St. Oswald's Catholic Primary School

Maths Policy

Mission Statement

This is St Oswald's Catholic Primary School's policy for Mathematics and is set within the context of the whole school aims and Mission Statement:

Together with Jesus, we will learn and grow in Faith.

The policy should be read in conjunction with the National Curriculum and the Long Term Numeracy Plans provided by the Liverpool Maths Consultancy team. These set out the rationale for teaching each area of the Mathematics Curriculum and specify the skills that will be developed for the pupils in each year group.

Aims

Mathematical skills are essential to everyday life. Our aim is to maximise the individual potential of children's understanding and knowledge. Teachers encourage children to develop skills using an interactive approach, providing opportunities for them to experiment with their ideas, test the reasonableness of their answers and to question what they do not understand. It is taught in a way which enables children to make sense of the world around them by understanding relationships, patterns and changes in, quantity, space, shape and measure in everyday life.

Our aims in teaching Mathematics are that all children will:

- Enjoy the subject and study it with confidence and a sense of achievement.
- Become fluent in the fundamentals of mathematics 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.
- Solve problems by applying their mathematics to a variety of problems with increasing sophistication including breaking down problems into a series of simpler steps and persevering in seeking solutions.
- To develop an understanding of the connectivity of patterns and relationships within mathematics.
- Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations and developing an argument, justification or proof using mathematical language
- 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.
- To develop personal qualities such as perseverance, independent thinking, cooperation and self-confidence through a sense of achievement and success.
- To teach calculations in line with the school Calculation Policy

What is Mathematics?

Mathematics is a creative and highly inter–connected discipline that has been developed over centuries, providing the solutions 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. (National Curriculum 2014)

Mathematics involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measures. (Statutory Framework for the Early Years, 2013)

Principles of the Teaching and Learning of Mathematics

Mathematics is a core subject in the National Curriculum. The fundamental skills, knowledge and concepts of the subject are set out in the National Curriculum programmes of study, which are organised into distinct domains although pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should apply their mathematical skills and knowledge to other subjects across the curriculum.

Children in Nursery and Reception follow the Foundation Stage Curriculum for Mathematics, as they make progress towards and where appropriate beyond the Early Learning Goals. Areas covered are: Numbers and Shape, space and measures.

Strategies for the Teaching of Mathematics

At St. Oswald's Catholic Primary School, Y1-Y6 use the Long Term Numeracy Plans as advised by the Liverpool Maths Consultancy team, which ensure the coverage, challenge and strategies of the New National Curriculum (2014). Continuous specific Number objectives and problem solving objectives run throughout all three terms. The unit plans also follow the LEA's guidance on calculation strategies and ensure progression through the four calculations. Each half-term, there is a focus on one or two mathematical themes. Teachers will use these plans as their medium term planning and will plan weekly, based on these unit plans to ensure differentiation, challenge and coverage of the NC objectives.

Half termly overview

For the specific objectives for each year group's topic, please refer to the Liverpool Maths Plans

Term Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
1	**Number** Number and Place Value	**Number** Addition and Subtraction	**Number** Multiplication and division Fractions	**Measurement**	**Geometry** Properties of shape Position and direction	**Revision and Reinforcement of targeted areas**
2	**Number** Number and Place Value Addition and Subtraction	**Number** Multiplication and division Fractions	**Measurement**	**Geometry** Properties of shape Position and direction	**Statistics**	**Revision and Reinforcement of targeted areas**
3	**Number** Number and Place Value Addition and Subtraction	**Number** Multiplication and division Fractions Decimals – Tenths	**Measurement** Perimeter Time Money Measurement	**Geometry** 2D and 3D Shapes Angles Properties of shape	**Statistics** Bar Charts Pictograms Tables	**Revision and Reinforcement of targeted areas**
4	**Number** Number and Place Value Addition and Subtraction	**Number** Multiplication and division Fractions Decimals	**Measurement** Conversions in measurement Perimeter Area Money Time	**Geometry** 2D and 3D shapes Symmetry Angles Co-ordinates Translation	**Statistics** Discrete and continuous data Bar charts Pictograms Tables Time graphs	**Revision and Reinforcement of targeted areas**
5	**Number** Number and Place Value Addition and Subtraction	**Number** Multiplication and division Fractions Decimals Percentages	**Measurement** Conversions in measurement – metric and imperial Perimeter Area Volume	**Geometry** 2D and 3D shapes Properties of rectangles and polygons Angles Reflection and translation	**Statistics** Line Graphs Tables and Timetables	**Revision and Reinforcement of targeted areas**

6	**Number** Number and Place Value Addition and Subtraction Multiplication and division	**Number** Fractions Decimals Percentages Ratio and Proportion Algebra	**Measurement** Conversions in measurement - metric and imperial Area Perimeter Volume	**Geometry** 2D and 3D shapes Circles Angles Coordinates Reflection and Translation	**Statistics** Line Graphs Pie Charts Averages - Mean	**Reinforcement of targeted areas** **KS2 – KS3 Transition Units**

Special Educational Needs

As in all other areas of the curriculum, additional provision will be made for gifted/talented children or those with special educational needs. This may take the form of work differentiated by task or outcome, additional support or where there is physical disability specific equipment. The class teacher will be responsible for identifying and planning for those needs with help from the Maths Co-ordinator and/or SENCO if applicable

Dyslexia

If a pupil is experiencing difficulties relating to dyslexia they will be supported in accordance with the school's dyslexia policy.

Equal Opportunities

St Oswald's Catholic Infant School believes that

- equality of opportunities for all those in our care is paramount and all our policies, procedures and practice will reflect the rights of all children and adults including those with special educational needs or a disability, all ethnic and cultural groups and those with English as an additional language.
- We have a zero tolerance attitude towards any form of discrimination and will challenge any inappropriate attitudes and practices.

The principle focus of mathematics teaching in Key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations including with practical resources e.g. concrete objects and measuring tools. We use a whole-school approach in using Numicon as a basis to maths teaching. This is introduced within the Early Years and is embedded within KS1. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use related vocabulary. Teaching should also use a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. Pupils should read and spell mathematical vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

In Key Stage One, basic skills lessons are taught three times are week, consisting of 10 minutes. These are the objectives previously taught earlier on. The aim of the basic skills lessons is to revisit, apply to another area of the curriculum and ensure progression.

Teaching is based on the following key principles:

- dedicated Mathematics lessons every day;
- direct teaching and interactive oral work with the whole class and groups;
- an emphasis on mental calculation and rapid recall to develop fluency;
- appropriate differentiation, with all pupils engaged in Mathematics relating to a common theme
- the principles of assessment for learning

Teaching time

The daily lesson for Maths should last between 40-60 minutes in Key Stage 1.

In the Foundation Stage, children learn Maths in a wide range of contexts both indoors and outdoors. Continuous provision allows children the opportunity to follow their interests and explore different aspects of Mathematics independently. Maths areas are established in the early years for children to access and support their learning.

All classrooms will have a Numicon Challenge area, which supports the current learning in maths. This should be differentiated for all children to access.

It is important to find time in other subjects for pupils to develop and apply their Mathematical skills appropriate to their learning needs and development. There should be opportunities for drawing mathematical experience out of a wide range of children's activities. Mathematics contributes to many subjects of the primary curriculum, often in practical ways, which will provide opportunities for discussion and for applying and using Maths in real contexts.

Methods of Teaching

A teacher should aim to focus on direct teaching and questioning of the whole class, a group of pupils, or individuals within guided group work.

Good direct teaching is achieved by balancing the following elements: directing, instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating pupils' responses and summarising. Children must be encouraged to explain their thinking, discuss their work, hypothesise and justify with a strong emphasis on the development of oral skills and good learning attitudes. They are encouraged to take part in the lesson, take risks, ask questions, make mistakes and learn from them, reason and explain their thinking in a practical and logical way.

Year 1 and 2 children work in ability groups and in Y2, they have Maths Setting once a week .

Classroom Assistants work under the direction of the teacher to support the teaching of mathematics and also provide extra help and support for children with particular needs, by means of differentiated activities, following each groups' target in Maths.

Strategies for Ensuring Progression and Continuity

Planning in Mathematics is a process in which all teachers and teaching assistants are involved.

Year Group planning meetings are used to discuss the curriculum, expectations, pedagogy, assessment and to ensure consistency of approach and of standards.

Detailed weekly lesson plans are produced by individual teachers to meet the needs of all the children in their class and are monitored by the subject leader and Senior management team.

Day to day assessment provides information about progress and attainment and is used to plan the next steps. Teaching assistants feedback to teachers how groups of children progressed in the lesson, which will inform next day's planning.

The Role of the Mathematics Subject Leader is to:

Take the lead in policy development and the production of long and medium term planning, designed to ensure progression and continuity in Mathematics throughout the school.

Support colleagues with planning and teaching as well as assessment and record keeping activities.

Analyse data from national and school assessments.

Take responsibility for the purchase and organisation of mathematical resources.

Keep up-to-date with developments in Mathematics education and disseminate information to colleagues as appropriate.

Feedback to pupils about their own progress in Mathematics is achieved through the marking of work and discussion. It aims to be encouraging, supportive and to move the child forward. Work scrutiny is carried out regularly.

Refer to marking policy.

Assessment in Mathematics

Statutory assessment is carried out at the end of the key stage in line with STA Assessment and reporting arrangements. Within the EYFS all children are assessed against the Early Learning Goals or N.C at the end of Reception. All children in Key Stage One who are registered as having SEN will be assessed using PIVATs. (refer SEN policy). Regular moderation sessions are held within and across year groups. Staff also attend LA meetings and work with LA consultants to ensure accuracy in assessments.

All year groups have half-termly Maths assessments, which teachers will track their progress on and target key areas. Year 2 and year 6 formally assess in Maths using SATS at the end of KS1. Following

a 6-7 week target-getting timetable, teachers will use different teaching and learning strategies to help support and embed the children's progress in that area of mathematics (see separate sheet) Children are aware of their target and are introduced to it at the start of each half-term. Through AFL, they become confident in their learning and progress and can self-assess at the end of the target with the teacher to see if they have achieved this target.

Computing and use of ICT

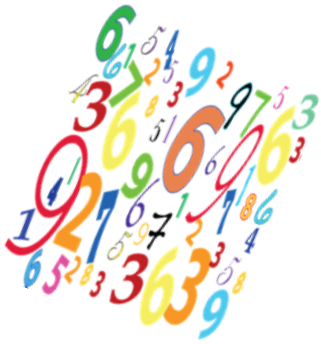
ICT is an integral aspect of mathematics' teaching and learning supporting:

data handling

modelling

the development and understanding of a range of mathematical concepts

For further information refer to Computing policy.



Health and Safety Issues in Mathematics

- correct use of all equipment
- ICT safe use

Success Criteria

To ensure each child reaches their fullest potential in the knowledge and application of skills in Mathematics.

To support each child in developing an understanding of Mathematics, according to their age and ability.

To develop children's enthusiasm, interest and confidence in Mathematics.

To have provided a wide range opportunities necessary for children to develop mental competence and thinking skills.

To have met and fulfilled the needs and requirements of "The National Curriculum. Mathematics," published in 2014 and the Foundation Stage Curriculum.

Reviewed

This policy will be reviewed and updated biannually.

Reviewed by Curriculum & Standards Governors committee Oct 2018