BOURNEMOUTH SCHOOL

Year 10

Knowledge Organiser 6

Summer Term: 2024-25

Name: Master Copy

Registration Form: 10

✓Hard Work ✓Discipline ✓Smart Appearance ✓Respect

Bournemouth School

Knowledge Organiser 6: 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.

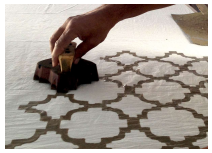
How long should I spend on my homework?

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 Printing

Keyword	Definition – read, cover, write, review
Printing	Printing in art is transferring ink or paint from a design onto a surface. There are many techniques for printing – these can be used for different results, including fine art, textiles and advertising.
Screen Print ◯	Screen printing is a printing technique where a mesh stretched over a frame is used to transfer ink (or dye) onto a substrate, except in areas made impermeable to the ink by a blocking stencil or by a coating which makes aspects impervious to the ink.
Drypoint ◯	A sharp pointed tool is used to essentially "gouge" a line into a sheet of plastic, some of the plastic is displaced and a good portion of the material is forced above the surface of the plate to make a burr. When the ink is applied it adheres to the burr and the excess is wiped off.
Lino printing ◯	Lino print is also known as lino cutting. When lino printing you cut a design into a block of linoleum, then ink the remaining raised surface with a **roller** and print onto either paper or fabrics.
Mono printing	The monoprint is a form of printmaking where the image can only be made once, unlike most printmaking which allows for multiple originals
Collograph ◯	Collagraph is a printmaking technique which operates, as the name suggests, on the basis of collage. The physical activity involved in creating a collagraph plate is the interaction with a selection of materials of varying textures.
Paper lithography ◯	Paper lithography is the process of inking a toner based photo copy (the plate) and printing it onto paper.


Block Print

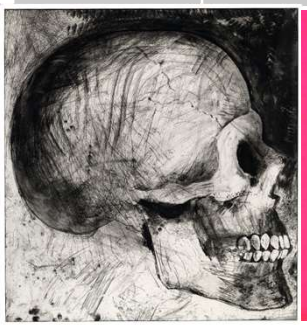

Lino print


Mono print


Paper lithography

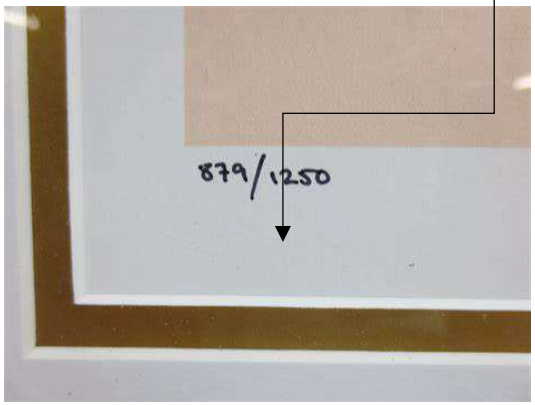

Screen and squeegee

Keyword	Definition – read, cover, write, review
Block Print ◯	Block printing is a **relief printing** technique that uses a carved material (typically wood, linoleum, or rubber) to transfer ink onto fabric or paper. The block serves as a stamp, with the final product resulting in a mirror image of the carving.
Roller also known as a brayer ◯	Used to apply ink to the printing block
Screen ◯	Mesh is stretched over a wooden frame and kept under tension. The most popular mesh in general use is made of polyester. There are also different types of mesh size which will determine the outcome and look of the finished design on the material.
Squeegee ◯	The purpose of a squeegee is to transfer the ink through the screen to the material or paper being printed. It scrapes excess ink on the screen and keeps the screen in contact with the substrate.
Edition ◯	In printmaking, an **edition** is a number of prints struck from one plate, usually at the same time. This may be a limited edition, with a fixed number of impressions produced on the understanding that no further impressions (copies) will be produced later. Most modern artists produce only limited editions, normally signed by the artist in pencil, and numbered as say 67/100 to show the unique number of that impression and the total edition size.


Dypoint. Jim Dine


Screen Print. Andy Warhol.


Collograph



◯ **Tick the circle when you have been taught this.**

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ART

Biodiversity

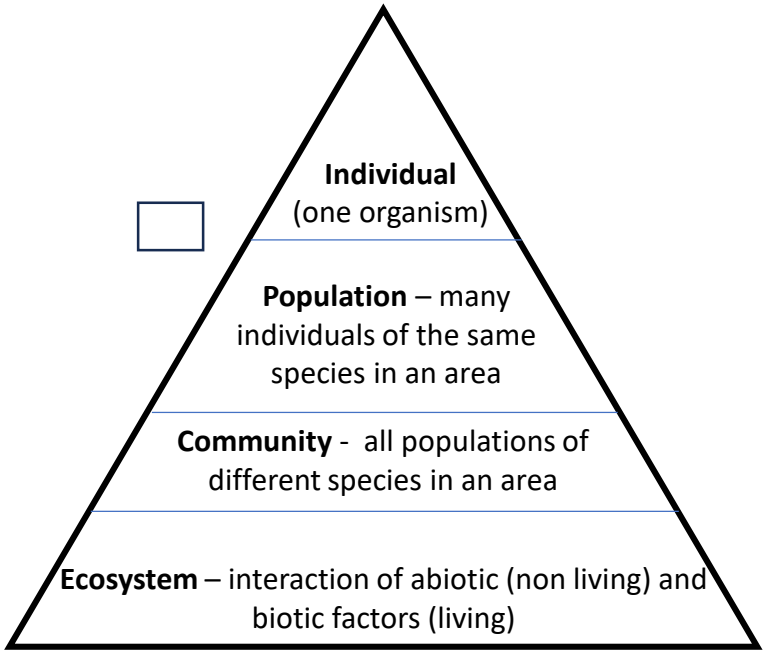
Keyword	Learn	✓
Biodiversity	The variety of all the different species of organisms in an ecosystem.	
Factors that reduce biodiversity	Destruction of peat bogs, destroying habitats, releasing carbon dioxide into atmosphere (global warming), pollution, deforestation	
Methods of maintaining and conserving 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

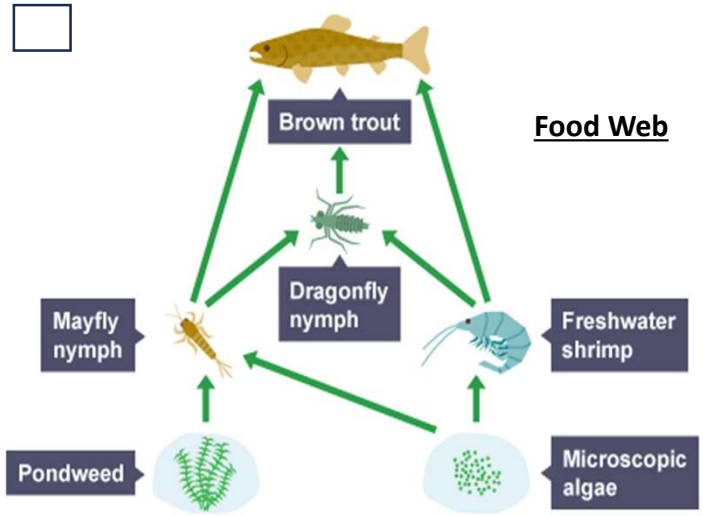


Sampling Techniques

	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	

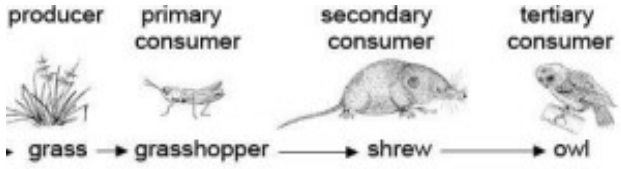
Pollution

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



Food Web

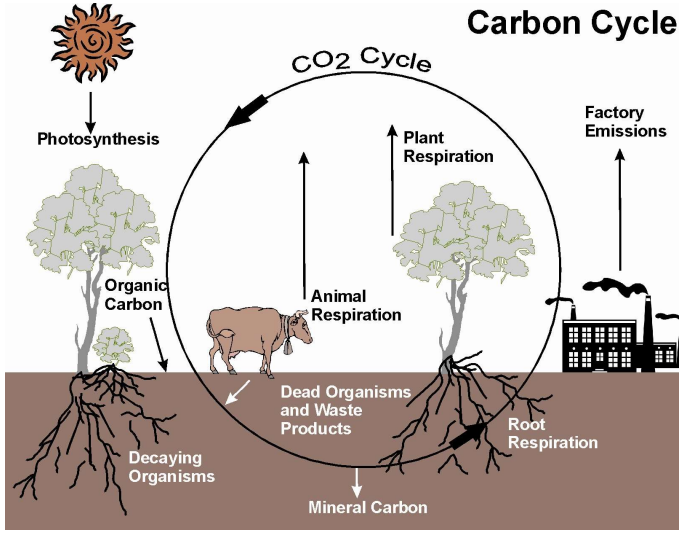
Food Chain



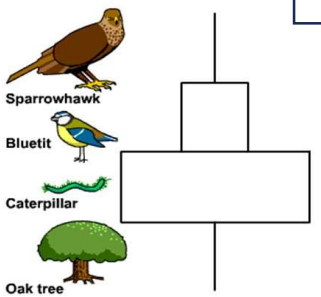
Decomposers are **bacteria and fungi**, which break down dead organisms in a process called **decomposition** or rotting.
They do this by releasing **enzymes** onto the dead matter and afterwards, consume the broken down substances.
Decomposers carry out **respiration** which releases heat, carbon dioxide 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		
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	

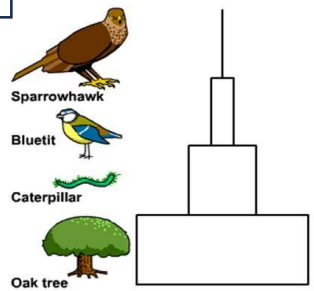
Carbon Cycle



Pyramid of number



Pyramid of biomass



Food Chains		
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	

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BIOLOGY

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

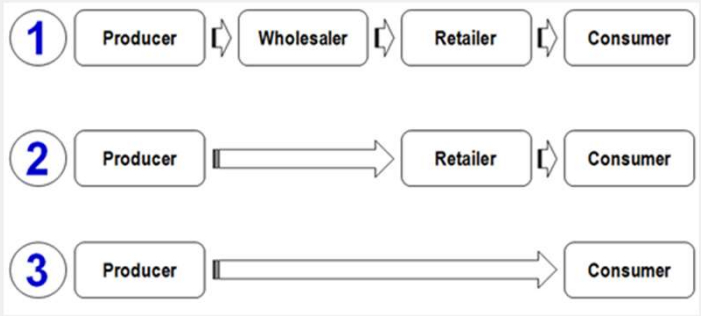
Other Distribution Channels

- **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:

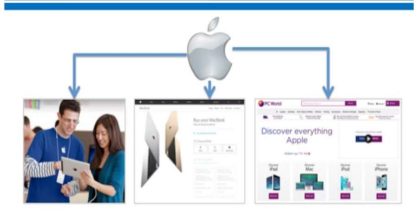
- Producer → customer
- Producer → **wholesaler** → customer
- Producer → wholesaler → **retailer** → customer



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 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.	

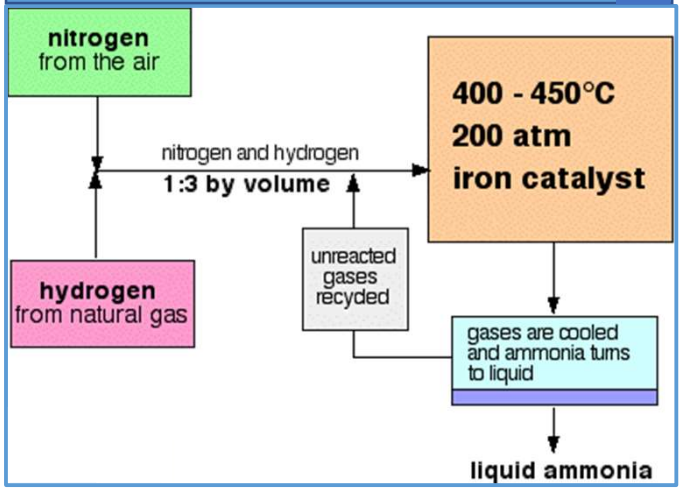
If a reversible reaction is exothermic in one direction, it is endothermic in the opposite direction.

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.

Topic 7a – Organic Chemistry

Key term	Definition	✓
Crude oil	A fossil fuel formed from ancient biomass. It is a mixture of different sized hydrocarbons.	
Biomass	Plankton, including algae which is buried under mud under the oceans and is converted into crude oil by heat and pressure over millions of years.	
Finite resource	A resource which is being used up faster than it is replaced.	
Hydrocarbon	A chemical compound containing ONLY hydrogen and carbon atoms	
Alkane	A SATURATED hydrocarbon containing only single covalent bonds between carbon atoms (C-C).	
Homologous series	Contains compounds with the same general formula, functional group and similar chemical properties.	
Fractional distillation	A method to separate a mixture of miscible liquids with different boiling points.	
Fraction	A mixture of molecules with a similar boiling point.	
Complete combustion	Fuels are burned in excess oxygen to form carbon dioxide and water	
Incomplete combustion	Fuels are burned in insufficient oxygen, so carbon monoxide and water are formed. CO is toxic.	
Cracking	Thermal decomposition of long hydrocarbons into a shorter alkane and alkenes.	
Alkene	An UNSATURATED hydrocarbon with a double carbon-carbon bond (C=C).	
Monomer	A small molecule which can join together to make a polymer.	
Polymer	A long chain molecule made by many monomer molecules joining together (polymerisation).	
Addition polymerisation	A reaction where alkene monomers form a polymer and no other products are formed. Alkene monomers→(Poly) alkene.	

Alkane: General formula: C_nH_{2n+2}

Alkene: General formula: C_nH_{2n}

Number of carbon atoms	Alkane name and formula	Alkene name and formula
1	Methane CH_4	
2	Ethane C_2H_6	Ethene C_2H_4
3	Propane C_3H_8	Propene C_3H_6
4	Butane C_4H_{10}	Butene C_4H_8

Fractional distillation of crude oil

1) Crude oil is heated at the base of a fractionating column.
2) Most of the molecules vaporise and rise up the column.
3) They cool as they rise due to a temperature gradient.
4) Fractions condense when the temperature falls below the boiling point of the molecules.
5) They are collected at different heights.

Catalytic Cracking

1) Long chain alkanes are heated to vaporise them.
2) They are passed over a hot catalyst of aluminium oxide.

Steam cracking

1) Long chain alkanes are heated to vaporise them.
2) They are mixed with steam and heated to high temperatures.

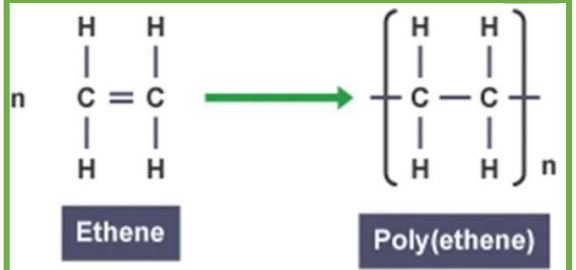
Property	Short chains	Long chains
Boiling point	Low	High
Volatility	Evaporate easily	Hard to evaporate
Flammability	Ignite easily	Hard to ignite
Viscosity	Low – flow easily	High – resistant to flow

Test for unsaturation. Mix with bromine water.

Alkene: If a C=C double bond is present, it will decolourise bromine water.

Alkane: If there is no double bond, the bromine water remains orange.

Addition Polymerisation



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CHEMISTRY

2.2 Programming Fundamentals

<table>
<tr><th>Keyword</th><th>Definition / Example</th><th>✓</th></tr>
<tr><td>Variable</td><td>A label/identifier which is used to identify a memory location used to store a value that can be changed while the program is running.</td><td></td></tr>
<tr><td>Constant</td><td>A label/identifier which is used to identify a memory location used to store a value that cannot be changed while the program is running.</td><td></td></tr>
<tr><td>Array</td><td>A data structure that stores a collection of values with the same data type under one name/identifier. Each value is called an element and is accessed by an index position</td><td></td></tr>
<tr><td>Concatenation</td><td>The action of joining strings together.
print(“Hello ” + name + “!”)</td><td></td></tr>
<tr><td>Data Types</td><td>Determines what type of value the variable will hold.
<table>
<tr><td>Integer – Whole number</td><td>age = 12</td></tr>
<tr><td>Real / float – Number that can have a fractional part</td><td>height = 1.52</td></tr>
<tr><td>Character – A single letter, symbol or number</td><td>letter = ‘a’</td></tr>
<tr><td>String – Multiple characters</td><td>name = “Bart”</td></tr>
<tr><td>Boolean – Has two values: true or false.</td><td>a = True
b = False</td></tr>
</table></td><td></td></tr>
<tr><td>Arithmetic operators</td><td>Mathematical functions that take two operands and performs a calculation on them.
<table>
<tr><th></th><th>Python</th><th>OCR Ref.</th></tr>
<tr><td>Add</td><td>7 + 2 = 9</td><td>7 + 2</td></tr>
<tr><td>Subtract</td><td>7 – 2 = 5</td><td>7 - 2</td></tr>
<tr><td>Multiply</td><td>7 * 2 = 14</td><td>7 * 2</td></tr>
<tr><td>Divide</td><td>4 / 2 = 2</td><td>4 / 2</td></tr>
<tr><td>Power</td><td>2 ** 3 = 8</td><td>2 ^ 3</td></tr>
<tr><td>Integer/floor division</td><td>7 // 2 = 3</td><td>7 DIV 2</td></tr>
<tr><td>Modulus</td><td>7 % 2 = 1</td><td>7 MOD 2</td></tr>
</table></td><td></td></tr>
</table>

<table>
<tr><th>Keyword</th><th>Definition / Example</th><th>✓</th></tr>
<tr><td>Relational operators</td><td>Allow the comparison of values.
<table>
<tr><td>Less than</td><td><</td><td>7 < 2</td><td>False</td></tr>
<tr><td>Greater than</td><td>></td><td>7 > 2</td><td>True</td></tr>
<tr><td>Equal to</td><td>==</td><td>7 == 2</td><td>False</td></tr>
<tr><td>Not equal to</td><td>!=</td><td>7 != 2</td><td>True</td></tr>
<tr><td>Less than or equal to</td><td><=</td><td>7 <= 2</td><td>False</td></tr>
<tr><td>Greater than or equal to</td><td>>=</td><td>7 >= 2</td><td>True</td></tr>
</table></td><td></td></tr>
<tr><td>Casting</td><td>Convert from one data type to another.
<table>
<tr><th>Python</th><th>OCR Ref.</th><th>Converts to</th></tr>
<tr><td>str()</td><td>str()</td><td>String</td></tr>
<tr><td>int()</td><td>int()</td><td>Integer</td></tr>
<tr><td>float()</td><td>real()</td><td>Real</td></tr>
</table></td><td></td></tr>
<tr><td>Sequence</td><td>A programming construct that represents a set of steps.
<pre>a = 1
b = 2
c = a + b
print(c)</pre></td><td></td></tr>
<tr><td>Selection (definition)</td><td>A programming construct used to make decisions in a program based on the result of a Boolean condition.</td><td></td></tr>
<tr><td>Selection (example)</td><td>
<table>
<tr><th>Python</th><th>OCR Ref.</th></tr>
<tr><td><pre>if value > 50:
    print(“Over 50”)
elif value >= 20:
    print(“20 or over”)
else:
    print(“Under 20”)</pre></td><td><pre>if value > 50 then
    print(“Over 50”)
elseif value >= 20 then
    print(“20 or over”)
else
    print(“Under 20”)
endif</pre></td></tr>
</table></td><td></td></tr>
</table>

For extra coding: https://www.w3schools.com/python/

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- Summer 2 Macbeth Revision

Plot Summary Acts 1-3

Act 1

- Witches plot to meet with Macbeth
- Macbeth and Banquo demonstrate their bravery defeating King Duncan's enemies in battle.
- The witches offer tempting prophecies and Macbeth's ambition is awakened. He is eager to hear more. Banquo is more sceptical and wary.
- Macbeth instantly shares the news with his wife and "partner in greatness". Lady Macbeth is eager to push Macbeth to kill the king. She renounces her womanly qualities seeking to be strong and ruthless.
- Macbeth's loyalty causes him to have second thoughts, Lady Macbeth accuses him of failing to be a man and convinces him to act.

Act 2

- On his way to kill Duncan, Macbeth sees a floating dagger pointing on towards the king's chambers.
- Having killed the king, Macbeth is horrified at his actions. In his distress, he forgets to plant the daggers on the sleeping guards. Lady Macbeth tells him to pull himself together and goes to plant the daggers herself.
- Macduff discovers the murder, Macbeth and Lady Macbeth pretend to be horrified and Macbeth kills the guards, claiming he did so out of rage. Macduff seems to doubt this explanation.
- The King's sons Malcolm and Donalbain decide they must flee Scotland, until they know who to trust.

Act 3

- With Malcolm and Donalbain gone, Macbeth is crowned king, but Banquo suspects he has "played most foully" to achieve the throne.
- Macbeth is tormented by guilt and paranoia and knows Banquo has cause to suspect him. He makes arrangements for murderers to kill Banquo and Fleance.
- While at a banquet to celebrate his coronation, Macbeth receives the news that the murderers succeeded in killing Banquo but that Fleance escaped.
- Macbeth imagines he sees Banquo's ghost at the table. His horrified reaction reveals his guilt and the guests are sent home early.
- Macbeth decides to revisit the witches to seek their aid.
- Some of Macbeth's thanes start to desert him to give their support to Malcolm (Duncan's eldest son). I

Plot Summary Acts 4-5

Act 4

- The witches show Macbeth a series of visions that seem to suggest he cannot be defeated. Although they warn against Macduff, they say no man born of woman can kill him and he will not fall until Birnam Wood comes to his castle walls. He resolves to kill Macduff to make sure of his rule.
- Macduff has gone to England to join with Malcolm. Macbeth has his wife and children murdered.
- Malcolm tests Macduff's loyalty by seeing if he will follow him, even if he doesn't act in a kingly way. Macduff passes the test and they join forces.
- Macduff learns of his family's murder. He swears to "feel it as a man" and to seek revenge.

Act 5

- Lady Macbeth sleepwalks and is tormented by guilt.
- Macbeth's supporters start to desert him but he is determined to fight on.
- Malcolm's approaching army cut branches from Birnam wood, which they carry to disguise their numbers.
- Macbeth receives the news that Lady Macbeth has died. He sees all he has achieved as pointless but still intends to fight on.
- Macbeth fights to the last. When he encounters Macduff on the battlefield and learns that he was not born of a woman but was "from his mother's womb untimely ripped" he realises how the witches have misled him. He briefly loses the will to fight, but in a final act of bravery, decides to die fighting, rather than be captured.
- Macduff kills Macbeth and cuts of his head.
- Malcolm celebrates his victory and the death of Macbeth and Lady Macbeth. Duncan's line is restored.

Context	Themes	One key quote per theme
Witchcraft: during the Jacobean period many individuals were prosecuted as witches. King James was fascinated with witches. He believed they had once summoned a storm to attempt to drown him. He wrote a book on witchcraft called The Daemonologie.	**Ambition**: The dangers of excessive ambition, suggesting it leads people into evil and to turn against their duty/God.	"I have no spur to prick the sides of my intent, but only vaulting ambition"
The Great Chain of being: the hierarchy Jacobeans thought governed the world. God ruled over the arch angels, angels and his creations. On earth, the king was appointed to rule over the nobles, lesser ranks and animals. To break from this social order was to go against God.	**Loyalty**: Loyalty is a key characteristic and to fail in your loyalty to King/God a terrible crime.	"Most sacrilegious murder hath broke ope The Lord's anointed temple"
	Violence: Violence is praised in Jacobean society. Shakespeare suggests that violent actions lead to violent consequences.	"it will have blood; they say blood will have blood".
	Masculinity: Jacobean notions of masculinity are too focused on strength/pride. This makes Macbeth easy to manipulate when Lady M questions his masculinity.	"What beast was't, then, That made you break this enterprise to me? When you durst do it, then you were a man"
The Divine Right of Kings: the belief that the king ruled as God's representative on earth.	**Femininity:** Lady Macbeth challenges Jacobean notions of how women should behave, but ends up bring about her own downfall. Is Shakespeare suggesting women can be strong and ruthless, or warning that these qualities are unnatural for women?	"Come, you spirits/ That tend on mortal thoughts, unsex me here"
The Gunpowder plot: an attempt to kill king James in 1605 by disgruntled Catholics.	**Kingship vs Tyranny:** Shakespeare explores the idea that a true king must be linked to God. Someone who seeks the throne for power or selfish reasons will be viewed as a cruel tyrant not a true king.	"This tyrant, whose sole name blisters our tongues"
Historical basis: although there are significant changes, Shakespeare based his characters, including Macbeth, on real historical figures. A key example is Banquo, who is based on an ancestor of king James I.	**The Supernatural:** Shakespeare presents the supernatural as an evil, dangerous and corrupting, force.	The instruments of darkness tell us truths, win us with honest trifles, to betray us In deepest consequence
Tragedy: The play Macbeth is modelled on the principles of a Greek Tragedy. Macbeth is a **tragic hero**, meaning he is a heroic figure whose downfall is brought about by a **hamartia** (a fatal flaw in his character). The audience should feel a degree of pity (pathos) for his downfall.	**Fate:** Shakespeare questions the idea of fate. Should be view Macbeth as responsible for his own downfall or is he the tragic victim of cruel fate?	"Life's but a walking shadow, a poor player That struts and frets his hour upon the stage And then is heard no more"
	Divine retribution: Shakespeare suggests that those who go against God will suffer terrible consequences: guilt, paranoia, madness, death.	"o full of scorpions is my mind"

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.

La planète est en danger	
menacé	threatened
menacer	to threaten
le climat	the climate
la circulation	traffic
le taux de carbone	the carbon rate
les espèces animales	animal species
la destruction des forêts	the destruction of the forests
le recyclage	recycling
recycler	to recycle
la planète	the planet
les humains	humans
les inondations	floods
le niveau de la mer augmente	sea levels are rising
la guerre	war
la faim	famine
c'est inquiétant	it's worrying
le réchauffement climatique	global warming
le changement climatique	climate change
la pollution	pollution
augmenter	to increase
aider	to help

Les éco-activistes	
les voitures éléctriques	electric cars
partout dans le monde	everywhere in the world
traverser des frontiers	to cross borders
un autre pays	another country
dès aujourd'hui	from today onwards
des petits gestes	little gestures
commencer à + infinitive	to start to do something
arrêter de + infinitive	to stop doing something

Vocabulaire utile	
même	even
contre	against
connu	well-known
un métier	a career
lutter	to fight
les émissions de carbone	carbon emissions
ça coûte très cher	it costs a lot

L'énergie	
améliorer	to improve
les transports éléctriques	electric translport
l'énergie solaire	solar power
l'énergie hydroélectrique	hydroelectric energy
purifier l'air	to purify the air
mieux utiliser	to better use
l'énergie éolienne	wind power
protéger	to protect
sauver	to save
polluer	to pollute

Les adjectifs pour l'environnement	
rapide	fast
propre	clean
polluant	polluting
pratique	practical
facile	easy
bon pour l'environnement	good for the environment
mauvais pour l'environnement	bad for the environment

Quel temps fera-t-il? (future tense weather)	
il fera beau/chaud /froid/mauvais	it will be: nice/hot/ cold/bad weather
il y aura du soleil/ du vent/du brouillard	there will be: sun/wind/fog
il pleuvra	it will rain
il neigera	it will snow

imperfect	present	perfect
j'utilisais	j'utilise	j'ai utilisé
je faisais	je fais	j'ai fait
je prenais	je prends	j'ai pris
j'allais	je vais	je suis allé(e)

Imperfect verbs for talking about what you used to do	
J'étais	I was/I used to be
Je m'intéressais à	I used to be interested in
Je passais	I used to spend
J'achetais	I used to buy
Je pensais	I used to think
J'utilisais	I used to use
Je faisais	I used to do
Je prenais	I used to take
J'allais	I used to go

Les grands gestes	
pour + infinitive	in order to..
pour protéger l'environnement	in order to protect the environment
il faut + infinitive	you must
etre bénévole	to be a volunteer
développer la cooperation globale	to develop global cooperations
participer aux éléctions	to participate in elections
manifester pour les organisations vertes	to protest for green organisations
il faut arrêter de + infinitive	we must stop doing..
il faut arrêter de créer des produits en plastique	we must stop creating products made of plastic
les énergies vertes	green energy
financer la recherche	to finance research

The nous form imperative = let's…	
travaillons	let's work
respectons	let's respect
protégeons	let's protect
sauvons	let's save
partageons	let's share
soyons	let's be
faisons	let's do
sauvons la planète!	let's save the planet

L'environnement	
toujours	always/still
le monde naturel	the natural world
a l'age de..ans	at the age of ..
plus de..	more than
la lutte	the fight
déjà	already
chaque	each/every
pendant les heures de cours	during lesson time
personne	no-one

Opinion structures	
étant donné que	given that
puisque	as/since
vu que	seeing that
tandis que	whereas
toutefois	however
cependant	however
pourtant	yet
d'après-moi	in my opinion
selon moi	according to me
selon mes amis	according to my friends
je trouve ça..	I find that..

Modal verbs are followed by an infinitive	
il faut	you must/have to
il ne faut pas	you must not
on doit	you/we must
on peut	you/we can
on devrait	you/we should
on pourrait	you/we could
je devrais	i should/ought to
nous devrions	we should
nous pourrions	we could

Que fais-tu pour aider l'environnement?	
Je trie les déchets	I separate the rubbish
J'achète des produits verts	I buy green products
Je fais du covoiturage	I car share
Je vais au collège à vélo	I go to school by bike
Je prends une douche au lieu d'un bain	I have a shower instead of a bath
J'évite les sacs en plastique	I avoid plastic bags
Je recycle le verre/le papier/le plastique	I recycle glass/paper/plastic
J'utilise le papier recyclé	I use recycled paper
Je réutilise les sacs en plastique	I reuse plastic bags
Je suis végétarien	I am vegetarian
Je ne mange jamais de viande	I never eat meat
Je protège l'environnement	I protect the environment

Qu'est-ce qu'on devrait faire pour aider l'environnement?	
trier les déchets	to separate the rubbish
réduire la pollution	reduce pollution
réutiliser le plastique	to reuse plastic
acheter des produits verts	to buy green products
aller au collège à vélo	to go to school by bike
prendre une douche au lieu d'un bain	to have a shower instead of a bath
éviter les sacs en plastique	to avoid plastic bags
recycler	to recycle

Geographical Investigations

Risk Assessments

Uneven ground	Danger of falling over due to uneven footpaths.	All wearing sensible footwear. Not running and walking carefully over large rocks.
Weather	Wet weather is dangerous due to slippery groynes etc. Hot weather also poses the risk of dehydration.	Students advised to bring plenty of water and sun cream if the weather forecast is hot. If the weather forecast is wet, students are advised to bring appropriate clothing and footwear.
Unfamiliar areas	Getting lost in new environments.	Staying in groups. Carrying a phone and a map in case you do get lost.
Traffic	Getting ran over by vehicles.	Use pedestrian crossings only when crossing the road.

Types of Data

Primary Data Data you collect yourself	**Secondary Data** Data collected by someone else
• Environmental quality survey • Questionnaires • Interviews • Traffic counts / Pedestrian counts • Photographs	• Census data • House price data • Crime statistics • OS map – locations of services / houses / roads / buildings

Types of Data

Quantitative Data Data that is statistical / numbers	**Qualitative Data** Data that is descriptive
• River depth / width / velocity / discharge • Pebble size / beach gradient • Weather data • Erosion rates	• Photographs • Pebble roughness • OS maps

Improving data collection methods

Make it ACCURATE & RELIABLE (Enough data that we can trust what we find out)	**Make it REPRESENTATIVE** (Enquiry covers the whole area and not just a small part)
• Collect more data and generate an average – reduce the risk of anomalies. • Ask a wider variety of questions on a questionnaire. • If something is opinion based, consulting with other people to reduce bias. • Collect data at different times of day / year / weather conditions.	• Collect data at more sites to cover a larger area – reduces the risk of anomalies. • Ask a lots of different people for a questionnaire to cover all ages / genders / ethnicities etc. • Collect data at different times of day / year / weather conditions.

Analysing Data

Mean	Add all data together and divide by the number of values.
Median	Put the data in numerical order and find the middle number.
Mode	Most common number.
Range	Highest number minus the smallest number.
Interquartile Range	Upper quartile value minus the lower quartile value. **More accurate than the range as it removes the extreme values.**

WHY?
+ Averages can remove the risk of anomalies skewing the data.
+ Easily see a general trend / what is most common in the data.
+ Easily compare changes between areas.

Ich möchte eine Reservierung machen – I would like to make a reservation		
Für wen ist die Reservierung?	*Who is the reservation for?*	
Sie ist für…	*It is for …*	
meine Familie/ Kollegen/mich	*my family/ colleagues/me*	
Was für ein Zimmer möchten Sie?	*What kind of room would you like?*	
Ich möchte ein/zwei … reservieren	*I would like to reserve one/two …*	
Einzelzimmer/ Doppelzimmer	*single room/ double room*	
mit Bad/mit WLAN	*with bath/with wi-fi*	
Mit wem reisen Sie?	*Who are you travelling with?*	
mit meiner Familie/ mit meinen Eltern	*with my family/ with my parents*	
mit meinen Freunden/ mit meinen Kollegen	*with my friends/ with my colleagues*	
Und noch eine Frage: was kostet ...?	*And another question: How much does … cost?*	
Mit oder ohne Frühstück?	*With or without breakfast?*	
Inklusive Frühstück, bitte.	*Including breakfast, please.*	
Wie lange möchten Sie bleiben?	*How long would you like to stay?*	
Ich möchte … lang bleiben.	*I would like to stay …*	
eine Nacht/drei Nächte	*one night/ three nights*	
eine Woche/zwei Wochen	*one week/ two weeks*	
Wann kommen Sie an?	*When are you arriving?*	
Ich komme um … an	*I will arrive at …*	
Wann fahren Sie ab?	*When will you leave?*	
Ich fahre am … ab.	*I will leave on*	
Wie möchten Sie bezahlen?	*How would you like to pay?*	
Kann ich mit Kreditkarte/ online bezahlen?	*Can I pay by credit card/ online?*	

Probleme, Probleme – problems, problems		
Probleme im Urlaub	*problems on holiday*	
Was ist das Problem?	*What is the problem?*	
Ich habe … verloren/ vergessen.	*I have lost/forgotten …*	
meinen Pass/ Schlüssel/Koffer	*my passport/ keys/suitcase*	
meine Fahrkarte/ Kreditkarte/Tasche	*my ticket/credit card/bag*	
mein Gepäck/Handy/ Tablet	*my luggage/ mobile phone/tablet*	
meine Kopfhörer/ Ohrhörer	*my headphones/ earbuds*	
Ich möchte mich beschweren.	*I would like to complain.*	
Mein Fernseher/ Meine Tür ist kaputt.	*My TV/door is broken.*	
Mein Bett ist unbequem.	*My bed is uncomfortable.*	
Mein Zimmer ist schmutzig.	*My room is dirty.*	
Die Mitarbeiter sind unhöflich.	*The employees are rude.*	

Picture description		
Im Bild/Im Foto	*On the photo*	
Ich/Man kann … sehen	*I can see/You can see*	
Im Bild gibt es	*In the picture there is*	
Auf der linken/rechten Seite	*On the left/on the right*	
Im Hintergrund (V2)	*In the background*	
Im Vordergrund (V2)	*In the foreground*	
Das Foto wurde ..... gemacht	*The photo was taken*	
Sie spielen, essen , tragen	*They are playing, eating, wearing*	

USE PRESENT TENSE TO SAY WHAT PEOPLE ARE DOING – "AM-ING", "NO IS-ING" OR "ARE-ING"

Fragewörter – Question Words		
Wann?	*When?*	
Was?	*What?*	
Wie?	*How?*	
Wie viel?	*How much?*	
Wie viele?	*How many?*	
Wie lange?	*How long for?*	
Welch-?	*Which?*	
Um wie viel Uhr?	*At what time?*	
Warum?	*Why?*	
Wo?	*Where?*	
Wohin?	*Where to?*	
Woher?	*Where from?*	
Was für?	*What kind of?*	
Wer?	*Who?*	
Möchten Sie .....?	*Would you like?*	
Gibt es ……..?	*Is/Are there?*	
Kann man …?	*Can you…?*	
Haben Sie …?	*Do you have?*	

Role Play essentials		
Guten Tag.	*Hello*	
Wie geht's?	*How are you?*	
Auf Wiedersehen.	*Goodbye.*	
Danke	*Thank you.*	
Bis später/bald!	*See you later/soon*	
Können Sie das/ die Frage bitte wiederholen?	*Can you repeat that/ the question please?*	
Ich möchte	*I would like*	
Ich will	*I want*	

Wie waren die Schulferien? – How were the school holidays?		
Wo hast du übernachtet?	*Where did you stay?*	
Ich habe/Er hat/ Sie hat/Wir haben … übernachtet.	*I/He/She/We spent the night …*	
auf einem Campingplatz	*at a campsite*	
mit/bei der Familie	*with the family*	
in einem Ferienhaus	*in a holiday home*	
in einem Hotel	*in a hotel*	
in einem Zelt	*in a tent*	
in einer Ferienwohnung	*in a holiday apartment*	
auf einer Insel	*on an island*	
an der Küste	*on the coast*	
am Meer	*at the seaside*	
an einem See	*at/by a lake*	
Ich bin zu Hause geblieben.	*I stayed at home.*	

Das Wetter – the weather (past tense)		
Das Wetter war …	*The weather was*	
heiß/kalt	*hot/cold*	
neblig/wolkig/windig/ sonnig	*foggy/cloudy/ windy/sunny*	
Es gab Regen.	*There was rain.*	
Es gab Schnee.	*There was snow.*	
Es gab Wind.	*There was wind.*	
Es gab viel Sonne.	*There was a lot of sun.*	
Es hat geregnet.	*It rained.*	
Es hat geschneit.	*It snowed.*	

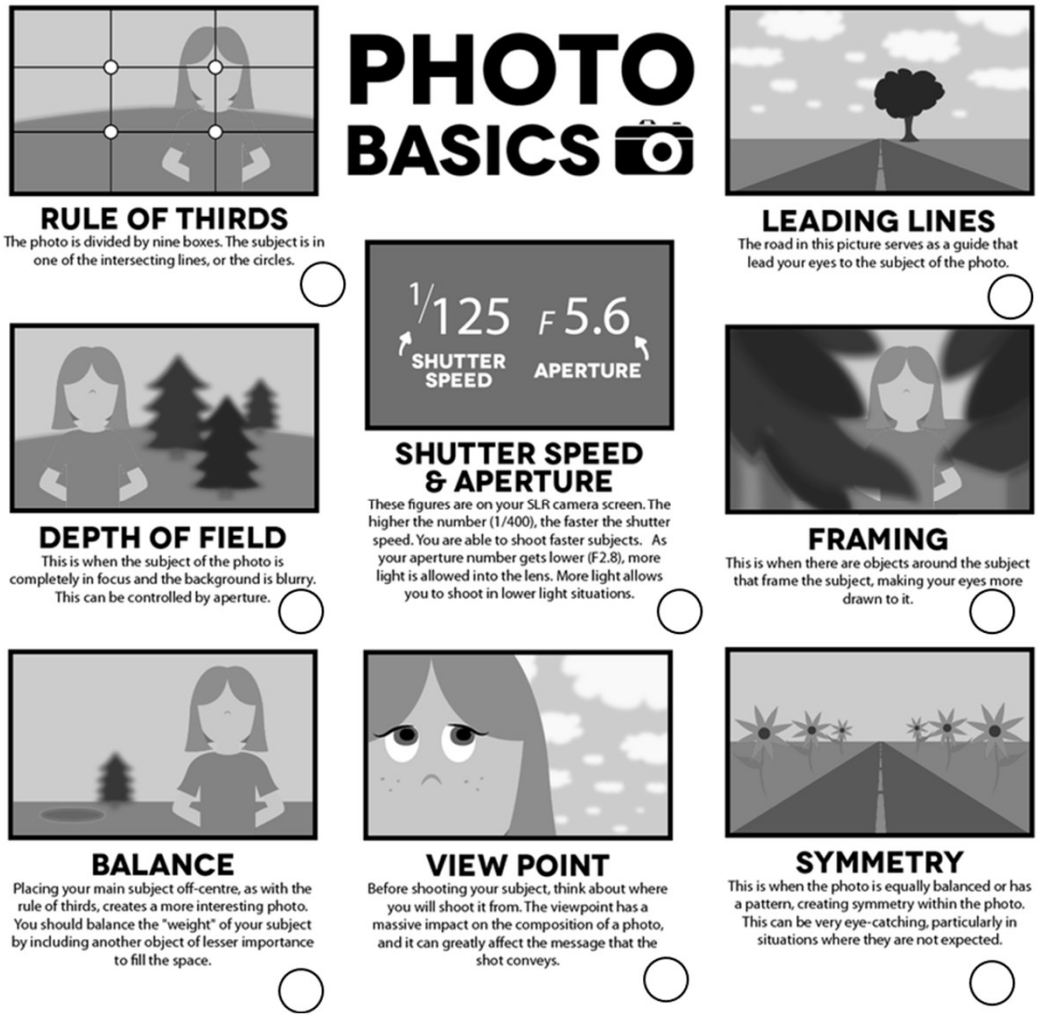
Wie waren die Schulferien? – How were the school holidays?		
Was hast du gemacht?	*What did you do?*	
Ich habe/Er hat/ Sie hat/Wir haben	*I (have) …*	
einen Ausflug gemacht.	*went on an excursion.*	
Volleyball gespielt.	*played volleyball.*	
das Schloss besichtigt.	*visited the castle.*	
die Museen besichtigt.	*visited the museums.*	
leckeres Essen gegessen.	*ate some delicious food.*	
Bücher gelesen.	*read some books.*	

Ich möchte um die Welt reisen! – I would like to travel (around) the world!		
Was wirst du in den Ferien machen?	*What will you do in the holidays?*	
Was wäre dein Traumurlaub?	*What would be your dream holiday?*	
Ich werde/Wir werden …	*I will/We will …*	
Ich würde/Wir würden …	*I would/We would ..*	
in den (Sommer)ferien	*in the (summer) holidays*	
in der Zukunft/ nächstes Jahr	*in the future/ next year*	
nach den Prüfungen	*after the exams*	
zu Hause bleiben	*stay at home*	
mit dem Boot/Flugzeug/ Zug	*by boat/airplane/ train*	
nach … fahren/reisen	*go/travel to …*	
Afrika/Asien	*Africa/Asia*	
Amerika	*America*	
Deutschland	*Germany*	

Ich möchte um die Welt reisen! – I would like to travel (around) the world!		
Welche Aktivitäten wirst/würdest du dort machen?	*Which activities will/would you do there?*	
Was wirst/würdest du dort machen?	*What will/would you do there/*	
Ich werde/würde …	*I will/would*	
mit meinem Partner/ meiner Partnerin	*with my partner*	
mit meinem Freund/ meiner Freundin	*with my friend*	
mit meiner Familie	*with my family*	
mit meinen Eltern	*with my parents*	
mit meinen Freunden/ meinen Freundinnen	*with my friends*	
(zehn) Tage in (Köln) sein.	*be in (Cologne) for (ten) days.*	
(zehn) Tage in (Köln) verbringen.	*spend (ten) days in (Cologne).*	
durch (Asien) fahren/ reisen/wandern.	*go/travel/hike through Asia.*	
diese Schlösser besichtigen.	*view these castles.*	
diese Museen besuchen.	*visit these museums.*	
die Kultur entdecken/ erleben.	*discover/ experience the culture*	
im Meer/See schwimmen.	*swim in the sea/lake.*	
einkaufen gehen.	*go shopping.*	
spazieren gehen.	*go for a walk.*	
Ausflüge/Fotos/ einen Kurs machen.	*go on excusions/take photos/do a course.*	
Tennis/Handball spielen.	*play tennis/handball.*	
in der Sonne liegen.	*lie in the sun.*	

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.



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: Crime & Punishment Paper 1: Knowledge Organiser: Year 10: Summer 2:

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:

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.

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.

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.

Bournemouth School History: Crime & Punishment Year 10: Paper 1 'Early Modern Period' Summer 2

1500 - 1700: Key terms/definitions

Crimes	Definition
Against property	Continuity of theft of clothing, food and smaller amounts of money: **New crimes** against property would be witchcraft, vagabondage
Against the person	Continuity of murders, assaults, slander, theft. ***New crimes***: witchcraft, vagabondage
Against Authority	***New crimes*** of Treason (disobedience to the monarch), Heresy: (holding different religious beliefs to the monarch) Poaching and trespassing

What social and economic changes affected crime and punishment 1500 – 1700?

1. **Population growth:** Population steadily increased, making it harder for some to find work. Numbers of unemployed increased.
2. **Increasing gaps between rich and poor:** Some people became richer but the majority remained poor, making them vulnerable to the rising cost of food. caused by bad harvests. The depressed cloth trade also meant more unemployment and hardship for many. Wealthy feared the poor…
3. **More printing:** More publications of books and pamphlets covered topics such as witchcraft and vagabondage, increasing the fear of such crimes
4. **Reformation and religious turmoil:** After the Reformation of the 1530's, there was much religious confusion and unrest, fuelling public beliefs of evil and supernatural explanations for events: accusations of witchcraft increased…
5. **Upheaval of political change:** English civil wars fuelled further feelings of insecurity and fear.
6. **More influential landowners:** Their wealth and influence grew, leading to them passing laws protecting their property and them regarding the poor with suspicion

Key dates of the Early Modern Period:

1534: Henry VIII 'broke with Rome', marking the beginning of religious turmoil continuing during the reigns of Edward VI (Protestant) Mary I (Catholic) until Elizabeth I's Religious Settlement of 1559.
1530's – 1590's: various Acts to deter vagabonds: less harsh from 1593
1604: King James I declared his 'utter detestation!' for Catholics
1605: Gunpowder Plotters uncovered and executed for Treason
1642 – 1649: English civil wars: Royalists v Parliamentarians
1645 – 1647: Peak of executions for witchcraft, led by Matthew Hopkins, the Witchfinder General, in East Anglia (Essex)
1688: Beginning of harsh punishments for minor crimes: the Bloody Code

1500 – 1700: Law Enforcement and Trials: effective?

- **Parish constables:** still main defence against crime but did not patrol
- **Hue and Cry:** still used. Citizens still expected to go out looking for the criminal if the alarm was raised. Local posse could also still be called out
- **Town watchmen and sergeants:** employed in larger towns, expected to arrest drunks and vagabonds. Sergeants could enforce market regulations on traders. Poorly paid and not very effective
- **Justices of the Peace:** their role developed from Middle Ages. Held status
- **Courts:** Manor Courts, County Quarter Sessions, Country Assizes

Early Modern Period

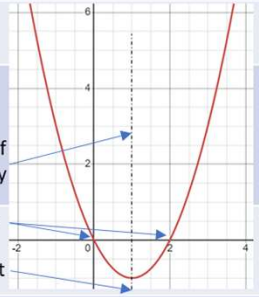
Monarchs and pamphleteers	Key individuals:
 **King Henry VIII (1509 – 1547) broke with Rome and began the Reformation of the Church in England**	 **Matthew Hopkins, 'Witchfinder General' 1645 – 47: led witch-hunts in East Anglia**
 **1560's: Thomas Harman wrote about the dangers of vagabonds**	 **Gunpowder Plotters 1605 Hung, drawn and quartered for Treason against King James I**

1500 – 1700: Crimes and their Punishments

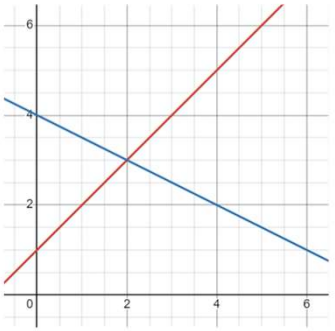
- **Treason:** Disobedience or disloyalty to the Monarch or the government: execution! H,D&Q
- **Heresy:** The crime of holding religious beliefs different to those of the Monarch: execution!
- **Vagabondage:** The crime of being a wandering beggar; also known as 'vagrancy'. whipping
- **Witchcraft:** The crime of using magic to cause harm to a person or their property, associated with the 'Witchfinder General', Matthew Hopkins, in East Anglia. Death!
- **Bloody Code:** Harsh laws making even minor crimes punishable by death

1700 – 1900: Industrial Period: new crimes?

Causes of changes in society	Urbanised and rising population, factory work, increased voting rights, faster travel, more Govt involvement, increased wealth and taxation, improved literacy, Darwin.
Highway robbery: reasons for rise and fall	Caused by better roads, technology, poverty, growth of towns, lack of centralised government. Fell due to changes in banking, better patrols (Fielding bros) JP's influence
Poaching	Seen as a social crime (esp. during poor harvests) caused by poverty and the growth of towns
Smuggling	Caused by better roads, poverty (tempting wages!) viewed as a social crime, difficult to tackle gangs
Tolpuddle Martyrs	Unionisation viewed as a crime, in interest of landowners

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 $y = x + 1$



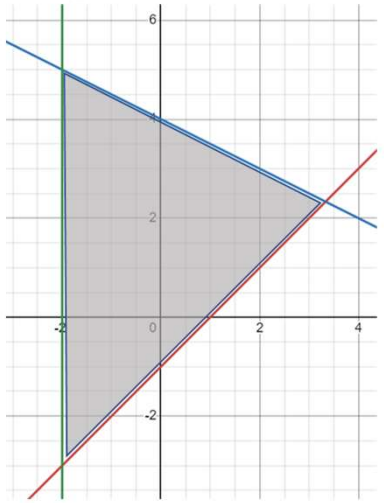
Solution: $x = 2, y = 3$

Shade the region satisfied by

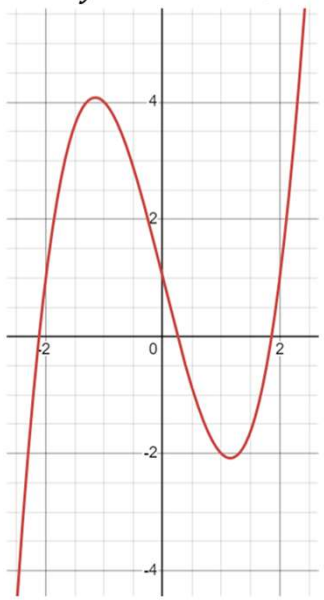
$x > 2$

$y > x + 1$

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



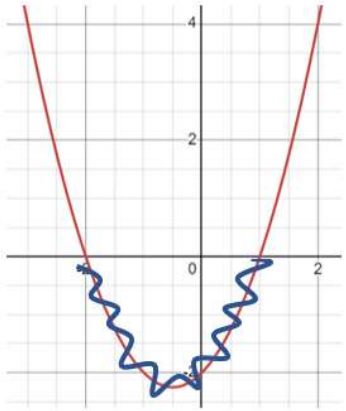
Draw $y = x^3 - 4x + 1$



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

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

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



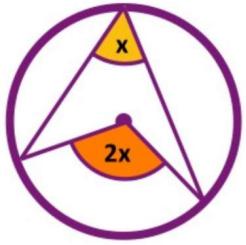
$-2 < x < 1$

Year 10 – Maths – Summer 2 – Unit 15

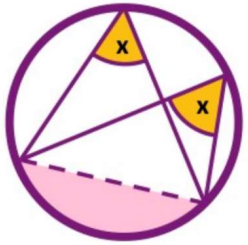
Bournemouth School – Knowledge Organiser – Year 10

MATHS

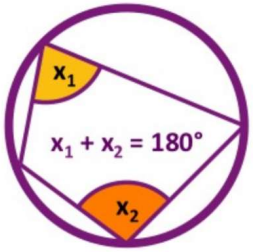
Keyword		Definition
Theorem		A theorem is a rule that can be proved by a chain of reasoning.
Chord		A chord is a straight line connecting two points on a circle.
Tangent		A tangent is a straight line that touches a circle at only one point.
Cyclic Quadrilateral		A quadrilateral inscribed in a circle (vertices sit on the circumference).
Segment		Two segments are created when you cut a circle along any one chord.



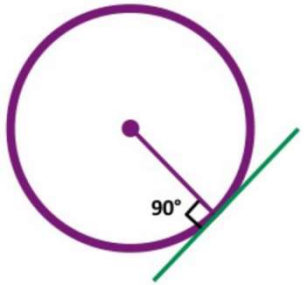
The angle at the centre is twice the angle at the circumference



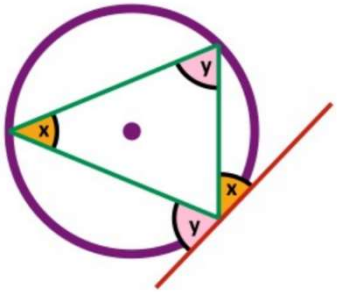
Angles in the same segment are equal



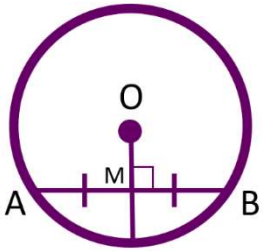
Opposite angles in a cyclic quadrilateral add to 180°



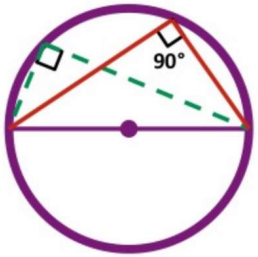
The angle between a tangent and the radius that meets it is 90°



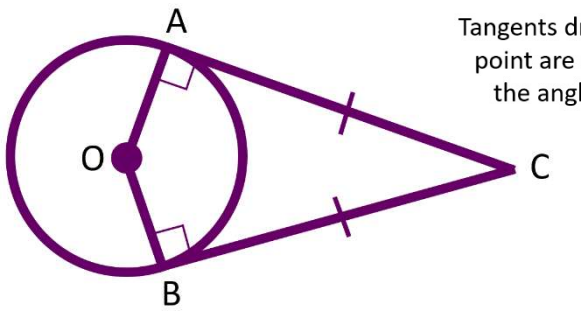
The angle between a tangent and a chord is equal to the angle in the alternate segment



The radius that bisects a chord, does so at 90°



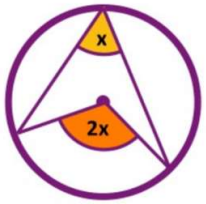
The angle subtended from a diameter is 90°

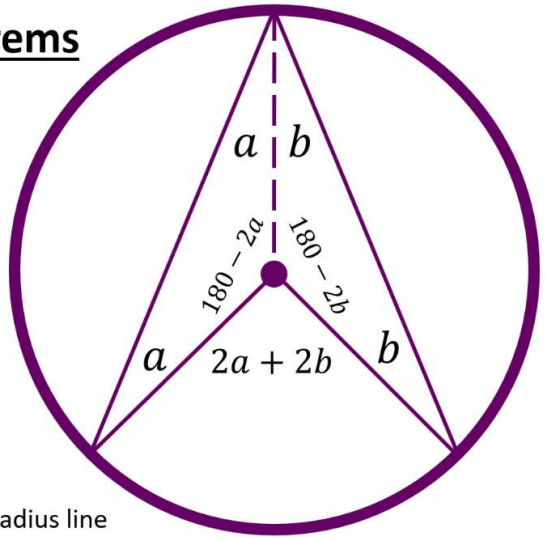


Tangents drawn to a circle from an external point are equal in length, and OC bisects the angles inside quadrilateral OACB.

Proving Circle Theorems

Prove this circle theorem:





Step 1:
Draw in additional radius line

Step 2:
Label the two parts of the angles created a and b.

Step 3:
Use the isosceles triangle property to define the two angles at the bottom as a and b respectively.

Step 4:
Use the sum of angles in any triangle to express the two angles around the centre as "180 – 2a" and "180 – 2b" respectively.

Step 5:
Use the sum of angles around a point to express the bottom angle in terms of a and b.

360 – (180 – 2a) – (180 – 2b) = 2a + 2b

Step 6:
Express this angle as 2(a + b) and close proof with the statement of fact.

Bournemouth School – Knowledge Organiser – Year 10

Year 10 – Maths – Summer 2 – Unit 16

MATHS

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

Context

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

Cover a new version of an existing song

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

Rhythm

Augmentation increasing the duration of the original notes

Syncopation accenting the offbeat or the weak beats in a bar

Clave the rhythm closely associated with the claves

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

Groove rhythmic feel

Texture

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

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

Monophonic a texture made up of a single line without accompaniment

Polyphonic a texture where many lines overlap

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

Structure

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

Outro a concluding section, like a coda in classical music

Melody

Conjunct movement by step

Disjunct movement by leap

Syllabic one note sung per syllable

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

Instrumentation

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

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

Claves Latin percussion instrument – two short sticks struck together

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

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

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

Harmony

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

Chord voicing how the notes in a chord are spaced out

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

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

Extended chord a chord with at least one added note

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

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.

Year 10

Unit: *Afro Celt Soundsystem*

See set work support guide and other resources:
Student resources > 10 > AOS4 - Fusions > Release - Afro Celt Sound System

Dynamics

Fading a gradual increase or decrease in the levels of the track

Rhythm

BPM beats per minute—an indication of tempo used in popular music

Lack of pulse music which has no discernible pulse

Polyrhythmic two contrasting rhythms which are played simultaneously

Texture

Heterophonic a texture where there is simultaneous variation of a melody

Homophonic a texture with a melody and an accompaniment

Layers different parts in the texture which can be added or removed at any given time

Loops a short repeated pattern, electronically produced

Ostinato a short phrase or rhythm which is repeated several times

Structure

Build a section in which the layers of the music are built up gradually—more instruments are introduced

Intro short for introduction, the opening section of a piece

Outro the ending section of a piece—like a coda

Solo a section featuring a solo instrument

Bournemouth School music department

Outro the ending section of a piece—like a coda

Verse section of music which is repeated, but with different lyrics each time

Melody

Pentatonic melody which uses a 5 note scale

Instrumentation

Accordion an instrument where bellows are pumped by squeezing the instrument and buttons or keys determine which note or chord is played

Bodhran Irish frame drum played with a double headed stick called a tipper. Pitch can be altered by applying pressure to the drum head

Djembe African goblet shaped hand drum

Drum machine a device which allows a pre -recorded drum pattern to be repeated on a loop

Hurdy Gurdy a string instrument which has a wheel which is turned to rub against the strings to cause the vibration. Sometimes known as the wheel fiddle

Kora African instrument which is a cross between a harp and a lute

Low Whistle a low pitched tin whistle

Multitracking a recording where each instrument or part is recorded on a separate track so that each track can be individually edited to add effects, change levels etc

Panning giving a particular track different levels in the left and right speaker

Reverb an effect which creates the impression of being in a physical space

Shaker maracas like instrument

Synthesiser an electronic instrument that creates sounds by manipulating waveforms or modifying existing sounds

Uillean Pipes a type of bagpipe used in Celtic music. Played by pumping the bellows with the arm

Tambourine frame drum with metal discs in the frame which 'jangle' when the drum is hit.

Talking Drum Hourglass shaped African drum where the pitch can be altered by squeezing the ropes which keep the drum head under tension

Tonality

Aeolian mode found by playing A-A on the white notes. Sometimes called the natural minor. Can be transposed to start on any note.

Dorian mode found by playing D-D on the white notes. Can be transposed to start on any note.

Harmony

Diatonic harmony which uses only notes from within the key.

Drone a continuously sounding note, usually low in pitch

Harmonic rhythm the speed at which the chords change eg every bar, every beat

Static harmony when the harmony doesn't change for extended periods of time

This QR code will take you to a Spotify playlist with listening for *Afro Celt Soundsystem.* You will find it helpful to listen to it as you learn.

Keyword	Learn	✓
Marriage	The legal union of two people through a wedding ceremony	
Civil Partnership	A legal relationship that has been registered between two people	
Spouse	A married person; another way of referring to a husband or a wife	
Cohabiting	Living together in a relationship without being married or in a civil partnership	
Role	The position that someone has within the family; what their 'job' is (e.g. a parent or carer)	
Responsibilities	The tasks that someone might do to carry out their role (e.g. providing a home and food for their child)	
Arranged marriage	a marriage planned and agreed by the families or guardians of the couple concerned rather than by the couple themselves.	
Forced marriage	Is an arranged marriage where one or both of the people do not or cannot consent to the marriage	
Secured (or unsecured) debt	Loan backed by collateral, usually property. (unsecured – not backed by collateral)	
Credit card	A card used to purchase goods with borrowed money	
Overdraft	a deficit in a bank account caused by drawing more money than the account holds	
Mortgage	A loan used to buy real estate, with the property as collateral.	

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
'Dorset together' – Dorset County Council Vulnerable support line – 01305 221000 communityresponse@dorset.gov.uk
'Together we can' – BCP Vulnerable person support line – 0300 1237052 https://dorsetmind.uk/
Tapper Funeral Services – Outlook Bereavement Support 01202 630111 https://www.tapperfuneralservice.co.uk/tapper/outlook-bereavement-support#cookieagree

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.

Student loan
A loan from the Government specifically to cover the costs of education.
Advantages: No repayments until you graduate – and even then only after you reach a certain annual salary (currently £27,000).
Disadvantages: Can take many years to pay off and the loan is taken straight from your salary. Government can change the interest and the repayment threshold whenever they want.

3.2.2.1 Socio-cultural influences and Commercialisation

Key Terms				
Barrier to participation: An obstacle that prevents a group within society from participating in sport or physical activity and therefore reduces overall levels of participation.	**Social Groups:** People who interact with one another, share similar characteristics, and have a sense of unity / togetherness.	**Engagement Patterns:** Trends / tendencies in involvement.	**Stereotype:** Widely held but fixed and oversimplified idea of a particular type of person e.g. females.	**Discrimination:** The unjust or prejudicial treatment of different groups of people, especially on the grounds of race, age or gender.
				

FIVE SOCIAL GROUPS YOU NEED TO KNOW

1) Gender – main focus of women's participation.
There are a number of barriers that affect participation rates for women:

Stereotypical Views:
- Women lack the strength or endurance to play the same sports as men.
- Women who play sport are not feminine.
- A women's role is as a carer and manager of the home.

Male Dominated Culture in Sport:
Women have less media coverage, receive less money and have less role models to look up to.

Support from Peers and Family:
Women get less support from their peers and family. Young girls often need to choose between playing sport or being part of a friendship group.

Body Image:
The media portrays women as feminine and objects of desire.

Facilities / Funding:
Facilities for women have developed more slowly than those for men.

2) Ethnicity
ETHNIC GROUP
A group of people who share common origins – i.e. racial, religious or cultural

Barriers Affecting Participation
- Live in poorer areas in the country – less facilities / lack of money for equipment
- Sporting prejudices/stereotypes e.g. African-Caribbeans can't swim so well.
- Family commitments, so less time to participate in sport.
- In some sports there are fewer role models for black/ethnic people to look up to.
- Discrimination – Many people don't take part in sports as they are afraid of being racially abused.

Examples of how ethical issues effects a person's participation?
- Muslim women have to keep their bodies covered up preventing them from doing sports e.g. gymnastics / swimming.
- During Ramadan people are not allowed to eat food during daylight hours. So during the day they have less energy when taking part in sports. Also, they must eat at night instead of train.
- Muslim/Islamic men are expected to pray at there local mosque every day, reducing time for sport.

3) Disability
A physical or mental condition that limits a person's movements,
senses or activities.
Three main categories of disability:
-Mobility impairments -Sensory impairments -Mental impairments

What prevents disabled people from taking part in sport?
- Lack of facilities in the local area.
- Lack of clubs / teams.
- Lack of media coverage (apart from when the Paralympics is on)
- Knowledge of activities available in local area e.g. advertising.

Adapted Sports: Competitive sports for individuals with disabilities. While they often parallel. Existing sports played by able-bodied athletes, there may be some modifications in the equipment and rules to meet the needs of the participants.

Benefits of Integration
- Reduced possibilities of discrimination
- Less stereotyping
- Fewer barriers

4)Age
- All school children participate in sport but when they leave school participation often drop. This is referred to as 'post-school drop out'
- Older people often take part is less sport due to family and work commitments as well economic issues which they might have.
- Also as people get older their fitness levels often decline, resulting in participation levels dropping.

5) Family / Friends / Role models
Family
Positive:
- Parents will encourage their children to take part in certain sports/activities
- Children rely on their parents to get them to the sport/activity.
- Parents/brothers or sisters may play a sport which you may watch resulting in you getting involved in.

Negative:
- Some parents may not provide support or encouragement due to safety concerns over participation or lack of interest in sport or may have had a negative experience of the sport (earlier in life).
- Some parents may pressure young people to concentrate on academic work rather that practical physical activity.
- Some parents cannot supply financial support / in the form of equipment or kit / coaching / transport.

Friends;
Positives:
- People are more likely to play sports / for teams that their friends play for.
- Peers / friends often encourage other children to take part in their sport as they understand / appreciate the benefits that can be gained from the activities.

Negatives: Peers might not be interested in the activity. As they are not interested / they may encourage friends not to train / take part in sport.
• Verbally pressure friends by saying they are better going out with them or that they will not be their friend.

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 $F = k \times e$

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

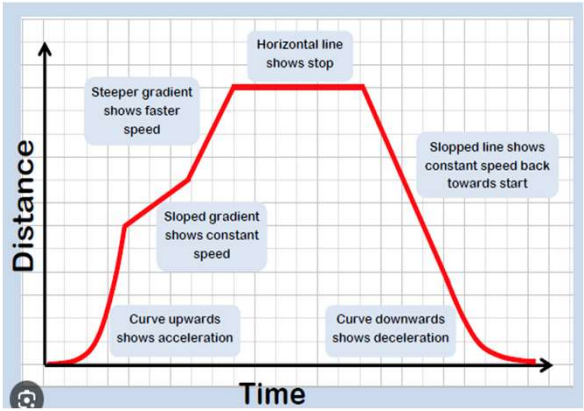
Moment = Force x perpendicular distance $M = F \times d$

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

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

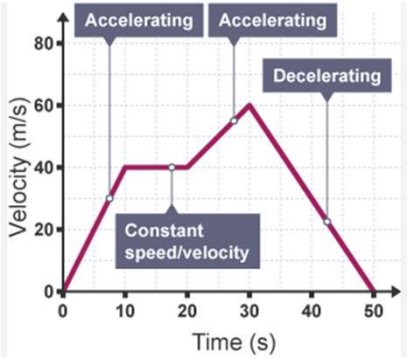
Keyword	Learn	✓
Scalar	A quantity with size (magnitude) only.	
Vector	A quantity with both size and direction.	
Displacement	Distance travelled in a given direction. Displacement is a vector.	
Velocity	Speed in a given direction. Velocity is a vector.	
Acceleration	The rate of change of velocity. Acceleration 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



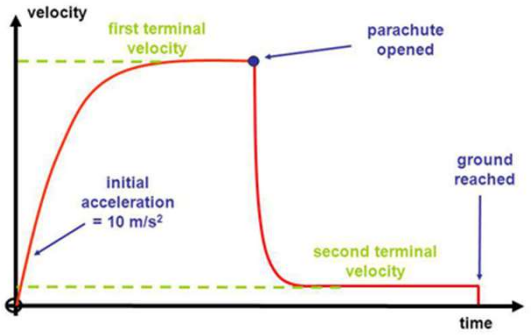
Gradient is the speed.

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)

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

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

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	

¿Qué has hecho en tu ciudad?		
he ido	I have been	
he visitado	I have visited	
he alquilado	I have rented	
he viajado	I have travelled	
he hecho*	I have done	
¿Has visto…?	Have you seen…?	
¿Has probado…?	Have you tried…?	
hemos viajado	we have visited	
hemos caminado	we have walked	
hemos ido	we have been	
ya	already	
todavía	yet	

Prepositions of place		
delante de	in front of	
detrás de	behind	
al lado de	next to	
cerca de	near to	
lejos de	far from	
el banco	the bank	
la estación de metro	the metro station	
el puente	the bridge	

Pros & cons		
Por un lado	On one hand	
Por otro lado	On the other hand	
Una ventaja es que	An advantage is that	
Una desventaja es que	A disadvantage is that	
Lo bueno es que	The good thing is that	
Lo malo es que	The bad thing is that	
Lo mejor es que	The best thing is that	
Lo peor es que	The worst thing is that	
Lo que más me gusta es	The thing I like the most is	
Lo que menos me gusta es	The thing I like the least is	
Lo positivo es que	The positive thing is that	
Lo negativo es que	The negative thing is that	
No obstante	However	

Cuando + subjunctive		
When you use cuando + future plans, use the present subjunctive (a verb form that is used in Spanish, but is used very rarely in English.)		
Cuando sea mayor	When I am older	
Cuando vaya (a la universidad)	When I go (to university)	
Cuando haga mis exámenes	When I do my exams	
Cuando tenga dieciocho años	When I am eighteen	

Ahora y antes		
When talking about what your city used to be like, you can use the following key verbs in the imperfect tense		
era	it was	
eran	they were	
tenía	it had	
había	there was	
e.g. La ciudad era más tranquila. (The city was / used to be calmer) Había menos edificios modernos. (There were fewer modern buildings.)		

Photo description phrases		
Hay	There is / there are	
Se puede ver	You can see	
En la foto	In the photo	
En el primer plano	In the foreground	
Al fondo	In the background	
A la derecha	On the right	
A la izquierda	On the left	
Parece que	It seems that	
Use the present continuous to say what someone is doing in a photo. Use *está / están + present participle (-ando / -iendo)* *For –ar verbs, take off the –ar and add **–ando*** *For –er / -ir verbs, take off the –er / ir and add **–iendo*** *e.g. Está jugando al fútbol = he is playing football* *Están comiendo = they are eating*		
Está…	He / she is	
Están…	They are	

The imperfect tense			
-ar verb endings			
-aba		**-ábamos**	
-abas		**-abais**	
-aba		**-aban**	

-ir / -ir verb endings			
-ía		**-íamos**	
-ías		**-íais**	
-ía		**-ían**	

Demonstrative adjectives		
Demonstrative adjectives are words like 'this', 'that', 'these' and 'those'. They are used to identify things. They are positioned before the noun and must agree with the noun.		
Este	This (masculine singular)	
Esta	This (feminine singular)	
Estos	These (masculine plural)	
Estas	These (feminine plural)	
Ese	That (masculine singular)	
Esa	That (feminine singular)	
Esos	Those (masculine plural)	
Esas	Those (feminine plural)	
Aquel	That over there (masc. sing.)	
Aquella	That over there (fem. sing.)	
Aquellos	Those over there (masc. pl.)	
Aquellas	Those over there (fem. pl.)	

A la tienda		
probar	to try (on)	
devolver	to return	
cambiar	to exchange	
esta camisa	this shirt	
este jersey	this jumper	
estos pantalones	these trousers	
porque es / son demasiado	because it is / they are too	
pequeño/a(s)	small	
largo/a(s)	long	
grande(s)	big	
ajustado/a(s)	tight	

Talking about the future		
There are three ways to express the future in Spanish: - The near future (e.g. voy a ir – I am going to go) - The simple future (e.g. iré – I will go) - The conditional (e.g. me gustaría ir – I would like to go)		
The near future Form of 'ir' + a + infinitive (e.g. voy a ir)		
Voy a ir	I am going to go	
Vas a ir	You are going to go	
Va a ir	He / she is going to go	
Vamos a ir	We are going to go	
Vais a ir	You (plural) are going to go	
Van a ir	They are going to go	
The simple future Infintive + ending (e.g. ir + é = iré)		
Iré	I will go	
Irás	You will go	
Irá	He / she will go	
Iremos	We will go	
Iréis	You (plural) will go	
Irán	They will go	
The conditional		
Me gustaría ir	I would like to go	
Me encantaría ir	I would love to go	

Comparing & contrasting		
es más…que	it's more…than	
es menos…que	it's less…than	
es tan…como	it's as…as…	
es mejor que	it's better than	
es peor que	it's worse than	
tanto/a(s)	as much / many as	

¿Dónde prefieres ir de compras?		
Suelo	I usually	
ir a las tiendas de mi barrio	go to the shops in my neighbourhood	
comprar ropa de segunda mano	buy second-hand clothes	
ir al centro comercial	go to the shopping centre	
es / son	it is / they are	
barato/a(s)	cheap	
económico/a(s)	cheap	
caro/a(s)	expensive	
práctico/a(s)	practical	
sostenible(s)	sustainable	

Key Phonics		
Spanish	**English**	
e	like **"e"** in *met*	
i	like **"ee"** in *see*	
o	like **"o"** in *dot*	
u	like **"oo"** in *boot*	
c + e/i	like **"th"** in *think* (Spain)	
c + a/o/u	like **"k"** in *cat*	
g + e/i	a throaty 'h' sound	
g + a/o/u	like **"g"** in *go*	
h	**silent**	
J	a throaty 'h' sound	
ll	like **"y"** in *yes*	
ñ	like **"ny"** in *canyon*	
qu	like **"k"** in *kite*	
v	like **"b"** in *bat*	
z	like **"th"** in *thin*	

Timetable

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