All Saints' Academy Cheltenham

Year 11

Cycle 2

Curriculum Organiser

Name : _____

Tutor : _____

Contents Page

All Saints' Academy Home School Agreement – 2024/25

All Saints' Academy recognises that the successful development of its students depends on an effective partnership of the Academy, students and parents/carers.

All three parties share responsibility for the development and achievement of each student. Together we commit ourselves to the following:

The Academy will:	Parents/Carers will:	Students will:
• Provide a learning environment that is stimulating, safe and caring. • Treat everyone with respect. • Ensure that each student has the opportunities, support and guidance to achieve their full potential. • Report regularly on each student's progress. • Expect high standards, set clear rules, promote mutual respect and develop a sense of responsibility. • Keep parents informed about Academy matters, be welcoming to enquiries and responsive to concerns. • Set homework in line with the published timetable, and give feedback on tasks completed. • Record and reward good progress and performance. • Offer enrichment activities that will develop broader skills to prepare for life and the world of work.	• Make sure their child attends in correct uniform, arrives on time and is properly equipped. • Encourage their child to work hard and support them in their homework. • Attend consultation evenings and discussions about their child's progress. • Support the Academy's policies and guidelines as published on the Academy website. • Allow their child to attend off-site visits during the day. • Agree to the sanctions system as set out in the Academy Ready to Learn Policy. • Ensure their child attends every day and that time out of school is not taken or requested, unless for an urgent reason. • Inform staff, if they have concerns about their child's progress, well-being or any other issues. • Encourage their child to participate in the enrichment opportunities offered by the Academy.	• Be an ambassador for All Saints' Academy. • Work hard in class and at home to achieve their full potential. • Treat others as they would wish to be treated and live out the Academy values. • Attend the Academy in correct uniform, be on time and properly equipped. • Keep the Academy rules, behave responsibly and be polite to others in the Academy, and in the wider community. • Follow the Ready to Learn Policy, completing any sanctions set and striving to achieve rewards each week. • Understand that any misbehaviour in the community whether in uniform or not, will be treated as if the incident happened in the Academy. • Take part in enrichment activities offered by the Academy. • Care for the environment in and outside the Academy.

Signed by Form Tutor	Signed by Parent/Carer	Signed by Student
.....	.....	.....

Independent homework timetable

Subject	Week 1 day	Week 2 day
English		
Maths		
Biology		
Chemistry		
Physics		
RE		
Option subject 1:		
Option subject 2:		
Option subject 3:		

Why study?

All students study because they value opportunities to learn and improve.

All students understand that in order to make excellent progress towards bright futures, they need to take responsibility for their own success and study at home as well as at the Academy.

We want you to have the very best opportunities available to you when you leave the Academy. Achieving excellent exam results in Year 11 and Year 13 is one way to help you to do that.

To gain excellent exam results in Year 11 and Year 13, you need to work hard in school every single lesson, every day in Year 7, 8, 9, 10 and 11. If you are in the Academy every day for 5 years you will have 4,750 hours of study time.

We want to make it as easy as possible for you to complete your study away from the Academy. Completing one hour of study per evening at home adds up to an extra 950 hours over your five years with us – which is like having an extra year of learning.

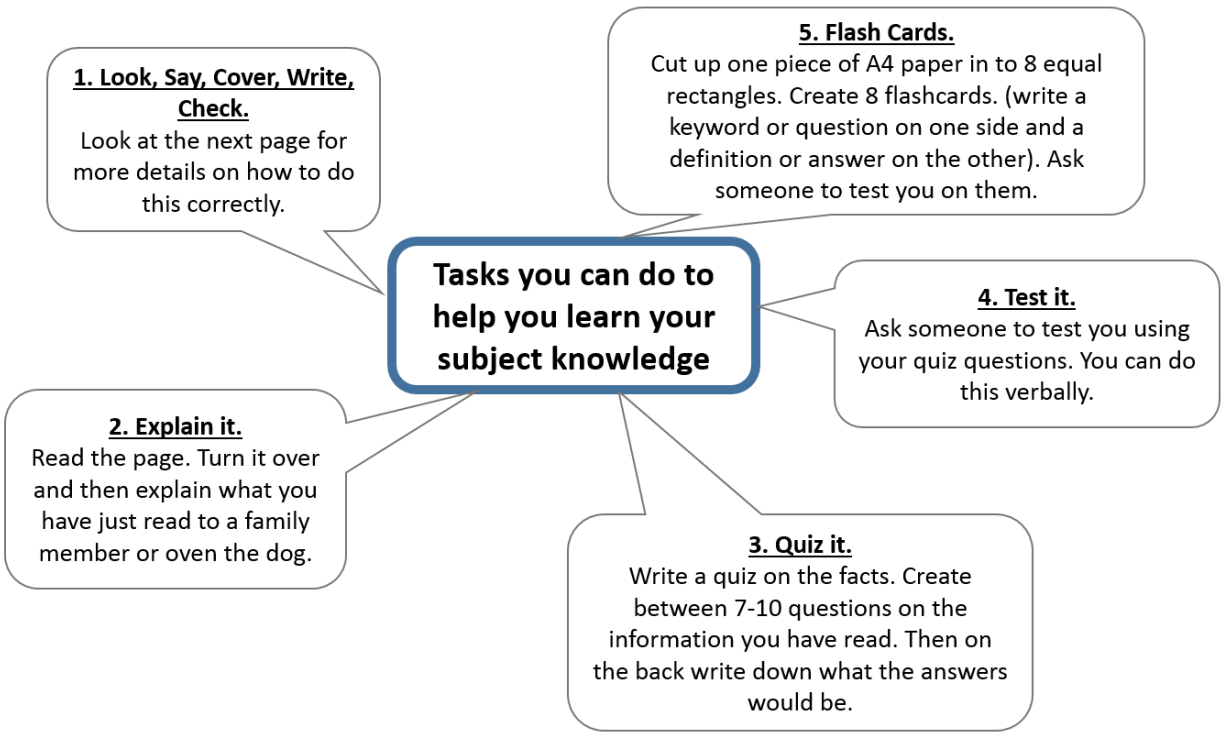
When and what should I study?

You should complete your Independent homework timetable on page 3, so that you know when to study.

Year 7, 8 and 9 should be completing one hour of homework each evening.

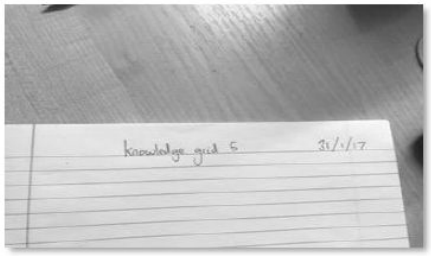
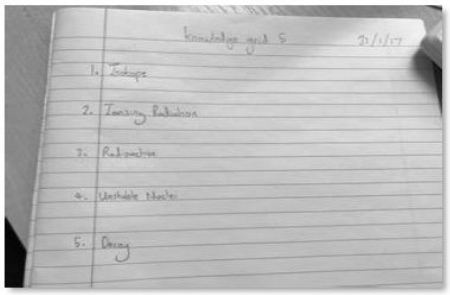
Year 10 and 11 should be completing two hours of homework each evening.

How should I use my Knowledge Organiser to study?



How should I use my Knowledge Organiser to study?

Look, Say, Cover, Write, Check

Step 1		1) Write the date and the title from the knowledge organiser. Underline them.
Step 2		2) Write out the keywords you have been asked to learn, leaving two lines between each word.
Step 3		3) Cover the definitions apart from the first: read it, cover it, say it in your head, check it until you are confident with it. Repeat this process with the other words and take your time.
Step 4		4) Cover up each definition in turn and write them out from memory. Avoid cheating as you need to know how much you can remember. Don't expect yourself to get it exactly right first time.
Step 5		5) Correct your answers in green pen. Repeat the process.

SPAG: Spelling, Punctuation and Grammar

Punctuation

Sentence demarcation:

Symbol	Name	Use
A, N	Capital letters	To start a sentence.
.	Full stop	To show a point/ idea is finished.
!	Exclamation mark	To illustrate heightened emotions, either positive or negative
?	Question mark	To illustrate a question is being asked.
…	Ellipsis	To build tension at the end of sentence or to leave a sentence unfinished for effect.

In sentence punctuation:

Symbol	Name	Use
,	Comma	Following an adverb or connective which starts a sentence or to join a subordinate and main clause together.
" "	Speech marks	To indicate the start and end of direct speech.
( )	Brackets	To put additional information into a sentence.
'	Apostrophe	To show a contraction (joining of two words) or omission (taking out of a letter).

Ambitious punctuation:

Symbol	Name	Use
:	Colon	To show the start of a list or to show important information.
;	Semi colon	To separate long items in a list or to join to simple sentences that are linked by meaning.

Grammar rules

Sentence construction:

All sentences need a subject, verb and an object.

Tense:

Past- Was/ Were
Present- Is/Am
Future- Will

Singular and Plural:

I was…
We/ they were….

Capital Letter Rules:

Start to a sentence.
Proper nouns.
Titles of books, films etc.
Days of the week.
Months of the year.
Religious deities.
I/ I'm/ I'd/ I've.
Historical periods/events.

Homophones

Their- belonging to them.
There- a position or place.
They're- contraction for they are.

Witch- a person with magic powers.
Which- a question word.

Were- past tense of was.
We're- contraction for we are.

Its- belonging to something.
It's- contraction for it is.

Toe- a part of the body.
Tow- to pull something along.

Hole- a hollow place in a solid body.
Whole- all of something.

English KS4 Curriculum 2025-2026

	Year 10			Year 11		
	Knowledge and skills	Cross Curricular	Enrichment	Knowledge and skills	Cross Curricular	Enrichment
Cycle 1	**Literature Paper 1-Macbeth** Read and explore key characters and themes. **Language Skills** Language analysis skills and writing techniques **Assessments:** **Mid- Cycle:** Macbeth extract **End:** Transactional Writing **Careers**- Stage manager/Director/ Actor/Speech writer/Journalist/ Marketing.	RE: Great Chain of Being and Christian beliefs. History: essay writing skills	RSC live showings	**Literature Paper 2** **Play: An Inspector Calls** Read and explore key characters and themes. **Unseen poetry** Analysis skills **Assessments:** November mock exams Language Paper 1, Literature Paper 2 **Careers**- Self-employed person/ Councillor/ shop worker.	Geo and Business: Economic world- links to economic ideas presented in the texts. History: similar time period	Theatre trip
Cycle 2	**Literature Paper 2-A Christmas Carol** Read and explore key characters and themes. Understanding of historical context. **Language Skills** Retrieval, analysis, evaluation, synthesis, and comparison. Writing skills. **Assessments:** **Mid-Cycle:** Theme of Redemption **End:** Paper 2 Language reading section **Careers**- Historian/ Charity worker.	Geography: The Living World and Nature poetry. History- poetry context.	Book club Carnegie shadowing Creative Writing competitions	**Revision and Consolidation** All sections of Literature and Language revisited and revised as appropriate for specific classes.		Book club Carnegie shadowing
Cycle 3	**Literature Paper 1-Poetry Anthology** Read and explore key themes and contextual information. **Language Skills** Retrieval, analysis, evaluation, synthesis, and comparison. Writing skills. **Assessments:** **Mid-cycle:** Poetry essay **End of cycle: Exams:** Literature Paper 1, Language Paper 2 **Careers**- Author/ Poet/English teacher/ Editor/ Librarian.	Extended writing skills: History MFL		**Revision/ Exams** All sections of Literature and Language revisited and revised as appropriate for specific classes.		

Year 11 – English Literature – A Christmas Carol		
Characters	**Key Quotations**	**Themes**
Ebenezer Scrooge- A miserable, selfish old man who hates Christmas. After a visit from four ghosts, changes. **Fred**- Scrooge's nephew of his late sister Fan. He is a cheerful, kind and forgiving. **Bob Cratchit**- A poor, religious family man who works as a clerk for Scrooge. He is treated poorly and not given fair pay. He loves him family and represents the poor. **Tiny Tim**- Bob's youngest son. He is ill and walks with a crutch. He has a positive outlook on life and is grateful. **The Ghost of Christmas Past** -The first ghost after Jacob, it shows Scrooge a range of Christmases from his past. **The Ghost of Christmas Present**- The second ghost Scrooge who shows him a range of people, including the Cratchits celebrating Christmas. **The Ghost of Christmas Yet to Come**- The final ghost Scrooge sees who shows him the future that will occur if Scrooge doesn't change his ways.	**Stave 1** 'Marley was dead; to begin with' 'Are there no prisons? Are there no workhouses?' 'Humbug!' 'As solitary as an oyster.' 'A tight fisted hand at the grindstone' 'A squeezing, wrenching, grasping, scraping, clutching, covetous, old sinner!" **Stave 2** 'A solitary child neglected by his friends.' 'Another idol has displaced me.' 'It was a strange figure- like a child: yet not so like a child as like an old man' 'There was a boy singing a Christmas carol at my door last night. I should like to have given him something: that's all' 'He has the power to render us happy or unhappy; to make our service light or burdensome; a pleasure or a toil' **Stave 3** 'There never was such a goose!' 'This boy is ignorance, this girl is want.' 'Then up rose Mrs Cratchit, Cratchit's wife.. brave in ribbons' 'Dressed out but poorly in a twice turned gown' 'What then if he be like to die he had better do it and decrease the surplus population' **Stave 4** 'The phantom slowly, gravely, silently approached' 'It's likely to be a cheap funeral.. .' 'Quiet, very quiet the noisy little Cratchits..' 'I am not the man I was.' 'I will honour Christmas in my heart and try to keep it all the year' **Stave 5** 'I'm as light as a feather, as happy as an angel, as merry as a school boy!' 'Scrooge was better than his word.' 'As so, as Tiny Tim observed, God Bless us every one!'	**Family** - Scrooge is rich but miserable and the Cratchits are poor but content as a family. **The Christmas Spirit** - Christmas is a time generosity and kindness. It is even powerful enough to transform Scrooge. **Change/Redemption** -Scrooge is redeemed by the end of novel and is a better person and others have better lives as a result of it. **Social Responsibility** - Highlights the lack of responsibility the rich felt for the poor and the differences between them. **Social Class** - The characters in different social classes are treated differently throughout the novel and the opportunities they have. **Time and Place** - Set in London but goes to different places and times with the ghosts. **Poverty and Wealth** - The poor are presented as characters we should be sympathetic with and the rich as ignorant and uncaring.

English Literature – Macbeth		
Characters: **Macbeth** – tragic hero. A brave and honourable soldier and thane who is tempted to commit regicide. **Lady Macbeth** – his wife. Hugely ambitious but unable to live with her actions. **Banquo** – Macbeth's friend who is destined to be head of a line of kings and so poses a threat to Macbeth. **King Duncan** – the king of Scotland – but not for long. **Malcolm** – Duncan's eldest son and the true heir to the throne. **Macduff** – the Thane of Fife. He is the victim of Macbeth's tyranny. Not of woman born. **Three Witches** – supernatural beings who can see the future.	**Key Quotations:** **Act 1** "Fair is foul and foul is fair" **Witches (S1)** "Brave Macbeth- well he deserves that name… " **Captain (S2)** "Stars hide your fires; let not light see my black and deep desires" **Macbeth (S4)** "Yet I do fear thy nature – it is too full o'th'milk of human kindness." **Lady M (S5)** "…when you durst do it, then you were a man" - **Lady M (S7)** **Act 2** "A dagger of the mind, a false creation." **Macbeth (S1)** "Had he not resembled my father as he slept I'd ha' done it." **Lady M (S2)** "… if a man were porter of hell-gate…" **Porter (S3)** "Hours dreadful and things strange…" **Old Man (S4)** **Act 3** "Thou has it now… and I fear thou played most foully for it." **Banquo (S1)** "Our fears in Banquo stick deep" **Macbeth (S1)** "Oh full of scorpions is my mind dear wife" **Macbeth (S2)** "Fly, good Fleance, fly, fly, fly!" **Banquo (S3)** "It will have blood they say. Blood will have blood." **Macbeth (S4)** **Act 4** "By the pricking of my thumbs something wicked this way comes" **Witches (S1)** "He has kill'd me, mother.," **Son (S2)** "Macbeth is ripe for the shaking" **Malcolm (S3)** **Act 5** "Out damned spot! Out I say!" **Lady M (S1)** "Make we our march towards Birnam." **Lennox (S2)** "Bring me no more reports, let them fly all." **Macbeth (S3)** "Out, out brief candle" **Macbeth (S5)** "Tyrant, show thy face!" **Macduff (S7)** "Macduff was from his mother's womb untimely ripp'd" **Macduff (S8)** "This dead butcher and his fiend like queen." **Malcolm (S9)**	**Themes:** **Witchcraft/Supernatural** A lack of scientific explanation led to people believing in witchcraft and the supernatural during Shakespeare's time. **Ambition** Macbeth's true downfall is his ambition. Lady Macbeth is as ambitious as her husband. Both Macbeths fail to see how their ambition makes them cross moral lines and lead to their downfall. **Appearance and Reality** In Macbeth things are never quite what they seem… Characters say one thing and mean something else. Wicked and violent acts such as murder are covered up or the blame is shifted. **Loyalty and Betrayal** Loyalty is important to many of the main characters. Banquo displays loyalty to Duncan and Macbeth betrays them both. **Madness and Guilt** Macbeth's guilt is focused on the murder as he expresses his remorse for killing Duncan. After that his guilt comes in the form of paranoia and this sends him on a frenzied murder spree. Guilt and madness come together. **Sexuality and Gender** Disruption of gender roles are presented through Lady Macbeth's usurpation of the dominant role in the Macbeth's marriage. Lady Macbeth is used to show that women can desire power as much as men. **Power** Lady Macbeth's power comes from her words through which she furthers her intentions. Macbeth's power comes from extreme brutality. **Death and Violence** Each act of violence and murder committed is a decline in Macbeth's soul leading him to further madness. Death is a symbol of his growing ambition.

English Literature- An Inspector Calls		
Characters: **Arthur Birling**- Represents the capitalist class that controls the wealth. **Sybil Birling** -Arthur's wife of a higher class. An unsympathetic woman who represents the bourgeoise (female) upper class. More than any other character, she is adamant that she is blameless in Eva Smith's suicide. **Eric Birling** -Same age and of the same mind as his sister. He is adolescent in his manner ('half shy, half assertive', according to Priestly) and drinks too much, perhaps because he has not yet found a meaningful role in life. **Sheila Birling** -Early twenties, bright, lively and optimistic. Unlike her parents and fiancé, she expresses deep regret for her role in Eva Smith's suicide. **Gerald Croft** -Gerald Croft represents the aristocracy, the highest class of society, comprised of rich landowners and people who inherit their wealth from their parents. Engaged to Sheila. **Inspector Goole** -A mysterious figure. His name evokes the word 'ghoul', meaning evil spirit or phantom. He doesn't officially exist and appears to have supernatural powers of perception and persuasion.	**Key Quotes:** **Act 1** **Birling:** The way some of these cranks talk and write now, you'd think everybody has to look after everybody else, as if we were all mixed up together like bees in a hive – community and all that nonsense. **Sheila:** But these girls aren't cheap labour- they're people. **Birling**: Still, I can't accept any responsibility. If we were all responsible for everything that happened to everybody, we'd had anything to do with, it would be very awkward, wouldn't it? **Inspector**: They might. But after all it's better to ask for the earth than to take it. **Act 2** **Inspector:** (massively) Public men, Mr Birling, have responsibilities as well as privileges. **Sheila:** (rather wildly, with laugh) No, he's giving us the rope –so that we'll hang ourselves. **Mrs B**: I'm sorry she should have come to such a horrible end. But I accept no blame for it at all. **Act 3** **Inspector**: One Eva Smith has gone – but there are millions and millions and millions of Eva Smiths and John Smiths still left with us **Mrs B**: Really, from the way you children talk, you might be wanting to help him instead of us. **Eric:** (bursting out)… You're beginning to pretend now that nothing's really happened at all. And I can't see it like that. This girl's still dead, isn't she?	**Themes:** **Social Responsibility:** The Inspector encourages the Birlings to be more aware of their society and understand that people need help from others. He represents Priestley's socialist views. **Age:** The older generation struggle to change when the Inspector is revealed as a fake but the younger ones do. Priestley believed it was the young in society that had the most influence. **Gender:** Males and females have very specific roles in the play that conform to the perceived social stereotypes of the time. Men have more power and influence, and the women are presented as more shallow. **Class:** Priestley shows the unfairness of the class divide and how it affects the Eva Smith. She is treated badly by the family because she is of a lower class. **Power:** The play has many different types of power from that of parents to societal and hierarchical power of the Inspector. The younger generation have the power to change but the lower class don't. **Secrets and lies:** All of the characters have secrets from each other. The characters lie to the Inspector and themselves and struggle to admit the truth even when it is made clear. **Family:** The Birlings show elements of good and bad family relationships. The Inspector highlights the distance between the Birlings and develops this further.

English Language : Transactional Writing		
DAFORREST	**Format**	**GAPS.**
D –direct address You are a highly valued member of this team. **A- alliteration** That was a perfect presentation. **-anecdote** When I was eleven… **F- fact** England is the birthplace of Shakespeare and The Beatles. **O- opinion** I personally believe that higher education should not be free. **R- rhetorical question** How could I be so stupid? **R –repetition** I think it is right that I should be able to make decisions about my own body. I think it is right that women be involved on my behalf in the policies and decisions that will affect my life. I think it is right that socially, I am afforded the same respect as men. **E- emotive language** The puppy has been abandoned by its owner. **S- statistics** Overall, 78% of companies had a pay gap in favour of men, 14% favoured women and the rest reported no difference. **T- tripling** it's great; it's brilliant; it's amazing!	You will be asked to write two of the following things: letter, speech, article, leaflet, review or report. **Letter:** Have an address in the top right of the page. Begin: Dear… End: Yours sincerely/ faithfully… Write in a formal tone. **Speech:** Start by introducing yourself or using a rhetorical question. Use verbs like 'speak' 'listen' or 'talk' to show it's meant to be said. Ensure an appropriate closing. **Article:** Include a headline. Use a lively style with a range of features. Your first paragraph should give an overview. **Leaflet:** Divide your ideas into sections with subheadings. Usually informative or persuasive - focus on the purpose. **Review:** Should be a balance of good and bad points. It needs to contain personal opinion as well as facts. You should come to a decision overall. **Report:** A formal, informative piece that is not written to anyone like a letter. It should be objective and will usually have titled **problems** and **solutions**.	**Genre:** What is it? **Audience:** Who is it aimed at? **Purpose:** What is its job? **Style:** How formal does it need to be? **Purposes** **Inform-** gives the reader key facts about a given subject. **Argue-** explain and defend your point of view on a given subject. **Persuade-** try to convince someone to do something that you want/ believe in. **Evaluate-** give a balanced response which comes to an overall conclusion. **Stretch and Challenge** Read an article and identify DAFORREST techniques. Write a review on a film that you have just seen.

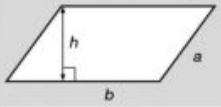
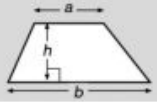
All Saints' Academy Mathematics KS4 Curriculum

Cycle	Year 10 Foundation	Year 10 Higher	Year 11	
	Knowledge & Skills	Knowledge & Skills	Knowledge & Skills	
1	**Algebra:** • Laws of Indices • Multiplying linear expressions • Factorising Quadratic Expressions • Changing the subject **Number:** • Standard Form • Error Intervals • Compound Growth and Decay **Construction:** • Perpendicular bisector of a line • Angle bisector • Shortest distance from point to a line **Proportion:** • Simplifying ratios and sharing ratios • Best buys	**Algebra:** • Laws of Indices • Multiplying linear expressions • Factorising Quadratic Expressions • Changing the subject **Number:** • Standard Form • Indices and Surds • Error Intervals • Compound growth and decay **Geometry:** • Pythagoras' Theorem and 3D shapes • Fractional and negative enlargements • Similar Shapes and Triangles • Area and Volume Scale Factor **Construction:** • Perpendicular bisector of a line • Angle bisector • Shortest distance from point to a line **Proportion:** • Simplifying ratios and sharing ratios • Best buys • Connected Ratios	<u>Foundation</u> • Revision and preparation for mocks	<u>Higher</u> • Circle Theorems • Quadratic Inequalities • Sine and Cosine Rule • Revision and preparation for mocks
Careers	**Quantity Surveyor**	**Meterologist**	**College options needing Mathematics**	**University options with Mathematics**
2	**Geometry:** • Area of rectilinear shapes, triangles and circles • Sector perimeter and area • Area of compound shapes • Surface Area and Volume of Prisms • Pythagoras' Theorem	**Geometry:** • Spheres, pyramids, cones, frustums and composite solids • Sector perimeter and area • Area of compound shapes **Algebra:** • Algebraic fractions • Constant of proportionality	Revision and preparation for mocks	

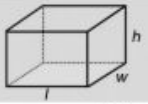
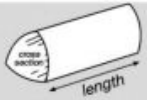
	Algebra: • nth term of linear sequences • Straight Line graphs • Simultaneous Equations **Data Handling:** • Scatter graphs and Line of Best Fit • averages from tables and grouped intervals	• Straight line graphs • Linear and quadratic sequences • Simple Geometric progressions. • Linear inequalities and inequality regions • Simultaneous Equations – Linear, Quadratic and Circle Equations as one of the equations	
Careers	**CAD Technician**	**Acoustic Consultant**	
3	**Probability:** • Product Rule for Counting • Two-way tables • Venn Diagrams • Tree Diagrams and Conditional Probability **Geometry:** • Angles in Polygons • Trigonometry **Algebra:** • Solving Quadratic Equations algebraically and from their graphs	**Algebra:** • Quadratic, cubic, exponential and reciprocal graphs • Tangent to a circle • Completing the Square • Solving Quadratic Equations algebraically and from their graphs **Probability:** • Product Rule for Counting • Two-way tables • Venn Diagrams • Tree Diagrams and Conditional Probability **Geometry:** • Angles in Polygons • Trigonometry • Vectors **Statistics:** • Cumulative frequency graphs & box plots • Histograms.	Revision and preparation for final examinations.
Careers	**Sports Science and Analysis**	**Statistician**	

GCSE Maths Formulae

Areas

Rectangle = $l \times w$	
Parallelogram = $b \times h$	
Triangle = $\frac{1}{2} b \times h$	
Trapezium = $\frac{1}{2}(a + b)h$	

Volumes

Cuboid = $l \times w \times h$	
Prism = area of cross section × length	
Cylinder = $\pi r^2 h$	
Pyramid = $\frac{1}{3}$ × area of base × h	

Midpoint of two points

Between (x_1, y_1) and (x_2, y_2) the midpoint is:

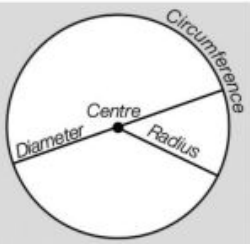
$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

Circles

Circumference = $\pi \times$ diameter, $C = \pi d$

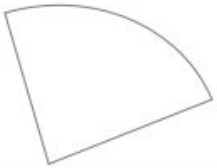
Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$

Area of a circle = $\pi \times$ radius squared, $A = \pi r^2$



Area of a Sector

$$\frac{\text{angle}}{360} \times \pi \times \text{radius}^2$$

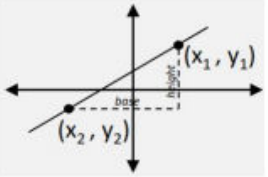


Arc Length

$$\frac{\text{angle}}{360} \times \pi \times \text{diameter}$$

Gradient of a Line

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$



Compound Interest

$$\text{starting amount} \times \left(1 \pm \frac{\text{rate of change}}{100}\right)^{\text{time}}$$

The $\pm$ means:

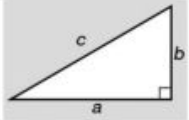
+ for growth

– for decay

Pythagoras

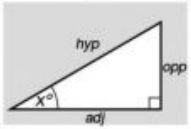
Pythagoras' Theorem

For a right-angled triangle, $a^2 + b^2 = c^2$



Trigonometric ratios (*new to F*)

$\sin x^\circ = \frac{\text{opp}}{\text{hyp}}$, $\cos x^\circ = \frac{\text{adj}}{\text{hyp}}$, $\tan x^\circ = \frac{\text{opp}}{\text{adj}}$



Compound measures

Speed

$$\text{speed} = \frac{\text{distance}}{\text{time}}$$

Density

$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

Pressure

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

Perpendicular Gradients

Flip & Swap

To find the perpendicular gradient, find the reciprocal, and switch signs.

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

Quadratic equations

The Quadratic Equation

The solutions of $ax^2 + bx + c = 0$, where $a \neq 0$, are given by $x = \frac{-b \pm \sqrt{(b^2 - 4ac)}}{2a}$

Median from a histogram

$$L + \frac{m - p}{f} \times w$$

L is the lower limit of the median class

m is the median point

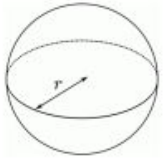
p is the total frequency of the previous bars

f is the frequency of the median class

w is the class width of the median class

Volume of a Sphere

$$\frac{4}{3} \times \pi \times \text{radius}^3$$



Volume of a Prism

Area of cross section x length

Probability

Where *P(A)* is the probability of outcome *A* and *P(B)* is the probability of outcome *B:*

$$P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$$

Constructing Pie Charts

The angle to draw for each sector is:

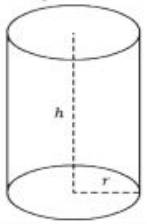
$$\text{Angle} = \frac{\text{frequency}}{\text{total}} \times 360^\circ$$

Stratified Sampling

$$\frac{\text{frequency of group}}{\text{total}} \times \text{sample size}$$

Curved Surface Area of a Cylinder

2 x π x radius x height



Curved Surface Area of a Cone

Curved surface area of a cone = $\pi r l$

Interior/Exterior Angles

Exterior: $\frac{360}{n}$ **Interior: 180 – exterior**

Sum of interior: (n – 2) x 180

Trigonometric Exact Values

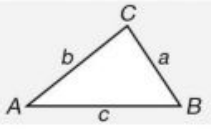
	Sinθ	Cosθ	Tanθ
0°	0	1	0
30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
45°	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
90°	1	0	$\pm\infty$

Trigonometric formulae

Sine Rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

Cosine Rule $a^2 = b^2 + c^2 - 2bc \cos A$

Area of triangle $= \frac{1}{2} ab \sin C$



Year 11 Maths Higher Knowledge Organiser

Year 11 Cycle 3 Knowledge Organiser

GCSE Maths Foundation Formula Sheet

Areas

Rectangle = $l \times w$	
Parallelogram = $b \times h$	
Triangle = $\frac{1}{2} b \times h$	
Trapezium = $\frac{1}{2}(a+b)h$	

Pythagoras

Pythagoras' Theorem

For a right-angled triangle,
$a^2 + b^2 = c^2$

Trigonometric ratios (new to F)

$\sin x° = \frac{\text{opp}}{\text{hyp}}$, $\cos x° = \frac{\text{adj}}{\text{hyp}}$, $\tan x° = \frac{\text{opp}}{\text{adj}}$

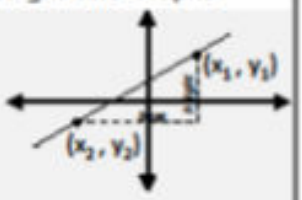
Equations of Straight Line Graphs

Gradient:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

or

$$m = \frac{\text{height}}{\text{base}}$$



Equation of a Line

$y = mx + c$

Midpoint of 2 points (x_1, y_1) and (x_2, y_2)

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

Compound measures

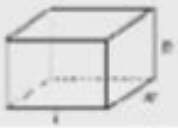
Speed

$\text{speed} = \frac{\text{distance}}{\text{time}}$

Density

$\text{density} = \frac{\text{mass}}{\text{volume}}$

Volumes

Cuboid = $l \times w \times h$	
Prism = area of cross section × length	
Cylinder = $\pi r^2 h$	

Constructing Pie Charts

The angle to draw for each sector is

$$\text{Angle} = \frac{\text{frequency}}{\text{total}} \times 360°$$

Compound Growth & Decay

The amount after *n* years (or days, etc.) is:

$$\text{starting amount} \times \left(1 \pm \frac{r}{100}\right)^n$$

where *r* is the rate of change.
The ± means + for growth and − for decay

Angles in Polygons

Sum of Interior Angles $= (n-2) \times 180°$

Where *n* is the number of sides of the shape

Exterior Angles add up to 360°

One exterior angle in a REGULAR polygon $= \frac{360°}{n}$

Pairs of Interior and Exterior Angles add up to 180°

Circles

Circumference = $\pi \times$ diameter, $C = \pi d$	
Circumference = $2 \times \pi \times$ radius, $C = 2\pi r$	
Area of a circle = $\pi \times$ radius squared, $A = \pi r^2$	

Head to the Corbett Maths website and use these videos to help you with revision for mocks.

Topic	Corbett Videos	Revised
Angle Facts	Video 35, 30, 34, 39	
Types of Angle	Video 38	
Angles in Parallel Lines	Video 25	
Angles in a Triangle	Video 37	
Angles in a Quadrilateral	Video 33	
Angles in Polygons	Video 32	
Bearings	Videos 26, 27	
Scales & Maps	Video 283	
Perimeter	Video 241	
Area of Rectangles/Triangles	Videos 45, 49	
Area of a Trapezium	Video 48	
Units	Videos 347,349	
Sensible Estimates	Video 285	
Line Symmetry	Video 316	
Rotational Symmetry	Video 317	
Constructions	Videos 72, 78, 83	
Loci	Videos 75, 76, 77	
Faces, Edges, Vertices	Videos 5, 3	
Nets	Video 4	
Views and Elevations	Video 354	
Time Calculations	Video 322	
Timetables	Video 320	
Distance Charts	Video 318	
Speed, Distance, Time	Video 299	
Travel Graphs	Video 171	
Density	Video 384	
Pressure	Video 385	
Translations	Video 325, 326	
Reflections	Videos 272, 273	
Rotations	Video 275	
Enlargements	Videos 104, 105, 107	
Parts of the Circle	Video 61	
Circumference	Video 60 , 243	
Area of a Circle	Video 59, 47	
Arc Length	Video 58	
Area of a Sector	Video 46	

Topic	Corbett Videos	Revised
Volume of a Cylinder	Video 357	
Pythagoras	Video 257	
Trigonometry	Videos 329, 330, 331	
Exact Trig Values	Video 341	
Similar Shapes (sides)	Video 292	
Congruent Triangles	Video 67	
Volume of a Cuboid/Prism	Video 355, 356	
Volume of a Sphere/Cone	Videos 359, 361	
Surface Area	Video 310	
Surface area of Sphere/Cone	Videos 313, 314	
Vectors	Video 353a, 353	
Multiplication	Video 199, 200	
Division	Video 98	
Addition	Video 6	
Subtraction	Video 304	
Rounding	Video 276, 277a, 277b, 278,280	
Estimation	Video 215	
Order of Operations	Video 211	
Ordering Decimals	Video 95	
Arithmetic with Decimals	Videos 90, 91, 92, 93, 94	
Multiples and Factors	Videos 220, 216	
Prime Numbers	Video 225	
Square Numbers and Square Roots	Videos 226, 228	
Cube Numbers and Cube Roots	Videos 212, 214	
Product of Primes	Video 223	
LCM/HCF	Videos 218, 219, 224	
Indices	Videos 172, 174	
Negative Indices	Video 175	
Standard Form	Video 300,302, 303	
Fractions of Amounts	Video 137	
Adding Fractions	Video 133	
Multiplying Fractions	Video 142	
Dividing Fractions	Video 134	
Reciprocals	Video 145	
Fractions, Decimals, Percentages	Videos 121 to 129	
Expressing as Fraction or%	Videos 136, 237	

Topic	Corbett Videos	Revised
Percentages of Amounts	Videos 234, 235, 238	
Percentage Change	Video 233	
Simple Interest	Video 236a	
Compound Interest	Video 236	
Reverse Percentages	Video 240	
Ratio	Videos 269, 270, 271	
Currency	Video 214a	
Recipes	Video 256	
Negative Numbers	Videos 205-209	
Place Value	Video 222, 222a	
Error Intervals	Video 377	
Money	Video 400	
Best Buys	Video 210	
Proportion	Videos 255a, 254	
Use of a Calculator	Video 352	
Tally Charts	Video 321	
Frequency Trees	Video 376	
Two-way Tables	Video 319	
Pictograms	Videos 161, 162	
Bar Charts	Videos 147, 148	
Line Graphs	Video 160	
Pie Charts	Video 163, 164	
Probability	Videos 245, 246, 248	
Relative Frequency	Video 248	
Listing Outcomes	Video 253	
Scatter Graphs	Videos 165 to 168	
Averages & Range	Videos 56, 50, 53, 57	
Mode: Frequency Table	Video 56a	
Median: Frequency Table	Video 51	
Combined Mean	Video 53a	
Estimated Mean	Video 55	

Topic	Corbett Videos	Revised
Venn Diagrams	Video 380	
Tree Diagrams	Video 252	
Reading Tables	Video 387	
Samples	Video 281a	
Coordinates	Video 84	
Function Machine	Video 386	
Writing Expressions	Video 16	
Collecting Like Terms	Video 9	
Multiplying & Dividing Terms	Videos 18, 11	
Laws of Indices	Video 174	
Sequences	Videos 286, 287, 290, 287a	
Geometric Progressions	Video 375	
The nth Term	Video 288	
Expanding Brackets	Videos 13, 14	
Factorising	Video 117	
Factorising Quadratics	Videos 118, 120	
Solving Equations	Video 110, 113, 266	
Forming Equations	Videos 114, 115	
Inequalities	Videos 177, 178, 179	
Conversion Graphs	Video 151	
Drawing Linear Graphs	Video 186	
y = mx + c	Video 191	
Gradient	Video 189	
Real Life Graphs	Video 171a	
Parallel graphs	Video 196	
Substitution	Video 20	
Changing the Subject	Video 7	
Simultaneous Equations	Videos 295, 297	
Quadratic Graphs	Video 264	
Cubic Graphs	Video 344	
Reciprocal Graphs	Video 346	

KS4 Science Curriculum 2025-26

	Year 10		Year 11	
	Knowledge and skills	Curriculum links	Knowledge and skills	Curriculum links
Cycle 1	**Paper 1 content** **Biology** – Topic 1: Cell biology, and Topic 2: Organisation **Chemistry** – Topic 1: Atomic structure and the periodic table, and Topic 2: Bonding, structure, and the properties of matter **Physics** – Topic 1: Energy, and Topic 2: Electricity **Cycle 1 assessments:** Topics 1 and 2	Maths – throughout all topics. DT – links to digestion and food groups.	**Paper 2 content** **Biology** – Topic 6: Inheritance, variation and evolution **Chemistry** – Topic 7: Organic Chemistry, and Topic 8: Chemical analysis **Physics** – Topic 5: Forces (Forces and motion), and Topic 6: Waves (wave properties) **AUTUMN MOCKS: Paper 1 content** (combined or separate science content, dependent on set) Bio – Topics 1-4 Chem – Topics 1-5 Phys – Topics 1-4	Maths – throughout all topics. Interpreting graphs. RE – Evolution.
Cycle 2	**Paper 1 content** **Biology** – Topic 3: Infection and response, and Topic 4: Bioenergetics **Chemistry** – Topic 3: Quantitative chemistry, Topic 4: Chemical changes, and Topic 5: Energy changes **Physics** – Topic 3: Particle model of matter, and Topic 4: Atomic structure **Cycle 3 assessments:** Topics 3 and 4	Maths – throughout all topics. Recognising patterns. Reading and drawing graphs. PE – movement, circulation, link to fitness RSE – Personal health, healthcare.	**Paper 2 content** **Biology** – Topic 7: Ecology **Chemistry** – Topic 9: Chemistry of the atmosphere, and Topic 10: Using resources **Physics** – Topic 5: Waves (Electromagnetic waves), Topic 7: Magnetism and electromagnetism, and Topic 8: Space physics (separate sciences only) **SPRING MOCKS: Paper 2 content** (combined or separate science content, dependent on set) Bio – Topics 5-7, Chem – Topics 6-10, Phys – Topics 5-7 (combined) or Topics 5-8 (separate)	Maths – throughout all topics. Geography – links to sustainability. RE – The Big Bang Theory.
Cycle 3	**Paper 2 content** **Biology** – Topic 5: Homeostasis and response **Chemistry** – Topic 6: The rate and extent of chemical change **Physics** – Topic 5: Forces pt.1 **END OF YEAR 10 MOCKS: Paper 1 (combined sciences) content** Bio – Topics 1-4, Chem – Topics 1-5, Phys – Topics 1-4	Maths – throughout all topics. Using equations. Interpreting and drawing graphs. RSE – Health, human reproduction and contraception.	**Consolidate and revise** Papers 1 & 2 – identify areas to improve, revision, exam technique **GCSE exams:** **Combined science:** 2x 1h 15 min paper/science **Separate sciences:** 2x 1h 45 min paper/science	

Year 11 Biology – Cycle 2 Curriculum Organiser
Biology Paper 2- Ecology

Adaptations, interdependence and competition

Organisms adaptations enable them to survive in conditions where they normally live. Adaptations may be structural, behavioural or functional.

Competition	Plants in a community or habitat compete with each other for light, space, water and mineral ions.
	Animals compete with each other for food, mates and territory.
Interdependence	Species depend on each other for food, shelter, pollination, seed dispersal etc. Removing a species can affect the whole community

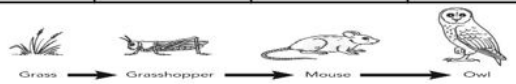
Abiotic	Biotic
Non-living factors that affect a community	*Living factors that affect a community*
Living intensity.	Availability of food.
Temperature.	
Moisture levels.	
Soil pH, mineral content.	New predators arriving.
Wind intensity and direction.	New pathogens.
Carbon dioxide levels for a plant.	One species outcompeting so numbers are no longer sufficient to breed
Oxygen levels for aquatic organisms.	

Organisation of an ecosystem

Photosynthetic organisms are the producers of biomass for life on Earth

Feeding relationships in a community

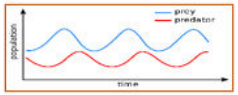
Producer	Primary consumer	Secondary consumer	Tertiary consumer



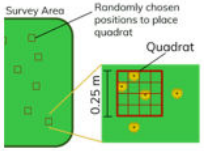
All food chains begin with a producer e.g. grass that is usually a green plant or photosynthetic algae.

Consumers that kill and eat other animals are predators and those eaten are prey.

In a stable community the numbers of predators and prey rise and fall in cycles.



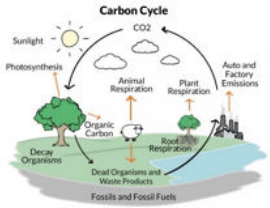
Required practical- Measuring a population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species.

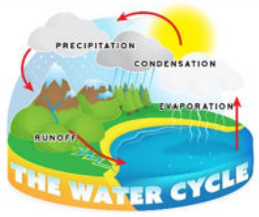


Sampling techniques	
Quadrats	Organisms are counted within a randomly placed square
Transects	Organisms are counted along a belt (transect) of the ecosystem.

Processing data	
Median	Middle value in a sample.
Mode	Most occurring value in a sample.
Mean	The sum of all the value in a sample divided by the sample number.

How materials are cycled





Biodiversity

Biodiversity is the variety of all the different species of organisms on earth, or within an ecosystem.
A great biodiversity ensures the stability of ecosystems by reducing the dependence of one species on another for food, shelter and the maintenance of the physical environment.
The future of the human species on Earth relies on us maintaining a good level of biodiversity. Many human activities are reducing biodiversity and only recently have measures been taken to try to stop this reduction.

Global warming

Levels of CO_2 and methane in the atmosphere are increasing.	Decreased land availability from sea level rise, temperature rise damages delicate habitats, extreme weather events harm populations of plants and animals.

Land use

Humans reduce the amount of land and habitats available for other plants, animals and microorganisms.
Building and quarrying.
Farming for animals and food crops.
Dumping waste.
Destruction of peat bogs to produce cheap compost for gardeners/farmers to increase food production.

Deforestation

Large scale deforestation has occurred to provide land for cattle and rice fields, grow crops for biofuels. Reduces biodiversity and removes a sink for increasing the amount CO_2 in the atmosphere

Waste management

Rapid growth in human population and higher standard of living	More resources used and more waste produced.
	Pollution in water; sewage, fertiliser or toxic chemicals.
	Pollution in air; smoke or acidic gases.
	Pollution on land; landfill and toxic chemicals.

Maintaining diversity

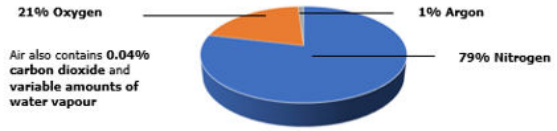
Scientists and concerned citizens have put in place programmes to reduce the negative effects of humans on ecosystems and biodiversity.
These include:
- breeding programmes for endangered species
- protection and regeneration of rare habitats
- reintroduction of field margins and hedgerows in agricultural areas where farmers grow only one type of crop
- reduction of deforestation and carbon dioxide emissions by some governments
- recycling resources rather than dumping waste in landfill.

My Biology teacher is:

Year 11 Chemistry – Cycle 2 Knowledge Organiser 14th January-8th March

Chemistry Paper 2- Chemistry of the atmosphere

Composition of the atmosphere



Evolution of the atmosphere

Early Atmosphere
Atmosphere is **mainly carbon dioxide** with **no oxygen.**

4.6 – 3.6 Billion Years Ago
Volcanoes erupt releasing nitrogen and **water vapour. Water vapour condenses** and forms the oceans. Some **carbon dioxide dissolves in the oceans. Carbon dioxide** is also **locked in fossil fuels and sedimentary rocks.**

2.7-1.7 Billion Years Ago
Plants evolve and **release oxygen through photosynthesis.** They take in more carbon dioxide.

How oxygen increased

Algae and plants produced the oxygen that is now in the atmosphere by photosynthesis, which can be represented by the equation:

$$6CO_2 + 6H_2O \xrightarrow{\text{light}} C_6H_{12}O_6 + 6O_2$$

carbon dioxide + water → (light) glucose + oxygen

Algae first produced oxygen about 2.7 billion years ago and soon after this oxygen appeared in the atmosphere. Over the next billion years plants evolved and the percentage of oxygen gradually increased to a level that enabled animals to evolve.

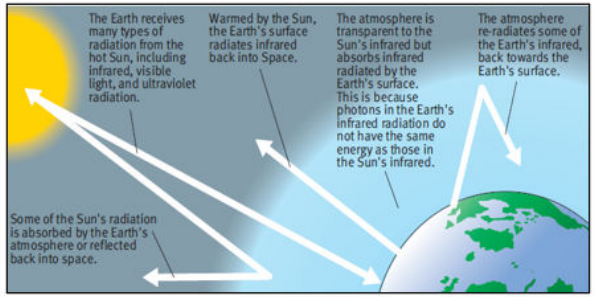
How carbon dioxide decreased

Reduction of CO_2 by formation of deposits	
Coal	**Plants absorbed CO_2.** They **died and decayed.** This layer of decaying plants was **compressed to form coal.**
Oil and natural gas	**Plankton absorbed CO_2.** Plankton died and were **deposited in muds on the sea floor.** They were covered over and **compressed over millions of years.**
Limestone	**Shelled animals absorbed CO_2** to make their **calcium carbonate shells.** The remains of these animals were **compressed to form limestone.**

Mid-Cycle Assessment

Greenhouse gases and global climate change

Greenhouse gases keep temperatures on Earth high enough to support life. **Water vapour**, **methane** and **carbon dioxide** are greenhouse gases.



How humans increase carbon dioxide in the atmosphere	How humans increase methane in the atmosphere
Combustion of **fossil fuels**	Increased **animal farming**
Deforestation	Decomposition of **rubbish in landfill**
How humans can decrease carbon dioxide concentration	**How humans can decrease methane concentration**
Use **alternative forms of energy** e.g. wind turbines	**Alternative foods – non-animal based**
Energy efficiency e.g. more efficient cars	Increased **recycling**
Carbon capture – capturing CO_2 from power stations and trapping it	
Carbon off-setting – planting **more trees**	
Effects of global warming	
Some regions will **not** be able to produce **enough food** because of **drought.**	
Changes to distribution of species and migration patterns.	
Increase in sea levels because of melting of polar ice caps.	
Reduction of water supplies in some regions.	

Atmospheric pollutants

Pollutant	Cause	Effect
Carbon monoxide, CO	**Incomplete combustion** of a **hydrocarbon** fuel.	**Toxic** gas. Colourless and odourless so hard to detect.
Sulfur dioxide, SO_2	**Burning coal or petrol.** Both contain sulfur which reacts with oxygen in the air.	Cause **respiratory problems** (e.g. for those with asthma). Combine with water vapour to cause **acid rain.**
Nitrogen oxides, NO_x	In **car engines. N_2** and **O_2 from air** react at **high temperatures.**	
Particulates	**Incomplete combustion** of a hydrocarbon fuel.	**Global dimming** (reduction in sunlight reaching Earth).

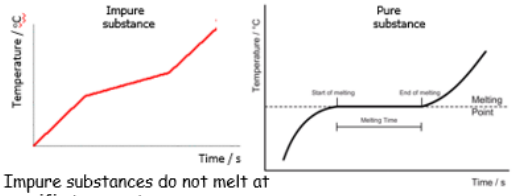
My Chemistry teacher is:

Year 11 Chemistry – Cycle 2 Knowledge Organiser 14th January-8th March

Chemistry Paper 2- Chemical analysis and using resources

Purity and Formulations

Key terms-
Pure= A pure substance is a single **element** or **compound**, **not mixed** with any other substance.
Formulation= A **mixture** that has been designed as a useful product. Formulations are made by mixing the components in **carefully measured quantities**. Formulations include **fuels**, **cleaning agents**, **paints**, **medicines**, **alloys**, **fertilisers** and **foods**.

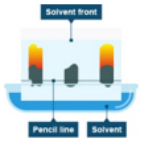


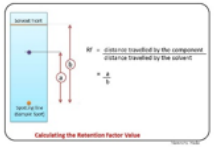
Impure substances do not melt at specific temperatures.

Pure substances do melt at specific temperatures (a horizontal line is produced).

Required practical-Chromatography and Rf values

Chromatography	A method used to **separate mixtures** into their different chemicals.
Stationary phase	The **medium** (e.g. paper) through which the **mobile phase passes** in **chromatography**.
Mobile phase	The **solvent** (e.g. water) that carries the sample (e.g. ink) in **chromatography**.
Rf value	A value (always less than 1) that shows how far the substance has moved compared to the solvent. Equation: R_f = distance moved by substance / distance moved by solvent





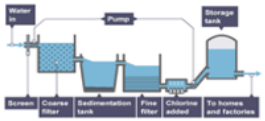
Identification of common gases

Gas	Procedure	Positive Result
Hydrogen	Hold a **lit splint** at the end of a test tube producing gas.	Hydrogen burns with a **pop** noise.
Oxygen	Hold a **glowing splint** in a test tube of the gas.	The splint **relights** if oxygen is present.
Carbon dioxide	Bubble gas through a solution of **limewater**.	Carbon dioxide causes the limewater to turn **milky**.
Chlorine	Place **damp litmus paper** in the gas.	The litmus is **bleached white** if chlorine is present.

Using resources key terms

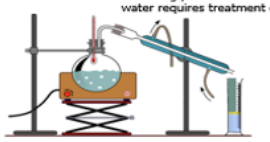
Finite resource	A resource used by humans that has a **limited supply** e.g. coal.
Renewable resources	A resource used by humans that can be **replenished** e.g. trees. If not managed correctly, the resource may decrease.
Potable water	Water that is **safe to drink**. Has **low levels of dissolved salts** and **microbes**.
Fresh water	Water that has **low levels of dissolved salts**. Sea water is not fresh water.
Pure water	**Only** contains **water molecules**, nothing else.
Desalination	A process that **removes salt from sea water** to create potable water. **Expensive** as it **requires a lot of energy**. Only necessary in areas with small amounts of fresh water e.g. Spain.
Sewage	**Wastewater produced by people**. Contains potentially dangerous **chemicals** and large numbers of **bacteria**.

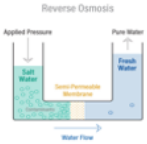
Water



Obtaining potable water in countries with plentiful fresh water e.g. the UK
- Find a suitable source of fresh water (e.g. a **reservoir**).
- Pass through **filter beds to remove particles.**
- **Sterilise** to kill microbes e.g. by using **chlorine**, **ozone** or **ultraviolet light.**

Obtaining potable water in countries with limited fresh water requires treatment of sea water:





Distillation:
- Water is heated to **100°C.**
- It **evaporates**, leaving the salt behind.
- A **condenser cools** the water to return it to the liquid state.

Reverse osmosis:
- **Pressure** is applied to the water.
- The **water molecules** move through the **partially-permeable membrane.**
- **Other particles are too large** and are not able to move through.

Life cycle assessment

Life cycle assessments **assess the environmental impact of products**. A LCA assesses the use of **water**, **resources**, **energy sources** and **production of some wastes** during the following stages:
- **extracting** and **processing raw materials**
- **manufacturing** and **packaging**
- **use** and operation during its lifetime
- **disposal** at the end of its useful life, including transport and distribution at each stage.

My Chemistry teacher is:

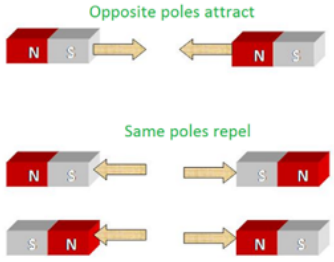
AQA

Year 11 Physics – Cycle 2 Curriculum Organiser
Physics Paper 2- Magnetism and Electromagnetism

All Saints' Academy

Poles of a magnet

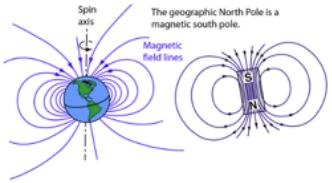
Pole	The **places** on a magnet where the **magnetic forces** are **strongest**.
Magnetic Field	The **area** around a magnet where a **force acts** on another magnet or magnetic material.
Repel	Occurs when two **like poles** are brought close together. The magnets **push apart**.
Attract	Occurs when two **opposite poles** are brought close together. The magnets **move together**.
Permanent magnet	A magnet that produces its **own magnetic field**.
Induced magnet	A magnetic material that **becomes a magnet** when it is placed in a **magnetic field**. When **removed** from the **field** it **quickly loses its magnetism**.



Magnetic Fields

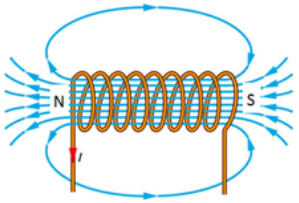
Magnetic material	There are **three** magnetic elements: **iron**, **cobalt** and **nickel** Materials made derived from these elements (e.g. **steel**)are also magnetic
Compass	Compasses contain small bar magnets which **points** to the **north pole** of the **Earth's magnetic field**.

The strength of the magnetic field depends on the distance from the magnet. The field is strongest at the poles of the magnet.
The direction of the magnetic field at any point is given by the direction of the force that would act on another north pole placed at that point.
The direction of a magnetic field line is from the north (seeking) pole of a magnet to the south(seeking) pole of the magnet.



Electromagnetism

Solenoid	A **coil of wire** that will create a **magnetic field** when **current** is passed through it. The magnetic field **inside** the solenoid is **strong** and **uniform**. It acts in the same way as a bar magnet.
Electromagnet	A **solenoid containing an iron core** which increases its strength.

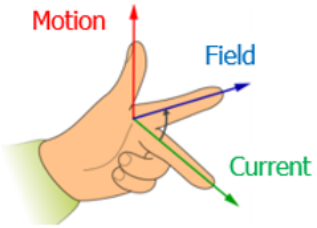


The magnetic field in a **solenoid** is concentrated **inside the coil in a uniform direction**, otherwise it acts in the same way as a bar magnet.

To increase the force of a solenoid
Add an **iron core**
Increase the **number of coils** of wire
Increase the **current**
Move the magnetic material/ magnet **closer** to the solenoid

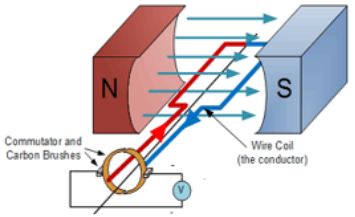
Fleming's left hand rule (Higher tier only)

A rule that shows the **relative direction** of the **current**, **force** and **magnetic field** in the motor effect.



Align fingers to the field and the direction of the current to work out the way the wire moves.

Electric motors (Higher tier only)



In this case the red part of the wire would experience a force upwards.

To increase the force of a motor
Increase the **number of coils** of wire
Increase the **strength of the magnetic field**
Increase the **current**

My Physics teacher is:

AQA

Year 11 Physics – Cycle 2 Curriculum Organiser
Physics Paper 2- Space Physics (Separate sciences only)

All Saints' Academy Dunstable

Our solar system

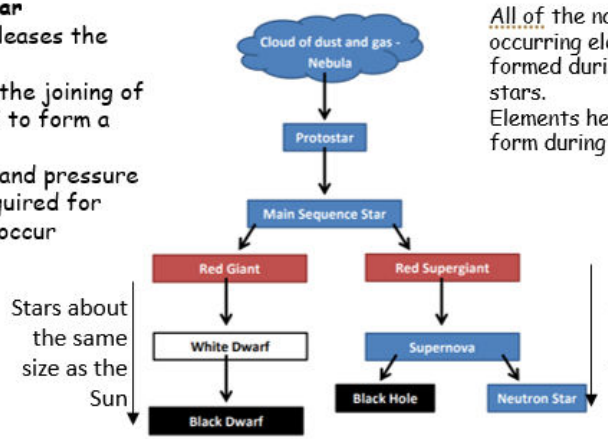
1 star (the Sun) + 8 planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune) + dwarf planets (e.g. pluto), all of which orbit the Sun.

The Sun is just one of billions of stars in our galaxy. Our galacy is a **spiral** galaxy, called the **milky way**.
There are billions of other galaxies in the observable universe.

Stars are formed by:
- Clouds of gas and dust being drawn together due to gravitational attraction.
- This increasing mass generates extremely high heat and pressure
- This starts nuclear fusion
- The fusion reactions provide equilibirum
- Force of gravitational collapse = expansion force due to fusion energy.
- As the rate of fusion reactions decreases, the star enters its end of life phases (Red Giant/Red supergiant)

Lifecycle of a star

Nuclear fusion releases the energy in stars.
Nuclear fusion is the joining of two smaller nuclei to form a larger nucleus.
The intense heat and pressure inside stars is required for nuclear fusion to occur



All of the naturally occurring elements are formed during fusion in stars.
Elements heavier than iron form during supernova

Orbital motion

Objects travelling in circles require a force acting inwards, at 90° to their direction of motion.
For satellites and planets, this is **gravity**.

Object	Natural satellites	Artificial satellites	Planets
Orbits	Planets	Planets	Stars
Examples	The Moon Other moons	The international space station	The Earth Exoplanets (planets that orbit other stars)

Orbits are change in velocity but not speed (direction changes, magnitude does not)
If speed changes, then the radius of orbit also changes

Red-shift and the Big Bang thewry

There is an observed increase in the wavelength of light from most distant **galaxies**. The further away the galaxies, the faster they are moving and the bigger the observed increase in wavelength. This effect is called red-shift.

This is evidence that the universe is expanding.

The Big Bang theory takes the idea of an expanding universe and theorises that if it is expanding now then it must have expanded from an initial point.

Other evidence exists for the Big Bang theory. Scientists must **publish** their results so that it can undergo **peer review** in order for theories to become widely accepted.

There is still a lot we do not know. Two examples::
Dark energy: The Universe is still expanding, what is causing it to keep going? Dark energy is the theorised label.
Dar matter: There is more gravity than there should be from the amount of mass that can be observed. Dark mass is the theorised 'missing' mass.

My Physics teacher is:

KS4 Religious Studies Curriculum Plan 2025-26

Staff	Year 10 - Edexcel	Year 11 – Edexcel
Careers	Building understanding of world views and philosophical and ethical approaches gives an understanding of how society functions. Leading to careers in the public sector, HR, Social policy design, law, environmental work, International development, working with NGO's etc. home work related tasks will be set at the end of every cycle that link to careers.	
Cycle 1 = 10 weeks	Paper 1 Religion and Society through a study of Christianity Christian Beliefs • The Trinity • The creation of the universe and humanity • The incarnation • The last days of Jesus' life • The nature of salvation • Christian eschatology • The problem of evil and suffering • Solutions to the problem of evil and suffering Matters of Life and Death • Origins and value of the universe • The sanctity of life • The origins and value of human life • The issue of abortion • Death and the afterlife • Non-religious arguments against life after death • Euthanasia • The natural world and issues raised	Intro Living the Muslim life – • The Ten obligatory acts in Shi'a Islam • The Shahadah • Salah • Sawm • Zakah and Khums • Hajj • Jihad • Celebrations and commemorations Intro Peace and Conflict – • Peace • Peace making • Conflict • Pacifism • The just war theory • Holy war • Weapons of mass destruction • Issues surrounding conflict
Assess Week - (1 week)	GCSE style assessment, based upon these topics. Assessment and mark scheme in shared area.	Mocks and GCSE style assessment, based upon these topics Assessment and mark scheme in shared area.
Review - (1 week)	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.
Cycle 2 = 10 weeks	Intro Living the Christian life • Christian worship • Sacraments • The nature and purpose of prayer • Pilgrimage • Celebrations • The future of the Church • The Church in the local community • The worldwide Church Intro Marriage and the family – • Marriage • Sexual relationships • Families • Roles within the family • Family in the local parish	Revision Start revision for Mocks – Matters of life and death – Sanctity of life and associated teaching Cycle 2 –FULL MOCKS – Christian Beliefs and Practices, plus marriage and family revision Revision from the post mock point will be based upon weak areas from full mocks for each class, below is a suggested outline. This will be confirmed in Dept. meetings and agreed with HoF Cycle 2 - Structured Revision Start with Muslim Beliefs – 6 Beliefs and 5 Roots Allah and Prophets Holy books and Angels Al-Qadr and Aqirah Living the Muslim Life revision – The 10 obligatory Acts and Shahadah

	• The family in the parish today • Family planning Divorce • Men and women in the family • Gender prejudice and discrimination	Salah and Sawm Zakh and Khums – and Hajj Jihad and celebrations and festivals
Assess Week – (1 week)	GCSE style assessment, based upon this topic. Assessment and mark scheme in shared area.	GCSE style assessment, based upon this topic. Assessment and mark scheme in shared area.
Review – (1 week)	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.
Cycle 3 = 10 weeks	Introduction to Paper 2 – Religion, Peace and Conflict through a study of Islam Muslim Beliefs – • The six beliefs of Islam • The five roots of "Usul ad-Don" in Shi'a Islam • The nature of Allah • Risalah • Malaikah • Muslim Holy books • Al-Qadr • Akhirah Intro Crime and punishment in Islam – • Justice • Crime • Good, evil and suffering • Punishment • Aims of punishment • Forgiveness • Treatment of criminals • The death penalty	
Assess Week – (1 week)	GCSE style assessment, based upon this topic. Assessment and mark scheme in shared area.	Assessment based upon Paper 1.
Review – (1 week)	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.	Green pen against mark scheme, peer review then teacher assessment followed by consolidation of common misconceptions.

Year 11 Religion and Ethics – Cycle 2– Paper 2– Islam – Section 4 - Peace and Conflict

Introduction to religion, peace and conflict

What is the definition of peace, when thought about in terms of the absence of war?

What is justice and what religious support is there for judgement?

How are Muslims taught to forgive?

What is forgiveness and reconciliation? Including examples from recer

Violent protest and terrorism

How does violence and protest happen and what is it's place in society?

What happened in the riots of 2011?

What are religious beliefs about violence and terrorism?

What is terrorism and how has British society experienced it?

Reasons for war

What are the causes of war?

Retaliation as a cause of war, and with particular reference to Afghanistan. Looking at 9/11.

Religious views on war, from a Qur'anic perspective.

Pacifism and peace-making

What is pacifism?

Is peace ever possible?

Pacifism in Islam.

What does Muhammad teach about peacemakers?

What does a modern peacemaker look like?

Key Terms for this topic

Al-Salumu 'Alaykum Muslim greeting which means 'peace be upon you' **Peace** Being in harmony with oneself and others; opposite of war **Peacekeeping** The process of making peace by preventing or settling disputes **Reconciliation** Restoring harmony after relationships have broken down **Conflict** A serious disagreement that may lead to disunity and war **Pacifism** The belief that disputes should be settled peacefully and war and violence are always wrong **Pacifist** Someone who does not believe in war **Passive resistance** Non-violent opposition to authority, including civil disobedience or non-co-operation with the government **Sanctity of life** The belief that life is holy and it is God-given **Just War** Theory A set of conditions that need to be met in order for a war to be **justified Harb al-Maqadis** Usually translated as **'holy war'**, where the conditions for lesser jihad are fulfilled **Holy war** A war fought in support of a religious cause **Weapons of Mass destruction (WMD)** Nuclear, Biological or chemical weapons that cause widespread devastation and loss of life **Terrorism** The unlawful use of violence, including against innocent civilians, to achieve a political or religious goal Jihad **Struggling or Striving Lesser Jihad** Physically resisting evil by defending Islam by use of conflict and war if necessary **Greater Jihad** Spiritually resisting against temptation within oneself (this is not necessary for this topic but helps when understanding Jihad)

Just War

What is the just war theory?

How could we apply the just war theory to recent conflicts, with particular reference to Syria and the War in Iraq?

What is the work of the United Nations and why was it founded? What organisations work with Muslim groups?

What are the discussions around war and what are your opinions?

Holy war and religion as a cause of violence

What is a holy war? And how does this link to Jihad?

What examples of Holy wars are there in history?

How is a religion a cause of violence both in the UK and around the world?

What are Muslim beliefs and responses to violence?

Nuclear weapons and weapons of mass destruction

What are weapons of mass destructions?

When have nuclear weapons been used.

What is the impact of chemical weapons and biological weapons on people and how are they used in war?

What are the arguments for and against the use of WMD from a Muslim perspective?

What religious support could be used to argue for and against the use of WMD?

Religious responses to victims of war

How is help provided to victims of war?

What does Red Crescent and Muslim Aid do to support the victims of war?

What does the teaching "Love thy neighbour" really mean?

How does the story of Qur'an teach Muslims to treat victims?

Stretch and challenge:- Do you think that there will ever be a time when there will be no war? Why?

Edexcel - Year 11 Religion and Ethics – Revision – Christian Beliefs

The Trinity

Christians believe that God is eternal, without limit (infinite), all-loving (omnibenevolent), all-powerful (omnipotent), all-knowing (omniscient)
• Christians believe that God relates to the world in three different ways: God as the Father who created the world; God as the Son, Jesus, who is the saviour of the world; God as the Holy Spirit, an invisible spiritual power that guides and inspires human beings.

The Creation

The Christian story of Creation is found in Genesis, the first book of the Bible, and describes how God created
everything in the universe.
• Christians believe that human beings are different from animals by being given a special place in God's Creation and a duty of stewardship. The story of Creation reminds them of this responsibility.
•Christians have different views about whether the Creation story is completely true.
•A belief in Creation is important to Christians as it demonstrates that God is eternal, all-powerful and should be worshipped.

The incarnation

Christians believe that Jesus is the Son of God who came to Earth in human form. This belief is known as the Incarnation.
•Jesus is the second member of the Trinity and is understood to be completely divine and completely human at the same time.
•Belief in the Incarnation is very important to Christians. They believe that Jesus' death, as a sacrifice for the sins of human beings, demonstrates how much God loves and cares about humanity.
•Christians see Jesus as a source of revelation, which helps them to understand what God is like and how God wants them to live.
•• Christians also believe that they can have a personal relationship with God through Jesus.

The last days of Jesus' life

•• Christians believe that Jesus' suffering and death had a purpose. They also believe that the resurrection is the most important event in Christianity and proves that Jesus is the Son of God, the second member of the Trinity.
• Christianity teaches that Jesus was betrayed by one of his disciples, Judas Iscariot. The Last Supper is the final meal that Jesus shared with his disciples before he was arrested. During the Last Supper Jesus gave his disciples two symbols to remember him by. The symbols of bread and
wine, which represent the sacrifice of Jesus' body and blood, form an important part of Christian worship today in a ceremony known as the Eucharist.

Salvation

Christians believe that Jesus suffered and died on the cross to save human beings from their sins. This is called atonement.
• There are different views about how atonement works and there are a number of theories that try to explain it.
• Salvation is the idea that only a soul that is free from sin can be with God in Heaven after death. Christians believe that the opportunity of salvation is available to everyone through faith in Jesus, providing they are truly sorry for what they have done, repentant of their sins and ask for forgiveness

Eschatology

• Christians believe that life continues after death in either heaven, hell or Purgatory. This is because they think
human beings have a soul that lives on after the physical death of the body.
• Some denominations also believe in an intermediate state before known as Purgatory.
• Christians believe that human beings have the opportunity to be with God when they die, depending on God's
judgement and whether they have accepted salvation through Jesus Christ.
• Christians also believe in the Last Judgement, which will take place when Jesus returns to. The Last Judgement is when God makes a final judgement on everyone, alive or dead

The problem of evil

The presence of evil and suffering in the world has always presented a challenge to Christian beliefs about God.
For many, it is philosophically incoherent to believe in the Christian concept of God when there is so much evil and suffering in the world: how could an omnipotent, omniscient, omnibenevolent God exist whilst evil and suffering exists? It makes more sense to believe that God does not exist.
For atheists the problem of evil and suffering isn't a problem in the same sense, it is just a tragic fact about life. For Christians it is a problem that needs a solution.

Solutions to the problem of evil

There have been a number of different ideas, called theodicies, put forward that aim to reconcile the idea of an omnibenevolent, all-loving, and omnipotent, all-powerful, God alongside the existence of evil and suffering.
• Christians believe that God cannot be responsible for evil. Many Christians believe that evil exists because
human beings have misused their free will and made wrong moral choices, which has caused suffering.
Some Christians believe that experiencing suffering can help people to develop into better human beings. Suffering also gives people the opportunity to make good moral choices, such as helping others.

Key Words

Trinity God as one being in three persons

Creationism the belief that the world was created in a literal 6 days

Stewardship looking after something so it can be passed on to the next generation

Incarnation God the Son taking human form as Jesus Christ

Sin something damaging to a relationship with God

Resurrection the belief that Jesus rose from the dead after 3 days

Atonement Jesus death restores the relationship between God and humans damaged by Original Sin

Salvation Being saved from sin; going to Heaven

Eschatology area of Christian teaching about life after death

Universalism the belief that everyone will go to Heaven

Edexcel - Year 11 RE – Revision – Marriage and the family revision

Marriage

Christians believe that marriage is: o part of God's plan for many, but not all, human beings; it is a gift from God o a lifelong, monogamous relationship, between one man and one woman o the right relationship for sexual relations and having children. • Christianity teaches that single people should live a celibate life and that cohabitation is a sin. However, individual Christians and groups of Christians can have different views on this.
• Non-religious people may or may not agree with marriage, depending on their personal beliefs. A Humanist wedding ceremony is becoming more popular as a secular alternative

Sexual relationships

The Bible has strict teachings about sexual relationships, and some Christians believe God will punish sexual immorality.
• Some Christians believe sex should only take place between a man and a woman within marriage.
• Others have a more liberal view but only if a couple are in a committed and loving relationship.
• Atheist views about sexual relationships differ according to personal beliefs.
• Humanists think sexual relationships are a matter of personal choice, as long as everyone involved is happy with those choices.

Families

There lots of types of families in the UK. • **Christian families also come in various shapes and sizes and they believe that**: o the family is important for society and Christianity o parents and children have responsibilities to each other o children must obey and respect their parents o parents must look after their children, keep them safe o the Christian family is one of the main ways children learn about the Christian faith. • Humanists do not believe in God and do not agree with the idea of families teaching children to be religious. **Humanists believe that**: o the overall happiness of the family is more important than the structure of the family unit o parents should bring up their children to be caring and reasonable people

Families and the local parish

Christians believe they have a responsibility to care for, and help, others – particularly the family.
• Local churches provide both pastoral and spiritual care. They try to help families in their parish in a variety of ways, including: o opportunities for families to worship and develop their faith together o running separate children's groups or clubs including Sunday schools, and adult classes and activities o supporting families through the different life stages, for example, births, marriages and deaths o offering counselling to help them resolve problems o giving support as a way of showing God's love; helping families also makes the Church stronger

Family Planning/Contraception

• Christian Churches have different teachings about contraception. • The attitudes of Christians towards family planning and the regulation of births vary between denominations and within the same Church. • The Church of England and other protestant traditions like the Methodist Church agree with the responsible use of contraception. • The Roman Catholic Church gives its view on contraception in a document called Humanae Vitae. • The Roman Catholic Church disagrees with all artificial methods of contraception, but permits a natural method based on a woman's menstrual cycle. • Some Roman Catholics think artificial methods are more practical in the modern world. • Humanists are very supportive of the use of contraception providing the outcomes are positive.

Divorce

Biblical teaching on divorce and remarriage is inconsistent. • Different Christian Churches have different teachings and attitudes towards divorce and remarriage. • All Christians agree that, ideally, marriages should last a lifetime. • Some Christian Churches, like the Church of England, accept that sometimes divorce is the 'most loving thing to do' for all concerned. • Churches that accept divorce will also in exceptional circumstances permit remarriage in a church. • The Roman Catholic Church does not permit divorce. It will not let Catholics who have remarried without an annulment take part in the Eucharist. • Humanist views on divorce sometimes agree with Christian views.
• However, Humanists do not believe that marriage is a sacred relationship. They also support easier divorce laws, which many Christians might disagree with.

Men and women in the family

There are different teachings and attitudes towards the family roles of men and women within Christianity. • The Roman Catholic Church teaching is based on a traditional biblical model. It states that men and women have been created equal by God but for different purposes. • This means that the roles of men and women within the family are defined according to the Bible. • Many Christians disagree with this. They believe this view is no longer suitable for modern society. • The Church of England and many other Protestant Churches support flexible gender roles within the family, depending on the needs of the family. Both sides of this debate use biblical texts to support their views. • Humanists believe that men and women should both be happy with the roles they play within the family.
• Some atheists, particularly feminist atheists, are very critical of the traditional Christian family roles for men and women. They say these beliefs have caused the mistreatment of women within the family and society

Gender, prejudice and discrimination

Prejudice and discrimination happens when people are pre-judged; this can lead to stereotyping. • Gender prejudice and discrimination happens when individuals or groups are treated differently because of what is believed about a particular gender. This is also known as sexism. • Both males and females can be affected by gender prejudice and discrimination. • Historically, and in the present day, women have been disadvantaged in many ways as a result of gender prejudice (also men but to a lesser degree). • Christianity has been criticised for its attitudes towards women. • Some people still believe that sexism exists in some parts of the Christian Church, particularly with regard to leadership opportunities for women. • Many individual Christians, Christian Churches and Christian organisations oppose gender prejudice and discrimination. • Humanists oppose gender prejudice and discrimination. • The rights of women are an important concern for some other atheists.

Key terms for this topic:

- **Human sexuality**: how people express themselves as sexual beings.
- **Homosexual**: to be sexually attracted to someone of the **same - sex.**
- **Heterosexual**: to be sexually attracted to the **opposite** sex.
- **Civil partnership**: legal union of same - sex couples.
- **Cohabitation**: a couple living together and having sexual relationship without being married to one another.
- **Remarriage**: Someone who remarries again after their divorce and while their other partner is still alive.
- **Contraception**: A way of preventing pregnancy.
- **Family planning**': controlling how many children couples have. **Different methods of contraception: Condom, The pill or injection, The coil**
- **Sterilisation**

Physical Education KS4 Curriculum Plan 2025-26

	Year 10	Year 11	
	Leadership skills and implementing and developing tactics	Healthy participation, officiating, game play	Enrichment
Cycle 1	• **Evaluate performance** • **Embedding and continuing to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, and exercising safely.	• **Evaluate performance and demonstrate improvement** • **Embedding and continuing to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, exercising safely.	Football Netball Rugby Trampolining Fitness club Dance Basketball
Cycle 2	• **Evaluate performance** • **Embedding and continue to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, and exercising safely.	• **Evaluate performance and demonstrate improvement** • **Embedding and continuing to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, and exercising safely.	Football Netball Rugby Trampolining Fitness club Dance Basketball
Cycle 3	• **Evaluate performance** • **Embedding and continue to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, and exercising safely.	• **Evaluate performance and demonstrate improvement** • **Embedding and continue to develop techniques into a competitive game** • **Use and develop tactics in various situations** • **Analyse and evaluate skills as a leader and official – officiating games with support** Assessment: Booklet used - focusing on motor competence, rules, strategies, tactics, leadership, and exercising safely.	Cricket Rounders Athletics Tennis Softball

Year 11 PE – Healthy participation, Game Play and officiating

Rugby

- Defensive tactics
- Attack tactics
- Formations
- Set plays
- Adapting tactics
- Leadership/ coaching

Trampolining

- Basic moves and twists
- Seat landing plus combinations
- Swivel hips
- Front landing plus combinations
- Back landing plus combinations
- Somersaults

HRE

- Circuit movements
- Safe and effective use of resistance machines
- Planning, conducting and evaluating a fitness programme.

Girls Football

Leaders:
Leadership skills
Confidence Skills
Working with others
Communication skills
Problem Solving skills.

Attacking:

- Finishing
- Passing
- Receiving
- Turning
- Moving with the ball

Defending:

- Intercepting
- Pressing
- Marking
- Challenging
- Covering and recovering

Table Tennis

- Grip and stance
- Push – Backhand/Forehand
- Backhand Drive – application of spin
- Forehand Drive – application of spin
- Serve
- Lob and smash
- Singles and doubles play

Football

- Defensive tactics
- Attack tactics
- Formations
- Set plays
- Adapting tactics
- Leadership / coaching

Stick Option 1 subject Curriculum plan here

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Stick Option 3 subject Curriculum plan here

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