Curriculum Map: Mathematics

Become the best that you can be: for learning, for life, for future success.

Intent:

Mathematics teaching is designed to deepen students' mathematical understanding about the world around them through our mathematics curriculum. Students are taught both mathematics knowledge and skills in discrete mathematics lessons, which are planned in line with the National Curriculum objectives for Key Stage Two. The shared vision of all members of the school community is for the teaching and learning of mathematics to be:

- **Engaging** – practical and visually engaging resources are used creatively to enable students to ask questions, work systematically, explore patterns, test hypotheses and establish relationships
- **Challenging** – all students are encouraged to identify appropriate levels of challenge so they can make progress, view mistakes as learning opportunities and reflect on the successes and shortcomings of the methods they employ
- **Vocabulary rich** – lessons offer opportunities for students to discuss their ideas with each other, teaching staff and parents, leading to improved precision, reasoning and fluency when problem solving

Implementation:

At Firside, mathematics is taught in daily, discrete one-hour lessons. Wedeliver maths sessions that are engaging, challenging and vocabulary rich. Throughout all maths lessons, students are encouraged to explore their mathematical understanding through the use of equipment, visual representations and technical vocabulary. All of our problem solving activities are rooted in a strong and solid base in arithmetical proficiency.

Skills are taught sequentially throughout the school, allowing for students to build on and develop prior knowledge. Teachers make skilled judgements about progress through assessing understanding within lessons and at regular points throughout the year through formal assessments. This allows teachers to identify areas of development and strength so that further lesson sequences can be planned to meet the needs of all students.

In lessons, teachers use starter activities that are designed to support the student in accessing, reflecting on and consolidating prior knowledge. Activities at the start of lessons may also be designed to engage students in understanding a new concept. Lessons engage students in applying their existing skills sets to solving problems they may encounter in the real world.

All teaching staff plan and deliver sessions which allow students to explore problems for themselves, using manipulatives, pictorial representations and discussions with peers. Misconceptions and

mistakes are seen as teaching opportunities rather than weaknesses - often they are explored and discussed as a class to aid the understanding of students. Teaching staff will model suitable and effective approaches for solving problems, including students' contributions, so that students have an array of successful strategies to choose from.

Cross-curricular opportunities within the curriculum consolidate mathematical understanding learning: science lessons allow students to use and apply measurement skills and statistical analysis; geography lessons allow children to explore coordinates in map work as well as further consolidating measurement principles; history allows children to work with aspects of time and chronology, as well as studying Roman Numerals; MFL modern foreign languages) consolidates counting principles for early learners; PE allows students students to explore statistics relating to their own performance in various disciplines; computing challenges children to work logically, strategically and algorithmically to design and fix coding sequences; and design and technology allows children to apply their measurement skills in making real-world products.

Students are encouraged to record their ideas and solutions effectively. This allows students to demonstrate their understanding logically and clearly. Activities are pitched to suit the needs of all learners to enable students to enjoy success at the level they are working at, whilst also challenging students to stretch and deepen their understanding. All students are seen as mathematicians and the skills they bring to each lesson are valued by staff and seen as a commodity to use in lessons.

Impact:

Over their time at Firside, pupils are more and more able to explain their understanding using clear, precise, technical vocabulary. Students grow in confidence when solving problems and discussing strategies to solve them. This leads to an enjoyment of mathematics and challenge within lessons. The use of various equipment and pictorial representations allows students to problem solve in different contexts. This is exemplified in the cross-curricular work outlined previously.

Children's understanding is assessed by teachers through skilled observation of students' verbal and written work in class, as well as through regular formal assessments. Students show clear progression from the start to the end of the year in both aspects. Where there are misconceptions, teaching staff work hard to address these gaps with quality first teaching, supportive feedback, targeted interventions and learning aids.

Curriculum overview:

The following overview has been adapted from the White Rose Maths scheme of work for each year group. Although these are the main themes for each block of work, areas are revisited again and again in subsequent lesson and starters and within other principles.

	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
Year 3	Place value Addition and subtraction	Addition and subtraction Multiplication and division A	Multiplication and division B Length and perimeter	Fractions A Mass and capacity	Fractions B Money	Time Shape Statistics Consolidation
Year 4	Place value Addition and subtraction	Measurement Area Multiplication and division A	Multiplication and division B Length and perimeter	Fractions Decimals A	Decimals B Money Time	Shape Statistics Position and direction
Year 5	Place value Addition and subtraction	Multiplication and division A Fractions A	Multiplication and division B Fractions B	Decimals and percentages Perimeter and area Statistics	Shape Position and direction	Decimals Negative numbers Converting units Volume
Year 6	Place value Addition and subtraction Multiplication and division	Fractions A Fractions B Converting units	Ratio Algebra Decimals	Fractions, decimals and percentages Area, perimeter and volume Statistics	Shape Position and direction	Themed projects: consolidation and problem solving