

Hartismere School



Knowledge Booklet 2026 - 2027
Year 11



Name: _____

Form: _____

What this booklet is for

Your teachers have selected some of the most important and useful knowledge you need to succeed in your subjects at GCSE. They are in this booklet! Of course you will cover lots of other things in your lessons, but the knowledge in this booklet will help you to learn more effectively as you prepare for your exams.

When you will use this booklet

You will use this booklet in a lesson where you may have a cover teacher, for some homework and to revise for assessments and quizzes.

You can also use this booklet to go above and beyond your school work. Your teachers have made suggestions for places you can look and things to do to really test your brain. These are in the booklet under 'Sharp minds' and will help you develop your subject knowledge and prepare for your next level of study.

How you will use this booklet

Each subject has a section with the important things you need to know. You are going to learn how to quiz yourself so that the things you need to know stay in your memory.

How will you do this?

1. Choose a subject (unless your teacher has chosen it for you)
2. Choose no more than 5 words or terms.
3. **Read** the terms and **say them over and over again in your head** (without saying them aloud) for 2 - 3 minutes.
4. Now turn to your practice pages (from page). If you have used them all up, use your rough book. Now **write** down as many words or terms and definitions as you can remember in box 1.
5. **Uncover** the words and check you have spelled them correctly and your definitions are right. Make any changes in a different colour.
6. Spend 2-3 minutes reading the words again and saying them in your head.
7. Now cover up box 1 and **write out the words again** in box 2.
8. Now look at your work in box 2. Check you have got them right. Check your spelling. **Make any changes in a different colour.**
9. **Repeat this process** until you have got them all right. If you run out of space, use your rough book. You will need to show your tutor the practice you have been doing.



Look out for sharp minds...

We call these things ‘supercurricular’ - they are outside of your usual curriculum, but they are the kind of things that really stretch your brain, and give you that ‘something extra’ that top employers and universities really look for. They are also the kinds of things that help you to start to shape your plans for the future.

The University of Cambridge produces a list of ‘supercurriculars’. These are suggestions of wider reading and thinking that students might do if they wanted to apply to Cambridge, which is one of the top universities in the world.

The list has interesting things for everyone - whether you’re thinking about university or not, so why not take a look?

https://www.undergraduate.study.cam.ac.uk/files/publications/super-curricular_suggestions.pdf

or just Google ‘Cambridge university supercurriculars’.

You can access the links to websites by accessing the booklet in the ‘Sharp Minds’ area of the website.

Subject list

Page numbers	Subject
4-5	Art
6-7	Biology
8-9	Business
10-11	Chemistry
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15-16	Creative iMedia
17-18	Dance
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21-23	Drama
24-29	English language and literature
30	Film
31-33	Food Preparation and Nutrition
34-36	French
37-39	Geography
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49-51	PE
52-53	Photography
54-55	Physics
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59-60	Religious Studies
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71-75	Self-quizzing pages

Art

	Word or term	Definition
1	aperture	The hole behind the lens, through which light passes to strike the image sensor or film.
2	chiaroscuro	An Italian term which refers to the use of the dramatic contrast of light and dark in a painting.
3	conceptual	An art form in which the underlying idea or concept and the process by which it is achieved are more important than any tangible product.
4	contemporary	This refers loosely to art of the present day and of the relatively recent past, of an innovatory or avant-garde nature.
5	en plein air	The French term for paintings completed out of doors.

6	expressive	Effectively conveying thoughts or feelings and where the process and style of creation is emphasised rather than the final product. It might be seen in bold colour, or gestural mark making.
7	foreshortening	The technique of depicting an object or human body in a picture so as to produce an illusion of projection or extension in space.
8	hue	One of the three primary attributes of colour. A hue is a variety of colours such as red, blue, green, or yellow.
9	impressionism	A style of painting associated mainly with French artists of the late nineteenth century, such as Degas, Manet, Monet, and Renoir. It seeks to re-create the artist's or viewer's general impression of a scene.
10	maquette	A small scale model or rough draft of an unfinished sculpture.

11	medium	This can refer to both the type of art (painting, sculpture, printmaking) as well as the materials an artwork is made from.
12	minimalism	A style that uses pared-down design elements (uncomplicated, kept purposefully simple).
13	monochromatic	Having only one colour. Descriptive of work in which one hue, perhaps with variations of value and intensity, predominates.
14	montage	An assembly of images that relate to each other in some way to create a single work or part of a work of art.
15	negative space	The space around an object rather than the object itself.

16	perspective	Use of a mathematical system to represent three dimensional space on the two dimensional surface of a drawing or painting.
17	Post-Impressionism	An art movement at the end of the nineteenth century that followed on from Impressionism and included Cezanne, Gauguin and van Gogh.
18	still life	One of the principal genres of Western art – essentially, the subject matter of a still life painting or sculpture is anything that does not move or is dead.
19	typography	The art of arranging type – which includes letters, numbers, and symbols.
20	vanishing point	The point at which the receding lines in perspective appear to meet.

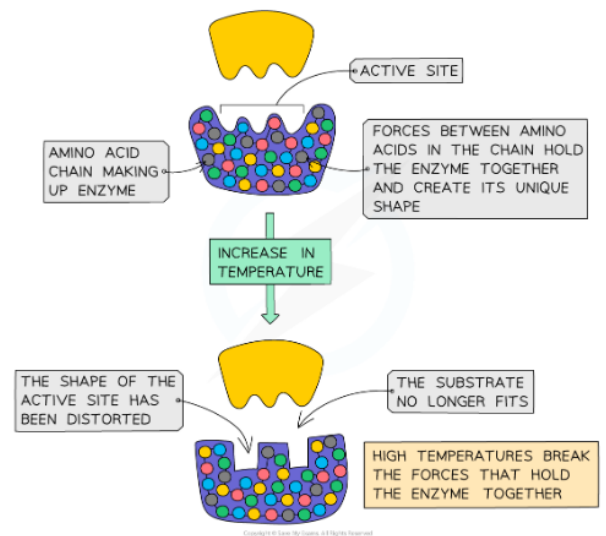
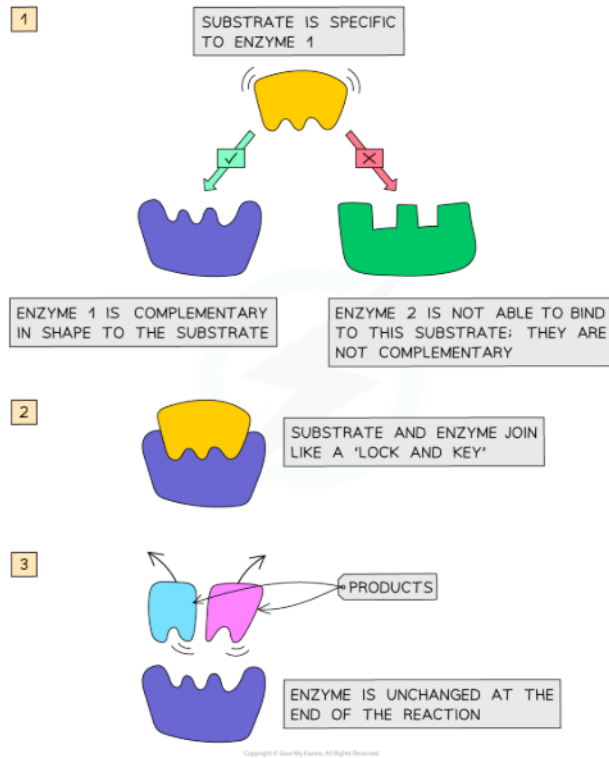


Sharp minds in art: where to look

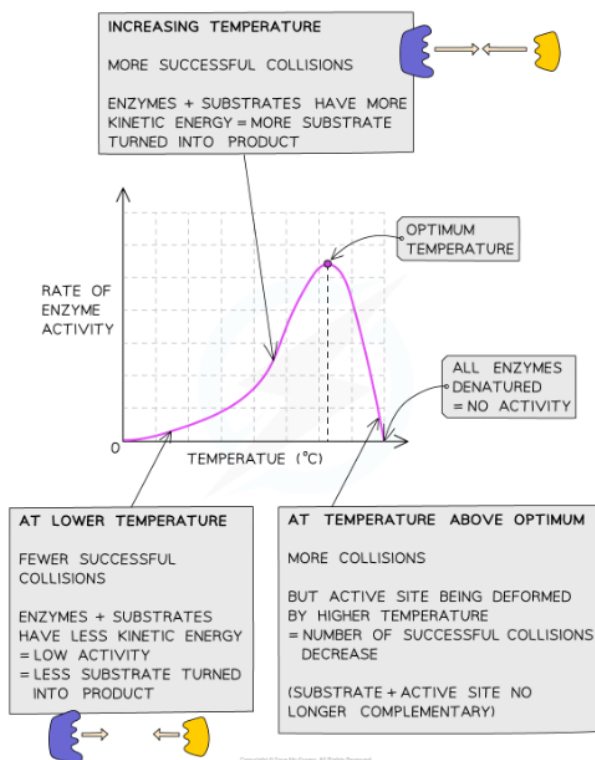
- Focus on demonstrating a clear process of development with varied experimentation in media and techniques, insightful artist research, and meaningful reflection.
- Show a coherent progression of ideas from initial mind maps and observational studies to refined final pieces, ensuring all your pages link together.
- Maintain a consistent visual style throughout your sketchbook while ensuring a clear, concise, and well-organised presentation that makes it easy for the examiner to understand your thought process.
- Visit art galleries and or their websites as often as possible to give you inspiration:
 - <https://www.tate.org.uk/>
 - <https://www.npg.org.uk/>
 - <https://www.saatchigallery.com/>

Biology

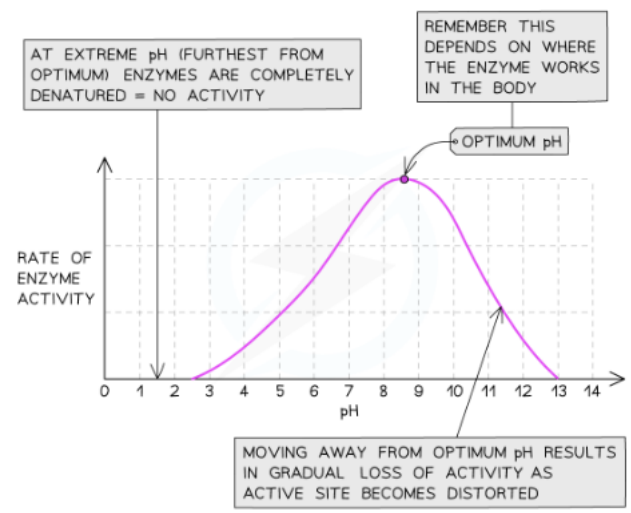
Enzymes have complementary shaped active sites to their substrates. An enzyme is denatured when the shape of the active site is changed (normally by heating) and is then no longer complementary to the substrate.



The effect of temperature on enzyme activity diagram

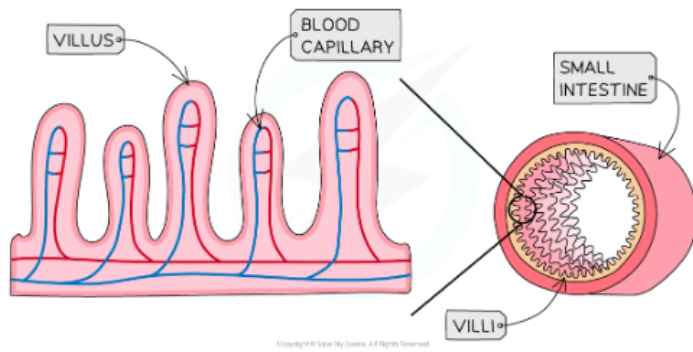


The effect of pH on enzyme activity diagram



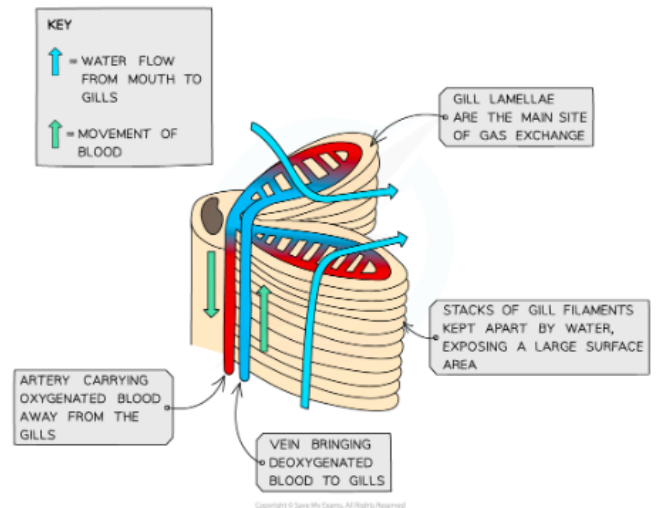
Different organisms have similar adaptations to maximise the exchange of substances.

The small intestine

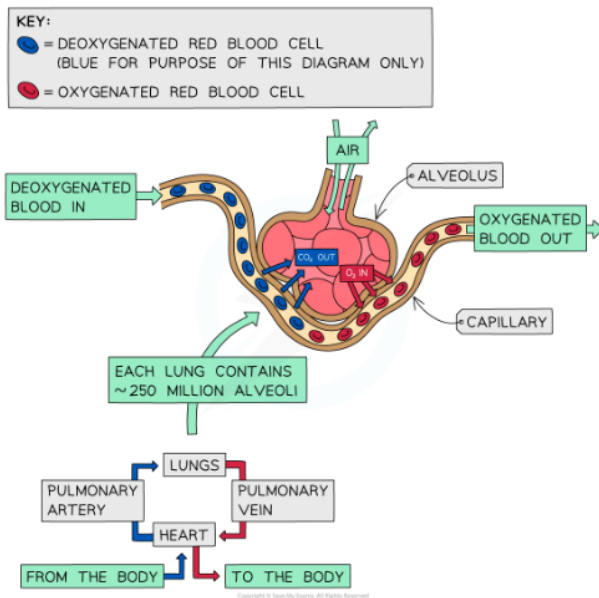


The highly folded surface of the small intestine increases its surface area

The gills (fish)

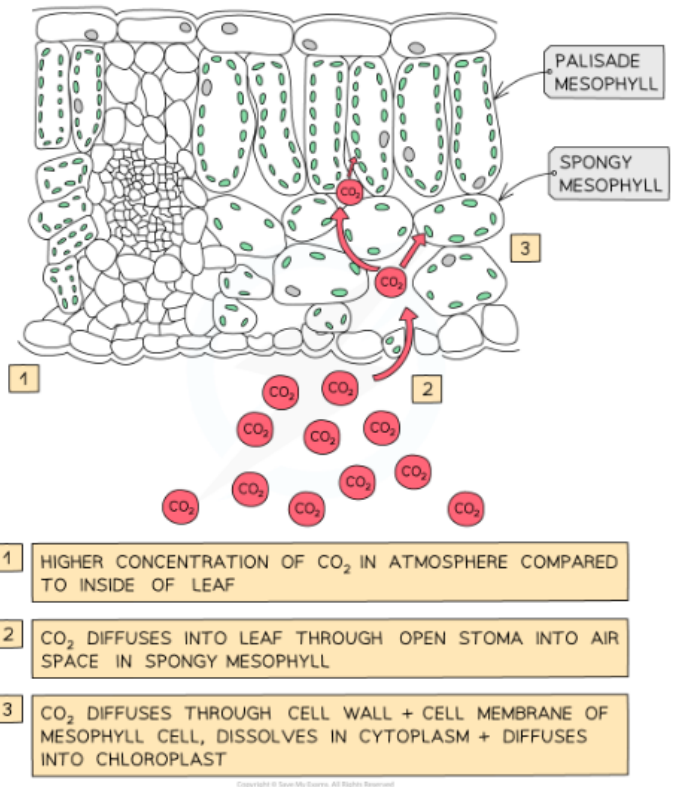


The lungs (mammals)



The alveolus is the gas exchange surface in humans

PATHWAY OF CO₂ MOLECULE WHEN LEAF IS PHOTOSYNTHESIS



- 1 HIGHER CONCENTRATION OF CO₂ IN ATMOSPHERE COMPARED TO INSIDE OF LEAF
- 2 CO₂ DIFFUSES INTO LEAF THROUGH OPEN STOMA INTO AIR SPACE IN SPONGY MESOPHYLL
- 3 CO₂ DIFFUSES THROUGH CELL WALL + CELL MEMBRANE OF MESOPHYLL CELL, DISSOLVES IN CYTOPLASM + DIFFUSES INTO CHLOROPLAST

In summary, multicellular organisms have surfaces and organ systems that **maximise the exchange of materials** by increasing the efficiency of exchange in a number of ways:

- Having a **large surface area** to increase the rate of transport
- A barrier that is as thin as possible to separate two regions, to provide as **short** a diffusion path as possible for substances to move across

In addition, animals have:

- A large network of blood vessels throughout the body:
 - To reduce distance of exchange of materials between cells and the bloodstream
 - To move substances towards or away from exchange surfaces to maintain concentration gradients
- Gas exchange surfaces that are well ventilated to maintain concentration gradients

Business

	Word or term	Definition
1	job production	The process of production where products are made individually.
2	batch production	The process of production where one type of product is made and then production is switched to make a different product.
3	flow production	Production of one product that takes place continuously using a production or assembly line. This is sometimes called mass production.
4	automation	A production process involving machinery that is not controlled by a person, but usually controlled by a computer.
5	quality control	A system for inspecting the quality of the goods or services produced and checking that they are of a good standard. Usually a dedicated team or staff member checking quality at the end of the production line.
6	quality assurance	An approach that involves the whole business focusing on quality, thus aiming to prevent quality problems arising.
7	consumer law	An area of law that protects the customers of the business. This is mainly through the Consumer Rights Act 2015. Goods must be of satisfactory quality, fit for purpose, and as described.
8	logistics	The management of the transportation and storage of goods.
9	procurement	The management of purchasing within a business.
10	loans	Sums borrowed for a certain period at an agreed rate of interest.
11	overdraft	An arrangement with a bank that a business can spend more money than it has in its account.
12	trade credit	When the business has the goods to sell and agree to pay at some time later.
13	retained profit	Profit that is not distributed to shareholders as dividends.
14	sale of assets	Items owned by the business, sold for an immediate cash injection.
15	owners' capital	Money from savings put into the business by the owner.
16	share issue	Money raised from investors by selling new shares.
17	crowdfunding	Money raised through an appeal to the public.
18	revenue	Money from sales. Price x Quantity
19	fixed costs	Costs that stay the same, regardless of output.
20	variable costs	Costs that change as output changes.
21	total costs	Fixed Costs + Variable Costs.
22	gross profit	Sales – Cost of Sales
23	net profit	Sales – Total Costs
24	Average Rate of Return (ARR)	A method of measuring and comparing the profitability of an investment over the life of the investment. $\text{Average Annual Profit} / \text{initial investment} \times 100$
28	break-even forecast	A prediction about the break-even quantity based on estimates of future sales revenues and costs. Shows the amount a business must sell to earn enough revenue to just cover its costs so that it does not make a profit nor a loss. (FC/contribution per unit)

26	contribution per unit	The difference between the selling price and the variable cost per unit. This 'contribution' goes towards the fixed costs until they are paid,
27	margin of safety	The amount by which a business' actual output is greater than its break-even output.
28	cash flow forecast	A statement showing the expected flow of money into and out of a business over a period of time.
29	liquidity	The ability of a business to pay its short-term debts.
30	ethics	The consideration of what is right and wrong.
31	child labour	The use of young children, below the legal age for employment, in order to achieve low-cost production.
32	ethical marketing	Marketing activities that seek to give customers information to make good choices for themselves.
33	fairtrade	A movement that encourages business to pay a fair price to suppliers in developing countries and consumers to buy Fairtrade goods.
34	environmentally friendly	A term that describes consumers and businesses that act to make production sustainable.
35	economic climate	Refers to how well the country is doing in terms of the levels of income and employment.
36	consumer income	The total amount of income that all customers in the country receive and which they have available to spend.
37	level of employment or unemployment	The number of people in work or out of work in a country.
38	Gross Domestic Product (GDP)	A measure of how much a country produces in a year. It influences the level of income and employment.
39	economic growth	A period when GDP is rising, causing income and employment to rise.
40	recession	A period when GDP is falling, causing income and employment to fall.
41	distribution of income	Refers to how income is shared out amongst different people in the community. The distribution of income can become more unequal if the incomes of the rich are rising faster than the incomes of lower earners.
42	globalisation	The process by which business activity around the world has become increasingly interconnected.



Sharp minds in Business: where to look

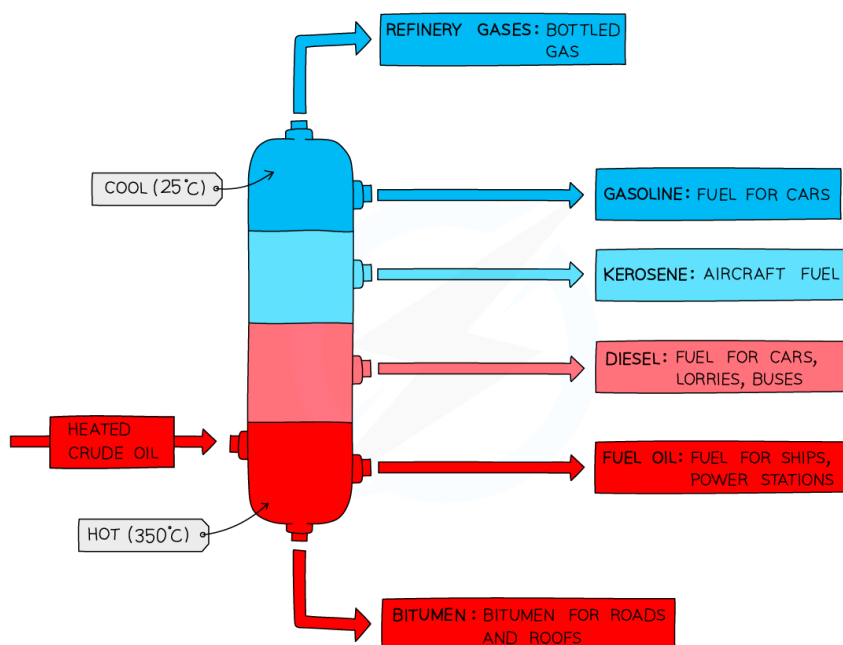
- Complete any of the extension activities from your homework booklet
- Sign up to a news app (BBC / Sky / The guardian)
- Choose a relevant video to watch on: <https://www.twoteachers.co.uk/>
- Update any notes or watch revision videos from GCSE Bitesize (make sure it is the OCR Spec): <https://www.bbc.co.uk/bitesize/examspecs/zhrphbk>
- Update any notes or watch revision videos from BusinessEd (make sure it is the OCR Spec): <https://www.businessed.co.uk/index.php/home/theory/gcse/ocr-gcse-9-1-public>
- Complete any Seneca activities - make sure you sign in to your Seneca account and class so that we can see this.

Chemistry

Crude oil

1	hydrocarbons	These are compounds that contain hydrogen and carbon atoms only
2	crude oil	This is a finite resource which we find in the Earth's crust. It is a complex mixture of lots of different hydrocarbon compounds of different sizes t is a thick, sticky, black liquid that is found in porous rock (under the ground and under the sea).
3	formation of crude oil	Crude oil formed over millions of years from the effects of high pressures and temperatures on the remains of biomass (plants and animals), mainly plankton that was buried in mud. It is being used up much faster than it is being formed, which is why we say crude oil is a finite resource.

Fractional distillation



1	fractional distillation	This is carried out in a fractionating column which has a temperature gradient. It is very hot at the bottom of the column and cooler at the top
2	The process of fractional distillation	- The crude oil is heated and vapourises - The vapours of hydrocarbons enter the column which has a temperature gradient - The vapours of hydrocarbons with high boiling points condense at the bottom of the column - The vapours of hydrocarbons with lower boiling points rise up the column and condense at the top

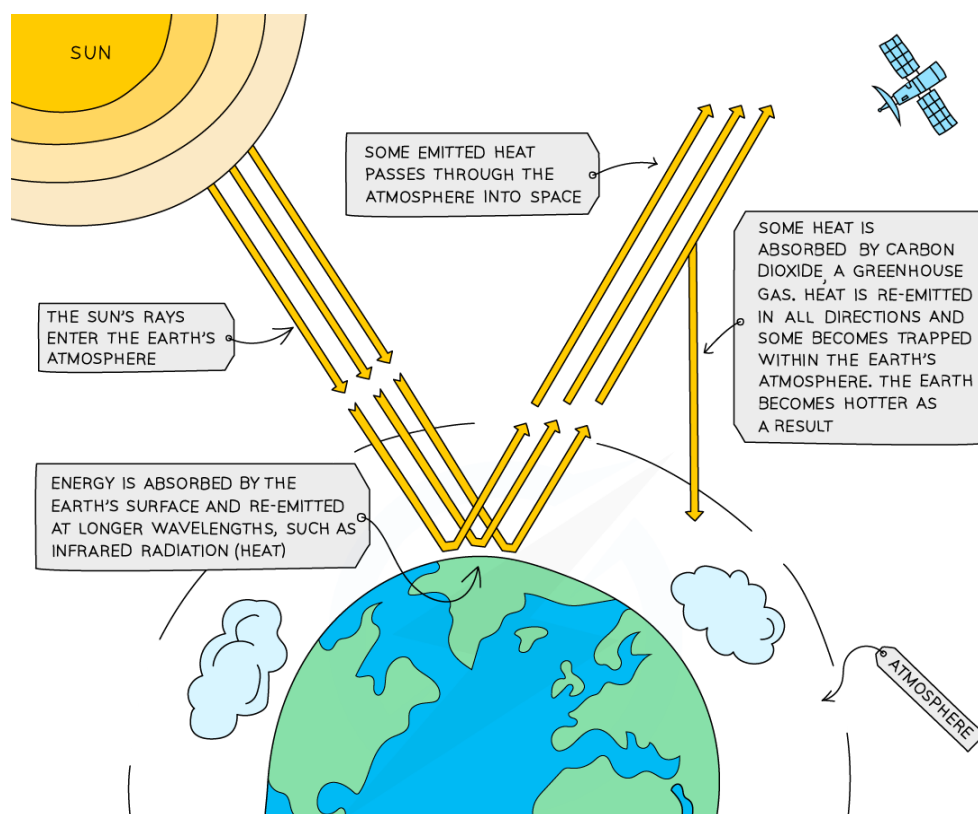
Alkanes

1	alkanes	Alkanes are a group of saturated hydrocarbons. They are colourless compounds which have a gradual change in their physical properties as the number of carbon atoms in the chain increases. Alkanes are generally unreactive compounds but they do undergo combustion reactions, and can be cracked into smaller molecules
2	formula	The general formula for alkanes is C_nH_{2n+2}
3	saturated	This means that they only have single carbon-carbon bonds, there are no double bonds.
4	methane	Methane is an alkane and is the major component of natural gas.

Reproduce this table.

Name of alkane	Number of carbons	Chemical formula	Melting point / °C	State at room temperature	Boiling point / °C
Methane	1	CH_4	-182	gas	-162
Ethane	2	C_2H_6	-183	gas	-89
Propane	3	C_3H_8	-188	gas	-42
Butane	4	C_4H_{10}	-138	gas	-1

The Greenhouse effect



Computer Science

1.4 Network security		
1	anti-malware software	Programs used to detect and remove malicious software, including viruses and spyware.
2	authentication	A way of verifying the identity of a user (e.g. with passwords, biometrics, or two-factor methods).
3	brute force attack	A method of trying every possible password or PIN until the correct one is found.
4	data interception and theft	Capturing data as it travels across a network, often using software called a packet sniffer.
5	Denial of Service (DoS) attack	Flooding a network or server with traffic to make it slow or unavailable.
6	firewall	A security system that controls the flow of data into and out of a network.
7	malware	Malicious software designed to harm a system, steal data, or disrupt services. Can you name and describe types of malware?
8	penetration testing	Testing a system or network for vulnerabilities by simulating a cyber attack.
9	phishing	Scam where fake emails or websites trick people into giving personal information.
10	social engineering	Tricking or manipulating people into giving away personal or security information.
11	SQL injection	A type of attack where malicious SQL code is entered into a form input to gain access to a database.
12	user access levels	Different levels of permission for users, limiting what data or files they can see or change.
1.5 Systems software		
1	backup (utility software)	A copy of data made in case the original is lost, damaged, or corrupted.
2	compression (utility software)	Reducing the size of files so they take up less storage or can be transferred more quickly.
3	defragmentation (utility software)	Software that reorganises parts of files and free space on a hard drive so they are stored together, improving access speed.
4	device driver	System software that allows the operating system to communicate with hardware devices like printers or keyboards.
5	encryption software (utility software)	Software that makes data unreadable (cipher text) to unauthorised users without the key to decrypt it.
6	Operating System (OS)	System software that manages hardware, software, user interface and system resources. Most operating systems are multitasking.
7	system software	Software designed to run and manage the computer's hardware and basic functions, like the OS and utility software.
8	user interface	The part of the OS that allows users to interact with the computer system.
9	utility software	System software that helps maintain, analyse and optimise system performance.

1.6 Ethical, legal, cultural and environmental impacts of digital technology		
1	Artificial Intelligence (AI)	Computer systems that can perform tasks normally requiring human intelligence, such as decision-making and learning.
2	censorship	Restricting or blocking access to online content, usually by governments.
3	Computer Misuse Act (1990)	A UK law that makes unauthorised access to computer systems illegal (e.g. hacking, spreading malware).
4	Copyright, Designs and Patents Act (1988)	A UK law that protects the work of creators, making it illegal to copy, share or use their work without permission.
5	Data Protection Act (2018)	A UK law that controls how personal data is used and gives people rights over their data. What is the name of the office that oversees this in the UK?
6	digital divide	The gap between people who have access to technology and those who do not.
7	E-waste (electronic waste)	Discarded electrical or electronic devices, which can harm the environment if not disposed of properly.
8	ethical issues	Questions about what is right or wrong when using technology (e.g. privacy, AI decision-making).
9	open source software	Software that is free to use and its source code is available for anyone to view and modify.
10	proprietary software (closed source)	Software that is owned by a company. Users buy a licence to use the software and cannot access or change the source code.
11	social impact	How technology changes the way people interact, work and communicate in society.
2 Computational thinking, algorithms and programming		
1	abstraction	Removing unnecessary details to focus on the essential parts of a problem.
2	algorithm	A set of step-by-step instructions to solve a problem or perform a task.
3	Boolean logic	A form of logic that uses AND, OR and NOT operators to combine true/false conditions.
4	concatenation	Joining two or more strings (text) together in a program.
5	decomposition	Breaking a problem down into smaller, more manageable parts.
6	input validation	Checking that data entered by a user meets certain rules before it is processed.
7	logic error	An error in a program that causes incorrect output, even though the program runs.
8	pseudocode	A way of writing algorithm designs using structured English that looks like code but doesn't run.
9	syntax error	A mistake in the code that breaks the rules of the programming language.
10	test data	Sample data used to test if a program works correctly, including valid, invalid and extreme values.
11	trace table	A table used to record the values of variables as an algorithm or code runs, often for debugging.



Sharp minds in Computer Science: where to look

- Our course details: OCR GCSE Computer Science J277
- Make maximum use of Smart Revise: <https://www.smartrevise.online>
- Remember to use the All-in-one revision document in Google Classroom
- Answer questions from the exam question packs and mark using the model answers: <https://www.hartismere.com/33393>
- If unsure on a topic/concept, make use of ADA Computer Science or Isaac Computer Science: <https://adacomputerscience.org>, <https://isaacomputerscience.org>
- Get used to the exams by making use of past papers: <https://www.hartismere.com/25078>
- Complete any outstanding homework or class quizzes on Genie.
- If you have missed a topic or want to recap, check out the revision videos from Craig'n'Dave on YouTube: <https://www.youtube.com/@craigndave>

Creative iMedia

Purpose of Media Products

	Term or word	Definition
1	advertise or promote	To publicise information and encourage it.
2	inform	To give or tell someone facts and information.
3	educate	To give intellectual, moral and social instruction.
4	entertain	To provide amusement or enjoyment.
5	influence	To have an effect on someone or something.

Media Codes: part 1

1	technical	These include how the equipment is required and used for each product.
2	symbolic	Codes which are communicated through symbols and represent meaning.
3	written	Codes which are communicated through written elements.
4	camera shot	A shot type is how close the camera is to the subject being filmed.
5	camera angle	The camera angle is the specific location at which the camera is placed to take a shot.

Media Codes: part 2

1	camera movement	Camera movements are how the camera moves with the subject in the scene.
2	mise-en-scene	French for “to place on stage” (pronounced meez-on-senn), and refers to everything you can see on screen.
3	movement	Movement of actors and cameras can help engage the audience. Pan, tilt, and dolly are examples of camera movement.
4	transitions	When multiple shots are combined to create a scene, and ordered in a sequence.
5	typography	Organising font in such a way that it can become visually appealing to the audience.

Research and Data

1	primary research	Qualitative (also known as field research) This is first-hand research, with data collected directly from original and reliable sources.
2	secondary research	Quantitative (also known as desk research) This is finding and using data that someone else has already collected and published.
3	qualitative	Data based on the responses/opinions of people or clients. Often obtained through open questions.
4	quantitative	Data that is based on facts or figures is usually easier to analyse than data that is qualitative. Often obtained through closed questions.
5	research	A systematic, methodical approach to discover new information, interpret facts or revise existing theories.

Legal Considerations - Intellectual Property

1	intellectual property	Something that you create using your mind, e.g. a story, invention, artistic work, or a symbol.
2	copyright	Protects your work and stops others from using it without your permission.
3	royalty free	Work can be used without having to pay royalties to the original owner.
4	trademarks	Identify an organisation or product, and their use is protected by law.
5	fair dealing	Excerpts of copyrighted material may be used in research, private study, education, criticism and news reporting.

Legal Considerations - Creative Commons Symbols

Creative Commons Symbols	Meaning
	A Creative Commons licence is being used with this asset.
	Attribution – you must acknowledge who produced this asset.
	Non-commercial – you cannot use this asset commercially (Dollar or Euro).
	Share alike – others can create derivatives (alterations) of this asset.
	No derivatives (alterations) are allowed.



Sharp minds in Creative iMedia: where to look

- KnowItAllNinja - R093 YouTube Revision Playlist
Search 'R093 KnowItAllNinja' on YouTube
[R093: Creative iMedia in the Media Industry - YouTube](#)
- Google Classroom; Knowledge Organiser; Lesson Presentations; PG Online Worksheets - Hartismere Revision Website:
<https://sites.google.com/hartismere.com/hartismere-creative-imedia>
- Revision Guides
Search 'ClearRevise OCR Creative iMedia J834'
Search 'CGP Creative iMedia J834'

Dance

	Term or word	Definition
1	purpose	The reason for which something is done or created or for which something exists.
2	performance processes	The series of actions that are taken as you prepare for, create, rehearse and perform a piece of dance or theatre.
3	theme	The main recurring idea throughout the work. There may be lots of other ideas but this is what the whole piece is about. The title of a piece is often the biggest clue.
4	practitioner skills	The expertise needed for the work.
5	techniques	The methods used to achieve skills.
6	dance skills	The physical and technical abilities a dancer uses to perform movement effectively, safely, and expressively.
7	musicality	A sense of rhythm and musical structure in a dancer's movements.
8	syncopation	Placing emphasis on the off-beat creating a sense of unpredictability.
9	accumulation	A structural technique in which dancers gradually join the performance of a sequence in incremental stages, gradually joining in until everyone is performing together in unison.
10	retrograde	Performing a sequence of movements in reverse order.
11	projection	This involves throwing energy out of the body to give a quality of life to the movement.
12	motif	A movement phrase which is repeated and developed throughout a piece of choreography.
13	contrast	Movement that is opposite to other movement in: speed, style, dynamics, use of space and rhythm etc.
14	locomotion	Travelling movement.
15	narrative choreography	Choreography with clear use of character and storyline.
16	abstract or thematic choreography	Choreography without a storyline that is structured around recurring ideas and has symbolic meaning.
17	analysis	Exploring the artist's intentions: - what has been done (choreographic choices) - how it has been performed - why it has been performed this way (audience impact)
18	evaluation	Exploring whether choreography is successful and how and why.
19	movement interpretation	Analysing the meaning of movement whether it is narrative or abstract.
20	justification	Providing reasons and explanations for your opinions and suggestions.



Sharp minds in Dance: where to look

- BTEC Dance Google Classroom: Component 2: read or watch interviews with the choreographers, dancers and designers and make notes on their way of working
- Use YouTube to watch different sections from the set repertoire - can you learn it from the video? Make notes about the stylistic features and the skills and techniques needed to perform it well
- Use these links to appreciate different examples of professional repertoire:
 - https://www.youtube.com/watch?v=Z4fu8p-l-Ck&list=RDZ4fu8p-l-Ck&start_radio=1
 - <https://www.youtube.com/watch?v=9DvFgqU1iOw>
 - <https://www.youtube.com/watch?v=sZA7-hPPa4o>
 - https://www.youtube.com/watch?v=tm6MGWeE-as&list=RDtm6MGWeE-as&start_radio=1
 - https://www.youtube.com/watch?v=038BdfaaVVs&list=RD038BdfaaVVs&start_radio=1

Design and Technology

	Term	Definition
1	automation	The use of control systems for operating equipment such as machinery and processes in factories; this reduces human input.
2	client	The person/people/audience being designed for and whose needs are being met.
3	commercial process	Manufacturing method used to produce products in quantity.
4	commercial product	A product intended to make money.
5	conceptual stages (of design)	Use of models, sketches and computer-aided design (CAD) to show the design of a product as it develops.
6	continuous improvement	The identification of improvements and subsequent evolution of products.
7	co-operative	A group of people united to meet common social, economic or cultural need through a jointly-owned business.
8	crowd funding	A large number of people who raise money for a project or venture.
9	ecological	The consideration of the environment and the impact that design can have on it.
10	ethics	Moral decisions when designing and manufacturing.
11	fabricate	Using processes such as cutting, bending, joining and assembly to produce products.
12	finite	A material or source which will one day run out.
13	functionality	How well a product carries out its purpose.
14	fusibility	How well a material is converted by heat into a molten or liquid state dependent on its melting point.
15	iterative design	Design methodology based on a cyclical process of analysing, prototyping and testing to refine a product. Each iteration and result starts the process again.
16	lean manufacturing	Reducing and eliminating waste in a manufacturing process.
17	life cycle assessment	A technique used to assess the environmental impact of a product at all stages of its manufacture, use and disposal.
18	market pull	Products developed to meet the needs of society or a specific section of the market.
19	mechanical device	Mechanism which produces and/or changes movement.
20	nesting	The tessellation of shapes or nets on a material to minimise the amount of waste during manufacture.
21	physical properties	Properties that refer to the actual matter that forms the material (e.g. insulation, conductivity, fusibility).
22	planned obsolescence	Deliberately designing the lifecycle of a product to be short, forcing the user to update their products quickly.
23	primary source	Research collected first-hand by a designer to develop a product or idea.
24	primary source (of materials)	Where materials originate (polymers from oil etc) and the raw material that needs to be converted into a workable form.
25	product	Item or artefact developed for an intended audience to solve a problem or meet a need.
26	prototype	An early model or sample of a product used to test a concept.

27	schematic diagram	Graphic symbols or simplistic diagrams used to convey a system (e.g. an underground map).
28	social footprint	The impact a product or individual has on society.
29	social responsibility	The idea that a designer needs to evaluate the impact their product could have on society and take action to make this better.
30	stock form	The standard shape and size of materials as they are bought.
31	technology push	Technological discoveries used to drive the development of a product.
32	tolerance	The minimum and maximum measurements that can be accepted when manufacturing.
33	user	The person/people who make use of the product that has been developed by a designer.
34	user-centered design	Design development with the user at the centre of the focus. The designer tries to envisage how the product will actually be used, as opposed to focusing on other areas such as cost.
35	working properties	How a material reacts to external forces.



Sharp minds in design & technology: where to look

- Mr Design Technology. YouTube videos on most of the AQA curriculum content <https://www.youtube.com/watch?v=eS7cpnHIPBg>
- SketchUp tutorials on YouTube from beginner to advanced.
- Huge range of resources inc quizzes etc on the Oak National Academy website. Find Key stage 4 - Design & Technology - core principles
- Loads of fascinating videos, everything from wood joinery to biomimetic architecture on the BBC Teach website - look for 'Design & Technology'
- DT TV on YouTube. A resource for Design and Technology students. Includes CAD and Sketching tutorials to really promote high quality skills plus process and H&S videos will ensure effective and safe practice.
- DTbase. GCSE revision material, NEA examples and notes. <https://designandtechbase.com/>
- Curriculum linked resources on SmartRevise

Drama

	Term	Definition
1	performance skills	Vocal, physical, space
2	EAT PIPPA P (Vocal skills)	Expression, Accent, Tone, Projection, Inflection, Pitch, Pace, Articulation, Pause
3	PEB FEES (Physical skills)	Pace, Eyeline, Body language, Facial Expression, Gesture, Stance
4	SD BAP SALT (Staging)	Stage Directions, Blocking, Areas of the stage, Proximity, Spatial Awareness, Levels, Transition
5	point (statement)	Stating the skill/ theatrical aspect
6	analysis (HOW)	Description of how the skill or theatrical aspect has been used
7	quotation	Use of the stage directions, or a phrase from a character's line of speech
8	evaluation (WHY)	Justification of what the skill or theatrical aspect demonstrates
9	non-verbal communication	Physical skills: everything you can see but not hear.
An Inspector Calls		
10	Arthur Birling	Business man. Arrogant, selfish and materialistic, possessive, patriarchal.
11	Gerald Croft	His family are upper-class business owners. Confident, charming. Ignorant. Had an affair with Eva
12	Sheila Birling	Engaged to Gerald. Naïve and childish. Becomes regretful, matures and accepts responsibility
13	Eric Birling	Lacks confidence. Alcoholic. Makes Eva pregnant. Stole money from his father's business
14	Sybil Birling	Cold-hearted, snobbish despite being part of local women's charity. Her uncaring nature leads to downfall
15	Inspector Goole	Investigates the family, reveals consequences of actions. Could be a ghostly or godlike figure. Socialist
Themes		
16	social duty	Priestley wants the audience to be more aware of the effect of their actions on others
17	The supernatural	Goole sounds like 'ghoul', insinuating the Inspector is a ghost.
18	social class	The play is written from a socialist perspective; Gerald Croft is of a higher class than the Birlings
19	youth and age	The younger generation reflect hope and the ability to learn and change; older characters have stubbornly fixed opinions.

20	responsibility	When required to face responsibilities, the characters often find ways to justify their actions
Costume		
21	SML CHAMPS	Status, Material, Location, Colour, Hair, Accessory, Makeup, Practicality, Style
22	men - material	Satin lined suits - upper class. Wool with hints of stripes or checks - middle class
23	men - hair	Oiled look, centre and side parting.
24	men - accessory	Bowler hat (businessman), Caps (lower class), Top hats (for events).
25	men - makeup	Beards - older men, Shaped moustaches - younger men.
26	men - practicality and style	Narrow fitting 3 piece suits, Starched collar (uncomfortable), Knotted tie, Tailcoat for formal evenings
27	women - material	Chiffon - lightweight, Silk, satin, Elaborate Lace and beadwork, Embroidered
28	women - accessory	Expensive ring, Pearls, drop earrings
29	women - hair	Wavy curls, Low wispy bun.
30	women - makeup	Pale look - face powder, rouge for cheeks and lips, Eyebrow pencil, kohl around eyes
31	women - practicality and style	Hobble skirt shaped dress (Narrow around the ankles) = difficult to walk in, High waistline dresses, tight corset which accentuates the figure
Lighting		
32	LIGHT TTACC	Location, Intensity, Gobo, Haze, Texture, Time, Type, Angle, Colour, Cue
33	intensity	How bright the light is: it may be brightly lit or dimly lit
34	cue	Fade; snap; crossfade; blackout
35	lighting type	Profile spotlight. Focused, or soft edged. For Gobo use, good for facelight wash
36	Fresnel	Used for evenly blended wash
37	angle	Uplight; downlight (top light); side light; backlight; front facing light
38	Gobo	Metal disc that creates patterns - e.g. chandelier shadow
39	haze	Water vapour creates smoke highlighting the beam of light rather than the object.
40	scrim	Looks like a solid curtain until lit from behind when it becomes transparent
41	cyclorama	A large curtain or wall at the back of the stage, used to project images
Sound		
42	DNSUV PRFSA	Diegetic Sound, Non-Diegetic Sound, Sound Cue, Underscore, Volume, Pitch, Reverb, Fade, Spot Sound, Ambient Sound
43	diegetic sound	Sound that originates from within the world of the play (e.g. a phone ringing on stage).
44	non-diegetic sound	Sound added for effect that the characters can't hear (e.g. background music to create tension).
45	sound cue	A signal for a sound to start or stop during a performance.
46	underscore	Music or sound played quietly beneath dialogue or action to enhance mood.
47	volume	How loud or soft a sound is.

48	pitch	The highness or lowness of a sound.
49	reverb	An effect that creates a sense of space or echo, often used to suggest location (like a cave or church).
50	fade	A gradual increase (fade in) or decrease (fade out) in volume.
51	spot sound	A specific, timed sound effect that matches a particular action on stage (e.g. a door slam).
52	ambient sound	Background sound that suggests the environment (e.g. birdsong, city traffic).
Set		
53	MSSPICES (Set)	Material, Status, Size, Practicality, Interior, Colour, Exterior, Symbolism
54	exterior - door	Black, shiny, animal head knocker, quaint metal number: symbolises importance in society
55	exterior - stage floor	Broken pavement, lifted, cracked: represents bombshell the Birlings are sitting on
56	interior - window and curtains	Large windows, big purple velvet curtains - luxurious and expensive, symbolic of upper class
57	interior - walls	Expensive paintings and lamps
58	practicality	Move around without tripping over it, step up onto different levels, move quickly and safely.
59	interior -table	Large, wooden, pattern engraved - expensive. Decorated with lace tablecloth, crystal decanter and candelabra
60	interior - cabinets	Large, wooden, displaying ornaments, crystal decanter - symbolising wealth and style, lavish
61	interior- fireplace	Big, grand, warming - sense of wealth
62	interior chairs	Grand, tall-backed dining chairs, arm chair: comfortable and expensive Wooden chair: cumbersome, plain, understated for maid - uncomfortable



Sharp minds in Drama: where to look

- Read and write a 200- word summary of An Inspector Calls by J.B. Priestley
- Watch and take notes:- An Inspector Calls - exclusive interviews from the cast about the BBC drama: <https://www.youtube.com/watch?v=mm-GFtGNUYY>
- A production of An Inspector Calls: <https://www.youtube.com/watch?v=dMUHU-2lfZk>
- Research online and present a power point for An Inspector Calls:
 - Costume design
 - Lighting design
 - Set design
 - Sound design

English Language and Literature

Grammar

	Word or term	Definition
1	noun	Nouns are typically words for people, places, animals and objects (e.g. doctor, Peter, Paris, dinosaur) and also many words for abstract things such as feelings, emotions and qualities (e.g. love, hope, mystery).
2	verb	A word that usually conveys an action (read, walk, run), an occurrence (happen, become) or a state of being (be, exist).
3	adjective	A word that modifies (changes) a noun, e.g. the <u>blue</u> car; your cake is <u>bigger</u> than mine.
4	adverb	Adverbs typically modify (change) a verb, an adjective, another adverb or entire clause or sentence, e.g. 'He wrote it down <u>quickly</u> '; 'The film ended <u>too</u> soon'.
5	pronoun	Pronouns replace nouns or noun phrases, for example, 'We like Tom' → 'We like him.' 'I like my new bike.' → 'I like it.' Personal pronouns usually refer to people or other living things.

Words we see in English exams

1	summarise	To express the most important facts or ideas about something in a short and clear form.
2	compare	To look at the similarities or differences between (usually) two things.
3	infer	To form an opinion or guess that something is true because of the information that you have.
4	structure	The way a story or poem is organised and how the ideas start, develop and end.
5	evaluate	To judge or work out the quality, importance, amount or value of something.

Purposes of writing

1	describe	To say or write what someone or something is like in detail.
2	explain	To make something clear or easy to understand by describing or giving information.
3	argue	To state a point of view using reasons for or against it.
4	persuade	To make someone do or believe something by giving them reasons or through argument.
5	story	A structured description, true or imagined, of a connected series of events.

Writers' methods

1	consonance	The repetition of similar-sounding consonants in close proximity.
2	alliteration	The occurrence of the same sound at the beginning of adjacent or closely connected words.
3	assonance	A similarity of sound between syllables of nearby words, arising particularly from the rhyming of vowels.
4	sibilance	A type of alliteration that relies on the repetition of soft consonant sounds.
5	onomatopoeia	The formation of a word from a sound associated with what it describes.

6	simile	The comparison of one thing with another thing using 'like' or 'as'.
7	metaphor	A figure of speech in which a word or phrase is applied to an object or action to which it is not literally applicable.
8	extended metaphor	A comparison between two unlike things that continues throughout a series of sentences in a paragraph or lines in a poem.
9	personification	Giving a personal nature or human characteristics to something that is not human.
10	symbolism	The use of symbols to represent ideas or qualities.

11	hyperbole	Exaggerated statements or claims not meant to be taken literally.
12	protagonist	The main or leading character
13	antagonist	The main or leading character who is an opposing force to the protagonist.
14	irony	A rhetorical device, literary technique or event in which what appears to be the case on the surface, differs radically from what is real.
15	tone	
16	semantic field	A set of words that relate to a similar theme or topic.
17	anthropomorphism	When writers portray animals, gods and objects as if they are human in appearance, character or behaviour.

18	narrator: first, second or third person	First person is when a story is told using 'I' or 'we'. Second person is a story told using 'you'. Third person is told using 'he', 'she' or 'they'.
19	omniscient narrator	The narrator knows everything and can give us access to their private thoughts, feelings or hidden events.
20	limited narrator	The narrator only knows the thoughts and feelings of one character.
21	perspective	The point of view of a narrator or character.
22	narrative arc	The structure of a typical story, often: exposition, rising action, climax, falling action and resolution.
23	juxtaposition	When two contrasting or opposing ideas are presented.

Poetic terms

24	stanza	Similar to a paragraph, but in a poem. Can be very short or long.
25	sonnet	A 14 line poem, often about love, written in iambic pentameter and usually ending in a rhyming couplet.
26	caesura	A pause in the middle of a line or poem.
27	rhyme scheme	The pattern of rhyme in a poem, or example AABB, ABAB etc.
28	enjambment or run-on line	When a sentence continues from one line into another without punctuation.
29	volta	The moment in a story or poem when everything changes, usually in the middle.

Concepts

30	sublime	A high degree of moral and spiritual purity usually inspired by nature.
31	The Enlightenment	A European intellectual movement emphasising reason and individualism over tradition.
32	hubris	Excessive pride or arrogance that results in the downfall of the protagonist of a tragedy.
33	oppression	When those in authority are cruel to the people they rule over.
34	Romanticism	A movement beginning in 1770 characterised by a belief in the power of nature and freedom from society's rules.
35	Industrial Revolution	From the late 1770s, many factories were built. Many people moved to cities for jobs and often lived in terrible conditions.
36	ephemeral	Something that lasts for a short time.
37	allegory	A text that can be interpreted to reveal a hidden meaning, typically a moral or political one.

English literature: quotations

Macbeth: quotations

	Act & scene	Quotation
1	Act 1 scene 1	Witches: "Fair is foul and foul is fair"
2	Act 1 scene 4	Macbeth: "Let not light see my black and deep desires"
3	Act 1 scene 5	Lady Macbeth: "Look like th'innocent flower/But be the serpent under't"
4	Act 2 scene 2	Macbeth: "Will all great Neptune's ocean wash this blood/Clean from my hand?"
5	Act 5 scene 9	Malcolm: "This dead butcher and his fiend-like queen"

Romeo and Juliet: quotations

	Act & scene	Quotation
1	Prologue	Chorus: 'star-crossed lovers'/ 'death mark'd love'
2	Act 1 scene 1	Romeo: 'O brawling love, O loving hate!'
3	Act 2 scene 1	Juliet: 'What's in a name? that which we call a rose By any other name would smell as sweet'
4	Act 3 scene 1	Mercutio: 'A plague o' both your houses!'
5	Act 5 scene 3	Juliet: 'O happy dagger!'

An Inspector Calls: quotations

Act	Quotation
Act 1	Arthur Birling: "I'm speaking as a hard-headed, practical man of business"
Act 1	Sheila Birling: "But these girls aren't cheap labour - they're <i>people</i> ."
Act 2	Mrs Birling: "girls of that class -"
Act 3	Eric: "my child - your own grandchild - you killed them both - damn you, damn you-"
Act 3	Inspector Goole: "We don't live alone. We are members of one body. We are responsible for each other."
Act 3	Inspector Goole: "if men will not learn that lesson, then they will be taught it in fire and blood and anguish"

Dr Jekyll and Mr Hyde:quotations

	Chapter	Quotation
1	Story of the Door	Enfield describes Hyde as "really like Satan".
2	Search for Mr Hyde	Utterton could hear the "low growl of London".
3	The Carew Murder Case	Utterton observed the fog "was like a great chocolate coloured pall lowered over heaven".
4	The Last Night	Hyde seemed a "masked thing, like a monkey"
5	Henry Jekyll's full Statement of the Case	Jekyll: "man is not truly one, but truly two".

A Christmas Carol:quotations

Stave	Quotation
1	Scrooge is described as "solitary as an oyster".
1	Ghost of Jacob Marley: "I wear the chain I forged in life"
1	"If they would rather die," said Scrooge, "they had better do it, and decrease the surplus

	population."
2	Belle ends her relationship with Scrooge, saying, "Another Idol has replaced me... A golden one."
3	Ignorance and Want are described as "Yellow, meagre, ragged, scowling, wolfish"
5	Scrooge: "I am as light as a feather, I am as happy as an angel, I am as merry as a school-boy."

Power and conflict poetry: quotations

	Poem	Quotation
1	Ozymandias	"Round the decay/ of that colossal wreck, boundless and bare The lone and level sands stretch far away."
2	London	"In every voice...the mind-forged manacles I hear".
3	The Prelude: Stealing the Boat	"O'er my thoughts there hung a darkness".
4	My Last Duchess	"She had/ a heart - how shall I say? - too soon made glad".
5	The Charge of the Light Brigade	"Forward the Light Brigade!/Was there a man dismay'd? Not tho'the soldier knew/Someone had blundered"
6	Exposure	"Pale flakes with fingering stealth come feeling for our faces".
7	Storm on the Island	"The flung spray hits the very windows/Spits like a tame cat turned savage".
8	Bayonet Charge	"King, honour, human dignity etcetera/Dropped like luxuries in a yelling alarm".
9	Remains	"He's here in my head when I close my eyes/dug in behind enemy lines".
10	Poppies	"Sellotape bandaged round my hand/I rounded up as many white cat hairs/ as I could".
11	War Photographer	"A stranger's features/Faintly start to twist before his eyes,/a half-formed ghost"
12	Tissue	"Trace a grand design/ with living tissue, raise a structure/never meant to last".
13	The Emigrée	"I am branded by an impression of sunlight".
14	Kamikaze	"Boats strung out like bunting".
15	Checkin' Out Me History	"I checking out me own history/I carving out me identity".



Sharp minds in English: where to look

- You could explore the English department suggestions for students at the University of Cambridge:
<https://www.english.cam.ac.uk/admissions/undergraduate/students.htm>
- Listen to a podcast about the Shakespeare play you're studying:
<https://podcasts.ox.ac.uk/series/approaching-shakespeare>
- Explore some new poetry with the Poetry Society:
<https://poetrysociety.org.uk/>
- Reading is absolutely the number one way to get better at English! See your English teacher for a recommended reads list.

Film Studies

Cinematography

ANGLES		SHOT SIZE		MOVEMENT	
•HIGH	The camera is above the subject	•EXTREME LONG SHOT (XLS)	Subject is far away	•PAN	Camera moves left or right-shaking
•LOW	The camera is below the subject	•LONG SHOT (LS)	Whole subject can be seen	•TILT	Camera moves up and down-nodding
•CANTED	The subject appears tilted	•MEDIUM LONG SHOT (MLS)	Top of head to thighs	•PED	Camera looks forward, sliding up or down
•EYE LEVEL	Camera is level with subject's eyes	•MEDIUM/MID SHOT (MS)	Top of head to waist	•DOLLY	Camera moves forward, fixed position
•BIRD'S EYE	Camera is high in the air	•MEDIUM CLOSE-UP (MCU)	Top of head to chest	•TRACK	Smooth sideways shot. Aka, 'crab'
•WORM'S EYE	Camera is low on the ground	•CLOSE-UP (CU)	Top of head & shoulders	•ZOOM	Camera lens moves forward or back
		•BIG CLOSE-UP (BCU)	Whole head	•CRANE	Not placed on tripod, held 'in hands'
		•EXTREME CLOSE-UP (ECU)	A part of the head	•STEADICAM	From perspective of a person
				•POV	

MISE-EN-SCENE	EDITING
SETTINGS & PROPS	•JUMP CUT Sudden cut from one shot to another
Where the scene is, when the scene is and the objects used to show this.	•FADE-OUT A fade from one scene to another
COSTUME, HAIR & MAKE-UP	•DISSOLVE Gradual fade as the image dissolves
Clothes worn & style of hair.	•CUT AWAY Film cuts to something else off screen.
FACIAL EXPRESSION & BODY LANGUAGE	•WIPE Image wipes to reveal a new image.
How people move their body and faces	•MATCH-ON ACTION Is a cut that shows two views of the same action.
LIGHTING & COLOUR	•GRAPHIC MATCH One object is matched by one of a similar shape on the next shot.
The brightness, colour, position and size of light. The overall colour, tone or temperature of a scene.	

EFFECTS			TYPES		SOUNDTRACK		
DEAFENING	BANG	HOWL	DIEGETIC	Sound the characters can hear	BOMBASTIC	CRAWLING	SPRITELY
HARSH	BUZZ	ECHOING			DRAMATIC	PIERCING	IMPOSING
LOUD	CRACKLING	GROWL	NON DIEGETIC	Sound the characters cannot hear	MOVING	SHRILL	PACEY
SUBTLE	SCREECH	WHIMPER			SWEEPING	PLAYFUL	REGAL
BRASH	SNAPPING	RUMBLE	CONTRAPUNTAL	Sound that is in contrast to the images	EVOCATIVE	DELICATE	LANGUID
MUFFLED	THUD	ROAR			PULSING	CHILLED	GLOOMY
MELODIOUS	RUSTLE	VOCIFEROUS	PARALLEL	Sound that is similar to the images	FAST	SOARING	SCARY

1	context	Film context refers to the various factors surrounding a film's production and reception that influence its meaning and interpretation. These factors include historical events, social and cultural trends, the filmmaker's background, and the audience's expectations.
2	ideology	These are the beliefs and values that a person communicates.
2	representation	The ways in which films portray particular people, communities, experiences or ideas from a particular point of view or ideology.

 Sharp minds in Film Studies: where to look
Visit Studio Binder on YouTube

Food Preparation and Nutrition

Principles of Nutrition

	Term or word	Definition
1	nutrient	Substances in food essential for nourishment and life.
2	macronutrient	Nutrients needed in large quantities such as protein, carbohydrates, and fats.
3	micronutrient	Nutrients required in small amounts such as vitamins and minerals.
4	dietary fibre (NSP)	Indigestible plant carbohydrates important for digestion.
5	amino acids	Building blocks of proteins; essential amino acids must come from the diet.
6	HBV proteins	High Biological Value proteins that contain all essential amino acids.
7	LBV proteins	Low Biological Value proteins lacking one or more essential amino acids.
8	protein complementation	Combining two LBV proteins to obtain all essential amino acids.
9	saturated fats	Typically from animal sources; can raise cholesterol levels.
10	unsaturated fats	Healthier fats found in plants and oily fish; improve cholesterol balance.
11	essential fatty acids	Omega-3 and Omega-6 fats that must be consumed through the diet.
12	energy balance	Balance between energy intake from food and energy expenditure.

Diet and Health

1	allergies	Immune system reaction to certain foods such as nuts or shellfish.
2	intolerances	Non-immune digestive reactions to foods, e.g., lactose intolerance.
3	energy balance	Balance between energy consumed and energy used; affects body weight.
4	dietary needs through life	Nutritional requirements differ across life stages: children need nutrients for growth; elderly may need more vitamin D and calcium.
5	anaemia	Iron-deficiency condition causing fatigue and pale skin due to fewer red blood cells.
6	Coronary Heart Disease (CHD)	Narrowing of heart arteries often linked to high fat diets.
7	obesity	Excess body fat caused by long-term energy imbalance; linked to health risks.
8	Diabetes (Type 2)	Body becomes resistant to insulin or doesn't produce enough; linked to obesity and high sugar diets.
9	bone health	Requires calcium and vitamin D to prevent rickets and osteoporosis.

Food preparation and nutrition continued

1	aeration	Incorporating air into a mixture to make it light and fluffy, e.g., whisking egg whites.
2	caramelisation	The process where sugar is heated and melts, then browns, creating a sweet, nutty flavour.
3	coagulation	The setting of proteins when heated, e.g., eggs turning solid when cooked.
4	denaturation	The chemical structure of proteins unfolds due to heat, acid, or agitation.
5	dextrinisation	The browning of starch when exposed to dry heat, giving a sweet flavour, e.g., toast.
6	emulsion	A mixture of two liquids that do not usually mix, such as oil and water.
7	emulsifier	A substance that helps stabilise an emulsion, e.g., lecithin in egg yolk.
8	gelatinisation	When starch granules swell and burst in liquid when heated, thickening the liquid.
9	plasticity	The ability of fats to be spread and shaped, due to different melting points of fats.

Food Spoilage

1	ambient food	Foods that can be safely stored at room temperature, e.g., canned goods.
2	cross contamination	Transfer of harmful bacteria from one food or surface to another.
3	enzymes	Natural proteins in foods that speed up chemical reactions, e.g., ripening.
4	high risk food	Foods that support rapid bacterial growth, e.g., cooked meat, dairy products.
5	mould	A type of fungus that grows on food, sometimes producing harmful toxins.
6	pasteurization	Heat treatment that kills bacteria in foods like milk, without affecting quality.
7	pathogenic	Microorganisms that cause disease in humans.
8	preservative	Substance added to foods to prevent spoilage by microorganisms.
9	danger zone	Temperature range (5°C–63°C) where bacteria multiply rapidly.
10	yeasts	Microorganisms used in bread making, brewing, but can also spoil foods.

1	additive	Substance added to food to improve flavour, texture, appearance, or shelf life.
2	carbon footprint	The total greenhouse gas emissions caused by producing and transporting food.
3	intensive farming	Farming that uses modern technology and high levels of input for maximum yield.
4	food miles	The distance food travels from production to consumer.
5	food poverty	When people cannot afford or access nutritious food for a healthy diet.
6	food security	Having reliable access to sufficient, safe, and nutritious food.
7	fortification	Adding nutrients to foods to improve their nutritional value, e.g., vitamin D in margarine.
8	free range	Farming method where animals have access to outdoor space and natural conditions.
9	Genetically Modified (GM)	Foods from organisms whose DNA has been altered for specific traits.
10	organic	Food produced without synthetic pesticides or fertilizers, often to higher welfare standards.
11	seasonal	Foods eaten when they are naturally in season and at their best quality.



Sharp minds in Food Science: where to look

- Listen to the Food Programme on BBC sounds for a wider awareness and appreciation of food in all its forms.
- Plan and cook meals regularly at home to embed knowledge of ingredients, techniques and processes required for recipes.
- Complete past papers
<https://www.hartismere.com/Curriculum/Technology-and-Food-Studies/Food-Studies/Student-resources/GCSE-Past-Papers-and-Mark-Schemes>

French

Key verbs in three tenses

Past tense	Present tense	Future tense
J'ai joué = I played	Je joue = I play	je vais jouer = I am going to play
J'ai mangé = I ate	Je mange = I eat	Je vais manger = I am going to eat
J'ai regardé = I watched	Je regarde = I watch	je vais regarder = I am going to watch
J'ai écouté = I listened	J'écoute = I listen	Je vais écouter = I am going to listen
J'ai visité = I visited	Je visite = I visit	je vais visiter = I am going to visit
J'ai fait = I did	Je fais = I do	Je vais faire = I am going to do
Je suis allé = I went	Je vais = I go	Je vais aller = I am going to go
C'était = it was	C'est = it is	Ça sera = it will be
		Je voudrais = I would like

Opinions

Opinion phrase	Positive	Negative
À mon avis = in my opinion	amusant = fun/funny	barbant / ennuyeux = boring
Je pense que = I think that	intéressant = interesting	affreux = awful
Selon moi = according to me	génial = great	difficile = difficult
je trouve que = I find that	fantastique = fantastic	pénible = annoying
je dirais que = I would say that	utile - useful	fatigant = tiring
	sensass = sensational	désagréable = unpleasant
	inoubliable = unforgettable	insupportable = unbearable

Family and relationships

Je m'entends bien avec	I get on well with
Je m'entends mal avec	I get on badly with
Je me dispute avec	I argue with
Je m'amuse avec	I have fun with
Mon (beau) père	My (step) dad
Ma (belle) mère	My step mum
Il/Elle est bavard(e)	He/She is chatty
Il/Elle est méchant(e)	He/She is mean
Il/Elle est sympa	he/She is nice
Il/Elle est drôle	He/She is funny

Healthy living and lifestyle

Je suis malade	I am ill
J'ai mal à la tête	I have a headache
Je suis en bonne santé	I am in good health
je suis sain(e)	I am healthy
Je mange des légumes / de la viande	I eat vegetables / meat
Je ne mange jamais de gâteau / de chocolat	I never eat cake / chocolate
Je bois de l'eau	I drink water
Je fais de l'exercice	I do exercise
Je dors bien	I sleep well
je ne fume pas	I don't smoke

Education and work

J'aime le français / l'histoire	I like French/ History
Ma matière préférée c'est...	My favourite subject is...
À l'avenir je voudrais...	In the future I would like...
aller au lycée	to go to college /sixth form
aller à l'université	to go to university
travailler	to work
faire un apprentissage	to do an apprenticeship
voyager	to travel
me marier	to get married
être professeur / chanteur/se	to be a teacher / singer

Free-time activities

Je joue au foot / au rugby / au basket	I play football / rugby / basketball
Je joue aux jeux vidéo / aux cartes	I play video games / cards
Je joue de la guitare / du piano	I play the guitar / the piano
Je fais du vélo / de la natation	I go biking / swimming
Je fais du shopping / du sport	I do shopping / sport
Je regarde la télé / les films	I watch TV / films
J'écoute de la musique / la radio	I listen to music / the radio
Je mange au restaurant / une pizza	I eat at a restaurant / a pizza
Je lis des livres / des magazines	I read books / magazines
Je visite le musée / le château	I visit the museum / the castle
Je vais au cinéma / en ville	I go to the cinema / to town

Customs, festivals and celebrations

Noël / le jour de l'An / Pâques	Christmas / New Year's Day / Easter
Je mange du gâteau / du chocolat	I eat cake / chocolate
Je passe du temps avec ma famille	I spend time with my family
Je donne / reçois des cadeaux	I give / receive presents
Je bois du champagne	I drink champagne
Je fais la fête	I celebrate / have a party
Je vais au festival de musique	I go to the music festival
Je chante	I sing
Je danse	I dance
Il y a des feux d'artifices	There are fireworks



Sharp minds in French: where to look

- BBC Bitesize : <https://www.bbc.co.uk/bitesize/examspecs/zp838p3>
- Quizlet – make revision cards and learn vocabulary
- Lingo Clip – listen to music and improve your French : <https://lingoclip.com/fr>
- Watch French films and television programmes on Netflix, having subtitles in English is absolutely fine. I can recommend Lupin (15+)!
- Lawless French – grammar points, reading practice and more:
<https://www.lawlessfrench.com/>

Geography

URBAN FUTURES

EDC/LIDC City = MUMBAI, INDIA	The city's location and importance within its region and the wider world	WORLD CITY - Headquarters of TNCs, Bank of India headquarters, Mumbai stock exchange 40% of all exports transported through port of Mumbai, Bollywood Mega City - population is 21 million - has increased rapidly (in 1990 was about 12 million) and is continuing to grow (2025 will be 26 million) - lots of pull factors - economic opportunities (has 10% of all factory employment in India) social opportunities - education, healthcare
	Patterns of national and international migration and how this is changing the growth and character of the city	Rural to urban migration 1000 people arriving every day from poor states like Bihar - city can not cope - growth of slums (50% of people live in slums - overcrowded - Dharavi - 1 million people in one square mile, not enough resources - water (taps on for two hours a day, 1 toilet per 500 people. Inadequate rubbish disposal system - Mithi river clogged with rubbish - floods more easily Significant International migration - University of Mumbai , Bollywood, headquarters of TNCs, Research institutes - aerospace
	Explore the ways of life in the city such as culture, ethnicity, housing, leisure and consumption	Colaba -place for the wealthy to go out - clubs, restaurants, beach Central bazaar District - market stalls Dharavi - slum - poor quality housing people live and work there - 15 000 one room factories - informal economy Bhendi Bazaar - old area of city being regenerated City centre - shopping malls, skyscrapers (28 billionaires in Mumbai - significant inequality)
	Investigate the contemporary challenges that affect life in the LIDC/EDC city	50% of people live in slums - overcrowded - Dharavi - 1 million people in one square mile, not enough resources - water (taps on for two hours a day, 1 toilet per 500 people - diseases spread Inadequate rubbish disposal system - Mithi river clogged with rubbish (city produces 7000 tonnes of rubbish a day) - floods more easily 15 000 one room factories - informal economy (lack of taxes paid to the government) Lack of space - Mumbai is located on peninsula so can not grow outwards - cost of housing very expensive 700 000 cars on roads in Mumbai - severe congestion - poor air quality - impacting people's health
	How can cities become more sustainable? One initiative to make it more sustainable	Sustainable Initiative in EDC/LIDC city - Bhendi Bazaar - redevelopment (Mumbai) Housing area built in 1889 for labourers on docks - lack of investment - inadequate sanitation/waste disposal/ buildings dangerous, only 1 tree - inaccessible by car Over 16.5 acres, will knock down 250 dilapidated buildings, 1,250 shops and relocate 3,200 families. Create 17 new buildings - flats with solar panels, rainwater harvesting for the toilet systems+ attractive business area, (multiplier effect , 700 trees planted etc.) But in 2017 Hussaini building collapsed killing 34 - loss of community/ people relocated in temporary transit camps whilst building constructed + Project costing \$1 billion

URBAN FUTURES

AC CITY = London, UK

The city's location and importance within its region and the wider world	World City - London stock exchange, headquarters of banks like Lloyds, TNCs headquarters - ABF, Tech companies like Google, Facebook on Silicon roundabout West End theatres, top universities - UCL, King's College, great museums e.g Natural History museum, shopping - westfield in Newham, Oxford St, Important hospitals - Great Ormond St London has 13% of UK's population but produces 22% of its wealth
Patterns of national and international migration and how this is changing the growth and character of the city	Population growing - grew by 12% between 2001 and 2011 Every year about 200 000 people from other countries move to London. Every year about 100 000 people in London move to other countries. 2011 - 38% Londoners born outside the UK - second most ethnically diverse city in the world International migration - 2011 - 38% Londoners born outside the UK - second most ethnically diverse city in the world - Brick Lane - big Indian population 262 000, China town, Edgware road - middle eastern food Notting Hill Carnival which celebrates Afro- Caribbean culture and is attended by over 2.5 million people Big Polish population over 150 000 (2004 EU expanded)
Explore the ways of life in the city such as culture, ethnicity, housing, leisure and consumption	Densely populated – over 5000 people per Km2 Lots of parks, like Hyde Park Lots of theatres in the West End Concert venues -e.g O2 Arena Sporting venues e.g Wembley Stadium Excellent transport system – London Underground, DLR, night buses, Eurostar train to Paris, airports like Heathrow Tourist Attractions like Buckingham Palace, Houses of Parliament and shopping experiences like Camden Market and Covent Garden Amazing museums and art galleries like the British Museum and Natural History Museum World renowned universities like UCL and Imperial College London
Investigate the contemporary challenges that affect life in the AC city	Population has grown by 12% in 10 years.... High house prices/rents - lack of affordable housing - people can't afford to live there Poor air quality (90% of people live in areas where it breaks the WHO safe limits) Victorian sewage system - gets blocked - causes flooding when it rains 22m tonnes of waste produced every year, More than half of London's rubbish ends up in landfill in places like Essex with only a fifth (22%) being recycled. Vulnerable to climate change - flooding - Thames Barrier has to close more frequently Water stress area - high water consumption but low rainfall
How can cities become more sustainable? One initiative to make it more sustainable	Sustainable Initiative in AC City - London's entire transport system is <u>zero emission</u> by 2050. - Walking and cycling .By 2041, the Mayor aims for 80% of all Londoners' trips to be made by foot, by cycle, or by public transport. - Low Emission Bus Zones. - Zero emission taxis. - Electric vehicles. - Ultra Low Emission Zone. (£12.50 charge if the vehicle does not meet certain standards) - Electric, hybrid and hydrogen buses.



Sharp minds in geography: where to look

- <https://senecalearning.com/en-GB/blog/free-ocr-b-geography-gcse-revision/> Revision quizzes on all the topics studied are available here.
- Books to broaden your horizons
 - Slumdog Millionaire, Vikas Swarup
 - Factfulness, Hans Rosling
 - Welcome to Lagos, Chibundu Onuzo
 - Dead Aid, Dambisa Moyo
 - The State of Africa, Martin Meredith
 - Empireland, Sathnam Sanghera

History

Nazi Germany

	Word or term	Definition
1	Weimar Republic	Germany's democratic government from 1919 to 1933.
2	Treaty of Versailles	1919 peace treaty that punished Germany (war guilt, reparations, army limits).
3	reparations	Payments Germany was forced to make after WWI (£6.6 billion).
4	hyperinflation	Rapid money devaluation in 1923; prices skyrocketed, savings lost.
5	Freikorps	Right-wing ex-soldiers who crushed left-wing uprisings after WWI.
6	Munich putsch	Failed Nazi coup in 1923; led to Hitler's imprisonment.
7	Mein Kampf	Hitler's book, written in prison; outlined Nazi ideology.
8	Fuhrerprinzip	Nazi belief that Hitler had total authority over Germany.
9	Enabling Act	1933 law that gave Hitler the power to make laws without the Reichstag.
10	Gestapo	Nazi secret police; rooted out opposition using fear and surveillance.
11	propaganda	Used by Goebbels to control information and spread Nazi ideology.
12	Volksgemeinschaft	The "people's community"; Nazi ideal of a racially pure, united Germany.
13	Kristallnacht	1938 anti-Jewish pogrom: synagogues burned, businesses smashed, 30,000 arrested.
14	Concordat	1933 agreement between Hitler and the Pope to stay out of each other's affairs.
15	Nuremberg Laws	1935 laws that removed Jewish rights and defined racial identity.

Nazi Germany Timeline (1918–1939)

♦ Weimar Republic (1918–1933)

- **1918 (Nov)** – **WWI ends**, Kaiser Wilhelm II abdicates.
- **1919 (Jan)** – **Spartacist Uprising** (left-wing); crushed by Freikorps.
- **1919 (June)** – **Treaty of Versailles** signed.
- **1920** – **Kapp Putsch** (right-wing coup attempt).
- **1923 (Jan)** – **French invade the Ruhr** after missed reparation payments.
- **1923 (Nov)** – **Hyperinflation crisis**; Hitler attempts **Munich Putsch**.
- **1924–29** – **Stresemann Era**: recovery, Dawes Plan (1924), Young Plan (1929).
- **1929** – **Wall Street Crash** sparks economic crisis in Germany.

♦ Rise of the Nazis (1929–1933)

- **1930** – Nazis gain 107 seats in the Reichstag.
 - **1932 (July)** – Nazis become largest party in Reichstag (230 seats).
 - **1933 (Jan 30)** – **Hitler becomes Chancellor.**
 - **1933 (Feb)** – **Reichstag Fire** blamed on communists; emergency powers given to Hitler.
 - **1933 (March)** – **Enabling Act** passed – Hitler can rule by decree.
 - **1933 (April–July)** – **Trade unions and other parties banned**; Germany becomes a one-party state.
 - **1933 (July)** – **Concordat** signed with Catholic Church.
-

♦ Nazi Consolidation of Power (1933–1939)

- **1934 (June)** – **Night of the Long Knives** – SA leaders (like Röhm) purged.
- **1934 (Aug)** – **Hindenburg dies**; Hitler becomes **Fuhrer**.
- **1935** – **Nuremberg Laws** introduced – racial laws against Jews.
- **1936** – **Hitler Youth** made compulsory.
- **1938 (Nov)** – **Kristallnacht** – coordinated attacks on Jews across Germany.
- **1939 (Sept)** – **WWII begins** with invasion of Poland.



Sharp minds in history: where to look

- Explore articles in 'History Today'
<https://www.historytoday.com/>
- Explore Cambridge University's online atlas
<https://www.cam.ac.uk/research/projects/occupations/online-atlas/>
- Explore the BBC's history content
<https://www.bbc.co.uk/history/british/>

Maths: Foundation Tier

List of Facts and Formulae to Memorise: Foundation Tier

This document lists the facts and formulae that will not be provided in your maths GCSE exam. Keep testing yourself until you get them right every time. This is not a full revision list – it only covers facts and does not list all the skills and procedures you also need to know.

Number Facts

- First fifteen square numbers: 1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225
- First five cube numbers: 1, 8, 27, 64, 125
- Powers of 2: 2, 4, 8, 16, 32, 64, 128, ...
- Powers of 3: 3, 9, 27, 81, ...
- Powers of 4: 4, 16, 64, ...
- Powers of 5: 5, 25, 125, 625, ...
- Powers of 10: 10, 100, 1000, 10000, ...
- The triangular numbers: 1, 3, 6, 10, 15, 21, 28, ...
- The Fibonacci sequence: 1, 1, 2, 3, 5, 8, 13, 21, ...
- Primes: 2, 3, 5, 7, 11, 13, 17, 19, 23, 29, ...

Index Laws

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

$$a^{-m} = \frac{1}{a^m}$$

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

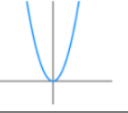
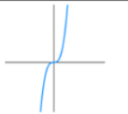
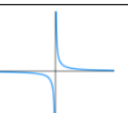
$$(a^m)^n = a^{m \times n} = a^{mn}$$

$$a^0 = 1$$

Types of Sequence

- Arithmetic: add the same amount each time
- Geometric: multiply by the same amount each time
- Quadratic: common second difference
- Fibonacci: add the previous two terms

Standard Graph Shapes

	LINEAR	$y = mx + c$
	QUADRATIC	$y = x^2$
	CUBIC	$y = x^3$
	RECIPROCAL	$y = \frac{1}{x}$

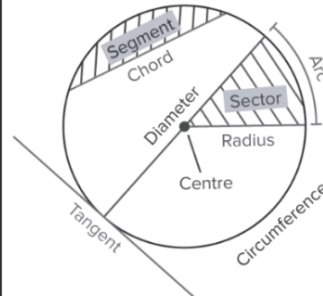
Exact Trig Values

	0°	30°	45°	60°	90°
sin	0	$\frac{1}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{3}}{2}$	1
cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	x

Metric Unit Conversions

- Length: 10mm in 1cm, 100cm in 1m, 1000m in 1km
- Mass: 1000mg in 1g, 1000g in 1kg, 1000kg in 1 tonne
- Capacity 1000ml in 1l, 100cl in 1l

Parts of a Circle



Area

- Area of rectangle, square and parallelogram = base x perpendicular height
- Area of triangle = $\frac{1}{2}$ x base x perpendicular height

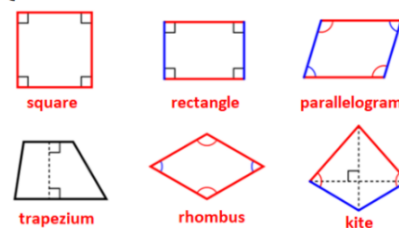
Sectors and Arcs

- Area of sector (radius r , angle x): $\frac{x}{360} \pi r^2$
- Length of arc (diameter d , angle x): $\frac{x}{360} \pi d$

Types of Angle

- Acute: Between 0° and 90°
- Right: 90°
- Obtuse: Between 90° and 180°
- Reflex: Between 180° and 360°

Quadrilaterals



Triangles

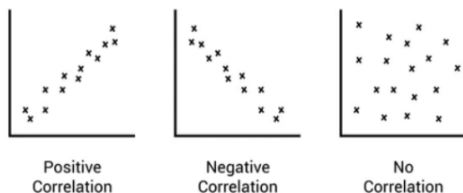
Type of Triangle	Angle property	Diagram
Isosceles	The two base angles are equal	
Right angle	One angle is equal to 90°	
Equilateral	All three angles are equal to 60°	
Scalene	Three different angles (with no angle equal to 90°)	

Maths Foundation Tier continued

Averages and Spread

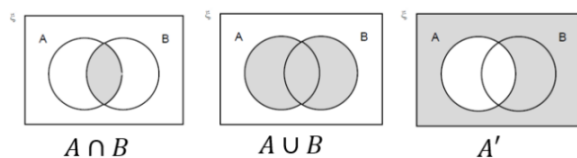
- Mode = most frequent value
- Median = middle value (when ordered)
- Mean = sum the values and divide by how many there are
[from a grouped frequency table, estimate the mean using the midpoint of each class]
- Range = maximum value minus minimum value

Scatter Graphs



- Interpolation: making a prediction within the range of the data [using a line of best fit]
- Extrapolation: making a prediction outside the range of the data [unreliable]

Sets Notation



Linear Graphs

$$y = mx + c$$

↑ gradient ↑ y-intercept

- $m = \frac{\text{change in } y}{\text{change in } x}$
- Parallel lines have the same gradient
- $y = c$ is a horizontal line
- $x = a$ is a vertical line

Compound Measures

Speed = Distance ÷ Time

Density = Mass ÷ Volume

Fractions, Decimals and Percentages

0.5	50%	$\frac{1}{2}$
0.25	25%	$\frac{1}{4}$
0.1	10%	$\frac{1}{10}$
0.01	1%	$\frac{1}{100}$
0.2	20%	$\frac{1}{5}$
0.75	75%	$\frac{3}{4}$

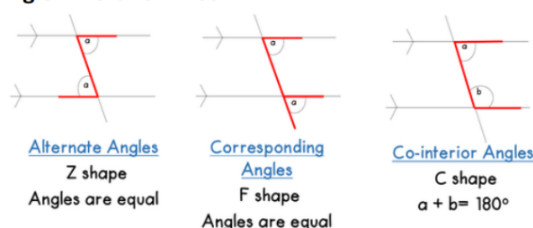
Polygon Names



Angle Facts

- Angles around a point sum to 360°
- Adjacent angles on a straight line sum to 180°
- Vertically opposite angles are equal
- Interior angles in a triangle sum to 180°
- Interior angles in a quadrilateral sum to 360°
- Opposite angles in parallelograms are equal

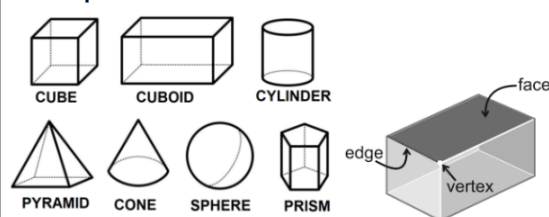
Angle in Parallel Lines



Angles in Polygons

- Sum of the interior angles of an n -sided polygon is $180(n - 2)$
- Sum of the exterior angles of any polygon is 360°
- interior angle + exterior angle = 180°

3D Shapes



Describing Shape Transformations

Reflection: Line of reflection

Rotation: Centre, angle and direction

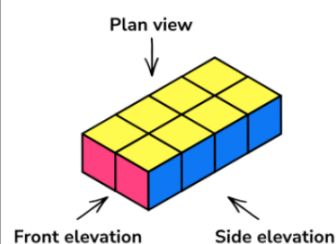
Translation: Vector

Enlargement: Centre and scale factor

Bearings

Measure from the north, measure clockwise and give three figures

Plans and Elevations



Maths: Higher Tier

List of Facts and Formulae to Memorise: Higher Tier

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$$a^{-m} = \frac{1}{a^m}$$

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

$$a^0 = 1$$

$$a^{\frac{m}{n}} = \sqrt[n]{a^m}$$

$$(a^m)^n = a^{m \times n} = a^{mn}$$

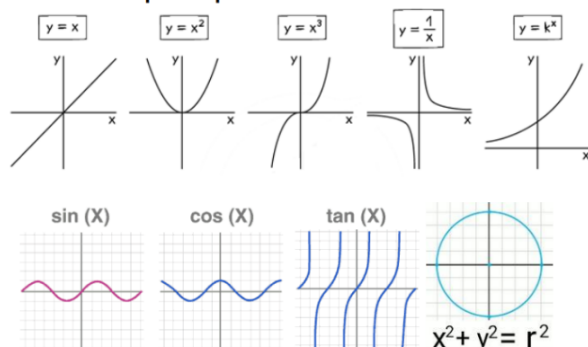
Inequalities

	Not included	Included
On a number line	○	●
Graphical	Dashed line	Solid line

Linear Graphs

- In $y = mx + c$, m is the gradient and c is the y-intercept
- $m = \frac{\text{change in } y}{\text{change in } x}$
- Parallel lines have the same gradient
- Perpendicular gradient = negative reciprocal
- $y = c$ is a horizontal line
- $x = a$ is a vertical line

Standard Graph Shapes



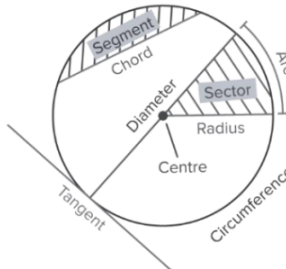
Graph Transformations

- $y = f(x + a)$: translate a units left
- $y = f(x) + a$: translate a units up
- $y = -f(x)$: reflect in x axis (vertical)
- $y = f(-x)$: reflect in y axis (horizontal)

Metric Unit Conversions

- Length: 10mm in 1cm, 100cm in 1m, 1000m in 1km
- Mass: 1000mg in 1g, 1000g in 1kg, 1000kg in 1 tonne
- Capacity 1000ml in 1l, 100cl in 1l

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Describing Shape Transformations

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Rotation: Centre, angle and direction

Translation: Vector

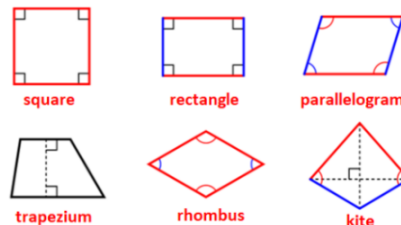
Enlargement: Centre and scale factor

Invariance: When a point or shape remains in the same place after a transformation has been applied.

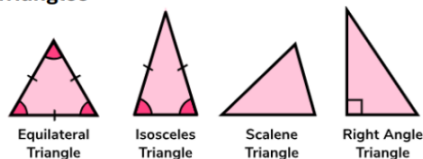
Types of Angle

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- Right: 90°
- Obtuse: Between 90° and 180°
- Reflex: Between 180° and 360°

Quadrilaterals



Triangles



Maths Higher Tier continued

Proportion Formulae

- y is directly proportion to x : $y = kx$
- y is inversely proportional to x : $y = \frac{k}{x}$

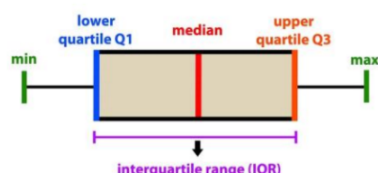
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cos	1	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{2}}{2}$	$\frac{1}{2}$	0
tan	0	$\frac{1}{\sqrt{3}}$	1	$\sqrt{3}$	∞

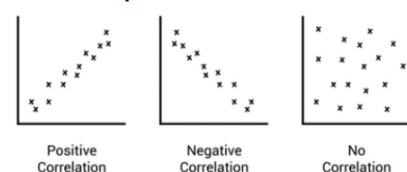
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- Mode = most frequent value
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- Mean = sum the values and divide by how many there are [from a grouped frequency table, estimate the mean using the midpoint of each class]
- Range = maximum value minus minimum value
- Interquartile range = upper quartile minus lower quartile

Box Plots



Scatter Graphs

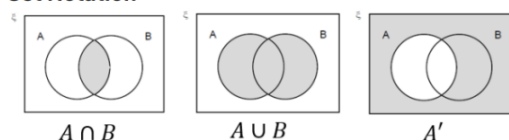


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Histograms

$$\text{Frequency density} = \frac{\text{frequency}}{\text{class width}}$$

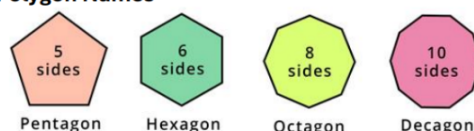
Set Notation



Types of Sequence

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- Geometric: multiply by the same amount each time (common ratio)
- Quadratic: common second difference
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Polygon Names



Angle Facts

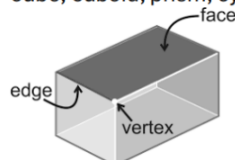
- Angles around a point sum to 360°
- Adjacent angles on a straight line sum to 180°
- Vertically opposite angles are equal
- Interior angles in a triangle sum to 180°
- Alternate angles in parallel lines are equal
- Corresponding angles in parallel lines are equal
- Co-interior angles in parallel lines sum to 180°
- Opposite angles in parallelograms are equal
- Interior angles in a quadrilateral sum to 360°
- Sum of the interior angles of an n -sided polygon is $180(n - 2)$
- Sum of the exterior angles of any polygon is 360°
- interior angle + exterior angle = 180°

Circle Theorems

- The angle at the centre is twice the angle at the circumference
- The angle in a semicircle is a right angle
- Angles in the same segment are equal
- Opposite angles of a cyclic quadrilateral sum to 180°
- A tangent meets a radius at 90°
- Tangents from an external point are equal in length
- The perpendicular from the centre to a chord bisects the chord
- The angle between a tangent and a chord is equal to the angle in the alternate segment

3D Solids

cube, cuboid, prism, cylinder, pyramid, cone and sphere



Similarity

- Length scale factor = k
- Area scale factor = k^2
- Volume scale factor = k^3

Bearings

Measure clockwise from the north and give three figures.

Congruency Proofs

- SSS: Side, Side, Side
- SAS: Side, Angle, Side (must be the included angle)
- ASA: Angle, Side, Angle
- RHS: Right Angle, Hypotenuse, Side

Compound Measures

Speed = Distance $\div$ Time

Density = Mass $\div$ Volume



Sharp minds in maths: where to look

- Parallel Maths by Simon Singh <https://parallel.org.uk/>
This contains a selection of problem-solving and rich maths tasks.
- Corbett Maths <https://corbettmaths.com/>
This contains video clips and worksheets (with answers) for every module in maths.
- Sparx Maths
Try completing the Booster XP questions in your Sparx Maths
- Brilliant.org
A selection of problem-solving and rich maths tasks
- <https://nrich.maths.org/students/secondary>
Lots of challenging problem-solving activities designed by Cambridge University for secondary school students

Music

Bach, Badinerie

Date of composition	1738-1739	dynamics	Terraced
Full name of composer	Johann Sebastian Bach (J.S. Bach)	tempo	Allegro
Structure	Binary (with repeats)	time signature	2/4
Key of section A	B minor, modulating to F sharp minor	keyboard instrument	Harpsichord
Key of section B	F sharp minor, modulating to B minor	main texture	Homophonic / melody and accompaniment
Motif X		harmonic features	Diatonic / root position and 1 st inversion chords / perfect and imperfect cadences / some suspensions / Neapolitan sixth in b.35
Motif Y		Badinerie	An 18th-century movement from a suite of dances; this badinerie is from Bach's Orchestral Suite No.2

Toto, Africa

Date recorded	1981	Introduction chords	A - G#m - C#m (Africa Gives My Children Memories)																
Date released	1982	Riff a																	
Album	Toto IV	Riff b																	
Composers	David Paich and Jeff Porcaro	Verse chords: 9-bar phrases	<table><tr><td>Bar 1</td><td>Bar 2</td><td>Bar 3</td><td>Bar 4</td><td>Bar 5</td><td>Bar 6</td><td>Bar 7</td><td>Bar 8/9</td></tr><tr><td>B</td><td>D#m</td><td>G#m</td><td>B/F#</td><td>A/E</td><td>E/F#</td><td>G#m</td><td>Riff a</td></tr></table> (Bass Drums Go BANG At Every Good American Graduation Ceremony)	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7	Bar 8/9	B	D#m	G#m	B/F#	A/E	E/F#	G#m	Riff a
Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	Bar 7	Bar 8/9												
B	D#m	G#m	B/F#	A/E	E/F#	G#m	Riff a												
Structure	Intro - verse 1 - chorus 1 - link 1 - verse 2 - chorus 2 - link 2 - instrumental - chorus 3 - outro	Verse chords: 8-bar phrase	<table><tr><td>Bar 1</td><td>Bar 2</td><td>Bar 3</td><td>Bar 4</td><td>Bar 5/6</td><td>Bar 7</td><td>Bar 8</td></tr><tr><td>B</td><td>D#m</td><td>G#m</td><td>G#m</td><td>Riff a</td><td>C#m</td><td>C#m</td></tr></table>	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5/6	Bar 7	Bar 8	B	D#m	G#m	G#m	Riff a	C#m	C#m		
Bar 1	Bar 2	Bar 3	Bar 4	Bar 5/6	Bar 7	Bar 8													
B	D#m	G#m	G#m	Riff a	C#m	C#m													
Key of choruses	A major	Chorus chords: 4-bar phrases	<table><tr><td>Bar 1</td><td>Bar 2</td><td>Bar 3</td><td>Bar 4</td></tr><tr><td>F#m</td><td>D</td><td>A</td><td>E</td></tr></table> (Fat Dogs Always Eat)	Bar 1	Bar 2	Bar 3	Bar 4	F#m	D	A	E								
Bar 1	Bar 2	Bar 3	Bar 4																
F#m	D	A	E																
Key of all other sections	B major	Chorus chords: 6-bar phrase	<table><tr><td>Bar 1</td><td>Bar 2</td><td>Bar 3</td><td>Bar 4</td><td>Bar 5</td><td>Bar 6</td></tr><tr><td>F#m</td><td>D</td><td>A</td><td>C#m</td><td>E</td><td>F#m - E/G#</td></tr></table> (Fat Dogs And Cats Eat Fried Eggs!)	Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6	F#m	D	A	C#m	E	F#m - E/G#				
Bar 1	Bar 2	Bar 3	Bar 4	Bar 5	Bar 6														
F#m	D	A	C#m	E	F#m - E/G#														

Other

1	diatonic	Using only notes from inside the key.
2	chromatic	Including notes from outside the key.
3	fusion	Combining features from different musical styles.
4	bhangra	A style which fuses traditional folk music from the Punjab region with Western pop.
5	chaal rhythm	The dotted 8-note rhythmic pattern found in bhangra.
6	dhol	The double-headed drum which usually plays the chaal rhythm.
7	tabla	A pair of drums used in Indian music.
8	sitar	Indian string instrument with a long neck, frets and sympathetic strings.
9	sarangi	Indian bowed string instrument with no frets.
10	tumbi	A single-stringed Indian instrument, played by plucking.
11	countermelody	A second melody, heard at the same time as the main melody.
12	minimalism	A 20th-century style characterized by simple ideas, repetition and very gradual change.
13	layering	Combining multiple ostinati at the same time.
14	polyrhythm	When different rhythms are heard simultaneously.
15	isorhythmic overlap	Ostinati of different lengths stated simultaneously.
16	transformation / metamorphosis	Gradual change of a motif / cell over time.
17	additive melody	When notes are gradually added to a repeated phrase.
18	phase shifting	2 identical phrases start out 'in sync'; one is played slightly faster than the other; they get 'out of sync' (and will eventually go back 'in sync').
19	rhythmic displacement	Moving a motif forward or backward so it starts on a different beat of the bar.



Sharp minds in music: where to look

- Attend an extra-curricular music club for at least a term
- Take part in the school production
- Attend a concert or production, either within or outside school
- Spend extended time outside of class practising and composing

PE

Chapter 4: Sports Psychology		
1	ability	Inherited, stable traits that determine an individual's potential to learn or acquire a skill.
2	arousal	A physical and mental (physiological and psychological) state of alertness/readiness, varying from deep sleep to intense excitement/alertness.
3	closed skill	A skill which is not affected by the environment or performers within it. The skill tends to be done the same way each time.
4	direct aggression	Aggressive act which involves physical contact with others, eg a punch.
5	externally-paced skill	The skill that is started because of an external factor. The speed, rate or pace of the skill is controlled by external factors, eg an opponent.
6	extrinsic feedback	Received from outside of the performer, eg from a coach.
7	extrovert	Sociable, active, talkative, out-going personality type usually associated with team sports players.
8	feedback	Information a performer receives about their performance. Feedback can be given during and/or after performance.
9	fine movement (skill classification)	Small and precise movement, showing high levels of accuracy and coordination. It involves the use of a small group of muscles.
10	goal setting (SMART goals)	A method to increase motivation and reduce anxiety. Goals should be SMART: • specific – specific to the demands of the sport/muscles used/movements used • measureable – it must be possible to measure whether they have been met • accepted – they must be accepted by the performer and others involved, eg coach • realistic – they are actually possible to complete • time bound – over a set period of time.
11	goal types (performance goals and outcome goals)	Performance goals: Personal standards to be achieved. Performers compare themselves against what they have already done or suggest what they are going to do. There is no comparison with other performers. Outcome goals: Focus on end result/winning.
12	gross movement (skill classification)	Using large muscle groups to perform big, strong, powerful movements.
13	guidance	A method to convey information to a performer. Guidance methods: visual (seeing); verbal (hearing); manual (assist movement – physical); mechanical (use of objects/aids).
14	indirect aggression	Aggression which does not involve physical contact. The aggression is taken out on an object to gain advantage, eg hitting a tennis ball hard during a rally.
15	information processing	Making decisions. Gathering data from the display (senses), prioritising the most important stimuli to make a suitable decision. Input- Decision making- Output- Feedback
16	intrinsic feedback	Feedback given to yourself. See Kinaesthetic feedback.
17	introvert	A quiet, passive, reserved, shy personality type, usually associated with individual sports performance.
18	kinaesthetic feedback	A type of intrinsic feedback, received via receptors in the muscles. Sensations that are felt by the performer, providing information from movement.
19	mental rehearsal/ visualisation/imagery	Cognitive relaxation techniques involving control of mental thoughts and imagining positive outcomes.
20	motivation (intrinsic motivation and extrinsic motivation)	The drive to succeed or the desire (want) to achieve something/to be inspired to do something. This can be:intrinsic (the drive that comes from within such as for pride, satisfaction, a sense of accomplishment

		or self-worth) or extrinsic (the drive to perform well or to win in order to gain external rewards such as prizes, money or praise).
21	open skill	A skill which is performed in a certain way to deal with a changing or unstable environment, eg to outwit an opponent.
22	positive self-talk	Developing cognitive positive thoughts about your own performance.
23	self-paced skill	The skill is started when the performer decides to start it. The speed, rate or pace of the skill is controlled by the performer.
24	skill	A learned action/learned behaviour with the intention of bringing about predetermined results, with maximum certainty and minimum outlay of time and energy.
25	skill classification	Categorisation of sporting skills in accordance with set continua. These include: simple/complex continua; open/closed continua; self-paced/externally-paced continua; gross/fine continua.
26	tangible	Something that can be seen and touched, eg a trophy.

Chapter 5 Socio-cultural Influences		
1	anabolic steroids	Artificially produced male hormones mimicking testosterone. They promote muscle and bone growth, and reduce recovery time. Often used by power athletes, eg sprinters.
2	Beta blockers	Drugs that are used to steady nerves by controlling heart rate. They have a calming and relaxing effect.
3	commercialisation	To manage or exploit (an organisation, activity, etc) in a way designed to make a profit. The specification refers to commercialised activity as being sponsorship and the media only.
4	contract to compete	Unwritten agreement to follow and abide by the written and unwritten rules.
5	diuretic drugs	Drugs that remove fluid from the body, elevating the rate of bodily urine excretion.
6	Erythropoietin (EPO)	A type of peptide hormone that increases the red blood cell count.
7	etiquette	A convention or unwritten rule in an activity. It is not an enforceable rule but it is usually observed.
8	gamesmanship	Attempting to gain an advantage by stretching the rules to their limit, eg time wasting.
9	hooliganism	Disorderly, aggressive and often violent behaviour by spectators at sporting events.
10	home field advantage	Gaining an advantage in a sporting event from being in familiar surroundings, with the majority of the spectators supporting you.
11	media	Diversified technologies which act as the main means of mass communication. These include: printed media (eg newspapers); broadcast media (eg TV and radio); internet/social media (eg Facebook); outdoor media (eg billboards).
12	narcotic analgesics	Drugs that can be used to reduce the feeling of pain.
13	peptide hormones	Drugs that stimulate the production of naturally occurring hormones (eg EPO), which increase red blood cell count/oxygen carrying capacity.
14	role model	A person looked to by others as an example to be imitated.
15	sponsor	An individual or group that provides financial support to an event, activity, person, or organisation.
16	sponsorship	Provision of funds or other forms of support to an individual or event in return for some commercial return.
17	sportsmanship	Conforming to the rules, spirit and etiquette of a sport. Static stretching Holding a stretch still/held/isometric.
18	stimulants	Drugs that have an effect on the central nervous system, ie they increase mental and/or physical alertness.

PE continued

Chapter 6: Health, Fitness & Well-being		
1	balanced diet	It is defined as eating: the right amount (for energy expended); the right amount of calories; according to how much you exercise; different food types to provide suitable nutrients, vitamins and minerals.
2	body composition	The percentage of body weight which is fat and non-fat (muscle and bone).
3	calorie	A unit which measures heat or energy production in the body, normally expressed as Kcal.
4	carbohydrate	The body's preferred energy source.
5	dehydration	Excessive loss of body water interrupting the function of the body. Hydration Having enough water to enable normal functioning of the body. Rehydration Consuming water to restore hydration.
6	ectomorph	A somatotype characterised by being tall and thin. Individuals with narrow shoulders and narrow hips.
7	endomorph	A somatotype, characterised by a pear shaped body/fatness. Individuals with wide hips and narrow shoulders.
8	health	A state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity
9	mesomorph	A somatotype, characterised by a muscular appearance. Individuals with wide shoulders and narrow hips.
10	obese	A term used to describe people with a large fat content, caused by an imbalance of calories consumed to energy expenditure. A body mass index (BMI) of over 30 or over 20% above standard weight for height ratio.
11	sedentary lifestyle	A lifestyle with irregular or no physical activity.
12	somatotype	A method of classifying body type. Body types: ectomorph; endomorph; mesomorph See these terms for definitions of individual somatotypes.
13	vitamins	Organic substances that are required for many essential processes in the body, eg Vitamin A for structure and function of the skin.



Sharp minds in PE: where to look

- **'GCSE PE' google classroom-** You will find all lesson materials here (powerpoints / handouts) + 'stuck' videos, past paper questions & coursework guidance.
- **Sky Sports news / BBC Sport & watching LIVE sports** -Keep up to date with all sporting events. This will help you when preparing for AO2 based questions (applying your knowledge to sporting examples).
- **AQA GCSE PE specification-** Refer to this when preparing for your practical moderation, look specifically at the 5 key skill areas for each sport and what is required in the competitive component of the assessment.
- **BBC bitesize** (<https://www.bbc.co.uk/bitesize/examspecs/zp49cwx>)- Use this website when learning or, revisiting a topic

Photography

	Term	Definition
1	ambient	Another term for 'natural light', meaning light only from the sun.
2	aperture	The opening in the lens that lets light through. This can be made wider or smaller and is measured in F-Stops (see below). The wider the aperture, the more light is let in.
3	artificial light	Any light created that isn't naturally occurring, via mains power or battery.
4	blur	When a photo is not sharp. The subject of the photo may be hazy, unclear or out of focus.
5	burst mode	Usually you take one photo at a time but you can take multiple images in a row using burst mode. When in burst mode the camera will keep taking images at a set frame rate until you release the shutter. Particularly useful when capturing moving objects.
6	candid	A photo of a person that isn't posed. Most often the person won't know their photo is being taken and it will therefore be more natural.
7	composition	The composition is how and where elements of your photograph are put together.
8	exposure	How much light hits the sensor. The higher the exposure, the brighter the image.
9	filter	A glass or plastic ring attached to your lens to create a certain effect. (See also ND filter)
10	fish eye	The term is used when a wide angle is so extreme it creates a panoramic or hemispherical image, resulting in distortion which creates a 'bulging' effect.
11	golden hour	The time of day right before sunset or right after sunrise when the sun is at it's lowest on the horizon. Considered by many as the best time for flattering natural light photography.
12	lens	An optical lens made of glass, used in conjunction with a camera body to make images. It can be permanently fixed to a camera or it can be interchangeable. Different lenses have different focal lengths and apertures, and therefore will affect how the light hits the sensor in your camera.

13	macro	Macro lenses have the ability to focus to 1:1 magnification, so the size of the image in real life can be the same size as it's reproduced on the sensor. They also allow you to be able to focus a lot closer to your subject than normal lenses would.
14	resolution	The measurement of the quality of an image or screen, characterised in pixels squared. For example, high definition (HD) resolution is described as 1080 x 1920 pixels. Therefore, the lower the resolution, the more pixelated an image becomes. Uploading an image to the internet or using it in any digital capacity usually requires the image to be a minimum resolution.
15	saturation	Saturation means the colour intensity of an image.
16	shooting	Slang which refers to the practice of taking a photo by pointing and aiming your camera.

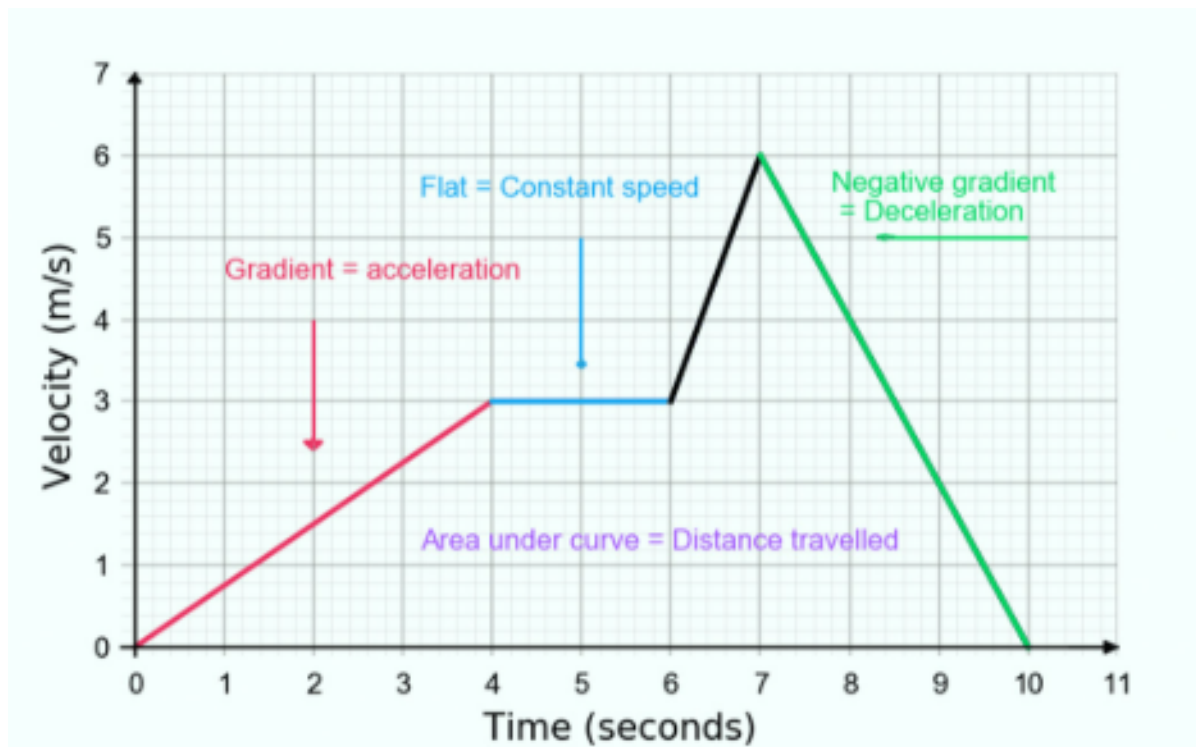


Sharp minds in photography: where to look

- Focus on demonstrating a clear process of development with varied experimentation, insightful artist research, and meaningful reflection.
- Show a coherent progression of ideas from initial mind maps and photoshoots to refined final pieces, ensuring all your digital sketchbook links together.
- Stay well-organised making sure that your presentation makes sense and it is easy for the examiner to understand your thought process.
- Visit galleries and or their websites as often as possible to give you inspiration:
 - <https://thephotographersgallery.org.uk/>
 - <https://www.tate.org.uk/>
 - <https://www.npg.org.uk/>
 - <https://www.saatchigallery.com/>

Physics

Learn this graph and how to calculate acceleration from it.

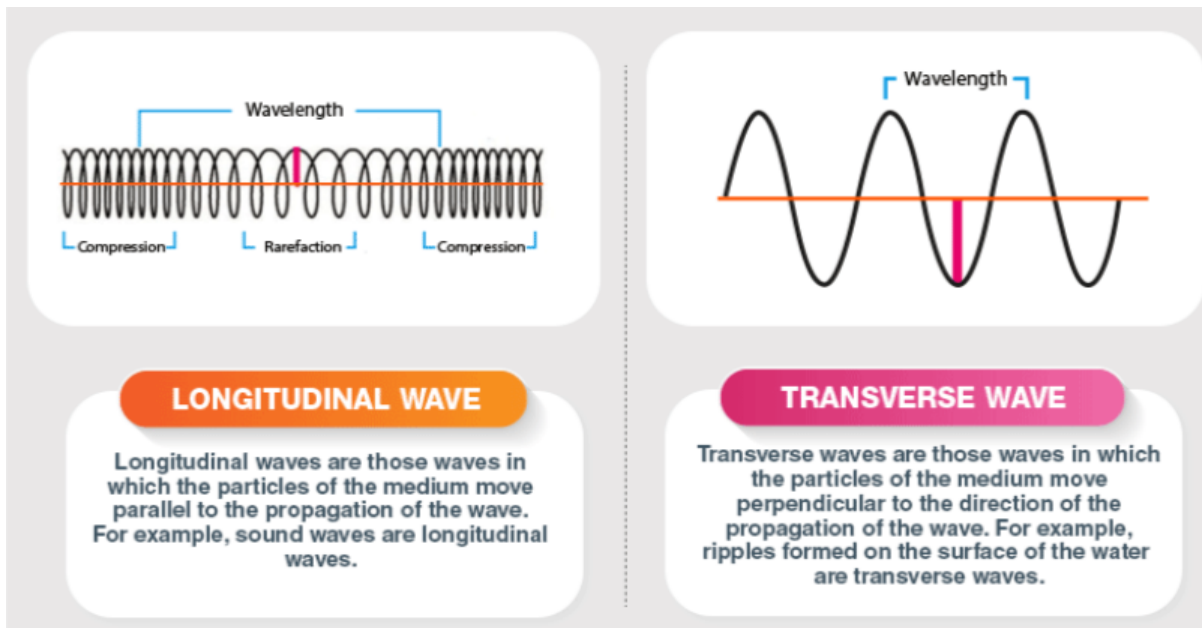


Here are the common speeds you need to remember:

Activity	Speed (m/s)	Speed (mph)
Walking	1.5	3
Running	3	7
Cycling	6	13
Driving in a car	15	40
Passenger on a train	35	80
Passenger on a jet	270	600

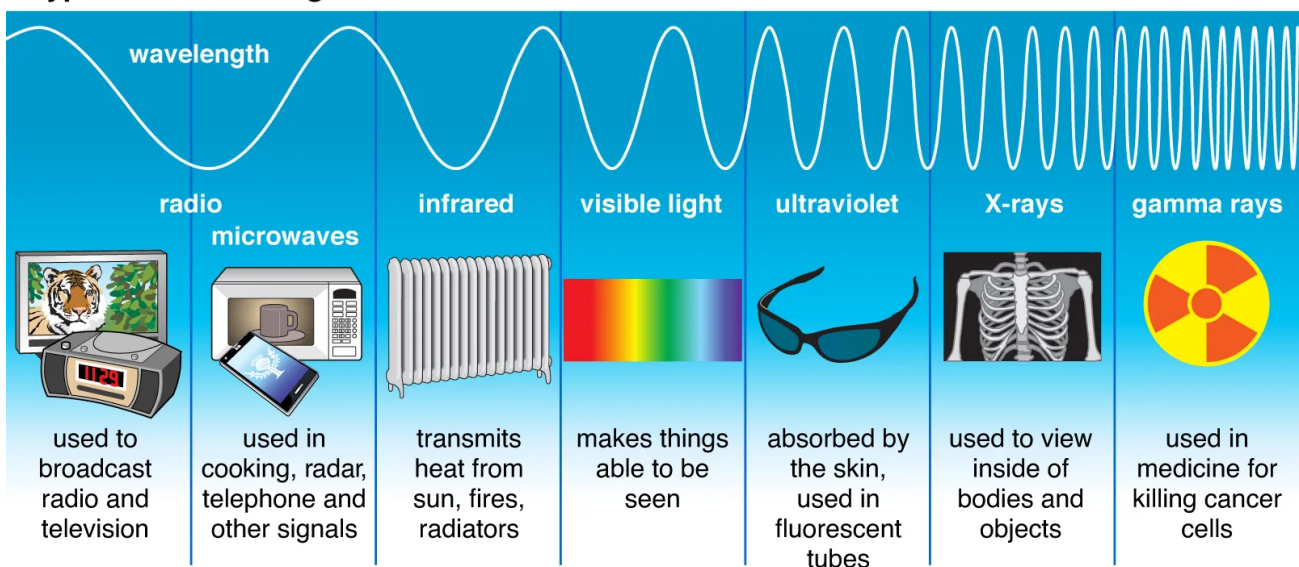
Physics continued

Learn the properties of longitudinal and transverse waves.



Can you think of a mnemonic to remember the order of the electromagnetic spectrum from largest to smallest wavelength?

Types of Electromagnetic Radiation



© Encyclopædia Britannica, Inc.

* Sharp minds can be found under 'Science'.

Psychology

Social Influence

	Term or word	Definition
1	conformity (majority influence)	Changing behaviour to match a group.
2	obedience	Following direct orders from an authority.
3	collective/crowd behaviour	Behaviour when in large groups.
4	deindividuation	Loss of personal identity in a crowd.
5	situational factors	External context (others, culture) shaping acts.
6	dispositional factors	Personality/traits shaping acts.
7	locus of control	Belief control is internal vs external.
8	authoritarian personality	One who holds obedient, rigid, conventional views
9	minority influence	When an individual or small group changes majority views.

Memory

	Term or word	Definition
1	input	Information entering the system.
2	encoding	Changing info into a storable form.
3	storage	Holding information over time.
4	retrieval	Accessing stored information.
5	output	Behaviour shown from memory.
6	sensory register	Initial, brief store for senses.
7	Short-term memory (STM)	Limited capacity/duration store.
8	Long-term memory (LTM)	Potentially unlimited store.
9	capacity	Amount that can be stored.
10	duration	How long info is stored.
11	acoustic/semantic encoding	Sound/meaning-based coding.
12	decay	Forgetting due to fading trace.
13	displacement	New info pushes out old in STM.
14	retrieval failure (lack of cues)	Cannot access without prompts.
15	reconstructive memory	Recall shaped by schemas/expectations.
16	schema	Knowledge framework shaping recall.
17	confabulation	Filling gaps with inaccurate details.
18	leading questions	Suggest answer; distort recall.
19	anterograde amnesia	Cannot form new memories (hippocampus).
20	retrograde amnesia	Loss of past memories (frontal links).
21	hippocampus	Brain area forming episodic memories.
22	frontal lobe	Planning; linked to retrograde amnesia.
23	cerebellum	Procedural memory and skills.

Sleep & Dreaming

	Term or word	Definition
1	REM sleep	Rapid eyes; vivid dreams.
2	circadian rhythm	24-hour biological cycle.
3	endogenous pacemaker (scn)	Internal body clock in hypothalamus.
4	exogenous zeitgeber	External cue (e.g., light).
5	melatonin	Hormone regulating sleepiness.
6	pineal gland	Releases melatonin.
7	hypothalamus	Regulates sleep/wake via SCN.
8	sleep hygiene	Habits/environment that aid sleep.
9	pons	Brainstem area triggering REM.
10	activation-synthesis theory	Dreams from random brain activation + synthesis.
11	Freudian dream theory	Dreams express unconscious wishes.
12	manifest content	What is remembered in a dream.
13	latent content	Hidden meaning of a dream.
14	wish fulfilment	Desires expressed symbolically.
15	repression	Keeping distressing thoughts unconscious.

Research Methods

	Term or word	Definition
1	Independent variable (IV)	Variable manipulated in an experiment
2	Dependent variable (DV)	Variable measured as the outcome
3	extraneous variables	Uncontrolled variables that may affect results
4	co-variables	Variables tested for correlation
5	independent measures design	Different participants in each condition
6	repeated measures design	Same participants in all conditions
7	target population	Group the researcher wants to study
8	sample	Participants chosen from population
9	reliability	Consistency of measurement or results
10	validity	Accuracy of results and conclusions
11	demand characteristics	When participants change behaviour due to study awareness
12	bias	Systematic errors (gender, cultural, experimenter, observer bias)
13	random sampling	Every individual has equal chance of being selected
14	opportunity sampling	Participants selected based on availability
15	self-selected sampling	Participants volunteer for the study
16	qualitative data	Non-numerical descriptive data
17	quantitative data	Numerical, measurable data
18	primary data	Data collected first-hand by researcher
19	secondary data	Data collected by others, used for research



Sharp minds in psychology: where to look

- Watch the revision videos on the Hartismere Psychology youtube channel (Paper 1 content only) <https://www.youtube.com/@hartismerepsychology4673>
- There are also excellent revision videos on a channel called PsychSpace

[PsychSpace - YouTube](#)

- You could practise past exam questions

[OCR GCSE Paper 1 Psychology Past Papers - PMT](#)

- <https://www.physicsandmathstutor.com/past-papers/gcse-psychology/ocr-paper-2-2/>
- Listen to the 'Speaking of psychology' podcast

[Podcast: Speaking of Psychology - YouTube](#)

Religious Studies

Christianity

	Term or word	Definition
1	omnipotent	All-powerful: God has unlimited power.
2	omniscient	All-knowing: God knows everything.
3	omnibenevolent	All-loving: God's nature is completely good and loving.
4	omnipresent	God is present everywhere at all times.
5	Trinity	God as three persons: Father, Son, and Holy Spirit.
6	incarnation	God becoming human in the form of Jesus.
7	resurrection	Jesus rising from the dead on Easter Sunday.
8	crucifixion	The method of Jesus' execution on the cross.
9	ascension	Jesus' return to Heaven 40 days after the resurrection.
10	salvation	Being saved from sin and its consequences.
11	literalist	Someone who believes the Bible is 100% factually true.
12	non-literalist	Someone who interprets Bible stories symbolically or metaphorically.

Relationships & families

	Term or word	Definition
1	cohabitation	Living together in a sexual relationship without being married.
2	natural contraception	Methods that involve timing (e.g. rhythm method) to avoid pregnancy.
3	artificial contraception	Man-made methods (e.g. condoms, the pill) to prevent pregnancy.
4	extended family	A family including more than just parents and children (e.g. grandparents).
5	nuclear family	A basic family unit of parents and children.
6	step family	A step-family formed after remarriage.
7	polygamy	Having more than one spouse at the same time (illegal in the UK).



Sharp minds in religious studies: where to look

- BBC bitesize:
<https://www.bbc.co.uk/bitesize/topics/z382xbk/articles/zrn6ywx#zbhqp9q>
<https://www.bbc.co.uk/bitesize/guides/z683rwx/revision/1>
<https://www.bbc.co.uk/bitesize/guides/zrpqmsg/revision/1>
<https://www.bbc.co.uk/bitesize/guides/zdxdqhv/revision/1>
<https://www.bbc.co.uk/bitesize/guides/zd6w7p3/revision/1>
<https://www.bbc.co.uk/bitesize/topics/z382xbk/articles/z7sc239>
- Seneca:
You have been added to a seneca classroom with topics and assignments that will help you with keywords and exam practice.
- Google classroom:
There are lots of resources to use on the Google Classroom. Here you will find booklets and powerpoints.
You will also find a document 'how to revise for religious studies' with various revision techniques to help you
Past papers are also on the google classroom

Science

	Term or word	Definition
1	accuracy	Results are considered accurate if they are close to the true value.
2	anomaly	A result which does not fit with the pattern seen in the rest of the results
3	data	Information collected in an experiment
4	evidence	Information collected by observation or measurement that supports a scientific prediction or hypothesis.
5	error	The difference between a measured value and the true value.
6	random error	Readings spread about the true value. These can be larger or smaller and cannot be corrected but can be reduced.
7	systematic error	Readings vary by the same amount each time. Can be removed or corrected by repeating with a new technique or equipment.
8	zero error	Occurs when a system displays a false reading when the true value is zero.
9	hazard	Something that could cause harm
10	hypothesis	A prediction based on scientific reasoning.
11	interval	The quantity or space between readings.
12	mean	A type of average. Calculated by adding all the values up and then dividing by the number of values
13	prediction	A statement suggesting what will happen in the future.
14	precaution	Something that reduces the risk of harm
15	precision	If repeat measurements do not vary much around the mean value they are precise. If there is a large spread in repeat readings precision is low..
16	range	The maximum and minimum values of the variables.
17	risk	How likely harm is to be caused
18	repeatable	When repeating an experiment the same scientist gets the same results with the same method and equipment.
19	reproducible	When a different scientist or a different method or equipment gets the same results or trend.

20	resolution	Smallest change in what is measured that gives a detectable change on the measuring equipment..
21	true value	Value that would be obtained in an ideal measurement.
22	uncertainty	Interval within which the true value can be expected to lie. For example a measurement of a leaf of 3.5 +/- 0.2 cm means the length could be anywhere between 3.3cm and 3.7cm.
23	validity	Suitability of an experiment to answer the question being asked.
24	valid data	An experiment in which only the independent variable affects the dependent variable.
25	valid conclusion	A conclusion supported by valid data from an appropriate experiment.
26	categoric variable	Variables with values that are labels or set categories. For example, eye colour
27	continuous variable	Variables with values that are measured or counted and take and value. For example temperature or time.
28	control variable	Something that could affect the outcome and should be kept constant.
29	dependent variable	Variable that is measured.
30	independent variable	The variable that is being changed in an investigation



Sharp minds in Science: where to look

- **Activity: IOP "Do Try This at Home"**
The Institute of Physics offers simple but impressive physics experiments to try at home, such as making a cloud in a bottle or exploring momentum with eggs.
Website: iop.org/explore-physics
- **Website: BBC Bitesize – GCSE Science**
Interactive revision guides, quizzes, and videos for all three sciences, tailored to the GCSE syllabus. Ideal for extending classroom knowledge.
Website: bbc.co.uk/bitesize/subjects
- **Book: "The Science Book" by DK**
Part of DK's Big Ideas series, this book explains key scientific concepts and discoveries with clear graphics – great for building background knowledge.
- **YouTube Channel: Physics Girl**
Hosted by Dianna Cowern, this channel explores fascinating physics concepts and questions in an accessible and often surprising way.
- **Podcast: "Science Vs"**
This podcast compares scientific facts to popular myths and opinions on topics like climate change, vaping, and fast food – ideal for developing critical thinking.

Spanish

Key verbs in three tenses

Past tense	Present tense	Future tense
Jugué = I played	Juego = I play	Voy a jugar = I am going to play
Comí = I ate	Como = I eat	Voy a comer = I am going to eat
Vi = I watched	Veo = I watch	Voy a ver = I am going to watch
Escuché = I listened	Escucho = I listen	Voy a escuchar = I am going to listen
Visité = I visited	Visito = I visit	Voy a visitar = I am going to visit
Hice = I did	Hago = I do	Voy a hacer = I am going to do
Fui = I went	Voy = I go	Voy a ir = I am going to go
Fue = it was	Es = it is	Será = it will be
		Me gustaría = I would like

Opinions

Opinion phrase	Positive	Negative
En mi opinión = in my opinion	divertido = fun/funny	aburrido = boring
Pienso que = I think that	interesante = interesting	terrible = awful
A mi parecer = according to me	genial = great	difícil = difficult
Creo que = I believe that	fantástico = fantastic	molesto = annoying
Diría que = I would say that	útil - useful	agotador = tiring
	guay = cool	desagradable = unpleasant
	inolvidable = unforgettable	insoportable = unbearable

Family and relationships

Me llevo bien con	I get on well with
Me llevo mal con	I get on badly with
Me peleo con	I argue with
Me divierto con	I have fun with
Mi padrastro	My (step) dad
Mi madrastra	My step mum
Es hablador/a	He/She is chatty
Es antipático/a	He/She is mean
Es simpático/a	he/She is nice
Es divertido/a	He/She is funny

Healthy living and lifestyle

Estoy enfermo	I am ill
Me duele la cabeza	I have a headache
Estoy en forma	I am in good shape
Estoy sano/a	I am healthy
Como verduras / carne	I eat vegetables / meat
Nunca como pastel / chocolate	I never eat cake / chocolate
Bebo agua	I drink water
Hago ejercicio	I do exercise
Duermo bien	I sleep well
No fumo	I don't smoke

Education and work

Me encanta el español / la historia	I love Spanish/ History
Mi asignatura favorita es ...	My favourite subject is...
En el futuro me gustaría...	In the future I would like...
Hacer bachillerato / formación profesional	to go sixth form / college
Ir a la universidad	to go to university
trabajar	to work
Hacer un aprendizaje	to do an apprenticeship
viajar	to travel
casarme	to get married
Ser profesor(a) / cantante	to be a teacher / singer

Free-time activities

Juego al rugby / al fútbol / al baloncesto	I play football / rugby / basketball
Juego a los videojuegos / a las cartas	I play video games / cards
Toco la guitarra / el piano	I play the guitar / the piano
Hago ciclismo / natación / deporte	I go biking / swimming / sport
Voy de compras	I go shopping
Veo la tele / películas	I watch TV / films
Escucho música / la radio	I listen to music / the radio
Como en un restaurante / una pizza	I eat at a restaurant / a pizza
Leo libros / revistas	I read books / magazines
Visito el museo / es castillo	I visit the museum / the castle
Voy al cine / al centro	I go to the cinema / into town

Customs, festivals and celebrations

Navidad / Año Nuevo / Pascua	Christmas / New Year / Easter
Como pastel / chocolate	I eat cake / chocolate
Paso tiempo con mi familia	I spend time with my family
Doy / recibo / abro regalos	I give / receive / open presents
Bebo cava	I drink champagne
Celebro con una fiesta	I celebrate with a party
Voy a un festival de música	I go to the music festival
Canto	I sing
Bailo	I dance
Hay fuegos artificiales	There are fireworks



Sharp minds in Spanish: where to look

- BBC Bitesize : <https://www.bbc.co.uk/bitesize/examspecs/zjgpg2p>
- Quizlet – make revision cards and learn vocabulary
- Lingo Clip – listen to music and improve your Spanish <https://lingoclip.com/es>
- Watch Spanish films and television programmes on Netflix, having subtitles in English is absolutely fine.
- Conjuguemos - practise verb conjugations and grammar points
<https://conjuguemos.com/activities/spanish/grammar/1>

<https://conjuguemos.com/activities/spanish/verb/1>

Sport and Coaching Principles

Unit 1: Fitness for Sport		
1	abduction	A movement away from the midline of the body.
2	adduction	A movement towards the midline of the body.
3	aerobic energy system	Produces energy using glycogen obtained from carbohydrates. Oxygen is used in the production of energy. Suited to low/moderate aerobic activity over a long period of time. Provides energy indefinitely.
4	anaerobic energy system	Produces energy using two different systems (ATP-CP and lactic acid) without the presence of oxygen. Suited to high-intensity exercise over a short period of time. Provides energy for approximately 90 seconds. Lactic acid is a by-product of this system and causes fatigue.
5	antagonist	The opposite muscle to the agonist; it relaxes when the agonist contracts.
6	ATP-CP energy system	ATP-CP energy system – Supplies energy faster than the other energy systems. Suited to explosive, high-intensity exercise of short duration without the presence of oxygen. Provides energy for approximately 10-15 seconds.
7	cardiac output	The volume of blood pumped out of the heart per minute (HR x Stroke volume).
8	cardio-respiratory system	Made up of the heart, lungs and the blood vessels. Its main function is to transport oxygen from the air we breathe into the body and remove carbon dioxide and other waste products out of the body.
9	cardio-vascular system	Made up of the heart and blood vessels. Its main functions are to transport oxygen to the working muscles, remove carbon dioxide and other waste products from the body and maintain appropriate body temperature.
10	circumduction	A circular movement at a joint that involves flexion, extension, abduction and adduction.
11	extension	Straightening a joint. This occurs when the angle of a joint increases.
12	fast twitch/type ii muscle fibre	Muscle fibres with a good blood supply which contract quickly and with a
13	flexion	Bending a joint. This occurs when the angle of a joint decreases.
14	gaseous exchange	The transfer of oxygen from inhaled air into the blood and of carbon dioxide from the blood into exhaled air.
15	heart rate	The number of times the heart beats per minute (bpm).
16	hypertrophy	An increase in muscle size. It is one of the long-term effects of exercise on the body.
17	minute ventilation	The volume of air breathed in and out per minute.
18	muscular-skeletal system	Made up of the skeletal system and the muscular system. Allows different types of the body's movement patterns to take place.
19	prime mover/agonist	The muscle that controls the body movement.
20	rotation	A twisting movement at a joint.
21	slow twitch/type i muscle fibre	Muscle fibres with a poor blood supply, that contract slowly and with a low force. Suited to low- or moderate-intensity aerobic exercise over a long period of time.
22	stroke volume	The volume of blood pumped out of the heart per beat.
23	synovial joints	Freely moveable joints containing synovial fluid that allow a wide range of movement to take place. Different types of joint allow different types of movement.
24	tidal volume	The volume of air inhaled or exhaled per breath.
25	training zones	Intensities of training based on heart rates in which aerobic improvement (60-80% of maximum heart rate), anaerobic improvement (80-90% of maximum heart rate) and maximal effort (above 90% of maximum heart rate) take place.
26	vasoconstriction	The closing of the blood vessels.
27	vasodilation	The opening of the blood vessels.

Sport and Coaching Principles continued

Unit 2: Improving Sporting Performance		
1	agility	The ability to change direction at speed.
2	anxiety	A feeling of unease that can cause a lack of focus and an increased level of tension and nerves. Anxiety can have somatic (physical) effects or cognitive (mental) effects on an athlete.
3	balance	The ability to maintain the stability of the body's centre of gravity above the base of support.
4	body composition	The ratio between body fat and muscle tissue and the impact of this on body weight.
5	body type	Also known as somatotype. Refers to the idea that there are three predetermined body types: endomorph, ectomorph and mesomorph.
6	cardio-vascular endurance	The ability to exercise for a sustained period of time.
7	continuous training	Training without rest periods (continually) at submaximal levels for a long period of time using the aerobic system. An example of this would be jogging.
8	co-ordination	The ability to move two or more body parts at the same time.
9	energy balance	The relationship between energy consumed and energy expended in terms of exercise.
10	feedback	Any information an athlete receives about an aspect of their performance. The information can come from inside the athlete (intrinsic) or from an external source (Extrinsic). Knowledge of performance (KP) focuses on the quality of a performance while knowledge of results (KR) focuses on the outcome of a performance
11	fitness tests	Methods of measuring and assessing the components of health and fitness. Offers a baseline of data.
12	flexibility	The range of movement around a joint.
13	health tests/screening	Procedures for measuring and assessing body composition, blood pressure and heart rate.
14	imagery/mental rehearsal	A strategy that involves the athlete imagining themselves successfully completing parts of or their whole sporting performance.
15	interval training	Training at high intensity for a short period of time and then resting before exercising again. Examples include circuit training and plyometric training.
16	motivation	The drive and desire to perform to the best of your ability. It can come from within the athlete (intrinsic motivation) or from outside sources (extrinsic motivation).
17	muscular endurance	The ability to exercise a specific muscle or muscle group for a sustained period of time.
18	muscular strength	The maximum force a muscle can generate against a resistance.
19	notational analysis	Watching a sporting performance and recording key pieces of information about it. The data recorded is usually quantitative.
20	nutrition plan	A structured series of meal plans, drinks and supplements put together to ensure a sports performer receives the nutrients they need to maximise their performance.
21	power	Speed multiplied by strength.
22	principles of training	The principles that must be applied to any training programme if it is to be effective and efficient. These principles are specificity, progression, overload and variance.
23	qualitative data	Unmeasurable data based on opinion, thoughts or feelings.
24	quantitative data	Measurable data based on empirical or numerical figures and statistics.
25	reaction time	The time taken to respond to a stimulus.

26	reliability	The extent to which a test produces the same result when repeated. Fitness tests must be administered accurately to be reliable and for comparisons with normative data to be accurate.
27	self-talk	A strategy that involves the athlete repeating key messages to themselves before and during their sporting performance to reduce levels of anxiety and stress and to focus on the key elements of their technique, skills or strategies.
28	SMART goals and target setting	SMART goals and target setting – Processes that can be used to focus an athlete's efforts and increase their motivation by providing them with long-term SMART goals and short-term targets to aim for.
29	speed	The ability to move the body, or a body part, as quickly as possible from point A to B.
30	strategies/game plans	Overall plans involving teams or individual players put in place by players or coaches to maximise the chances of winning. Considered in these plans will be the strengths and weaknesses of the individual or team themselves and the opposition along with various other factors. It is difficult to change a strategy/game plan during a performance.
31	subjective	Opinion, thoughts or feelings describing qualities or characteristics.
32	tactics	Methods of play put in place to facilitate the strategy/game plan. They will look to utilise the individual's or team's skills to the best possible advantage.
33	techniques	Particular methods of carrying out movements associated with different sporting activities. They can be changed quickly during a performance if needed.
34	training programme	A structured series of training sessions designed to improve specific elements of an individual's or team's performance.
35	types of guidance	These are the different ways in which a coach can provide guidance for an athlete. The types of guidance they can provide are verbal, visual, mechanical and manual. The most appropriate type of guidance for a coach to use will depend on the ability and experience of the individual or team and the specific sporting activity being developed
36	types of practice	These are the different types of practice that a coach can use during coaching sessions. The types of practice they can use will vary, and the most appropriate to use will depend on the ability and experience of the individual or team and the specific sporting activity being developed.
37	validity	Fitness tests must measure the required component of health or fitness in order to be valid.

Unit 3: Coaching Principles		
1	aims	What you hope to achieve. These are often in the form of long term goals.
2	conditioned/small-sided/competitive elements and practices	Different types of activity of different levels of intensity and competition that can be included during a coaching session to develop skills, techniques, strategies/game plans or tactics.
3	cool down	The final component of a coaching session. It consists of activities designed to remove waste products from the muscles and to return the heart rate to normal.
4	drills	Exercises or activities designed to improve a skill or technique that can be repeated during a coaching session.
5	health and safety	Regulations and procedures intended to prevent accidents or injuries.
6	professional conduct	Professional conduct – The ethics, morals and standards of behaviour expected of someone in a position of responsibility (such as a sports coach).
7	responsibility	Having a duty to deal with something.

8	risk assessment	The systemic process of identifying and evaluating the potential hazards and risk factors involved in planned activities.
9	safeguarding	Appropriate measures and procedures put in place to try and protect people, particularly children, from harm or damage.
10	skill	The ability to do something well and demonstrate expertise.
11	stages of learning	The three stages that a sports performer moves through as they become more skilled and proficient at their sporting or physical activity. These stages are the cognitive or preparation phase, the associative or practice phase and the autonomous or automatic phase.
12	SWOT analysis	A method used to identify internal strengths and weaknesses and external opportunities and threats.
13	transitions/progressions	Movements and developments between the different drills and components that make up a coaching session.
14	warm-up	The first component of a coaching session. It is intended to raise the heart rate and increase blood circulation, mobility and mental focus.



For 'Sharp Minds', please see 'PE'.

Quizzing pages**Subject:**

You could practise here, or use your rough book.

	Word or term	Definition
1		
2		
3		
4		
5		

Cover up this box for your next go!

Attempt 2

	Word or term	Definition
1		
2		
3		
4		
5		

Cover up this box for your next go!

Attempt 3

	Word or term	Definition
1		
2		
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5		

Quizzing pages

Subject:

You could practise here, or use the back of your yellow Citizenship book.

	Word or term	Definition
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Cover up this box for your next go!

Attempt 2

	Word or term	Definition
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Cover up this box for your next go!

Attempt 3

	Word or term	Definition
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Quizzing pages**Subject:**

	Word or term	Definition
1		
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Cover up this box for your next go!

Attempt 2

	Word or term	Definition
1		
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3		
4		
5		

Cover up this box for your next go!

Attempt 3

	Word or term	Definition
1		
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3		
4		
5		

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