

St Vincent De Paul R.C. Primary School, Knutsford

Mission Statement:

Believe, Trust and Be Ready

“That they may have life, and to the full” John 10:10



Maths Curriculum



Maths Curriculum Design

This document should be read alongside the Maths policy, Calculation policy and Maths Handbook.

Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. It is integral to all aspects of life and, with this in mind, we endeavour to ensure that children develop a positive and enthusiastic attitude towards Mathematics that will stay with them.

Intent

- To foster within children, a positive attitude to Mathematics as an interesting and attractive part of the curriculum.
- For children to develop the ability to think clearly and logically, with confidence, flexibility and independence of thought, and to express their understanding both in written form and orally.
- For children to develop a deeper understanding of Mathematics through a process of enquiry and investigation, with specific focus on the skills of reasoning and problem solving.
- For children to develop an understanding of the connectivity of patterns and relationships within Mathematics.
- For children to develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of Mathematics in the wider world.
- For children to develop the ability to use Mathematics as a means of communicating ideas.
- For children to develop an ability and inclination to work both alone and cooperatively to solve mathematical problems by choosing the most effective and efficient strategies.
- To develop within our children, personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.
- To develop within our children, an appreciation of the creative aspects of Mathematics and an awareness of its aesthetic appeal.
- For teachers to provide a stimulating environment and adequate resources so that pupils can engage with the subject matter and develop their mathematical skills to their full potential.
- For teachers and children to be aware of Mathematics in other areas of the curriculum.

Implementation

Our objectives are in line with the key objectives outlined in the Early Years Outcomes and the National Curriculum Mathematics Document 2014. Whilst we do not follow a particular scheme of work in terms of materials and coverage, the NCETM spine documents underpin our pedagogical approach and offer guidance so that teachers can plan and write engaging lessons that meet the needs of our children. Our medium and short term planning is supported by White Rose, Abacus and Scholastic schemes of work. Teachers will also use a variety of other resources to further enhance their teaching of specific lesson objectives.

As with any guidance, this leaves the teachers free to extend the time period over which a topic is taught should they feel that a depth of understanding has not been achieved. However, we expect all topics within the National Curriculum to have been covered to some degree over the year. Gaps will be identified in a timely manner by class teachers so that they can be addressed through same day intervention, or even by the next teacher.

How Maths is structured throughout the School

The school uses a variety of teaching styles to cater for the variety of learning styles of pupils in Mathematics lessons. Our principle aim is to develop children's knowledge, skills and understanding in Mathematics. We do this through a daily lesson that has a high proportion of whole-class and group-direct teaching. During these lessons, we encourage children to ask as well as answer mathematical questions and explain their thinking both verbally and in writing. To support children with this, teachers model the use of stem sentences for the children to use in their discussions and in their recording of work.

Children have the opportunity to use a wide range of concrete and abstract resources such as number lines, number squares, digit cards and small apparatus to support their work. Mathematical dictionaries are available in all classrooms. Children use ICT in Mathematics lessons where it will enhance their learning, as in modelling ideas and methods.

In all classes there are children of differing mathematical ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work; in others through providing more concrete or pictorial resources for learners requiring more support; and in other lessons by organising the children to work in pairs on open-ended problems or games.

We use Teaching Assistants to provide appropriate support to individuals or to groups of pupils – this also includes challenging our most able pupils through 'Challenge Group' interventions. Teaching Assistants within St Vincent's are viewed as an important 'asset' to the school and, as such, are appropriately involved in the planning and delivery of the Mathematics curriculum. Their knowledge, skills and understanding are constantly updated through involvement in school-based INSET and other training opportunities.

At St. Vincent's we believe that good mathematics teaching is when teachers (and other school staff):

- Demonstrate secure subject and pedagogical knowledge in order to inspire children and build on their understanding;
- Plan lessons effectively taking children's prior learning and current assessment into account;
- Include elements of fluency, reasoning and problem solving in every lesson;
- Adapt their teaching in response to a variety of assessment information;
- Have a good knowledge of the common misconceptions and plan to address them through daily planning;
- Introduce subject content progressively and have high expectations of the pupils;
- Provide adequate time for practice to embed the pupils' knowledge, understanding and skills securely;
- Use manipulatives appropriately, with all children, with a clear rationale for why the manipulative will support pupils to understand mathematics;
- Create lessons that are designed to consolidate, build upon and extend learning for all children;
- Emphasise the connections between different aspects of mathematics;
- Use questioning effectively to gauge and extend children's skills, knowledge and understanding;
- Orchestrate productive classroom discussions by including regular opportunities for pupils to explain their approaches to mathematical tasks to themselves, the teacher and other pupils;
- Ensure that effective support is given in order that the children make good progress;
- Whilst we try to foster a 'keep up not catch up' mentality, we work rigorously to identify and support any pupil who is falling behind and enable almost all to catch up;

- Use precise mathematical language when examining mathematical structures;
- Use resources effectively, including other adults, to support children’s learning;
- Use technology effectively in order to support children’s learning;
- Mark work, identifying successes and next steps where appropriate so that children can improve their knowledge, understanding and skills. A good balance between oral and written feedback allows the children to effectively improve their learning;
- Link mathematics to other areas of the curriculum where appropriate;

Impact

As a result of our Maths teaching at St. Vincent’s you will see:

- Children with a positive and enthusiastic attitude towards Mathematics.
- Children who can apply knowledge, skills and ideas in real life contexts outside the classroom, and are aware of the uses of Mathematics in the wider world.
- Happy, confident and engaged children who are challenged appropriately.
- Children who can talk about their learning and knowledge in this subject.
- Lessons that use a variety of resources to support learning.
- Learning that is tracked and monitored to ensure all children make good progress.

Long Term Plans

Year Group	Area of Maths to be taught in each term		
	Autumn	Spring	Summer
Reception	<p>Number: Match and sort Compare amounts Representing 1, 2 & 3 Comparing 1, 2 & 3 Composition of 1, 2 & 3 Representing numbers to 5 One more and less</p> <p>Measure, Shape and Spatial Thinking: Compare size, mass & capacity Exploring pattern Circles and triangles Positional language Shapes with 4 sides Time</p>	<p>Number: Introducing zero Comparing numbers to 5 Composition of 4 & 5 6, 7 & 8 Making pairs Combining 2 groups 9 & 10 Comparing numbers to 10 Bonds to 10</p> <p>Measure, Shape and Spatial Thinking: Compare mass & capacity Length & height 3D-shape Pattern Time</p>	<p>Number: Building numbers beyond 10 Counting patterns beyond 10 Adding more Taking away Doubling Sharing and Grouping Even and Odd Deepening understanding Patterns and Relationships</p> <p>Measure, Shape and Spatial Thinking: Spatial Reasoning (1) Match, rotate, manipulate Spatial Reasoning (2) Compose and Decompose Spatial Reasoning (3) Visualise and build Spatial Reasoning (4) Mapping</p>

<p>1</p>	<p>Number: Place Value (within 10) Number: Addition and subtraction (within 10) Geometry: Shape Number: Place Value (within 20)</p>	<p>Measurement: Length and Height Number: Addition and Subtraction (within 20) Number: Place Value (within 50) (multiples of 2, 5 and 10) Measurement: Weight and Volume Measurement: Time</p>	<p>Number: Multiplication and Division (Reinforce multiple of 2, 5 and 10) Number: Fractions Geometry: Position and Direction. Number: Place Value (Within 100) Measurement: Money</p>
<p>2</p>	<p>Number: Place Value Number: Addition and subtraction Measurement: Money Geometry: Shape Number: Multiplication and division</p>	<p>Number: Multiplication and division Statistics Fractions Measurement: Time Measurement: Length & Height</p>	<p>Measurement: Mass/Capacity/Temp Geometry: Position & Direction Measurement: Length & Height Geometry: Position & Direction Measurement: Time</p>
<p>3</p>	<p>Place value Addition and subtraction Multiplication and division</p>	<p>Multiplication and Division Measurement- money Statistics Measurement: length and perimeter Fractions</p>	<p>Fractions Measurement- time Geometry -property of shapes Measurement -mass and capacity</p>
<p>4</p>	<p>Number: Place Value Number: Addition and Subtraction(include Money) Measurement: Length and Perimeter Number: Multiplication and Division</p>	<p>Number: Multiplication and Division Measurement: Area Number: Fractions Number: Decimals</p>	<p>Number: Decimals Measurement: Money Measurement: Time Statistics Geometry: properties of Shape Geometry: Position & Direction</p>

	Measurement: Money		
5	Place value and Number (Roman Numerals etc) Addition and subtraction Statistics Multiplication and division Perimeter and area	Multiplication and division Fractions Decimals Percentages	Decimals Geometry- Properties of Shapes Position and Direction Measurement- Converting Units and Volume Calculations – 4 operations
6	Place value and Number (Roman Numerals etc) Calculations – 4 operations inc. BODMAS Fractions inc. decimals and percentages Ongoing in every ½ term: calculations, arithmetic inc. fractions and percentages, mental maths etc.	Finish Fractions Measure- converting units Measure – perimeter, area and volume Shape/Geometry & Position and Direction Ongoing in every ½ term: calculations, arithmetic inc. fractions and percentages, mental maths etc.	Algebra Data handling, Statistics and Ratio Revision Problem solving/Investigations Ongoing in every ½ term: calculations, arithmetic inc. fractions and percentages, mental maths etc.

Progression

Each class has Maths Yearly Objective Maps which show progression.