BOURNVILLE SCHOOL

FAIRFAX MULTI-ACADEMY TRUST

Mathematics 5 Year Curriculum Plan

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Trust Curriculum Policy Extract

The Trust curriculum ensures all pupils in the Trust experience a rich, broad and balanced experience, reflecting the FMAT mission of `Enriching lives, transforming futures`**. We want all our pupils to experience the joy and wonder of learning.**

We place a strong emphasis on nurturing the spiritual, moral, social and cultural development of pupils, along with a firm commitment to developing pupils' resilience and character **through the acquisition of life skills**. We are preparing all our pupils to contribute positively to modern British society **and have a suitable career and destination**. All pupils have the entitlement to study a rich and varied curriculum

The Trust values permeate the curriculum

Excellence: a curriculum of the highest quality to ensure excellent outcomes
Dedication: we believe there is dignity in hard work
Ambition: we want the very best for all of our students.
Integrity: moral purpose will underpin the curriculum decisions we make for our pupils
Tradition: British values, literacy and numeracy underpin the curriculum

A well-constructed curriculum will lead to good results because these results will reflect what pupils have learned. The curriculum is the progression model, enabling pupils to **know more, remember more and be able to do more.**

Teaching and Learning Vision

Knowledge is power. Information is liberating.
Kofi Annan

We believe all students, whatever their background, can become experts in the disciplines that they study. Their expertise will be achieved through quality teaching and the dissemination of deep knowledge by highly skilled and knowledgeable subject experts – in every classroom, every lesson, every day.

Our students have the right to be introduced to deep knowledge and a wealth of information from the spectrum of subjects that they study. They will be introduced to, and understand, theories and principles that have influenced, continue to influence, and will influence in the future, the world in which they live. They will be prepared to fully engage in academic discussion about their learning.

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This learning will secure a successful place in society for our students. They will go further than they ever thought possible.

Teaching and Learning Vision for the Mathematics Department

'A mathematician at Bournville is not defined through prior attainment. At Bournville they are someone who through practice and application deepens their conceptual understanding to solve routine and non – routine problems. Through not over-valuing short term performance, addressing students' individual needs and inspiring students' creativity, it is our aim for every student to leave Bournville recognising themselves as a mathematician.'

At the end of Year 11 students in *Mathematics* will….

Know…

Use and apply standard techniques
Reason, interpret and communicate mathematically
Solve problem in mathematics and in other contexts

Understand…

Students should be able to:

- accurately recall facts, terminology and definitions
- use and interpret notation correctly
- accurately carry out routine procedures or set tasks requiring multi-step solutions

Students should be able to:

- make deductions, inferences and draw conclusions from mathematical information
- construct chains of reasoning to achieve a given result
- interpret and communicate information accurately
- present arguments and proofs
- assess the validity of an argument and critically evaluate a given way of presenting information.

Students should be able to:

- translate problems in mathematical or nonmathematical contexts into a process or a series of mathematical processes
- make and use connections between different parts of mathematics interpret results in the context of the given problem
- evaluate methods used and results obtained
- evaluate solutions to identify how they may have been affected by assumptions made

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Be able to…

- 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 comprehend, interpret and communicate mathematical information in a variety of forms appropriate to the information and context

Have been exposed to the following knowledge, theories, texts and experiences that span beyond the GCSE specification

A-level taster classes.

- Students are given the opportunity of taster sessions in year 10.

Team and Individual challenges

- AMSP challenges for Yr 10.
- Maths Challenge for junior, intermediate and senior.

Additional suggested reading for KS3/KS4

These texts will help students appreciate the wider uses of mathematics and how it has helped shape modern society.

Author	**Title**
Alex Bellos	Alex's Adventures in Numberland
Alex Bellos	Alex Through the Looking-Glass
Edwin A.Abbott	Flatland: A romance of may dimensions
Marcus du Sautoy	The music of the primes
Rob Eastaway	How many socks make a piar?
Rob Eastaway	How long is a piece of string?
Matt Parker	Things to make and do in the fourth dimension
Simon Singh	The Simpsons and Their Mathematical Secrets
Simon Singh	The Code Book
Simon Singh	Fermat's Last Theorem

Developed their cultural and social capital through the following extra-curricular work

Regular NRICH/Challenge Puzzles on display.

These will be promoted every 2 weeks during form time. House points will be awarded for submissions with bonus house points for correct submissions.

Yr 7, 9 and 10 trip (venue changes each year)

These will give the students the opportunity of seeing the importance and different use of mathematics outside the classroom.

UK Maths challenge and AMSP TEAM challenge

Maths Challenges encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Chess Club

Students encouraged to attend practice each week and compete in house/inter school chess competitions.

Pi day

Celebration of Pi day and again a variety of different activities may be organised.

Numeracy badge – Activities to help promote the love and enjoyment of mathematics and to encourage students to participate in different activities**.**

- *Create a mathematical game*
- *Puzzles from newspaper*
- *Complex net*
- *MyMaths unit*
- *Poster of a famous Mathematician*
- *Create a video of a concept*
- *Pixl app activities*
- *NRICH challenge tasks*

External visitors for revision KS4 alongside Birmingham Popular Maths Lectures

Links with the University of Birmingham to help provide revision sessions for KS4. Birmingham Popular Maths Lectures occur on the last Wednesday of each month with a 7pm start.

Showmyhomework

Additional work is also set weekly for all year groups on SMHW to encourage independent learning.

Numeracy Form Time

Additional support on basic maths in tutor times for students.

Subject mentors for Year 7 and 8

Year 10 and 11 students are encouraged to help support our younger students throughout numeracy form time.

Activities on multicultural mathematics

Opportunities are given to students to produce work based on exposing students to different cultural needs e.g. rangoli patterns, number systems from around the world

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5 Year Curriculum Plan

Students at Bournville receive their entitlement to a curriculum at least as ambitious as the National Curriculum as we aim to ensure that students;

- become fluent in the fundamentals of mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects. Care has been taken to ensure that key topics align across different subjects. During teaching where links occur these are explicitly mentioned.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems and should not be accelerated through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Year 7 *Mathematics* at Bournville School

The Year 7 *Mathematics* curriculum prepares all pupils to confidently manipulate number skills and develop and transfer numbers skills to algebraic situations. All students complete a base line assessment (GL assessment) at the start of year 7. This enables staff to identify level of previous understanding and to directly support individual and whole class teaching. Students based on their base line assessment score, KS2 scores and teacher professionalism are grouped early in the Autumn term to allow staff to tailor work to a more appropriate level based on their different starting points.

The Do Now activity at the start of every lesson also supports retrieval and recall of previous learning.

These units are studied in this order because it allows for developmental of conceptual understanding of number skills and it equip our students with the necessary mathematical and numeracy understanding irrespective of their starting point to go into the next stages of their learning

Mathematics is essential for solving problems of all kinds, understanding everyday life and our world. Basic maths is essential for everyday life, as well as a key skill required in the workplace. Employers require all staff to be numerate, which means being able to confidently handle numbers

The rationale for teaching these topics

Place value: This is required in most areas of mathematics. Place value also helps understand the meaning of number and order of numbers. Decimals are used commonly in everyday life, for example money and measurement.

Rounding: Numbers are often rounded to the degree of accuracy required, e.g. when measuring a length of wood you may only need to measure to the nearest cm. A solid understanding of rounding is required for bounds at GCSE.

Negative numbers: Helps students with calculations that are more complicated and means an understanding of temperatures.

Conversions: Helps students know what the metric prefixes mean and therefore be able to compare lengths, liquid volumes and weight

BIDMAS: Without an understanding of BIDMAS, students would not be able to answer calculations correctly. It also teaches students how calculators work and will support them in using a calculator effectively.

Multiples and factors: Factors and multiples are especially important in working with expanding, factorising and working with fractions as well as finding numbers in patterns .

Index laws: Index notation is a short way of writing a number that is multiplied by itself several times, e.g the number of stars in the Milky Way is around 10^{11}. Knowledge of index laws is required for standard form.

Sequences: Learning about sequences helps students in spotting patterns, which can support the understanding of graph work and logic structures in algebra. You can use sequences to perform a piece of music or do a kata in martial arts. Knowing how a pattern continues can help us to know what to expect, for example when planets are going to appear in the nights sky.

Coordinates: Can help with map reading, cross curricular with Geography and PE.

Linear graphs: Links between sequences and plotting real life graphs. Scientists plot results on graphs to look for the relationships between quantities. Game designers use equations of straight lines (y=mx+c) to program characters' movements.

Linear, and quadratic graphs: Links between sequences and plotting real life graphs. Scientists plot results on graphs to look for the relationships between quantities. Game designers use equations of straight lines (y=mx+c) to program characters' movements. Will require this understanding to go onto sketching graphs, drawing cubic graphs and solving equations from graphs at GCSE.

Fractions,and decimals : Fractions are seen in everyday life, for example, recipes may contain fractional amounts, like ½ teaspoon. When scaling a recipe up you need to multiply fractions. Dividing by fractions helps you work out how many 1/3 litre glasses you can fill from a 2 litre bottle. Decimals are used commonly in everyday life, for example money and measurement

The order of these topics allows for transference of integration of skills and knowledge to be developed. An example of this is for students to know and be confident with four operations in order to solve BIDMAS problems. Students also should be confident with calculating with fractions and again when solving problems with area and perimeter of shapes students could be transferring and using skills on fractions in an applied setting.

The enrichment opportunities available to year 7 pupils are:

Maths Challenge

Maths Challenge encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Trip – Venue changes each year ,

Gives students the opportunity of seeing the importance and different use of mathematics outside the classroom

Numeracy badge

Opportunity to be produce and be involved in a variety of mathematical activities.

- *Create a mathematical game*
- *Puzzles from newspaper*
- *Complex net*
- *MyMaths unit*
- *Poster of a famous Mathematician*
- *Create a video of a concept*

- *Pixl app activities*
- *NRICH challenge tasks*

Year 7 Units of Study Autumn 1 (trust schools to start Sept 2020)		Length of unit (lesson)
Please see learning journey for Yr 7 for additional details		
Unit 1	Place Value	*4*
Unit 2	Addition/Subtraction	4
Unit 3	Multiplication	4
Unit 4	Division	4
Unit 5	Rounding and estimating	4
Unit 6	Order of operations	4
Unit 7	Metric Units	4
Year 7 Units of Study Autumn 2		Length of unit
Unit 1	Types of number	*4*
Unit 2	Factors and multiples	4
Unit 3	Introduction to algebra	4
Unit 4	Expanding single brackets	4
Unit 5	Functions	4
Year 7 Units of Study Spring 1		Length of unit
Unit 1	Properties of shape	*4*
Unit 2	Angles - drawing/measuring/point/line/vo	4
Unit 3	Angles - shapes	4
Unit 4	Simplify/Equivalent/Order Fractions	4

Unit 5	Calculate with fractions (1)	4
Year 7 Units of Study Spring 2		Length of unit
Unit 1	Calculate with fractions (2)	*4*
Unit 2	Area and perimeter of quadrilaterals	4
Unit 3	Area of triangles and trapezia	4
Unit 4	Types of sequence (1)	4
Year 7 Units of Study Summer 1		Length of unit
Unit 1	Types of sequence (2)	*4*
Unit 2	Linear sequences	4
Unit 3	Mathematical movement - Graphs	4
Unit 4	Straight line graphs	4
Unit 5	Measuring data	4
Year 7 Units of Study Summer 2		Length of unit
Unit 1	Presentation of data (1)	*4*
Unit 2	Presentation of data (2)	4
Unit 3	Construction	4
Unit 4	Project	8

Year 8 Mathematics at Bournville School

The year 8 *Mathematics* curriculum prepares all pupils to build upon skills from year 7. In conjunction it allows for skills to be built upon from prior topics and enable student to transfer those skills into different contexts and topics.

These units are studied in this order because it allows for developmental of conceptual understanding of number and mathematical skills. It also equips our students with the necessary mathematical and numeracy understanding irrespective of their starting point to go into the next stages of their learning.

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An example of how topics are linked within the year 8 learning journey; students should be confident with manipulating and solving one and two step equations and therefore be able to transfer and build upon their algebraic skills in a different context using properties of angles later in the year.

The rationale for teaching these topics

Fractions: Fractions are seen in everyday life, for example, recipes may contain fractional amounts, like ½ teaspoon. When scaling a recipe up you need to multiply fractions. Dividing by fractions helps you work out how many 1/3 litre glasses you can fill from a 2 litre bottle.

Percentages: An understanding of percentages will help students to find the best deals when shopping, is 40% off a 800ml bottle better than the 2 for 1 deal on a smaller size? It will also help them in finding the best savings accounts when they open bank accounts and get a mortgage etc.

Ratio and proportion: Outdoor pursuits need to have the correct supervision ratio. You need to mix paints in the same ratio to get the same colour each time. You can use ratios to work out your money for abroad. The ratio of gold to other metals in a piece of jewellery is used to work out the value of the item. An understanding of proportion will help students to up or down scale recipes and work out which product is the best value of money (the 300ml or 500ml bottle). A manager needs to understand proportion to allocate the right number of people to a position. A solid understanding of proportion is required to move onto inverse proportion at GCSE

Collecting like terms: Simplifying makes algebra less complicated and easier to use. This will be extra marks at GCSE after expanding brackets.

Substitution: Cross curricular in science, used in formulae for example working out how much medicine to give someone.

Expressions: Students will need to be able to set up their own equations to solve worded problems at GCSE.

Expanding and factorising: Required at GCSE as a standalone but also to support understanding of completing the square.

Changing the subject of a formula: Cross curricular with science. In a formula e.g. speed = distance/ time, you may be given the distance and speed and have to rearrange the formula in order to calculate the time taken. Required at GCSE also to find the inverse of a function, solve simultaneous equations and derive the iterative formula.

Solving equations: Knowing how to solve equations helps you solve other problems such as finding one mass when given another. Engineers building large structures have to solve many equations to make sure that the structure is strong enough and will not fall down. Required at GCSE to solve simultaneous equations.

Probability: Calculating probabilities can help you work out is games are fair. Modelling probabilities by experimenting can help scientists predict the outcomes of random events. Car insurers use probability to assess how likely a driver is to have an accident.

Properties of shapes: This helps students identify and organise visual information. Learning about shapes also helps students understand other signs and symbols.

Angles: Cross curricular links with science, D and T and geography. Key skill in being able to represent and interpret data in pie charts. Engineers need to know about angle properties between parallel lines when designing buildings like the Shard in London. Knowing the angles in a triangle helps pinpoint the exact location of an aircraft.

Nets: Supports students in being able to visualise shapes, work out the number of faces, vertices and edges. Supports students in being able to calculate surface area. Nets are required for packaging. Food manufacturers look at the nets for food cartons very carefully in order to work out the most efficient way to cut the cardboard.

Plans and elevations: Used in jobs such as engineering, design and architecture. If you apply for planning permission to build a new house or an extension, you need to send plan and elevation drawings of the new building to the council for approval.

Isometric drawing: Used in jobs such as engineering and design

Construction and loci: Sailors use compasses to draw triangles on navigation charts when plotting a course. Architects use a variety of constructions in order to accurately draw plans for new buildings. Air-sea rescue services use loci to help them identify which areas to search for missing survivors.
Scale drawing: Scale diagrams are a useful planning tool. For example, you would use one when designing a new kitchen. Cross curricular links with Geography and Pe in map reading, and D & T.

The enrichment opportunities available to year 8 pupils are

Maths Challenge

Maths Challenge encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Numeracy badge

Opportunity to be produce and be involved in a variety of mathematical activities.

- *Create a mathematical game*
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- *Create a video of a concept*
- *Pixl app activities*
- *NRICH challenge tasks*

Year 8 Units of Study Autumn 1 (trust schools to follow as much as possible but will have individual adjustments for 20/21)		Length of unit (lesson)
Please see learning journey for Yr 8 for additional details		
Unit 1	Multiplication/Division of Decimals	4
Unit 2	FDP (1)	4
Unit 3	FDP (2)	4
Unit 4	Percentages	4
Unit 5	Simplifying ratios inc. conversion to fractions	4
Unit 6	Sharing into a ratio	4
Unit 7	Ratio problems including FDP	4
Year 8 Units of Study Autumn 2		Length of unit
Unit 1	Expressions and equivalence	4
Unit 2	Substitution into formulae	4
Unit 3	Expanding pairs of brackets	4
Unit 4	Factorisation - common factors	4
Unit 5	One step/Two step equations	4

Year 8 Units of Study Spring 1		Length of unit
Unit 1	Rearranging formulae	4
Unit 2	Linear equation with unknowns on both sides	4
Unit 3	Construct and solve linear equations	4
Unit 4	Construct and solve linear equations - properties of shapes	4
Unit 5	Angles in parallel lines	4
Year 8 Units of Study Spring 2		Length of unit
Unit 1	Bearings	4
Unit 2	Scale conversions	4
Unit 3	Percentage change	4
Unit 4	Simple interest	4
Year 8 Units of Study Summer 1		Length of unit
Unit 1	Probability 1	4
Unit 2	Probability 2	4
Unit 3	Circumference of circles	4
Unit 4	Area of circles	4
Unit 5	Properties of 3D shapes	4
Year 8 Units of Study Summer 2		Length of unit
Unit 1	Volume of shapes	4
Unit 2	Plans and elevations	4
Unit 3	Constructions	4

Unit 4	Project	8

Year 9 *(mathematics)* at Bournvlle School

The year 9 Mathematics curriculum prepares all pupils to build upon skills from Yr 7 and 8 . In conjunction it allows for skills to be built upon from prior topics and enable student to transfer those skills into different contexts and topics, interleaving of techniques and previous learning into routine and non-routine problems. It also allows for transfer of skills to other contexts to make connections with prior learning.

These units are studied in this order because previous topics form a prerequisite to future topics. The topics are interwoven where possible, to enable students to see and use transference of understanding and skills. For example students learn the laws of indices before using those laws of indices to solve problems using standard form.

The rationale for teaching these topics

Probability: Calculating probabilities can help you work out is games are fair. Modelling probabilities by experimenting can help scientists predict the outcomes of random events. Car insurers use probability to assess how likely a driver is to have an accident.

Collecting data: Frequency tables are a useful and clear way of displaying data.

Sampling: For example, at a sweet factory, some sweets are taken from every batch as a sample in order to check for quality.

Averages: Averages are useful as they summarise a large amount of data into a single value making it easier to compare data. For example to see which mobile phone we want we may want to take into consideration the mean battery life of each phone.
Presenting data: Displaying data in a graph makes it easier to interpret. For example, if a bar chart is used to display the hours of sunshine per day in a number of holiday destinations, you can see at a glance which destination is the sunniest. Students will need an understanding of graphs as they are used everywhere in life for example to show house price change as you move further away from the city.

Real life graphs: Help visualise the relationship between two variables. Will look at questions that compare mobile phone tariffs, currency conversions etc to support decision making as students get older.

Inequalities: Inequalities can be used to compare quantities. They are useful because it is rare to find a situation where there is only one solution, e.g . you do not need to be driving exactly 30mph to be following the law, you need to be driving 30 or less.

Pythagoras and trigonometry : Lots of jobs require the use of Pythagoras and trigonometry (engineers, builders, architects, landscapers etc)

Averages: Averages are useful as they summarise a large amount of data into a single value making it easier to compare data. For example to see which mobile phone we want we may want to take into consideration the mean battery life of each phone.

The enrichment opportunities available to year 9 pupils are

Maths Challenge

Maths Challenge encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Trip – Venue changes each year,

Gives students the opportunity of seeing the importance and different use of mathematics outside the classroom

Year 9 Units of Study Autumn 1 (Start Sept 2021)		Length of unit (lesson)
Please see learning journey for Yr 9 for additional details		
Unit 1	Unit Conversions	4
Unit 2	Index Laws (1)	4
Unit 3	Standard Form (1)	4
Unit 4	Standard Form (2)	4
Unit 5	Rounding and Bounds	4
Unit 6	Inequalities	4
Unit 7	Direct Proportion	4
Year 9 Units of Study Autumn 2		Length of unit
Unit 1	Inverse Proportion	4
Unit 2	Compound Units	4

Unit 3	Drawing Graphs (1) and (2)	8
Unit 4	Equation of a line	4
Year 9 Units of Study SPRING 1		Length of unit
Unit 1	Real Life Graphs	4
Unit 2	Angles in polygons (1) and (2)	8
Unit 3	Similarity and congruence	4
Unit 4	Pythagoras'	4
Year 9 Units of Study SPRING 2		Length of unit
Unit 1	Trigonometry	4
Unit 2	Venn Diagrams (including set notation)	4
Unit 3	Two way tables	4
Unit 4	Tree Diagrams	4
Year 9 Units of Study SUMMER 1		Length of unit
Unit 1	Factorising quadratics	4
Unit 2	Quadratic Sequences	4
Unit 3	Frequency tables	4
Unit 4	Stem and Leaf	4
Unit 5	Scatter graphs	4
At this point in Year 9 students follow different pathways based on most appropriate tier of entry, but there will be crossover where necessary.		
Year 9 Units of Study SUMMER 2 **Foundation**		Length of unit (lessons)
Unit 1	Inequalities • Use correct notation to show inclusive and exclusive inequalities	6

<table>
<tr><td></td><td>

- Solve simple linear inequalities
- Write down whole numbers which satisfy and inequality
- Represent inequalities on a number line
- Solve two sided inequalities

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<tr><td></td><td>

During this half term students will sit their end of year exams plus receive appropriate deep feedback. In addition to this, time will be spent on ensuring students are confident with the following crossover topics studied earlier. This will be done by weekly fluency tasks and deep feedback. Extra deliberate practice will be given on any topics that student need to secure understanding.

<table>
<tr><td>Integers and place value</td></tr>
<tr><td>Decimals</td></tr>
<tr><td>Indices, powers and roots</td></tr>
<tr><td>Factors, multiples and primes</td></tr>
<tr><td>Algebra: the basics</td></tr>
<tr><td>Expressions and substitution into formulae</td></tr>
<tr><td>Tables, charts and graphs</td></tr>
<tr><td>Pie charts</td></tr>
<tr><td>Scatter graphs</td></tr>
<tr><td>Fractions, decimals and percentages</td></tr>
<tr><td>Percentages</td></tr>
<tr><td>Equations and inequalities</td></tr>
<tr><td>Sequences</td></tr>
</table>

</td><td></td></tr>
<tr><td colspan="2">Year 9 Units of Study
SUMMER 2
Higher</td><td>Length of unit</td></tr>
<tr><td>Unit 1</td><td>

Index laws

- Zero, negative and fractional indices

Calculating standard form
Surds

- Understand difference between rational and irrational numbers
- Simplify surds
- Rationalise a denominator

</td><td>

- 4

</td></tr>
<tr><td>Unit 2</td><td>Index laws and algebra
Solve algebraic fractions
Quadratics sequences</td><td>4</td></tr>
</table>

Unit 3	Time series	2
Unit 4	Recurring decimals	3
Unit 5	Non calc trig	3
	During this half term students will sit their end of year exams plus receive appropriate deep feedback. In addition to this, time will be spent on ensuring students are confident with the following crossover topics studied earlier . This will be done by weekly fluency tasks and deep feedback . Extra deliberate practice will be given on any topics that student need to secure understanding.	

Calculations, checking and rounding
Indices, roots, reciprocals and hierarchy of operations
Factors, multiples, primes, standard form and surds
Algebra: the basics, setting up, rearranging and solving equations
Sequences
Averages and range
Representing and interpreting data and scatter graphs
Fractions and percentages
Ratio and proportion
Polygons, angles and parallel lines
Pythagoras' Theorem and trigonometry

Year 10 *(MATHEMATICS)* at Bournville School

Currently we are looking at aligning topics for KS4 within the trust for teaching Sept 2022.
Year 10 and Year 11 to be completed in due course after order of topics has been agreed by trust maths leads.

The year 10 Mathematics curriculum prepares all pupils to ….. our students are studying these units because…

We follow the Edexcel curriculum which allows a progressive SOL where number skills are started first. Fluency activities are at the start of each unit, with warm up activities' building to problem solving and reasoning activities are available. Previous topics are built upon within later topics. Previous learning are also incorporated in regular diagnostics assessments.

The enrichment opportunities available to year 10 pupils are

Maths Challenge

Maths Challenge encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Trip – Venue changes each year ,

Gives students the opportunity of seeing the importance and different use of mathematics outside the classroom

Year 10 Units of Study		Length of unit (lessons)
Unit 1		
Unit 2		
Unit 3		
Unit 4		
Unit 5		

Year 11 *(Mathematics)* at Bournville School

The year 11 *(Subject)* curriculum prepares all pupils to ….. our students are studying these units because…..

These units are studied in this order because……

The enrichment opportunities available to year 11 pupils are…….these are aimed at……

Maths Challenge

Maths Challenge encourages **mathematical reasoning**, **precision of thought**, and **fluency** in using basic mathematical techniques to solve interesting problems and to make children think.

Year 11 Units of Study		Length of unit (lessons)
Unit 1		
Unit 2		

Unit 3		
Unit 4		
Unit 5		