Mathematics
at
Castle Camps C. of E. (V.C.) Primary School

Life in all its fullness

Intent

At Castle Camps C of E (VC) Primary School we believe that it is essential to prepare our children for a rapidly changing world through the use of mathematical, systematic and logical thinking; because maths is an integral part of everyday life.

We aim to provide all children with the mathematical tools they need to help them make sense of, understand and eventually change the world in which we live. These tools include arithmetical aptitude (problems involving adding, subtracting, multiplying, or dividing numbers), logical reasoning, problem solving and the ability to apply their thinking in abstract ways.

We aim to develop independent children who are inquisitive, creative, numerically literate, confident and financially responsible. Through the provision of a stimulating learning environment and a wide range of pictorial and concrete resources, we aim to develop every child's mathematical skills in order to reach their full potential.

Implementation

Maths is at the forefront of our curriculum. From EYFS to Year 6, we systematically build on the sequence of lesson objectives, ensuring there is progressive coverage throughout the school. Our curriculum is developed in a mastery style, allowing the children to evolve deep conceptual understanding of Maths and giving them equal access to the curriculum, no-matter their starting point.

At Castle Camps C of E (VC) Primary School:

- We teach a daily Maths lesson following the NCETM Curriculum Prioritisation materials for Year One to Year Six.
- In Reception we use materials from the NCETM Mastering Number Curriculum. In addition, all children in the EYFS partake in weekly Shape, Space and Measure lessons and focused continuous provision activities based upon the White Rose Maths scheme of learning.
- Nursery pupils begin to develop key mathematical skills during daily maths sessions where they explore sorting, quantities, shape, number and counting awareness.
- In addition, all children in the Nursery partake in weekly Shape, Space and Measure lessons and focused continuous provision activities based upon the White Rose Maths scheme of learning.

- We provide a mathematics curriculum that is progressive, broad, and coherent with deep learning experiences that are relevant, challenging and enjoyable.
- We deliver high quality teaching and learning experiences that foster and nurture positive and enthusiastic attitudes towards mathematics.
- We build confidence in all learners through a range of well planned problems in a range of contexts.
- We carefully select relevant and appropriate visual representations, manipulatives and abstract representations to develop the understanding of mathematical concepts and procedures.
- We provide support and scaffolding, as required, to meet the needs of all learners, stretching and deepening the understanding of each strand of mathematics.
- We seek opportunities to extend every pupil's mathematics skills through the use of open ended investigations and challenges.
- We build mathematicians who are fluent, capable and confident, developing automaticity to become future problem solvers.

Impact

Children at Castle Camps C of E (VC) Primary School demonstrate impact through:

- Demonstrating a deep understanding of maths.
- Displaying a positive and resilient attitude towards mathematics and an awareness of the fascination of mathematics.
- Showing confidence in believing that they will achieve.
- Achieving the objectives (expected standard) for their year group, or beyond.
- Showing flexibility and fluidity to move between different contexts and representations of maths.
- Recognising relationships and making connections in maths lessons and beyond.

We know that mathematical concepts or skills are 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.

Impact is monitored through children's work in books, reflections and teacher assessment. Teachers provide verbal and written feedback, and 'pupil voice' is gathered through interviews to ensure the curriculum is centred around the needs of our children.

Maths National Curriculum
Purpose of study

Mathematics is a creative and highly interconnected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

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

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving

increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

Whole School Maths Overview
Planned using NCETM Curriculum Prioritsation Materials adapted for mixed age classes

Hedgehog Class	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	Mastering Number - Subitising to 3 - Counting 1:1 correspondence, cardinality - Composition of 3 and 4 - Subitising to 4; making 4 - Counting to 5 and the representation of '5 fingers and die-five pattern - Comparison by matching, including when groups are equal	Mastering Number - Focus on the concept of a 'whole' - Focus on the composition of 5 - Counting beyond 5 - Connect subitised quantities to numerals - Order numbers to 5 - Introduce the '5 and a bit' structure using fingers and die frames	- Connect the counting sequence to ordinality. - Comparison using knowledge of ordinality rather than comparison by matching of quantities - Composition of 7 as 2 groups, with a focus on '5 and a bit	- Practise subitising within 6 - Sort odd and even numbers - Count larger amounts and focus on strategies for counting - Focus on structured arrangements including the 10-frame	- Focus on representations of numbers using fingers and 10-frames - Focus on doubles using different representations - Focus on ordinality: comparing numbers - 'Seeing' small quantities and numbers within larger quantities	- Strategies for counting - Compare groups of objects that are of different sizes/colours/attributes - Investigate 'parts' and 'wholes' - Continue to practically explore the composition of numbers to 10 - Recall the 'numbers within' 3, 4, 5 and 10
Shape, Space and Measure	Compare and Order size, weight Make simple patterns	Circles and Triangles Spatial awareness Shapes with 4 sides	Comparing mass & capacity Length and height Time	Time 3d shape Pattern	Spatial reasoning	Patterns and relationships
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**

Squirrel Class Year 1	Y1 Previous Reception experiences and counting within 100	Y1 Numbers 0 - 5 Y1 Comparisons of quantities and part whole relationships Y1 Recognise, compose, decompose and manipulate 2D and 3d shapes	Y1 Numbers 0 - 10	Y1 Additive Structures Y1 Addition and subtraction facts within 10	Y1 Numbers 0 to 20 Y1 Unitising and coin recognition	Y1 Unitising and coin recognition Y1 Position and direction Y1 Time
Squirrel Class & Rabbit Class Year 2	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	Y2 Calculations within 20 Y2 Numbers 10 to 100	Y2 Addition and subtraction of two-digit numbers	Y2 Shape Y2 Introduction to multiplication	Y2 Introduction to multiplication Y2 Introduction to division structures	Y2 Fractions Y2 Position and Direction Y2 Money Y2 Time	Y2 Multiplication and division – doubling, halving, quotitive and partitive division Y2 Sense of measure – capacity, volume, mass
Rabbit Class	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**

Year 3	Y3 Adding and subtracting across 10 Y3 Numbers to 1,000	Y3 Numbers to 1,000 Y3 Manipulating the additive relationship and securing mental calculation	Y3 Column Addition Y3 Column Subtraction Y3 Right Angles	Y3 2, 4, and 8 times table	Y3 Unit fractions Y3 Time	Y3 Non-Unit Fractions Y3 Parallel and perpendicular sides in polygons
Badger Class	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
	Unit 1 Y4 Numbers to 10,000 Unit 2 Y5 Negative Numbers	Unit 3 Y4 Review of Column Addition and Subtraction Unit 4 Y4 Understanding and Manipulating Multiplicative Relationships Unit 4 Y5 Short Multiplication and Division	Unit 4 Y4 Understanding and Manipulating Multiplicative Relationships Unit 5 Y4 Division with remainders Unit 4 Y5 Short Multiplication and Division	Unit 6 Y4 3, 6 and 9 times table Unit 6 Y5 Factors, Multiples and Primes Unit 7 Y4 7 times tables and patterns Unit 7 Y5 Money Unit 8 Y4 Time	Unit 9 Y4 Review of Fractions Unit 9 Y5 Decimal Fractions Unit 10 Y4 Fractions Greater Than 1 Unit 10 Y5 Fractions	Unit 11 Y4 Perimeter Unit 11 Y5 Area and scaling Unit 12 Y4 Co-ordinates Unit 13 Y4 Symmetry Unit 13 Y5 Angles
Deer Class	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**

	Y6 Calculating Using Knowledge of Structures Y6 Multiples of 1000 Y5 negative numbers	Y6 Multiples of 1000 Y5 negative numbers Y6 Numbers up to 10,000,000 Y6 Draw, compose and decompose 2d and 3d shapes Y5 Angles	Y5 Short Multiplication and Division Y6 Multiplication and Division	Y5 Decimal Fractions Y6 Fractions and Percentages	Y6 Area, Perimeter, Position and Direction Y5 Area and Scaling Y6 Statistics	Y5 Factors, multiples and primes Y5 Money

SMSC in Maths

Spiritual We aim to develop deep thinking, encouraging children to question the way in which the world works; to promote the spiritual growth of our children. We are sensitive to individual needs, backgrounds and experiences. We strive to enable each of our students to explore the connections between fluency, reasoning and problem solving skills and every-day life. We promote the ability to question the mathematical world around them, fostering deep level thinking and nurturing a spiritual growth in our students. We encourage our pupils to see sequences, patterns, symmetry and scale, both in the man-made and natural worlds, using Mathematics as a tool to explore it fully. We celebrate a multi-faith community, and welcome approaches to Maths from all areas of the world.	**Moral** Within our classrooms we encourage respect and reward positive behaviour. We value listening to the views and opinions of others, particularly through mathematical discussion. We encourage all to feel free to share their reasoning through an open forum that can be challenged positively to aid learning. We provide role-play and decision making activities to allow children to explore making choices, and how their decisions have an impact, both positive and negative. This will foster a balanced morality in each individual, enabling them to see right/wrong choices in Maths. Within our community and beyond into the worldwide economy, we instil British Values through Mathematics, by educating children on financial decisions and implications on lives surrounding their own, and expose children to other financial issues around the world such as poverty in underprivileged countries, and raising money for those less fortunate.
Social In our classrooms, we seek opportunities to promote self-esteem and build self confidence. Teamwork and collaborative learning are an essential building block of learning in all areas of Maths at Castle Camps. These are nurtured through creative whole class and peer discussions, explaining and presenting ideas, giving constructive and supportive feedback, as well as many more. We support all children feeling comfortable and safe to share their ideas and opinions in Maths, enabling them to understand their own strengths and achievements, which in turn supports them on their journey to become independent and resilient learners. We believe that social interaction between children and their peers, plays a vital role in developing deeper knowledge in Mathematics, encouraging teamwork, modelled and acquired reasoning, and collective problem solving.	**Cultural** Mathematics is a fundamental part of all learning in humans, and is a universal language that reaches all cultures of our diverse community. We teach children how to spot Maths in all aspects of life, and identify patterns in the natural world. Children are exposed to approaches to Maths from around the world, and this fosters children to choose approaches to suit their liking, and be open to cultures in all areas of their learning. We celebrate Maths through praise and achievement for all, regardless of progress or achievement. Every step counts in our community, big or small, and we champion this nature in each student.