Curriculum Map. **Subject: Mathematics**

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	Place value within 10 • Sorting, ordering and representing numbers • Counting forwards and backwards • Introducing number line and <, > and = symbols. Addition and subtraction • Introduce part whole model • Fact families for addition • Compare and find number bonds to 10	Addition and subtraction (within 10) • Adding together and adding more • Finding a part • Subtraction – taking away and breaking apart. Shape • Recognise and name 2D and 3D shapes Place Value (within 20) • Tens and ones • Focus on numbers 11-20	Addition and subtraction (within 20) • Crossing/ not crossing 10 • Related facts Place value (within 50) • Counting in 2s and 5s • Order and compare	Place value (within 50) • Tens and ones • Compare numbers Measurement • Comparing length and height (shorter, longer etc) • Introduce weight and mass and compare • Introduce capacity and volume and compare	Multiplication and Division • Counting in 10s • Makes doubles • Make arrays • Equal groups and sharing Number fractions • Halves • Quarters	Position and Direction • Describe turns and position Place value (within 100) • Order and compare • Partitioning Measurement – money • Recognising coins • Recognising notes Measurement – time • Before and after • Days/ dates • Time to the hour and half hour • Comparing time
2	Place value (within 50) • Tens and ones • Represent numbers to 100 • Introduce place value chart • Order and compare	Addition and Subtraction • Subtraction crossing 10 • Add two 2-digit numbers (crossing 10	Multiplication and Division • Counting in 2s, 5s and 10s • Divide by 2, 5 and 10 • Odd and even numbers	Geometry – Shape • 2D and 3D shape • Counting faces, vertices and edges Fractions	Measurement – Length and Height • Introduce standard units (cm and m) • Order and compare	Measurement – Time • Hours and days • Find/compare durations of time • Recognise o'clock and half past

	Addition and Subtraction • Number bonds to 20 and compare • 10 more 10 less •	and not crossing 10) • Bonds to 100 • Adding 3 1-digit numbers Measurement – Money • Counting money – pence and pounds • Finding total, difference and change • Introduce 2-step problems Multiplication and Division • Make/ add equal groups • Make arrays	Statistics • Tally charts • Pictograms • Block diagrams	• Introduce thirds • Recognise 3 thirds • Equivalence of a half and two quarters	Geometry – Position and Direction • Describe movement and turns • Making patterns with shapes	Measurement – Capacity, mass and temperature • Introduce ml and l • Measure mass in g and kg • Read temperatures
3	• Place Value- 100s, 10s and 1s, Rounding, Ordering.	• Addition and Subtraction- 2 3-digit numbers. • Multiplication- Multiply and Divide by 2,5 and 10. • Multiply and Divide by 3,4 and 8.	• Multiply and Divide a 2 – digit number by a 1-digit number. • Money • Statistics.	• Length and Perimeter. • Fractions- Fractions as Objects, Tenths as Decimals.	• Add and Subtract Fractions. • Compare and Order Fractions. • Time	• Geometry- Properties of Shape. • Mass and Capacity.
4	• Place Value- 1000s, 100s, 10s and 1s.	• Measurement- Length and Perimeter- m, cm, mm.	• Multiplication and Division- 11, 12, 3.	• Fractions and Decimals- Equivalent fractions,	• Decimals- Compare, order and	• Statistics • Geometry- Properties of Shape.

	• Rounding, Ordering, Negative Numbers, Roman Numerals • Addition and Subtraction with two 4-digit numbers with exchanges. • Efficient Strategies.	• Multiplication and Division- 3,6,7,9,10 and 100.	• Multiply 3 by 1 digit number. • Measurement- Area- What is Area? Counting Squares, Comparing Area.	Fractions greater than 1, Add and Subtract 2 fractions. • Tenths and Hundredths, divide 1 or 2-digit number by 100.	round decimals. • Measurement- Money- Working with money, rounding, ordering, working with pound and pence. • Measurement- Time.	• Geometry- Position and direction.
5	• Place Value- 10,000s, 1000s, 100s, 10s and 1s. • Rounding, Ordering, Negative Numbers, Roman Numerals • Addition and Subtraction with more than two 4-digit numbers with exchanges. • Efficient Strategies.	• Statistics- Line Graphs, Two Way Tables, Timetables. • Multiplication and Division- Multiples, Factors, Prime Numbers, Square Numbers, Cube Numbers. • Measurement- Perimeter and Area- Area of Compound and Irregular Shapes.	• Multiplication- 3 by 2 digit numbers and 4 by 2 digit numbers. • Divide 4-digit by 1-digit number.	• Fractions- Equivalent, Adding 3 fractions. • Add and Subtract mixed number fractions. • Percentages and Decimals.	• Decimals- th,h,t- ordering. • Multiply and divide by 10, 100 and 1000. • Geometry- Properties of Shape. • Geometry- Position and direction.	• Coverting Units of Measure.
6	• Place Value-to 1 million. • Rounding, Ordering, Negative	• Fractions- Add, Subtract, Multiply and Dividing.	• Decimals • Percentages • Algebra	• Perimeter • Area • Volume • Statistics	• Geometry- Properties of Shape. • Consolidation	

	• Numbers, Roman Numerals • Addition and Subtraction Multiplication and Long Division.		• Converting Units of Measure.			
7	• Transition unit – statistical methods • Sequences • Understand and use algebraic notation • Equality and equivalence	• Place value and ordering integers and decimals • Fraction, decimal and percentage equivalence	• Solving problems with addition & subtraction • Solving problems with multiplication and division • Fractions & percentages of amounts	• Operations and equations with directed number • Addition and subtraction of fractions	• Constructing, measuring and geometric notation • Developing geometric reasoning	• Developing number sense • Sets and probability • Prime numbers and proof
8	• Ratio and scale • Multiplicative change • Multiplying and dividing fractions	• Working in the Cartesian plane • Representing data • Tables & probability	• Brackets, equations and inequalities • Sequences • Indices	• Fractions and percentages • Standard index form • Number sense	• Angles in parallel lines and polygons • Area of trapezia and circles • Line symmetry and reflection	• The data handling cycle • Measures of location
9	• Straight line graphs • Forming and solving equations • Testing conjectures	• Three dimensional shapes • Constructions and congruency	• Numbers • Using percentages • Maths and money	• Deduction • Rotation and translation • Pythagoras' theorem	• Enlargement and similarity • Solving ratio and proportion problems • Rates	• Solving problems using graphs, tables and algebra
10	• Congruence, similarity and enlargement	• Representing solutions of equations and inequalities	• Angles and bearings • Working with circles	• Ratios & fractions • Percentages and interest	• Collecting, representing and	• Non-calculator methods

	• Trigonometry	• Simultaneous equations	• Vectors	• Probability	interpreting data	• Types of number and sequences • Indices and roots
11	• Gradients & lines • Non-linear graphs • Using graphs	• Expanding & factorising • Changing the subject • Functions	• Multiplicative • Geometric • Algebraic	• Transformations and constructing • Listing & describing • Show that...	• Revision	• Examinations

Cultural Capital

Endeavours are made throughout Maths teaching at each Key Stage to provide students with a broad 'cultural capital', both to enable them to access Mathematics questions posed to them, and to provide them with wider knowledge to open up opportunities to them.

Throughout Maths teaching at BGGS, topics are related to wider world examples, which enable students to understand the topics, and also provide wider knowledge. For example, in KS3/4, 'Election results' can be used to compare percentages. In KS3 when teaching probability, knowledge of 'playing cards', sports games and theatre layouts e.g., 'stalls, dress circle' etc. can all be introduced and used as examples within maths questions. In KS2, Roman Numerals are introduced, and can be used later on in 'time telling', also at KS2.

Students are also presented with wider opportunities, such as entering the 'UK Maths Challenge' events and receive certification for doing this. In-house events such as 'Number day' are used to enhance the students' experiences within our subject.

Inclusive curriculum

Throughout the Key Stages, the department ensures that the 'inclusive curriculum' is embedded in our teaching. We ensure that a wide variety of 'names' are used in Maths Problems, and that we introduce topics with examples that represent the diverse community in which we teach, and which our students can relate to. For example, discussions will include Islamic geometric patterns when covering tessellations. We make a conscious effort to challenge preconceptions and stereotypes with regard to race and gender in the use of examples in questions posed.

In KS3, we have started to use video links when introducing new topics – e.g. 'Islamic mathematicians and the invention of algebra' https://www.bbc.co.uk/bitesize/topics/zfxhfg8/resources/1

From September 2021, we will aim to have a 'working wall' display, to include 'Inspiring Female mathematicians', and 'real life maths' examples that the students can relate to.

Literacy

This is embedded in the day-to-day teaching across the Primary and Secondary phase in the following ways:

Primary

- Working wall which displays key words, sentence stems and examples of student work
- When introducing a new topic a discussion is had into all the different vocabulary used within that topic
- Students read out aloud text and questions

Secondary

- Knowledge organisers which are given at the start of each new topic, have a vocabulary section which goes through what each word means
- Flashback 4 starters has a vocabulary question where you have to explain what that word means
- The meaning of Key words are discussed within questions and when introducing topics
- Emphasis on spelling correctly and shown what key words are spelt like
- Students read out aloud text and questions