BOURNVILLE SCHOOL

CURRICULUM OVERVIEW 2019-2020

SUBJECT: Mathematics

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	THE BIG QUESTIONS	THE BIG QUESTIONS	THE BIG QUESTIONS	THE BIG QUESTIONS	THE BIG QUESTIONS	THE BIG QUESTIONS
YEAR 11	**Algebra 7:** How can we be sure that 'even + odd = odd' or that a square number is always positive?	**Statistics 5:** Lies, damn lies, and statistics; how do you know when you are being influenced?	**QLA Review and Revision:** How to prepare for the maths GCSE through learning something new whilst practicing something known.			
YEAR 10	**Number 5:** How long is a piece of string? Which is further away; Mars or Venus?	**Geometry 7:** ?Por que es importanté la trigonometria?	**Algebra 5:** Which is bigger n^2 or 2^n?	**Geometry 8:** How did the Egyptians make the pyramids?	**Algebra 6:** Where do the 2 lines cross and how many times?	**Statistics 4:** How many fish are in the ocean?
YEAR 9	**Graphs 1:** How do you make sense of patterns/trends through graphs?	**Algebra 3:** Equalities and identities; why is it useful to manipulate algebra?	**Geometry 5:** Given triangles with sides (3,4,5), (2,12,13) and (5,12,13), which is the odd one out?	**Algebra 4:** How can you find solutions to equation with and without graph paper? Why is this useful?	**Geometry 6:** How far away is the sun?	**Statistics 3:** Why do people still play the lottery?
YEAR 8	**Number 3:** Winning a million dollars: why do people search for large prime numbers?	**Geometry 3:** Could the goat have broken the fence?	**Algebra 2:** Which is bigger 0.9999… or 1?	**Number 4:** The taxman cometh: how do you pay **taxes** and why you should be **interested**?	**Geometry 4:** May the odds be ever in your favour: How many sweets are in the jar?	**Statistics 2:** Why is the average salary £15,000 when the mean is £50,000?
YEAR 7	**Number 1:** Why do we count in 10s and not 20s?	**Geometry 1:** There are 10mm in a cm, 1000g in a kg and 360° in a circle. Why do we use degrees and not gradians?	**Number 2:** If I have half as much, why do I have a third overall?	**Geometry 2:** Can you square a circle?	**Algebra 1:** Think of a number; multiply by 4, add 14, divide by 2, take away double your original number and add 4, why is your answer 11?	**Statistics 1:** How many people in this room love Birmingham?

BOURNVILLE SCHOOL

CURRICULUM OVERVIEW 2019-2020

Year 7

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**N1: Why do we count in 10s and not 20s?**						**G1: There are 10mm in a cm, 1000g in a kg and 360° in a circle. Why do we use degrees and not gradians?**					
	Pre- Assessment	• Place value systems • 4 operations • Area and perimeter • Factors and multiples				Assessment and Review	Intervention Week	• Properties of 2D shapes • Symmetry • Basic angle facts • Parallel and perpendicular lines				Assessment and Review
Spring	**N2: If I have half as much, why do I have a third overall?**						**G2: Can you square a circle?**					
	Intervention Week	• Equivalent fractions (including simplifying) • Ordering fractions, decimals and percentages. • 4 operations with fractions • Fraction of an amount				Assessment and Review	Intervention Week	• Perimeter (including the circumference of a circle) • Area of triangles and quadrilaterals • Area of a circle • Area of a compound shape				Assessment and Review
Summer	**A1: Think of a number; multiply by 4, add 14, divide by 2, take away double your original number and add 4, why is your answer 11?**						**S1: How many people in this lesson live in Birmingham?**					
	Intervention Week	• Creating and simplifying expressions • Simple factorisation • Expanding single brackets • Substitution • Sequences (linear, geometric and special)				Assessment and Review	Intervention Week	• Collecting and interpreting different types of data • Constructing diagrams, graphs and charts from data • Comparing and converting between different statistical diagrams				Assessment and Review

BOURNVILLE SCHOOL

CURRICULUM OVERVIEW 2019-2020

Year 8

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**N3: Winning a million dollars: why do people search for large prime numbers?**						**G1: Could the goat have broken the fence?**					
	Pre- Assessment	• Factors, multiples, primes and coprime • Prime factorisation • Squares, cubes and nth powers • Surds • Lowest common multiple and highest common factor				Assessment and Review	Intervention Week	• Constructions • Loci • Finding unknown angles including those involving parallel lines				Assessment and Review
Spring	**A2: Which is bigger 0.9999… or 1?**						**N4: The taxman cometh: how do you pay taxes and why you should be interested?**					
	Intervention Week	• Form and solve linear equations • Linear sequences including the nth term • Recurring decimals • Form expressions involving powers of x and more than one variable				Assessment and Review	Intervention Week	• Fractions/percentages of amounts • Fractional/percentage increase/decrease • Reverse percentages • Representing and equivalent ratios • Sharing into a ratio				Assessment and Review
Summer	**G4: May the odds be ever in your favour: How many sweets are in the jar?**						**S2: Why is the average salary £15,000 when the mean is £50,000?**					
	Intervention Week	• Properties of 3D shapes (including nets) • Surface area of prisms • Volume of prisms and composite solids				Assessment and Review	Intervention Week	• Collecting and organising data • Comparing statistical representations • Averages, range and outliers				Assessment and Review

BOURNVILLE SCHOOL

CURRICULUM OVERVIEW 2019-2020

Year 9

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**Gr1: How do you make sense of patterns/trends through graphs?**						**A3: Equalities and identities; why is it useful to manipulate algebra?**					
	Pre- Assessment	• Cartesian coordinates (2D and 3D) including midpoints. • Linear, quadratic, cubic, exponential and reciprocal graphs • Direct and inverse proportion from a graph • Real life graphs				Assessment and Review	Intervention Week	• Sequences (geometric and quadratic) • Expanding polynomials • Factorise simple quadratics • Draw and recognise quadratic graphs • Change the subject of a formula				Assessment and Review
Spring	**G5: Given triangles with sides (3,4,5), (2,12,13) and (5,12,13), which is the odd one out?**						**A4: How can you find solutions to equation with and without graph paper? Why is this useful?**					
	Intervention Week	• Similarity and congruence • Angles in polygons • Pythagoras' Theorem				Assessment and Review	Intervention Week	• Construct and solve linear equations and inequalities (relating to graphs) • Graphical solutions to simultaneous equations • Quadratics equations (factorising and completing the square)				Assessment and Review
Summer	**G6: How far away is the Sun?**						**S3: Why do people still play the lottery?**					
	Intervention Week	• Similarity and enlargement • Transformations • Simple trigonometry				Assessment and Review	Intervention Week	• Probability • Mean of grouped data • Boxplots and comparisons of two data sets • Scatter graphs, lines of best fit				Assessment and Review

BOURNVILLE SCHOOL

CURRICULUM OVERVIEW 2019-2020

Year 10

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**N5: How long is a piece of string? Which is further away; Mars or Venus?**						**G7: ?Por que es importanté la trigonometria?**					
	Pre- Assessment	• Index laws • Standard form and calculations • Compound interest, growth and decay • Bounds				Assessment and Review	Intervention Week	• Enlargement • Similar shapes • Bearings • Trigonometry				Assessment and Review
Spring	**A5: Which is bigger n^2 or 2^n?**						**G8: How did the Egyptians make the pyramids?**					
	Intervention Week	• Equations of lines • Cubic and reciprocal graphs • Expand and factorise binomials • Quadratic equations • Graphical solutions				Assessment and Review	Intervention Week	• Plans and elevations • Volume of pyramids, cones and spheres • Geometric proof				Assessment and Review
Summer	**A6: Where do the 2 lines cross and how many times?**						**S4: How many fish are in the ocean?**					
	Intervention Week	• Vectors • Linear and quadratic simultaneous equations • Non-linear sequences				Assessment and Review	Intervention Week	• Populations and samples • Theoretical vs experimental • Probability of combined events • Sample space and listing				Assessment and Review

CURRICULUM OVERVIEW 2019-2020

BOURNVILLE SCHOOL

Year 11

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	**A7: How can we be sure that 'even + odd = odd' or that a square number is always positive?**						**S5: Lies, damn lies, and statistics; how do you know when you are being influenced?**					
	Pre- Assessment	• Direct and inverse variation • Algebraic proof in algebra				Assessment and Review	Intervention Week	• Represent and describe distributions • Time series • Correlations • Cumulative frequency and box plots • Histograms				Assessment and Review
Spring	**QLA**						**QLA**					
	Intervention Week	The curriculum will be based on the QLA data from the Autumn mock to address individual needs.				Assessment and Review	Intervention Week	The curriculum will be based on the QLA data from the Autumn and concentrate on areas for further development from the milestone.				Assessment and Review
Summer	**QLA**						**Revision Session**					
	Intervention Week	The curriculum will be based on the QLA data from the Spring mock to address individual needs.				Assessment and Review	Intervention Week	Revision sessions for each tier will be scheduled for this half term.				Assessment and Review