favours the forwards reaction, but high pressure requires expensive equipment and has a risk of explosion.

A catalyst does not change the position of equilibrium so the yield does not change: the rate of both reactions is increased by the same amount.

1.3.1 Networks & Topologies

Keyword	Definition	✓
Network	Where two or more computer devices are connected together.	
LAN	Local Area Network A computer network located within a small geographic area. The hardware is owned and maintained by the organisation that uses it.	
WAN	Wide Area Network Covers a large geographical area. The infrastructure is provided by a large telecommunications company.	
Transmission media	The medium the data is sent through.	
Bandwidth	How much data can be transferred over a network in a given time.	
Latency	How much time it takes for a packet of data to travel across the network.	
Client-server	A network where one computer (server) provides data and services for many other computers (clients).	
Peer-to-peer	A network where all of the computers have equal status.	
Switch	Hardware that allows devices to connect together to form a wired network in a LAN..	
WAP	Hardware that connects Wi-Fi devices to a wired network.	
Router	Hardware that connects different networks together.	

1.4 Network Security

Keyword	Definition	✓
Malware	Any kind of malicious program that is installed on a computer system.	
Virus	Malware that, when executed, replicates itself by modifying other computer programs and inserting its own code into those programs.	
Worm	Malware that replicates itself in order to spread to other computers.	
Social engineering	Tricking or manipulating people into giving away critical information or access details.	
Brute force attacks	Use software to automatically try every possible combination of letters, numbers and characters until the correct password is found.	
Penetration testing	Attempting a controlled attack on a network to identify vulnerabilities	
Anti-malware software	Designed to detect and remove malware.	
Firewall	Designed to prevent unauthorised access to a network by inspecting and filtering incoming and outgoing data packets	
Two-factor authentication	2FA is an authentication process that requires two different authentication factors to establish identity.	
Biometrics	Using body measurements and calculations related to human characteristics.	
Encryption	Scrambling plain text data in such a way that it cannot be read by unauthorised people without a key.	
Network policy	A document that sets out the rules and procedures to help protect the network.	

GCSE Design Technology:
TIMBER 7.7 *part 4* Equipment and processes

Tick	Term	Definition
	KD fittings	**K**nock **D**own fittings. These are blocks and fittings that are easy to use and fix together pieces of a product. They are used in flat pack furniture to allow for easier transportation of goods.
	Ironmongery	The term used for a range of metal parts/components that can be bought to go onto products such as: • Hooks • Handles and knobs • Locks • Drawers runners
	Abrading	When a rough grit paper is used to sand away a material i.e. sandpaper.
	Wastage	When a material is cut away and becomes waste as it is no longer needed.

Screws and nails

Tick	Screw	Explanation/use
	General screws	These create a strong, tight fit which can be unscrewed and dismantled if needed.
	Pilot hole	These are drilled into timber prior to adding a screw. They are smaller than the screw being used to give the screw grip as it goes in.
	Countersink hole	These are used for countersink screws. A countersink bit drills a 'v' shaped hole so that the screw sits flush to the surface of the wood.
	Round wire nail	These have a large, flat head so they do not pull through thin materials.
	Oval nail	Spread the grain less due to the shaping of the nail and so split the wood less when being hammered in.
	Panel pins	These are small nails used for extra support and strength.

GCSE Design Technology **revision**:
CORE 1.04 Smart materials

Type	Description	Uses/ applications
Shape memory alloys (SMAs)	Can be deformed but returns to its' original shape when heat or electricity is applied.	• Glass frames • Tweezers and hooks • Orthodontic wires
Nano-materials	Made of tiny components less than 100 nanometres (a millionth of a mm).	• Sunscreen • Car bumpers • Motorcycle helmets
Photochromic glass	Darkens when exposed to light and reverses in the dark.	• Sunglasses • Cockpit windows
Reactive glass	It changes from transparent to opaque when voltage is passed through.	• Welding masks and goggles • Windows • Toilets
Conductive inks	Used in a pen – contains pigments which allow a small current to pass through.	• Improvising or repairing circuit boards • Drawing circuits on different materials
Temperature-responsive polymers	Changes colour when heat is applied to it.	• Baby products i.e. spoons, bath thermometers • Kettles • Biomedical applications
Piezoelectric materials	Generates a small electric charge when compressed.	• Sensors: burglar alarms, seatbelt sensors, keypads, keyless car entry • Actuators: for precise position control i.e. digital cameras

GCSE Design Technology: TIMBER 7.8 Surface treatments and finishes

Tick	Name	Description	Advantages
	Paint	A coloured pigment in liquid that dries out.	Available in a range of colours and different finishes.
	Stain	A coloured liquid that soaks into the wood surface.	• It makes a pale wood like pine into a darker colour to mimic a more expensive wood like oak or mahogany • You can still see the grain
	Varnish	A clear coating that dries to a shine.	• Gives a hard wearing finish • Can be gloss or matt finish
	Wax	A soft solid that is rubbed onto the surface and soaks in.	• Easy to apply • Gives a plain, natural look • Can leave an extremely smooth finish
	Oil	It is rubbed onto the surface and soaks in.	• Good waterproofing for timber • Vegetable oil on kitchen ware is non toxic
	Shellac	A cloudy liquid made from a resin secreted by a beetle.	Traditionally used on expensive furniture for its glossy lustre.
	Veneer	A thin layer of material (i.e. wood, polymer) glued onto the surface.	An expensive, decorative wood like mahogany can be put onto a cheaper wood line pine or chipboard.

GCSE Design Technology **revision**: CORE 1.03 Energy sources

Source	How it is used	Advantages
Biomass	Organic matter such as wood and crops are burnt to produce heat or converted to electricity	• Uses waste products
Biodiesel	Made from plants, vegetables and fermented waste cooking oil	• Uses waste products • Does not give off harmful chemicals
Tidal	Turbines turned by tidal movement of water, generating electricity	• No emissions • Very powerful • Predicable & stable
Wind	Wind turns the turbines which creates electricity through a generator	• Freely available • Can be used in remote areas • No emissions
Solar	Photovoltaic cells convert sunlight into electricity	• Reliable source in warmer countries • Can be small scale for homes • More electricity in stronger sunshine
Hydro-electric	Dams are built to trap water, which turns turbines and generators	• Large amount of low-cost power • Can be used as water reserve

Type	How it is used	Advantages
Coal	The coal is burnt, this heats water, which creates steam, which is used to turn a turbine, which creates high voltage electricity.	• Generates large-scale electricity • Cheap to extract and convert • Reliable
Oil	Oil is burnt to heat water into steam, which turns turbines to produce electricity.	• Generates large-scale electricity • Relatively cheap to extract and convert
Gas	Gas is burnt, which powers turbines to then create electricity through a generator. Waste heat is also used to heat water, turning it into steam to then turn other turbines generate more electricity.	• Generates stable, large-scale and high-powered electricity • Relatively cheap to extract and use as ready-made fuel • Cleaner than oil or coal

Year 10 English Literature Paper 2

Exam Structure: 2 hours 15 minutes			
Topic	Question form	Marks	☑
Section A Modern Prose or Drama: An Inspector Calls.	Write one essay from a choice of two possible options, one exploring a character, one a theme. 40 min	30 marks for content (AO1-12, AO2 -12, AO3- 6). 4 marks for SPAG (AO4)	
Section B Poetry: The Power and Conflict Poetry collection	Write one essay comparing two poems from the collection. One poem will be set and printed on the page. You need to compare to the second poem from memory. 40 min	30 marks for content (AO1-12, AO2 -12, AO3- 6).	
Section C Unseen Poetry	Explore a given theme in an unseen poem. 35 min	24 marks for content (AO1-12, AO2-12).	
	Compare the methods used in the first unseen poem and a second unseen poem with a similar topic. 10 min	8 marks for comparison of methods (AO2)	

Assessment objectives		☑
AO1	Read, understand and respond to texts. Students should be able to: • Maintain a critical style and develop an informed personal response to the text. • Use textual references, including quotations, to support and illustrate interpretations	
AO2	Analyse the language, form and structure used by a writer to create meanings and effects, using relevant subject terminology.	
AO3	Show understanding of the relationships between texts and the contexts in which they were written.	
AO4	Use a range of vocabulary and sentence structures for clarity, purpose and effect, with accurate spelling and punctuation.	

An Inspector Calls- context review		☑
1912	The date the play is set. A time characterised by a rigid class system, based on the one that had emerged in the Victorian era. Power and wealth rested with the upper classes, who were confident and complacent in their power. Priestley sets his play at this time to highlight problems of inequality and the need for change.	
WW1 and WW2	The world wars had helped break down barriers between classes. All classes had fought together and, following the wars, there was greater class mobility as people moved into roles left vacant by those who had died.	
Strikes and Trade unions	From 1910 onwards a series of strikes and protests had drawn attention to the poor treatment of the working classes. By 1945, trade unions had more power to unite workers and call for better conditions and people were much more conscious of the rights of workers.	

Context review – continued		☑
Suffragettes	From the early 1900s, the suffragette movement had helped highlight social inequality between the genders. Women gained the same voting rights as men in 1928 and, by 1945 even though society still favoured men, people were more aware of and sympathetic to the rights of women in society.	
The Titanic	The titanic sunk in 1912. A luxury liner considered unsinkable; it can be seen as a symbol of the complacency of Britain's wealthy, industrial class.	
Capit-alism	Encouraged a focus on business and the growth of individual wealth.	
Socialism	Encouraged the idea that societies wealth should be used to benefit all members of society. Encouraged the idea of community and social responsibility.	
1945	When Priestley wrote the play. People were much more sympathetic to socialist views and ready to take on the play's message. A labour government were on the verge of taking power, promising reforms to social equality. The welfare state had just been set up, providing support to those living in poverty. The NHS was soon to be set up, making free health care available to all.	
Priestley	A committed socialist and advocate for social reform. He served in World War 1 and later became a broadcaster for the BBC. He wrote An Inspector Calls to encourage a shift towards socialism and greater class equality.	

Characters and quotes		☑
Arthur Birling	Embodying the capitalist mindset, Arthur Birling is arrogant, selfish and unsympathetic towards the working classes. Priestley uses dramatic irony to highlight the foolishness and arrogance of his outdated views, as he confidently proclaims that the Titanic is "unsinkable, absolutely unsinkable" and that "I'm talking as a hard headed, practical man of business. And I say there isn't a chance of war".	
Sheila Birling	Sheila's sympathy for Eva, her remorse for her own actions and the way she sides with the Inspector urging her family to take responsibility, highlight the role the younger generation have to play in changing attitudes in society. "*Urgently, cutting in:* Mother, don't- please don't. For your own sake, as well as ours, you mustn't-"	
Eric Birling	Young, arrogant and foolish, described early on as "half-shy, half-assertive" Eric has to grow and mature, taking responsibility for his actions. His growth as a character demonstrates the way society can grow and improve.	
Sybil Birling	She is an example of the fixed attitudes of the established upper classes. Her rush to judge Eva and her belief that as a member of the upper classes she is automatically superior, highlights prejudicial attitudes in society: "As if a girl of that sort would ever refuse money!"	
Gerald Croft	Gerald's exploitation of Eva highlights the inequality between the genders "I insisted on her moving into those rooms and I made her take some money" . His initial remorse, followed by his attempts to explain away the Inspector's tale: "Everything's all right now Sheila" act as a warning against those who would rather ignore lessons on social inequality.	
Eva Smith/ Daisy Renton	Represents the working classes, as suggested by the generic name "Eva Smith". Her lack of voice in the play highlight the lack of power over their own lives women and the working classes held. The name Daisy Renton highlights her innocence and purity (Daisy) and how she treated like a commodity by society (Renton).	
Goole	Priestley's mouthpiece. He embodies socialist views and the inescapable lessons of history. "We are members of one body. We are responsible for each other. And I tell you that the time will soon come when if men will not learn that lesson, then they will be taught it in fire and blood and anguish".	
Edna	Another example of the working class. Her subservient role and lack of dialogue highlights how the lower classes had little say in the world of 1912 Britain.	
Setting	The setting of the Birling household represents the world of 1912 Britain. This microcosm of society is dominated by the wealth and self-satisfaction of the upper classes, until the Inspector (socialism) arrives to shatter their complacency.	

Food Provenance- Food Processing and Production

Where food comes from
No matter where it is bought from, food is grown, reared or caught, then processed in some way, to make it edible and safe to eat.

Food processing
Food processing is classified into two types, PRIMARY and SECONDARY.

Examples of Primary are Milling wheat into flour.
Heat treating (Pasteurising, sterilising and Ultra Heat Treating (UHT) Milk.
Extracting oil from crops such as maize for corn oil, rape for rapeseed oil, Olives for Olive Oil.
Peeling, stoning and slicing fruit for canning or freezing.
Examples of secondary processing are making wheat into bread, pasta, biscuits and other flour-based products.
Making Milk into cheese, butter and yoghurt etc

- Primary processing of milk- Milk is mainly water it is an emulsion and has tiny drops of fat suspended in it. The cream (Fat) is dispersed in milk under pressure by a process known as HOMOGENISATION.
- Milk can be pasteurised-heated to 72 Degrees for 15-25 seconds and cooled quickly to below 6 Degrees.
- Sterilised- Heated to 113-130 degrees for 10-30 minutes and cooled quickly.
- Ultra Heat Treated (UHT) Heated to 135 Degrees for 1 second put into sterile sealed containers.
- Milk can be Whole Milk where no cream is removed and is 3.5 per cent fat.
- Semi Skimmed – where some cream is removed and is 1.7 per cent fat.
- Skimmed has a fat content of 0-0.5 Percent and contains slightly more calcium than whole milk but is not recommended for children under 5.
- Channel Island Milk has a higher fat content than UK mainland milk so is higher in fat, and therefore higher in fat soluble vitamins.
- ORGANIC Milk comes from cows that have grazed in fields where no fertilisers etc have been used and comes in the same varieties as above.

Food Manufacturing
Modern processing has developed over the centuries, with canning and pasteurisation advancing the microbiological safety of food. Food processing can be very simple, e.g. preparing, freezing or drying food to preserve nutrients and freshness. It can also be complex, e.g. formulating a frozen meal with the right balance of nutrients and ingredients.

There are two main stages to food processing:

- primary - foods are processed after harvest or slaughter, e.g. wheat is harvested and then milled into flour;
- secondary - food is made into products, e.g. flour into bread or pasta. Steps need to be taken at all stages of food supply to prevent contamination and spoilage and avoid food wastage.

Flour can be **wholemeal** where an extraction rate of 100% means nothing has been taken away from the whole wheat germ.
Brown flour where 10-15% of the wheat germ is removed.
White Flour an extraction rate where 70-75% of the wheat germ has been removed, In the UK white flour is fortified by law with Iron, Calcium, Thiamine and Niacin.
Flours can be,, STRONG with a higher Gluten content – used for bread making.
Soft (PLAIN) Flour used for pastry.
SELF RAISING this has a chemical raising agent (Baking Powder) added to it used for sponge cakes etc
GLUTEN FREE made from rice flour, etc for people who have COELIAC DISEASE

Functional foods
Functional ingredients are ingredients that are specifically included in food for additional health benefits, including pre- and pro- biotics. Plant Sterols and Stanols. Phytochemicals and other antioxidants

Food additives
Additives are used to ensure safety, increase shelf life or improve the taste, texture or appearance of food. Additives need to be approved before they can be used.

Additives are given an 'E number' to show that they have been rigorously tested for safety and have been approved for use in food by the European Commission.

Jams contain several kinds of additives, including emulsifiers and gelling agents.

Freezing & dehydrating
The shelf life of food and drink can be extended by freezing and dehydrating.
Freezing – commercial methods are based on two principles:
1. very low temperatures inhibit growth of microorganisms;
2. the formation of ice crystals draws available water from the food.
Dehydration – reduces the water activity level, weight, bulk of the food, and helps to preserve a product. There are a number of techniques used including; sun drying, spray drying, fluidised bed drying, roller drying and accelerated freeze-drying.

Vacuum Packing- Air is removed from and the package sealed to prevent bacteria growing.

Pasteurisation, sterilisation
The shelf life of food can be extended if sufficient heat is applied to kill microorganisms and inactivate the enzymes that are present.
Pasteurisation – extends shelf life by killing most food spoilage organisms and pathogenic organisms. Products are treated with mild heat, usually to less than 100°C for 30-35 minutes.
Sterilisation – is a more severe process that destroys all microorganisms.
.

Canning – aims to destroy all microorganisms and their spores through the application of heat by sterilising food in airtight containers.
Cold Methods
Refrigerating
Freezing
Chilling
Blast Chilling
Cook-Chill
Cook Freeze
Chemical Preservation- Smoking i.e. Fish-Kippers, Bacon etc
Using Acids- Pickling, onions, gherkins etc
Salting- Ham, Bacon, Fish (salt cod)
Sugar, in Jams, Marmalades, candied and crystallised fruit.
MAP- Modified Atmosphere Packaging and CAP Controlled Atmosphere Packaging- these involve changing the atmosphere around the food inside packaging, i.e. remove oxygen and replace with Nitrogen.- Crisps, cereals etc.

ADDITIVES can be- Natural i.e. beetroot juice for colour. **Nature Identical**- (Synthetic) made in labs i.e. Vanillin a man made vanilla. **Artificial**- Synthetic compounds that do not occur in nature i.e. Sweeteners.
PreservativesTo increase Shelf life
Antioxidants to stop fats going rancid.
Colourings To replace colour lost in processing
Flavourings and Flavour Enhancers to replace flavour lost in processing
Sweeteners used in used in place of sugar to lower calories, i.e. Coke Zero
Bulk Sweeteners
Emulsifiers To hold oil and water together i.e. spreads like Flora
Stabilisers As above
Thickeners used to modify starches and thicken foods like sauces and gravies in ready meals
Gelling Agents- Setting meats and Jellies.

Key terms
Additives: Are added to ensure safety, increase shelf life or improve the taste, texture of appearance of food.
E numbers: Given to an additive to show it has been approved for use in the EU.
Food labels: Provide information and help consumers make choices.
Food processing: Any deliberate change in a food that happens before it is available for us to eat.
Packaging: Used to protect the food or drink from physical damage, chemical or bacterial contamination and provide information.
Pathogenic: Disease causing microorganisms.

Packaging
Due to advances in technology, most food items are now sold pre-packed.
Food products often have a long journey from the initial manufacturer, until finally being eaten by the consumer. The aim of packaging includes:

- preventing physical damage, e.g. from knocking, shaking or crushing;
- preventing contamination from micro-organisms, pollution or vermin;
- protecting against dehydration or dampness;
- protecting the product's nutritional and sensory characteristics;
- keeping the product in peak condition;
- helping to increase a product's shelf life.

Packaging is also designed to be visually stimulating and provide information about the product.

Food labelling
Manufacturers include a range of information on food labels. Some of which is legally required and some of which is useful to the consumer or supermarket. Best-before and use-by dates are examples of information that is legally required.

Bournemouth School – Knowledge Organiser – Year 10

FPAN

Past tense Essentials	
C'était	It was
Il y avait	There was there were
J'ai fait	I did/made
J'ai eu	I had
J'ai joué	I played
J'ai voyagé	I travelled
J'ai travaillé	I worked
J'ai étudié	I studied
J'ai mangé	I ate
J'ai bu	I drank
J'ai pris	I took
J'ai vu	I saw
Je suis allé	I went
Je suis sorti	I went out

Present tense Essentials	
C'est	It is
Il y a	There is/ there are
Je fais	I do/I make
J'ai	I have
Je joue	I play
Je voyage	I travel
Je travaille	I work
J'étudie	I study
Je mange	I eat
Je bois	I drink
Je prends	I take
Je vois	I see
Je vais	I go
Je sors	I go out

Near future essentials	
Ça va être	It is going to be
Il y aura	There will be
Je vais faire	I am going to do
Je vais avoir	I am going to have
Je vais jouer	I am going to play
Je vais voyager	I am going to travel
Je vais travailler	I am going to work
Je vais étudier	I am going to study
Je vais manger	I am going to eat
Je vais boire	I am going to drink
Je vais prendre	I am going to take
Je vais voir	I am going to see
Je vais aller	I am going to go
Je vais sortir	I am going to go out

Simple Future essentials	
Ce sera	It will be
Il y aura	There will be
Je ferai	I will do
J'aurai	I will have
Je jouerai	I will play
Je voyagerai	I will travel
Je travaillerai	I will work
Je mangerai	I will eat
Je boirai	I will drink
J'étudierai	I will study
J'irai	I will go
Je sortirai	I will go out
Je pourrai	I will be able to
Je serai	I will be

Weather in the past tense	
Il faisait beau	It was nice
Il faisait mauvais	It was bad weather
Il y avait du soleil	It was sunny
Il pleuvait	It was raining

Weather in the present tense	
Il fait beau	It is nice
Il fait mauvais	It is bad weather
Il y a du soleil	It is sunny
Il pleut	It is raining

Future Time phrases	
Demain	Tomorrow
L'année prochaine	Next year
A l'avenir	In the future
Le week-end prochain	Next weekend

Past tense opinions	
Je l'ai trouvé	I found it
Je me suis bien amusé	I had fun
Nous nous sommes bien amusés	We had fun
Ce que j'ai aimé le plus était..	What I liked the most was..
Je n'ai pas aimé	I didn't like

Conditional essentials	
Ce serait	It would be
Il y aurait	There would be
Je ferais	I would do
Je serais	I would be
J'aurais	I would have
Je voyagerais	I would travel
Je travaillerais	I would work
J'irais	I would go
Je sortirais	I would go out
je voudrais/j'aimerais	I would like
je n'aimerais pas	I wouldn't like

Question words	
Où?	Where?
Quand?	When?
Comment?	How?
Pourquoi?	Why?
Combien?	How much?
Est-ce que?	Is it..?
Qu'est-ce que?	What is it?
Quoi?	What?
Quel/quelle	What?

Past Tense Time phrases	
Hier	Yesterday
L'année dernière	Last year
Récemment	Recently
Le week-end dernier	Last weekend

Notre monde est beau	
le monde	the world
bien connu	well-known
un pays	a country
le paysage	the landscape
plein de*	**full of/plenty of**
y	there
inclus	including
en hiver/au printemps	in winter/in spring
en été/en automne	in summer/in autumn
également	equally/also
de tout	everything
nombreux/nombreuse	many/numerous
toute l'année	all year round
haut/bas	high/low

Superlatives – the most	
Le meilleur/le mieux	The best
Le/la pire	The worst
Le/la plus…	The most…
Le/la moins	The least..
Eg le plus petit	The smallest

Comparatives	
Meilleur que/mieux que	Better than
Pire que	Worse than
plus…que	More…than
Moins…que	Less…than
Aussi…que	As…as

Pros and Cons	
Un avantage	**An advantage**
Un désavantage	**A disadvantage**
Un pour/un contre	**A for/ an against**
D'un côté	**On the one hand**
D'un autre côté	**On the other hand**
Au contraire	**On the contrary**
Toutefois	**However**
Tandis que	**Whereas**
Selon mes parents	**According to my parents**

Intensifiers	
vraiment	really
assez	quite
très	very
un peu	a bit
trop	too
complètement	completely

Connectives	
étant donné que	given that
vu que	seeing that
puisque	as/since
comme	like/as
car/parce que	because
bien que	although
cependant	however
Malheureusement	unfortunately
heureusement	fortunately

Superlatives - examples	
La plus longue rivière	The longest river
La plus haute montagne	The highest mountain
Le plus long match	The longest match

Avoir raison	To be right
Avoir tort	To be wrong

Presnt Tense Time phrases	
Normalement	Normally
Actuellement	At the moment
Aujourd'hui	Today
En général	Generally
D'habitude	Usually

Opinion structures	
a mon avis	In my opinion
je pense que	I think that
je dirais que	I would say that
je crois que	I believe that
j'imagine que	I imagine that
mes parents pensent que	my parents think that
personnellement	personally
je le/la/les trouve	I find it/them
mes amis disent que	my friends say that
il me semble que	it seems to me that
j'apprécie	I appreciate

Simple opinions	
c'est bruyant	It's noisy
c'est calme	It's quiet
c'est joli	It's pretty
c'est sale	It's dirty
c'est tranquille	It's quiet
c'est formidable	It's great
c'est affreux	It's awful
c'est délicieux	It's delicious
c'est ennuyeux	It's boring
c'est inoubliable	It's unforgettable

Negatives	
ne…pas	not any
ne ….jamais	never
ne…rien	nothing
ne…que	only
ne…aucun	not any, none
ne…personne	no-one
ne..ni..ni	neither…nor…
ne…plus	not any more

Geographical Investigation - Coasts

Stages of fieldwork enquiry

1 Identifying suitable fieldwork questions and enquiry processes.
2 Understanding fieldwork techniques and measurement methods.
3 Processing and presenting data using maps, GIS, and graphs.
4 Analysing field data with case studies and theories.
5 Drawing conclusions from fieldwork data.
6 Critically reflecting on data, methods, and conclusions.

Fieldwork enquiry question: How effective are the groynes at Hengistbury Head in managing longshore drift?

Hypothesis and aims:

It is predicted that the groynes at Hengistbury Head will be effective in preventing longshore drift. The aim of the investigation is to discover how effective the groynes are at preventing the process of longshore drift.

Reason location is suitable for physical enquiry:

The location was chosen as Hengistbury Head beach is on a stretch of coastline that is affected by the process of longshore drift. As a result of this process the local council has installed the hard engineering method of groynes. The area is also easily accessible by coach from our school.

Method 1: Beach profile

Sampling method: systematic sampling (fixed intervals)
Sample size: 3 sites (between pier and groyne, between two groynes and away from the groynes).
Description: Person A stands by the sea holding a ranging pole and person B holds a second ranging pole 5m up the beach. The angle between matching markers on each ranging pole is measured using a clinometer. Repeat this process every 5m up the beach.

Strengths
-The method of data collection is simple to carry out.
-Systematic sampling is simple and has good coverage of the study area.

Weaknesses
-There may be some user error when taking readings with a clinometer.
-Ranging poles need to be held straight and prevented from sinking into the sediment, otherwise an inaccurate measurement will be taken.

Method 2: Exposed height of groynes

Sampling method: systematic sampling (fixed intervals)
Sample size: 10 groynes
Description: identify the updrift and downdrift using a compass. Use the meter ruler to measure from the top of the groyne to the surface of the sediment on each side. Repeat for each groyne.

Strengths
-The method clearly shows whether the groynes are working.
-The method of data collection is simple to carry out and does not need special equipment.
- A large enough sample size was used (most of the groynes were measured), in order to reach a reliable conclusion.

Weaknesses
-Measurements were not taken at the same point along each groyne and several were not taken along each side.
- Care should be taken to ensure that meter ruler is held straight and does not sink into the sand- otherwise an inaccurate reading could be taken.

Sampling types

Random sampling
☺ Results can be generalised for a population. It is more time efficient than asking the entire population. Reduced bias.
☹ Expensive. Time consuming. Not always possible if there is no sampling frame or list to sample from.

Stratified sampling
☺ Sample is representative of the population so the results can be generalised. It is more time efficient than asking the entire population. Minorities given fair representation.
☹ Requires another sampling method to select individual items of data from a list (random / systematic etc.).

Systematic sampling
☺ It is more time efficient than asking the entire population. Easy to implement (regular intervals).
☹ Every member of the population must be listed. The first member of the population must be chosen at random to avoid bias.

Secondary Data

Secondary Data is information that you did not collect yourself.
Examples include: Books, Newspaper Articles and Government statistics.
For Coastal Fieldwork we will be looking at **Geology Maps** and **Shoreline Management Plans.**

Revising the Past Tense		
ich habe/er hat gewohnt	I/he lived	
ich bin/er ist gegangen	II/he went	
ich habe/er hat gemacht	I/he did	
ich habe/er hat gespielt	I/he played	
ich habe/er hat gegessen	I/he ate	
ich habe/er hat getrunken	I/he drank	
ich bin/er ist gefahren	I/he travelled	
ich habe/er hat gelesen	I/he read	
ich habe/er hat (fern)gesehen	I/he watched (tv)	
ich habe/er hat besucht	I/he visited	
ich habe/er hat gekauft	I/he bought	
ich habe/er hat getroffen	I/he met	
ich war/es war	I/it was	
es gab	there was/were	
ich/er hatte	I/he had	

Revising the Present Tense		
ich wohne/er wohnt	I/he live(s)	
ich gehe/er geht	I/he go(es)	
ich mache/er macht	I/he do(es)	
ich spiele/er spielt	I/he play(s)	
ich esse/er isst	I/he eat(s)	
ich trinke/er trinkt	I/he drink(s)	
ich fahre/er fährt	I/he travel(s)	
ich lese/er liest	I/he read(s)	
ich sehe/er sieht (fern)	I/he watch(es) (tv)	
ich besuche/er besucht	I/he visit(s)	
ich kaufe/er kauft	I/he buy(s)	
ich treffe/er trifft	I/he meet(s)	
ich bin/es ist	I am/it is	
es gibt	there is/are	
ich habe/er hat	I have/he has	

Revising the Future Tense		
ich werde/er wird wohnen	I will/he will live	
ich werde/er wird gehen	I will/he will go	
ich werde/er wird machen	I will/he will do	
ich werde/er wird spielen	I will/he will play	
ich werde/er wird essen	I will/he will eat	
ich werde/er wird trinken	I will/he will drink	
ich werde/er wird fahren	I will/he will travel	
ich werde/er wird lesen	I will/he will read	
ich werde/er wird (fern)sehen	I will/he will watch (tv)	
ich werde/er wird besuchen	I will/he will visit	
ich werde/er wird kaufen	I will/he will buy	
ich werde/er wird treffen	I will/he will meet	
ich werde/es wird sein	I/it will be	
es wird geben	there will be	
ich werde/er wird haben	I will/he will have	

Weather		
es ist / es war	it is / it was	
es wird / würde sein	it will / would be	
sonnig/wolkig/ heiß/kalt/ stürmisch	sunny/cloudy /hot/cold/ stormy	
es regnet / es schneit	it is raining/ snowing	
es hat geregnet/ geschneit	it was raining / snowing	
es wird regnen/ schneien	it will rain/snow	
es würde regnen/ schneien	it would rain/snow	

Useful complex structures		
Mein Bruder/Freund, der … heißt	My brother/friend who is called	
Meine Schwester/ Freundin, die … heißt	My sister/friend who is called	
Mein Haustier, das… heißt	My pet, which is called	
in den Park / in die Schule / ins Kino / nach Berlin, wo (VTE)	to the park/school/ the cinema/Berlin, where	
Wenn ich viel Zeit/Geld hätte, würde ich …	If I had lots of time/money, I would	
Wenn ich reich wäre, würde ich	If I was rich, I would	
um … zu (infinitive)	in order to	
Ich habe vor, … zu (inf)	I intend to…	

Revising the Conditional Tense		
ich/er würde wohnen/besuchen	I/he would live/visit	
ich/er würde gehen/fahren	I/he would go/travel	
ich/er würde machen/spielen	I/he would do/play	
ich/er würde essen/trinken	I/he would eat/drink	
ich/er würde lesen/(fern)sehen	I/he would read/watch (tv)	
ich/er würde kaufen/treffen	I/he would buy/meet	
ich/es wäre	I/it would be	
es würde geben	there would be	
ich hätte/er hätte	I/he would have	

Reiseziele – travel destinations	
ich reise	I travel
ich fahre	I go/travel
nach Deutschland	to Germany
nach Österreich	to Austria
in die Schweiz	to Switzerland
nach Frankreich	to France
nach Italien/Spanien	to Italy/Spain
nach Amerika/ in die USA	to America/ the USA
nach Asien/Afrika	to Asia/Africa
nach Australien	to Australia
ins Ausland	abroad
der Berg/der Wald	mountain/forest
die Burg/das Schloss	castle

Im Urlaub und unterwegs – during the holidays and on the way	
es ist …	it is …
alt /historisch	old /historic
bekannt /berühmt	well-known/famous
beliebt /schön	popular/beautiful
eindrucksvoll	Impressive
hoch/lang	high/long
riesig	huge, great
spannend	exciting, tense
traditionell	traditional
unglaublich	incredible
wunderbar	wonderful
günstig	cheap, good
interessant / langweilig	interesting / boring

Vor- und Nachteile – Advantages and disadvantages	
Was denkst du?	What do you think?
Ich denke, dass …	I think that …
Du hast gesagt. dass …	You said that …
Auf der einen Seite …	On the one hand …
Auf der anderen Seite …	On the other hand …
Du hast Recht!	You're right!
Das stimmt!	That's right!
Genau! / Richtig!	Exactly! / Correct!
Ein Vorteil/Nachteil davon ist	An advantage/ disadvantage of it is …
Meiner Meinung nach ist das …	In my opinion thatit is
Ich finde das	I find that/it
eine gute/schlechte Idee	a good/bad idea
einen guten/schlechten Vorschlag	a good/bad suggestion
weil/da man … kann	because/since you can
leckeres Essen probieren	try delicious food
(nicht) (Tennis) spielen	(not) play (tennis)
in den Seen schwimmen	swim in lakes
in den Bergen wandern	hike in the mountains
am Strand liegen	lie on the beach
klettern	climb

Opinions in different tenses	
Ich finde/fand	I find/found
Ich denke/dachte	I think/thought
Ich glaube/glaubte	I believe/believed
Es macht Spaß	It is fun
Es gefällt mir (nicht).	I like/don't it.
Es gefiel mir (nicht)/Es hat mir (nicht) gefallen.	I liked/didn't like it.
Es wird/würde mir gefallen.	I will/would like it.
Ich mag (noun) (nicht)	I like/don't like
Ich mochte (noun)	I liked
Ich werde/würde (noun) mögen	I will/would like
Ich (verb) gern	I like to …
Ich (verb) lieber	I prefer to …
Ich (verb) am liebsten	Most of all I like to
Früher mochte ich (noun), aber jetzt mag ich lieber (noun)	I used to like … but now I prefer …
Es interessiert mich	It interests me
Es hat mich interessiert.	It interested me
Es ist/war mir egal.	I don't/didn't care.

Intensifiers	
wirklich	really
ziemlich/ganz	quite
sehr/echt	very/really
ein bisschen	a bit
eher/zu	rather/too
besonders	particularly
total/völlig	completely
äußerst	extremely
tatsächlich	actually

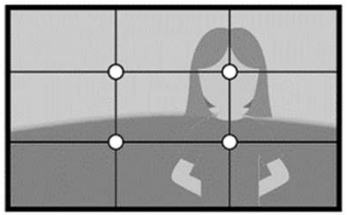
Negatives	
nicht (verb)	not
kein (noun)	no/not any
nichts	nothing
kaum	hardly
nie	never
niemand	no-one
weder…noch	neither…nor
nicht mehr	not any more

Connectives, Adverbs	
denn	because
weil/da (VTE)	because
obwohl ((VTE)	although
jedoch (V2)	however
zudem/außerdem	besides
trotzdem (V2)	however
leider	sadly
glücklicherweise	fortunately
also/deshalb	therefore/so

Oceanarium Brief – Summer term

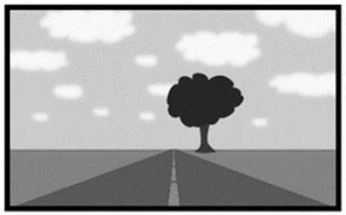
- AO1: Develop ideas through investigations, demonstrating critical understanding of sources.
- AO2: Refine work by exploring ideas, selecting and experimenting with appropriate media, materials, techniques and processes.
- AO3: Record ideas, observations and insights relevant to intentions as work progresses.
- AO4: Present a personal and meaningful response that realises intentions and demonstrates understanding of visual language.

PHOTO BASICS



RULE OF THIRDS

The photo is divided by nine boxes. The subject is in one of the intersecting lines, or the circles.



LEADING LINES

The road in this picture serves as a guide that lead your eyes to the subject of the photo.

DEPTH OF FIELD

This is when the subject of the photo is completely in focus and the background is blurry. This can be controlled by aperture.

SHUTTER SPEED & APERTURE

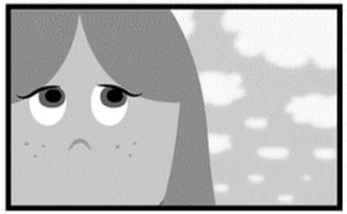
These figures are on your SLR camera screen. The higher the number (1/400), the faster the shutter speed. You are able to shoot faster subjects. As your aperture number gets lower (F2.8), more light is allowed into the lens. More light allows you to shoot in lower light situations.

FRAMING

This is when there are objects around the subject that frame the subject, making your eyes more drawn to it.

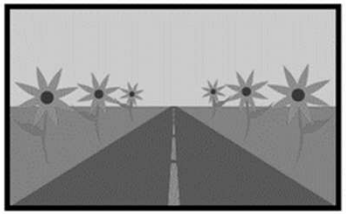
BALANCE

Placing your main subject off-centre, as with the rule of thirds, creates a more interesting photo. You should balance the "weight" of your subject by including another object of lesser importance to fill the space.



VIEW POINT

Before shooting your subject, think about where you will shoot it from. The viewpoint has a massive impact on the composition of a photo, and it can greatly affect the message that the shot conveys.



SYMMETRY

This is when the photo is equally balanced or has a pattern, creating symmetry within the photo. This can be very eye-catching, particularly in situations where they are not expected.

Keyword	Definition - look cover write review
Kerning	Kerning refers to the **space between two specific letters** (or other characters: numbers, punctuation, etc.) and the process of adjusting that space improves legibility.
Tracking	Tracking is similar to kerning in that it refers to the spacing between letters or characters. However, instead of focusing on the spacing between individual letters (kerning), tracking measures space between **groups of letters**.
Bold	Bold colours or text stand out in a design. They are often bright or contrasting colours. Bold text has a thicker weight.
Font weight	The font-weight specifies the weight, **or thickness, of a font.** A heavier weight is often used to aid with hierarchy in a design.
Alignment	Depending on the desired visual outcome, text can be either left, center or right aligned in a design. This refers to which margins the paragraph is aligned to.
Justified text	Justified **text is text aligned to both the left and right margins,** creating straight edges on both sides of the text block. This is achieved by adjusting spacing between words and letters
Script	Script typefaces are fonts or type based upon historical or modern handwriting styles and are more fluid than traditional typefaces.
Slab serif	Slab serif fonts feature a geometric feel compared to traditional serif fonts and feature serifs that are square and larger, bolder.
Sans serif	A serif is the little extra stroke or curves, at the ends of letters.
Sans	"Sans" literally means "without", and a sans serif font does not include any extra stroke at the ends of the letters.

Bournemouth School: History Department: KO Year 10: Summer 1: Elizabethan Society 3: 1558 - 1588

1. Society & Leisure ✓

Key Terms	Definitions
Bear-baiting	Bears chained to posts for dogs to attack
Feast Days	Opportunities for dancing & drinking
'Fourth Sort'	Harrison's description of the lowest ranks
Gambling	Money bet on the outcome of sports
Harrison's book	Describing the four classes in society
Hunting	Enjoyed by all: deer, hawking, rabbits
Music	Enjoyed by all: madrigals, ballads, in-house
Mystery plays	Popular at start of her reign, then secular
Storytelling	Popular with all ranks in society
Theatre	Popular pass-time enjoyed by all ranks

2. Education ✓

Key Terms	Definitions
Apprentice	Education for children learning a trade
Grammar Schools	Private schools for sons of the well-off
Humanists	New influences: philosophers studied
Nobility	Educated their children at home
Petty Schools	For boys aged 4-8. Paid for by parents
Protestant	Promoted literacy to access Bible
Rhetoric	University:Public speaking / persuasion
School for girls	Dame Schools: Private tutors for rich
Social order	Education designed to reinforce it
Virgil & Cicero	Classical authors taught in Grammars

3. Why did Poverty increase? ✓

Key Terms	Definitions
Alms	Term to describe help to the poor
Cloth trade	Woollen cloth was most significant
Debasement	New coins containing less gold
Dissolution	Monasteries closed down by HVIII
Enclosure	Enclosing land with hedges
Inflation	Prices rising faster than wages
Recession	Slower trade = unemployment
Rent-racking	Increased rents badly hitting farmers
Sir Thomas Smith	Wrote pamphlets criticising enclosures
Vagabondage	Homeless and jobless: a concern

4. Attitudes to Poverty ✓

Key Terms	Definitions
Able-bodied	Or 'idle poor': those fit but not in work
Categories for vagrants	Angler, counterfeit-crank, clapper dudgeon, Doxy
Impotent poor	Or 'deserving poor'. Caused by Illness/old age
Ipswich	A town ahead of its time for managing the poor
Poor Relief Act	Designed to distinguish the able & impotent poor
Statute of Artificers	Aimed to ensure the collection of poor relief
Thomas Harman:	Wrote pamphlets on types of vagabonds
Vagabonds Act	Turning point: Aimed to deter vagrancy

5. Why did the Elizabethans explore abroad? ✓

Key Terms	Definitions
Astrolabe	Used to measure latitude&longitude
Colony	Land controlled and occupied by settlers
Heathens converted	Elizabethans spreading Protestantism
Lucrative trading	Ventures creating substantial wealth
Piracy	Plundering enemy ships at sea
Renaissance	Enlightened thinking encouraging exploration
Richard Hakluyt	Author urging sailors to explore more
savages	Term to describe native peoples
Voyages longer	Better navigation and ship design
Trade routes	Russia, India and New World profits

6. Frances Drake's circumnavigation ✓

Key terms	Definitions
Cacafuego	Spanish treasure ship raided
'Elizabeth'	One of Drake's ship lost
Golden Hind	Drake's ship (formerly *'Pelican'*)
'Marigold'	Captained by J Thomas: sank
Mocha	Drake landed and was attacked
Mutiny	Dougherty charged and executed
Nova Albion	'New England': California claimed
Ternate	Traded with the king here for spices
Tierra del Fuego	Islands at bottom of S. America
Valparaiso	Settlement attacked by Drake

7. Why was Walter Raleigh significant and why did the early attempts to colonise Virginia fail? ✓

Key Terms	Definitions
Algonquians	The natives in areas sought by the English
Bartering	Explorers exchanged utensils for food
Croatoan	An island near to Roanoke
Expeditions	Voyages to Virginia: in 1584 and 1587
Trip Leaders	Raleigh sent Grenville, Lane and Harriot
Manteo& Wanchese	Natives in England to help colonists
Reconnaissance	Fact-finding mission to Virginia 1584
Roanoke	Became known as the 'Lost Colony'
'Tiger'	Largest of the 5 ships sent by Raleigh

8. Who's who? ✓

1532-1588 — Robert Dudley, Earl of Leicester; the Queen's favourite?

1540-1596 — Francis Drake: explorer, privateer and hated by King Philip II

1542-1587 — Mary, Queen of Scots: second cousin to Elizabeth and rival

1520-1598 — William Cecil: The Queen's chief advisor

9. Timeline: Society and Exploration ✓

1560's & 70's: 72 new Grammar Schools
1563: Statute of Artificers
1562 – 68: John Hawkins' 3 slave voyages
1569: Gerardus Mercator's sea charts published
1571: Jesus College Oxford, founded
1572: Vagabonds Act
Early 1570's: poor harvests impacting the poor
1576: Poor Relief Act
1576: Martin Frobisher tried & failed to reach China
1577: William Harrison's *'Description of England'*
1577 – 80: Drake's circumnavigation of the globe
1585 - 1587: Raleigh's attempts to colonise Virginia

Bournemouth School – Knowledge Organiser – Year 10

HISTORY

Bournemouth School History: Crime & Punishment Paper 1: Knowledge Organiser: Year 10: Summer 1:

1000 - 1500: Key terms/definitions	
Crimes	**Definition**
Against property	Theft of clothing, food and smaller amount of money: this accounted for 73% of crime in 1300's. Another crimes against property would be arson
Against the person	Murder, assault, slander. Violent crime made up 18% of crime in 1300
Against Authority	Hunting in the King's forest (Forest Laws), Treason (disobedience to the monarch), heresy: holding different religious beliefs to the monarch, Murdrum: murder of a Norman (from 1066)

How did the Normans change Crime & Punishment 1066-1170s

1.The Sheriff: introduced to catch criminals

2. Murdrum Fine: William introduced a new law which said that if a Norman was murdered, all the people in that region had to pay an expensive fine.

3.Trial by Combat: The accused fought with the accuser until one was killed or unable to fight on. The loser was then hanged as God had judged him to be guilty.

4. Ending the Wergild: William ended the Wergild system, all fines for crimes were paid to the King and no longer the victim's family.

5. Women: Women had less rights than men in law

6. Church Courts: The Normans introduced Church courts.

7. Forest Laws: This created new crimes where previously none had existed and made other crimes more serious:

Case Study: What role did the Church have in Crime & Punishment?

1. Church Courts: The Church claimed the right to try a churchman accused of a crime in its own courts. Church courts often dealt with 'moral offences': failing to go to Church, drunkenness, adultery, playing football on a Sunday

2. Benefit of the Clergy: If a person was accused of a crime they were allowed to claim the right to be tried in a Church court (where the punishments were less severe). This should have meant only priests however others would often use it. You had to prove you worked for the church by reading out a passage from the bible people often memorised the verse to save themselves from capital punishment.

3. Sanctuary: If a criminal on the run from the law could reach a Church, he or she could claim sanctuary. Once inside the Church the criminal was under the Church's protection and could not be arrested. The criminal could spend up to 40 days there before deciding either to leave the Church and be arrested or to leave the country.

4 Trial by ordeal: Trial by hot iron, water, blessed bread or cold water. The Church ended trial by ordeal in 1215. It was seen as unreliable as it was possible that some guilty men and women could escape punishment whilst others were wrongly found guilty.

1000 – 1500: Law Enforcement and Trials

- **Tithings:** groups of 10 men responsible for each others' behaviour
- **Hue and Cry:** loud shouting to raise the alarm; everyone expected to join the hunt for the suspect
- **Local Jury:** A jury of peers would assess the guilt of the accused. Witnesses would swear oaths to support the defendant
- **Church Courts: Tried moral crimes: bigamy, drunkenness etc**
- **Trial by Ordeal: Hot water, iron, cold water, blessed bread**
- **Royal Judges: Oversaw on quarter sessions from the 1200s.**

Key people

Henry II: King of England 1154-89

William the Conqueror King of England 1066 - 1087

Pope Innocent III: Pope who ended Trial by Ordeal 1161-1216

1000 – 1500: Punishments

- **Wergild:** A form of compensation paid to the victims of crime in the Saxon period
- **Murdrum Fine:** A fine paid by a community for death of a Norman
- **Forest Laws:** A form of poaching, punishable by mutilation or death
- **Corporal Punishment:** Mutilation for repeated crimes such as theft
- **Capital Punishment:** Hanging for serious crimes like treason.

What changes occurred by the later Middle Ages 1170s-1500?

1. The King's peace: if someone committed a crime close to the location of the King at any time, the punishment was made far harsher

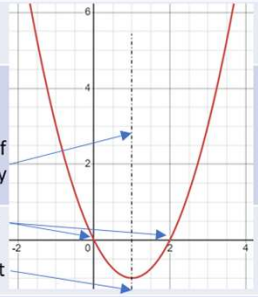
2. Travelling Justices: People given power by the king to hear court cases on his behalf and pass sentence on people found guilty.

3. Ending of trial by ordeal: All cases now had to be settled by jury.

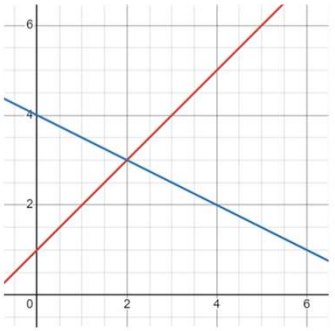
4. Justices of the Peace (JPs): 1361 – these men had the right to fine and arrest people who were disturbing the peace.

5. Country Coroners: People specifically appointed to investigate unexpected deaths.

Year 10 – Maths – Summer 1 – Unit 15

Keyword		Definitions	Example
Simultaneous Equations		2 equations with 2 unknowns. These can be solved graphically by finding the point(s) of intersection when plotting the graphs.	See separate box
Graphical Inequalities		Regions on a coordinate system that satisfy an inequality involving x, y or x and y	See separate box
Set Notation		A way of presenting solutions to quadratic inequalities	$\{x: -2 \leq x \leq 5\}$ $\{x: x < 2\} \cup \{x: x > 8\}$
Quadratic equations		Equations of the form $0 = ax^2 + bx + c$ where $a \neq 0$	
Quadratic graph		Is a parabola. Quadratic graphs have a turning point, line of symmetry, and y-intercept. Can be used to solve equations by looking for intersections.	
Roots		For a quadratic graph $y = ax^2 + bx + c$, the roots are where the graph crosses the x-axis (i.e: $y = 0$)	
Discriminant		Tells you how many roots a quadratic will have.	$b^2 - 4ac > 0$ → 2 real roots $b^2 - 4ac = 0$ → 1 repeated root $b^2 - 4ac < 0$ → No real roots
Completing the Square		Writing $x^2 + bx + c$ in the form $\left(x + \frac{b}{2}\right)^2 - \frac{b^2}{4} + c$ "Half the coefficient of x, and subtract it's square"	$y = x^2 - 4x + 3$ $y = (x-2)^2 - 4 + 3$ $y = (x-2)^2 - 1$
Turning point		The maximum or minimum point of a quadratic curve. Can be found using "completing the square"	The turning point of $y = x^2 - 4x + 3$... Write in completed the square form: $y = (x-2)^2 - 1$ Turning point at $(2, -1)$
Quadratic inequality		Inequalities of the form $ax^2 + bx + c > 0$ or $ax^2 + bx + c < 0$ (Inequalities can be inclusive)	See separate box
Cubic equation		Equations of the form $0 = ax^3 + bx^2 + cx + d$ where $a \neq 0$	$0 = x^3 - 5x^2 + 4$
Cubic graph		Have 2 turning points, and are rotationally symmetrical about the point of inflection.	See separate box
Iteration		An iterative process using a rearranged version of an equation. $0 = f(x)$ → $x_{n+1} = g(x_n)$	Used to solve equations.

Solve the simultaneous equations $y = -\frac{1}{2}x + 4$ and $y = x + 1$



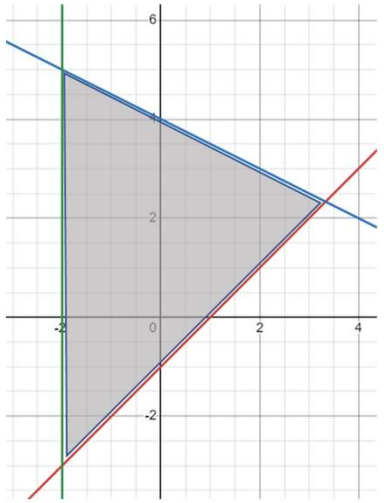
Solution: $x = 2, y = 3$

Shade the region satisfied by

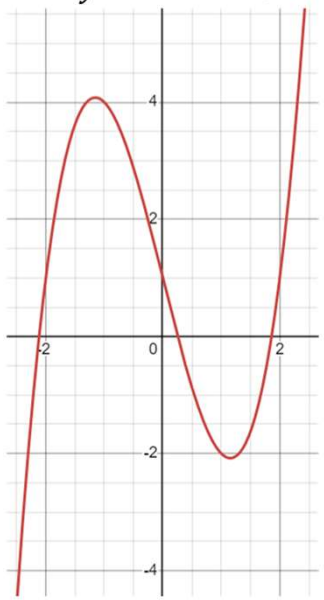
$x > 2$

$y > x + 1$

$y < -\frac{1}{2}x + 4$



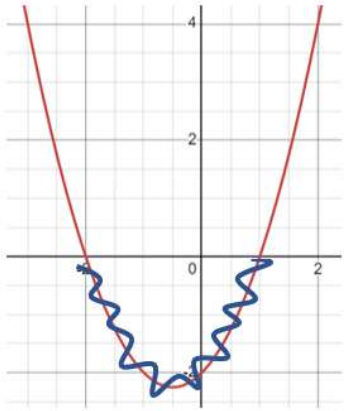
Draw $y = x^3 - 4x + 1$



Solve $x^2 + x - 2 < 0$

$(x + 2)(x - 1) < 0$

C.Vs at $x = -2, 1$



$-2 < x < 1$

Year 10

Unit: *Samba em prelúdio*

See set work support guide and other resources:
Student resources > 10 > AOS4 - Fusions > Samba Em Prelúdio

Bournemouth School music department

Acoustic guitar does not require amplification (unlike an electric one)

Added notes notes added to a basic triad, such as a seventh or ninth

Added sixth chord a triad with the sixth above the tonic added, common in jazz and popular music.

Altered notes notes in a chord that have been sharpened or flattened, for example a flattened fifth

Articulation the manner in which a note or sequence of notes is played (e.g. staccato, legato)

Augmentation increasing the duration of the original notes

Broken chord when the notes of a chord are played one at a time rather than sounding together

Capo a clamp fastened around the neck of a string instrument, holding down all the strings and raising their pitch

Chopin, Frédéric Polish composer of Romantic piano music (1810-49)

Chord voicing how the notes in a chord are spaced out

Clave the rhythm closely associated with the claves

Claves Latin percussion instrument – two short sticks struck together

Contrapuntal written in counterpoint – two melodies played against each other.

Conjunct movement by step

Consonant chords or harmonic intervals that sound pleasant (e.g. thirds and sixths)

Cover a new version of an existing song

Cross rhythms rhythms that cross the usual pattern of accented and unaccented beats, creating irregular accents and syncopation

Disjunct movement by leap

Dissonant chords or harmonic intervals that clash(e.g. sevenths)

Extended chord a chord with at least one added note

Fusion the blending of two or more musical styles, usually from different cultures

Groove rhythmic feel

Independent parts instruments or voices doing different things. A part simply harmonising another (e.g. in thirds) is not independent

Inversions chords with a note other than the root as their bass

Monophonic a texture made up of a single line without accompaniment

Multi-track a recording of a performance on separate audio tracks, which can be edited individually

Outro a concluding section, like a coda in classical music

Polyphonic a texture where many lines overlap

Pull-off when a note is sounded on the guitar by lifting a finger of the fretting hand

Sequence repetition of a musical phrase at a higher or lower pitch than the original

Solo an extended, often improvised, melodic line played by a single instrument over a given chord sequence, usually as an instrumental interlude in the middle of a song

Syllabic one note sung per syllable

Syncopation accenting the offbeat or the weak beats in a bar

Turnaround a set of faster moving chords to get the music back to a repeated section – most common in jazz

This QR code will take you to a Spotify playlist with listening for *Samba em prelúdio*. You will find it helpful to listen to it as you learn.

Keyword	Learn	✓
Consent	is an agreement by choice made by someone with the freedom and capacity to consent.	
Respect	due regard for the feelings, wishes, or rights of others.	
Pressure	to force (someone) toward a particular end; influence.	
Persuasion	to move by argument, entreaty, or expostulation to a belief, position, or course of action	
Coercion	the practice of persuading someone to do something against their will by using force or threats.	
Controlling	behaviour inclined to exercise arbitrary and overbearing control over others.	
Manipulation	to control a person or situation to one's own advantage by artful, unfair, or insidious means	

Help and support:

ChildLine: www.childline.org.uk 0800 1111
Samaritans:www.samaritans.org 116 123
Refuge: www.refuge.org.uk
Women's Aid: www.womensaid.org.uk
Mankind: www.mankind.org.uk
Domestic abuse helpline: 0808 2000 247
Galop (LGBT anti-abuse charity): www.galop.org.uk
National LGBT+ domestic abuse helpline: 0800 999 5428

Relationship advice:

- **Be respectful** at all times
- **Communicate clearly**, share your thoughts and seek the thoughts of others without judgement
- **Safety**, keep each other safe
- **Consent**, it is the person seeking consent who is responsible for ensuring that these conditions are met. Ask, do not assume.

Seeking help – some advice…

Talking to someone about a toxic or abusive relationship can be scary. Always choose an adult that you trust and feel safe with.

You could do this face-to-face, or you could write them a letter, or leave a note. Just remember that anything written could be found by someone else or be shared – so think about how you will keep it private.

If you want to discuss it face-to-face but feel worried about starting the conversation, you could try starting with this:

- I need your help with something.
- I'm worried about something, and I need your advice.
- I have something important to tell you.

Non-Examined Assessment (NEA) Written Component – 25 marks

Analysis Section – 15 Marks

STRENGTH 1 - Fitness Component (500-750 words):		STRENGTH 2 - Skill/Technique (500-750 words):	
• Define the component • Describe how and when you need it within your sport & why it is important. Link it to your specific position and explain. • Include knowledge of rules/regulations and how that links to your sport. (E.g. In Football you have a rule called 'offside' which means …… Speed is therefore needed to reach the ball following a pass between defenders without being offside. • Explain from a recent performance why you selected the component as a strength. Include details of a match / game / competition / performance. Give at least 2 examples of **how / why / when** you used it. • Explain how the chosen component affected your performance in a positive way. • Justification of how the component of fitness impacted yours and others performance		• Describe what your chosen skill / technique is and how it is used in a game / competition / performance / match. • Explain the technique – PERFECT PERFORMANCE MODEL. • Justify why you have chosen this as a strength and how it created a positive performance. Link to positional play, game play awareness. • Explain from a 'recent performance' why and when you selected to use / apply it **(Include at least 2 examples)**. (Focus on technique and movement and how it enables the skill to work positively). • Explain how your skill impacted on the game / teammates / opposition / competition.	
WEAKNESS 1 - Fitness Component (500 words):		**WEAKNESS 2- Skill/Technique (500 words):**	
• Define the fitness component. • Describe how you need it within your sport & why it is important and how that links to your sport. Link it to your specific position and explain. • Explain from a recent performance (Details of match / competition / game / tournament) why you selected the component as a weakness. **GIVE AT LEAST TWO EXAMPLES.** • Explain how your 'weakness' affected your performance in a negative way. • Justify how the component of fitness negatively impacted yours and others performance – Was it an advantage to your opponents? Did it encourage the opponents to perform better?		• Describe what the chosen skill is and how it is used in a game. • Explain the technique – PERFECT PERFORMANCE MODEL. • Justify why you have chosen this as a weakness and how it created a negative performance. Link to positional play, game play awareness. • Explain from the recent performance why you selected it. Focus on technique and movement and how you were unable to complete the skill / techniques / choreography / moves and how it affects the outcome (result / marks awarded) and the game. **GIVE AT LEAST TWO EXAMPLES.** • Justify how it is a weakness for your position & sport and why you chose it.	

Topic 5a - Forces

Keyword	Learn	✓
Scalar	A quantity with size (magnitude) only.	
Vector	A quantity with both size and direction. A vector quantity may be represented by an arrow. The length of the arrow represents the magnitude, and the direction of the arrow the direction of the vector quantity.	
Velocity	Speed in a given direction. Velocity is a vector.	
Displacement	Distance travelled in a given direction. Displacement is a vector.	
Force	A push or pull. Measured in newtons, N. Force is a vector.	
Contact force	Force exerted between two objects when they touch. E.g. friction, air resistance, tension and normal contact force.	
Non-contact force	Force exerted on objects when they are physically separated. E.g. gravity, electrostatic and magnetic forces.	
Centre of mass	The point at which the weight of the object can be taken to act. In diagrams, arrows representing the weight should start from this point.	
Resultant force	A single force that can replace multiple forces acting on an object.	
Free body diagram	Used to show the magnitude and direction of all the forces acting on the object.	
Work	When a force of 1 N pushes an object 1 m, in the direction of the applied force, then 1 J of work is done	
Elastic deformation	When an object is stretched, it returns to its original length after the forces are removed.	
Inelastic deformation	When an object is stretched, it does not return to its original length after the forces are removed.	
Extension	The difference between the stretched and unstretched lengths of a spring.	
Elastic potential energy	The energy stored in a stretched (or compressed) spring.	
Moment	The turning effect of a force. Measured in newton metres, Nm.	
Principle of moments	When a system is balanced the sum of the anti-clockwise moments equal the sum of the clockwise moments.	
Fluid	A liquid or a gas. It flows and can take the shape of the container.	

Quantity	Unit	Symbol
force	newton	N
mass	kilograms	kg
gravitational field strength	newtons per kilogram	N / kg
work	joule	J
extension	metre	m
spring constant	newtons per metre	N / m
elastic potential energy	joule	J
moment	newton metres	Nm
pressure	newtons per metre squared	N/m^2
density	kilograms per metre cubed	kg/m^3

Pressure in fluids. Learn these two statements.

The pressure in fluids causes a force normal (at right angles) to any surface.

A partially (or totally) submerged object experiences a greater pressure on the bottom surface than on the top surface. This creates a resultant force upwards. This force is called the upthrust.

Equations

Weight = mass x gravitational field strength $W = m \times g$

Work done = force x distance in the direction of the force $W = F \times s$

Force = spring constant x extension $F = k \times e$

$$\text{Elastic potential energy} = \frac{1}{2} \times \text{spring constant} \times (\text{extension})^2 \qquad E_e = \frac{1}{2} \times k \times e^2$$

Moment = Force x perpendicular distance $M = F \times d$

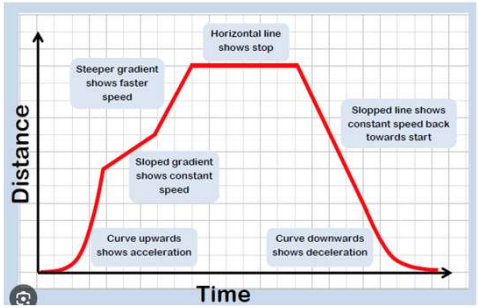
$$\text{Pressure} = \frac{\text{Force normal to the surface}}{\text{area of the surface}} \qquad P = \frac{F}{A}$$

Pressure = height x density of the liquid x gravitational field strength $P = h \times \rho \times g$

Topic 5b – Force and Motion

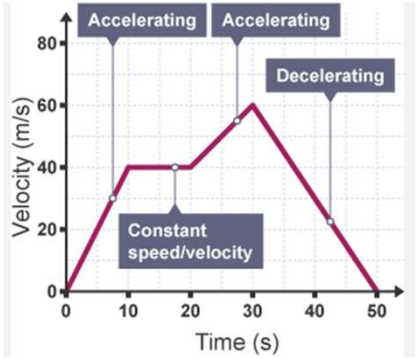
Keyword	Learn	✓
Scalar	A quantity with size (magnitude) only.	
Vector	A quantity with both size and direction.	
Displacement	Distance travelled in a given direction. Displacement is a vector.	
Velocity	Speed in a given direction. Velocity is a vector.	
Acceleration	The rate of change of velocity. Acceleration is a vector.	
Resultant force	A single force that can replace multiple forces acting on an object.	
Newton's First Law	If no resultant force is acting on an object, it will be stationary or it will continue to move at same speed in same direction.	
Newton's Second Law	Force = mass x acceleration	
Newton's Third Law	For a pair of interacting objects, the forces they exert on each other are equal but opposite.	
Terminal velocity	When air resistance and weight are equal, no resultant force acts so object reaches a constant velocity.	
Inertia	The tendency of objects to continue in their state of rest or of uniform motion.	
Momentum	Momentum = mass x velocity	
Conservation of momentum	Total momentum before and after a collision/explosion is the same.	
Force	Force is equal to the rate of change of momentum.	
Stopping distance	Thinking distance + braking distance	
Thinking distance	The distance travelled whilst the driver reacts.	
Braking distance	The distance travelled under the braking force.	

Distance – time graph



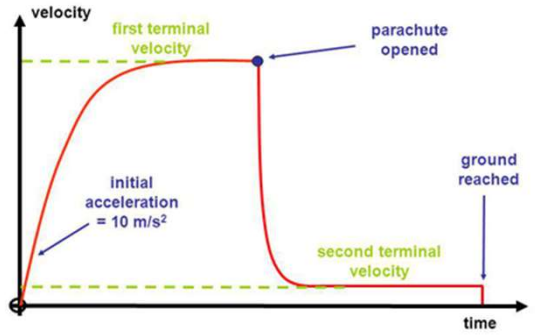
Gradient is the speed.

Velocity – time graph



Gradient is the acceleration.
Area is the distance travelled.

Velocity – time graph for a skydiver



Speed	
Walking	1.5 m/s
Running	3 m/s
Cycling	6 m/s
Speed of sound	330 m/s
Speed of light	300,000,000 m/s (300 million)

$$a = \frac{v - u}{t} \quad \text{and} \quad v^2 = u^2 + 2as$$

u = velocity at start
v = velocity at end
a = acceleration
s = distance
t = time

Factors increasing thinking distance	Factors increasing braking distance
Drinking alcohol Taking medication Tiredness Distracted (using mobile phone)	Wet or icy roads Worn brakes or worn tyres Smooth road surface Smaller braking force

Religious teachings about human sexuality

Human sexuality: refers to how people express themselves as sexual beings.
Heterosexual: Sexually attracted to members of the opposite sex.
Homosexual: Sexually attracted to members of the same sex.

For homosexual relationships	Against homosexual relationships
Reform Jews believe that loving, committed homosexual relationships should be allowed.	**The Catholic Church** teaches that homosexual relationships are wrong because they do not allow for new life to be created.

Key Quotations: "Do not lie with a male as one lies with a woman: It is an abhorrence" Leviticus 18:22 (Tenakh)

Divorce and Remarriages

Divorce: legal ending of marriage
Remarriage: when someone marries again while their former husband or wife is still alive.

Why do people got divorced?
Adultery, people changing and growing apart, work and money pressures, addiction, inability to have children etc.

Religious views on divorce and remarriage
Some Christians believe in the sanctity of marriage and divorce is wrong. Catholics can separate but not remarry whilst their partner is still alive.
Other Christians believe divorce is the lesser of two evils and should be allowed.
Jews believe marriage is a voluntary contract, so divorce is allowed.

The Purpose of Families

Procreation: bringing babies into the world.
For Christians and Jews, the purpose of families is to procreate, educate children in the faith and to protect children and keep them safe.

Procreation.
Mainly takes place within the family. Jews consider a large family a blessing from God.
For Christians, procreation is an important purpose of the family.

Stability and the protection of children
Families provide secure, stable environments for children to grow up in.
Educating children in a faith – **In Judaism**, the Shema instructs parents to teach children God's laws. **Christians** are expected to teach children good morals and Christian values.

Sexual relationships before and outside of marriage

Adultery: voluntary sexual intercourse between a married person and someone who is not their husband or wife.
Sex before marriage
Some liberal Christians believe that sex before marriage can be a valid expression of love, as long as they are in a committed relationship. Others argue that sex before marriage is wrong.
Traditionally, **Judaism** considers sex before marriage as sinful and wrong.
Sex outside marriage
Adultery is against one of the Ten Commandments 'thou shalt not commit adultery' Exodus 20:14 (**Judaism and Christianity**)
Both religions believe adultery breaks the spiritual bond of marriage.

Religious Teachings about Marriage

Marriage: legal union between a man and woman as partners in a relationship (same-sex marriage is legal in the UK)
Cohabitation: refers to a couple living together and having a sexual relationship without being married.
What is the nature and purpose of marriage?
Jews have a binding contract (Ketubah) that protects the woman's financial security. It provides a secure foundation to raise a family.
Christians believe marriage is the proper place to enjoy sex, raise children and provide a secure and stable environment for family life.
Cohabitation and same - sex marriage
Catholics and Orthodox Jews oppose cohabitation as they believe sex should only take place within marriage. Against same-sex marriage
Reform and liberal Jews → accept same-sex marriage & cohabitation.

Religious Attitudes to Gender Equality

Gender equality: men and women should have the same rights and opportunities as each other.
Gender prejudice: holding biased opinions about people based on their gender.
Sexual stereotyping: having a fixed idea or image of how men and women will behave.
Gender discrimination: acting against someone on the basis of their gender.

Christians believe all people are created in the image of God.
"There is neither Jew nor Gentile" Galatians 3:28 [NIV]
In **Reform Judaism**, women can be rabbis however this is not allowed in **Orthodox Judaism**. Women take on more traditional roles within Orthodox Judaism.

Contraception and family planning

Contraception: methods used to prevent pregnancy (e.g. condoms, the pill - artificial), the rhythm method - natural
Most Christians and Jews accept family planning in certain circumstances, but not to stop having children altogether.

Christian views
Catholics -artificial contraception goes against natural law. Sex should be about creating new life (rhythm method is allowed).
Other Christian's contraception should be allowed for family planning.
Jewish views
Orthodox accepts use of contraception by married couples
Reform allow contraception for many reasons including social and financial reasons.

The nature of families

Different types of families
Nuclear family- a mother, father and children (most common family type in the west).
Extended family › includes grandparents and other relatives.

Jews view themselves as an extended family, descending from Abraham, Isaac and Jacob .
Some Christians and Orthodox Jews disapprove as they believe children should have both male and female role models.
Polygamous families are when a man has more than one wife. Illegal in UK
Role of parents- to love and care for children, educate them about their faith, encourage positive morals and values.
Role of children- to love and respect parents, support and care for them.

KISSJO SKILLS:

Knowledge
Impact
Specialist language
Source
Judgement
Opinion

Revising the past		
Fui	I went	
Hice	I did	
Jugué	I played	
Comí	I ate	
Bebí	I drank	
Viajé	I travelled	
Estudié	I studied	
Salí	I went out	
Fue	He/she went / it was	
Fuimos	We went	
Jugamos	We played	
Comimos	We ate	
Salimos	We went out	

Revising the present		
Voy	I go	
Hago	I do	
Juego	I play	
Como	I eat	
Bebo	I drink	
Viajo	I travel	
Estudio	I study	
Salgo	I go out	
Es	He / she / it is	
Vamos	We go	
Jugamos	We play	
Comemos	We eat	
Salimos	We go out	

Revising the future		
Voy a ir	I am going to go	
Voy a hacer	I am going to do	
Voy a jugar	I am going to play	
Voy a comer	I am going to eat	
Voy a beber	I am going to drink	
Voy a viajar	I am going to travel	
Voy a estudiar	I am going to study	
Voy a salir	I am going to go out	
Va a ser	He / she / it is going to be	
Vamos a ir	We are going to go	
Vamos a jugar	We are going to play	
Vamos a comer	We are going to eat	
Vamos a salir	We are going to go out	

-ar verb endings preterite			
-é		**-amos**	
-aste		**-asteis**	
-ó		**-aron**	

-ar verb endings present			
-o		**-amos**	
-as		**-áis**	
-a		**-an**	

-er verb endings preterite			
-í		**-imos**	
-iste		**-isteis**	
-ió		**-ieron**	

-er verb endings present			
-o		**-emos**	
-es		**-éis**	
-e		**-en**	

-ir verb endings preterite			
-í		**-imos**	
-iste		**-isteis**	
-ió		**-ieron**	

-ir verb endings present			
-o		**-imos**	
-es		**-ís**	
-e		**-en**	

Simple future essentials	
iré	I will go
haré	I will do
jugaré	I will play
comeré	I will eat
será	It will be
saldré	I will go out
viajaré	I will travel

Simple future endings (infinitive + ending)			
-é		**-emos**	
-ás		**-éis**	
-á		**-án**	

Future phrases		
Cuando sea mayor	When I am older	
Si pudiera	If I could	
Si tuviera la oportunidad	If I had the opportunity	
Me gustaría + infinitive	I would like to	
Me encantaría + infinitive	I would love to	
Quiero + infinitive	I want to	

Past tense opinions		
Pensé que	I thought that	
Mi amigo pensó que	My friend thought that	
A mi hermano le gustó	My brother liked it	
A mi amigo le encantó	My friend loved it	
Lo pasé bomba	I had a blast	
Fue genial	It was great	
Fue inolvidable	It was unforgettable	

Pros & cons		
Por un lado	On one hand	
Por otro lado	On the other hand	
Una ventaja es que	An advantage is that	
Otra ventaja es que	Another advantage is that	
Una desventaja es que	A disadvantage is that	
Otra desventaja es que	Another disadvantage is that	
Lo bueno es que	The good thing is that	
Lo malo es que	The bad thing is that	
Lo que más me gusta es	What I like the most is	
Lo que menos me gusta es	What I like the least is	
Sin embargo	However	
No obstante	However	

Negatives		
nada	nothing	
nadie	nobody/no one	
ninguno/a/os/as	no, none, not one	
tampoco	neither	
ni……ni	neither …….. nor	
no hay	there isn't	
nunca	never	
jamás	never (strongly)	

Opinion structures		
Pienso que	I think that	
Creo que	I think that	
En mi opinión	In my opinion	
Diría que	I would say that	
Según mi amigo	According to my friend	
Según mis padres	According to my parents	
Mi mejor amigo dice que	My best friend says that	
Mis padres dicen que	My parents say that	

Connectives & adverbs		
porque	because	
dado que	given that	
también	also	
además	furthermore	
aunque	although	
afortunadamente	fortunately	
desafortunadamente	unfortunately	
recientemente	recently	

Intensifiers		
muy	very	
bastante	quite	
un poco	a bit	
completamente	completely	
absolutamente	absolutely	

¿Qué hay en tu región?		
un río	a river	
un paisaje	a landscape	
una playa	a beach	
la arena	the sand	
la selva	the rainforest	
la naturaleza	nature	
un volcán	a volcano	
una montaña	a mountain	
la sabana	the savannah	
un bosque	a forest	

¿Qué hay en tu ciudad?		
la bolera	the bowling alley	
la iglesia	the church	
la mezquita	the mosque	
el castillo	the church	
el polideportivo	the sports centre	

¿Qué has hecho recientemente?		
he comido	I have eaten	
he comprado	I have bought	
he jugado	I have played	
he viajado	I have travelled	

El perfecto		
he	I have	+ ado (-ar verbs) (e.g. he jugado)
has	You have	
ha	He / she has	
hemos	We have	+ ido (-er/ir verbs) (e.g. he comido / he salido)
habéis	You (pl.) have	
han	They have	

Timetable

	1Mon	1Tue	1Wed	1Thu	1Fri	2Mon	2Tue	2Wed	2Thu	2Fri
Reg										
1										
2										
Break										
3										
4										
Reg										
Lunch										
5										
6										