

ST ALOYSIUS' CATHOLIC JUNIOR SCHOOL

MATHEMATICS POLICY

OUR MISSION STATEMENT

Through Jesus, we learn, love and grow together.

INTRODUCTION

This policy is a working document and outlines the management of the teaching and learning of Mathematics in St Aloysius Junior School, in accordance with the school's Mission statement.

The policy represents current practice, the views of the teaching staff and is supported by the Governors.

THE PURPOSE OF STUDY

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.

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.

The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

SUBJECT ORGANISATION AND PLANNING

Teachers use a Jigsaw Overview (Journey Planner) for planning/teaching mathematics to ensure that all parts of the National Curriculum Programme of Study are taught. This has been created in partnership with Eleanor Palmer Primary School and Camden. It includes all the new curriculum objectives for each year and acts as a pacer. It provides teachers with destinations and a suggested time scale in order to reach them.

For each year group the Jigsaw Overview is split into six areas, each of which is covered every term. These are:

- **The Number System – Place Value**
- **Calculating, Patterns & Algebra, Addition and Subtraction**
- **Calculating, Patterns & Algebra, Multiplication and Division.**
- **The Number System: Fractions**
- **Statistics**
- **Geometry & Measures**

Within each strand, the Jigsaw provides the key destinations and key ideas. It also offers some advice on achieving these ideas. Teachers are required to work out together the appropriate journey for their children to reach these destinations in the allocated time. It is their judgment as to how they reach the destinations and emphasis is placed on consolidation and depth. In order for a big idea to be really understood children need to be able to approach that mathematical area in a variety of contexts.

Teachers also plan in accordance with the calculations policy. This policy was established by the subject leaders from the Infant and Junior school and agreed upon by all teaching staff. (See calculations policy). Teachers are expected to use the Jigsaw to ensure the pitch is right and then the calculation policy to provide individual children with an appropriate method to reach the destination.

Year group teachers plan together on a week to week basis. They are expected to provide unit plans which show the journey planned to reach the destinations. Individual lesson plans are not

necessary as the journey route will be in reaction to the children's progression. Overarching objectives and tools to support will be expected to be specified on the journey planners.

Teachers recognise the importance of cross-curricular links and every effort is made to make links, particularly with science. These are included in the yearly overview.

Through careful planning and preparation we aim to ensure that throughout the school children are given opportunities for:

- Practical activities and mathematical games.
- Problem solving.
- Individual, group and whole class discussions and activities.
- Open and closed tasks.
- A range of methods of calculating e.g. mental, pencil and paper and using a calculator.

The children are grouped in **various ways including; mixed ability, ability and pairs** and work is differentiated to meet the needs of all pupils.

TEACHING

Each class teacher is responsible for mathematics in their class.

Mathematics is taught every day with lessons lasting between 50 and 60 minutes.

Every lesson will include a mental maths fluency section and plenary.

ICT/HOMEWORK

Mathletics-an online mathematics resource is used to support the children with their learning at home. Homework is set for mathematics each week. Every second week the homework involves the use of Mathletics. There are lunchtime sessions for those children who do not have IT resources available at home.

SPECIAL EDUCATIONAL NEEDS

The daily mathematics lesson is appropriate for almost all pupils. We aim to ensure that everyone makes progress and gains positively from the lesson by planning lessons, in which all pupils can be included. Children who cannot access the curriculum are given an individual learning programme.

Support for lower achievers can include visual cues, differentiated activities, the use of carefully planned resources including ICT, mixed ability groupings and support from the teacher/teaching assistant.

Within the daily lesson teachers not only provide activities to support children who find mathematics difficult but also provide appropriate challenges for children who are high achievers

in mathematics. The focus for higher attaining pupils is to give them greater opportunities to work within greater depth, enriching their understanding of the class objective. This may be more a more challenging activity, an open ended activity, an extension activity or ICT including the use of internet sites such as Nrich.

EQUAL OPPORTUNITIES

Recognition is given to a high percentage of children with English as an additional language. Support is provided in a variety of ways e.g. drama, visual aids, repeating instructions, emphasising key words, playing mathematical games.

ASSESSMENT

Work will be assessed in line with the Assessment Policy. In addition to this:

Assessment for learning plays an integral part of every lesson and each unit of work. Assessment techniques include the use of whiteboards, number fans, thumbs up/thumbs down, a variety of questioning, opportunities for children to share their learning/strategies and the use of talk partners. During the lesson, and especially in the plenary, the children assess their learning against the success criteria. This may be in the form of peer/self evaluation.

Numeracy assessments take place at the end of the autumn and spring term, in which the children complete a PUMA test. The findings of the termly assessments are used to inform changes to the strategies and time allocated to the main teaching concepts for the following term.

Annual assessment takes the form of PUMA tests for Years 3, 4 and 5 and SATs for Year 6. This information helps teachers to see pupils' annual progress. It also supports the comments made in the end of year report to parents and supports teachers with setting targets for the following year.

TARGET SETTING AND INTERVENTIONS

At the beginning of each term a pupil progress meeting is carried out with each class teacher, the head teacher and inclusion lead. Pupils' progress is reviewed, analysis of end of term assessments inform whole class teaching targets and interventions are identified for those off track or targeted to make better than expected progress.

Interventions for mathematics include: First Class at Number, Catch Up Numeracy, additional maths teaching support, homework clubs, target groups, mental maths groups and after-school key maths clubs. Numicon resources provide a visual, interactive and communicative tool to aid a greater sense of number for those pupils who have not yet established age appropriate expectations.

In addition to this, extension is provided for the more able in specific year groups according to needs including additional teaching resources in Year 4 and Year 6 to enable higher attaining pupils to work within greater depth.

Targetted children with specific gaps in mathematical understanding will receive a programme of 1-1 tuition. This will last ten sessions.

KEY MATHEMATICS

Key Maths is a series of take home cards which are based on four areas of mathematical number facts times tables, number bonds, place value and fractions.

Each year group has a specific card which covers the four areas for that year group relating to the national curriculum requirements for mathematics. Teachers plan for daily opportunities for the children to learn and review the key facts for their year group as a class. The children take home the cards each night to learn with their parents. The facts on the cards will also form the basis of TA interventions for children in each year group. All pupils will start on their year group card apart from those who are significantly below or above the expected standard for their year group. When a pupil feels they are ready to move on the TA will assess them.

MARKING AND INDIVIDUAL PUPIL TARGETS

Marking for improvement indicates the children's next steps for learning and provides each pupil with an individual target. Ticks are used to indicate success and an arrow to show what the child needs to do next. Pink highlighter is used to indicate where a child has done well. Green highlighter draws the child's attention to something which needs further attention or their next step. All work should be acknowledged and every third piece of work should receive a formative comment. Self-marking and response partner marking are used where appropriate. Children should be given opportunities, especially in years 5 and 6, to check computational exercises with a calculator. This can foster independence in the children, who can seek help if they are unable to locate and correct their errors.

PARENTAL INVOLVEMENT/LINKS

At the beginning of each academic year and at the beginning of the spring term a meeting is held with parents/guardians to discuss their child/children's progress. Children's strengths and areas for development are shared and targets set.

Parent workshops offer the opportunity to celebrate the children's learning and to find out about current initiatives. They are usually held once a year.

We encourage parents to support their children's learning by helping them to learn their key maths daily and to support their weekly maths homework.

MONITORING, EVALUATION AND REVIEW

Each year there are two teaching and learning reviews for mathematics as part of the school monitoring, evaluation and review cycle.

The subject leader reviews data, planning, smarters, books and meets with pupils. A teacher is observed from each year group. The observations are carried out by the subject leader and members of the senior leadership team. To promote quality assurance of judgements external

professionals such as the Camden Professional Partner and senior leaders from other schools are invited to observe lessons.

The review findings are used to inform individual and whole school areas for development.

THE ROLE OF THE SUBJECT LEADER

The subject leader is responsible for continuing to improve the standards of teaching and learning in mathematics through:

- Monitoring and evaluation of –
 - pupil progress
 - provision of mathematics (including intervention and support programmes)
 - the quality of teaching, learning and assessment and the learning environment,
 - the deployment **and training** of support staff.
- Taking the lead in policy development.
- Auditing and supporting colleagues in their CPD.
- Purchasing and organising resources.
- Keeping up to date with recent mathematics developments.

MONITORING THE POLICY

The Head Teacher and Senior Leadership Team will monitor the policy by regular reviews and observations.

The Head Teacher must publicise the policy and bring it to the attention of pupils, parents and staff at least once a year.

This policy was updated by Kate Ramsay the Mathematics Subject Leader

This policy was agreed in Spring 2016

Review and update by Spring 2019

Signed.....

Chair of SEN and Curriculum Committee
10th March 2016



Principles of Key



Maths



- ***What is Key Maths?***

Key Maths is a series of take-home cards which are based on the four strands of the National Curriculum: Place Value and Counting, Addition and Subtraction, Multiplication and Division and Fractions.

Each year group will have a specific card which covers the four areas for that year group, which children will take home and learn off by heart with their parents.

Each child will begin at the start of the year with the card for the year group they are in. This will assist a more focussed whole class approach to learning the key facts together. The focus of maths intervention groups in each year group will be to enable those who are not yet secure in the previous year's facts to catch up.

- ***When will we do Key Maths in school?***

Each class spends five minutes every morning practising the key maths for their year group. This may include -

- A simple activity, displayed on the board, relating to one element of the Key Maths e.g. Round the following numbers to the nearest 100.
- Using a number response pattern for the register, e.g. multiples of six...Alice: 0, Bob: 6, Charlie: 12...
- A counting pattern lining up for assembly e.g. bonds to 100 in Year 3 - teacher says 80, class reply 20.

There is usually a different focus each week and this is displayed in the classroom. At home, children learn the facts on their year group specific card with their parents for 5-10 minutes each evening.

- ***Who will be involved in assessing Key Maths facts?***

Each Friday in school, children take part in a 'Maths Match' for 10 minutes, in which they work with a partner to peer-assess key facts learnt that week. When children have learnt all the facts on their card, the TA will assess if they are ready to progress onto the next year group's facts.