

Curriculum Quality 2019-2020 Maths	Date published: September 2019	Plan number: 1	Subject Leader: Mark Coombes
--	--	--------------------------	--

Intent

At the Marchant-Holliday School, we believe that Mathematics is essential to everyday life and as such is a vital part of education. It is important in many trades and professions and, therefore, necessary for many forms of employment and for financial literacy in adult life. Mathematics is an interconnected subject in which pupils need to be able to move fluently between mathematical ideas. The programmes of study are, by necessity, organised into distinct areas, but pupils will make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They will also apply their mathematical knowledge to Science and other subjects. Decisions about how pupils will progress through the programmes of study will always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly will be challenged through being offered rich and sophisticated mastery problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material will consolidate their understanding, including additional practice, before moving on. By creating cross-curricular learning experiences and real life opportunities, we aim for the pupils to become fluent in the fundamentals of Mathematics and, through regular and varied practice, to be able to solve increasingly complex problems.

The national curriculum for Mathematics aims to ensure that all pupils:

- 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.

Pupils should become fluent in the fundamentals of Mathematics, including the varied and regular practice of increasingly complex problems over time.

The overarching concepts for Mathematics at The Marchant-Holliday School are to deliver a high-quality Mathematics education, which enables the pupils to gain a foundation for understanding the world around them, to learn skills of reasoning and enquiry, to recognise patterns and relationships and to develop a sense of curiosity in Maths and also to transfer this understanding to other subjects and areas of study. All pupils are taught Mathematics in the following strands:

- Number – number and place value, addition and subtraction, multiplication and division, fractions (including decimals and percentages)
- Ratio and Proportion
- Algebra
- Measurement
- Geometry – properties of shapes, position and direction
- Statistics

Implementation

At the Marchant-Holliday school, we recognise that the majority of our learners have missed learning opportunities, prior to starting at the school, therefore in order to meet the individual needs of the learners, we ensure that all staff use gap analysis when planning their Maths lessons. The focus is to ensure that Maths lessons develop

pupils' confidence in counting and in understanding number and the place-value system. When they are secure in this, pupils will move on to using their place-value knowledge to solve calculations using the four operations, develop their mental fluency and use practical resources to support their calculations and encourage practice. Teachers plan lessons to excite, stimulate, and provide practical mathematical equipment for measuring, weighing and comparing and concrete objects for shape, time and money. Where possible, the pupils use their developing mathematical knowledge in other subjects and cross-curricular links are made throughout topics. The teaching of weighing, using money and understanding time are used when the pupils are shopping and cooking and are used in our 24 hour curriculum. By planning highly differentiated lessons, and by using Individual Education Plans and EHCP outcomes, we enable all our learners to have the opportunity to access a mathematical curriculum that is appropriate for them. This ensures that we meet individual needs, build on successes and challenge our pupils across all areas of Mathematics. Once they have developed their ability to count, order and understand place value, we encourage the pupils to begin to reason mathematically. We support their understanding of how to follow a line of enquiry, understand relationships and generalisations, and develop an argument, justification or proof using mathematical language. As part of our whole-school approach to Growth Mindset, we encourage the pupils to persevere in seeking solutions and model ways in which they can break problems down into smaller steps. By teaching resilience in this way, pupils are able to tackle problems for themselves and do so with increasing sophistication. Pupils in Key Stage 1 and 2 follow the Abacus programme of study matched to their needs and current knowledge and skill development. Abacus was chosen as it provides a cyclical model of teaching where we can revisit aspects of Maths to aid developing memory of concepts and strategies. It also offers timely assessments to check understanding and retention of skills and identify knowledge gaps and places an emphasis on practice and application.

Impact

By developing growth mindset values, we ensure that all children experience challenge and success in Mathematics. Pupils are able to close gaps and make progress, are willing to take risks and strive for mathematical fluency. Regular and ongoing assessment informs teaching, as well as intervention, to support and enable the success of each child. For pupils who have made accelerated progress, we monitor their mastery of Maths and assess their deep, long-term, secure and adaptable understanding of the subject.

By the end of Key Stage 1: pupils should have developed an understanding and knowledge of the fundamentals of Mathematics. They will be starting to use these skills to solve problems and answer questions. If appropriate pupils will sit the Key Stage 1 Standardised Assessment Tests.

By the end of Key Stage 2: pupils will have continued to develop their understanding and knowledge of the fundamentals of Mathematics. They will use these skills to solve problems by applying their Mathematics to a variety of problems with increasing sophistication. If appropriate they will sit the Key Stage 2 Standardised Assessment Tests.

By the end of year 7: pupils will develop their mathematical fluency, problem solving and reasoning and consolidate their numerical and mathematical capability from Key Stage 2. They will begin to look at algebra, and continue to develop their mathematical knowledge of ratio, proportion and rates of change, geometry and measures, probability and statistics.