The **Scholar's Guide**

Year 10

Cycle Three

Name:

Tutor Group:

OXFORD SPIRES ACADEMY

BE THE BEST YOU CAN BE

My Timetable

	MON	TUE	WED	THU	FRI
Tutor 8:30am					
Period 1 9:00 -10:00am					
Period 2 10:00 -11:00am					
Break 11:00am - 11:20am					
Period 3 11:20 - 12:20pm					
Period 4 12:20 - 13:20pm					
Lunch 13:20 - 14:00pm					
Period 5 14:00 - 15:00pm					
End of Day / Extra Curricular 15:00pm					

How we teach at OSA

Scholars Calendar

Week	Monday	Tuesday	Wednesday	Thursday	Friday
1	25th March	26th March	27th March	28th March	29th March
	Y10 Geography Field Trip		Y10 Geography Field Trip Humanitarian Aid Day	OSA Society Day	Bank Holiday
Easter Holidays					
2	15th April	16th April	17th April	18th April	19th April
				Barclay Life Skills Drop Down	
3	22nd April	23rd April	24th April	25th April	26th April
	Drama Shakespeare Festival				
				Junior Maths Challenge Year 10 Parents Evening	
4	29th April	30th April	1st May	2nd May	3rd May
	Astronomy Talk - Chris Lintott				
5	6th May	7th May	8th May	9th May	10th May
	Bank Holiday			Year 8 Parents Evening	
6	13th May	14th May	15th May	16th May	17th May
	House Sports Week Oxford City Arts Week				
					Barclay Life Skills Drop Down

Scholars Calendar

Week	Monday	Tuesday	Wednesday	Thursday	Friday
7	20th May	21st May	22nd May	23rd May	24th May
Half Term					
8	3rd June	4th June	5th June	6th June	7th June
	PRIDE month		Barclay Life Skills Drop Down		
9	10th June	11th June	12th June	13th June	14th June
	Reading Age Tests Y7-10				
			Music Concert		
Year 10 & 12 Mocks					
10	17th June	18th June	19th June	20th June	21st June
	Reading Age Tests Y7-10				
Assessment Week & Year 10,12 Mocks					
11	24th June	25th June	26th June	27th June	28th June
			INSET DAY International day against drug abuse	**New Y7 transition day 1**	**New Y7 transition day 2**
Super Learning Week & Year 10, 12 Mocks					
12	1st July	2nd July	3rd July	4th July	5th July

Students with missing uniform or equipment should report to Student Services where they will be supported to correct their uniform or allowed to borrow equipment without any sanction.

Our Uniform

Pupils are expected to wear the correct uniform at all times (other than specified non-school uniform days) while:

- On the school premises
- Travelling to and from school
- At out-of-school events or on trips that are organised by the school, or where they are representing the school

Failure to comply with the Uniform Policy will results in sanctions as indicated in the School Behaviour Policy.

OSA Uniform	Details
Academy V Neck Sweater	Should be worn everyday. Available from the Price & Buckland website
Clip on tie (in house colour)	Should be worn everyday. Available from the Price & Buckland website
Trousers/Shorts	Plain black or Shalwar Kameez (trouser style only). Shorts should be knee length.
Skirts	Plain black knee length skirt
Hijab	This should be black or white
Socks/Tights	Plain black socks or black tights
Shoes	Black shoes or black trainers
Coats/Hats	Outdoor coats only. These should not be worn indoors. Hoodies are not allowed to be worn on school site.
Jewellery	One small plain earing stud and one wristwatch All facial piercings or additional jewellery should be removed.
Make Up	Make-up must be subtle and understated. False eyelashes and nail varnish/nail extensions are not permitted

Equipment

Pupils are expected to bring the correct equipment every day. All equipment is available to buy in school from Reprographics

OSA Equipment
x1 Blue, x1 Black and x1 Purple Pen
30cm Ruler
x1 Pencil Sharpener
x1 Eraser
x1 Whiteboard Pen (provided in September)
x1 Mini Whiteboard (provided in September)
x1 Mini Whiteboard eraser (provided in September)
x1 Highlighter
x1 Glue Stick
Mathematical equipment (Protractor, Scientific Calculator)
Scholars Guide (provided in September)
Plastic wallet – to hold mini whiteboard set and Scholars Guide (provided in September)

My logins

Use this page to keep all your useful logins. If you write down your password be sure to keep your Scholars Guide safe at all times!

Platform		Username	Password
	School computer	These logins are all the same: Username: _____ Password: _____	
	Email account https://Outlook.live.com		
	Teams https://www.microsoft.com/en-gb/microsoft-teams/log-in		
	Educake https://www.educake.co.uk/		
	Accelerated Reader https://ukhosted33.renlearn.co.uk/2246697/		

Platform		Username	Password
	ClassCharts https://www.classcharts.com	Pupil code: Download the ClassCharts app on your phone!	
	Sparx https://www.sparxmaths.uk/		
	Trinket https://trinket.io/login		
	Massolit https://www.massolit.io/		
	Bedrock https://bedrocklearning.org/ Year 7 & 8 only	*Students can use the same login as the school login details*	

Aspiring Habits: Attendance

There is a clear and significant link between academic performance and attendance. **The more days you are off school, the less likely you are to secure good GCSE grades.** Every Student should aim for at least 97% attendance; this equates to missing no more than 5 days over the school year!

Week	Cumulative days attended	Cumulative Possible days	Reflection & Tutor check
Example	*5*	*5*	*Well done for being in every day this week!*
1		4	
2		9	
3		14	
4		19	
5		23	
6		28	

Week	Cumulative days attended	Cumulative possible days	Reflection & Tutor check
7		33	
8		38	
9		43	
10		48	
11		52	
12		57	

The OSA House System

On joining the school, each student and family will belong to one of our 4 Houses: Bannister, Earhart, Seacole and Tolkien. Each House has its own identity, strengths and qualities.

House competitions will be held in each cycle for you to challenge your abilities and explore your interests competitively. Your achievements in school will be recognised and rewarded through House Points. Competitions throughout the year, House Points and Sports Day all contribute to the House Cup at the end of the year – so make sure you commit to doing your bit to support your House!

Sir Roger Bannister
Former athlete famed for running the first mile in under four minutes in 1954 at the Iffley Road track in Oxford

House values:
Kindness
Perseverance
Staying focused

Mary Seacole
The Jamaican nurse famed for treating the battlefield wounded in the Crimean War

House values:
Compassionate
Dedicated
Inspiration

Amelia Earhart
The first woman to fly solo across the Atlantic Ocean

House values:
Challenging conventions
Adventure
Courage

JRR Tolkien
The writer, poet and former Oxford University professor famous for The Hobbit and Lord of the Rings

House values:
Creativity
Commitment
Friendship

House Competitions for Round 3

- House Sports Day!
- House Cricket
- House Rounders
- House Basketball
- House Business
- House Drama
- House STEM
- House Mural

The values of my House I pledge to follow are:

I pledge my participation in:

Student safeguarding curriculum

To become a successful future leader, students need to be able to make informed safe choices. All students will take part in a weekly safeguarding session which focuses on personal development leading them to make a difference in the community. This will follow the schedule below, although it is subject to change depending on the needs of each year group.

You can also report concerns to your trusted adult, in the whisper box (library) or by using the online whisper box on ClassCharts, the student portal or school website.

Cycle 3	
1	Serious violence and knife crime
2	Kindness and respectful behaviours - neurodiversity awareness
3	Recognising unhealthy relationships
4	Mental Health Month
5	Malicious communication - cyber bullying / false allegations
6	Honor based abuse
7	Using the internet safely
8	Pride Month
9	Mental Health – Preparing for Exams
10	Safety over Summer - water safety
11	International day against drug abuse
12	5 ways to wellbeing - Self care - taking care of yourself

SAFEGUARDING TEAM

EVERYBODY EVERYDAY

If you are concerned about anything speak to the Safeguarding Team straight away

My trusted adult is:

Other key staff that can assist you with your wellbeing.

Head of Year 7
Mr McKenzie: Atrium

Head of Year 8
Ms Bhatti: Library

Head of Year 9
Mrs Booth: Quad

Head of Year 10
Ms Wilkinson: Reuben middle floor

Head of Year 11
Ms Shuttleworth: Quad

Mental Health Lead – Ms C May: D2

Literacy curriculum

Oxford Spires Academy is a reading school! We read because we know that reading helps to improve your vocabulary and increases your success in every subject that you study. We read for pleasure because it is fun and relaxing, helps us explore life experiences and lets us in to new worlds!

Two days each week, your tutor will read to you from one of the texts from the reading list. As your tutor reads to you, you will follow the text will a ruler.

Cycle 3	
1	P1-10
2	P11-20
3	P21-30
4	P41-50
5	P51-60
6	P61-70
7	P71-80
8	P81-90
9	P91-100
10	P101-110
11	Reading tests
12	Book review and presentations

Why do I use a ruler when I read?

Following your tutor reading to you will show you how new words sound when spoken aloud, and how to use new words in a sentence. It also supports your understanding of the text by allowing you to focus on the meaning of each sentence at a time

My reading pledge:

By the end of Y11, I promise to read _____ books and _____ words

Y10 Tutor reading list

I Know Why the Caged Bird Sings
The Hate U Give
Magpie
The Recruit
Boys Don't Cry
Taking Flight: From War Orphan to Star Ballerina
Rebecca
No Fixed Address
The Supreme Lie

Reading log

This cycle we are reading...

Year 10, Cycle 3, Character Education

Careers linked to topics we study this cycle are: Human Rights Lawyer, International Relations Specialist, Social Worker, Policy Analyst, Journalist, Reporter, United Nations Officer, Advocate, Humanitarian Aid Worker, Police Offer, Solicitor, Barrister, Probations Officer, Forensic Scientist, Crime Scene Investigator, Criminal Profiler, Bailiff, Intelligence Analyst, Court Clerk, Family Therapist

Week	I will need to know:	So that I can:
1	1. Human rights are central to global issues and conflicts, guiding ethical standards. 2. Understanding the impact of discrimination and inequality on human rights is crucial because it unveils systemic injustices, fostering awareness and advocacy. This knowledge empowers efforts to address and eradicate these issues, promoting a fair and inclusive society that upholds the rights and dignity of all individuals.	We can advocate for our human rights and recognise when human rights are being violated.
2	1. Promoting diversity, inclusion, and equity requires collective effort. Encourage open dialogue, actively listen to diverse perspectives, and challenge biases. Advocate for inclusive policies in institutions and workplaces, and support initiatives that foster equal opportunities for everyone. Embrace diversity as a strength, celebrate different cultures, and strive for fair representation in all aspects of society. 2. Understanding the role of international organizations and treaties in protecting human rights is essential as they establish a framework for global cooperation. These entities set standards, monitor compliance, and provide mechanisms for redress, fostering a collective commitment to uphold and safeguard fundamental human rights on a global scale.	
3	1. The principle of justice and the rule of law are fundamental to a democratic society because they provide a fair and predictable legal framework. They ensure equal treatment, protect individual rights, prevent abuse of power, and establish a foundation for a society where citizens can trust in the impartiality of legal institutions. This fosters the principles of democracy, accountability, and the protection of human rights. 2. The right to a fair trial includes the right to be heard, the right to legal representation, the right to confront witnesses, and the right to a impartial and unbiased tribunal. These rights contribute to the protection of individuals from arbitrary actions, promoting the principles of justice, fairness, and the rule of law within the criminal justice system.	Know your legal rights and what to expect if you are ever in a situation where you require legal support.
4	1. The UK's youth justice system prioritizes rehabilitation through Youth Offending Teams, community-based sentences, and education programs. Custodial options focus on education and support, aiming to reintegrate young offenders into society successfully while addressing root causes to prevent reoffending. 2. Career paths within the criminal justice system are diverse. In law enforcement, options include police officers, detectives, and corrections officers. Legal professions encompass lawyers, judges, and legal analysts. Additionally, roles in forensics, probation, and homeland security offer varied opportunities.	
5	1. Understanding the role of relationships and communication within families is crucial for several reasons. It fosters emotional support, builds resilience, and contributes to a healthy family dynamic. Effective communication helps resolve conflicts, promotes empathy, and strengthens connections, laying the foundation for individual well-being and a supportive, nurturing family environment. 2. Navigate familial changes by fostering open communication, seeking support, establishing new routines, setting realistic expectations, prioritizing self-care, considering therapeutic intervention, adopting a child-centric approach, and maintaining a positive outlook. These strategies promote emotional well-being during times of transition.	*Widen our understanding or the family unit and learn how to cope when family units change.*

Year 10, Cycle 3, Character Education

Week	I will need to know:	So that I can:
6	1. Addressing issues of domestic violence, abuse, and safeguarding within families is crucial to protect individuals' physical and emotional well-being. It promotes a safe and secure environment, prevents harm, and contributes to breaking the cycle of abuse, fostering healthier family dynamics and societal well-being. 2. Explore responsible parenting through education, self-reflection, strong communication, consistency, empathy, positive reinforcement, adaptability, and seeking support. Developing these skills fosters a nurturing environment and supports the well-being of children.	You can identify signs of abuse and report them and ensure that appropriate support is given.
7	1. Discussing and respecting gender and sexual identities is vital for fostering inclusivity, understanding diversity, and promoting equality. It creates a supportive environment, reduces stigma, and acknowledges the unique experiences of individuals, contributing to a more tolerant and accepting society. 2. Promoting healthy self-esteem involves self-reflection, positive affirmations, and setting realistic goals. To respect others' identities, cultivate empathy, educate yourself, and engage in open, non-judgmental communication. Creating a supportive environment fosters self-acceptance and embraces the diversity of identities.	Help to creative inclusive environments that are welcoming to all people. Have high self-esteem which will result in better mental health.
8	1. Workplace etiquette refers to the set of expected behaviours, manners, and courtesies observed in a professional setting. It involves respecting colleagues, communicating effectively, being punctual, dressing appropriately, and adhering to workplace norms, creating a positive and harmonious work environment. 2. Understanding the importance of work ethics, professionalism, and workplace etiquette is essential for fostering a positive work environment. It ensures efficiency, promotes teamwork, and contributes to a culture of respect, integrity, and professionalism, ultimately enhancing individual and organizational success.	Be successful in the workplace and contribute positively to a team.
9	1. Apprenticeships and vocational education provide hands-on learning, job placement, industry relevance, and cost-effectiveness. They diversify career paths, offer skill specialization, enable earning while learning, enhance employability, and foster innovation, making education more accessible and tailored to industry needs. 2. Exploring apprenticeships, vocational education, and non-traditional career pathways is crucial for several reasons. It provides diverse opportunities for skill development, addresses labour market demands, offers alternative routes to career success, and helps bridge the gap between education and practical, industry-specific skills, fostering a more inclusive and adaptable workforce.	Think carefully about my next steps after Year 11 and know all options and pathways available to me.
10	1. Make informed decisions about substance use by educating yourself, seeking professional advice, considering consequences, setting personal limits, understanding triggers, staying informed, building a support system, and regularly self-assessing habits for a balanced and healthy approach to substance use.	I can be safe over the summer holidays.
11	**Leader's Prep:** To prepare for your upcoming assessment, you should self quiz on knowledge from weeks 1-10; revising for assessments keeps you on the path to leadership. Work hard and show your best!	
12	**Super teaching week:** Your lessons this week will focus on key areas identified from your assessments. IT will be your opportunity to strengthen your knowledge on content covered from weeks 1-10 and cover any gaps in knowledge.	

Year 10 English Leadership Guide: Power and Conflict

Careers linked to this topic (**Power and Conflict)** can include things like a Historian as I will be developing my ability to interrogate and analyse events of the past

Week	I will need to know:	So that I can:
1	1. Bayonet Charge: Hughes' poem exemplifies the terrifying, traumatic **reality of war** for soldiers, while demonstrating how governments use the state apparatus of ideology to hold power over and control their citizens. 2. Bayonet Charge: **Alliteration** creates a violent atmosphere by reflecting the loud chaotic noises 'hot khaki, his sweat heavy.' 3. Bayonet Charge has an **irregular rhythm** to reflect the panic and struggle of war. 4. Exposure: Owen suggests the **trauma** of war causes a profound loss of faith in any higher power or purpose even corrupting nature itself. 5. Exposure: **Sibilance** is used to mimic the sound of the bullets 'Sudden successive flights of bullets streak the silence.' 6. Exposure: Owen uses the **refrain** of: 'But nothing happens' to indicate how long WW1 lasted (1914-191	1. Analyse how Hughes uses language, structure and form to portray the personal and public conflict of war. 2. Explain how Owen uses nature to demonstrate the unnaturalness of war.
2	1. Charge of the Light Brigade: Tennyson idealises patriotic acts of self-sacrifice but also hints at the indoctrinating power of **patriotism**. 2. Charge of the Light Brigade: Tennyson's use of **anaphora** communicates the relentlessness of war: 'Cannon to the right of them,/ Cannon to the left of them,/ Cannon in front of them.' 3. Charge of the Light Brigade: The **rhythm** of the poem echoes the sound of horse hooves. 4. That **simultaneous** comparison means comparing two poems at the same time and making links to the focus of the question. When comparing simultaneously I will need to demonstrate how a poet has used the features of **LIST (language, imagery, structure and tone)** to promote discussion regarding the themes of power and conflict and how this may influence the reader.	1. To analyse how language and imagery is used to convey the impact of conflict. 2. To explain how a poet's work promotes discussions.
3	1. Kamikaze: Garland demonstrates how family happiness can be disrupted by conflict and **cultural** pressure, but memory has the power to revolt against oppressive political structures. 2. Kamikaze: Garland uses symbolism to portray the pilot's **patriotism**, which conflicts his personal desires: 'My father embarked at sunrise.' 3. Kamikaze: The poem has a conflicting structure; the stanzas are all clear with defined lengths however there is no rhyme or regular rhythm. 4. Kamikaze: Garland's poem details the daughter's account and reasoning for her father's return; however, the absence of her father's voice is significant as it represents his **marginalisation** due to the shame, he brought on his family and country.	1. Identify how Garland uses imagery to evoke nostalgia within the pilot. 2. Explain what the devasting impact of war is on families.
4	1. Remains: Armitage demonstrates both the **dehumanisation** that occurs under the conditions of war but also the inability of soldiers to act clinically, suffering instead inevitable psychological disintegration as a result of violence. 2. Remains: Armitage uses colloquial language to give the sense that the speaker is directly telling the reader his story as he 'legs it' and 'mates.' 3. Remains: The poem is written in the form of a **monologue** and uses **enjambment;** this suggests a flow of consciousness. 4. The Emigree: Rumens uses the narrative of a refugee to demonstrate that **nostalgia** and memory, even if misplaced, are powerful forces that may even have the power to liberate. 5. The Emigree: The city is **personified** so it appears likes a friend to the speaker when she says that the city comes to her is it 'own white plane.' **Theme**: **Loss** is an inevitable part of war and conflict. Throughout this anthology we the loss of loved ones as well as the loss of identity.	1. To analyse how language and imagery conveys the impact of conflict. 2. To explain how the power others hold affects the lives of others. **Progress Book task** exploring loss within two poems
5	1. Checking Out Me History: Agard critiques disempowering colonial attitudes in the British education system, suggesting **subjugated** people must reclaim their own history and identity. Agard's use of **dialect** informs the reader that he is proud of his heritage, 'Dem tell me' 2. Agard creates a **dual structure** through italics to expose the separation between his history and what he was taught. 3. Tissue: Dharkar demonstrates the sanctity and value of human life, while also revealing its transitory, fragile and impermanence. 4. Dharkar uses paper as an **extended metaphor** for the fragility of life, 'raise a structure never meant to last'. Dharker uses **enjambment** (between lines and across stanzas) to demonstrate the delicate nature that both paper and human tissue share.	1. Analyse Agard's critique of the British education system and his pride in his own identity. 2. Link Dharkar's message to my analysis of the methods used for effect.

Year 10 English Leadership Guide: Power and Conflict

Careers linked to this topic (**Power and Conflict)** can include things like a Historian as I will be developing my ability to interrogate and analyse events of the past

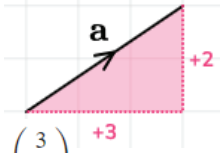
	I will need to know:	So that I can:
6	1. War Photographer: Duffy criticises the mass media's **commodification** of war while also demonstrating that the chaos and trauma of war can never be fully understood by those living outside of it. 2. War Photographer: Duffy uses **sibilance** ,'spools of suffering set out', wherein the harsh S sound reminds us both of bullets and the harsh world the photographer operates in. 3. War Photographer: Duffy shows how the Photographer experiences **Post traumatic stress disorder** (PTSD) upon his return to 'rural England' to demonstrate that the impact of conflict is far reaching. **4. Theme**: **Internal conflict** is the battle within an individual; in this case whether to make the moral choice.	**Progress book task:** Compare the ways poets present internal conflict in War Photographer and in one other poem from Power and Conflict.
7	1. Storm on the Island: Heaney's storm reveals the destructive power of nature, but also as an **extended metaphor** represents the often baseless, irrational nature of conflict. 2. Storm on the Island: Heaney uses an **oxymoronic** simile, 'spits like a tame cat', this is a simile for nature as it has a tame and wild side. 3. Storm on the Island: The poem has no consistent **rhyme scheme** reflecting how order cannot be enforced upon nature by humans. 4. Prelude: Wordsworth reveals the sublime, **ineffable** authority of nature suggesting it has the power to shape identity. 5. Prelude: Wordsworth uses **personification** to suggest that nature is in control of the speaker's actions, 'led by her'. 6. Prelude: The entire extract is a **single stanza** which highlights the overwhelming power of nature. The lack of pauses causes breathlessness	1. To explore man's relationship with power. 2. To consider how form creates meaning. 3. To appreciate how context impacts the intent of the respective poet.
8	1. My Last Duchess: Browning uses the painted Duchess to demonstrate the objectifying **power** of the male gaze suggesting that the **patriarchal** desire for power and control is sinister, neurotic yet ultimately **futile**. 2. My Last Duchess: **Possessive pronouns** such as 'my' are repeated throughout the poem to denote how the Duke saw the Duchess as his property. 3. My Last Duchess: The **dramatic monologue** shows the Duke's desire for control. Browning uses iambic pentameter to reflect the Duke's traditional views. 4. Ozymandias: Shelley suggests that human attempts to assert power over nature and time are **hubristic** and **futile**. 5. Ozymandias: Shelley uses **alliteration** to suggest that nature will always outlast human power, 'boundless and bare'. 6. Ozymandias: Shelley writes this poem as a **sonnet** however; he uses an irregular rhyme scheme. This implies how conventions are not permanent and can be changed.	1. To explore man's relationship with power. 2. To consider how form creates meaning. 3. To appreciate how context impacts the intent of the respective poet.
9	**GCSE Language Spoken Language component** 1. That for my spoken language assessment I will deliver a 3–5-minute speech to an audience that expresses my viewpoint on a chosen topic. 2. To be successful I will need to complete research into my topic, to plan my speech and practice my speech before I present to my audience. 3. To engage my audience, in addition to creating an interesting speech, I will need to use **paralinguistic** features (eye contact, hand gestures, body language along with pitch and tone) as I deliver my speech. 4. I will need to listen and respond to questions from the audience on my topic. 5. For my speech I will be assessed against the criteria from the exam board, and I will be awarded: pass, merit or distinction.	1. Meet the criteria of my spoken language assessment 2. Deliver an informative and persuasive speech on my topic 3. Engage and respond to questioning
10	1. London: Blake suggests that inequality and **oppression** disempower people; institutions inevitably control people by placing limits on their intellect and imagination. 2. London: Blake uses an **oxymoron** in the description 'marriage hearse'. This informs the reader that for a woman getting married was similar to dying in terms of loss of control and that there was no happiness within society. 3. Poppies: Weir's **nostalgic** narrative reveals the profound and corruptive influence that conflict and male heroism has on the family unit. 4. Poppies: The writer uses **imagery** to contrast domestic happiness and battle when she says: 'Sellotape bandaged around my hand.'	1. Explain the division of power within society. 2. Analyse the power of the individual over others.

Year 10 Foundation Maths

Careers linked to topics we study in maths are actuary, architect, computer scientist, game designer, doctor, market researcher, statisticians, quantity surveyor.

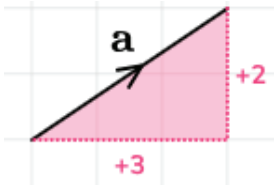
Week	Topic:	I will know that:	So that I can:
1	Fractions	• To add (or subtract) fractions I need to make the **denominators** the same, then I add (or subtract) the numerators. • To multiply fractions, I must first convert any mixed numbers to improper fractions, then I multiply the **numerator** by the **numerator** and the **denominator** by the **denominator**.	• Add, subtract and multiply fractions, including mixed numbers • Convert between **mixed numbers** and **improper fractions**
2	Fractions and reciprocals	▪ To find the **reciprocal** of a fraction I must "flip" the **numerator** and the denominator. ▪ To divide fractions, I multiply the first fraction by the **reciprocal** of the second (keep, flip, change).	• Find the **reciprocal** of a fraction • Divide fractions including mixed numbers
3	Indices	▪ When I multiply two powers of the same number, I add the powers. ▪ When I divide two powers of the same number, I subtract the powers. ▪ When I raise a power to another power, I multiply the powers, for example $(x^3)^4 = x^{12}$	• Simplify expressions using indices • Use the laws of indices to multiply, divide, and raise powers to other powers.
4	Standard Form	• A number is written in **standard form** if it is written as a number between 1 and 10, multiplied by a power of 10. • For example 8×10^3 is in **standard form**, but 25×10^6 is not. • To convert a number into **standard form**, split it up into two parts: a number multiplied by a power of 10.	• Convert large and small numbers into **standard form**. • Convert numbers back from **standard form**. • Use a calculator to work with numbers in **standard form**
5	Similarity and Congruence in 2D(1)	• Congruent shapes are identical • The corresponding sides of **congruent** shapes have equal length. • The corresponding angles of **congruent** shapes are equal. • For triangles, there are 4 criteria of **congruency**: SSS, SAS, ASA and RHS	• Identify **congruent** shapes. • Find missing side lengths or angles in **congruent** shapes. • Prove two triangles are **congruent** using SSS, SAS, ASA or RHS.

Year 10 Foundation Maths

Week	Topic:	I will know that:	So that I can:
6	Similarity and Congruence in 2D (2)	• **Similar** shapes are enlargements of each other. • The scale factor is how many times bigger one shape is than another. • Scale drawings, like maps, are **similar** to the real-life examples. • After an enlargement, the new perimeter of a shape is the original perimeter multiplied by the scale factor	• Identify **similar** shapes. • Find the scale factor of an enlargement. • Find missing side lengths on **similar** shapes. • Understand the effect of enlargement on the perimeter of shapes.
7	Vectors	• A **vector** has size (magnitude) and direction. The length of the line shows its size (magnitude) and the arrowhead points in its direction. • **Vectors** can be written in column notation, like: $\begin{pmatrix} 3 \\ 2 \end{pmatrix}$ 	• Write **vectors** using column notation. • Add and subtract **vectors** written in column notation.
8	Rearranging equations	• We **rearrange** an equation by following the rules of balancing equations. You have to do the same operation on both sides. • To make a variable the subject of an equation, you need to "get it on its own". For example x is the subject in "x = 2y + 5".	• Rearrange and solve equations • Change the subject of an equation
9	Simultaneous equations	• To solve two equations graphically, I need to find the coordinates (x and y values) where the graphs meet each other. • I can solve two equations by "adding/subtracting one equation to/from another" to remove one of the variables • I might need to multiply one or both equations by a number first, so that one of the variables cancels when I add/subtract	• Solve simultaneous equations graphically (by reading off coordinates where they meet) • Solve simultaneous equations using algebra (by adding/subtracting each equation)
10	Graphs of cubic and reciprocal functions	• To draw a graph of an unfamiliar function, I need to start with a table of values (x and y), then plot the coordinates.	• Recognise and draw graphs of cubic and reciprocal functions
11	**Leader's Prep:** To prepare for your upcoming assessment, you should self quiz on knowledge from weeks 1-10; revising for assessments keeps you on the path to leadership. Work hard and show your best!		
12	**Super teaching week:** Your lessons this week will focus on key areas identified from your assessments. IT will be your opportunity to strengthen your knowledge on content covered from weeks 1-10 and cover any gaps in knowledge.		

Year 10 Higher Maths

Careers linked to topics we study in maths are actuary, architect, computer scientist, game designer, doctor, market researcher, statisticians, quantity surveyor.

Week	Topic:	I will know that:	So that I can:
1	Vectors	• A **vector** has size (magnitude) and direction. • The length of the line shows its size (magnitude) • and the arrowhead points in its direction. • **Vectors** can be written in column notation, like: $\begin{pmatrix}3\\2\end{pmatrix}$ • I use Pythagoras' theorem to find the length of a vector 	• Represent vectors pictorially, and perform calculations (addition & multiplication) with column vectors • Find the lengths of vectors • Solve problems where vectors are divided in a given ratio.
2	Geometric Proof	• A mathematical proof is an argument which shows in detail, step by step, why something is true. • I have to explain every step, in order, when answering a proof question.	• Produce a geometrical proof to prove two points lie on a straight line, or that vectors are parallel.
3	Reciprocal & Exponential graphs	• Reciprocal functions can be expressed by the general form $y = \frac{k}{x}$ • Exponential functions can be expressed by the general form $y = k^x$	• Recognise and sketch reciprocal functions • Recognise and sketch exponential functions • Solve growth and decay problems
4	Graph transformations	• When y = f(x) is the original function before a transformation… • y = k f(x) is a stretch, scale factor k, in the y-direction. • y = f(kx) is a stretch, scale factor 1/k, in the x-direction. • y = f(x) + a is a translation with vector $\begin{pmatrix}-a\\0\end{pmatrix}$ • y = f(x + a) is a translation with vector $\begin{pmatrix}0\\a\end{pmatrix}$ • y = -f(x) is a reflection in the x-axis, y = f(-x) is a reflection in the y-axis.	• Describe and draw graph transformations (stretches, translations, and reflections in the coordinate axis)
5	Gradient of non-linear graphs	• The gradient of a straight line is calculated by "change in y" ÷ "change in x". • A non-linear (curved) graph does not have a single gradient like in "y = mx + c". • To estimate the gradient of a curve at a specific point, you draw a **tangent** to the curve at that point, then find the gradient of the tangent	• Estimate the gradient of a non-linear graph at a given point

Year 10 Higher Maths

Week	Topic:	I will know that:	So that I can:
6	Area under non-linear graphs	• To estimate the area under a non-linear graph, I can split it up into trapezia, find the area of each trapezium separately, then add the areas together. • Depending on the shape of my graph, I may over- or under-estimate the area.	• Estimate the area under non-liner graphs
7	Direct and Inverse Proportion	• Two quantities are in **direct proportion** if as one increases, the other increases at the same rate. • Two quantities are in **inverse proportion** if as one increases, the other decreases at the same rate. • The graph of two quantities in **direct proportion** is a line through the origin (y = kx) • The graph of two quantities in **inverse proportion** is a reciprocal graph ($y = \frac{k}{x}$)	• Solve problems using direct and inverse proportion • Recognise and draw graphs for quantities in direct and inverse proportion
8	Revision	• The best way to revise for maths is to do past paper questions. • By working on questions, I can identify gaps in my knowledge. • When I identify a gap in my knowledge, I need to seek help. Watch the relevant video on Sparx Independent Learning, search for the topic on YouTube, or ask a teacher for help. • After seeking help on a topic, I need to practise more of that topic, to embed what I have just learned into my long-term memory. • Flashcards can be effective in helping me remember things, but I need to do past paper questions too. • Just reading through notes is comforting, and may feel productive, but is not as effective revision as practising answering questions.	• Revise effectively for my maths mocks and GCSEs.
9	Revision		
10	Revision		
11	**Leader's Prep:** To prepare for your upcoming assessment, you should self quiz on knowledge from weeks 1-10; revising for assessments keeps you on the path to leadership. Work hard and show your best!		
12	**Super teaching week:** Your lessons this week will focus on key areas identified from your assessments. It will be your opportunity to strengthen your knowledge on content covered from weeks 1-10 and cover any gaps in knowledge.		

Year 10 Biology – Infection & Response and Bioenergetics

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers	
1	• Define the word **pathogen** and recall the four types of **pathogen** • Compare the different ways that bacteria and viruses reproduce inside the body and explain why they make us feel ill	P43	P46
2	• Recall examples of **communicable diseases** in plants and animals that are caused by viruses, bacteria, fungi and protists. For each disease you should be able to describe: how it is spread, what the associated symptoms are, how you can prevent or reduce spread of the disease and how it can be treated. • Explain how vaccines prevent illness in an individual	P44 P45 P47	P47 P48
3	• Compare the use of **antibiotics** and **painkillers** • Describe the process of discovery and development of potential new medicines, including preclinical and clinical testing.	P48 P49	P51 P52
4	• Know that **photosynthesis** is an endothermic reaction. • Describe the reaction that summarises **photosynthesis.** • Evaluate how a leaf is adapted for **photosynthesis.** • Name the factors which limit the rate of **photosynthesis.**	P50 P51	P57 P58
5	• Revision Week		
6	• RP: Explain the effects of temperature, light, carbon dioxide and chlorophyll on rate of **photosynthesis.** • Interpret graphs of **photosynthesis** rate. • State the different factors which affect the rate of **photosynthesis.** • Describe how the different factors interact. • Explain how humans can manipulate the environment in which plants grow. • Name some substances that plants make from glucose. • Describe the uses of these substances. • Explain how proteins are made by plants.	P52 P53	P59 P60

Year 10 Biology – Infection & Response and Bioenergetics

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers	
7	• Recall the equation for **aerobic respiration** is glucose + oxygen → carbon dioxide + water • Explain why **respiration** is so important. • Explain how the body facilitates **respiration** by making connections between your knowledge of the respiratory, cardiovascular and digestive systems. • Recall the equation for **anaerobic respiration.**	P54 P55	P61 P62
8	• Describe how our body responds to exercise. • Explain why heart rate and breathing rate are affected by exercise. • Explain the effect of exercise on glycogen stores. • Compare **aerobic** and **anaerobic respiration.** • Describe **anaerobic respiration** in plants and yeast. • Explain how the **oxygen debt** is paid off.	P56 P55	P63 P62
9	• Define **metabolism**. • Give examples of reactions that happen in living organisms. • Explain how the liver performs metabolic functions.	P54	P61
10&11	**PPE Week – you will have your PPEs during these weeks. It will cover everything in B1, B2, B3 and B4.**		
12	• Give the definition of homeostasis and give three examples of conditions that need to be controlled in the human body. • Describe how an impulse travels across the synapse from one neurone to another • Know why we need a nervous system and describe what happens during conscious responses and reflex responses. (Including: stimulus > receptor > sensory neurone > coordination centre > motor neurone > effector) • Explain the importance of reflex responses	P58 P59 P60	P65 P66 P67

Year 10 Chemistry – Rates and Chemical Analysis

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers	
1	• State the factors which affect the **rate of reaction**. • Describe how changing each factor affects the rate of reaction. • State how the rate of a chemical reaction can be measured. • Calculate mean rate of reaction using the quantity of reactant used or product formed. • State the units of rate of reaction.	P143 P144	P68 P69
2	• *RP: Investigate rates of reaction, showing how temperatures* • Draw graphs showing the quantity of product formed or reactant used up against time. • Interpret these graphs and describe the changing rate of reaction. • Draw **tangents** to curves on these graphs and use the slope as a measure of the rate of reaction. • Calculate the **gradient** of a tangent to determine the rate of reaction at a specific time.	P145 P146	P70 P71
3	• State the definition of **activation energy**. • Predict and explain the effect of changing factors on reaction rate using **collision theory**. • Predict and explain the effects of changes in the size of pieces of a reacting solid on reaction rate in terms of surface area to volume ratio. • Use simple ideas about proportionality when using collision theory to explain the effect of a factor on the rate of a reaction.	P142	P67
4	• State what a **catalyst** is and what it does. • Draw a reaction profile for a reaction with a catalyst and without a catalyst. • Identify catalysts in reactions from their effect on the rate of reaction and because they are not included in the chemical equation for the reaction. • Explain catalytic action in terms of activation energy.	P142 P143	P67 P68

Year 10 Chemistry – Rates and Chemical Analysis

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers	
5	• Revision Week		
6	• Know the positive test for identifying hydrogen is if a 'squeaky pop' sound is heard when lit split is nearby • Know the positive test for identifying oxygen is if a glowing split relights • Know the positive test for identifying chlorine is if damp blue litmus paper is bleached white • Know the positive test for identifying carbon dioxide is if lime water turns cloudy when gas is bubbled through • Definition of a **pure substance** • Know that **melting point** data can be used to decide if a substance is pure. A well-defined melting point is seen if a substance is pure • Know that pure substances appear with a single spot in **chromatography**. Mixtures will have multiple spots. • Definition of a **formulation** and explain how formulations are made. Examples of formulations- fuels, cleaning agents, paints, medicines, alloys, fertilisers and foods.	P155 P153	P88 P89 P86
7	• Define chromatography and explain how paper chromatography separates mixtures in relation to the two phases • Give the equation for the **retention factor** (Rf) in chromatography • Explain how retention factor values help us to identify compounds	P154	P87
8&9	Paper 1 revision		
10&11	**PPE Week – you will have your PPEs during these weeks. It will cover everything in C1, C2, C4 and C5.**		
12	• Recall the approximate percentage of the gases in the modern atmosphere • Describe the composition of the Earth's first atmosphere • Explain how the Earth's first atmosphere formed • Explain how the oceans formed • Recall the planets with similar atmospheres to the Earth's first atmosphere • Explain why the proportion of nitrogen has gradually increased over time • Describe how the proportion of carbon dioxide decreased by: dissolving in oceans, forming carbonates (shells, sedimentary rock)or forming fossil fuels • Recall that the process of photosynthesis released oxygen into the atmosphere once algae and plants evolved 2.7billion years ago • Recall the equation for photosynthesis (word and symbol)	P157	P91

Year 10 Physics – Atomic Structure and Forces & Springs

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers
1	• Know the basic structure and approximate size of an atom • HT - Understand that absorption or **emission** of electromagnetic **radiation** can cause **electrons** to move up or down energy levels • Understand and use the terms: atomic number, mass number and **isotope.** • Represent atoms using the notation $^{23}_{11}Na$ • Know that atoms turn into positive ions if they lose one or more outer **electron**(s) • Describe why the new evidence from the scattering experiment led to a change in the atomic model • Describe the difference between the plum pudding model of the atom and the nuclear model of the atom.	P195
2	• Know that some atomic nuclei are unstable, and that radioactive decay is a random process • Know that activity is the rate at which a source of unstable nuclei decays. • Activity is measured in becquerel (Bq) • Recall the composition, range, **penetration**, ionising power of alpha, beta, and gamma **radiation.** • Use the names and symbols of common nuclei and particles to write balanced equations that show single alpha (α) and beta (β) decay	P196
3	• Define and explain the concept of **half-life** • Determine the **half-life** of a radioactive **isotope** from given information. • HT - Calculate the net decline, expressed as a ratio, in a radioactive **emission** after a given number of **half-lives** • Explain why the hazards associated with radioactive material differ according to the half-life involved	P197 P198
4	• Explain the difference and compare the hazards between **irradiation** and **contamination** • Describe precautions that must be taken to protect against any hazard that the radioactive source used in the process of **irradiation** may present. • Understand that it is important for the findings of studies into the effects of **radiation** on humans to be published and shared with other scientists so that the findings can be checked by peer review.	P199
5,6,7	• Revision Weeks	

Year 10 Physics – Atomic Structure and Forces & Springs

Week	What I need to know and be able to do.	Where I can study this: CGP Revision Guide Page Numbers	
8	• Know **scalar** quantities have **magnitude**, **vectors** have magnitude and direction. Give examples of vectors and scalars. • Know the difference between contact and non-contact forces and give examples. • Know that **weight** is the force acting on an object due to gravity. It depends on the field strength at that point • Recall and use the equation: **weight** = mass x **gravitational** field strength. This means mass and weight are directly proportional. • Define the centre of mass of an object and estimate its position. • Know the definition of **work done** • Recall and use the equation: **work done** = force x distance • Understand how to convert between newton-meters and **Joules**	P201 P202 P203	P51 P52 P53
9	• Understand multiple forces can be combined into a single force – this is called a **resultant force** • Know how to label forces on a diagram e.g. **Weight**, friction, thrust, upthrust, air resistance, normal reaction force and tension using an appropriately sized arrow, from the centre of mass. • Know how to calculate the **resultant force** when forces act in the same direction on an object, or in opposite directions. • HT – know that a single force can be resolved into two forces acting at right angles and understand how to use vector diagrams to determine **resultant forces** using scale diagrams	P203 P204	P53 P54
10&11	**PPE Week – you will have your PPEs during these weeks. It will cover everything in C1, C2, C4 and C5.**		
12	• Know Newton's first law applies to objects moving at constant speed, or stationary objects, when forces are **balanced**. • Apply Newton's first law to situations where speed is constant, but velocity changes. • Recall and use the equation for Newton's second law: **resultant force** = mass x acceleration • HT – explain Newton's first law to concept using idea of inertia. Inertial mass is measure of how difficult it is to change the velocity of an object. • Apply Newton's Third law, that when two objects interact the forces they exert are equal and opposite	P211	P64

Year 10, Cycle 3, Character Education
Curriculum Dictionary: Tier Two Words

Week	Word	Definition	In a sentence:
1	**Discern**	(verb): To see, notice, or understand something clearly, especially when it's not obvious or requires careful observation.	She could discern the details in the artwork, noticing the artist's skilful use of colours and shapes.
2	**Socio-economic**	(adjective): Describing how money and social factors are connected in a community or society.	The research looked at the socio-economic effects of the new job rules on the town, considering both money and social aspects.
3	**Advocacy**	(noun): The act of supporting or speaking out for a cause, idea, or group to bring about positive change.	Her advocacy for environmental protection led to community initiatives like tree-planting and waste reduction programs.
4	**Intersectionality**	(noun): The interconnected nature of social categorizations, such as race, gender, and class, that create overlapping and interdependent systems of discrimination or disadvantage.	Understanding intersectionality means recognizing that individuals may face unique challenges based on the combination of factors like race, gender, and socio-economic status.
5	**Injustice**	(noun): Unfair or morally wrong treatment, often violating principles of equity or justice.	The protest aimed to raise awareness about the injustice of discriminatory laws that disproportionately affected certain communities.
6	**Disparities**	(noun):Differences or inequalities, especially in terms of social, economic, or health outcomes.	Efforts to address educational disparities focus on providing equal opportunities for students from diverse backgrounds to succeed in their studies.
7	**Liberty**	(noun): The state of being free from oppressive restrictions or control.	The declaration emphasized the importance of individual liberty, affirming the right to freedom of speech and expression for all citizens.
8	**Interventions**	(noun): Actions or measures taken to improve a situation, prevent harm, or address a problem.	The government implemented interventions to reduce unemployment, including job training programs and support for small businesses.
9	**Identity**	(noun): The qualities, beliefs, and characteristics that make a person or group distinct and recognizable.	Cultural traditions and language are essential aspects of her identity, reflecting her heritage and background.
10	**Cultural**	Relating to the ideas, beliefs, customs, and practices of a particular group or society.	The festival celebrated various cultural traditions, featuring music, dance, and cuisine from around the world.

Leader's Dictionary: Tier Three Words

Week	Word	Definition	In a sentence:
1.	Imagery	Visually descriptive language	'I pinned one onto your lapel, crimped petals, spasms of paper red, disrupting a blockade'. Her pinning the poppy on her son, a nurturing **image** which is contrasted with the words **'spasm'** and **'red',** presenting the idea of a horrific, violent death.
2.	Enjambment	The continuation of a line without a pause	'A stranger's features **/** faintly start to twist before his eyes'. **Enjambment** reflects not only the gradual reveal of a photograph during development but the ongoing and long-lasting effects of war on those who are directly involved (the subjects of the photos) and the photographer himself.
3.	Sonnet	A poem of 14 lines which ends in a rhyming couplet	The **sonnet** also begins by following the rhyme scheme of a Shakespearean sonnet: abab but then changes at line 5. This may be used to draw attention to the ruined and forgotten leader and his civilisation.
4.	Extended metaphor	An extended metaphor is a version of metaphor that extends over the course of multiple lines, paragraphs, or stanzas of prose or poetry	Storm on the Island contains an **extended metaphor** for the political storm that raged across Northern Ireland in the second half of the twentieth century. The storm pummelling the island in the poem is a metaphor for the violence in Northern Ireland.
5.	Caesura	A pause in the middle of a line	'Then I'm home on leave**.** But I blink'. **Caesura** provides a finality – should be final. Going home should be the end of his memory of the event and the extent of its impact on him Warzone shouldn't be able to impact him once he leaves.
6.	Alliteration	The same letter or sound at the beginning of words which are close together	'In what **c**old **c**lockwork of the stars and the nations,' the hard **alliterated** sound provides a sense of an uncaring mechanical universe and the inevitable geo-political self-interest.
7.	Refrain	A phrase or line repeated at intervals within a poem.	'But nothing happens' is a refrain used by Owen to illustrate how many days within the war passed with little to no action but left the soldiers exposed to the harsh conditions within the trenches.
8.	Anaphora	Repeated words or phrases at the beginning of a line	'**Cannon** to the right of them, / **Cannon** to the left of them, / **Cannon** in front of them'. Here the method creates a sense of unrelenting assault.
9.	Monologue	A long speech spoken by one person	My Last Duchess is written as **dramatic monologue** which sheds light on the Duke's obsessive nature.
10.	Dialect	Form of language specific to the region	In 'Checking Out **Me H**istory' John Agard writes in his own Creole **dialect** to demonstrate that he is proud of his identity and where he comes from.

Leader's Dictionary: Tier Two Words

Week	Word	Definition	In a sentence:
1.	Oppression	The act of preventing an idea from being expressed, or an action from being carried out.	William Blake's 'London' reveals the **oppression** of the lower classes.
2.	Nostalgia	A longing for the past	The mother within 'Poppies' shows the sentimental **nostalgia** she has for her son's childhood.
3.	Commodification	Turning something into a product	Through 'War Photographer' Duffy critiques the **commodification** of war in order to sell newspapers.
4.	Hubris	Too much pride	Ozymandias' **hubris** is evident in how he built statues within the desert.
5.	Ineffable	Too great or intense to be described in words.	They were shocked at the **ineffable** power of the storm.
6.	Dehumanisation	To be treated as if you are not human	One form of **dehumanisation** is the man who they've shot and killed is seen nothing more than a casualty of war, nothing more than a piece of garbage to be lumped together and thrown away.
7.	Patriotism	Devotion to your country	Throughout 'Kamikaze' the pilot often experience a battle between his expected **patriotism** for Japan and his personal wishes.
8.	Propaganda	Information of a biased nature used to promote political causes	**Propaganda** was used in World War 1 and 2 to persuade young men to join the war effort and potentially sacrifice their lives for their country.
9.	Futile	Something which is pointless	The battle between mankind and nature is **futile**, nature will always win in the end.
10.	Impermanence	Lasting for a limited amount of time	Dharker uses the adverb "never" to embrace our **impermanence**: paper now has power to preserve our history whilst we keep our brief and constructive existence.

Maths Curriculum Dictionary: Tier Two & Three Words

	Word	Definition	In a sentence:
1	Convert	To change something from one form to another.	To **convert** a length from cm into mm, we multiply it by 10.
2	Whole	A positive number without any decimal or fractional parts.	He had the **whole** pizza to himself; he did not share it with his friends.
3	Numerator Denominator	The number above the line on a fraction The number below the line on a fraction	For the fraction ½, the **numerator** is 1, and the **denominator** is 2.
4	Mixed Number	A number split up into an integer and a fraction, for example 3 ½ is a **mixed number**.	To multiply two **mixed numbers**, you need to first convert them to improper fractions.
5	Reciprocal	The **reciprocal** of a number is equal to one divided by that number. For a fraction, the **reciprocal** is the "flipped" version of it.	The **reciprocal** of 2 is ½.
6	Indices	The index (or "power") of a number is the number of times we multiply it together, like the 5 in 3^5. The plural of index is indices.	To calculate $y^3 \times y^6$, we add the **indices** to get y^9.
7	Standard Form	A number is written in **standard form** if it is written as a number between 1 and 10, multiplied by a power of 10.	We can convert 53600 to **standard form** by writing it as 5.36×10^4
8	Congruent	Two shapes that are identical.	She showed that the two triangles were **congruent** using the ASA rule.
9	Similar	A shape that is an enlargement of another.	All circles are **similar** to each other.
10	Vector	A vector is a quantity that has magnitude and direction.	You can represent **vectors** as arrows on a grid or using column notation.

Maths Curriculum Dictionary: Tier Two & Three Words

	Word	Definition	In a sentence:
1	Vector	A vector is a quantity that has magnitude and direction.	You can represent **vectors** as arrows on a grid or using column notation.
2	Proof	A logical argument which can be used to demonstrate why a statement is true.	As part of her **proof**, she wrote out the fact that alternate angles are equal.
3	Function	A rule which tells you an output, for an input. Usually written "f(x)", where x is the input.	The **function** f(x) = 2x + 1 has an input of 3, and an output of 7.
4	Cubic	A **function** containing terms with powers no higher than 3. e.g. $f(x) = x^3 + 2x^2 - 3x + 6$	Every **cubic** function has at least one root.
5	Reciprocal	The **reciprocal** of a number is one divided by that number.	The **reciprocal** of a fraction $\frac{a}{b}$ is the fraction $\frac{b}{a}$
6	Exponential function	A function where we use repeated multiplication on an initial value to get each output, for example $f(x) = 3^x$.	**Exponential functions** are used to represent real-world applications, such as bacterial growth/decay, population growth/decline, and compound interest.
7	Tangent	A line which just touches a curve.	To estimate the gradient of a curve, you draw a **tangent** to the curve, then find the gradient of the tangent.
8	Trapezia	The plural of trapezium (not "trapeziums").	To estimate the area under the graph, he split it up into three **trapezia** with equal widths.
9	Direct Proportion	Two quantities are in **direct proportion** if as one increases, the other increases at the same rate.	Her earnings are **directly proportional** to the number of hours she works.
10	Inverse Proportion	Two quantities are in **inverse proportion** if as one increases, the other decreases at the same rate.	The time taken to paint a wall is **inversely proportional** to the number of painters.

Year 10 Biology

B3: Infection & Response	
Word	**Definition**
Antibiotics	Medicines that cure bacterial infections by killing bacteria
Antibodies	Produced by white blood cells to help kill pathogens
Antigen	A protein found on the surface of cells, foreign antigens can be detected by white blood cells and induce an immune response
Communicable disease	Communicable diseases are illnesses caused by pathogens, these diseases can be spread from one organism to another
Double-blind trial	A clinical trial where both the patient and the doctor do not know if the patient has been given a real drug or the placebo (fake drug)
Gonorrhoea	STD with symptoms of a thick yellow/green discharge and pain when urinating
HIV	Virus that causes a flu-like illness but damages the immune system and develops into AIDS
Malaria	Disease caused by a protist where mosquitos are the vector
Measles	Viral disease with symptoms of a fever and red skin rash
Painkiller	A drug or medicine for relieving pain
Pathogen	Microorganism that causes disease, e.g. bacteria, fungi, virus, protist
Phagocytosis	White blood cells engulf and digest pathogens
Placebo	Fake drug
Rose black spot	Fungal plant disease where purple/black spots develop on the leaves which turn yellow and drop off
Salmonella	Bacterial disease which causes food poisoning
Tobacco mosaic virus (TMV)	Plant virus causing discolouration of the leaves that affects the growth of the plant due to lack of photosynthesis
Vaccination	Inserting small amounts of dead or inactive forms of a pathogen to stimulate antibody production
Vector	An organism that transports a disease from person to person

B4: Bioenergetics	
Aerobic respiration	Respiration where oxygen is used to release lots of energy
Anaerobic respiration	Respiration where oxygen is NOT used and releases only small amount of energy
Fermentation	Anaerobic respiration in yeast
Limiting factor	Factor that is slowing down the rate of photosynthesis when it is not present
Metabolism	All of the chemical reactions in a cell or the body
Oxygen debt	The amount of extra oxygen the body needs after exercise to react with the built up lactic acid and remove it from the cells
Photosynthesis	The process by which plants make glucose using carbon dioxide, water and sunlight
Respiration	The process by which ENERGY is RELEASED from glucose

Year 10 Chemistry	
C6a: Rates	
Word	**Definition**
Rate of Reaction	The measure of the amount of product formed or reactant used over time. The units of rate of reaction may be given as g/s, cm^3 /s or mol/s.
Tangent	A straight line that touches a curve at a single point without crossing through it.
Gradient	Steepness of a line (change in y ÷ change in x)
Activation energy	The minimum amount of energy that particles must collide with to react.
Catalyst	Catalysts increase the rate of reaction by providing a different pathway for the reaction that has a lower activation energy. They are not used up during the reaction.
Collision Theory	According to this theory, chemical reactions can occur only when reacting particles collide with each other and with sufficient energy

C8: Chemical Analysis	
Word	**Definition**
Chromatography	A technique used to separate mixtures due to the distribution of the substances between the stationary and mobile phase. It can give information to help identify substances.
Pure substance	A pure substance is a single element or compound, not mixed with any other substance.
Melting Point	The point at which a material changes from a solid to a liquid.
Formulation	A mixture that has been designed as a useful product. They are made by mixing the components in carefully measured quantities to ensure that the product has the required properties.
Retention Factor	The ratio of the distance moved by a compound to the distance moved by the solvent during chromotography.

Year 10 Physics

P4: Atomic Structure Glossary	
Word	**Definition**
Contamination	When radioactive material is found inside a person.
Dose	The amount of a substance that has been absorbed.
Electron	A negatively charged particle that makes up atoms.
Emission	Given off.
Half life	The time it takes for the activity of a radioactive source to halve.
Ionisation	The process where an electron is knocked out of an atom.
Irradiation	When radiation hits an object from the outside.
Isotopes	Two atoms that have the same number of protons and electrons but different numbers of neutrons.
Neutron	A neutral particle that makes up atoms.
Nucleus	The centre of an atom that is made up of protons and neutrons.
Penetration	The distance into a material that radiation can travel.
Photon	A small amount of energy in the form of a wave.
Proton	A positively charged particle that makes up atoms.
Radiation	Energy carried away from the nucleus – either alpha, beta, or gamma.
Spectra	A spread of all the light emitted by an object.

Year 10 Physics

P5a: Forces and Springs	
Word	**Definition**
Balanced	Two (or more) forces that are equal and opposite such that the resultant force is Zero.
Component	One of a number of parts that makes something up.
Elastic	Deformation where the object does return to its original length once the force is removed.
Equilibrium	The situation when all forces are balanced and the resultant force is Zero.
Free-Body diagram	A diagram representing all the forces acting on an object, drawn as arrows from the centre of the object.
Gravitational potential energy	The energy stored when an object is raised to a particular height.
Joule	The unit of energy (J).
Magnitude	The size (or amount) of a quantity.
Newton	The unit force is measured in (N).
Resolving	The splitting of a force into two components, one acting in the horizontal and one acting in the vertical direction.
Resultant Force	The overall force acting on an object.
Scalar	A quantity with magnitude (size) but not direction. E.g. mass, distance, speed.
Vector	A quantity with magnitude (size) and direction. E.g. weight, velocity.
Weight	The downward force exerted on an object due to gravity.
Work done	The amount of energy transferred to an object.

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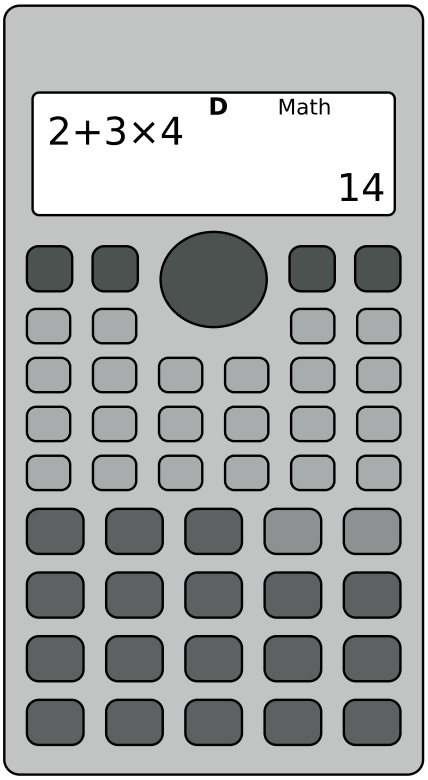
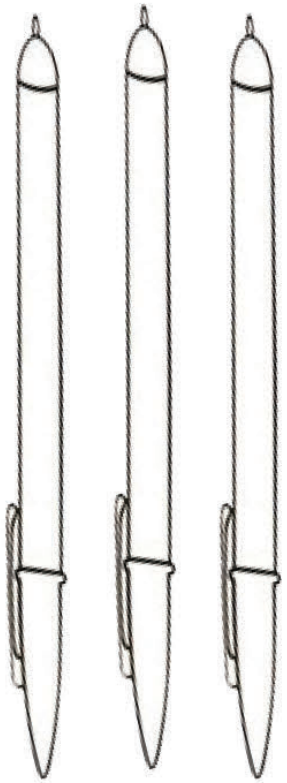
R

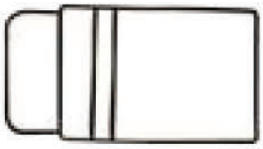
Tools for Learning

All equipment is available to purchase from the Reprographics Department

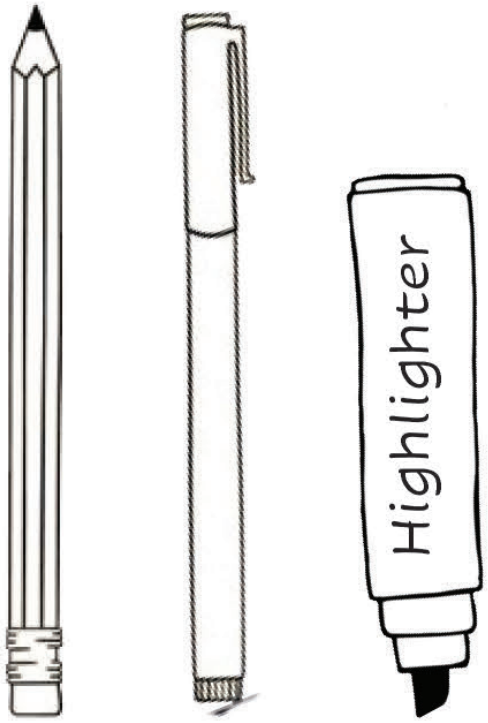




Black, Blue & Purple Pens

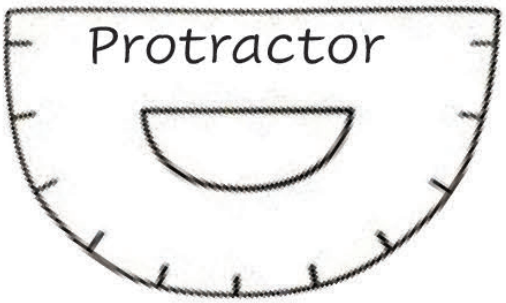


Eraser



Pencil, Whiteboard Pen & Highlighter

Pencil Sharpener

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