



Quality of Education Statement

GCSE

Maths

Curriculum Intent

Subject Vision and Rationale Statement

Wyvern College Vision Statement

“To become the finest version of yourself...

Think deeply, read widely, discuss openly and listen intently. Study with *PRIDe*, forever Prepared, Respectful, Involved and Dedicated.

Grow personally, in confidence, wellbeing and individuality. Expand your interests and friendships. Develop a conscience and the moral courage to act on it. Embrace the personal challenges of *STRIVE*.

Care passionately about people and causes. Appreciate the help of others; help them through service, teamwork, kindness and leadership. Make this world a better place as an informed and influential citizen, respecting British and universal values”

Explain the vision for your subject’s curriculum. How does your subject curriculum support the whole-college vision statement? Please ensure your vision statement is written in three paragraphs: Think, Grow, Care.

Think - We endeavour to prepare students for their future by developing their mathematical knowledge, ability to solve problems, to reason mathematically and develop mathematical arguments, to recall and apply mathematical knowledge fluently and to retain this knowledge over time. Students engage in deliberate practice of prior learning to develop high levels of fluency of key knowledge and skills. This forms the foundation for when they are given rich and sophisticated problems to deepen their conceptual understanding, develop perseverance and encourage transferability of skills across the curriculum. *PRIDe* is also a key element ensuring basic expectations are met and to help with becoming independent learners.

Grow - Our curriculum aims to develop an appreciation that maths is a powerful skill developed over centuries not only in terms of future employment, but also in everyday life. We want our students to cultivate a wide

understanding of maths demonstrating how it can be used for future education and employment, as well as preparing students for their personal life and the challenges that may bring. We aim to show that maths can be enjoyable, interesting and fulfilling.

Care - Our curriculum equips students with a comprehensive set of tools to understand and approach the world with confidence. Mathematics is essential to informed decision-making in everyday life and critical to science, technology, engineering and most forms of employment.

Principles of Effective Curriculum Design



An Equitable Curriculum

Key principles

“An Equitable Curriculum- All students access the same curriculum, whichever teacher they have and whatever group they are in. Students are not denied this curriculum because of their SEND, their prior attainment or their teacher. The curriculum rationale ensures what students get taught, not teachers’ personal preferences – and this is every child’s entitlement.”

Explain your strategy and decision-making to ensure all students access an equitable curriculum. How do you ensure students with SEND, PP, or with different classes and teachers access the same curriculum?

The maths scheme of work is structured to ensure all students can access the curriculum, starting with essential key skills. Our curriculum encourages a high level of challenge for students regardless of prior attainment. It is designed to develop fluency, before progressing onto reasoning and problem solving. The department has a centralised resource bank for each unit of study, this includes

- 1) a detailed scheme of work with each learning objective stated.
- 2) Weekly skills-checks to help with retention and recall of prior units studied.
- 3) Details of how to complete a home learning task on, every class uses the Sparx Maths platform on line.
- 4) Pride Expectations for within the classroom
- 5) End of unit tests and homework's
- 6) Unit introduction PowerPoints
- 7) Numeracy Ninjas for Year 7
- 8) Summative assessment programme.

Resources can then be tailored further to each individual class and student to ensure suitability and accessibility for all, this includes PP and SEND students. Teachers have allocated time to gain a greater understanding of the students in front of them to ensure barriers to learning are minimised and an equitable curriculum is delivered.

A Vertical Curriculum & A Spiral Curriculum

Key principles

“A Vertical Curriculum- *The curriculum is used as a progression model, it unfolds with increasing levels of challenge. Units are sequenced in such a way that each one builds on what went before and prepares for what comes next. It builds learning up towards clear end points, whilst also being clear what students are expected to know and do at each defined intermediate point. Knowledge and skills therefore get progressively more complex; conceptual understanding becomes more sophisticated because conceptual links are maximised.*

“A Spiral Curriculum- *The curriculum explicitly identifies for teachers, students and parents the subject’s “Big Ideas” - the essential knowledge, skills and concepts in each unit that need to be retained beyond that unit as they are built upon in later units. The curriculum doesn’t just introduce the Big Ideas once, but repeatedly revisits them in ways that provide students with retrieval practice opportunities to ensure curriculum continuity, coherence and retention. This supports students in transferring knowledge and understanding to their long-term memory and makes it easier for them to understand new learning.”*

Curriculum End Points for End of KS3 (Y7-9)

List here the skills, knowledge and concepts that you are aiming for students to have mastered before they begin their KS4 courses. Think about how these are stepping stones or staging posts towards the KS4 curriculum end points.

In Y7-9, pupils build on knowledge and skills gained in KS2 in and work towards mastering mathematical skills in 6 key areas of the full curriculum. In this time, our curriculum meets the ambitions of the KS3 National Curriculum, exceeding it in many areas.

KS2 work is assessed and built on in Year 7 using daily low-stake assessment 'Numeracy Ninjas' to recall and apply knowledge rapidly and accurately and during teachers' formative assessment and daily teaching practices.

Mastery of the following mathematical knowledge:

1. Number – Part One
 - a. Laws and number sense
 - b. Four operations- positive numbers
 - c. Four operations- negative numbers
 - d. Working with decimal numbers
 - e. Indices
 - f. Factors, Multiples and Primes

2. Algebra – Part One
 - a. Manipulating expressions
 - b. Quadratics
 - c. Equations

1. Number – Part Two
 - g. Rounding
 - h. Money
 - i. Standard form
 - j. Surds

2. Algebra – Part Two
 - d. Changing the subject of a formula
 - e. Substitution
 - f. Exponential Expressions and equations
 - g. Sequences

3. Fractions, ratio and percentages
 - a. Fractions
 - b. Fractions, decimals and percentages
 - c. Ratio and proportion

4. Data
 - a. Understanding data and frequency tables
 - b. Displaying data

5. Angles and trigonometry
 - a. Introduction to angles
 - b. Properties of 2D shapes
 - c. Angle facts including Angles in Parallel Lines
 - d. Angles in Polygons
 - e. Pythagoras
 - f. Right Angled Trigonometry

6. Graphs
 - a. Linear Graphs and Coordinates
 - b. Distance Time Graphs
 - c. Speed Time Graphs
 - d. Interpreting and drawing Real life graphs
 - e. Quadratic, Cubic, reciprocal graphs and circles

In order to master topics, real-life and functional problems are built into the scheme of work for each area. This enables pupils to understand the relevance of certain skills and to be able to envisage how they are used in everyday life

All topics have extension tasks and increasingly sophisticated problem-solving activities incorporated to encourage pupils to persevere with tasks and to extend their independent learning skills to progress further

Topics are extended further in KS4 through foundation and higher schemes of work and secure knowledge of the basic rules and skills in KS3, this facilitates swifter progress in KS4

Skills

- develop fluent knowledge, skills and understanding of mathematical methods and concepts
- acquire, select and apply mathematical techniques to solve problems
- reason mathematically, make deductions and inferences, and draw conclusions
- use subject specific terminology confidently and develop the literacy skills required to be able to access worded questions and to be able to respond comprehensively to questions requiring proofs and explanations
- comprehend, interpret and communicate mathematical information in a variety of forms appropriate to the information and context. This includes communicating verbally using subject-specific language to present a mathematical justification, argument or proof and communicating effectively through using conventions for presenting mathematical calculations
- fluently use calculators to solve problems, but not at the expense of good written and mental arithmetic which are supported through Weekly Skill Checks and Numeracy Ninjas

Wider educational outcomes

1. Give students an awareness and skills with personal finance including profit and loss calculations and financial (bank) statements in order to empower them with financial literacy in later life
2. Encourage a love of maths through the super curriculum - offering pupils access to UKMT competitions, Cipher Club, Pokemon Maths Club, puzzles, challenges and problem-solving activities on the website
3. Students who grasp concepts rapidly are not accelerated through new content, but instead are extended by being offered rich and sophisticated problems to solve
4. For students who are not sufficiently fluent, setting classes helps by ensuring that these students consolidate their understanding through a greater proportion of time on fluency practice before moving on

Curriculum Plan

Unit of Work	(Vertical Curriculum & Spiral Curriculum) Why do students study it?	(Vertical Curriculum) Why do they study it when they do?	(Vertical Curriculum) How will their grasp of the Big Ideas be assessed?	(Spiral Curriculum) How will they be supported to remember & retrieve the Big ideas?
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Year and term	What is the title of the unit? How many weeks of how many lessons will it last for?	What are the “Big Ideas” to be taught in this unit (the essential skills, concepts, knowledge that students will need later on)? Why are these essential? (How do they build students up towards the curriculum end points you have identified above?) How else does this unit implement the ideas in your vision statement above?	How do the Big Ideas in this unit build on those from previous units? How do they prepare students for those in future units?	How will the Big Ideas be assessed? Outline the assessed task and assessment objectives.	What strategies will be used to help students remember and retrieve the Big Ideas over time? (E.g. retrieval practice with knowledge organisers, spaced testing etc).
1	Number Part 1 Year 7 – 8-10 weeks, complete just after autumn half term	<ul style="list-style-type: none"> • Big ideas to be taught: laws and number sense; four operations with positive and negative numbers; decimal numbers; index laws; factors, multiples and primes • Fluency in Number underpins every other unit in the Maths Scheme of Work 	<ul style="list-style-type: none"> • It is only with secure understanding of the concepts and skills introduced in this topic that that progression in subsequent topics can be ensured. 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning. • End of unit check-up homework and test 	<ul style="list-style-type: none"> • Lagged homework’s • Retrieval element to homework in Sparx • Unit Introduction Power Point • Knowledge Organisers • Numeracy Ninjas • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
2	Algebra Part 1 Year 7 – 8-10 weeks	<ul style="list-style-type: none"> • Big ideas to be taught: Manipulating Expressions; Quadratics; Equations • Understanding and usage of Algebraic skills and concepts at this stage will enable students to access complex calculations and problems in subsequent topics by using algebraic methods and structures 	<ul style="list-style-type: none"> • Algebraic methods can be applied to all other areas of the scheme of work (particularly shape) to facilitate and to solve certain problems 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning • End of unit check-up homework and test 	<ul style="list-style-type: none"> • Lagged homework’s • Retrieval element to homework in Sparx • Unit Introduction Power Point • Knowledge Organisers • Numeracy Ninjas • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
1	Number Part 2 Year 7 – 8-10 weeks	<ul style="list-style-type: none"> • Big ideas to be taught: rounding numbers; financial maths; standard form; surds • Fluency in Number underpins every other unit 	<ul style="list-style-type: none"> • It is only with secure understanding of the concepts and skills introduced in this topic that that progression in 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking 	<ul style="list-style-type: none"> • Lagged homework’s • Retrieval element to homework in Sparx

		<p>in the Maths Scheme of Work</p> <ul style="list-style-type: none"> This unit introduces students to financial maths early in their school experience to ensure the skills and understanding of personal finance can be built on and secured in subsequent topics 	<p>subsequent topics can be ensured.</p>	<p>accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning.</p> <ul style="list-style-type: none"> End of unit check-up homework and test 	<ul style="list-style-type: none"> Unit Introduction Power Point Knowledge Organisers Numeracy Ninjas Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
2	Algebra Part 2 Year 7 – 8-10 weeks	<ul style="list-style-type: none"> Big ideas to be taught: Changing the Subject of the Formula; Substitution; Exponential expressions and equations; Sequences Understanding and usage of Algebraic skills and concepts at this stage will enable students to access complex calculations and problems in subsequent topics by using algebraic methods and structures 	<ul style="list-style-type: none"> Algebraic methods can be applied to all other areas of the scheme of work to facilitate and to solve certain problems 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning End of unit check-up homework and test 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Unit Introduction Power Point Knowledge Organisers Numeracy Ninjas Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
3	Fractions, Ratio and Percentages Year 8 - approximately 40 lessons teaching + 6 lessons consolidation	<ul style="list-style-type: none"> Big Ideas to be taught: understanding the concept of fractions and calculations with fractions; converting fractions to decimal and percentage format; usage of percentages; fractions and their relation with ratio; usage of ratio and proportion Understanding and security in the usage of Fractions, Decimals and Percentages is helpful to everyday life, other areas in the school curriculum. This topic builds on and extends knowledge and skills learned in the Number topic 	<ul style="list-style-type: none"> All topics prior to this can be applied to this topic to secure understanding and extend learning Subsequent topics will require understanding of this topic to ensure extension opportunities 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning End of unit check-up homework and test 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Unit Introduction Power Point Knowledge Organisers Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
4	Data Year 8 - approximately	<ul style="list-style-type: none"> Big ideas to be taught: Understanding Data and 	<ul style="list-style-type: none"> The topic requires comprehension of and securing of Number 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school 	<ul style="list-style-type: none"> Lagged homework's

	20 lessons teaching + 6 lessons consolidation	<p>Frequency Tables; Averages; Displaying Data</p> <ul style="list-style-type: none"> • Analysis and usage of data is an important skill that can be transferred and applied in everyday life and in many career paths. • Understanding and comprehension of usage of data is a transferable skill to most other subjects across the school curriculum • 	<p>skills and can be applied to many subsequent areas in the Maths Scheme of Work to secure understanding</p> <ul style="list-style-type: none"> • 	<p>year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning</p> <ul style="list-style-type: none"> • End of unit check-up homework and test 	<ul style="list-style-type: none"> • Retrieval element to homework in Sparx • Unit Introduction Power Point • Knowledge Organisers • Weekly skill checks • Numeracy Ninjas • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
5	Angles and Trigonometry Year 8 - approximately 35 teaching lessons + 6 lessons consolidation	<ul style="list-style-type: none"> • Big Ideas to be taught: understanding the concept of, measuring and drawing angles, basic angle facts; angles in parallel lines; angles in polygons; Pythagoras' theorem; trigonometry • Understanding how to use angles and knowledge of angle facts and laws can be applied in many career paths. Again, this is a topic that is transferable across other areas of the school curriculum including Technology 	<ul style="list-style-type: none"> • Number, algebra, FPRP topics be applied to Angles and Trigonometry problems to secure understanding and extend learning • 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning • End of unit check-up homework and test 	<ul style="list-style-type: none"> • Lagged homework's • Retrieval element to homework in Sparx • Unit Introduction Power Point • Knowledge Organisers • Weekly skill checks • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
6	Graphs - approximately 20 teaching lessons + 6 lessons consolidation	<ul style="list-style-type: none"> • Big Ideas to be taught: understanding the usage of, creating and analysing straight line graphs, quadratic graphs, reciprocal graphs as well as real-life graphs • Again this topic is relevant and used in other areas of the school curriculum, 	<ul style="list-style-type: none"> • Confidence in Number, FDP and Algebra is required for and is further secured in this topic • This topic will be explored further and extended in both foundation and higher topics in KS4 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in 	<ul style="list-style-type: none"> • Lagged homework's • Retrieval element to homework in Sparx • Unit Introduction Power Point • Knowledge Organisers • Weekly skill checks

		including geography, science and technology. <ul style="list-style-type: none"> • Conceptual understanding of the usage of graphs and tables is applicable to everyday life 		subsequent learning <ul style="list-style-type: none"> • End of unit check-up homework and test • 	<ul style="list-style-type: none"> • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths •

Curriculum End Points for End of KS4 (Y9-11)

List here the skills, knowledge and concepts that you are aiming for students to have mastered by the time they leave us. Think about the assessment objectives for the course you teach at KS4 but also any wider educational outcomes you think students should have been able to acquire.

In Y9-11, pupils build on knowledge and skills gained in KS3 and work towards mastering mathematical skills in the full curriculum. Work is assessed regularly using weekly low-stake assessments called 'Weekly Skills Checks', during teachers' formative assessment and daily teaching practices.

At the start of KS4, pupils are split between those who will be studying for the Foundation tier examination and those studying for the Higher tier examination. Movement between the two tiers is possible after the start of year 9, students' progress made in assessments, in class and through home learning activities is monitored and considered by teachers throughout KS4.

Foundation Course.

Mastery of the following mathematical knowledge. Some topics on the foundation course have been visited previously in years 7 or 8 and are recapped in KS4 to secure learning:

1. Averages and Range
 - a. Collecting Data and Sampling
 - b. Averages and Range
2. Perimeter, Area and Volume
 - d. Perimeter and Area
 - e. Surface Area
 - f. Volume
 - g. 3D shapes and Nets
 - h. Plans and Elevations
3. Graphs
 - c. Linear Graphs and Coordinates
 - d. Distance Time Graphs
 - e. Speed Time Graphs
 - f. Interpreting and Drawing Real Life Graphs
 - g. Conversion Graphs
4. Transformations
 - d. Drawing Transformations
 - e. Describing Transformations

5. Ratio and Proportion
 - a. Ratio
 - b. Proportion
 - c. Algebraic Direct Proportion
6. Right Angled Triangles
 - f. Pythagoras
 - g. Right Angled Trigonometry - calculator
 - h. Right Angled Trigonometry - non calculator
7. Probability
 - a. Single Event Probability
 - b. Multiple Event Probability
 - c. Conditional Probability and Tree Diagrams
 - d. Sets and Venn Diagrams
 - e. Product rule for Counting
8. Multiplicative Reasoning
 - a. Percentages - profit and loss, reverse and change
 - b. Converting units of measure
 - c. Metric and imperial conversions
 - d. Converting Time and Money
 - e. Compound Measures
 - f. Direct Proportion - Recipe Problems and Best buys
 - g. Financial Maths
9. Constructions, Loci and Bearings
 - a. Bearings
 - b. Constructions and Loci
 - c. Scale Diagrams
10. Quadratic Equations and Graphs
 - a. Quadratic Expressions - Expanding and Factorising
 - b. Quadratic Equations - solving
 - c. Plotting Quadratic Graphs
11. Perimeter, Area and Volume 2
 - a. Circles and Sectors
 - b. Volume and Area
12. Fractions, Indices and Standard Form
 - a. Fractions and Percentages
 - b. Indices
 - c. Standard Form
13. Congruence, Similarity and Vectors
 - a. Similar Shapes - Polygons and Triangles
 - b. Similar Shapes - Area and Volume
 - c. Congruent Shapes
 - d. Vectors
14. More Algebra
 - a. Rearranging Equations
 - b. Important Graphs

- c. Simultaneous Equations

Higher Course.

Mastery of the following mathematical knowledge. Some topics on the foundation course have been visited previously in years 7 or 8 and are recapped in KS4 to secure learning:

- 7. Area and Volume
 - a. Perimeter and Area of 2D shapes
 - b. Circles - Area and Circumference
 - c. Sectors - Area and Perimeter
 - d. Volume of Prisms
 - e. 3D shapes, nets, plans and elevations
 - f. Surface Area of Prisms
 - g. 3D shapes based on circles
 - h. Accuracy and Bounds
- 8. Transformations and Constructions
 - a. Drawing Transformations
 - b. Describing Transformations
 - c. Bearings
 - d. Constructions
 - e. Loci
 - f. Scale
- 9. Equations and Inequalities
 - a. Solving Quadratic Equations
 - b. Solving Simultaneous Equations (linear)
 - c. Solving Linear Inequalities
- 10. Probability
 - a. Systematic Listing and Product Rule
 - b. Probability of events
 - c. Tree Diagrams
 - d. Venn Diagrams and set notation
- 11. Multiplicative Reasoning
 - a. Converting Units of Measure
 - b. Metric and Imperial conversions, currency and time
 - c. Conversion graphs
 - d. Compound measure -
 - e. Best Buys
- 12. Similarity and Congruence
 - a. Rules of congruence
 - b. Similarity
- 13. More Trigonometry
 - a. Graphs of Trigonometric Functions
 - b. Area of a triangle
 - c. Sine and Cosine Rules
 - d. 3D Trigonometry

- 14. Further Statistics
 - a. Sampling
 - b. Cumulative Frequency and Box Plots
 - c. Histograms
- 15. Equations and Graphs
 - a. Further Simultaneous Equations
 - b. Representing Inequalities Graphically
 - c. Iteration
 - d. Quadratic, Cubic, Reciprocal and Exponential Graphs
 - e. Graphs of Circles
- 16. Circle Theorems
- 17. More Algebra
 - a. Functions
 - b. Proof
- 18. Vectors and Geometric Proof
- 19. Proportion and Graphs
 - a. Algebraic Direct and Inverse Proportion
 - b. Graph Transformations
 - c. Exponential Expressions and Graphs
 - d. Further rates of change graphs (curves)

In order to master topics, real-life and functional problems are built into the scheme of work for each area. This enables pupils to understand the relevance of certain skills and to be able to envisage how they are used in everyday life. Links are actively made within the curriculum and also across other curriculum areas, examples are embedded into each unit.

All topics have extension tasks and problem-solving activities built in to encourage pupils to persevere with tasks and to extend their independent learning skills to progress further

Foundation Course

Unit of Work		(Vertical Curriculum & Spiral Curriculum) Why do students study it?	(Vertical Curriculum) Why do they study it when they do?	(Vertical Curriculum) How will their grasp of the Big Ideas be assessed?	(Spiral Curriculum) How will they be supported to remember & retrieve the Big ideas?
Year and term	What is the title of the unit? How many weeks of how many lessons will it last for?	What are the "Big Ideas" to be taught in this unit (the essential skills, concepts, knowledge that students will need later on)? Why are these essential? (How do they build students up towards the curriculum end points you have identified above?) How else does this unit implement the ideas in your vision statement above?	How do the Big Ideas in this unit build on those from previous units? How do they prepare students for those in future units?	How will the Big Ideas be assessed? Outline the assessed task and assessment objectives.	What strategies will be used to help students remember and retrieve the Big Ideas over time? (E.g. retrieval practice with knowledge organisers, spaced testing etc).

7F	Averages and Range Year 9 - Autumn Term approximately 4 weeks' work including consolidation	<ul style="list-style-type: none"> • Big ideas to be taught: collecting data and sampling; averages and range • Analysis and usage of data is an important skill that can be transferred and applied in everyday life and in many career paths. • Understanding and comprehension of usage of data is a transferable skill to most other subjects across the school curriculum 	<ul style="list-style-type: none"> • This topic revisits, recaps and strengthens important skills learned in KS3 • Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning. 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
8F	Perimeter, Area and Volume Year 9 - Autumn Term approximately 5 weeks' work including consolidation	<ul style="list-style-type: none"> • Big ideas to be taught: Perimeter and Area; Surface Area; Volume; 3D Shapes and Nets, Plans and Elevations • This topic has many uses in practical everyday life and skills and concepts learned can be used in many employment opportunities, particularly in the construction industry 	<ul style="list-style-type: none"> • This topic is tackled early in the KS4 curriculum as it can be used and applied in other areas. It is recapped and extended later in KS4 to maximise knowledge retention • Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
9F	Graphs Year 9 - Autumn Term approximately 5 weeks' work including consolidation	<ul style="list-style-type: none"> • Big ideas to be taught: Linear Graphs and Coordinates; Distance Time Graphs; Speed Time Graphs; Interpreting and drawing Real life Graphs • Analysis and usage of data is an important skill that can be transferred and applied 	<ul style="list-style-type: none"> • This topic revisits skills learned in KS3 and extends on them in order to secure pupils' understanding and knowledge retention • Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill

		<p>in everyday life and in many career paths.</p> <ul style="list-style-type: none"> Understanding and comprehension of usage of data is a transferable skill to most other subjects across the school curriculum including geography, science and technology 	<ul style="list-style-type: none"> This is also a crucial building block for quadratic graphs covered later. 	<p>curriculum to be filled in subsequent learning.</p>	<p>checks after the content is taught</p> <ul style="list-style-type: none"> Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
10F	Transformations Year 9 - Spring Term approximately 2 weeks	<ul style="list-style-type: none"> Big ideas to be taught: Drawing and describing the four transformations; reflection; rotation; translation; enlargement This topic is relevant and used in other areas of the school curriculum including art, science and technology. 	<ul style="list-style-type: none"> Understanding of this topic is required for subsequent topics such as Similarity and Congruence, Vectors studied in Year 11 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
11F	Ratio and Proportion Year 9 - Spring term - approximately 3 weeks' work	<ul style="list-style-type: none"> Big Ideas to be taught: Ratio, Proportion, Algebraic Direct Proportion Understanding and security in the usage of ratio and proportion is critical to everyday life. It also interlinks to many other subjects especially in art and technology 	<ul style="list-style-type: none"> This topic revisits work that has been introduced in year 8 and extends it further to secure understanding and to promote knowledge retention Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to

					promote the love of maths
12F	Right Angled Triangles Year 9 - Summer Term - approximately 3 weeks' work	<ul style="list-style-type: none"> • Big Ideas to be taught: Pythagoras; Right Angles Trigonometry; Right Angled Trigonometry – non calc • Understanding how to use angles and knowledge of angle facts and laws can be applied in many career paths. Again, this is a topic that is transferable across other areas of the school curriculum including Technology 	<ul style="list-style-type: none"> • Number, algebra, FPRP topics be applied to Angles and Trigonometry problems to secure understanding and extend learning • Subsequent topics will require understanding of this topic to ensure extension opportunities and advanced Trigonometry 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •
13F	Probability Year 9 - Summer Term - approximately 4 weeks work	<ul style="list-style-type: none"> • Big Ideas to be taught: Single Event Probability; Multiple Event Probability; Conditional Probability and Tree Diagrams; Sets and Venn Diagrams; Product Rule for Counting • The value of understanding the laws of probability benefits pupils in real life situations. The topic is also applied in other areas of the school curriculum 	<ul style="list-style-type: none"> • This topic uses number skills, fractions, FDP conversions and requires good understanding of mathematical language and notation 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •
14F	Multiplicative Reasoning Year 10 - Autumn Term - approximately 14 weeks' work	<ul style="list-style-type: none"> • Big Ideas to be taught: Percentages - profit and loss, reverse and change, converting units of measure, metric and imperial conversions, converting time and money, compound 	<ul style="list-style-type: none"> • This topic builds on and extends Percentage skills from year 8 and uses skills from the Number topic in year 7 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities

		<p>measures, direct proportion, financial maths</p> <ul style="list-style-type: none"> This topic is very relevant to understanding maths in real life situations, helping pupils understand money investments, loans etc. 		<p>gaps in the full curriculum to be filled in subsequent learning</p>	<ul style="list-style-type: none"> Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
15F	<p>Constructions Bearing and Loci Year 10 - Spring Term - approximately 5 weeks</p>	<ul style="list-style-type: none"> Big Ideas to be taught: bearings, construction and loci, scale drawings This topic is again very important in real life situations such as map reading, and plays a crucial part in many career opportunities, particularly in the construction industry 	<ul style="list-style-type: none"> This topic again uses number skills and builds on year 9 work on area and perimeter 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths
16F	<p>Quadratic Equations and Graphs Year 10 - Spring and Summer Terms - approximately 13 weeks' work</p>	<ul style="list-style-type: none"> Big Ideas to be taught: quadratic expressions, expanding and factorising, solving quadratic equations, plotting quadratic graphs Algebraic methods can be applied to other areas of the scheme of work to facilitate and to solve certain problems 	<ul style="list-style-type: none"> This topic recaps and extends algebra skills acquired in year 7, also building on linear graph work from year 9 Number topics studied in KS3 are essential pre-learning for this 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught Supercurricula problem solving questions build retention of topic

					by providing additional links via challenges and puzzles, to promote the love of maths •
17F	Perimeter, Area and Volume	<ul style="list-style-type: none"> • Big Ideas to be taught: Circles and Sectors, area and perimeter, surface area and volume of circular based shapes • This topic has many uses in practical everyday life and skills and concepts learned can be used in many employment opportunities, particularly in the construction industry 	<ul style="list-style-type: none"> • This topic extends the Year 9 topic on Perimeter, Area and Volume and revises methods used, applying to circular shapes 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •
18F	Fractions, Indices and Standard Form Year 11	<ul style="list-style-type: none"> • Big Ideas to be taught: fractions using the four operations, indice laws and standard form • This topic is embedded everywhere in daily life and transferable to many other subjects in particular science 	<ul style="list-style-type: none"> • This topic recaps and extends number skills acquired in year 7 and 8 • Also critical to graph work and problem solving 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •
19F	Congruence, Similarity and Vectors	<ul style="list-style-type: none"> • Big Ideas to be taught: Understanding the conditions of congruency 	<ul style="list-style-type: none"> • Builds on construction, bearing and loci unit. Also linked to 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to

	Year 11	<p>and similarity, solving angle problems using congruency and similarity, vectors and vector notation</p> <ul style="list-style-type: none"> • Another transferable skill linking to design and technology in particular through scale drawings. Essential life skill to develop geometric awareness 	perimeter, area and transformations.	year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning	<p>provide additional retrieval practice opportunities</p> <ul style="list-style-type: none"> • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •
20F	More Algebra Year 11	<ul style="list-style-type: none"> • Big Ideas to be taught: Rearranging equations, simultaneous equations, graphs of cubic and reciprocal functions • Applicable to numerous areas from deciding how much something costs in everyday life to being used across industry. 	<ul style="list-style-type: none"> • Builds on linear graph work, and prior algebra units taught since year 7, in particular substitution and rearranging formulas. 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Homeworks will be lagged behind taught content to provide additional retrieval practice opportunities • Deliberate spaced retrieval practice of studied content via weekly skill checks after the content is taught • Supercurricula problem solving questions build retention of topic by providing additional links via challenges and puzzles, to promote the love of maths •

Higher Course

Unit of Work	(Vertical Curriculum & Spiral Curriculum) Why do students study it?	(Vertical Curriculum) Why do they study it when they do?	(Vertical Curriculum) How will their grasp of the Big Ideas be assessed?	(Spiral Curriculum) How will they be supported to remember & retrieve the Big ideas?
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Year and term	What is the title of the unit? How many weeks of how many lessons will it last for?	What are the “Big Ideas” to be taught in this unit (the essential skills, concepts, knowledge that students will need later on)? Why are these essential? (How do they build students up towards the curriculum end points you have identified above?) How else does this unit implement the ideas in your vision statement above?	How do the Big Ideas in this unit build on those from previous units? How do they prepare students for those in future units?	How will the Big Ideas be assessed? Outline the assessed task and assessment objectives.	What strategies will be used to help students remember and retrieve the Big Ideas over time? (E.g. retrieval practice with knowledge organisers, spaced testing etc).
7H	Area and Volume Year 9 - Autumn Term approximately 9 weeks' work	<ul style="list-style-type: none"> • Big ideas to be taught: Perimeter and Area of 2D shapes, circles and sectors, prisms - surface area, nets and volume, 3d shapes based on circles, accuracy and bounds • This topic has many uses in practical everyday life and skills and concepts learned can be used in many employment opportunities, particularly in the construction industry • The topic overlaps into other subject areas in the school curriculum, such as certain Technology options 	<ul style="list-style-type: none"> • This topic is tackled early in the KS4 curriculum as it is be used and applied in other areas such as Constructions and Similarity and Congruence. It is recapped and extended later in KS4 to maximise knowledge retention • Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning. 	<ul style="list-style-type: none"> • Lagged homeworks • Retrieval element to homework in Sparx • Weekly skill checks • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
8H	Transformations and Constructions Year 9 - Autumn Term approximately 7 weeks' work	<ul style="list-style-type: none"> • Big ideas to be taught: Transformations, bearings, constructions, loci and scale • This topic has many uses in practical everyday life and skills and concepts learned can be used in many employment opportunities, particularly in the construction industry • This topic is relevant and used in other areas of the school curriculum, including art, science and technology. 	<ul style="list-style-type: none"> • This topic builds on the previous topic and security of this topic is required for subsequent topics such as Similarity and Congruence, Vectors • Number topics studied in KS3 are essential pre-learning for this topic 	<ul style="list-style-type: none"> • Weekly skill check • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> • Lagged homeworks • Retrieval element to homework in Sparx • Weekly skill checks • Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
9H	Equations and Inequalities Year 9 - Spring Term approximately 10 weeks' work including consolidation	<ul style="list-style-type: none"> • Big ideas to be taught: Solving quadratic equations, simultaneous equations and linear inequalities • This topic is relevant and used in other areas of the school curriculum, including geography, science and technology. 	<ul style="list-style-type: none"> • This topic builds on algebra skills acquired in year 7 and is extended further in year 11 to tackle quadratic inequalities and simultaneous equations 	<ul style="list-style-type: none"> • Weekly skill check on specific topics taught • Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be 	<ul style="list-style-type: none"> • Lagged homeworks • Retrieval element to homework in Sparx • Weekly skill checks • Super curricula problem solving questions,

		<ul style="list-style-type: none"> Algebraic methods can be applied to other areas of the scheme of work to facilitate and to solve certain problems 		filled in subsequent learning.	challenges and puzzles on units available to promote a love of Maths
10H	Probability Year 9 - Summer Term approximately 9 weeks	<ul style="list-style-type: none"> Big Ideas to be taught: Systematic listing and Product rule, probability, tree and venn diagrams and set notation The value of understanding and applying the laws of probability benefits pupils in real life situations. The topic is also applied in other areas of the school curriculum 	<ul style="list-style-type: none"> This topic builds on knowledge and skills learned in year 8 on Data. It uses and applies number skills, fractions, FDP conversions and requires good understanding of mathematical language and notation 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homeworks Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
11H	Multiplicative Reasoning Year 10 - Autumn term - approximately 7 weeks' work	<ul style="list-style-type: none"> Big Ideas to be taught: Converting units of measure, conversion graphs, compound measures This topic is very relevant to understanding maths in real life situations 	<ul style="list-style-type: none"> This topic builds on graph work visited in year 9 and can be extended to application of the SUVAT equations as well as complex formula rearrangements 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homeworks Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
12H	Similarity and Congruence Year 10 - Autumn Term approximately 3 weeks' work	<ul style="list-style-type: none"> Big Ideas to be taught: similar and congruent shapes This topic is again applied in other subjects of the school curriculum such as technology 	<ul style="list-style-type: none"> This topic builds on and extends geometry skills acquired in years 8, 9 and 10 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
13H	More Trigonometry Year 10 - Spring Term -	<ul style="list-style-type: none"> Big Ideas to be taught: trigonometric graphs, area of non-right angled 	<ul style="list-style-type: none"> This topic builds on knowledge and skills learned in year 8 on trigonometry and is 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking 	<ul style="list-style-type: none"> Lagged homework's

	approximately 7 weeks' work	<p>triangles, sine and cosine rules, 3d trigonometry</p> <ul style="list-style-type: none"> Understanding how to use angles in complex situations can be applied in many career paths. Again, this is an topic that is transferable across other areas of the school curriculum including science and technology 	applied later again in year 11 when studying trigonometric graph transformations	accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning	<ul style="list-style-type: none"> Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
14H	Further Statistics Year 10 - Summer Term - approximately 8 weeks' work	<ul style="list-style-type: none"> Big Ideas to be taught: Sampling, cumulative frequency and box plots, histograms This topic is again used in other areas of the school curriculum, in particular science and is used in numerous career paths 	<ul style="list-style-type: none"> This topic builds on data topics studied in year 8 and 9, looking at the most complex statistical situations 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
15H	Equations and Graphs Year 10 - Summer Term - approximately 8 weeks' work	<ul style="list-style-type: none"> Big Ideas to be taught: Solving quadratic and graphical simultaneous equations, representing inequalities graphically, iteration, graphs of quadratic functions, cubic, reciprocal, exponential, circle graphs 	<ul style="list-style-type: none"> This topic builds on and extends year 9 algebra topic, moving into the most complex equations and graphs 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
16H	Circle Theorems Year 11- Autumn term approximately 3 weeks work	<ul style="list-style-type: none"> Big Ideas to be taught: Main circle theorems, reinforcing the use of angle facts, identifying radii and understanding the properties of tangents and circles 	<ul style="list-style-type: none"> This topic builds on basic angle facts, properties of shape, knowledge of gradients and perpendicular lines 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions,

				filled in subsequent learning	challenges and puzzles on units available to promote a love of Maths
17H	More Algebra Year 11 – Autumn term, approximately 4 weeks work	<ul style="list-style-type: none"> Big Ideas to be taught: Changing subject of the formula, algebraic fractions, rationalising surds, function's and further proof work 	<ul style="list-style-type: none"> This topic builds on fractions and using the four operations, surds and rearranging basic formulae 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
18H	Vectors and Geometric Proof Year 11 – autumn term, approximately 5 weeks work	<ul style="list-style-type: none"> Big Ideas to be taught: Vector notation, resultant vectors, solving 2D problems involving vectors and geometric proofs 	<ul style="list-style-type: none"> This topic build on Pythagoras theorem, links between fractions and ratio 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths
19H	Proportion and Graphs Year 11 – spring term, approximately 5 weeks work	<ul style="list-style-type: none"> Big Ideas to be taught: Reciprocal graphs, exponential graphs, gradient and area under graphs, direct and inverse proportion 	<ul style="list-style-type: none"> This topic builds on Graph plotting, gradients and equations of straight lines, the concept of direct and inverse proportionality. Also earlier work on transforming trigonometric graphs 	<ul style="list-style-type: none"> Weekly skill check Three assessments taken in the school year, checking accumulation of all skills gained so far and identifying gaps in the full curriculum to be filled in subsequent learning 	<ul style="list-style-type: none"> Lagged homework's Retrieval element to homework in Sparx Weekly skill checks Super curricula problem solving questions, challenges and puzzles on units available to promote a love of Maths

Curriculum plan

A Horizontal Curriculum

Key principles

“A Horizontal Curriculum- *Students’ learning within one subject is linked to their learning in other subjects. These links are meaningful and authentic, rather than contrived or artificial. Where appropriate, common methods for teaching the same numeracy or literacy skills are used across different subjects and where relevant, the Big Ideas students gain from one subject are built upon in another.*”

List here the skills, knowledge and concepts that are common between this course and other courses within the college. After discussions with relevant Curriculum Leaders, explain the decisions that were made around sequencing of taught content and common approaches to teaching methods.

Maths is linked to so many other curriculum areas. Our main link is with science whereby we seek to teach graphs and formula using the same approaches. We also actively seek to use examples from science, for example using the suvat equations for rearranging formula. Maths is also linked to many other areas, computer science, food and nutrition, geography design and technology etc.

We also encourage literacy, ensuring spelling, sentence structure, reasoning arguments are all in place.

A Broad and Balanced Curriculum

Key principles

“A Broad and Balanced Curriculum- *The curriculum balances depth (level of detail given to topics or skills) with curriculum breadth (the range of topics or skills covered). The curriculum promotes diversity and includes cultural capital to equip students with the knowledge and skills to succeed in life.*”

Explain your strategy and decision-making to ensure all students access a broad and balanced curriculum. What decisions were made around breadth versus depth? How does your curriculum promote diversity? Which cultural capital opportunities are incorporated into your curriculum and how do these equip students with the knowledge and skills to succeed in life?

In order to achieve a broad and balanced curriculum we have adopted a 5-year mastery scheme of work. This allows us to maximise the amount of time we can spend on each unit, enabling students to practice fluency within a topic, then moving on to reasoning and problem-solving providing depth and greater conceptual understanding.

This also permits time to embed real life examples, links to careers and how formulas are derived, focussing on mathematical language and even details about famous mathematicians.

The Key Stage 3 National Curriculum is covered within the first 2 and a half years of our scheme of work and then extended further through our extra and super curricula activities offered to students. These include podcast, videos, cipher clubs, extended reading, places to visit, articles to read etc.

Key Stage 4 builds and expands on previous skills taught ensuring that the Edexcel specification is covered. We also actively promote essential life skills within our lessons to ensuring students talk like a mathematician, can communicate their thoughts and ideas effectively, can work well with their peers as well as independently. Many students are also offered a personal finance course covering

financial implications relating to bank accounts, credit cards, loans, finance at university, home ownership or renting, insurance and day to day living expenses

An Inclusive Curriculum

Key principles

“An Inclusive Curriculum- *The curriculum ambition is the same for all students but is made accessible for SEND, low attaining and disadvantaged students. This means the curriculum and its component lessons are planned on the principle of “teach to the top” but are organised into small individual units which are logically sequenced and then scaffolded to help students each reach their individual highest possible level.*”

Explain the approaches you use to ensure that all students access an inclusive curriculum. Explain how the curriculum is adapted to be accessible for SEND, low-attaining and disadvantaged students. How are lessons and teaching resources differentiated?

Within mathematics we have set classes linked to prior attainment which is constantly monitored and reviewed following summative assessments. SEND, low attaining and disadvantaged students are supported through a variety of means. Primarily through reviewing the aforementioned students, identifying key barriers to learning and addressing these through quality first teaching, the use of teaching assistants and other in class interventions. We encourage the use of concrete examples, before moving onto pictorial and then more abstract examples. Our mantra in maths is to teach to the top and scaffold those students who require extra help to achieve. We actively encourage a “healthy struggle” to develop and consolidate learning.

Other strategies used within the department is an initial base line test in year 7 upon entry reviewing basic key skills. From this we identify 20-30 students would we then support through the department’s numeracy ambassador’s scheme. This involves practicing key skills with a year 9 or 10 mentor 2 morning a week during tutor time.

We use Sparx maths, this offers support through videos and worked examples, it also provides useful writing frames to support students, saving them time, enabling them to focus on the required skills and permitting practice time.

A Work-Related Curriculum

Key principles

“A Work-Related Curriculum- *Within each programme of study there are opportunities for students to learn about work in related industries and sectors of the economy. This includes gaining the knowledge and understanding of different careers and jobs.*”

Explain the work-related knowledge and skills that you have built into the curriculum and how these are shared with students. Which careers and jobs are linked to and why?

Mathematics is intrinsically linked to everyday life. Mathematics nurtures the power of reasoning, creativity, abstract, spatial and critical thinking, problem-solving abilities and effective communication skills. Every career path will require some form of mathematics.

We endeavour to link many career paths into our lessons, even linking students interests and chosen career paths with the aim that increased relevancy will help understanding and encourage progress. Links can be made to architecture, finance, building, analysts, sport, transport, medicine to name but a few.

An Adaptive Curriculum

Key principles

***“An Adaptive Curriculum-** Regular planned assessments measure what students have understood from the taught curriculum and there is flexibility to adapt the future curriculum on the basis of this assessment. For example, this could mean finding time to reteach areas of student weakness or to include more opportunities for revisiting content than were originally planned.”*

Explain how the curriculum has been planned to be adaptive so that areas of student weakness can be retaught.

Due to our 5-year scheme of work that builds on prior learning, assessment and adaptive teaching is key. AFL is used in every lesson to assess understanding, address misconceptions and be able to respond to students that require help in a timely and effective manner.

We also use Numeracy Ninjas and Weekly Skills Checks to promote retention and recall of key skills and curriculum taught throughout the 5-year journey. (Numeracy Ninjas year 7, Weekly skills checks year 8 onward).

End of unit check-up homework's and tests are conducted 3 weeks after the core teaching has taken place so a greater understanding of what has been learnt and retained is gained. Feedback is provided at both the check up homework and end of unit assessment stage. Students are encouraged to green pen any feedback and to complete an AFL sheet. The AFL sheet is then used to encourage independent learning whereby all questions are linked to a Hegarty clip and further clarity can be sought.

Our termly assessment programme also highlights areas that might need to be readdressed, with particular attention paid to the focus questions, areas that have been covered. Other questions included are used to promote application and encourage future learning. Teachers complete question level analysis in order to address any knowledge gaps that may exist. This is achieved through additional teaching, weekly skills checks, targeted home learning tasks, starters etc. Building blocks essential to other units also help to revisit prior learning.

