

Curriculum Intent Statement for Mathematics

Intent

The Maths curriculum at George Mitchell School is designed to enable pupils to become maths literate, keen problem solvers and develop fluency in procedures.

We provide a demanding and interesting curriculum that enables pupils to discover patterns in data, reasoning and analytical skills for problem solving, and how these processes link to their wider applications. We are committed to developing students' passion for mathematics as well as an appreciation of the beauty and power of mathematical reasoning.

Implementation

"Maths is easy and sweet if you understand it."

There are opportunities for a variety of learning experiences. These include problem-solving; investigations; practical Mathematics; teacher exposition; routine practice; use of spreadsheet, database and dynamic geometry and graphing computer programs; strategy games and discussion.

The lessons and work we give to pupils are ambitious and sequenced effectively so that pupils will know and remember more and achieve excellent outcomes.

EYFS

Mathematics is taught in EYFS through adult-led, adult initiated and child-led activities. Children are provided with a rich stimulating learning environment where sustained interactions take place between children and adults, in order to deepen their mathematical understanding. Mathematics lessons in the EYFS are followed by carefully planned play-based opportunities for children so that they can apply and embed their mathematical skills and knowledge. The curriculum is sequential and provides opportunities for retrieval and application of key concepts as well as developing their mathematical vocabulary. Our Maths curriculum follows the EYFS framework and is supplemented by White Rose Maths which provides strong foundations for children's mathematical learning in KS1 and beyond. NCETM interventions are used in Reception to provide additional support where required.

KS1

Mathematics lessons are delivered daily. Lessons are underpinned by the National Curriculum and our programme of study is White Rose Maths. In KS1, pupils are taught key skills in a logical sequence. Each lesson begins with retrieval practice of prior learning. They learn new concepts initially using concrete examples, such as counters and Base 10, then progress to drawing pictorial representations before finally using more abstract symbols, such as the equals sign. Pupils are encouraged to build on their learning in the EYFS by reasoning about, exploring and explaining their methods in greater detail. Pupils sit a PUMA paper at the end of each term, in order to support teachers in assessing progress to date. Catch-up interventions are used to ensure that all children are supported to make strong progress.

KS2

Key skills continue to be taught daily in a logical sequence through KS2 using White Rose Maths. Each lesson begins with retrieval practice of prior learning. These skills are reviewed and consolidated as well as built upon. Our curriculum emphasises conceptual understanding, problem solving and reasoning and promotes enjoyment of Mathematics through its application to real life situations. We encourage children to share their mathematical thinking, to develop mathematical fluency and to challenge themselves in all lessons. Catch-up interventions are also used in KS2 to support our children.

Pupils sit a PUMA paper at the end of each term, in order to support teachers in assessing progress to date. In Year 4, pupils sit the statutory Multiplication Tables Check. This is designed to ensure that all children know their times tables up to 12x12, and identify those in need of additional support. At the end of KS2, Year 6 pupils sit arithmetic and reasoning SATs papers.

KS3

We provide a 3-year curriculum. Key Stage 3 follows the National Curriculum and is taught in **set groups** over 7 lessons per fortnight.

The main areas of Mathematics addressed are:

- Number, Decimals and Fractions – this focuses on general calculations
- Algebra – introduces abstract reasoning and problem-solving
- Geometry and Measure Skill – this helps develop spatial awareness and also introduces various concepts of proof
- Data Handling and Probability – in a world ruled more and more by data, this helps develop the representation and analysis of data whilst testing hypotheses
- Indices, Ratio and Proportion – this focuses on ratio, proportion and rate of change.
- Properties of 2D Shapes
- Expression, Equations and Identities
- Graphs

KS4

We provide a 2-year KS4. Key Stage 4 students have 8 lessons each fortnight over Years 10 and 11. Students are taught in set groups.

Year 10

Using & applying number & algebra; Number & the number system; Calculations (mental method & written methods); Equations, formulae & identities; Sequence functions & graphs; Using & applying space, shape & measure; Geometrical reasoning; Transformations & coordinates; Measures & constructions; Using applying handling data; Collecting data; Processing & representing data; functional Maths; Interpreting & discussing data; Measures & construction; Specifying the problem & planning.

Year 11

Number & the number system; Solving numerical problems; Equations, formulae & identities; Sequences, functions & graphs; Geometrical reasoning Transformation & coordinates; Measures & constructions; Collecting data; Functional Maths; Processing & representing data; Interpreting & discussing data.

Text books for KS4: Edexcel Maths A Linear higher and Foundation.

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Homework at the primary phase

Children rehearse their maths skills at home using Mathletics and Time Tables Rockstars (in KS2). Class teachers set weekly activities in line with their learning at school. Mathletics is a great platform to engage maths learning at home and allows pupils to play games, and challenge their peers and other Mathletics users from across the world!

Homework at the secondary phase

Maths Homework is set on two websites:

MyMaths: This website is designed for all KS3 and KS4 students. All teachers set their classes homework for students to complete online at home. Students can also use the extensive range of animated lessons to revise from or even extend their learning in their spare time.

Maths Watch: This website enhances learning of maths by analysing the students' working out. This helps prepare them for examinations

Maths Resources/supporting your child with Maths

- www.mymaths.co.uk/
- vle.mathswatch.co.uk/vle/
- www.bbc.co.uk/bitesize
- www.mathsrevision.net
- www.nrich.maths.org.uk
- www.MathsNet.net
- www.funBrain.com
- www.corbettmaths.com
- qualifications.pearson.com
- www.pearsonschools.co.uk/revise
- www.mathsgenie.co.uk/gcse.html

Enrichment opportunities

- Maths Challenge UKMT
- Mathletes competition
- Pi Day
- Thinking Challenge
- Linking curriculum learning to career

Pupils in KS3 and KS4 have the opportunity to take part in Junior and Intermediate UKMT competition respectively. This helps to improve their mathematical skills in all areas of Mathematics especially reasoning and problem-solving skills.

Linking curriculum learning to career enable students to acquire much knowledge and ideas about the career paths they intend to take after they leave school. Other above challenges enable the students to become more matured in dealing with some real-life challenges and also when making decisions.

Where could Maths take you next?

Possible careers in Maths can be – Accountancy, Engineering, Architecture, Hairdressing & Barbers, Retail and more!