BOURNEMOUTH SCHOOL

Year 10

Knowledge Organiser 1

Autumn Term: 2024-25

Name:_____

✓Hard Work ✓Discipline ✓Smart Appearance ✓Respect

Bournemouth School

Knowledge Organiser: Year 10 Autumn Term 1

'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.

Art Craft & Design **GCSE** Y10 Drawing

Keywords	Drawing knowledge - Read, cover, write, review
Tone	How light or dark something is. Tones could refer to black, white and the grey tones between, or how light or dark a colour appears.
cross-hatching	A drawing technique where shade or tone are created using crossing lines.
Hatching	A drawing technique where shade or tone are created using closely-spaced lines.
Stippling	Dots used instead of lines to build up tone. The size, number and distance between the dots will change the tones created.
Blending	Blending with your pencil involves rubbing the graphite with either your finger or a smudging tool (tortillon) to achieve a smooth finish.
Tonal drawing	Drawings that show a full range of **tones**, or shades, look more realistic. Good **tonal drawings** will show at least five different shades, smooth blending and no dark edges or outlines.

Types of pencil - Pencils come in a range of hardness:
- The **H** range is hard and light, and useful for design or technical drawings.
- The **B** range is soft and dark, and more suitable for shading and tonal drawings.
- **B** stands for **Black** and each number indicates the darkness of the pencil, for example **2B** is twice as dark as **B**. **4B** is four times darker than **B**.
- The **H** range works the same way - **2H** is twice as hard as **H**, **4H** is four times as hard.

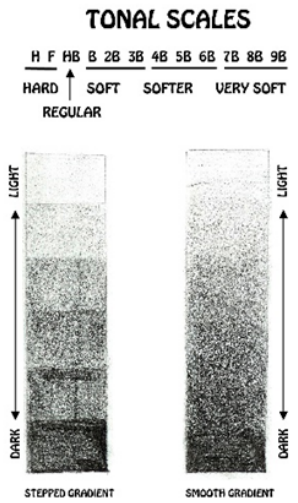
Shapes and Forms

Shapes have two dimensions: length and width
examples: square, triangle, circle, etc…

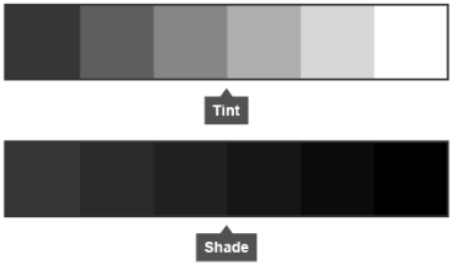
Forms have three dimensions: length, width and depth
Example: cube, cone, sphere, etc…

Drawing tools and materials

Drawing materials include:
- pencils and coloured pencils
- graphite sticks
- charcoal
- ballpoint pens
- fine line and felt tip pens
- drawing ink
- erasers



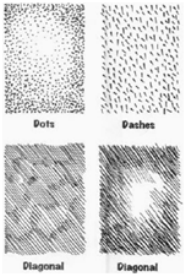
Viewfinder A window to select focus area for a drawing
Composition The position and layout of shapes / objects on



Mark Making and Texture

Mark Making describes the different lines, dots, marks, patterns, and textures we create in an artwork.

Texture is the way a surface looks or feels. We use different styles of Mark Making to create the impression of different Textures.



Keyword	Read, cover, write, review
Negative space	Every shape takes up space. The space it *doesn't* take up is called negative space.
Directional shading	Shading in a particular direction to make something appear solid
Proportion	The size and shape of one object in comparison to another
Scale	The different sizes of shapes. Scale refers to the overall physical size of an artwork or objects in the artwork

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ART

B3 – Infection and response

Keyword	Learn	✓
Pathogen	Micro-organisms that cause infectious diseases in plants and animals. The four types are bacteria, virus, fungus and protist.	
Bacteria	Causes disease by reproducing rapidly inside the body and releasing toxins which damage tissues and make us feel ill.	
Virus	Causes disease by living and reproducing rapidly inside cells, causing cell damage.	
Antibiotic	Drug which cures bacterial disease by killing pathogenic bacteria. Some antibiotics kill specific types of bacteria.	
Painkiller	Used to treat the symptoms of a disease but do not kill pathogens.	
Resistant strain	A bacteria that is not affected by an antibiotic.	
Vector	An organism which carries something e.g. a disease but isn't affected by it.	
Vaccine	Dead or weakened form of a pathogen injected into the body.	
Antigen	Protein on the surface of a pathogen which the body recognises as a foreign body.	
Antibody	Produced by white blood cells in response to antigen. Binds to the antigens on pathogens and helps them be destroyed.	
Lymphocyte	White blood cells that make antibodies.	
Phagocyte	White blood cells that ingest pathogens.	
Monoclonal antibody	Antibody produced by clones of a single hybridoma cell. They are specific to one binding site on one protein antigen.	

Drug	Learn the origin of these drugs.
Digitalis	Heart drug, originally from foxgloves (flowers).
Aspirin	Painkiller, originally from willow trees.
Penicillin	Antibiotic, originally from the Penicillium mould. Discovered by Alexander Fleming.

Disease	Pathogen	Symptoms, Transmission and Treatment	✓
Measles	Virus	• Fever and a red skin rash. Can be fatal. • Spread through inhalation of infected droplets from sneezes and coughs. • Most young children are vaccinated against measles.	
HIV	Virus	• Initially flu like, can become AIDS when the body's immune system becomes so badly damaged it can no longer deal with other infections or cancers. . • Spread through sexual contact, exchange of bodily fluids such as blood. • Initially can be successfully controlled with antiretroviral drugs.	
Tobacco mosaic virus	Virus	• A 'mosaic' pattern of discolouration on the leaves which affects the growth of the plant due to lack of photosynthesis.	
Salmonella	Bacteria	• Fever, abdominal cramps, vomiting and diarrhoea. • Spread through bacteria ingested in food prepared in unhygienic conditions. • Poultry (chickens and turkeys) are vaccinated against Salmonella to control the spread.	
Gonorrhoea	Bacteria	• A thick yellow or green discharge from the vagina or penis and pain on urinating. • Spread through sexual contact. • Can be treated with antibiotics or prevented by the use of a barrier method of contraception (condom).	
Rose black spot	Fungus	• Purple or black spots develop on leaves, which often turn yellow and drop early. • Spread in the environment by water or wind. • Can be treated by using fungicides and/or removing and destroying the affected leaves.	
Malaria	Protist	• Recurrent episodes of fever and can be fatal. • Uses the mosquito as a vector. • Controlled by preventing the vectors, mosquitos, from breeding and by using mosquito nets to avoid being bitten.	

B3 – Infection and response

Keyword	Learn	✓
Preclinical testing	Testing done in a laboratory using cells, tissues and live animals.	
Clinical trial	Trial using healthy volunteers and ill patients.	
Efficacy	How effective a drug is.	
Dose	How much of the drug to use and how often.	
Toxicity	A check in drug trials for side effects.	
Placebo	A tablet that does not contain any medicine. (A fake drug.)	
Double blind trial	Both doctor and patient don't know whether the patient is taking the drug or a placebo. Avoids bias in a drug trial.	

Human defence system includes the skin, nose, trachea and bronchi and the stomach.

In the immune system, white blood cells help to defend against pathogens by: phagocytosis, antibody production and antitoxin production.

Vaccination – Learn the 4 stages in the correct order.

1. Dead or weakened pathogen injected into the body.
2. Stimulates white blood cells to make specific antibodies.
3. White blood cells remember how to make the correct antibody for that pathogen.
4. If the pathogen re-enters the body, the white blood cells will respond quickly to produce the correct antibodies preventing infection.

Clinical trials – Learn these steps.

Very low doses of the drug are given at the start of the clinical trial.

If the drug is found to be safe, further clinical trials are carried out to find the optimum dose for the drug.

In double blind trials, some patients are given a placebo.

Plant diseases

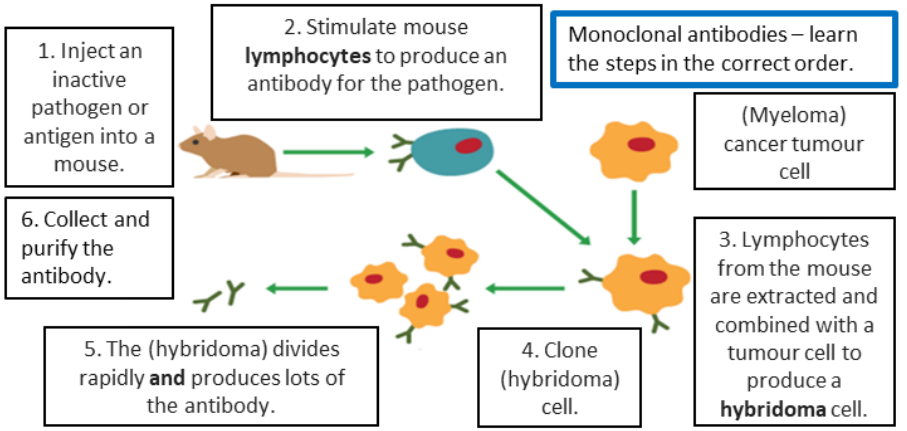
7 symptoms - stunted growth, spots on leaves, areas of decay (rot), growths, malformed stems or leaves, discolouration, the presence of pests (e.g. aphids).

3 sources of information - reference to a gardening manual or website, taking infected plants to a laboratory to identify the pathogen, using testing kits that contain monoclonal antibodies.

2 types of ion deficiency –
stunted growth caused by nitrate deficiency, nitrate ions are needed for protein synthesis and therefore growth
chlorosis caused by magnesium deficiency, magnesium ions are needed to make chlorophyll

Monoclonal antibodies are used:

- for diagnosis such as in pregnancy tests
- in laboratories to measure the levels of hormones and other chemicals in blood, or to detect pathogens
- in research to locate or identify specific molecules in a cell or tissue by binding to them with a fluorescent dye
- to treat some diseases: for cancer the monoclonal antibody can be bound to a radioactive substance, a toxic drug or a chemical which stops cells growing and dividing. It delivers the substance to the cancer cells without harming other cells in the body.



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BIOLOGY

Methods of production

Definition: The process in which the factors of production are turned into products or services.

Deciding on which method is most appropriate for a business will depend on the type of good, finance available and business objectives.

Method of production	Definition	Advantages	Disadvantages	Examples
Job production	The business produces bespoke, tailor made products that meet the specific requirements of the customer.	o Higher prices can be charged o Products are likely to be high quality o Variety of work increases staff motivation	o Expensive to produce o Employees need to be skilled and may require training	o Made-to-measure clothes such as suits o Handmade crafts o Wedding cakes
Flow Production	A business makes large numbers of identical products on a continuous production line.	o Large volumes of products can be produced, reducing unit costs o Employees can **specialise** in a small number of tasks. This is also known as **division of labour**	o High initial costs of machinery o A lack of flexibility, as all products need to be identical or fairly similar o Employees may become bored or demotivated due to limited range of tasks	o Chocolate bars o Crisps o televisions o bottled drinks

Efficiency in production

Efficiency measures how well a business uses its resources to make its products or provide its service.
Measured using **cost per unit**.

Efficiency is impacted by:
1. Employee motivation
2. Skills of the managers
3. The quality of the suppliers
4. investment in technology
5. how the products are made.

Efficiency in production	Definition	Advantages	Disadvantages
Lean production	This aims to reduce waste and increase efficiency during the production process, whilst maintaining quality.	o Higher productivity. o Fewer defective products. o Less money spent on storage costs	o Higher costs of training staff o No spare stock is held to deal with surges in demand o Delays in delivery can delay production
Kaizen	Means 'continuous improvement' and makes all employees responsible for suggesting ways that the business can improve production processes.	o As the ideas come from the workers themselves, they are more likely to be simpler, and therefore easier to implement. o Increases motivation in staff	o For **kaizen** to work, employees need to be motivated and committed to improving the business.
Just in time (JIT)	The business only orders raw materials and makes goods once an order has been placed.	o Less money tied up in stock o Less stock that could go out of date will reduce waste o JIT reduces costs of production	o Businesses are unable to use **bulk-buy discounts** if they only buy in small quantities. o Requires good relationships with suppliers

Methods of stock control				✓
Method	**Definition**	**Advantages**	**Disadvantages**	
Just in time (JIT)	The business does not store any raw materials. Instead, it has regular deliveries that bring only what is needed before its existing raw materials run out.	o Less money tied up in stock that could go out of date or out of fashion. o Products are fresher due to frequent deliveries o Storage space can be used for other items	o Unable to use bulk-buy discounts if buying in small quantities. o Requires good relationships with suppliers o Hard for businesses to react to unexpected changes in demand	
Just in case (JIC)	Involves producing or purchasing stock with excess, or **buffer stock** in place.	o Increases the level of customer satisfaction o Reduce the chance of running out of stock o Benefit from **bulk-buy discounts (economies of scale)**	o Buffer stock space requires more storage space at more cost to the business o Products kept in stock for a long time may lose their freshness o High amounts of cash tied up in stock	

Factors affecting choice of suppliers		✓
Factor	**Explanation**	
Price	o If a business can get supplies cheaply, this keeps its variable costs low, allowing it to maintain higher profit margins. o Cheaper goods may mean lower quality items.	
Quality	o Quality needs to be consistent. o Quality needs to meet customer expectations for price paid – value for money. o Customer will associate poor quality with the business, not the supplier.	
Reliability	o A business needs to be able to trust that their products will be delivered on time, and that suppliers are consistently going to have enough stock available to meet the demands of their customers.	

Definitions		✓
Procurement	Procurement means getting the right supplies from the right supplier, at the right price and at the right time.	
Logistics	Logistics means making sure the correct products are procured and that they will arrive when needed. Logistics involves three main elements, transportation, storage and distribution.	
Supply chain	The process of developing, sourcing, producing and providing goods and services to consumers. A supply chain can involve working with, and relying on a range of other businesses such as suppliers and shipping companies.	

Benefits of effective supply chain management	✓
o Working with suppliers to ensure that key processes are running efficiently and cost effectively	
o Getting goods and services for the best price and value	
o Cut waste and unnecessary costs to create a streamlined process and fast production	
o More satisfied end consumers, resulting in less complaints and lower returns rates	

Chapter 3 – Quantitative Chemistry

Key term	Definition	✓
Conservation of mass	No atoms are lost or made during a chemical reaction so mass of products = mass of reactants	
Relative atomic mass (A_r)	The relative mass of one atom of a substance, i.e. the big number on periodic table	
Relative formula mass (M_r)	Sum of the relative atomic masses of the atoms in the numbers shown in the formula	
Avogadro's constant	Number of particles in one mole of substance $N_A = 6.02 \times 10^{23}$	
Mass of one mole (g)	Numerically the same as the relative formula mass eg the mass of 1 mole of CO_2 = (12+ 16+16) = 44 g	
Limiting reactant	The reactant that is completely used up in a chemical reaction and limits the amount of product formed	
Atom economy	A measure of the amount of starting materials that end up as useful products	
Uncertainty	The interval within which the true value of a value can be expected to lie.	

Key equations	✓
Moles = $\frac{\text{mass (g)}}{M_r}$	
Moles = concentration (mol/dm³) x volume (dm³)	
Concentration (g/dm³) = concentration (mol/dm³) x M_r	
% yield = $\frac{\text{actual mass}}{\text{expected mass}}$ x 100	
% atom economy = $\frac{\text{Mr of desired product}}{\text{sum of Mr of all reactants}}$ x 100	
Gas volume (dm³) = moles x 24	

Calculating unknown mass or concentration

1. Work out moles of known substance using n= m/M_r or n = c x v
2. Use the equation ratio to work out the moles of the unknown substance
3. Calculate mass or concentration of the unknown substance using m = n x M_r or c = n / v

During a reaction, the mass may appear to increase if one of the reactants is a gas.

magnesium + oxygen → magnesium oxide

Oxygen from the air is added to the magnesium so the product will be heavier in mass.

During a reaction, the mass may appear to decrease if one of the products is a gas.

copper carbonate → copper oxide + carbon dioxide

Carbon dioxide gas is produced and released into the atmosphere, so the product is lighter in mass.

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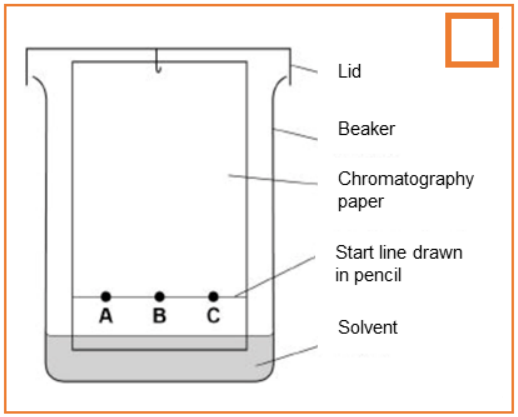
CHEMISTRY

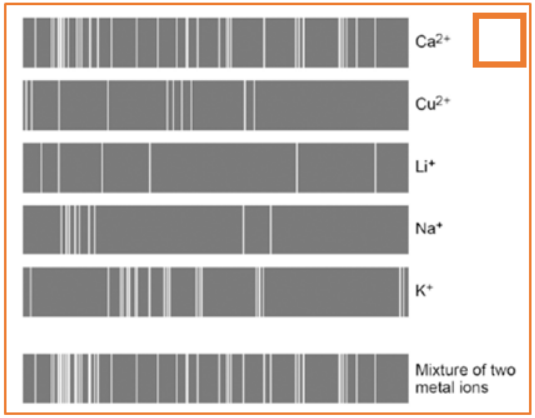
Chapter 8 – Chemical Analysis

Test	Results	✓
Flame test: Dip a nichrome wire loop into the substance. Hold the metal loop in a blue flame.	Sodium ion = orange Potassium ion = lilac Calcium ion = orange-red Copper ion = green Lithium ion = crimson	
Sodium hydroxide test: Add sodium hydroxide to the substance	Iron (II) ion = green precipitate Iron (III) ion = brown precipitate Copper (II) ion = blue precipitate Magnesium ion = white precipitate Calcium ion =white precipitate Aluminium ion = white precipitate (dissolves in excess NaOH)	
Halide ion: Add dilute nitric acid and silver nitrate	Chloride = white precipitate Bromide = cream precipitate Iodide = yellow precipitate	
Carbonate ion: Add dilute acid	Effervescence (fizzing). Carbon dioxide gas is produced	
Sulfate ion: Add dilute hydrochloric acid and barium chloride	White precipitate forms. $BaSO_4$ is produced which is insoluble	

Gas	Test	✓
Oxygen	Relights a glowing splint	
Hydrogen	Lit splint makes a squeaky pop noise	
Chlorine	Bleaches damp blue litmus paper	
Carbon dioxide	Turns limewater (calcium hydroxide solution) cloudy	

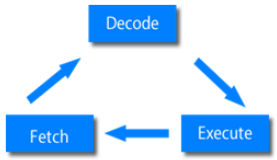
Key term	Definition	✓
Pure substance	Made up of one element or compounds Melt or boil at specific temperatures	
Formulation	A mixture that has been designed for a specific purpose. The components are mixed in carefully measured quantities.	
Chromatography	A technique used to separate mixtures. Separation depends on the distribution of substances between the stationary and mobile phase	
Mobile phase	The solvent which moves up the paper	
Stationary phase	The chromatography paper	
Rf value	$\frac{\text{Distance moved by substance}}{\text{Distance moved by solvent}}$	



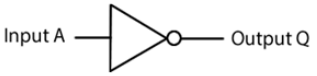


Flame emission spectroscopy – instrumental method		✓
Method	Sample is put into a flame and light given out is passed through a spectroscope. The output is a line spectrum	
Advantages	Quicker, more accurate, more sensitive	
Application	Can identify which metal ions are present and measure their concentrations.	

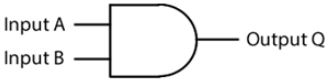
1.1 Systems Architecture

Keyword	Definition	Tick
Hardware	The physical components that make up a device or computer system.	
Software	The computer code, programs and algorithms that give instructions to the hardware to make it perform the desired task.	
Central Processing Unit (CPU)	Where a computer processes all data and instructions.	
Control Unit (CU)	Controls the flow of data in and out of the CPU. Manages the fetching, decoding and execution of instructions.	
Arithmetic Logic Unit (ALU)	Performs the calculations and logical operations required by the program instructions.	
Von Neumann Architecture	A design for a computer system where data and instructions are both stored in memory.	
Program Counter (PC)	Stores the memory location (address) of the next instruction in a program to be executed.	
Accumulator (ACC)	Stores the results of calculations made by the ALU.	
Memory Address Register (MAR)	Stores the memory location (address) for data that needs to be fetched from memory or stored into memory.	
Memory Data Register (MDR)	Stores data that has been fetched from or is waiting to be sent to memory.	
Fetch Execute Cycle (FE Cycle)		

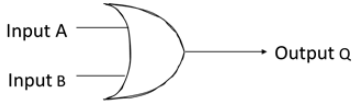
2.4.1 Boolean Logic

Logic Gate	NOT	Tick
Diagram		
Expression	Q = NOT A	
Truth Table		

Input	Output
0	1
1	0

Logic Gate	AND	Tick
Diagram		
Expression	Q = A AND B	
Truth Table		

Input - A	Input - B	Output
0	0	0
1	0	0
0	1	0
1	1	1

Logic Gate	OR	Tick
Diagram		
Expression	Q = A OR B	
Truth Table		

Input - A	Input - B	Output
0	0	0
1	0	1
0	1	1
1	1	1

GCSE Design Technology:
TIMBER 7.1-2 Sources of timber

Tick	Hard wood	Uses	Advantages
	Birch	• Veneers for plywood • Furniture	• Easy to work with • Even grain • Non-toxic
	Ash	• Tool handles • Ladders • Furniture	• Strong • Tough • Elastic
	Jelutong	• Model making	• Very easy to cut and shape • Close grain • Lightweight

Tick	Soft wood	Uses	Advantages
	Larch	• Cladding on buildings • Boats • Yachts	• Resistant to water • Tough • Hard

Tick	Man made board	Uses	Advantages
	Chipboard	• Inside of kitchen worktops • Flat pack furniture	• Cheap • Readily available

Tick	Property	Definition
	Grain	The fibres which run the length of a tree trunk which gives it its strength. These are the patterns you see on timber.
	Trend forecasting	When manufacturers try to forecast the trends that will occur with a material.
	Impact of logging on communities	When trees are cut down for timber. This brings jobs to the area but it does destroy habitats and people's homes.
	Recycling and disposal	Timber is a natural material that will biodegrade over time.
	Ecological footprint	This is the amount of the environment required to produce goods and services needed to support a particular lifestyle.
	Sustainability of timber	Softwoods are better than hardwoods as they grow quicker so are more readily available. Most forests are now sustainably managed.
	Pollution	Trees absorb CO2 and release oxygen = trees are good for the environment.

GCSE Design Technology **revision**:
CORE 1.17 Communication techniques

Method	Explanation
Orthographic projection	3 main sides; plan, front and side are drawn in line with each other.
Exploded drawing	Draws the product disassembled so all parts can be seen.
Assembly drawings	A chronological set of drawings - used to show manufacturers how to make a product.
Schematic diagrams	Electronics - circuit diagrams to show where components are placed.
CAD (Computer Aided Design)	Computer images drawn of products using specialist software.
Annotated sketches	Added to sketches to allow the designer to communicate their thinking i.e. materials etc.
Freehand sketching	Used by designers as initial ideas as they are quick to do.
Cut and paste techniques	Images are used to create and inspire their own ideas i.e. using a mood board.
Oblique	A style of 3D drawing, drawn at 45°.

GCSE Design Technology:
TIMBER 7.3 *part 1* Selection of timber

Tick	Environmental factors	Description/links to selecting timber
	Genetic engineering	Scientists make changes to the DNA of a tree to try and improve the qualities/characteristics of it for example, make it grow quicker, make it resistant to natural diseases.
	Seasoning	When timber is dried out so it will not warp for its intended use. This elongates the life span and durability of the product.
	Upcycling	When a timber product is given a new lease of life by repurposing it and reworking it for a different function or to have different/more updated aesthetics/form etc.

Tick	Cost factors	Description/links to selecting timber
	Quality of material	As timber is natural, it can vary in its quality. Timber can have drying defects and others can be very knotty.
	Manufacturing processes necessary	The manufacturing processes required affect the cost of the product. The designer will use stock forms and standard components bought in so that they do not need to invest in specialist machinery.
	Treatments	Timber will burn and rot quite easily and quickly. It can be treated with chemicals to reduce this.

Tick	Social factors	Description/links to selecting timber
	Different social groups	Groups of people like different products. Designers need to understand what their target market finds appealing and cater towards their wants.

GCSE Design Technology **revision**:
CORE 1.15 Designers and companies

Name	What are they known for?
Alessi	Kitchenware products – which are fun and unique. A company with lots of different designers.
Apple	Ground breaking designs which broke away from tradition. Have a loyal customer base. Design company.
Heatherwick Studio	Around 200 designers, architects and makers have worked on products from perfume bottles to buildings – original and unique designs.
Joe Casely-Hayford	Fashion designer. Known for original but wearable designs, using traditional English tailoring techniques.
Pixar	Among the first to develop computer animated feature films. Design company.
Raymond Loewy	Designer. Combined simplicity with functionality. Known for the 'teardrop' design for aerodynamics.
Tesla, Inc.	Is the leader in producing electric cars which don't compromise on power or quality.
Zaha Hadid	An architect who integrated geometric forms with expressive, sweeping fluid curves. Promoted architecture as a visual art form for aesthetic pleasure.

Bournemouth School

Year 10 'An Inspector Calls' Knowledge organiser

An Inspector Calls was written by J.B. Priestley, and was first performed in the UK in 1946. However, it is set in 1912

Characters		✓	Key quotations	✓
Inspector Goole	Priestley's mouthpiece, advocates social justice, serves as the Birling's conscience *Sardonic, omnipotent, righteous, mysterious, imposing, verbose*		• "Massiveness, solidity and purposefulness." • "It's better to ask for the earth than to take it." • "One Eva Smith has gone – but there are millions and millions and millions of Eva Smiths and John Smiths still left with us." • "Fire and blood and anguish"	
Mr Arthur Birling	Capitalist thinking businessman *Arrogant, foolish, ignorant, emasculated*		• "Heavy looking, rather portentous man" • "A hard-headed practical man of business" • "A man has to mind his own business… look after himself…."	
Mrs Sybil Birling	Husband's social superior, cold-hearted, believes in personal responsibility. *Conformist, remorseless, controlling, deluded, prejudice*		• *"Rather cold woman… her husband's social superior."* • *"It's disgusting to me."* • *"I did nothing I'm ashamed of'*	
Sheila Birling	Naïve, young, spoilt, comes to change and show remorse and pity. *Transformative, socialist, empowered, astute, privileged, protected*		• "But these girls aren't cheap labour – they're people" • "At least I'm trying to tell the truth. • "Why – you fool – he knows!" "The point is, you don't seem to have learnt anything."	
Eric	Young, spoilt, forces himself on Eva Smith, drinks, feels regret *Reckless, rebellions, socialist, controlled, irresponsible, dualistic, disgraced*		• *"Not quite at ease half shy, half assertive."* • *"You're not the kind of father a chap could go to when he's in trouble."* • *"You're beginning to pretend that nothing's really happed at all.'*	
Gerald Croft	Politically closest to Birling, engaged to Sheila *Aristocratic, evasive, secretive, disingenuous, privileges*		• *"You seem to be a nice well-behaved family"* • *"The hero… the wonderful Fairy prince."*	
Eva Smith/ Daisy Renton	Never seen in the play. Stands for victims *Suffragette, victim, motif of suffering, emblematic, allegorical, vulnerable*		• "A nice promising life there, I thought, and a nasty mess somebody's made of it." • "She had a lot to say – far too much – so she had to go.' • ' She went away "to be alone, to be quiet, to remember all that had happened."	

Context		✓
J B Priestley	• 1934: writes 'English Journey' about the poorer parts on Britain. • Often labelled a 'socialist' • 1945: writes An Inspector Calls	
1912 England	• *General attitude of those with social and economic sway was towards looking after oneself* • *Work strikes* • *Workers' rights* • *Pre WW1* • *Suffragette movement* • *Class system*	
1945 England	• *Clement Atlee's Labour party won a landslide election, reflecting a wave of enthusiasm towards communal responsibility* • *Post WW1 and WW2* • *Social levelling* • *Women's rights* • *Workers' rights* • *Trade unions* • *National Insurance* • *Welfare system* • *NHS*	
Class	• *Pre-First World War, strong distinctions between classes* • *Women subservient* • *Post-Second World War, class distinctions reduced* • *Women earned a more valued place in society* • *Greater desire for social change.*	
Titanic	• British passenger liner • Sank in the North Atlantic Ocean • 15th April 1912. • 1,500 people died	

Bournemouth School – Knowledge Organiser – Year 10

ENGLISH

Bournemouth School

Year 10 'An Inspector Calls' Knowledge organiser

Dramatic Form		✓
Well-made play	The plot is intricate and complex, action builds to a climax. Concerned with events that happened before the events of the play. Usually ends with a return to order.	
Morality play	Popular during the 15th and 16th centuries. Taught the audience lessons focussing on the seven deadly sins.	
Crime Thriller	Gripping tale based around a crime. Audience receives clues and must guess what has happened. All is revealed by the climax.	
Three Unities	unity of action: one main plot unity of time: the action takes place over a short period in the real time unity of place: the play takes place in a single location (the dining room). Makes the social message easy to understand.	
Dramatic Device		
Dramatic irony	When the audience know more than the characters for dramatic effect.	
Cliff-hanger	The audience have to wait to find out what happens, even though they have already anticipated it.	
Setting	The Birling's home is described at the start as 'substantial and heavily comfortable, but not cosy and home-like.' The setting reflects the lack of warmth and kindness within the family.	
Proleptic irony/ foreshadowing	When an earlier event gives the audience a clue ("foreshadows") a later event in the play.	
Photograph	The Inspector only shows the photograph to one person at a time. This creates mystery and tension.	
The 4th Wall	As the Inspector gives his final speech, he breaks the fourth wall and speaks directly to the audience.	
Sounds	Sharp ring of the doorbell interrupts Birling. Forces the audience to make a connection between the Inspector's arrival and Birling's Capitalist ideology	
Lighting	Priestley uses a change in lighting to show the change in atmosphere. 'The lighting should be pink and intimate until the INSPECTOR arrives, and then it should be brighter and harder.	
Dramatic timing	Entrances and exits are placed at dramatic times in the plot to create tension. There is also a time-lapse. Set in 1912, written on 1945 so dramatic irony can be created.	

Themes-a key idea that runs throughout the play		✓
Age and change	*Priestley shows how older characters represent an outdated way of thinking. Younger characters represent new attitudes towards caring about others in society.*	
Responsibility and Guilt	*All of the family are forced to reflect upon how responsible they are for Eva's death.*	
Class and gender	*Eva Smith's position in society is weakened because she is from a lower class background and she is also a woman. Biases related to class and gender mean that certain characters are dismissive and treat others in a derogatory manner.*	
Capitalism verses socialism	*Socialism is an approach to economic and social systems and is characterised by social ownership, democratic control, and high levels of equity. Capitalism is where factors of production are privately owned by private groups or individuals.*	
Social responsibility	*Priestley wanted his audience to be responsible for their own behaviour and responsible for the welfare of others*	
Hypocrisy	*The hypocrisy of middle-class Edwardian society is uncovered: appearance and reputation matter more than reality & morality.*	

Plot structure		✓
Act 1	Set in April 1912. The Birling family and Gerald Croft are celebrating Sheila Birling's engagement. Inspector Goole arrives and say he is investigate the death of a young woman who committed suicide. Mr Birling is shown a photograph of Eva, after initially denying recognising her, he remembers firing her in 1910. Sheila recalls also having Eva sacked about her manner when served by her in a department store. The Inspector reveals that Eva Smith changed her name to Daisy Renton. Gerald reveals he had an affair with Daisy Renton.	
Act 2	Gerald explains that he had an affair with Eva, but hasn't seen her since he ended their relationship. Sheila gives her engagement ring back to Gerald. The Inspector turns his attention to Mrs Sybil Birling, she confesses that she also had contact with Eva, but Eva gave herself a different name. Eva approached a charity chaired by Mrs Birling as she was desperate and pregnant but help was refused by Mrs Birling. She tells Inspector Goole that the father should be held entirely responsible and should be made an example of.	
Act 3	Eric is revealed as the father. He stole money from Mr Birling's office to provide money to Eva. The Inspector delivers his final speech. After he leaves, the family begin to suspect that he was not a genuine inspector. Next, they phone the infirmary to be informed that no suicide case has been brought in. Mr Birling, Mrs Birling and Gerald congratulate themselves that it was all a hoax but his attitude upsets Sheila and Eric. The phone rings. Mr Birling announces to the family that a girl has just died on her way to the infirmary, a police inspector is coming to question them.	

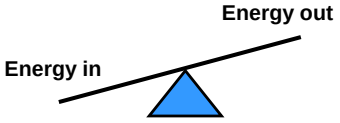
Nutrients

- Food and drinks provide energy and nutrients in different amounts, they have important functions in the body and people require different amounts during their life.
- Digestion involves different parts of the body, each having an important role.

Energy
Energy is essential for life, and is required to fuel many different body processes, growth and activities. These include:
- keeping the heart beating;
- keeping the organs functioning;
- maintenance of body temperature;
- muscle contraction.

Different people need different amounts of dietary energy depending on their:
- age;
- gender;
- body size;
- level of activity;
- genes.

Energy balance
To maintain body weight it is necessary to balance energy intake (from food and drink) with energy expenditure (from activity).



Energy in > Energy out = Weight gain

Energy from food
- Energy intake is measured in joules (J) or kilojoules (kJ), but many people are more familiar with the term calories (kcal).
- Different macronutrients provide different amounts of energy.

	Energy per 1g
Carbohydrate	16kJ (3.75 kcals)
Protein	17kJ (4 kcals)

Energy requirements vary from person to person, depending on the Basal Metabolic Rate (BMR) and Physical Activity Level (PAL).

Total energy expenditure = BMR x PAL

Body Mass Index (BMI) can be used to identify if an adult is a correct weight for height.

BMI = weight (kg) / (height in m)²

Recommended BMI range (adults)

Less than 18.5	Underweight
18.5 to 25	**Desirable**
25-30	Overweight
30-35	Obese (Class I)
35-40	Obese (Class II)
Over 40	Morbidly obese

Nutrients
There are two different types of nutrients:
- macronutrients;
- micronutrients.

There are three macronutrients that are essential for health:
- carbohydrate;
- protein;
- fat.

There are two types of micronutrients:
- vitamins;
- minerals.

Carbohydrate
Free sugars include all sugars added to foods, plus sugars naturally present in honey, syrups and unsweetened fruit juice.
Fibre is a term used for plant-based carbohydrates that are not digested in the small intestine.
Sugars include a variety of different sugar molecules such as sucrose
Starchy foods are the main source of carbohydrate for most people and are an important source of energy. We should be choosing wholegrain versions of starchy foods where possible.

Protein
Protein is made up of building blocks called amino acids. There are 20 amino acids found in protein. For adults, eight of these have to be provided by the diet (this is higher in children). These are called essential amino acids, which cannot be made by the human body.

Micronutrients
Vitamins
There are two groups of vitamins:
- **Fat-soluble vitamins**. A, D, E and K. Our bodies can store these vitamins in fat and use them as required so we do not need to consume them every day
- **Water-soluble vitamins**, e.g. B vitamins B1 Thiamin, B2 Riboflavin, B3 Niacin, B9 folate or folic acid, B12 Cobalamin and vitamin C Ascorbic Acid. Our bodies cannot store these and so they need to be consumed on a regular basis

Minerals and Trace Elements
Minerals are inorganic substances required by the body in small amounts for a variety of different functions. Examples include: calcium, sodium, iron, phosphorous, fluoride and iodine.
Most micronutrients are mostly provided by the diet. An exception is vitamin D which can be synthesised by the action of sunlight on the skin.

Key terms
Energy: The power the body requires to stay alive and function.
Digestion: The process by which food is broken down in the digestive tract to release nutrients for absorption.
Macronutrients: Nutrients needed to provide energy and as the building blocks for growth and maintenance of the body.
Micronutrients: Nutrients which are needed in the diet in very small amounts.
BMR- Basal Metabolic Rate- the energy we need just to maintain bodily function each day, approx. 1.1 Cal per minute.

Fibre- There are two types of fibre, soluble and insoluble. **Insoluble fibre** is indigestible and helps to bulk up and soften our faeces, cleans the bowel as it passes through and helps stave off constipation and therefore also Diverticular disease. Good sources are Some fruits and vegetables, Wholegrains and brown rice
Soluble Fibre- Slows down the consumption and digestion of carbohydrates and so helps to control blood sugar levels, this helps us stop feeling hungry and less likely to snack. Soluble fibre may also reduce blood cholesterol levels and so may reduce the risk of heart disease. Good sources include- Oats, peas, beans and lentils and most fruit and vegetables especially if eaten with the skin on.

Starch- Starches take longer than sugar for the body to digest and so provide a feeling of fullness for longer, helping to avoid over eating and obesity. All starch comes from plant sources, starchy foods should make up one third of our daily diet.- Good sources are Grain products like bread, rice, cereals and pasta and some fruits and Vegetables.
Function of starch in the diet- Broken down into simple sugars in the digestive system to provide energy. It adds bulk to our diet. Gives a feeling of fullness. Anything not used is converted to fat and stored in the body.

Fat
Sources of fat include:
- saturated fat;
- monounsaturated fat;
- polyunsaturated fat.

A high saturated fat intake is linked with high blood cholesterol levels which can lead to coronary heart disease.

Essential Fatty Acids (EFAs) cannot be made in the body but are important to the healthy and efficient functioning of the body. They include-
Omega-3: Found in oily fish, seeds, walnut oil and leafy green vegetables, it helps protect the heart.
Omega-6; found in vegetables, fruits, grains, chicken and seeds. It helps lower cholesterol in the blood.

Calcium is essential for a number of important functions such as the maintenance of bones and teeth, Heart regulation, blood clotting and normal muscle function
Sodium is needed for regulating the amount of water and other substances in the body.
Iron is essential for the formation of haemoglobin in red blood cells. Red blood cells carry oxygen and transport it around the body. Iron is also required for normal metabolism and removing waste substances from the body.
Phosphorous combines with calcium to harden bones and teeth. Helps muscle function – energy production**-** Found in Dairy product, nuts ,meat, fish and other foods rich in calcium.

Fluoride Strengthens teeth against decay. Can be found in drinking water and Fish.
Iodine Makes thyroid hormones- to control metabolic rate of the body- Fish-milk-dairy.

Sugars- we are advised to eat no more than 30g of sugar each day.
Fibre- Children aged 11-16 should aim to consume 25g of fibre each day.
Salt- We are advised not to consume more than 6g of Salt each day.

Bournemouth School – Knowledge Organiser – Year 10

FPAN

Le règlement scolaire		
Selon les règles	According to the rules	
il faut	you must	
il ne faut pas	you must not	
Il ne faut jamais	You must never	
il est interdit de	it is forbidden to	
il est important de	It is important to	
il est essentiel de	It is essential to	
on doit	One/you/we must	
avoir le droit de	To have the right to	
harceler	to bully	
tricher dans un contrôle	to cheat in a test	
utiliser son portable en classe	to use your phone in class	
arriver à l'heure	to be on time	
être en retard	to be late	
faire ses devoirs	To do your homework	
manger en classe	to wear make-up	
s'asseoir à sa place	Sit in the seating plan	
respecter les autres	To respect others	
écouter le prof	To listen to the teacher	
aller aux toilettes pendant un cours	To go to the toilet during a lesson	

Opinions of school rules		
Quel est ton avis sur les règles?	What is your opinion of the rules?	
À mon avis…	In my opinion	
C'est juste/injuste	It's fair/unfair	
C'est trop sévère/stricte	It's too strict	
Il faut respecter les autres	You must respect others	
Tu es d'accord?	Do you agree?	
Oui je suis d'accord	I agree	
Non, je ne suis pas d'accord	I disagree	
C'est raisonnable	It's reasonable	
Je pense que	I think that	

Mon uniforme scolaire		
à l'école je porte	At school I wear	
porter l'uniforme scolaire	Wearing school uniform	
un pantalon gris	grey trousers	
une jupe	a skirt	
une veste grise	a grey jacket	
une cravate	a tie	
des baskets	trainers	
une chemise blanche	a white shirt	
un pull gris	a grey jumper	
des chaussures noires	black shoes	
un short	shorts	

More on rules		
Le directeur/la directrice	The headteacher	
Les élèves	The pupils	
Un problème de comportement	A behaviour problem	
C'est important pour les examens	It's important for the exams	
C'est essentiel pour le travail scolaire	It's essential for school work	
J'ai toujours faim en classe	I'm always hungry in class	
Des manifestations	Protests	
Un risque de harcèlement	A risk of bullying	
Refuser de	To refuse to	
En été, il fait trop chaud	In summer, it is too hot	
Le pouvoir	The power	
Partager des vidéos	To share videos	

Past tense essentials		
L'année dernière	Last year	
Récemment	recently	
Je suis allé/nous sommes allés	I/we went	
Je suis resté/ nous sommes restés	I stayed/ we stayed	
J'ai appris	I learnt	
J'ai pris	I took	
J'ai reçu de bonnes notes	I got good grades	

C'était	It was	
Il y avait	There was/were	
Il faisait + weather	It was + weather	
J'ai fait	I did	
J'ai lu	I read	
J'ai bu	I drank	
J'ai écrit	I worte	
J'ai couru	I ran	
Je me suis bien amusé	I had fun	
Nous nous sommes bien amusés	We had fun	
Je l'ai trouvé	I found it	
Ce que j'ai aimé le plus était…	What i liked the most was..	
Le pire, c'était..	The worst thing was..	
Le mieux, c'était…	The best thing was…	

Quels sont tes projets pour après les GCSEs?		
Après mes GCSEs/mes examens	After my GCSEs /exams	
Je ferai mon Bac	I will do my A levels	
Je voudrais étudier ..	I would like to study	
une année sabbatique	a gap year	
un apprentissage	an apprenticeship	

Quelles matières est-ce que tu étudies?		
j'étudie ...matières	I study …….. subjects	
ma matière préférée est..	My favourite subject is	
j'apprends...	I learn...	
mon prof préféré est..	My favourite teacher is	
mon emploi du temps	My timetable	
mon jour préféré est le...	My favourite day is..	

Les matières		
le français	french	
l'anglais	english	
le théâtre	drama	
l'informatique	ict	
l'EPS (f)	PE/sport	
la musique	music	
les maths (f)	maths	
les sciences (f)	science	

Souvenirs d'école – imperfect tense		
quand tu étais petit (e) tu étais comment?	when you were little, what were you like?	
quand j'étais petit ...	when I was little..	
j'étais/je n'étais pas...	I was/I wasn't...	
travailleur/travailleuse	hard-working	
l'enfant le plus sportif de la classe	the sportiest child in the class	
j'aimais (beaucoup/bien)	I liked...alot	
je jouais	I used to play/was playing	
je lisais	I used to read/was reading	
je mangeais	I used to eat/was eating	
j'allais	I used to go/was going	
je faisais mes devoirs	I used to do my homework	
je regardais	I used to watch/was watching	

Adjectives		
intéressant (e) (s)	interesting	
utile (s)	useful	
fascinant (e) (s)	fascinating	
inspirant (e) (s)	inspiring	
drôle	funny	
sympa	nice	
passionant (e) (s)	exciting	
génial (e) (s)	great	
facile (s)	easy	
ennuyeux/euse	boring	
sévère	Strict/harsh	
difficile (s)	difficult	
Stressant(e)	stressful	

Une journée typique		
les cours commencent à	lessons start at	
le collège commence/finit à	school starts/finishes at	
on n'a pas de cours le samedi	we don't have school on Saturdays	
ils ont cours le samedi	they have school Saturday	
je me réveille	I wake up	
je m'habille	I get dressed	
je me lave	I wash myself	
le me lève	I get up	

Adverbs		
totalement	totally	
extrêmement	extrememly	
trop	too	
vraiment	really	
complètement	completely	
assez	quite	

Opinion structures		
à mon avis	In my opinion	
je pense que..	I think that..	
je trouve..	I find...	
je suis fort (e) en	I'm good at...	
je suis faible en	I'm bad at..	
j'ai horreur de	I hate...	
il me semble que	It seems to me that	
j'apprécie	I appreciate/like	
selon moi	according to me	
selon mes amis	according to my friends	
pour moi/ personnellement	Personally	
je suis créatif/créative	I am creative	
sportif/ive	sporty	

Comparatives		
plus ...que	more..than	
moins ... que	less ...than	
aussi ...que	as...as	

Comparative sentences		
la journée scolaire est plus courte	the school day is shorter	
la pause déjeuner est plus longue	the lunch break is longer	
qu'ici	than here	
qu'au Canada	than in Canada	
qu'en France	than in France	
qu'à la Martinique	than in Martinique	

Interesting idioms		
c'est mon kif	it's my 'thing'	
c'est mon truc	it's my 'thing'	

Topic 3: Challenges of an urbanising world

3.1 The world is becoming increasingly urbanised.

- **Urbanisation** is the rise in the percentage of people living in urban areas. In 2007, for the first time, more people lived in urban areas than rural:
- Africa and Asia are expected to see the biggest rises in the next century.
- Most of the world's largest cities are now in emerging countries.
- The causes of this growth are:

1. **rural-urban migration**
2. **natural increase** (higher birth rate than death rate).

- **Megacities** have over 10 million people. Increasing numbers of megacities are in emerging countries (e.g. Mumbai).

- **World cities** have a big influence on global politics and decision-making. Some world cities play an unequal role in world affairs. They have **urban primacy** – meaning they have an importance and bigger influence than their size suggests (e.g. London).

3.2 Urbanisation is a result of socio-economic processes and change.

- The main cause of urbanisation is economic growth, which creates new jobs.
- Lilongwe is the capital of Malawi. It is growing largely because of rural-urban migration (**internal migration**).
- New York's **knowledge economy** attracts **international migrants**.
- Some cities experience population decline. **De-industrialisation** las led to population decline in Detroit.

- The **informal economy** in LICs is often large. Millions of people sell goods or offer services on the street (e.g. selling fruit). The **formal economy** grows slowly as many people are subsistence farmers such as those in Malawi.
- India's informal economy is huge. Much of India's informal economy is in **factories and construction**, where there are few regulations.
- New York's knowledge economy (e.g. **software and financial services**) is the most valuable part of is economy. However, the informal economy still contributes to its GDP, mostly in the catering industry.

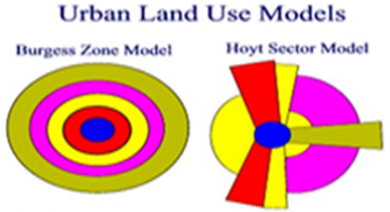
3.3 Cities change over time and this is reflected in changing land use.

- New York began to grow in the 17th century. Its deep harbour allowed trade and immigration. Manhattan soon became crowded leading to **suburbanisation** owing to the subway and bridges.

- From 1950-1980, **counter-urbanisation** caused New York's population to fall. People left owing to a decline in jobs, poor services (as wealthier people moved out of the city and city income declined), as well as a high crime rate.
- Since 1980, the knowledge economy and **regeneration** of brownfield sites in New York have encouraged **re-urbanisation**.

Land use in cities is usually in a pattern. The three types of land use are:

- Commercial – mostly in the **CBD** (central business district). The most accessible and expensive part of the city.
- Industrial – either found in the **inner city** (older) or on the city edge (newer).
- Residential – older properties are found closer to the centre (19th century **terraced** housing). 20th century **semi-detached** and **detached** housing are found towards the **suburbs**.



Mumbai is a megacity, India's main commercial city, and world city. Mumbai is:

- on an estuary, where its **port** grew
- well-connected owing to its port on the west coast (closer to Europe) and by air, only 9-hours from the UK
- not typical of developing cities – the CBD is near the island tip surrounded by inequal residential areas.

- Mumbai's structure loosely follows that of developing cities.
- **High quality housing** is found in the **inner city** close to the CBD that only the wealthy can afford.
- **Low-income poor quality** (permanent housing) **surrounds the inner city.**
- Spontaneous (**informal**) squatter settlements **spreads outwards** as rural-urban migrants arrive and build on what land is available.

Definitions	
Central Business District (CBD)	the heart of an urban area, often containing a high percentage of shops and offices
Counter-urbanisation	when people leave towns and cities to live in the countryside
Deindustrialisation	decreased activity in manufacturing and closure of industries, leading to unemployment
Formal economy	means one which is official, meets legal standards for accounts, taxes, and workers' pay and conditions
Informal economy	an unofficial economy, where no records are kept. People in the informal economy have no contracts or employment rights

lernen - to study/learn		
ich lerne	I learn	
du lernst	you learn	
er/sie lernt	he/she learns	
wir lernen	we learn	
ihr lernt	you learn	
Sie/sie lernen	you/they learn	

Strong verbs in German change the vowel in the "du & er/sie/es/man" forms only		
fahren (fährst/fährt)	to travel	
tragen (trägst/trägt)	to wear	
essen (isst/isst)	to eat	
sehen (siehst/sieht)	to watch	
lesen (liest/liest)	to read	
Verbs with a stem end in –d or –t add an extra "e" in these forms		
finden (findest/findet)	to think/find	

Modal verb: müssen – to have to		
ich muss	I have to	
er/sie/man muss	he/she/one has to	
wir müssen	we have to	
Modal verb: dürfen – to be allowed to		
ich darf (nicht)	I'm (not) allowed to	
er/sie/man darf (nicht)	he/she/one is (not) allowed to	
wir dürfen (nicht)	we're (not) allowed to	
Modal verb: sollen – to ought to		
ich soll	I ought to	
er/sie/man soll	he/she/one ought to	
wir sollen	we ought to	

Modal verbs are followed by an infinitive
"Ich muss nicht" means I don't have to
"ich darf nicht" means I'm not allowed to

sich freuen auf - to look forward to			
ich freue mich auf	I	look(s) forward to	
du freust dich auf	you		
er/sie freut sich auf	he/ she		
wir freuen uns auf	we		
ihr freut euch auf	you		
Sie/sie freuen sich auf	you/they		

Schulregeln		
im Klassenzimmer	in the classroom	
im Computerraum	in the computer room	
im Gang	in the corridor	
im Unterricht	during lessons	
in der Bibliothek	in the library	
in der Schule	at school	
draußen	outside	
ruhig/leise sein	be quiet	
laufen	walk/run	
langsam gehen	walk slowly	
plaudern	chat	
Respekt zeigen	show respect	
seine Hausaufgaben vergessen	forget your homework	
Ich denke/glaube, dass	I think/believe that	
Ich bin der Meinung, dass diese Regel … ist	I am of the opinion that this rule is …	
falsch/richtig	wrong/right	
notwendig/nötig	necessary	
weil ich nicht genug Freizeit habe	because I don't have enough free time	
weil es in der Kantine nicht genug Platz gibt	because there isn't enough room in the canteen	

To talk about actions in the past use the perfect tense. A part of haben or sein plus a past participle	
Ich habe/er, sie hat/wir haben	I/he, she/we
gespielt/gelernt/ geplaudert/gemacht/ gezeigt/gehört/ gekauft/geschlafen/ gegessen/verbracht	played/learnt/ chatted/did/ showed/listened/ bought/slept/ ate/spent
Ich bin/er, sie ist/wir sind	I/he, she/we
gefahren/gegangen/ geflogen/gekommen geschwommen/geblieben	travelled/went/ flew/came/ swam/stayed

Important imperfect tense verbs:
ich war, er/sie/es war – I was, /he/she//it was
wir waren – we were
Ich hatte, wir hatten – I had, we had
es gab – there was

In der Pause – at break		
Was machst du normalerweise in der (Mittags)Pause?	What do you normally do in your (lunch) break?	
Ich esse (mein Pausenbrot)/ ich trinke	I eat (my snack)/ I drink	
ich spreche/plaudere mit meinen Freunden/ Freundinnen	I speak/chat to my friends	
Ich verbringe Zeit mit Freunden	I spend time with friends	
ich mache Sport/meine Hausaufgaben	I do sports/my homework	
Ich gehe in einen Klub	I go to a club	
Ich spiele	I play	
Ich habe keine (Mittags)Pause	I don't have a (lunch) break)	
jeden Tag	every day	
letztes Jahr	last year	
gestern	yesterday	
nach der Schule	after school	

Die Schulfächer	
Ich lerne … Fächer	*I study …….. subjects*
Geschichte	*History, story*
(Natur)Wissenschaften	*Sciences*
Kunst	*Art*
Mathe	*Maths*
Musik	*Music*
Deutsch	*German*
Sprachen	*Languages*
Theater	*Drama*
Religion	*RS*
Sport	*PE, sport*

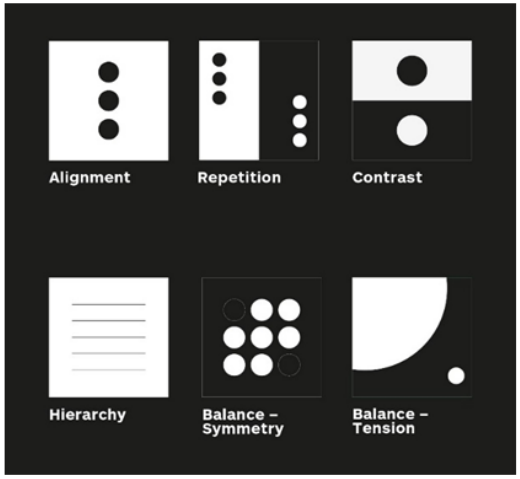
Mein Stundenplan – My timetable	
Was hast du am …	*What do you have on …*
Montag	*Monday*
Dienstag	*Tuesday*
Mittwoch	*Wednesday*
Donnerstag	*Thursday*
Freitag	*Friday*
in der ersten/zweiten/ dritten Stunde	*in first/second/third lesson*
Wie oft hast du …?	*How often do you have…?*
Ich habe … einmal/ zweimal/dreimal pro Woche/pro Tag	*I have … once/twice/ three times per week/per day*
Wie viele Stunden hast du …?	*How many lessons do you have …?*
am Nachmittag	*in the afternoon*
nach der Pause	*after break*

Was ist dein Lieblingsfach? What's your favourite subject?	
Mein Lieblingsfach ist …	*My favourite subject is*
Ich studiere/lerne gern/nicht gern …	*I like/don't like learning*
Wie findest du …?	*How do you find …?*
Welches Fach magst du (nicht)?	*Which subject do you (not) like?*
Ich mag + subject, weil	*I like … because*
Ich liebe …, weil	*I love … because*
einfach/leicht	*easy*
schwer/schwierig	*difficult/hard/tough*
ermüdend/kompliziert	*tiring/complicated*
interessant/langweilig	*interesting/boring*
nützlich/praktisch	*useful/practical*
weil ich schwach in … bin	*because I'm weak in*
weil ich sportlich bin	*because I'm sporty*
weil ich Sprachen liebe	*because I love languages*

Picture description	
Auf dem 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*
man sieht	*you (can) see*
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, sprechen (miteinander)	*They are playing, eating, wearing, talking (to each other)*
*USE PRESENT TENSE TO SAY WHAT PEOPLE **ARE DOING** – "NO IS-ING" "AM-ING" OR "ARE-ING"*	

Was trägst du in der Schule?– What do you wear to school?	
In der Schule trage ich…	*At school I wear*
eine (graue) Hose	*(grey) trousers*
ein (weißes) Hemd	*a (white) shirt*
eine (graue) Jacke	*a (grey) jacket*
eine (blaue) Krawatte/ einen (blauen) Schlips	*a (blue) tie*
(k)eine Schuluniform	*no/a school uniform*
einen (grünen) Pullover	*a (green) jumper*
(schwarze) Schuhe	*(black) shoes*
ein (rotes) Kleid	*a (red) dress*
ein (gelbes) T-Shirt	*A (yellow) t-short*
(eine) (dunkelblaue) Jeans	*(a pair of) (dark blue) jeans*
(braune) Shorts	*(brown) shorts*
(hellblaue) Sportschuhe	*(light blue) trainers*
orange/rosa(rot)	*orange/pink*

Wie findest du Schuluniformen? – How do you find school uniforms?	
Ich finde … sehr praktisch	*I find … very practical*
Auf der anderen Seite sind sie	*On the other hand, they are*
langweilig	*boring*
teuer	*expensive*
unbequem	*uncomfortable*
der Vorteil/Nachteil ist	*the advantage/ disadvantage is*
ein Mädchen/ein Junge	*a boy/a girl*
ein Schüler/eine Schülerin	*a pupil*



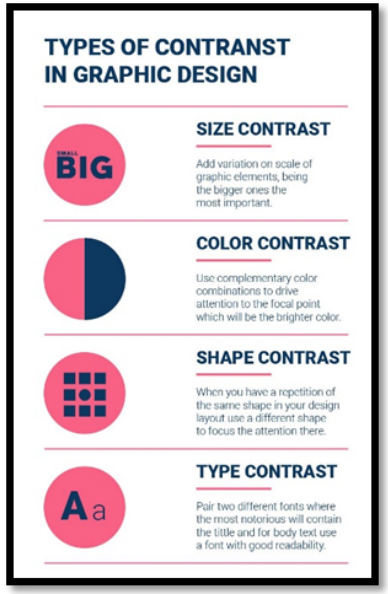
A zine is a small-circulation self-published work of original or appropriated texts and images, usually reproduced via a copy machine. Zines are the product of either a single person or of a very small group, and are popularly photocopied into physical prints for circulation.

Keyword	Principles of Design – read, cover, write, review
Balance	This refers to the distribution of the graphic design elements, such as shapes, text boxes and images, of a design evenly throughout a certain layout. Designers can choose between a balanced (stable) design or off-balanced (dynamic) layout.
Emphasis	Refers to a design's focal point and the importance of each element within it
Alignment	Having a strong point of alignment within design allows our eyes to seamlessly flow through the visual message. Aligning elements with one another so that every item has a visual connection with something else on the page, tightens a design and eliminates the haphazard, messy effect which comes from random placement of elements.
Contrast	The contrast principle of design generates space and distinction between elements, and is the most effective way to create emphasis and impact with your design.
Repetition	Repetition strengthens a design by tying together otherwise separate parts, and as a result, creates associations.
Proportion	The visual size and weight of parts in composition and their correlation is referred to as proportion.
Movement	Controlling the elements in a composition such that the eye is led from one to the next and the information is transmitted appropriately to your audience is known as a movement.
White space/ negative space	The empty space around the parts in your composition/layout is known as white space.
Hierarchy	Hierarchy creates organisation, typographic hierarchy is an essential part of any design or layout and even if you're not familiar with the term, you'll be sure to have seen hierarchy in action on any website, newspaper or magazine.

https://www.youtube.com/watch?v=7r5Pu0ecHdY&ab_channel=4TheCreatives

Balance ***In the context of graphic design, balance is of three types.***

- **Symmetrical** – This type of design is formed along a vertical axis and or horizontal axis, where the weight of the elements is evenly divided into both sides of the layout.
- **Asymmetrical** – This type of balance employs scale, contrast and colour to even out the flow of a layout. It is usually found in websites, where two sides of a webpage differ from each other but contain similar elements.
- **Radial**– Here, the elements of a design are placed in a circular pattern on the layout. This provides a sense of movement and dynamism to the eyes of the viewer.



Keyword	Definition
Typography	Typography is the visual component of the written word,". All visually displayed text, whether on paper, screen or billboard, involves typography.
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.

Bournemouth School: History Department: Knowledge Organiser: Year 10 Autumn 1: Cold War 1958 - 1970

Timeline of key events:

1949-61: 4m East Germans fled West
1958: Khrushchev's Berlin Ultimatum
1959: Cuban Revolution: Fidel Castro replaced US - backed General Batista
Late 1959: Khrushchev sending weapons to Cuba
5th May 1960: American U2 spy plane shot down over USSR airspace
14th May 1960: date for Paris summit meeting (that was cancelled by Khrushchev)
Jan 1961: up to 20,000 refugees going through East Berlin to the West
April 1961: Bay of Pigs failed invasion
June 1961: Vienna summit meeting
July 1961: both US and USSR announce an increase in defence spending
13th August: Khrushchev closed the border between East and West Berlin
October 1961: Stand-off at Checkpoint Charlie in Berlin
14 – 28th October 1962: 13 days of the Cuban Missile Crisis
June 1963: Kennedy visits Berlin
1963: Hot Line set up
August 1963: Limited Test Ban Treaty
1968: Outer Space Treaty and Nuclear non - Proliferation Treaty signed
Spring 1968: Dubcek's Prague Spring in Czechoslovakia
21st August 1968: Soviet invasion of Czechoslovakia
Autumn 1968: Brezhnev Doctrine
January 1969: Jan Palach set fire to himself

Key terms/definitions

Term	Definition	✓
Berlin Ultimatum	Khrushchev's accusation that the Allies had broken the Potsdam Agreement of 1945	
Blockade	A naval quarantine around Cuba to prevent soviet ships delivering military materials	
Boundary	The dividing line in East Berlin marking where the barrier was created to encircle West Berlin from East Berlin and the GDR, where the Berlin Wall was then built.	
Brain-drain	The term to describe the large numbers of professional and skilled people leaving through East Berlin for a new life in the West	
Brezhnev Doctrine	Soviet foreign policy from 1968 which meant military intervention by Warsaw Pact forces if another member of the Warsaw Pact tried to leave the Soviet sphere of influence	
Brinkmanship	A term used to describe pursuing a dangerous policy to the limits of safety; associated with the 13 days of the Cuban Missile Crisis	
Checkpoint Charlie	The best-known Berlin Wall crossing point between East Berlin and West Berlin. The scene of a famous stand-off between the superpowers.	
CIA	Central Intelligence Agency: used by USA to gather/analyse intelligence for national security	
Cuban exiles	Pro-American Cubans who fled to the USA after the Cuban Revolution. Called 'La Brigada 2506'	
Cuban Revolution	The overthrow of General Batista by Fidel Castro	
De-Stalinisation	The elimination of the influence of Stalin, led by Nikita Khrushchev after the death of Stalin	
Defectors	A person who abandons their country for another country with an opposing ideology	
Defence spending	The amount both the USA and the USSR were spending on military hardware	
Detente	A French term meaning a 'relaxation of tension' between the USA and the USSR	
EEC	The European Economic Community: an organisation to foster economic integration created in 1957	
Espionage	Spying on each other: a main feature of the Cold War, increasing rivalry and mistrust	
Hot Line	A direct line of communication set up between Washington and Moscow	
Jupiter missiles	US nuclear warheads stationed in Italy and Turkey as a forward strike capability	
NATO	North Atlantic Treaty Organisation formed to provide 'collective security' against the USSR	
Non-Proliferation Treaty	Signed by major nuclear and non-nuclear powers pledging their cooperation to stop the spread of nuclear weapons and to stop developing them	
Outer-Space Treaty	A promise made by the superpowers and also Britain, to use outer space for peaceful purposes and not place nuclear weapons in orbit	
Peaceful co-existence	A belief originating from Khrushchev that despite ideological differences the superpowers could exist peacefully together	
Potsdam 1945	The last wartime conference led by Truman, Attlee and Stalin in July 1945	
Prague Spring	Series of liberalising reforms introduced by Dubcek in Czechoslovakia	
Thermonuclear	A military conflict deploying nuclear weapons, likely to lead to MAD (mutually assured destruction)	
Warsaw Pact	A military treaty including the USSR and the European satellite states	

Bournemouth School: History Department: Knowledge Organiser: Year 10 Autumn 1: Cold War 1970 - 1991

Timeline of key events:

May 1972: SALT I signed
May 1972: President Nixon visits Moscow
Oct 1973: Arab-Israeli War (Yom Kippur)
Jan 1973: Peace in Vietnam after 11 years
July 1974: Nixon visits Moscow (2nd time)
July 1975: Space link-up
July 1975: Helsinki Agreements
27th April 1978: Communist PDPA led by Taraki takes power in Afghanistan
Sept 1979: Amin seizes power from Taraki
Nov 1979: US hostage crisis in Iran
25th Dec 1979: Soviets invade Afghanistan. SALT II not ratified
27th Dec 1979: Amin shot and replaced by Kamal
Jan 1980: Carter Doctrine: end of Detente
Summer 1980: USA boycott Moscow Olympic Games
Nov 1980: Reagan elected President
1981: Reagan announces significant increases in US defence spending: 2nd 'Cold War'
1982: Lech Walesa imprisoned in Poland
Nov 1982: Brezhnev dies; replaced briefly by Andropov
June 1982: Reagan's 'evil empire' speech
23rd March 1983: Strategic Defence Initiative ('Star Wars')
Feb 1984: Chernenko replaced Andropov
Summer 1984: USSR boycotts Olympics
March 1985: Gorbachev new Soviet leader
Nov 1985: 1st summit meeting in Geneva
Oct 1986: 2nd summit in Reykjavik
Dec 1987: INF Treaty signed
1988: Gorbachev rejects Brezhnev Doctrine
1988 – 91: Collapse of Soviet control in Eastern Europe
9th Nov 1989: Berlin Wall pulled down
1990 Germany reunifies
July 1991: Warsaw Pact formally ends
Dec 1991: end of Gorbachev and USSR

Key terms/definitions

Term	Definition	✓
Détente	French term: 'relaxation in tension' associated with 1970's USA/USSR relations	
Six Day War	1967: a war between Israel and its Arab neighbours lasting 6 days in June 1967	
Vietnam War	Conflict: 1954-1975 between the communist backed North and the US backed South	
SALT I & SALT II	Strategic Arms Limitation Talks (I: May 1972; and II: not ratified in 1979)	
AMB / SLBM / ICMB / MIRVs	Anti-ballistic missile system / submarine-launched ballistic missiles / intercontinental ballistic missiles / multiple independently targetable re-entry vehicles	
Disarmament	The term given to describe the reduction or withdrawal of military forces / weapons	
Cosmonauts	Name given to soviet individuals who travelled in space	
Apollo-Soyuz	First international space mission including USA and USSR crew, symbolising Detente	
Helsinki Declaration	The results of agreements on international Security, Cooperation and Human Rights	
Dissident	Term to describe a person who opposes official policy, especially authoritarian states	
US Congress	The law-making branch of the USA's Federal Government	
DPDA	A communist party in Afghanistan: the People's Democratic Party of Afghanistan	
Mujahideen	A guerrilla movement in Afghanistan wanting to overthrow the government of Amin	
Hostage crisis	Militant Islamic students seized US embassy staff; made Carter look weak by late 1979	
Carter Doctrine	US foreign policy whereby US would use force if necessary in Persian Gulf area	
Boycott	The term given to avoid something, such as the Olympic Games in 1980 & 1984	
'2nd Cold War'	A term used to describe a more hard-line approach by Reagan towards the USSR	
Deployment	Term given to describe the placement of military and nuclear weapons and troops	
NUTS	'Nuclear Utilization Target Selection': specific targets could be identified	
MAD	'Mutually Assured Destruction': an attack by either side would result in devastation	
'Zero option'	US proposal to withdraw all Soviet and USA nuclear weapons from Western Europe	
Solidarity	Polish Trade Union movement led by Lech Walesa in 1980 demanding political change	
SDI / 'Star Wars'	'Strategic Defence Initiative': a US plan for ground and space-based laser armed anti-ballistic missiles designed to destroy in-coming missiles from the USSR from space	
New Thinking	Term given to describe Gorbachev's plans to reform and modernise communism	
Glasnost	The name given to Gorbachev's policy of openness, ending censorship and encouraging free expression	
Perestroika	The name given to Gorbachev's policy of restructuring the soviet economy	
Uskoreniye	A Russian term for 'acceleration' of economic development	
Summit meetings	A series of meetings in 1985, 1986 and 1987 designed to reduce nuclear weapons	
INF Treaty	Intermediate-Range Nuclear Forces Treaty eliminating many nuclear weapons	
Gorbymania	The term given in the West to describe the popularity of Gorbachev	
Sinatra Doctrine	A rejection of the Brezhnev Doctrine: the USSR would no longer interfere in any changes Warsaw Pact countries made regarding their internal affairs	
Malta Summit	Declaration made in 1989 by Gorbachev and Bush that the Cold War was over	

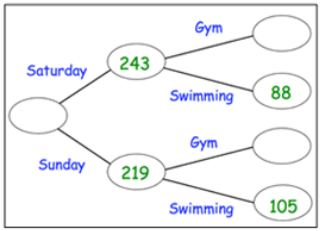
Keyword	Definition	Examples
Set Notation	A formal way of representing a solution to an inequality.	$x > 2 \rightarrow \{x : x > 2\}$ $x \leq -5 \rightarrow \{x : x \leq -5\}$ $x < 1 \text{ or } x > 8 \rightarrow \{x : x < 1\} \cup \{x : x > 8\}$ $-10 \leq x < 3 \rightarrow \{x : -10 \leq x < 3\}$
Factorising	A method which turns an expression into the **product** of two or more brackets (factors). It is a technique we can use to solve **some** quadratic equations.	$x^2 + 9x + 14 \equiv (x+2)(x+7)$ $x^2 - 6x + 9 \equiv (x-3)^2$
DOTS	Difference of Two Squares $\boldsymbol{a^2 - b^2 = (a+b)(a-b)}$	Factorise $x^2 - 121$: $\boldsymbol{x^2 - 121 = (x-11)(x+11)}$
Roots	The roots of a quadratic function are its solutions when it is equated to zero.	The roots of $x^2 + 9x + 14$ are $\boldsymbol{x = -2 \text{ and } x = -7}$ Because $x^2 + 9x + 14 = 0$ $(x+2)(x+7) = 0$ So $x + 2 = 0$ or $x + 7 = 0$ $\boldsymbol{x = -2 \text{ and } x = -7}$
Quadratic Expression	Any expression of the form $ax^2 + bx + c$, where a, b, c are numbers.	$x^2 + 8x - 1$ $5x^2 + 9x$ $3x^2 - 4$
Quadratic Formula	A formula for solving any quadratic equation of the form $ax^2 + bx + c = 0$, used when factorising doesn't work. $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Solving $3x^2 - 6x - 2 = 0$ $x = \frac{6 \pm \sqrt{(-6)^2 - 4(3)(-2)}}{2(3)} = \frac{6 \pm \sqrt{60}}{6}$ $= \frac{6 \pm 2\sqrt{15}}{6} = \frac{\boldsymbol{3 \pm \sqrt{15}}}{\boldsymbol{3}}$
Perfect Squares	Linear expressions raised to a power of 2.	$(x-3)^2$ $(x+1)^2$ $(3x-5)^2$
Completing The Square	Process of expressing $x^2 + bx + c$ in the form $(x + \frac{b}{2})^2 - (\frac{b}{2})^2 + c$	$\boldsymbol{x^2 - 8x + 2}$ $= (x-4)^2 - 16 + 2 = \boldsymbol{(x-4)^2 - 14}$
Simultaneous Equations	A pair of equations involving two variables, requiring a common solution. Solved by Elimination or Substiion.	$3x + 2y = 9$ $y = x^2 + 4x - 1$ $x - y = 4$ $y = 3x + 1$
Elimination	Make the coefficients of one variable the same in both equations, and then either add of subtract the equations to **eliminate** this variable.	$3x + 2y = 9$ $3x + 2y = 9$ $x - y = 4$ ....multiply by 3..... $3x - 3y = 12$ subtracting..... $5y = 21$ $\boldsymbol{y = 4.2, x = 8.2}$
Substitution	**Substituting** an expression for x or y from one equation into the other equation.	$y = x^2 + 4x - 1$ $y = 3x + 1$ $\therefore\ x^2 + 4x - 1 = 3x + 1$ $x^2 + x - 2 = 0$ .....

Inequalities are solved in the same way as equations with one careful note:
If you multiply or divide an inequality by a negative number you must change the inequality symbol.

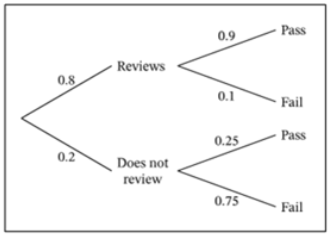
A pair of quadratic and linear simultaneous equations can have up to solutions.
To find the coordinates where two graphs intersect, solve their equations simultaneously.

Keyword	Definition	Example(s)
Probability	Defined as $\frac{\text{number of successful outcomes}}{\text{total number of possible outcomes}}$	$P(5 \text{ on a dice}) = \frac{1}{6}$ $P(\text{tail on a coin}) = \frac{1}{2}$
Sample Space Diagram	Shows all the possible outcomes of two events	
Mutually Exclusive Events	Events that cannot happen at the same time. $P(A \text{ or } B) = P(A) + P(B)$	A = Selecting a KING from a pack of cards B = Selecting an ACE $P(A \text{ or } B) = \frac{4}{52} + \frac{4}{52} = \frac{\boldsymbol{8}}{\boldsymbol{52}}$
Exhaustive Events	A set of events which include all possible outcomes. The probabilities of exhaustive, mutually exclusive events sum to 1.	A =Rolling an EVEN number on a dice B = Rolling an ODD number on a dice
Experimental Probability	Defined as $\frac{\text{frequency of outcome}}{\text{total number of trials}}$	Rolling a dice 10 times: RESULTS = 5, 3, 6, 3, 2, 4, 1, 5, 5, 1 $P(5) = \frac{3}{10}$
Expectation	Expected number of outcomes = number of trials x probability of outcome	Rolling a dice 20 times, I would expect to land an odd number a total of 10 times. $\text{Exp}(Odd) = 20 \times \frac{1}{2} = 10$
Frequency Tree	Shows two or more events and the number of times they occurred.	
Independent Events	Events that do not affect each others probability of occurring.	Choosing two marbles from a bag one after the other, **replacing the first marble** before taking the second.
Dependent Events	If one event depends upon the outcome of another event, the events are dependent.	Choosing two marbles from a bag one after the other, **NOT replacing the first marble** before taking the second.
Probability Tree Diagram	Shows two or more events and their probabilities.	
Conditional Probability	The probability of a dependent event. The probability of the second outcome is dependent/conditional on the first.	Consider **5 blue and 3 red marbles in a bag**. Taking 2 marbles out without replacing them: $\text{P(Red, Red)} = \frac{3}{8} \times \frac{2}{7} = \frac{6}{56}$
Element	An element is a "member" of a set. $\in$ means "**is an element of**"	Set of prime numbers less than 10 = { 2, 3, 5, 7} The numbers 2,3, 5 and 7 are called elements of that particular set.
Universal Set	References all elements being considered. ξ means "**univeral set**"	Consider creating a Venn Diagram of favourite subject from MATHS, ENG or SCIENCE. Asking a year 10 maths class with 31 students in it. ξ = The 31 students in that class

Frequency Diagram



Probability Tree Diagram



Sample Space Diagram

Rolling a dice and flipping a coin:

	1	2	3	4	5	6
H	(H,1)	(H,2)	(H,3)	(H,4)	(H,5)	(H,6)
T	(T,1)	(T,2)	(T,3)	(T,4)	(T,5)	(T,6)

Bournemouth School – Knowledge Organiser – Year 10

MATHEMATICS

Year 10 – Maths – Autumn 1 – Units 9 & 10

Year 10
Unit: Star Wars
See set work support guide and other resources:
Student resources > 10 > AOS3 – Stage and Screen > Star Wars

Bournemouth School music department

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

Context

Cue a self-contained section of music in a film

Diegetic music contained within the action of the film and included in the story—for example, music played in a bar. If a character in the story can hear the music, it is diegetic. Most film music is non-diegetic.

Fanfare a celebratory piece for brass instruments (and sometimes percussion) often marking the opening of an important event or ceremony. The music is short and loud and often features arpeggios and broken chords

Underscore (or **background**) **music** non-diegetic music adding to the mood of a scene, reinforcing character developments and aspects of character.

Dynamics

Crescendo gradually getting louder

Diminuendo gradually getting quieter

Rhythm

Homorhythmic when all the parts play in the same rhythm at the same time

Syncopation rhythm which emphasises the off beat

Triplets 3 notes played in the time it normally takes to play 2. Indicated with a number 3 and (usually) a horizontal square bracket.

Texture

Ostinato a persistent phrase or motif repeated over several bars or more

Imitation when one part copies or imitates another at a short time distance.

Structure

Ternary form music with an ABA structure

Melody

Conjunct movement by step

Disjunct movement by leap

Leitmotif a recurring musical idea which is associated with a particular theme, character or place

Lower auxiliary a melody note which goes to the note below and then back to the original note again

Motif a short melodic phrase

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

Instruments/Sonority

Glissando playing all the pitches between to points in rapid succession

Glockenspiel tuned percussion instrument with metal bars. High pitched – sounds 2 octaves above written pitch

Register How high or low in pitch a piece of music or an individual part sounds.

Roll a rapid succession of hits on a percussion instrument.

Snare a drum with a series of loosely strung metal wires in contact with the lower skin which create a distinct 'buzzing' or 'rattling' noise when the drum is struck.

Tam-tam orchestral gong

Tremolo/tremolando rapid repetition of the same note to create a wavering, tremulous sound.

Year 10
Unit: *Star Wars*
See set work support guide and other resources:
Student resources > 10 > AOS3 – Stage and Screen > Star Wars

Bournemouth School music department

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

Tonality

Atonal music that does not have a key of any sort

Bitonal music that is in two keys at the same time

Polytonal music written in multiple keys at the same time.

Harmony

Block triads major or minor triads in root position, built up in thirds

Consonant Intervals or chords that don't clash—major/minor triads and intervals of a third or sixth are examples

Dissonant sounds that clash. Dissonant intervals are major and minor second and seventh, and the triton (augmented fourth or diminished fifth)

Dominant the fifth note (or chord) of the scale or key—the strongest after the tonic

Dominant seventh chord V (the dominant chord) with an added minor seventh

Imperfect cadence a cadence comprising two chords, ending on chord V. Because it ends on the dominant, an imperfect cadence sounds unfinished.

Neapolitan chord a chord built on the flattened supertonic

Perfect cadence a cadence comprising two chords; chord V followed by chord I. Because it ends on the tonic, a perfect cadence sounds finished.

Quartal Harmony chords made up of notes a 4th apart rather than the usual 3rd apart

Personal Development is
Personal – to do with ourselves
Relationships – how we relate to others and how they relate to us
Sex – how we interact and relate to others in a sexual sense
Health – about looking after our bodies, mentally and physically
Careers – how we plan and develop our careers
Economics – all about managing our money (the E also stands for education too)

Keyword	Learn	✓
Curriculum Vitae (CV)	a short written description of your education, qualifications, previous jobs, and sometimes also your personal interests, that you send to an employer when you are trying to get a job	
Cover Letter	a one-page business letter that you submit when applying to a job, along with your CV. As a piece of persuasive writing, your cover letter will aim to convey to the employer why you're a great candidate for the role.	

Useful Careers Websites

The **Unifrog** platform is designed to support learners in making the most informed decisions about their futures and has a range of tools that are suitable for all year groups. Each student has their own personal account that provides a wide range of information related to their interests and aspirations. www.unifrog.org

Information on apprenticeships, including a range of different schemes:
https://amazingapprenticeships.com/

General careers information:
https://careerpilot.org.uk/

PD Classroom Rules

Openness: Be open and honest. However, do not discuss others' personal/private lives - try to use examples.
Keep the conversation in the room: You should feel safe discussing issues and be confident that you contributions will not be shared outside this room. If your teacher has concerns that someone is at risk of harm they have a duty to refer.
Non-judgmental approach: It is okay for us To disagree with another person's point of view but do not judge, make fun of, or put anybody down. - 'challenge the opinion, not the person'.
Right to pass: Taking part is important. However, you have the right to pass on answering a question and you will not put anyone 'on the spot'.
Make no assumptions: Do not make assumptions about people's values, attitudes, behaviours, identity, life experiences or feelings. Listen to other people's views respectfully and expect to be listened to.
Use appropriate language: Use the correct terms rather than slang terms - they can be offensive.
Ask questions: You are encouraged to ask questions. However, do not ask personal questions or say anything to embarrass someone.

Year 10 Work Experience – 20th – 24th May 2024

Work experience gives students the chance to learn about what type of job they might enjoy, and develop their CV. Students are responsible for sourcing their own work experience placements.
We are using **Unifrog** (www.unifrog.org) to manage the administration of the work experience programme – for example collecting information from the employer about their Risk Assessment and Health & Safety policy, as well as obtaining parental consent.

Some important logistics:

- Students need to agree the placement with the employer **first**, and then students will add the placement to their Unifrog account (you will find the Placements tool on the Unifrog homepage).
- The Unifrog system will then email the employer, the parent / guardian, and the school, to collect the necessary information and permissions. For the process to work, **it is essential that students add the initial information about the placement accurately**.
- Placements should be secured by **15th December**

Health:
State of complete mental, physical and social wellbeing and not merely the absence of disease or infirmity

Relationship between health and fitness:

- Ill health can negatively affect fitness as the individual may be too unwell to train.
- Increases in fitness can positively affect health and well-being e.g. you may be less likely to get ill, you may feel better about yourself; **HOWEVER**, an increase in fitness cannot prevent illness.

Fitness:
Ability to meet the demands of the environment

3.1.3.1 The relationship between health and fitness and the role that exercise plays in both
&
3.1.3.2 The components of fitness, benefits for sport and how fitness is measured and improved

Components of Fitness:

1) **Cardiovascular endurance:** the ability of the heart and lungs to supply oxygen to the working muscles.
2) **Agility:** The ability to move and change direction quickly (at speed) whilst maintaining control.
3) **Balance:** maintaining the centre of mass over the base of support.
4) **Co-ordination:** the ability to use different (two or more) parts of the body together smoothly and efficiently.
5) **Flexibility:** the range of movement possible at a joint.
6) **Muscular endurance:** Ability of a muscle or muscle group to undergo repeated contractions avoiding fatigue.
7) **Power / Explosive strength:** the product of strength and speed (strength x speed).
8) **Reaction Time:** the time taken to initiate a response to a stimulus.
9) **Speed:** the maximum rate at which an individual is able to perform a movement or cover a distance in a period of time (speed = distance divided by time)
10) **Strength:** the ability to overcome a resistance
    a) **Maximal** – the largest force possible in a single maximal contraction
    b) **Dynamic** – repeated contractions
    c) **Explosive** – (see POWER)
    d) **Static** – the ability to hold a body part in a static position.

When asked to explain remember to give specific sporting examples:

- Power is needed in football to kick the ball harder when shooting so it is more difficult for the goalkeeper to save.
- A gymnast uses power gain height when jumping. This will give them more time to complete the move.
- Cardiovascular fitness is important in hockey as each game lasts a long time therefore they need to be able to transport oxygen around the body effectively for the duration of the match. This will help them maintain the quality of performance throughout game.

Reasons for Fitness Testing:

- To identify strengths and weaknesses, this allows them to work on weaknesses
- To allow you to plan your training
- To show a starting level of fitness
- To monitor improvement
- To monitor the success of a training programme
- To compare against normative data
- To motivate and set goals

Limitations with Fitness Testing:

- Tests are often not sports specific (give an example)
- They do not replicate the movements in a sport
- They don't replicate the high-pressure environment of sporting activities/non-competitive
- Some are not reliable
- Some are maximal which means the performer is required to try their best

Protocols MUST be followed or else the tests are invalid

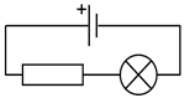
Fitness Tests

Agility = Illinois agility run: Cones arranged in 10m x 5 m rectangle with 4 cones down the middle, performer starts face down, performer runs around the cones as fast as possible, performer is timed, compare results to national averages.
Balance = Stork Balance Test: start balanced on 2 feet, hands placed on hip, one leg lifted so that the toes of the lifted leg touch the inside of the planted leg, timekeeper tells the individual to raise the heel on the planted leg and starts the stopwatch, individual balances for as long as possible, timer stops clock when the individual loses their balance, compare to national averages.
Cardiovascular endurance = multi-stage fitness test: Cones set out 20m apart, test gets progressively harder, individual runs 20m in time with 'bleeps', time between bleeps gets shorter as levels increase, performer runs for as long as possible, score recorded as a level when performer finishes e.g. level 8 bleep 4, compare to national averages.
Co-ordination = wall toss test: tennis ball starts in one hand, stand 2m from wall, on 'GO' the performer works for 30 seconds, performer throws ball against wall and catches it with opposite hand, if ball is dropped the time continues, compare to national averages.
Flexibility = sit and reach test: Remove shoes, sit on floor with feet flat against sit and reach board, performers legs must be straight, performer pushes forward slider as far as possible, score is recorded in centimetres, compare to national averages.
Muscular endurance = abdominal curl conditioning test: Performer lies on mat in a sit-up position, partner holds ankles, performer sits up on bleep and down on bleep (staying in time), the test gets progressively harder as bleeps get faster, score is how many sit ups you did, compare to national averages
Power / Explosive strength = vertical jump test: with flat feet, stand and push the wall ruler with fingertips as high as possible, apply chalk to finger tips, from a standing position jump as high as possible marking the ruler with chalk, record height jumped, compare to national averages.
Reaction time = ruler drop test: Place thumb and index finger together of dominant hand, partner holds metre ruler above, without warning partner drops ruler, individual being tested must catch the ruler, measure in 'cm', compare to national averages
Maximal Strength test = one rep max: lift weight once using the correct technique, if completed attempt a heavier weight until heaviest weight is discovered, take 1 rep max weight and divide it by body weight, compare to national averages.
Strength = handgrip dynamometer test: hold dynamometer in dominate hand, bend elbow at 90 degrees and place against body, squeeze with maximum effort, record best score, compare to national averages.
Speed = 30m speed test: set up two cones 30m apart, use a flying start, individual is timed running as fast as they can for 30m, compare to national averages.

Topic 2 – Electricity

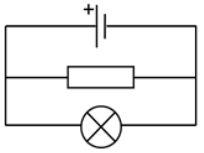
Keyword	Learn	✓
Current, I	The rate of flow of electrical charge measured in amperes, A. 1 ampere = 1 coulomb (of charge) per second.	
Potential Difference, V	The work done (or energy transferred) per unit of charge measured in volts, V. I volt = 1 joule (of energy) per coulomb (of charge).	
Resistance, R	A measure of how difficult it is to get a current to flow through a component, measured in ohms, W.	
Power, P.	The rate at which energy is transferred, measured in watts, W. 1 watt = 1 joule per second.	
Ohms law	The current flowing through a resistor is directly proportional to potential difference and inversely proportional to the resistance. I = V/R	
Series Circuit	A circuit (or section of circuit) where there is only one route for the current to take.	
Parallel Circuit	A circuit (or section of circuit) where the charge can flow through more than one route.	
Alternating Potential Difference	The potential difference alternates between a positive and negative value causing an Alternating Current (AC) that changes it's direction of flow.	
Direct Potential Difference	The potential difference has a constant value causing a Direct Current (DC) that always flows in one direction.	
LDR	Light dependent resistor ; A resistor whose resistance depends on the intensity of the light.	
Thermistor	A resistor whose resistance depends on the temperature. Generally, the higher the temperature the lower the resistance.	
Transformer	A step-up transformer increases the PD (and reduces the current). A step-down transformer decreases the PD (and increases the current).	

Series Circuit

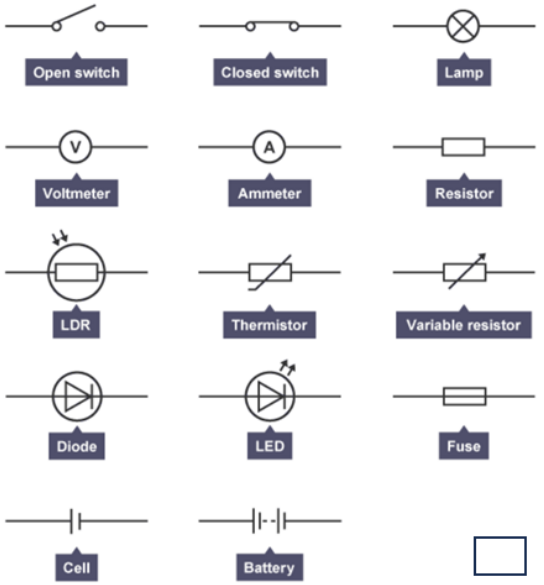


Current is the same at all points. Potential Difference is shared across each component. Total Resistance is the sum of the resistances.

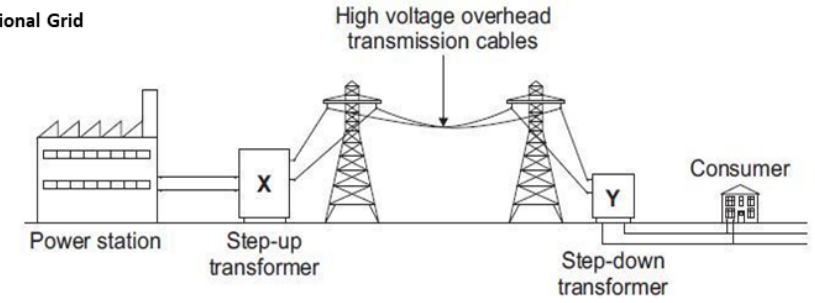
Parallel Circuit

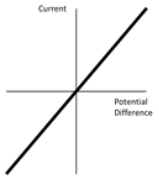


Potential Difference across each branch is the same. Current is divided between each branch. Total Resistance is less than the smallest resistor.

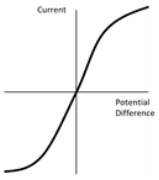


The National Grid

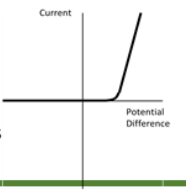




Ohmic resistor
A device that obeys Ohm's Law.



Filament Lamp
As the current increases the filament heats up and this increases the resistance.



Diode
Only allows the current to flow in one direction.

Key equations: $I = Q \div t$, $V = E \div Q$, $P = IV$ $P = I^2R$ $V = IR$

The nature of God (what is God like?)

- **God is omnipotent (all powerful)**
- **God is omnibenevolent (all loving)**
- **God is just (fair)**

Key quotes

"For nothing is impossible with God" – shows God is omnipotent

"For God so loved the world, he gave his One and Only Son" – God is omnibenevolent

Creation

Creation – the act by which God brought the universe into being

The Word – term used at the beginning of John's gospel to refer to God the Son

Christians believe that God created the earth and all living things. Some take the creation story in Genesis literally, therefore they believe God created the world in 6 days and rested on the 7th whereas other Christians believe it is symbolic and teaches them about what God is like.

Key quote → "in the beginning, God created the heavens and earth"

The Trinity

Trinity – Christians believe there are three persons in the One God: Father, Son and Holy Spirit. Each person of the Trinity is fully God.

The Father – creator of life

The Son – became incarnate through Jesus. Fully God and fully human

The Holy Spirit – guides and comforts Christians

Key quote → " We believe in one God"

Incarnation

Incarnation - the belief that Jesus was God in human form (becoming flesh, taking a human form)

Jesus was fully God and fully human, which helps explain his miracles and resurrection.

His words and teachings have authority because they are the word of God.

Christians believe that Jesus is the Messiah (saviour)

Key quote → "The Word became flesh and made his dwelling among us." John 1:14 NIV

Crucifixion

Crucifixion – Roman method of execution by which criminals were fixed to a cross

- Jesus was accused of blasphemy (proclaiming to be G od) and was crucified on Good Friday
- Although he was fully God he still felt pain as he was also fully human
- Christians believe God understands suffering as Jesus suffered and therefore accept suffering as a part of life
- Jesus' death on the cross washed away humanities sins

Key quote → "Father, into your hands I commit my spirit." Luke 23:46 NIV

Resurrection and ascension

Resurrection - rising from the dead. Jesus rising from the dead on Easter Sunday

Ascension – the event, 40 days after Jesus' resurrection, when Jesus returned to God, the Father in heaven

Christianity is based on the belief that Jesus died and resurrected

Resurrection is important as it teaches Christians not to fear death and that their sins will be forgiven if they follow God's laws.

Ascension is important as it shows Jesus is with God in heaven.

Key quote → "He is risen!"

Resurrection and life after death

Christians believe that because Jesus resurrected they will too.

There are different Christian beliefs about resurrection: some believe a person's soul is resurrected straight after death, others believe it happens at the end of time when Jesus returns to play the role of judge.

How does the belief in resurrection impact Christians?

- Means life after death is real
- Gives them confidence in the face of death
- Inspires them to live a good life and follow Gods laws

Key quote → "So it will be the resurrection of the dead."

The afterlife and judgement

Day of Judgement – a time when the world will end and every soul will be judged

Christians believe Jesus plays the role of judge as he has lived life as a human and set the path for Christians to follow

They will be judged based on their behaviour and actions as shown in the Parable of the Sheep and Goats

Key quotes → "I am the way and the truth and the life. No one comes to the Father except through me"

"For I was hungry and you gave me something to eat…"

Heaven and hell

Heaven – a state of eternal happiness (with God)

Hell – place of eternal suffering (separated from God for eternity)

Purgatory – intermediate state where the soul is cleansed (Catholic belief)

Christians believe if they have lived a good life and had faith in God they will be rewarded with heaven and if they have lived a bad life they will be punished with hell.

Some believe that heaven and hell are physical places, whilst others believe they are spiritual places.

Sin and salvation

Sin – any thought or action that separates humans from God

Original sin – everyone is built with the urge to sin/Adam and Eve brought sin into the world

Salvation – saving the soul from sin, made possible by Jesus

Grace – God's love which humans do not have to earn

Salvation through good works → can be achieved by doing good and following God's laws "Faith…without action is dead"

Salvation through grace → salvation is given by God to show his love, does not have to be earnt "For it is by grace you have been saved"

The role of Christ in salvation

Atonement – restoring the relationship between God and humans through the life, death and resurrection of Jesus

- Jesus' crucifixion made up for the original sin of Adam and Eve
- The death of Jesus restored the broken relationship between God and humans which allowed for salvation to be achieved
- Christians can now be forgiven for their sins and go to heaven
- Jesus atoned for the sins of humanity

Key quote → "For the wages of sin is death, but the gift of God is eternal life in Christ Jesus our Lord" Romans 6:23 NIV

KISSJO

Knowledge- Beliefs and Teachings

Impact- How it affects them/consequences

Specialist Language -Terminology and keywords

Sources - Quotes, Leaders, Scripture. Laws

Judgement- Strength of argument

Opinion- Alternate or opposite views

¿Qué se puede hacer?		
Se puede	You can (singular noun)	
Se puede(n)	You plural (plural noun)	
disfrutar de la vida cultural	enjoy the cultural life	
hacer deportes de aventura	do adventure sports	
ir al cine	go to the cinema	
ir de compras	go shopping	
pasear por las calles	walk through the streets	
ver una obra de teatro	watch a play	
apreciar el paisaje	appreciate the landscape	
aprovechar el buen clima	take advantage of the good climate	
descubrir la arquitectura	discover the architecture	
probar platos típicos	try typical dishes	
sacar fotos	take photos	

¿Cómo te gustaría viajar? / Los comparativos		
Me gustaría	I would like to	
Quisiera	I would like to	
viajar en	travel by…	
coger el	take the…	
porque	because	
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	
económico	economic	
práctico	practical	
sostenible	sustainable	
cómodo	comfortable	

La cultura en la calle		
Las fiestas	Festivals	
Si te gusta(n)…	If you like…	
Si te encanta(n)…	If you love…	
los desfiles	parades	
las fiestas	festivals	
las tradiciones	traditions	
los festivales	festivals	
hay que…	you have to…	
ver las Fallas	see the Fallas	
ir a la Tomatina	go to the Tomatina	

Los superlativos		
El / la / los / las más	The most	
El / la / los / las menos	The least	
conocido/a(s)	well-known	
lindo/a(s)	beautiful	
peligroso/a(s)	dangerous	
típico/a(s)	typical	
mayor	biggest	
menor	smallest	
mejor	best	
peor	worst	

¿Qué tal tus últimas vacaciones?		
Acabo de	I have just	
Acabamos de	We have just	
volver de	come back from	
regresar de	returned from	
visitar	visited	
ir a	been to	

Las opiniones		
Me gustó	I liked it	
Me encantó	I loved it	
Nos gustó	We loved it	
Nos encantó	We loved it	
Fue genial	It was great	
Lo pasé bien	I had a good time	
Lo pasé fatal	I had a terrible time	

¿Qué tiempo hizo?		
Hizo buen tiempo	It was good weather	
Hizo mal tiempo	It was bad weather	
Hizo calor	It was hot	
Hizo frío	It was cold	
Hizo sol	It was sunny	
Hizo viento	It was windy	
Llovió	It rained	
Nevó	It snowed	

¿Qué fue lo peor de tu visita?		
Lo bueno fue cuando	The good thing was when	
Lo malo fue cuando	The bad thing was when	
comí algo malo y vomité	I ate something bad and I vomited	
me puse enfermo	I became ill	
tuvimos que (volver a casa)	we had to (return home)	
dejé	I left	
perdí	I lost	
rompí	I broke	
mi reloj	my watch	
mi maleta	my suitcase	

¿Dónde te quedaste?		
El alojamiento	The accommodation	
Me alojé en	I stayed in	
Me quedé en	I stayed in	
Nos alojamos en	We stayed in	
Nos quedamos en	We stayed in	
Alquilamos	We rented	
una casa	a house	
una habitación	a room	
un coche	a car	

¿Cómo era el alojamiento?		
Tenía	It had	
No tenía	It didn't have	
Había	There was / were	
No había	There wasn't / weren't	
No tenía ni…ni…	It didn't have either…or…	
(una) cocina	a kitchen	
vistas al mar	sea views	
mucho ruido	lots of noise	
El ascensor	The lift	
La luz	The light	
estaba roto/a	was broken	
era muy	it was very	
agradable	pleasant	
decepcionante	disappointing	

¿Qué sueles hacer en verano?		
Suelo	I usually	
Solemos	We usually	
ir al extranjero	Go abroad	

¡Descubre Andalucía!		
un bosque	a forest	
un río	a river	
un barco	a boat	
una playa	a beach	
vistas bonitas	beautiful views	
muchos árboles	lots of trees	
muchas casas	lots of houses	

¡Descubre Andalucía!		
el mar	the sea	
el valle (precioso)	the (beautiful) valley	
los caballos	horses	
los pájaros	birds	
los* turistas (extranjeros)	(foreign) tourists	
las tiendas	shops	
los monumentos	monuments	
el paisaje hermoso	beautiful landscape	
el turismo (sostenible)	(sustainable) tourism	
la arena	sand	
el parque acuático	water park	

Mi aventura por Latinoamérica		
El verano pasado	Last summer	
Hace…días	…days ago	
En primavera	In spring	
En otoño	In autumn	
En verano	In summer	
En invierno	In winter	
Fui de vacaciones a	I went on holiday to	

Mi aventura por Latinoamérica		
Lo mejor fue cuando	The best thing was when	
Lo peor fue cuando	The worst thing was when	
aprendí mucho sobre	I learnt a lot about	
compré regalos	I bought presents	
conocí a	I met	
decidí visitar	I decided to visit	
fui a un parque temático	I went to a theme park	
vi* un partido	I watched a match	
una exposición	An exhibition	
llegué*	I arrived	
visité	I visited	
hice turismo	I went sightseeing	
probé un plato típico	I tried a typical dish	

¿Adónde vas a ir?		
El año próximo	Next year	
El año que viene	Next year	
Voy a	I am going to	
Vamos a	We are going to	
ir a	go to	
pasar	spend	
hacer	do	
ver	watch	
visitar	visit	
Va a ser	It is going to be	

Timetable

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