BOURNEMOUTH SCHOOL

Year 10

Knowledge Organiser 2

Autumn Term: 2024-25

Name: Master Copy

Registration Form: 10.Master

✓Hard Work ✓Discipline ✓Smart Appearance ✓Respect

Bournemouth School

Knowledge Organiser: Year 10 Autumn Term 2

'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.

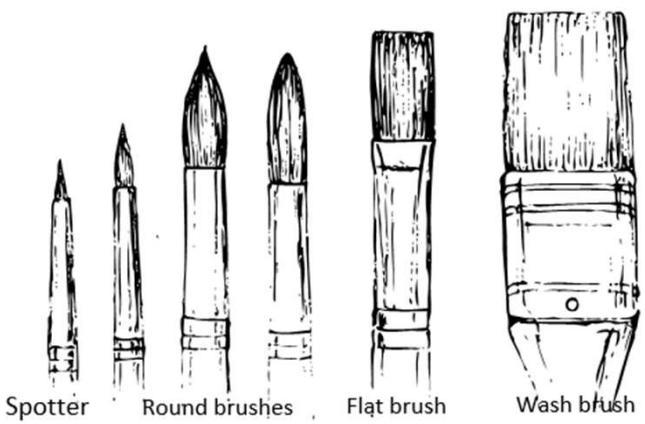
How long should I spend on my homework?

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

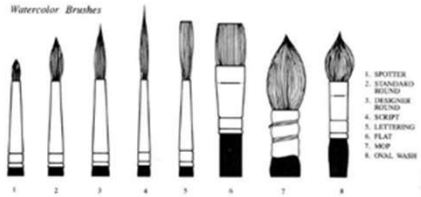
- You should spend about 35 minutes revising your KO each day.
- You should spend 25 minutes either reading or revising each day.
- This timetable is a guide. If you want to spend longer revising one subject that you find more difficult and less time on one you find easy, that is your choice.
- We would 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.

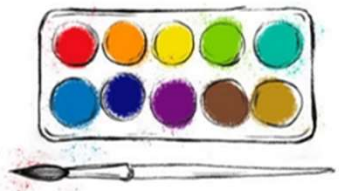
Art Craft & Design **GCSE** Y10 Painting

Keyword	Definition – read, cover, write, review
Watercolour paint ○	Watercolour paint is **translucent** - it can create a muted, subtle image with a **softened** look.
Wet on Wet ○	This is a watercolour technique that uses wet paint against wet paint or wet paper. It's used to create beautiful bleeds and blooms between areas of colour and allow the watercolour paint to spread and blend.
Dry brush ○	Dry brushing is a dry surface technique using a damp, well-blotted brush to paint broken streaky watercolour textures.
Washes ○	A wash is essentially a thin layer of watered-down paint, which provides a background for your painting. Washes are generally used to cover large areas of a painting in one go.
Sgraffito ○	Sgraffito comes from an Italian word and means 'to scratch'. To use sgraffito in your work, scratch into wet paint to show the color beneath. A tool such as a palette knife is ideal for this.
Wet on dry ○	Wet on dry painting requires a little more patience. For this technique you need to wait for the first layer of paint to dry before you paint over the top. With wet on dry painting, you can add fresh details to your work and the colours beneath will still shine through due the translucent nature of the paint.
Scumble ○	Scumbling is a technique that artists use to build a textured, a layered surface that creates depth.
Flat Painting ○	The use of flat colours (no tints or tones blended in)to give each shape a clear bold finish.
Tonal painting ○	The use of flat colours (no tints or tones blended in)to give each shape a clear bold finish



○ Tick the circle when you have been taught this.





Keyword	Definition – read, cover, write, review
Hue ○	Essentially, a hue is a way to describe a colour. And a hue can be any color on the colour wheel. For example, red, blue and yellow are all hues.
Monochrome ○	Monochrome is used to describe art, design or photographs in one colour or different shades of the single colour. An image created in black and white or in varying tones of only one colour.
Analogous ○	Analogous colour schemes use colours that are next to each other on the colour wheel.
Complementary ○	Colours that are opposite each other on the colour wheel are considered to be complementary colours (example: red and green).
Gradient ○	A gradient is a gradual change of colours (such as green turning gradually into blue) or a colour fading into transparency.
Translucent ○	Allows light to pass through but is not completely clear.
Tint ○	A tint is a variety of a colour. **Tints** are created when you add **white or water** to any hue on the colour wheel. This lightens and **desaturases** the hue, making it less intense. Adding water makes it more transparent.
Shade ○	A **shade** is where an artist adds black to a colour to darken it down.
Round brush ○	**Round brushes** are the most versatile and widely used brushes. Their shape makes them suitable for small details and delicate lines. They can also be used to make broader strokes and washes.
Flat brush ○	**Flat brushes** aren't as versatile as round brushes but they're useful for blending and creating washes.
Spotter brush ○	**Spotter brushes** are small round brushes with shorter bristles to give extra control. They are excellent for precise details.
Wash brush ○	**Wash brushes** are similar to flat brushes, but are much wider. They are suitable for blending or applying lots of paint.

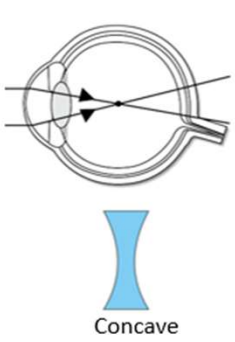
B5a Homeostasis and the human nervous system

Keyword	Learn	✓
Central Nervous System	Made up of the brain and the spinal cord.	
Receptor	Detects a stimulus. Eyes (light), skin (temperature and pressure), ears (sound), nose (smell), tongue (taste)	
Reflex Response	Automatic and rapid response that does not involve the conscious part of the brain. Protects the body from harm.	
Stages of Reflex Arc	Stimulus -> Receptor -> sensory neurone -> relay neurone -> motor neurone -> effector -> response	
Effector	Muscles (contract) or gland (releases chemical or hormone)	
Synapse	Gap between 2 neurones. Chemicals diffuse across the synapse between two neurones to pass on the impulse.	
Accommodation	The process of changing the shape of the lens to focus on near or distant objects.	
The Brain	The brain controls complex behaviour. It is made of billions of interconnected neurones and has different regions that carry out different functions.	
Cerebral Cortex	Area of the brain responsible for higher-order processes: intelligence, personality, memory, consciousness.	
Medulla	Area of the brain responsible for unconscious activity: heart rate, breathing rate.	
Cerebellum	Area of the brain for coordinated muscle control and balance.	

Information from receptors passes along neurones as **electrical impulses** to the central nervous system.
The central nervous system **coordinates** the response of effectors.
The nervous system enables humans to react to their surroundings and to coordinate their behaviour.

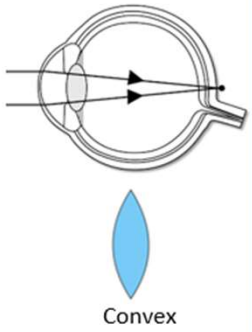
Adaptation to light
Dim Light – Circular muscles relax, Radial muscles contract
Bright Light – Circular muscles contract, Radial muscles relax

In order to see a clear image, light must be **focussed** on the **retina**. This is achieved due to the **refraction** of light by the lens. The **focal point** must fall on the retina.
Spectacle lenses refract light rays so that they do focus on the retina if someone is short or long sighted.



Myopia (short sightedness) is caused by having an eyeball which is too long.

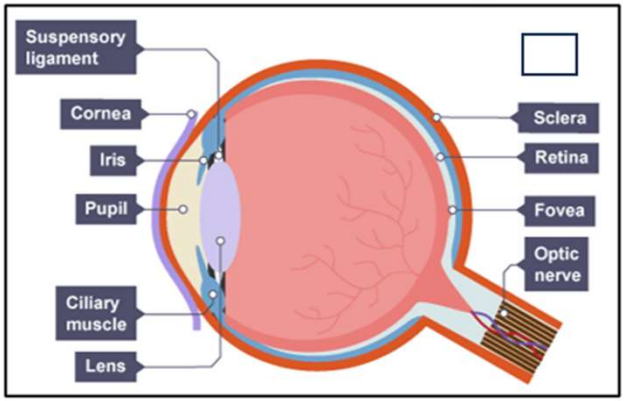
Spectacles for short sightedness have a concave lens.



Hyperopia (long sightedness) is caused by having an eyeball which is too short.

Spectacles for long sightedness have a convex lens.

Accommodation for Near Object	Accommodation for Far Object
Ciliary muscles contract	Ciliary muscles relax
Suspensory ligaments loosen	Suspensory ligaments are pulled tight
The lens is thicker and refracts light rays strongly	The lens is pulled thin and only slightly refracts light rays



The eye is a sense organ containing receptors sensitive to light intensity and colour.

Methods of stock control				☑
Method	**Definition**	**Advantages**	**Disadvantages**	
Just in time (JIT)	A stock control method where the business does not store any raw materials. Instead, it has regular deliveries that bring only what is needed before existing raw materials run out.	○ Less money tied up in stock that could go out of date or out of fashion. This money (capital) can then be reinvested or spent elsewhere. ○ Products are fresher due to frequent deliveries ○ Storage space can be used for other items	○ Unable to use bulk-buy discounts if buying in small quantities. ○ Requires good relationships with suppliers ○ Customers could receive a poor service if the business misjudges the amount of stock it needs and allows products to go out of stock. ○ 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. This means stock is always available for the business if required.	○ Increases the level of customer satisfaction ○ Reduce the chance of running out of stock ○ Benefit from **bulk-buy discounts (economies of scale)**	○ Buffer stock space requires more storage space at more cost to the business ○ Products kept in stock for a long time may lose their freshness ○ High amounts of cash tied up in stock ○ Increases the chances of having to sell off stock at a discount	

Factors affecting choice of suppliers		☑
Factor	**Explanation**	
Price	○ If a business can get supplies cheaply, this keeps its variable costs are low, allowing it to maintain higher profit margins. Often, the more products businesses buy from suppliers, the more power they have to negotiate discounts. ○ Cheaper goods may mean lower quality items.	
Quality	○ Quality needs to be consistent. ○ Quality needs to meet customer expectations for price paid – value for money. ○ Customer will associate poor quality with the business, not the supplier.	
Reliability	○ This may cover areas such as delivery, availability and capacity. 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	Getting the right supplies from the right supplier, at the right price and at the right time.	
Logistics	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	☑
○ Working with suppliers to ensure that key processes are running efficiently and cost effectively	
○ Getting goods and services for the best price and value	
○ Cut waste and unnecessary costs to create a streamlined process and fast production	
○ More satisfied end consumers, resulting in less complaints and lower returns rates	

Quality Control		✓
Focuses on identifying faulty goods	Quality is the responsibility of one individual or a specific team of individuals	
Identifies and fixes problems and faults	The product is at the heart of quality control	

Quality Assurance		✓
Focuses on improving the production process	Establishes a good system for quality management	
Quality is the responsibility of everyone involved in the manufacturing process	The production process is at the heart of quality assurance	

Total Quality Management (TQM) ✓

TQM aims to make managing quality the responsibility of all employees in a business to create a 'culture of quality' and gain a **competitive advantage**. It ensures that there are standardised processes for each part of a business, and that all employees are fully trained in how to complete each part of their role effectively and consistently.

Advantages	Disadvantages	
○ cost reduction ○ increased efficiency ○ increased customer satisfaction ○ reduced waste and errors	○ the cost of training ○ can be difficult and time consuming to introduce ○ all employees must believe in TQM for it to be successful	

Quality issues associated with growth ✓

- It may become expensive to carry out all necessary quality inspections
- They may not be able to cope with increase in volume of orders, so cut corners to make goods quicker
- New staff may be needed and it takes time to train them to required standard
- If the business chooses to grow through franchising, it can be difficult to maintain quality across the franchises
- Using outsourcing for production can be expensive to ensure high quality. However using a cheaper outsourced company may cause a fall in quality.

Costs of maintaining quality ✓

Cost	Impact	
Inspection costs	Products need to be inspected to check the quality is good enough. The inspection process costs both time and money.	
Staff training	To produce quality goods, staff need to do their job properly. It is important for the business to spend time and money on training their staff well.	
Product recalls	Products need to be safe for the customer to use. Any found to be unsafe or faulty may need to be recalled and either replaced or refunded. This is costly and negatively impacts the company's reputation / image.	
Provision of services	Providing warranties and methods of after sales service, such as telephone helplines, are expensive for a business to operate.	

Benefits of maintaining quality ✓

Benefit	Impact	
Additional sales	When customers are satisfied with the quality they are more likely to make repeat purchases (buy again from the business)	
Image / reputation	A reputation for good, consistent quality enables a business to increase their market share. New customers are more likely to choose them and existing customers will make repeat purchases.	
Higher price	Customers are prepared to pay a higher price for better quality .	

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 = $\frac{\text{mass (g)}}{\text{Mr}}$	
Moles = concentration (mol/dm^3) x volume (dm^3)	
Concentration (g/dm^3) = concentration (mol/dm^3) x Mr	
% yield = $\frac{\text{actual mass}}{\text{expected mass}} \times 100$	
% atom economy = $\frac{\text{Mr of desired product}}{\text{sum of Mr of all reactants}} \times 100$	
Gas volume (dm^3) = 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.

1.2.1/1.2.2 Primary & Secondary Storage

Keyword	Definition	✓
Primary storage	Memory that the CPU can access quickly.	
Secondary storage	Non-volatile storage where programs and data are kept permanently.	
Volatile	Power is required for the component to retain data.	
Non-volatile	The component retains data even when the power is turned off.	
Random Access Memory (RAM)	Volatile primary storage that holds the programs and data currently running on the computer.	
Read Only Memory (ROM)	Non-volatile, read only primary storage that hold the firmware such as BIOS.	
BIOS	Used to boot up the computer system after it is turned on. Initialises and tests the hardware for error before loading the operating system.	
Magnetic storage	Uses different patterns of magnetisation to store data, e.g., hard disk Drive (HDD).	
Optical storage	User lasers to read/write data from optical disks, e.g., CDs & DVDs.	
Solid State Storage	Contains no moving parts like RAM but is non-volatile. Includes solid-state drives (SSDs) and USB memory sticks.	

1.2.4 Data Storage

Keyword	Definition	✓
Denary	Base 10 – 0, 1, 2, 3, 4, 5, 6, 7, 8, 9	
Binary	Base 2 – 0, 1	
Hexadecimal	Base 16 - 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F	
Character set	Every character the computer can understand. Each character is represented by a **unique** number.	
ASCII	Originally used 7 bits to represent each character so could represent 128 different characters (0-127).	
Unicode	Uses multiple bytes for each character and can represent millions of characters from every language.	
Bitmap	A type of image made up of lots of tiny dots, called pixels.	
Resolution	The **concentration** of pixels in an image.	
Colour depth	The number of bits used to represent each pixel. Represents the numbers of unique colours an image can display.	
Metadata	Data that describes and gives information about other data.	
Sample rate	The number of samples taken per second.	
Bit depth	The number of bits used to store each sampled value.	

English Language Paper 2-

Exam Structure ✓

1 hour 45 Minutes. 5 Questions. 2 sections: Reading and Writing.

	Marks	Time	Description
Q1	4	4 min	Select the 4 correct statements.
Q2	8	8 min	Summarise the differences between the 2 sources, making inferences from both.
Q3	12	12 min	Analyse one author's use of language to create effects.
Q4	16	16 min	Compare how the author's present their viewpoints/perspectives and the methods they have used.
	You also have 20 minutes reading time to split between Questions 1-4.		
Q5	40 (24 + 16 SPAG)	45 min	Write a non-fiction persuasive text: an article, letter or speech.

Terminology ✓

Technique	Definition
Anecdote	A short illustrating story based on real events, often humorous.
Hypophora	A rhetorical question, which the author then answers.
Hyperbole	Exaggeration for dramatic effect.
Anaphora	Repetition of the opening to a sentence/clause
Euphonic	Lyrical, beautiful or pleasing sounds
Dissonant	Harsh or jarring sounds
Sibilance	Repetition of the S sound

Terminology ✓

Technique	Definition
Semantic field	A series of words that all relate to the same topic or theme i.e. branch, root, stem etc.
Colloquialism	Slang or informal language.
Euphemism	Mild or indirect language used in place of terms considered too harsh or blunt i.e. *passed away* instead of *dead.*
Modal verb	Verbs used to express possibility or necessity i.e. *will, should, might, must.*
Personal pronouns	Words used as substitute for the name of a person/people i.e. *he, they*. These can also be plural: *they, us* and possessive: *my, our.*

Useful Vocab

Bereft (adj) Deprived of or lacking something.	**Spurred (Vb)** Urged on towards or in pursuit of .	**Privatisation (n)** The process of being transferred to private ownership.	**Status quo (n)** The existing state of affairs.	**Pithy (adj)** Short, to the point and meaningful.	**Feral (adj)** In a wild state
Mantle (n) An important role or responsibility.	**Vigour (n)** Physical health and strength.	**Decrepit (adj)** Worn out by age or neglect.	**Mediocrity (n)** The state of being unexceptional.	**Inference (n)** A conclusion reached by reasoning.	**Harken-back (phrasal verb)** look back to a previous time.

Bournemouth School – Knowledge Organiser – Year 10

ENGLISH

Year 10 The Strange Case of Dr Jekyll and Mr Hyde Knowledge Organiser

Ch	Title and Key events	✓
1	**The Story of the Door** Utterson and Enfield encounter a strange and sinister looking door. This prompts Enfield to tells a story about how he met Hyde, who trampled over a child and then, blackmailed by the onlookers, entered this door, returning with a cheque made out by a respectable gentleman.	
2	**Search for Mr Hyde** Utterson guesses the gentleman from Enfield's story from the troubling terms of Henry Jekyll's will, which leaves everything to Hyde. Utterson is sure Hyde must be blackmailing Jekyll. He decides to arrange an encounter with him and meets him by the same door, which we later learn is the side entrance to Jekyll's own property. Like Enfield, Utterson finds Hyde instantly repulsive. He attempts to speak with Jekyll but is told that he is not at home. Jekyll's servant Poole reveals that all Jekyll staff have orders to obey Hyde.	
3	**Dr Jekyll Was Quite At Ease** Utterson meets with Jekyll and expresses his concerns over Hyde and the will. Jekyll brushes his worries aside saying that he can be rid of Hyde whenever he chooses.	
4	**The Carew Murder Case** Nearly a year later, Hyde is witnessed viciously beating a distinguished gentleman: Sir Danvers Carew with a cane, murdering him, apparently without provocation. Utterson identifies the body and recognises Jekyll's cane. He goes with the police to Hyde's dingy lodgings in disreputable Soho. There are signs that Hyde has fled.	
5	**Incident of the Letter** Utterson goes to Jekyll's house and finds him looking "deadly sick". Jekyll gives Utterson a letter, supposedly from Hyde, stating his intention to disappear. However, inspection by Utterson's clerk: Mr Guest, suggests the letter has actually been written by Jekyll.	
6	**Remarkable incident of Dr Lanyon** For a while Jekyll seems healthier and happier. Utterson visits Dr Lanyon who is on his death bed. Something has driven him to death but he will not say what. He gives Utterson a letter, to be opened if Jekyll dies or disappears. Utterson attempts to visit Jekyll once more but is told by Poole that he cannot see anyone.	
7	**Incident at the Window** Utterson and Enfield see Jekyll at his window. He greets them, but then a strange change sweeps over his features and he flees back inside.	
8	**The Last Night** Poole arrives to seek Utterson's aid. He believes that Hyde is shut up in Jekyll's home, pretending to be him and desperately requesting a certain chemical. They break the door down and find Hyde's body. Hyde has committed suicide. There is no sign of Jekyll, but left behind is a letter from Jekyll to Utterson and a note urging him to read Lanyon's account.	
9	**Dr Lanyon' Narrative** Dr Lanyon's note details how he received a letter from Jekyll, begging him to collect certain chemicals and a notebook from Jekyll's home. Hyde then arrived and the horrified Lanyon witnessed him turning back into Jekyll. The shock was so great that it sent him to his death bed.	
10	**Henry Jekyll's Full Statement of the Case** Jekyll's account details how he created the potion which turned him into Hyde. He was seeking to separate the animalistic/evil desires in him to better meet societies expectations. He used the discovery to indulge secretly in vice. However, he lost the ability to control the transformation and Hyde took over completely.	

Key context		
Charles Darwin	Darwin gave the world his Theory of Evolution which suggested that perhaps we did not come from God, but evolved from apes. People were shocked at the thought that we might have something in common with these primate beasts.	
The Industrial Revolution	Rapid technological changes brought many benefits, but also replaced traditional industry, forcing many to seek low-paid factory works in the industrial cities. This led to overcrowding, poverty and crime, prompting fears that civilization had passed its peak and was starting to break down.	
Edinburgh	Edinburgh's divide between the modern and wealthy New Town and the squalid Old Town helped inspire the themes of duality and secret lives in Stevenson's work.	
London	London is the setting of the novella and, as the heart of the British Empire, a symbol of the 'civilized' world. Hyde's presence in the heart of London and the gothic descriptions of the city suggest Victorian fears that civilization had become corrupted. They also highlight Stevenson's belief that man's dual nature existed everywhere, even in the most outwardly 'civilized' people.	
Dr John Hunter	A respected surgeon who helped transform our understanding of anatomy. He did so by dissecting stolen cadavers purchased from 'body snatchers'. A key example of duality and secrecy, Stevenson bases Jekyll's London home on Hunter's residence.	

Themes		
Duality	Stevenson explores the civilized and animalistic side to man. He believed all men possessed this dual nature and saw repressing it as impossible.	
Secrecy and reputation	Stevenson explores how Victorian society pretend to uphold strict moral values, but was really focused on maintaining a positive reputation, while indulging vices in secret. Stevenson saw this as hypocritical and dangerous	
Science	Stevenson presents science as a valued and respectable profession, but also explores the idea that , if pursued recklessly or with the wrong intentions, scientific discoveries can be dangerous.	

Bournemouth School – Knowledge Organiser – Year 10

ENGLISH

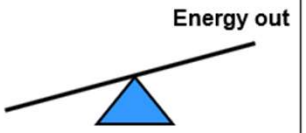
Nutrients

- 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).



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.

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 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.

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.

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.

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.

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.

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

The imperative – vous form		
Allez au collège à pied !	*Go to school on foot!*	
Allez plus souvent au centre sportif!	*Go to the sports centre more often!*	
Faites de la natation!	*Do swimming!*	
Mangez moins de frites	*Eat less chips!*	
Dormez au moins huit heures!	*Sleep at least 8 hours a night!*	
Essayez de faire plus d'exercice!	*Try and do more exercise!*	

The imperative – tu form		
Sois calme/patient!	*Be calm/patient*	
Fais de la cuisine	*Do the cooking*	
Va au lit	*Go to bed*	
Ne crie pas	*Don't shout*	
Ne pleure pas	*Don't cry*	
T'inquiète pas	*Don't worry*	
N'oublie pas tes devoirs	*Don't forget your homework*	
Ne sois pas triste	*Don't be sad*	
Tu dois parler avec quelq'un	*You need to speak with someone*	
Tu dois expliquer le problème à..	*You need to explain the problem to..*	
Cherche en ligne	*Look on line*	
évite de passer trop de temps devant des écrans	*Avoid spending too much time in front of a screen*	
Conseiller/le conseil	*To advise/ advice*	

Le corps humain	The human body	
Le bras/le coeur/le dos	*The arm/the heart/the back*	
Le nez/le pied/le ventre	*The nose/the foot/the stomach*	
La bouche/la gorge/la jambe	*The mouth/the throat/the leg*	
La main/l'oreille/la tête/les yeux	*The hand/the ear/the head/the eyes*	
Avoir du mal	*To have pain*	
J'ai mal au/à la/ aux/ à l'	*My.....hurts*	
J'ai mal au dos	*I have back ache*	
J'ai mal au ventre	*I have stomach ache*	
J'ai mal à la gorge	*I have a sore throat*	
J'ai mal aux dents	*I have tooth ache*	
J'ai de la fièvre	*I have a temperature*	
J'ai eu un accident	*I have had an accident*	
Etre malade	*To be ill*	
Je me sens malade	*I feel ill*	
Je me suis cassé le/la...	*I have broken my....*	

Role Play at the doctors – chez le médecin		
Allo, je peux vous aider?	*Hello, can I help you?*	
Je voudrais prendre rendez-vous svp	*I would like to make an appointment*	
Bien sûr, quel est le problème?	*Of course, what's the problem?*	
J'ai mal au bras et mal à l'oreille	*I have a sore arm and sore ear*	
Vous voulez un rendez-vous pour quand?	*When would you like an appointment?*	
Demain après-midi/aujourd'hui	*Tomorrow afternoon/today*	
Le rendez-vous est à quelle heure?	*What time is the appointment?*	
Quelle est l'addresse, si'il vous plait	*What is the address please?*	
C'est dans la rue...,au numéro	*It's ....street, number...*	
Ça s'est passé....	*It happened...*	
Etre blessé	*To be injured*	
Des médicaments	*medication*	

Bon appétit	
Les repas	Meals
Le petit-déjeuner	Breakfast
Le déjeuner	Lunch
Le goûter	Snack
Le dîner	dinner

La nourriture	
Le café	Coffee/café
Le chocolat	Chocolate
L'eau (f)	Water
Les frites (f)	Chips
Le fromage	Cheese
Le fruit	Fruit
Le gateau (x)	Cake
Le lait	Milk
Les légumes	Vegetables
L'oeuf	Egg
Le pain	Bread
Le poisson	Fish
Le thé	Tea
La viande	Meat
Une boisson	A drink
Une boisson gazeuse	A fizzy drink

En plus	
Avoir faim	To be hungry
J'ai faim	I'm hungry
Avoir soif	To be thirsty
J'ai soif	I'm thirsty
Un plat	A dish
Un verre	A glass
sucré	Sweet
salé	savoury

Boire	to drink
Je bois	I drink
Tu bois	You drink
Il/Elle/on boit	He/she/we drink
Nous buvons	We drink
Vous buvez	You drink
Ils/Elles boivent	They drink

Manger	to eat
Je mange	I eat
Tu mange	You eat
Il/Elle/on mange	He/She eats
Nous mang**e**ons	We eat
Vous mangez	You eat
Ils/Elles mangent	They eat

Use the partitive to say what you eat/drink for different meals.
Le – du eg je mange du fromage
La – de la eg je mange de la pizza
L' – de l' eg je bois de l'eau
Les – des – je mange des légumes

Sain/malsain	
Sain	Healthy
Malsain	Unhealthy
Bon pour la santé	Good for your health
Mauvais pour la santé	Bad for your health
Les végétariens	Vegetarians
Les végans	Vegans
Ce plat contient	This dish contains
Délicieux/euse	Delicious
Le goût	The taste
Un régime alimentaire	A diet

Au restaurant	
Je voudrais..	I would like
Puis-je avoir..	Can I have?
La carte/le menu	The menu
Pour moi	For me
Je prends	I'll have
Comme entrée	As a starter
Comme plat principal	For main course
Comme dessert	For dessert
Comme boisson	To drink
L'addition	The bill
C'est combien?	How much is it?
Une table pour une/ deux personnes	A table for one/two people
Est-ce qu'il y a ..?	Is there?
Le café ferme à quelle heure?	What time does the café close?

prendre	to take
Je prends	I take
Tu prends	You take
Il/Elle/on prend	He/she/we take
Nous prenons	We take
Vous prenez	You take
Ils/Elles prennent	They take

Picture description	
je peux voir	I can see
on peut voir	we/you can see
La photo a été prise	The photo was taken
à gauche/ à droite	on the left/right
À l'arrière plan	in the background
Au premier plan	in the foreground
Il est en train de ...	he is in the middle of

UW: Mumbai Case Study

3.5 The Megacity of Mumbai is growing rapidly.

Mumbai grew substantially between 1888 and 2015. Today, Mumbai is experiencing **hyper-urbanisation** – about 1000 new migrants arrive every day. Mumbai has grown for two reasons:

1. **Natural increase** – The birth rate (20.1 per 1000) in Mumbai is higher than the death rate (6.0 per 1000). There is therefore a large natural increase in Mumbai of 14.1 per 1,000.
2. **Rural-urban migration** – The boom in Mumbai's population growth from the 1970s onwards was fuelled by rural-urban migration from the region around Mumbai. 70% of migrants to Mumbai come from Maharashtra state. The average age of migrants is 20-21 years and 64% are male.
3. **Investment** has grown, increasing the amount of jobs rapidly. Investment has been greatest in…
   1. Services (e.g. banking, finance, IT and call centres)
   2. Manufacturing (textiles, food processing and engineering).
   3. Construction (housing, factories and offices).
   4. Entertainment and leisure (Bollywood, hotels and restaurants).

- Population growth has created new **suburbs**, such as **Navi Mumbai**, caused by the migration of the middle classes from the city.
- **Informal settlements** continue to sprawl as new migrants arrive. Here population density is very high but they are close to where people can work and accommodation is very cheap. Often, informal settlements can be right next to expensive accommodation.
- Rapid growth is putting pressure on land therefore **prices are rising.** Some industries are moving out as a result.

3.6 Rapid population growth creates opportunities and challenges for people living in Mumbai.

- Urban growth has improved healthcare access, with major hospitals expanding.
- Free, compulsory education has raised literacy rates to 89.7%, even in informal settlements.
- World-class universities provide advanced education opportunities.
- Informal settlements are gaining access to water, but sanitation remains a challenge.
- Projects are improving sanitation, with more community toilet blocks built.
- Initiatives are expanding safe electricity connections to informal settlements.
- Mumbai's financial status drives economic growth, creating jobs in various sectors.

Challenges facing Mumbai include:

- not enough income from **tax** to improve infrastructure as a result of a large informal economy within informal settlements.
- a weak **local government**
- **housing shortages** and informal settlement development as a result of rapid population growth
  - Dharavi is Mumbai's and India's biggest informal settlement, with a population of approximately 1.2 million people crowded into one square mile.
- **water pollution** from untreated industrial waste and sewage
- **air pollution** and traffic **congestion**
- 90% travel by **rail** rather than by car, which has put a huge strain on the railway system as every day around 8 million people travel on suburban lines.

Although Mumbai is a globally important megacity, it is underachieving in quality of life.
There are three major problems:

- Government in Mumbai is inefficient and very bureaucratic.
- Most of Mumbai's property is rent-controlled.
- Corruption.

3.7 Quality of life in Mumbai can be improved by different strategies for achieving sustainability.

In 1987, the UN defined sustainability as *'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'*

Top-down development – **'Vision Mumbai'** is a plan to improve the city and quality of life by providing **cheap housing, restoring 'green' spaces, building toilets, and improving the rail system.**

Advantages:

- **new flats** have replaced 45,000 informal settlements with piped water and sewage
- 300 extra public **toilets**
- In 2020, 350 new trains were added to Mumbai's rail network. Platforms were raised to prevent people falling into gaps between the trains and platforms.

Disadvantages:

- apartment blocks have **split up communities**
- rents costs are **unaffordable**
- small workshops (recycling industry) have had to **move**
- water quality is worsening because of **sewage discharge**

Bottom-up development – LSS health charity was set up to control **leprosy** in Dharavi (Mumbai's largest informal settlement). It delivers education about health and carries out health-related and community work.

Advantages:

- **28 000** people have been treated in the last 30 years
- runs **play groups** for young children to help **working parents**
- **educates communities** about the importance of boiling water and waste disposal.
- Screened 2300 patients at its mobile health clinic for symptoms of Covid-19.

Disadvantage:

- can't reach everyone and relies on **charity funding**.

trinken – to drink		
ich trinke	I drink	
du trinkst	you drink	
er/sie trinkt	he/she drinks	
wir trinken	we drink	
ihr trinkt	you drink	
Sie/sie trinken	you/they drink	

I drink and I'm drinking are ich trinke (no AM-ING, IS-ING or ARE-ING)

essen - to eat		
ich esse	I eat	
du isst	you eat	
er/sie isst	he/she eats	
wir essen	we eat	
ihr esst	you eat	
Sie/sie essen	you/they eat	

Strong verbs in German change the vowel in the "du & er/sie/es/man" forms only

Other strong verbs are		
fahren (fährst/fährt)	to travel	
schlafen (schläfst/schläft)	to sleep	
treffen (triffst/trifft)	to meet	
helfen (hilfst/hilft)	to help	
brechen (brichst/bricht)	to break	
sehen (siehst/sieht)	to watch	
lesen (liest/liest)	to read	

Verbs with a stem end in –d or –t add an extra "e" in the "du & er/sie/es/man" forms

finden (findest/findet)	to think/find	

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 gespielt/gemacht/ gehört/gekauft/ bestellt/gegessen/ getrunken/geschlafen	I/he, she/we played/did/ listened/bought/ ordered/ate/ drank/slept
Ich bin/er, sie ist/wir sind gefahren/gegangen/ geflogen/gekommen geschwommen/geblieben	I/he, she/we 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

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)	
sie sind im ...	they are in ...	

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

sich fühlen - to feel			
ich fühle mich	I	feel + adjective	
du fühlst dich	you		
er/sie fühlt sich	he/ she		
wir fühlen uns	we		
ihr fühlt euch	you		
Sie/sie fühlen sich	you/they		

die Körperteile – body parts		
der Arm	arm	
das Auge	eye	
der Bauch	stomach/tummy	
das Bein	leg	
der Finger	finger	
der Fuß	foot	
das Gesicht	face	
der Hals	neck / throat	
die Hand	hand	
die Haut	skin	
das Herz	heart	
das Knie	knee	
der Körper	body	
der Kopf	head	
der Mund	mouth	
die Nase	nose	
das Ohr / die Ohren	ear(s)	
der Rücken	back	
die Schulter	shoulder	
der Zahn / die Zähne	tooth / teeth	

Half Term 2

Bleib gesund

Year 10 German

Das Essen – the food		
das Brot	bread	
das Ei	egg	
das Eis	ice / ice-cream	
das Essen	food	
der Fisch	fish	
das Fleisch	meat	
das Frühstück	breakfast	
das Gemüse	vegetables	
der Kaffee	coffee	
der Käse	cheese	
der Kuchen	cake	
das Obst	fruit	
die Schokolade	chocolate	
das Wasser	water	
die Wurst / die Würste (pl)	sausage / sausages	
ich habe (keinen) Hunger / Durst	I am (not) hungry / thirsty	

Das Essen – the food		
das Butterbrot	sandwich	
die Mahlzeit	meal	
die Milch	milk	
der Nachtisch	dessert	
Es schmeckt ...	it tastes ...	
süß / sauer / lecker	sweet / sour / yummy	
salzig / scharf	salty / spicy	
der Veganer(in)	vegan	
der Vegetarier(in)	vegetarian	

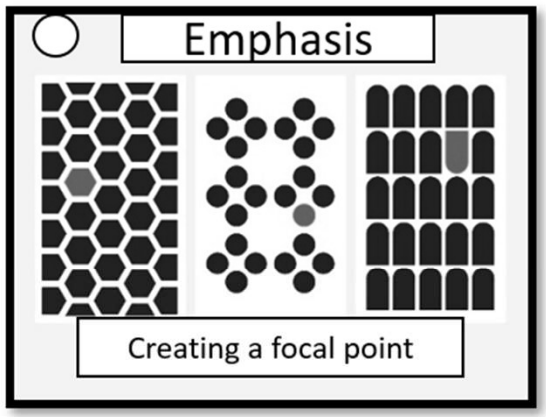
Im Restaurant – In the restaurant		
der Löffel	spoon	
der Teller	plate	
die Flasche	bottle	
die Gabel	fork	
das Glas	glass	
das Messer	knife	
Mein Glas ist schmutzig.	My glass is dirty.	
Ich habe keinen Löffel.	I don't have spoon..	
Können Sie mir bitte ein Glas bringen?	Can you please bring me a glass?	
Kann ich bitte ein sauberes Messer haben?	Can I have a clean knife, please?	
Das Messer ist schmutzig / nicht scharf.	The knife is dirty / not sharp.	
Das Essen ist zu heiß / zu kalt.	The food is too hot / too cold.	
Wo ist die Toilette?	Where is the toilet?	
Kann ich die Rechnung haben?	Can I have the bill?	
Kann ich bitte bezahlen?	Can I pay, please?	
Ich möchte mit Karte zahlen.	I would like to pay by card.	

Wie geht's? – How are you?		
Wie geht es dir?	How are you?	
Es geht mir gut/schlecht.	I am / I feel good/bad.	
Was ist los?	What's the matter?	
Ich bin krank / gesund	I'm ill / healthy.	
allergisch gegen	allergic to	
Was hast du?	What do you have?	
Ich habe Fieber.	I have a fever.	

Beim Doktor – At the doctor's		
Was tut dir / Ihnen weh? / Wo tut es denn weh?	What's the matter? / where does it hurt?	
Meine Hand / Mein Ohr tut weh.	My hand / my ear hurts.	
Meine Beine tun weh.	My legs hurt.	
Ich habe mir (die Nase) gebrochen / verletzt.	I have broken / injured (my nose).	
Ich habe (Zahn)schmerzen.	I have (tooth)ache.	
Ich habe (Bauch)weh.	I have (stomach)ache.	
Können Sie / Kannst du mir bitte helfen?	Can you please help me?	
Seit wann haben Sie / hast du das?	Since when do you have it?	
seit gestern / drei Tagen / einer Woche.	since yesterday / for three days / for a week	
Wie ist das passiert?	How did it happen?	
Beim (Laufen).	While (running).	
Ich hatte einen Unfall.	I had an accident.	
Sie müssen / du must ...	You have to / must ...	
... viel Wasser trinken.	... drink lots of water.	
... im Bett bleiben.	... stay in bed.	
... ins Krankenhaus gehen.	... go to hospital.	
... zum Zahnarzt / zur Apotheke gehen.	... go to the dentist / pharmacy.	
dreimal täglich / alle vier Stunden	three times a day / every four hours	
... dieses Arzneimittel / diese Medizin / eine Tablette nehmen.	take this medicine / a tablet	
Wann kann ich wieder Fußball spielen?	When can I play football again?	
Wann kann ich wieder in die Schule gehen?	When can I go back to school?	
Morgen / In zwei Tagen / Nächste Woche	Tomorrow / In two days / Next week	

Bournemouth School – Knowledge Organiser – Year 10

GERMAN



Keyword	Principles of Design continued ..... read, cover, write, review	Tick
Rhythm	Rhythm in design refers to consistent application of elements in a way that can suggest movement, patterns or action. You can create an alternating rhythm by repeating more than one element in a design or you can create a random rhythm by repeating elements in no particular pattern.	
Variety	When used properly, variety in colours, shapes, typography, images and any other design elements can be used to create visual interest. Straight lines next to curvy lines add variety. Organic shapes among geometric shapes add variety.	
Unity	Unity is achieved when all the design principles are used effectively to create a piece of visual design.	

The coursework component of the AQA GCSE Art and Design Graphic Communication is worth 60% of the final mark. The final 40% is the exam in year 11. There are four assessment objectives (A0's)

Brands use the AIDA model to determine the way they should craft and distribute marketing messages to their target audience

Keyword	Colour theory - read, cover, write, review	Tick
Monochrome	Monochrome is used to describe design or photographs in one colour or different shades of the single colour. An image created in black and white or in varying tones of only one colour.	
Analogous/ Harmonious	Colours are called analogous colours when they are very similar to each other, especially when they are next to each other on a colour wheel. For example, red, red-orange, and orange are analogous colours.	
Complementary	Colours that are opposite each other on the colour wheel are considered to be complementary colours (example: red and green, example Christmas).	
Gradient	A gradient is a gradual change of colours (such as green turning gradually into blue) or a colour fading into transparency. There are two common types of gradients: radial and linear.	
Opacity	Opacity enables us to make an element of a design transparent. The lower the opacity, the more transparent an element is. For example, 100% opacity means an object is solid.	

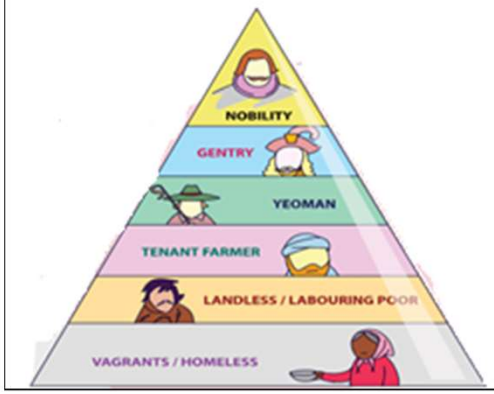
Bournemouth School: History Department: Knowledge Organiser Year 10. Revision for Paper 2: Cold War

Timeline of key events 1941-58:	✓	Timeline of key events 1958-70:	✓	Timeline of key events 1970-91:	✓	Reminder of exam format:	✓
November 1943: Tehran Conference **February 1945:** Yalta Conference **April 1945:** Roosevelt dies, Truman becomes President of the USA **July 1945:** USA tested atomic bomb at a desert site in the USA **July 1945:** Potsdam Conference **July 1945:** UK General Election: Attlee becomes Prime Minister of UK **August 1945:** Atomic bombs dropped on Hiroshima and Nagasaki **February 1946:** Kennan's *Long Telegram* **March 1946:** Churchill's *Iron Curtain* speech **September 1946:** Novikov Telegram **January 1947:** US and British zones in Berlin/West Germany merged into one economic unit: Bizonia **12th March 1947:** Truman Doctrine speech to Congress **June 1947:** Marshall Plan announced **5th October 1947:** Cominform created **June 1948:** Western power announced plans to create a West German state and introduced the western Deutschmark for their zones. **June 1948:** Soviet Union responds with Ostmark currency in Soviet zone **24th June 1948:** Start of Berlin Blockade **28th June 1948:** Start of Berlin Airlift **January 1949:** Comecon created **4th April 1949:** NATO created **16th-17th April 1949:** Peak of Airlift **12th May 1949:** Stalin called off the Berlin Blockade **14th May 1955:** Warsaw Pact created **4th Nov. 1956:** 200,000 Soviet troops and 6,000 tanks invade Hungary		**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		**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/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		**Question 1: 'Explain two consequences of…'** ***(8 marks)*** **S**tate, **E**xplain the first consequence: **S**tate, **E**xplain the second consequence: **Question 2: 'Write a narrative account analysing…** ***(8 marks)*** **E**vent, **L**ink, **E**vent, **L**ink, **E**vent **O**utcome **Question 3: 'Explain the importance of… for…)'** ***(2 x 8 marks)*** **P**oint of **I**mportance: **E**xplain key details and why they were important x 2 for each question.	

Bournemouth School: History Department: Knowledge Organiser: Year 10 Elizabeth (1) 1558 - 1569

Timeline of key events:

1558: Accession to the Throne
1559: Religious Settlement;
1559: Treaty of Cambresis;
1559: Scottish Prot. Lords' rebellion
1561: Mary Queen of Scots returns to Scotland from France
1563: King Philip II bans the importation of English cloth to the Netherlands
1565: Mary QoS marries Henry Stuart, Lord Darnley
1566: Mary's son James is born.
1566: Dutch Revolt begins
1567: Darnley murdered; Mary QoS marries Bothwell; she abdicates and is imprisoned.
1567: Spanish Fury: Alba sends 10,000 Spanish troops to crush Dutch Revolt
1568: Mary QoS escapes captivity and flees to England.
1568: Genoese Loan incident; Eliz took gold from Sp. ships sheltering in English ports
1569: Norfolk Plot and Revolt of the Northern Earls.
1569: Mary QoS placed under house arrest in England.



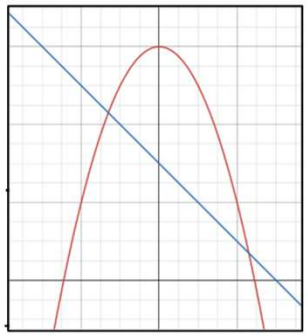
Key terms/definitions (4 SPaG marks on this unit for spelling and punctuating with consistent accuracy, controlled use of grammar, and use of a wide range of specialist terms)

Term	Definition	✓
Accession	The term given for when a monarch (King or Queen) takes the throne	
Gentry	About 2% of the population; they were wealthy landowners; Knights & Squires	
Nobility	Hereditary titles, passing from father to eldest son. Dukes, Barons or Earls.	
Merchants	a person involved in trade, especially one dealing with foreign countries	
Court	The community of people who lived with the Queen including advisers and officials	
Privy Council	The committee of ministers appointed by the Queen to advise her	
Parliament	House of Commons and Lords: summoned by the Queen for raising taxes / laws	
Lords Lieutenant	Responsible for governing each county and organising the local army / militia	
Justices of the Peace	Usually from the gentry; appointed by Monarch to keep law and order. Carried status.	
Yeomen	Farmers who owned their own land; some growing quite wealthy in Elizabeth's reign	
Vagrants	Homeless and jobless people who wandered the country and could turn to crime	
Patronage	Providing someone with an important job or position or finance; to be a 'patron'	
Divine Right	The belief that the Monarch has a God-given right to inherit the Throne	
Crown	The refers to the Monarch and their government	
Royal Prerogative	Some areas where only Elizabeth had the right to decide upon, such as marriage	
Succession	The issue of who was going to succeed the Throne after the death of current Monarch	
Legitimacy	The right to inherit, based on being born to reigning parents who were married	
Crown Debt	Money owed by the crown; £300,000 in 1558 due to costly wars & selling of Crown land	
Auld Alliance	The term given to the traditional friendship between France and Scotland	
Cateau-Cambresis	The Treaty of 1559 that marked the end the war with France and the loss of Calais	
Religious Settlement	Elizabeth's Act to create a new and moderate religious compromise with the intention of creating a form of Protestant worship acceptable to Catholics too.	
Act of Supremacy	The law which made Elizabeth supreme governor of the Church of England	
Act of Uniformity	The law given to setting up an agreed appearance for churches and services	
Royal Injunctions	The term for the set of instructions from Queen to clergy, including how to worship	
Papal Bull	Term given to a public decree or charter from the Pope, Head of the Catholic Church	
Priest holes	Hiding places used by priests in many Catholic houses when facing persecution by law	
Recusants	Term given to those who refused to attend services of the Church of England	
Puritans	Protestants wanting to purify the Church of England from Roman Catholic practices	
Crucifix	A representation of Jesus Christ dying on the cross	
Vestments	Elaborate clothing worn by clergy during church services	
Counter-Reformation	The name given to the active fight-back to strengthen Catholicism in Europe	
Dutch Revolt	A reaction in the Netherlands to increased interference by Spain in Dutch govt	
Sea Beggars	Name given to Dutch rebels who used the English Channel to attack Spanish ships	
Spymaster	Name given to Sir Francis Walsingham, Elizabeth's Secretary of State	
Plots	Secret plans to overthrow Elizabeth: Northern Earls, Ridolfi, Throckmorton, Babington	

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 $3x^2 - 6x - 2 = 0$ $x = \frac{6 \pm \sqrt{(-6)^2 - 4(3)(-2)}}{2(3)} = \frac{6 \pm \sqrt{60}}{6}$ $= \frac{6 \pm 2\sqrt{15}}{6} = \boldsymbol{\frac{3 \pm \sqrt{15}}{3}}$
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.	$3x + 2y = 9$ $x - y = 4$ $y = x^2 + 4x - 1$ $y = 3x + 1$
Elimination	Make the coefficients of one variable the same in both equations, and then either add of subtract the equations to **eliminate** this variable.	$3x + 2y = 9$ $x - y = 4$ ....multiply by 3..... subtracting..... $3x + 2y = 9$ $3x - 3y = 12$ $5y = 21$ $\boldsymbol{y = 4.2, x = 8.2}$
Substitution	**Substituting** an expression for x or y from one equation into the other equation.	$y = x^2 + 4x - 1$ $y = 3x + 1$ $\therefore x^2 + 4x - 1 = 3x + 1$ $x^2 + x - 2 = 0$ .....

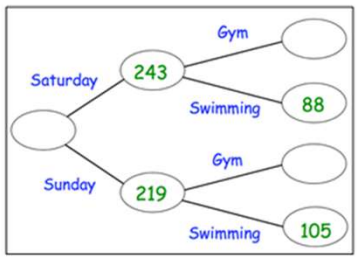
Inequalities are solved in the same way as equations with one careful note:
If you multiply or divide an inequality by a negative number you must change the inequality symbol.

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.

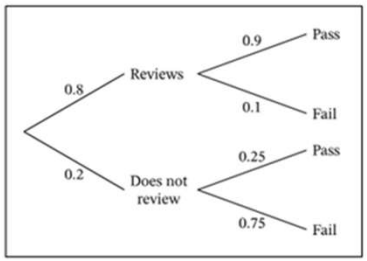


Keyword	Definition	Example(s)
Probability	Defined as $\frac{\text{number of successful outcomes}}{\text{total number of possible outcomes}}$	$P(5 \text{ on a dice}) = \frac{1}{6}$ $P(\text{tail on a coin}) = \frac{1}{2}$
Sample Space Diagram	Shows all the possible outcomes of two events	
Mutually Exclusive 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 $P(A \text{ or } B) = \frac{4}{52} + \frac{4}{52} = \boldsymbol{\frac{8}{52}}$
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

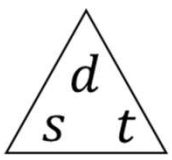
Rolling a dice and flipping a coin:

	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

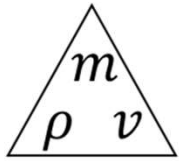
Keyword		Definition	Example(s)
Iteration		Iteration means carrying out a process repeatedly	*Compound interest is repeatedly multiplying by the same value.*
Compound interest		The interest earned each year is added to the money in the account and earns interest the next year.	*4% compound interest for n years* *Amount = initial amount x* 1.04^n
Growth		When an amount increases	*Multiplying by 1.05 increases by 5%*
Decay		When an amount decreases	*Multiplying by 0.85 decreases by 15%*
Compound measures		Combined measures of two different quantities	*Speed is a measure of distance and time*
Velocity		Speed in a given direction. Possible units are metres per second (m/s) or kilometres per hour (km/h)	*15m travelled in 10s* V = 15 ÷ 10 = 1.5m/s
Density		The mass of a substance contained in a certain volume. Usually measured in grams per centimetres cubed (g/cm³)	*40*cm³ *of lead has a mass of 450g* *Density* = 450 ÷ 40 = *11.25* g/cm³
Pressure		The force in newtons applied over an area. Usually measured in newtons per square metre (N/m²) or per square centimetre (N/cm²)	*A force of 48N is applied to an area of 12*cm² *Pressure = 48/12 = 4* N/cm²
Direct proportion		When x and y are in direct proportion then $y = kx$ where k is a constant.	
Inverse proportion		When x and y are in inverse proportion then $y = \frac{k}{x}$ where k is a constant.	



$$Speed = \frac{Distance}{Time}$$

$$Distance = Speed \times Time$$

$$Time = \frac{Distance}{Time}$$



$$Density = \frac{Mass}{Volume}$$

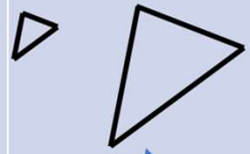
$$Mass = Density \times Volume$$

$$Volume = \frac{Mass}{Density}$$

$$Pressure = \frac{Force}{Area}$$

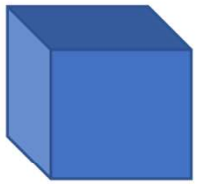
$$Force = Pressure \times Area$$

$$Area = \frac{Force}{Pressure}$$

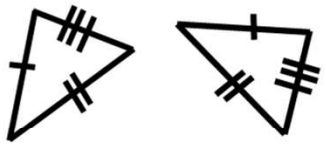
Keyword		Definition	Example(s)
Congruent		Congruent shapes are exactly the same shape and size	*All angles and sides lengths are the same* 
Congruent Triangles		There are four conditions for two triangles to be congruent SSS – all three sides equal SAS – two sides and the included angle are equal ASA – two angles and a corresponding side are equal RHS – right angle, hypotenuse and one other side are equal	
Similar		Two shapes are similar if one is an enlargement of the other	
Scale factor		The scale factor is how much the shape has been enlarged by	*Scale factor of 3*

If two 3D shapes are similar and the scale factor of their lengths is k

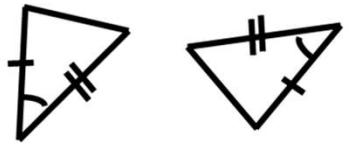
- The lengths are multiplied by k
- The surface area is multiplied by k^2
- The volume is multiplied by k^3



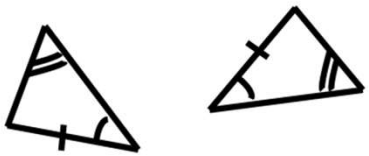
SSS



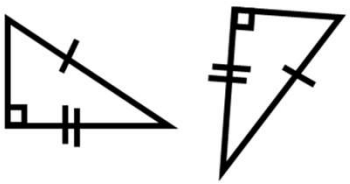
SAS



ASA



RHS



Bournemouth School music department

Year 10

Autumn term 2

Defying gravity

Context

Jukebox musical a musical in which the score is made up of existing songs, usually all by the same artist or with a strong thematic link

Music theatre integrates songs, spoken dialogue, acting and dance within a popular idiom.

Musicals are an extended piece of music theatre.

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

Vaudeville a form of comic musical theatre from the 1880s

Rhythm

Colla voce literally 'with the voice'. This is an instruction to the accompanist or band and musical director to follow the vocalist's tempo and beat (allowing them more freedom).

Cross rhythms rhythms that cross the usual pattern of accented and unaccented beats, creating irregular patterns and syncopated effects.

Metrical shifting the downbeat is shifted to a different part of the bar

Syncopation emphasis on the offbeat

Texture

Duet Music for two players or in this case singers

Homophonic a texture comprising a melody part and an accompaniment

Monophonic A single melodic line with no accompaniment

Stab Chord A singe detached chord which adds dramatic punctuation to the music

Unison more than one part playing the same melody at the some pitch

Vamp a short repeated accompanying phrase

Structure

Chorus a part of a song which is repeated after each verse. Lyrics and music usually the same each time.

Recitative a section or short piece of music which uses speech rhythms and usually has little accompaniment

Verse A verse is a part of a song that tells the story or moves the action forward. Music is the same each time, but the lyrics change

Melody

Compound interval an interval wider than an octave. For example, a compound third could be a tenth or seventeenth.

Conjunct movement by step

Disjunct movement by leap

Enharmonic two identically sounding pitches with different names—for example Eb and D#.

Motif a short melodic phrase

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

Syllabic when one note is sung per syllable

Vocalisation wordless singing using a vowel syllable such as Ah

Word painting depicting a word in music to imitate its meaning

This QR code will take you to a Spotify playlist with audio examples of many of the concepts covered on this sheet and in lessons. You will find it helpful to listen to these as you learn.

Bournemouth School – Knowledge Organiser – Year 10

MUSIC

Bournemouth School music department

Year 10

Autumn term 2

Defying gravity

Instrumentation/ Sonority

Distortion an effect that increases the volume and sustain on an electric guitar as well as making the timbre more 'gritty'. Designed to emulate the effect of overloading the valves on an older amplifier.

Effects electronic devices designed to enhance or alter the basic sound quality (for example, delay, reverb).

Over Drive use of a distorted guitar sound

Pad a synthesiser sound designed to be used in chords as opposed to lead lines

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

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

Vibrato a technique used to cause rapid variations in pitch.

Harmony

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)

Pedal a sustained or repeated note in the bass, with harmonic changes above the pedal note. Usuallyon either the tonic or dominant note of the scale

Keyword	Learn	✓
Mental resilience	The ability to adapt to change or uncertainty or to recover from setbacks	
Negative thinking	Is a mental attitude of anticipating the worst possible outcomes.	
Reframing	Changing the way you look at something	
Depression	Is a low mood that can last a long time or keep returning, affecting your everyday life.	
Anxiety	Is a feeling of unease, like worry or fear, that can be mild or severe. It makes your heart race and causes changes in behaviour.	
Stress	Is how we react when we feel under pressure or threatened.	
Addiction	Is defined as not having control over doing, taking or using something to the point where it could be harmful to you.	
Impulsivity	Is a tendency to act quickly without thinking about the consequences.	
Delayed gratification	Is the resistance to the temptation of an immediate pleasure in the hope of obtaining a valuable and long-lasting reward in the long-term.	

Mental health and well-being support:
ChildLine: www.childline.org.uk Phone: 0800 1111
Young Minds: www.youngminds.org.uk
Samaritans: www.samaritans.org Phone: 116 123
In a crisis, text 'Shout' to 85258

Mental health and well-being

Depression
Signs:
- Feeling something is missing in your life
- Being withdrawn
- Lack of desire or 'drive'

Strategies:
- Quick fixes don't work
- Medication can help – see your GP
- CBT – Cognitive behaviour therapy – see your GP
- Sport and exercise are good
- Talk to someone they will understand.

Anxiety
Signs:
- Being withdrawn
- There can be physical symptoms
- An obsession with perfection
- Constantly seeking reassurance

Strategies:
- Don't look up your symptoms
- CBT – Cognitive behaviour therapy – see your GP
- Yoga and meditation can help
- Talk to someone they will understand.

Stress: Everyone needs stress, some stress is essential to function. Too much stress is not good. There are two types of strategies: a) avoid stressful situations if possible and b) take action to manage stress.

Signs and symptoms of problem gambling:
- Being preoccupied with gambling
- Needing to gamble with increasing amounts of money to get the same thrill
- Trying to cut back or stop gambling, without success, often feeling irritable
- Gambling to escape problems or relieve feelings of helplessness, guilt, anxiety or depression
- Trying to get back lost money by gambling more (chasing losses)
- Lying to family members or others to hide the extent of your gambling
- Risking important relationships, a job, or school because of gambling
- Resorting to theft or fraud to get gambling money
- Asking others to bail you out

For help: https://www.gamcare.org.uk/

Types of Training:

Interval = Training that involves set periods of work followed by set periods of rest. It usually involves periods of intense exercise followed by periods of rest so that the performer can recover. The intensity of interval training can be altered to suit the individual by altering the time working and / or the time resting.
High Intensity Interval Training (HIIT) = Short bursts of extreme effort with even shorter rest periods. A 2:1 work ratio is often used e.g. 30 seconds work, 15 seconds rest. During HIIT training the performer will be working anaerobically so it will develop their ability to withstand the build-up of lactic acid.
Continuous = Exercising for a sustained period of time without rest. It improves cardiovascular fitness. Sometimes referred to as 'steady state' training. The performer normally trains at a low to moderate intensity but for an extended period of time.
Fartlek = Also known as 'speed play', this type of training involves performers varying their speed / intensity. It can involve different speeds (walk, jog, sprint) or running at different terrains (uphill, downhill, on sand). Altering the intensity allows the performer to use both their aerobic and anaerobic energy systems.
Circuit = A series of exercises performed one after the other with a rest in between. Each circuit involves different activities called 'stations'. Stations are often set out to work all of a performers body (arms, core, legs). In circuit training performers often work for a set amount of time and then have a set rest period e.g. work 30 seconds, rest 30 seconds. Progressing these sessions is easy as the performer can increase the work time or decrease the rest time.
Weight = Involves the lifting of weights / resistance to develop muscular strength or endurance. The beauty of weight training is that it can focus on specific muscles / muscles groups so that sessions can be designed to suit an individual's needs. This type of training involves REPS (completing one lift of a weight) and SETS (the completion of a number of reps).
Plyometric = Is a type of training that is used to increase power (strength x speed). It typically takes the form of bounding, hopping or jumping. The aim of plyometrics is to use your body weight and gravity to stress the muscles involved. This type of training involves the muscles working eccentrically (lengthening) when landing (often quadriceps) which helps them store elastic energy.
Static Stretching = Stretching to the limit and holding the stretch isometrically.

Calculating Intensities

Maximum heart rate = 220 – age
Aerobic Training Zone = 60 – 80% of maximum heart rate
Anaerobic training Zone – 80 – 90% of maximum heart rate

Weight training – 1RM
Strength/Power – High weight/low reps (Above 70% of 1RM)
Muscular endurance – Low weight/high reps (Below 70% 1RM)

Principles of Training (S.P.O.R.T):

S = Specificity
Training should be specific to the needs of an individual and demands of the sport that they take part in
PO = Progressive Overload
Working harder than normal whilst gradually and sensibly increasing the intensity of training.
R = **Reversibility**
If an individual stops or decreases their training level, then fitness and performance are likely to drop.
T = **Tedium**
Tedium refers to boredom. Training should be altered and varied to prevent an individual from getting bored and demotivated.

Principles of Overload (F.I.T.T):

Works with the principle of PROGRESSIVE OVERLOAD.
F = Frequency – refers to how often someone trains. As fitness increases a performer can start to train more often.
I = Intensity - refers to how hard a performer trains e.g. how fast they run, how heavy the weight is that they can lift. As fitness increases, the intensity should be suitably increased.
T = Time - refers to how long you train for. As fitness increases, the length of time spent training may well increase.
T = Type -refers to the type of training used e.g., HIIT. The training type must remain suitable to gain the specific fitness benefits that are required.

3.1.3.3 The principles of training and their application to personal exercise/training programmes

3.1.3.4 How to optimise training and prevent injury

KO 1 0f 2

Specific Training Techniques (High Altitude Training)

High altitude training is carried out by elite performers.
Involves carrying out training at a high altitude, 2000m above sea level.
The idea behind this training method is that there is less oxygen in the air at high altitude.
Benefits
Endurance athletes can sustain exercise at a higher intensity for a longer period of time.
Issues
It can be very difficult to complete.
Some athletes suffer from altitude sickness – a feeling of nausea.
The benefits are lost quite quickly once the athlete returns to sea level.

Justifications of Training Methods

Training should involve vital component s for the sport.
Training should try and **mimic** many of the specific movements required in a sport.
Performing activities that can easily be included within training session to complement other (named) training types.
If no / little equipment is required, methods can easily be integrated into session.
Using methods that can be specifically designed / altered for a specific sporting session, e.g. jumping to reach a ball in basketball, sprinting away from a defender in football.
If methods can be completed by large groups it would be better for games sports.

Considerations to prevent injury

The training type and intensity should match the training purpose.
Over training should be avoided e.g. use of appropriate weights.
Appropriate clothing and footwear should be worn
Taping / bracing should be used as necessary to protect and support areas of weakness.
Stretches should not be overstretched or bounce.
Technique used should be correct e.g. weight lifting technique.
Spotters should be used when weight training if heavy weights are being attempted.

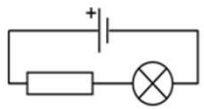
Advantages and Disadvantages of Continuous Training	Advantages and Disadvantages of HIIT	Advantages and Disadvantages of Static Stretching	Advantages and Disadvantages of Circuit Training	Advantages and Disadvantages of Weight Training
Advantages: It can be done with little or no equipment e.g. simply go for a run. It improves aerobic fitness Running can be done virtually anywhere It is simple to do – keep doing the same movement over and over. **Disadvantages:** It can be boring / tedious. It can cause injury due to repetitive contractions. It can be time consuming. It does not always match the demands of the sport e.g. in basketball the players do not run at one speed continuously	**Advantages:** It burns body fat and calories quickly. It can be altered easily to suit the individual. It can be completed relatively quickly. It can improve the anaerobic and aerobic energy systems. **Disadvantages:** Extreme work can lead to injury. High levels of motivation are needed to complete the work. It can lead to dizziness and feelings of nausea.	**Advantages:** It increases flexibility. It can be done by virtually everyone. It can be done anywhere (does not need a lot of space). It is relatively safe. **Disadvantages:** It can be time consuming to stretch the whole body. It can get boring and repetitive. Some muscles are easier to stretch than others. Over-stretching can cause injury **3.1.3.4 How to optimise training and prevent injury** **3.1.3.5 Effective use of warm up and cool down** **KO 2 0f 2**	**Advantages:** Exercises chosen can be simple to complex. The circuit can be manipulated to train different things e.g. repeated contraction of a muscle / muscle group to train muscular endurance It can be varied to suit fitness level / age etc. It is easy to monitor and alter – progressive overload can be applied by altering the work / rest ratio. **Disadvantages:** An appropriate amount of space is required. It may require specialist equipment e.g. a medicine ball, benches, agility ladders. It is difficult to gauge an appropriate work / rest ratio at the start.	**Advantages:** It can be easily adapted for different fitness aims. It is relevant to all sports. It is relatively straightforward to carry out. Strength gains can occur. **Disadvantages:** Heavy weights can increase blood pressure. Injury can occur if weights are too heavy or lifted incorrect technique is used. Calculating one rep max requires high levels of motivation.

Warming Up	Cool Down	The Three Training Seasons
A good warm-up should include: Pulse raiser – gradually raising heart rate in preparation for exercise. Stretching – stretch all relevant muscles involved in the activity. Skill Based Practices – Perform skills that allows the performer to familiarise themselves to the activity they are taking part Mental Preparation – Starting to get focused, using techniques to control arousal The benefits of a good warm-up are as follows: 1. Body temperature will increase ready for exercise. 2. Stretching will increase the range of movement possible. 3. There will be a gradual increase in effort towards 'competition pace'. 4. You will be focused and psychologically prepared. 5.Movement skills that will be used have been practised before starting the game/match/event. 6. There will be less chance of suffering injury. 7. There will be an increase in the amount of oxygen being carried to the working muscles – helping with the production of energy.	An effective cool down should include: • An activity to maintain an elevated breathing and heart rate, e.g. walk, jog. • A gradual reduction in intensity, e.g. jog to light-jog to walk. • Stretching of all main muscles used in the activity. The benefits of a good cool down are as follows: 1) It allows the body to start to recover after exercising. 2) It helps with the removal of lactic acid, carbon dioxide and waste products. 3) It can help to prevent the delayed onset of muscle soreness, sometimes referred to as DOMS.	**Pre-season (Preparation)** The aim is to improve general and aerobic fitness. It should also focus on specific fitness needs of the performer so they are ready for the competition / season. **Competition season (Peak / Playing season)** The aim is to maintain fitness levels. The performer should be at peak fitness and will aim to maintain this. They will focus on specific skills that are needed in their activity. **Post-season (Transition)** The aim is to rest and recover from the season / competition. Performers should continue to do some light aerobic training so that fitness levels do not drop to far.

Topic 2 – Electricity

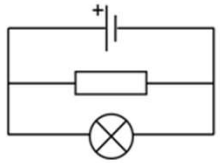
Keyword	Learn	✓
Current, I	The rate of flow of electrical charge measured in amperes, A. 1 ampere = 1 coulomb (of charge) per second.	
Potential Difference, V	The work done (or energy transferred) per unit of charge measured in volts, V. I volt = 1 joule (of energy) per coulomb (of charge).	
Resistance, 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

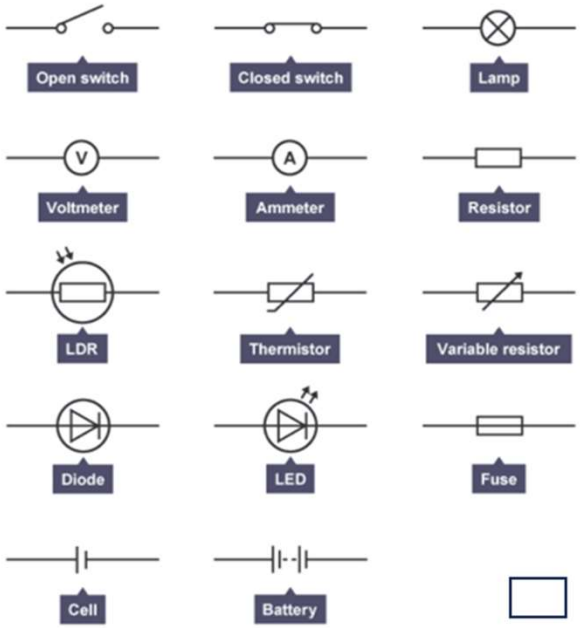


Current is the same at all points. Potential Difference is shared across each component. Total Resistance is the sum of the resistances.

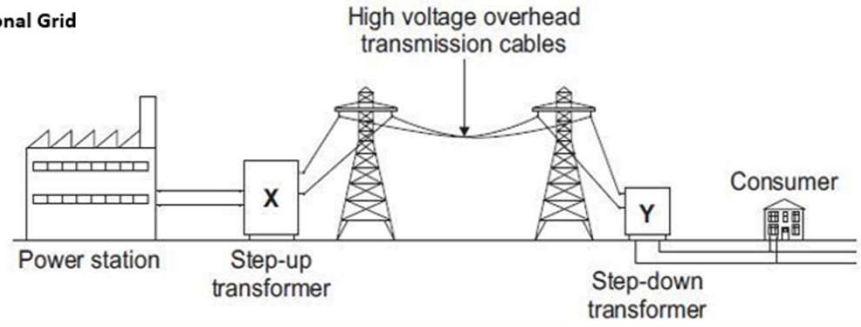
Parallel Circuit

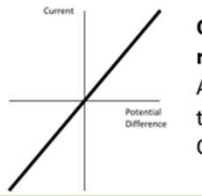


Potential Difference across each branch is the same. Current is divided between each branch. Total Resistance is less than the smallest resistor.

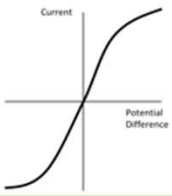


The National Grid

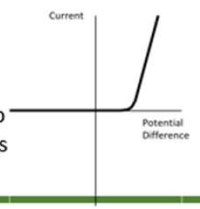




Ohmic resistor
A device that obeys Ohm's Law.



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

Worship

Liturgical worship → church service that follows a set structure and pattern

Non-liturgical worship → church service that does not follow a set text or ritual

Why do Christians worship? To praise God, give thanks, for forgiveness, to strengthen relationship with God

Liturgical worship	Non-liturgical worship
takes place in a church	no set order
set prayers with set response	Services follow themes

Prayer

Set prayer → prayers that have been said more than once and written down, for example the Lord's Prayer

Informal prayer → a prayer that is made up by the individual using his/her own words

Why is prayer important?

- Allows Christians time to reflect, find peace, allows them to communicate with God
- The Lord's prayer is important as it reminds Christians to forgive others in order to be forgiven
- Key quote → **"Our Father, who art in heaven"**

Baptism

Infant baptism → is for babies and young children

Believers' baptism → people who are old enough to make the decision to be baptised

Why are people baptised? To become a member of the Church, to be cleansed of sin, follow in Jesus' footsteps

Believer's baptism	Infant baptism
Attend baptism classes	Parents make promises
Gives a brief testimony	Removes original sin

Key quote → **"Get up, be baptised and wash your sins away" Acts 22:16**

Holy Communion and celebrating it

Holy Communion → sacrament that uses bread and wine to remember sacrificial death of Jesus. Remembers the events of the Last Supper

Different understandings of Holy Communion

Catholic → transubstantiation (bread and wine actually becomes the body and blood of Jesus)

Protestant → see the bread and wine as symbolic to remember Jesus' sacrifice

How it is it celebrated? In Catholic Church the priest gives the bread and wine to people, in Orthodox Church the priest receives bread and wine from church members. **"Do this in remembrance of me"**

Pilgrimage

Pilgrimage → religious journey of moral and spiritual importance

Lourdes – France → in the South West of France. Bernadette had numerous visions of the Virgin Mary who told her to dig for spring water. The water is believed to have healing powers and miracles are said to happen there. Pilgrims bathe in the water and there is a big focus on the sick and disabled.

Iona – island off the coast of Scotland → Ecumenical community → pilgrims spend time praying, reading the Bible, reflecting and meditating. It is said the veil between earth and heaven is thin here.

Celebrating festivals

Two main festivals in Christianity are Easter and Christmas

Christmas → commemorates the incarnation of Jesus

Ways it is celebrated → carol services, nativity scenes, giving to charity, Midnight Mass, Christmas cards and gifts

Easter → celebrates the resurrection of Jesus from the dead

Ways it is celebrated → On Good Friday there are special services and processions led by a person carrying a cross, Saturday night some churches hold a special service to celebrate the resurrection, Easter Sunday churches are filled with flowers and hymns are sung **"He is Risen!"**

Role of the Church in the local community: Food banks

The Church → the holy people of God, also called the Body of Christ, among who Christ is present and active

A church → building in which Christians worship

What does the Church do? Support projects such as food banks, providing social services and campaigning for justice

The Trussell Trust → runs over 400 foodbanks in the UK, provides food for those in need

The Oasis Project → provides an internet café, CV support and a safe meeting place

Role of the Church in the local community: Street Pastors

Agape → selfless, sacrificial, unconditional love

Jesus taught the importance of helping those in need.

Key quote → **'Faith, by itself, if it is not accompanied by action, is dead' James 2:17 NIV**

Street Pastors

- Volunteers who stroll the streets at night helping those that are drunk and supporting the police and local councils with anti-social behaviour.
- They listen to people's problems and give them advice.

Mission and evangelism

Mission → vocation or calling to spread the faith

Evangelism → showing faith in Jesus by example or by telling others

The Great Commission Jesus instructs his disciples to go and spread the gospels and make disciples of others through baptism. **"Go and make disciples of all nations."**

Missionary work

Aims of missionary work is to persuade people to accept Jesus as their Saviour. Alpha is an example of evangelism in the UK. It is an introductory course to Christianity for those that are interested.

Church growth and the importance of the worldwide Church

The growth of the Church

- Growing rapidly in South America, Africa and Asia but not in the US, Europe and the Middle East. Christ for all Nations is an example of an organisation that spreads the message

Ways Christians can spread the faith →praying for others to accept God, via social media, fellowship meals, sharing what God has done for them with others

Working towards reconciliation → Church has a mission to restore people's relationship with God and one another.

The Corrymeela community brings people together

Christian persecution

Persecution → hostility and ill treatment

Examples of persecution → paying extra taxes, job discrimination, being forbidden to build churches, attacks on Christian homes, churches and families, including murder

Christian responses to persecution

- To stand up against persecution
- Persecution can strengthen faith – **'if one suffers, every part suffers with it'**
- They are encouraged to show love and forgiveness towards persecutors

The Church's response to world poverty

Helping those in need

- Jesus taught it was important to help others and often taught his message through parables
- The parable of the Rich man and Lazarus sees a rich man sent to hell for not helping the poor

Christian charities that help those in poverty → Christian Aid, Tearfund, CAFOD

What do they do? → Provide short term and long term aid including, food, medical supplies, shelter and sanitation

Present tense

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

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

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

Near future tense

The near future		
voy a visitar monumentos	I am going to visit monuments	
voy a sacar fotos	I am going to take photos	
voy a descansar en la playa	I am going to relax at the beach	
voy a bailar	I am going to dance	
voy a comer paella	I am going to eat paella	
voy a beber limonada	I am going to drink lemonade	

<u>The near future:</u>

It is the equivalent of 'I am going to...' in English.

Form of 'ir' + a + infinitive
e.g. Voy + a + hacer

Preterite (past) tense

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

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

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

Present continuous

The present continuous is used to say what someone is doing (e.g. in a photo)

It is made up of two different parts

estar + gerund

For –ar verbs, replace –ar with –ando
For –er / -ir verbs, replace with –iendo

e.g. está jugando
están comiendo

Simple future (e.g. I will)

The simple future endings		
Visitaré monumentos	I will visit monuments	
Sacaré fotos	I will take photos	
Descansaré en la playa	I will relax at the beach	
Bailaré	I will dance	
Comeré paella	I will eat paella	
Beberé limonada	I will drink lemonade	

-ar,er & ir verb endings - future			
-é		-emos	
-ás		-éis	
-á		-án	

Imperfect

The imperfect tense is used to talk about habits in the past and to describe things in the past.

-ar verb endings imperfect			
-aba		-ábamos	
-abas		-abais	
-aba		-aban	

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

¿Qué comida te gustaría probar?		
Me gustaría probar..	I would like to try..	
Porque...	Because...	
parece rico/a	It seems tasty	
suena sano/a	It sounds healthy	
tiene muchos beneficios para la salud	It has lots of health benefits	
¡A comer!	Let's eat!	
¡Buen Provecho!	Enjoy your meal!	

¡Qué rico!		
Para...	For...	
el desayuno	breakfast	
la comida	lunch	
la merienda	snack	
la cena	dinner	
una comida típica	a typical meal	
un plato popular	a popular dish	
el/la ... es de ...	... is from ...	
los/las ... es de ...	... are from ...	
México / España	Mexico / Spain	
está hecho/a con ..	It is made with ..	
consiste(n) en ...	It/they consist of ..	

¿De dónde vienen los platos típicos?		
argentino/a	Argentinian	
chileno/a	Chilean	
colombiano/a	Colombian	
español/a	Inglés/inglesa	
mexicano/a	Mexican	
peruano/a	Peruvian	
venezolano/a	Venezualan	

Los verbos reflexivos		
ducharse	to shower	
levantarse	to get up	
acostarse	to go to bed	
vestirme	to get dressed	
me ducho	I shower	
me levanto	I get up	
me acuesto*	I go to bed	
me visto*	I get dressed	

Antes de / Después de		
Antes de ..	Before ..	
Después de ..	After ..	
hacer los deberes	doing homework	
terminar las clases	finishing classes	
tomar el desayuno	having breakfast	
volver a casa	returning home	
comer	eating	

¿Cómo es tu rutina?		
por la mañana	in the morning	
por la tarde	in the afternoon	
por la noche	in the evening	
durante el día	during the day	
el fin de semana	at the weekend	
todos los días	every day	
los domingos	on sundays	
algunos días	some days	
primero	first	
luego	later	
Finalmente	Finally	

¡Los tiempos cambian!		
Cuando era pequeño	When I was little	
Cuando era más joven	When I was younger	
Cuando tenía ... años	When I was .. Years old	
dormía bien/mal	I slept well/bad	
me levantaba temprano	I got up early	
me acostaba tarde	I went to bed late	
era muy active/a	I was very active	
tenía mucha energía	I had lots of energy	
tenía una vida sina	I had a healthy life	
iba al gimnasio	I used to go the gym	

¿Qué te gustaba comer?		
Solía comer	I usually ate	
(no) comía	I ate (didn't eat)	
Bebía demasiado café	I drank too much coffee	
Me encataban los postres	I loved desserts	
Me gustaba comer dulces	I liked eating sweets	

GCSE Design Technology
TIMBER 7.3 *part 2* Selection of timber

Tick	Availability factors	Description/links to selecting timber
	Use of stock materials	Materials are processed and sold in standard sizes. If a designer uses standard stock forms, it saves costs and wastage.
	Specialist materials	Specialist timber is used for specific purposes i.e. marine plywood for outdoor use, HW veneers for laminates on manmade boards.
	Hurricanes, storms and diseases	Trees can be effected by naturally occurring events i.e. hurricanes. Diseases can kill trees i.e. ash dieback has killed off ash tress in the UK.

Tick	Cultural and ethical factors	Description/links to selecting timber
	Avoiding offence	If people find your product offensive, they will not buy your product. It is crucial for a designer to understand these differences and avoid accidental offense with a word, symbol, colour, picture etc. that has significance to other people.
	Suitability for intended market	It is important to understand the intended market for a product so that you can make sure that the product is suitable.
	The consumer society	In Britain, we live in a consumer society. We are relatively wealthy and products are quite cheap, so some people can afford to buy lots of things they do not need.
	Effects of mass production	Carpenters used to make one off products whereas nowadays, more products are mass produced and manufactured using cheaper timber. Lots more automation too.
	Built in product obsolescence	A lot of products only have a short lifespan. Manufacturers deliberately make some products with parts that fail after a time and can't be replaced. They like this as it means consumers need to then buy new products.

GCSE Design Technology **revision**:
CORE 1.13 Materials properties

Property	Definition
Strength	Withstands forces by squashing (compressive strength) or stretching (tensile strength).
Elasticity	Can return to its original shape once the deforming force has been removed.
Plasticity	(plastics only) Ability to permanently deform without breaking when heated.
Malleability	(metals only) Ability to deform in all directions without fracture.
Ductility	To be drawn out, bent or twisted without fracture.
Hardness	Resists deformation, indentation or penetration.
Toughness	Withstands sudden shock or stress.
Brittleness	Inability to withstand sudden shock or stress.
Durability	Withstands deterioration over a long period of time.
Stability	Resists changes in shape over time.
Stiffness	Resists bending.

GCSE Design Technology: TIMBER 7.4 Strengthening timber

Tick	Fabrication Method	Method Description
	Lamination	When thin layers/veneers of material are glued together to form a thicker material. Lamination is usually done to produce curved forms.
	Braces and Tie Bars	Brace = a bar added to a frame to strengthen it and are usually diagonal to form a triangle. Tie bar = a rod that is held in tension.
	Embedding composite materials	When composite materials are added to timber products to strengthen them i.e. steel strips fixed on a timber beam to give it high tensile strength.

Tick	Stresses	Stress description
	Compression	A squashing force – when a tree is bent over and is squashing in on itself.
	Tension	A pulling force – when a tree is bent over and the rear side is being pulled apart.
	Shear	When forces act in opposite directions from the same point – when a tree has a large branch hanging down one side and another on the opposite side to it.

Pre-stressing beams and why the process is carried out

It is the process used on wooden construction beams prior to them being used and is done to enable them to successfully take the compressive load of the roof without buckling under the weight of it.

- The construction beam will be placed under tension for a set amount of time
- Once the tension is released, the beam will bow slightly
- Once the compressive load is added, the beam will level out again and not dip/buckle underneath the weight.

GCSE Design Technology **revision**: CORE 1.11 Textiles and fibres

Woven textile	Properties	Uses
Plain weave (calico)	• Strong • Hardwearing • Prints well	• Shirts • Bags • Beddings
Twill weave (denim)	• Strong • Less stiff • More interesting to look at due to the weave	• Jeans • Jackets • Curtains • Blankets

Non-woven textile	Properties	Uses
Felted wool	• Resistant to chemicals • Doesn't fray • Good sound insulator	• Pool table surface • Hats • Slippers
Bonded fibres	• Doesn't fray • Cheap • Not very strong	• Wet wipes • Face masks • Disposable overalls

Knit type	Properties	Uses
Warp knit	• Fairly stretchy • Retains heat • Doesn't unravel	• Geotextiles • Lace • Fleece
Weft knit	• Stretchy • Comfortable • Ladders easily	• T-shirts • Jumpers • Socks

Timetable

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