

Curriculum for

Mathematics 2022-23

Mathematics

Intent

At St. Mary's Catholic School, we strive towards ensuring that all our pupils develop a positive attitude towards Mathematics and we aim to equip all children with the skills and resilience they need to access the three aspects of Mathematics.

We recognise the importance of Mathematics in everyday life and we aim to equip all pupils with the skills and confidence to solve a range of problems through fluency with numbers and mathematical reasoning. Children are encouraged to see the mathematics that surrounds them every day and enjoy developing vital life skills in this subject.

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

- 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.
- To ensure that all pupils reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- To ensure that all pupils 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.

Implementation

At St. Gerard's Catholic Primary School, we follow a mastery approach to learning. Children are taught in mixed ability groupings, and all children access the same curriculum.

We use the 'White Rose Maths' curriculum as the foundations for our teaching. This is a cumulative curriculum, so that once a topic is covered it is revisited and built upon many times in many contexts across the learners' journey through the school.

Teachers begin lessons by revising and reviewing knowledge of concepts and skills to ensure they are embedded. Children are introduced to new concepts in small, logical steps. In order to tailor our teaching to our children, staff are equipped with a range of resources that support our curriculum. Through carefully planned activities, children are encouraged to work mentally, observe patterns, make predictions and discuss relationships.

Where children have not yet mastered a concept, same day interventions and pre-teaching takes place to support learners. Where children are confident, they are challenged by deeper thinking questions allowing them to demonstrate full mastery of concepts. We do not move on through the curriculum until children have grasped the concepts taught.

As a school we use the CPA (Concrete, Pictorial, Abstract) approach to support our mastery curriculum. Children are taught to represent mathematical concepts in these three ways to both support and challenge their learning:

- Concrete children can use concrete objects and manipulatives to help them understand and explain what they are doing.
- Pictorial children then build on this concrete approach by using pictorial representations, which can then be used to reason and solve problems.
- Abstract With the foundations firmly laid, children can move to an abstract approach using numbers and key concepts with confidence. Where possible, links are made with other subjects across the curriculum as well as making connections outside of the classroom and to life experiences and enterprises, developing the children's Cultural Capital.

Mathematical Fluency of Number Facts

Across the school we use KIRFs (Key Instant Recall Facts). These are year group specific number facts that aim to improve children's fluency in maths by freeing up their working memory. These will change each half term and will be sent home as homework as well as being worked on in class.

Reception and KS1 teach to the NCTEM Mastering Number program, alongside White Rose. This is to ensure that all children have a strong understanding of numbers and their composition. This aims to support children by laying the foundations for Maths, which they will need as they progress through school. By Year 1, all children should be fluent in their number bonds to 20.

From Year 2, Children will begin learning their times tables. All children should be fluent by the end of year 4, in preparation for the Year 4 Multiplication Check. As a school we use a range of teaching methods to ensure children are secure in number facts up to 12×12 as well as daily TT Rockstar practise at home.



Year EYFS Long Term Maths Plan

Week 1 Week 2 Week 3 Week 4 Week 5 Week 6 Week 7 Week 8 Week 9 Week 10 Week 11 Week 12 Just like me! It's me 1, 2, 3! Getting to know you Light & dark **Autumn term** (Take this time to play and Match and sort Representing 1, 2 & 3 Representing numbers to 5 get to know the children!) Comparing 1, 2 & 3 Compare amounts One more or less Compare size, mass & Composition of 1, 2 & 3 Shapes with 4 sides Contains overviews and capacity Circles and triangles Time frequently asked questions Exploring pattern Positional language **VIEW VIEW VIEW** VIEW Alive in 5! Building 9 & 10 **Growing 6, 7, 8** Spring term Introducing zero 6,7 & 8 Counting to 9 & 10 Comparing numbers to 5 Combining two amounts Comparing numbers to 10 Composition of 4 & 5 Bonds to 10 Making pairs Consolidation Compare mass (2) Length & height 3-D shapes Compare capacity (2) Time (2) Spatial awareness Patterns **VIEW VIEW** VIEW To 20 and beyond First, then, now Find my pattern On the move

Summer term

Build numbers beyond 10 Count patterns beyond 10 Spatial reasoning 1 Match, rotate, manipulate

VIFW

Adding more
Taking away
Spatial reasoning 2
Compose and decompose

VIFW

Doubling
Sharing & grouping
Even & odd
Spatial reasoning 3
Visualise and build

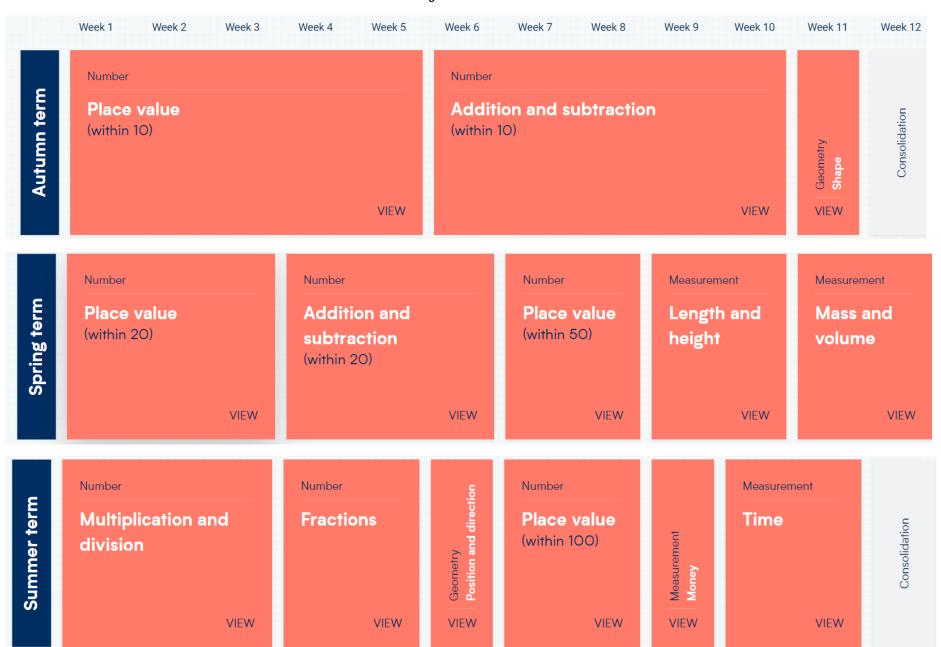
VIFW

Deepening understanding Patterns & relationships Spatial mapping (4) Mapping

VIFW

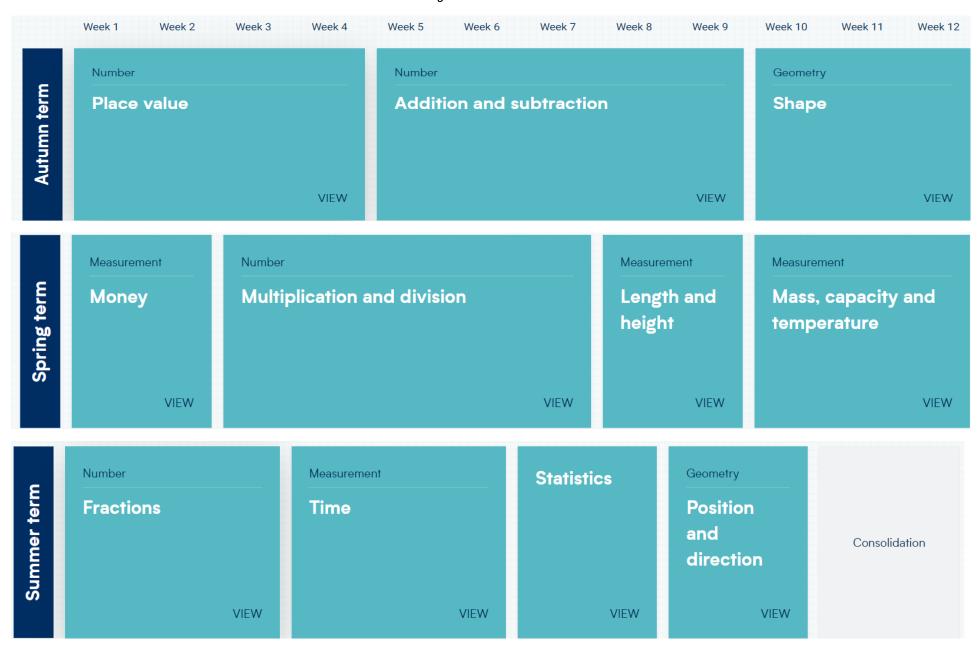


Year One Long Term Maths Plan



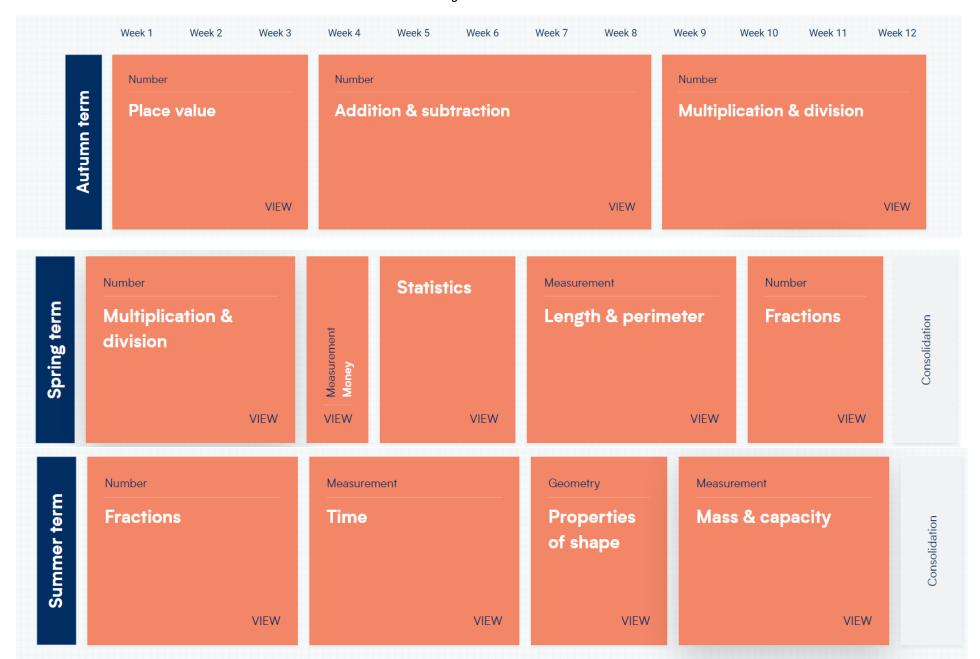


Year Two Long Term Maths Plan





Year Three Long Term Maths Plan





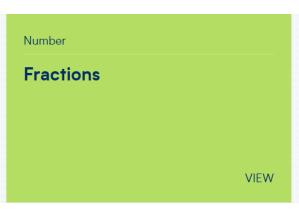
Year Four Long Term Matha Plan



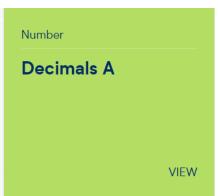
Spring term



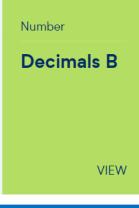




Consolidation

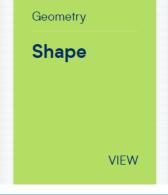


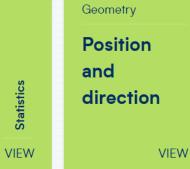
Summer term





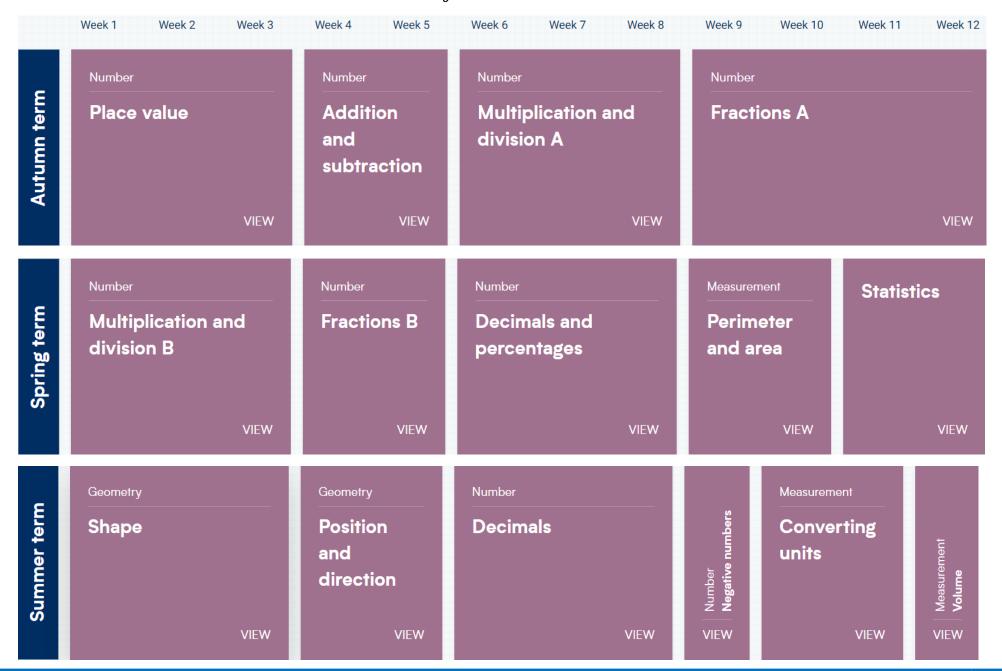








Year Five Long Term Maths Plan





Year Six Long Term Maths Plan

Autumn term	Number Place value	Number Addition, subtraction, multiplication and division			Number Fractions A		Week 10 Week 11 Number Fractions B		Measurement Converting units
Spring term	Number Ratio	Number Algebra VIEW	Number Decimals VIEW	Number Fractio decima percen	als and	Measure Area, p and vo	perimeter	Stati	stics VIEW
Summer term	Geometry Shape VIEW VIEW VIEW Shape VIEW VIEW VIEW								

Impact

Children will become fluent in the fundamentals of mathematics. Through varied and frequent practice with increasingly complex problems over time, pupils will have the conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

- Children will be able to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, developing an argument, justification or proof using mathematical language.
- Children will solve problems by applying their mathematics in a variety of problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering to seek solutions.
- Quick recall of facts and procedures.

 A mathematical concept or skill has been mastered when a child can show it in multiple ways, using the mathematical language to explain their ideas, and can independently apply the concept to new problems in unfamiliar situations.

