

St. James the Great School RC Primary and Nursery School



Mathematics Policy

Date Created: Spring 2010
Date Reviewed: Spring 2015

Rationale

From St. James the Great Mission Statement:

“...the school will provide a framework within which all pupils are enabled to develop the highest possible level of achievement, fulfilling their academic, moral, physical and spiritual potential.”

Aim

The overall aim is to encourage children to develop their mathematical education along a broad range of experiences whilst ensuring progression.

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 have conceptual understanding and are able to recall and apply their 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.

Objectives

At St. James the Great all children will have equal access to a curriculum, which will:

- Extend each child to his or her potential, building on previous experiences and recognising individual capabilities.
- Encourage the children to have a positive attitude towards mathematics and foster interest, confidence and enjoyment in the subject.
- Enable children to achieve a high standard in mathematics and a range of other mathematical skills and apply these skills with confidence and understanding when solving problems.
- Provide opportunities to apply mathematical learning in everyday situations and provide a range of skills which can be applied in later education and throughout life.
- Provide the children with appropriate experiences in order to develop confidence and fluency in the use of mathematical language and concepts.
- Enable children to have a sense of the size of a number and where it fits in the number system and know by heart number facts such as number bonds, multiplication and derived division facts, doubles and halves.

- Enable children to calculate accurately and efficiently, both mentally and with paper and pencil, drawing on a range of calculation strategies and understanding of the required operation.
- Recognise where it is appropriate to use a calculator and to be able to do so effectively.
- Encourage children to explain their methods and reasoning using correct mathematical terms and to judge whether their answers are reasonable and to have strategies for checking them.

Mathematics in the Foundation Stage

In the Foundation Stage the children will meet mathematics through play and real life experiences, promoting an enjoyment and curiosity about all aspects of the subject. The Foundation curriculum will be based upon ‘The Early Years Foundation Stage’ practice guidance. Planning will ensure progression and to also meet the needs of individual children. The children will be supported in developing their understanding of Problem Solving, Reasoning and Numeracy in a broad range of contexts in which they can explore, learn, practise and talk about their developing understanding.

The work undertaken will be largely practical with some recording as appropriate.

Organisation in Key Stage 1 and Key Stage 2

Year 1 mathematics lessons are class based. Arrangements in year two will be either class based or grouped across the year in line with the needs of the particular cohort. Key Stage 2 children are grouped across the year group according to individual needs; the children are regularly assessed and moved to meet their needs.

Children will be taught mathematics based upon the structure and planning of the National Curriculum. Learning objectives are always shared with the class and success criteria made clear. Children will record learning objectives as appropriate in books or on worksheets.

The daily mathematics lesson may include:

- **A Mental and Oral Starter** – Warm up, practise and recall of skills involving the whole class. The success criteria, or WILF, for the day will be shared here.
- **A Main Teaching Activity** – Direct teaching through demonstrating, modelling and discussion. Teachers use a variety of visual, aural and kinaesthetic resources and mathematical language. Children participate actively in activities related to the learning objective. Group or paired work may take place as part of the main teaching session, allowing children to use mathematical vocabulary, and discuss and explore mathematical concepts with their peers.
- **A Plenary** – Children are encouraged to reflect on their learning and their development of mathematical skills, and to apply them to a range of contexts. Children are encouraged to reflect against the success criteria or WILF for that day.

All mathematics lessons are based upon common objectives for the group or class. Within each part of the mathematics lesson there is suitable differentiation to meet the needs of the whole class, group or individual children, including where appropriate, expectations relevant to different year groups.

Planning

The National Curriculum provides long term planning. Medium term planning is completed once a half term, and is monitored by the Mathematics Leader and the Curriculum Leader to ensure appropriate coverage of the range of topics within mathematics throughout the year. Short term planning is completed weekly and includes teaching and learning activities, differentiation, focus support and vocabulary.

A system of highlighting successfully covered and partially covered key objectives allow for clarity of coverage and are passed from teacher to teacher, using the statements on Target Tracker. This will be in place for Year groups 1, 3, 4 and 5 by the end of Spring 2015, and for Years 2 and 6 by the end of Autumn 2015.

Assessment

Children are actively encouraged to participate in self-assessment of their progress in mathematics.

Short Term Assessment takes place during the lesson as questions and answers, and the evaluation and marking of children's work. Notes are kept on children who do not achieve, or exceed, learning objectives at the bottom of the weekly planning sheet to inform short and medium term planning.

Medium Term Assessment takes place at the end of units of work and is recorded on Target Tracker as formative assessments against the National Curriculum statements.

These assessments are reviewed at least half termly and provide a record of the children's progress. Half termly Rising Stars Maths tests are used to support these teacher assessments.

Summative assessment takes place at the end of each academic year and will be passed on from class to class from Reception onwards. Reception will complete PIPS (Performance Indicators in Primary Schools) on entry, and at the end of reception year. Years 2 and 6 undertake National SATs tests, with end of year tests being brought in from Summer 2015 to replace the Optional SATs previously undertaken

An analysis of the children's achievement will be used to inform school focus of short and long term curriculum targets, INSET and resourcing issues, as well as to target children for appropriate intervention packages.

Targets are set for individual children within a group and are recorded on Target Tracker and in the class assessment file.

Inclusion

Children with special educational needs in mathematics, those that require extra support to achieve national targets and those with exceptional mathematical ability, will be identified through assessment and tracking.

SEN support plans, the use of appropriate resources including Learning Support Assistants and Pupil Support Assistants, will support children who are not achieving set targets.

Appropriate resources are available to support the more able.

Children's Recording

At St. James the Great we place emphasis in our teaching of mathematics on the importance of discussion and the development of thinking and reasoning skills. Children will be actively encouraged to use pictures, diagrams and written methods to support and show their thinking. This will include the development of jottings, empty number lines and informal methods on route to the use of compact methods for addition, multiplication, subtraction and division.

The school guidance for the teaching of written calculations is attached to this policy.

The children will record their work in numeracy exercise books with squared paper from year 1 onwards. If children complete work on worksheets or graph paper these should be kept in a folder for each child, or stuck into mathematics books as appropriate.

Children should be encouraged to maintain a high standard of presentation in their books, but the format of recording should be appropriate to the age of the children and the task at hand.

Marking

Mathematics will be marked in accordance with the school marking policy.

Cross Curricular Links

Computing: It is aimed that teachers will incorporate computing where appropriate in mathematics lessons.

Mathematics specific computing resources will be used in small groups and whole class teaching sessions when beneficial to support the objectives.

Calculators should not be used as a substitute for good written and mental arithmetic. They will be introduced towards the end of Key Stage 2 onwards to support children's conceptual understanding and exploration of more complex number problems, if written and mental arithmetic are secure.

Wherever possible, skills and concepts learned within the mathematics lessons are followed up and reinforced within other curriculum areas particularly in science and design and technology.

Resources

Teachers plan from a wide range of published resources to suit their class needs. These resources are kept in central storage and support in their use is offered by the Mathematics Leader.

Each class is equipped with a set of teaching resources to support an emphasis on resource based teaching. Specialist equipment is kept in central storage. Resource needs are audited annually and purchased in order of priority.

Homework

Children are given one maths homework activity per week in Year 1, rising to two per week in Year 2 and beyond. There will be a planned progression in the tasks set with the emphasis of parental involvement and games in KS1 through to longer, more independent tasks by the end of KS2. One of the set homework pieces should be from the Mental Arithmetic scheme which is followed from Year 2 onwards. Homework will be linked to current teaching.

Parental/Carer Involvement

Parents and carers will be kept informed of children's achievement and curriculum targets through reports, homework diaries and parent consultation evenings.

Workshops and information events will be used to support parents and carers in their understanding of mathematics teaching and disseminating ways to support children learning mathematics at home. Parental involvement is seen as crucial to success at school.

The Role of the Mathematics Leader

The Mathematics Leader will work closely with the Senior Leadership Team, staff and the Mathematics Governor to plan for and sustain improvement in the teaching and learning of mathematics.

The Mathematics Leader will:

- Lead staff development through developing their confidence and expertise with INSET, staff meetings, support and advice.
- Take the lead in policy development and the production of schemes of work designed to ensure progression and continuity in mathematics throughout the school.
- Support colleagues in their development of detailed work plans and implementation of the scheme of work and in assessment and record keeping activities.
- Monitor progress in mathematics and advise the head teacher and SLT on action needed.
- Monitor planning, teaching and learning and disseminate good practice.
- 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.

This policy has been shared with the Governing Body of the school.

Next Policy Review Date: Spring 2016