St. Mary's Catholic Primary School

Mathematics Policy

September 2024

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Rationale

'Mathematics is a creative and highly inter-connected 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'. (National Curriculum 2014)

At St Mary's Catholic School we recognise that mathematics helps children to make sense of the world in which they live. It is used to make sense of and communicate information and to tackle a wide range of practical and real-life problems. Our ambition is that all children are well prepared for the next stage of their education.

The aim of our mathematics policy is to give children:

- a positive attitude towards mathematics and an awareness of the relevance of mathematics in the real world
- competence and confidence in mathematical knowledge, concepts and skills
- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and an ability to work both independently and in cooperation with others
- an ability to communicate mathematics
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and experiment

Teaching and learning

At St. Mary's we use the White Rose Schemes of Learning. These are designed to support a mastery approach to teaching and learning and have been designed to support the aims and objectives of the new National Curriculum. The lessons and resources:

- have number at their heart. A large proportion of time is spent reinforcing number to build competency
- ensure teachers stay in the required key stage and support the ideal of depth before breadth
- ensure students have the opportunity to stay together as they work through the schemes as a whole group
- provide plenty of opportunities to build reasoning and problem solving elements into the curriculum

The schemes build competency by taking the 'Abstract, Concrete and Pictorial' approach:

- Concrete – children have the opportunity to use concrete objects and manipulatives to help them understand what they are doing.
- Pictorial – alongside this children use pictorial representations. These representations can then be used to help reason and solve problems.
- Abstract – both concrete and pictorial representations support children's understanding of abstract methods.

The White Rose resources are full of purposeful practice opportunities which embed the concrete – pictorial – abstract approach throughout. They are designed and written specifically for children in particular year groups and get them thinking about the relevant concept. The lessons and worksheets interweave content as appropriate and encourage mathematical discussion and thinking. They include variation to help children spot patterns and build fluency, reasoning and problem solving skills.

Each class teacher is responsible for the mathematics in their class in consultation with and with guidance from the mathematics subject leader. Each class has a daily lesson of between 45 and 60 minutes for mathematics, with opportunities to apply their mathematical skills in other curriculum subjects. (Teachers of the EYFS ensure the children learn through a mixture of adult led activities and child initiated activities both inside and outside of the classroom). Each lesson may differ slightly, however they generally consist of

the following: children completing a 'Flashback' for their year group in their 'Flashback' book, which revises previous work; teacher guided input; an independent/supported activity, where the children apply what they have learnt during the teacher input; a summary of the learning or application of the knowledge to a problem at the end of the lesson.

Long Term Planning:- Teachers follow the long term plan set out in the White Rose scheme of learning, which is broken down into blocks of learning, adapting these to suit the needs of their class if necessary.

Medium term planning: - The schemes are broken down into terms and then blocks of learning. There are then weekly overviews showing what objectives need to be taught each day.

Short term planning:- Individual lesson plans or weekly plans are written by teachers based on the overviews, PowerPoints and lesson videos provided on the White Rose website.

Differentiation

White Rose do not produce multiple versions of each worksheet. Instead, the worksheet tasks are differentiated in many ways, such as:

- altering the level of teacher/peer support given
- varying the amount of concrete support available

The start of every worksheet is accessible to all. The questions get progressively more challenging, so some students will naturally get further through them than others. All children have access to concrete resources in the 'Maths Boxes' on their tables. White Rose Maths Mastery resources and 'Fast Finishers' mastery resources are also used to stretch and challenge those children who finish early.

Homework

Mathematics homework is set in accordance with the school's homework policy; in mathematics it is linked to the area which the children have most recently studied and its aim is to consolidate and extend their learning in that area.

Use of ICT

The effective use of ICT can enhance the teaching & learning of mathematics when used appropriately. When considering its use we take into account the following points:

- ICT should be used in lessons only if it supports good practice in teaching mathematics
- Any decisions about using ICT in a particular lesson or sequencing lessons must be directly related to the teaching and learning objectives for those lessons.
- ICT should be used if the teacher and/or the children can achieve something more effectively with it than without it.

Teaching Assistants/Support Staff

Assistants are actively involved in teaching small groups within lessons and in providing intervention sessions. They support all groups in the classroom, enabling the teacher to also work with all groups on a weekly basis. During lessons they are expected to offer sensitive support and modify tasks, materials and teaching resources as required. They spot misconceptions and gaps in learning, and take responsibility for assessing pupils in their groups, and help to identify the next steps and plan subsequent activities with the class teachers. In conjunction with the class teacher they assist in reviewing pupils' progress and helping identify and supporting personal problems that present barriers to learning. Furthermore, teaching assistants are expected to offer verbal feedback

to children and indicate the level of support they have given in their books (see the school's marking policy for details).

Marking

Marking of children's work is essential to ensure they make further progress. All work is marked against success criteria, in line with the school marking policy, and includes next steps (where appropriate). Work is to be marked once completed before a child starts the next piece of work. Children are encouraged and given time to read teachers' comments, make corrections and complete their next steps. Work in mathematics can generate a great deal of marking and it is recognised that it is not always desirable to mark every piece of work. The children themselves can mark exercises which involve routine practice with support and guidance from the teacher – particularly in Year 5 and 6. The quality of marking is crucial to moving a child's learning forward, so indications of where the errors have occurred, together with an explanation of what went wrong are essential (for further information see the school marking and feedback policy). 'Next Steps' comments are also used to move children on in their learning.

Assessment

Teachers make regular assessments of each child's progress and record these systematically. A record of each child's attainment against the key objectives for the appropriate year group is recorded within each class' assessment file.

Short term:- Children's class work is assessed frequently through : regular marking; analysing errors; questioning; discussion; plenaries ; informal tests; 'Flashback' slide questions. This is used to inform future planning and teaching.

Lessons are adapted readily and short term planning is evaluated and annotated in light of these assessments. Each block of learning within White Rose has an end of block assessment, which can be used to assess the children's understanding and progress at the end of a unit of work. Pre-assessments can be carried out to identify gaps in knowledge and check pupils prior understanding of a topic by using the previous year group assessment and analysing the results.

Long-term/Medium-term :- Termly assessments are to be carried out across the school using the assessment materials for each year group. At the end of each half-term an assessment week is held in which teachers can use assessments or tasks to identify and update children's progress against the school's assessment framework; at the end of a full term, all teachers use Pira and Puma age standardised test for the same purpose. These are used alongside judgements from class work to form a teacher assessment for each child. These judgements are then passed onto the Headteacher to be fed into the whole school tracking system. From this data, pupil progress meetings are held to identify groups of children who are not on track and to discuss interventions to support them.

At the end of Year 2 and Year 6, children complete SATS assessments to compare progress within the school, to the progress of children nationally.

In Year 4 children sit the Multiplication Check to assess their knowledge and understanding of times table facts to 12x12.

Self –assessment: - where possible, children are encouraged to self-assess their own work or understanding; this can take a number of forms, such as using 'thumbs up/down' etc.

Special Educational Needs

Children who require additional support are identified on both the year groups' provision maps and the teachers' mathematics plans. Needs for these children ar

e met through adapted activities, concrete resources and adult support when appropriate. This can take place both during the mathematics lesson and through an additional intervention.

Pupil's records of work

Children are taught a variety of methods for recording their work and they are supported in choosing the most appropriate and convenient method of recording. They are encouraged to use mental strategies before resorting to a written method and to work tidily and neatly when recording their work.
In Years 1-6 children record their work using the White Rose activity sheets which are filed in mathematics folders. Extension activities are completed on squared paper and then added to the children's folders behind their main activity sheet.'Flashback' books are used to record the children's answers to the 'Flashback' slides at the start o each lesson.
EYFS record informally within the setting. For example: - on the playground; on whiteboards; using jigsaws ; physically ordering numbers . Staff also use photos to ensure records of each child's achievements are maintained. They also use Master The Curriculum worksheets/resources where necessary, as these closely follow the White Rose 'Small Steps' of progression.

Multiples Marathon and Mental Mathematics Tests

Multiples Marathon tests are carried out each week to improve the children's knowledge, understanding and fluency of times tables. Rising Stars Mental Mathematics tests are carried out each week to develop the children's mental calculation and problem-solving skills. They also reinforce and re-cap topics which have been taught throughout the year.

Staff responsibilities

Headteacher :

- lead, manage and monitor the development of mathematics in the school

- support the mathematics subject leader in taking mathematics forward
- carry out annual audits, set targets, review the action plan and monitor its progress
- ensure that arrangements are made to meet the training needs of teachers and other adults involved
- manage the school's allocation of resource funding, including leadership time
- ensure parents are informed and involved

Mathematics Subject leader:

- assist the Head teacher in carrying out audits, reviewing and amending of the action plan
- prepare, organise and provide school based INSET meetings, workshops and staff meetings.
- assist with the monitoring of teaching and planning and the analysis of SATs results
- preparation, review and implementation of school policy documents and guidelines taking into account the recommendations of the New National Curriculum and EYFSP
- liaison with staff in school – working alongside them giving guidance and support
- introduce, organise and maintain the school's mathematics resources
- take responsibility for their own professional development by attending courses and keeping up-to-date with current developments within mathematics education
- liaise with mathematics subject leaders in other schools through attendance of local network meetings
- to provide an example to the school by taking a lead in teaching mathematics and classroom organisation
- maintain contacts beyond school with numeracy consultants, advisory staff and other outside agencies

- ensuring equality of opportunity for all pupils.

SENCO:

- Support and work co-operatively with the mathematics subject leader to implement and develop mathematics throughout school
- organise and providing INSET for staff special needs mathematics issues
- advise staff on how best to support children with varying needs during mathematics lessons so that they meet the expectations of the yearly teaching programmes where possible
- advise staff on the inclusion of mathematical objectives in IEPs for children with SEN in mathematics
- help to ensure that children who are capable of catching up their peer group do so as quickly as possible
- advise staff on the effective use of teaching assistants and helping support staff to develop their role.

Class Teachers: Class teachers are responsible for the planning, teaching and assessment of the daily mathematics lesson and the organisation of additional adults in the classroom. They are also responsible for implementing the contents of this policy within their classroom.

Support Staff: HLTAs and TAs work with the children to support the teaching of mathematics under the direction of the class teacher.

Staff development

All staff are encouraged to develop, assess and improve their teaching of mathematics. Whenever possible we:

- encourage staff to attend mathematics courses

- make provision for the mathematics subject leader to work alongside colleagues in the classroom or shared areas
- provide school based INSET
- involve staff with policy and decision making
- provide the opportunity to learn from colleagues expertise
- encourage parental involvement at home and in school based workshops with their children

Resources

All classes have 'Mathematics' resource boxes with concrete resources inside to support the children when completing the White Rose activity sheets. Additional resources (i.e. fraction walls, place value grids etc. are used at a teacher's discretion. Resources which are not used or required regularly are stored centrally in the maths area.

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