

St John's Upper Holloway CE Primary School



Mathematics policy

November 2020



Our Vision

Jesus said: 'Love each other as I have loved you'. John 15:12

As we are loved, so we shall love.

As we are taught, so we shall teach.

As we are nurtured, so we shall flourish.

Our Mission

St John's is a small, caring Church of England Primary School. It is committed to supporting our pupils to be happy, successful and fulfilled throughout their lives. We believe that everyone is unique and valued by God. We aspire to be a high achieving school that provides an outstanding education:

- ❖ promoting the highest standards of teaching and learning, with excellent leadership
- ❖ being inclusive, celebrating diversity and valuing all religions, faiths, cultures and backgrounds
- ❖ providing a rich and stimulating curriculum that will inspire and challenge
- ❖ being a happy, healthy and safe place
- ❖ providing excellent care, guidance and support with a strong partnership between school, parents and the community.

We seek to promote six Christian values of creativity, thankfulness, truthfulness, friendship, perseverance and courage, each linked by our core value of love. We believe these help to prepare our children for a successful and fulfilling life, so being:

- ❖ considerate and respectful with excellent manners
- ❖ confident, happy, independent and self-motivated
- ❖ co-operative and collaborative
- ❖ honest and trustworthy
- ❖ resilient, hardworking and determined
- ❖ highly principled with moral, spiritual, cultural and social awareness, including shared British Values.

MATHEMATICS POLICY

Policy approved by staff and governors: Nov 2020

Date for review: Nov 2022

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1. Aims and Objectives for the teaching and learning of Mathematics

Mathematics is a significant part of modern society, helping us to understand science, technology, engineering and economics.

Maths is one of the core subjects in the National Curriculum. The aims of the 2014 National Curriculum are for our pupils to:

- Become fluent in the fundamentals of mathematics through varied and frequent practice with complexity increasing over time.
- Develop conceptual understanding and ability to recall and apply knowledge rapidly and accurately.
- Reason mathematically; follow a line of enquiry, conjecture relationships and generalisations. Develop an argument, justification and proof by using mathematical language.
- Problem solve by applying knowledge to a variety of routine and non-routine problems. Breaking down problems into simpler steps and persevering in answering.

The purpose of mathematics in our school is to develop:

- positive attitudes towards the subject and awareness of the relevance of mathematics in the real world
- competence and confidence in using and applying mathematical knowledge, concepts and skills

- an ability to solve problems, to reason, to think logically and to work systematically and accurately
- initiative and motivation to work both independently and in cooperation with others
- confident communication of maths where pupils ask and answer questions, openly share work and learn from mistakes
- an ability to use and apply mathematics across the curriculum and in real life
- an understanding of mathematics through a process of enquiry and investigation

2. Mathematics curriculum planning

At St John's, we use the 2014 Primary Curriculum for Maths as the basis for implementing the statutory requirements of the programme of study for mathematics. Maths is planned for in two ways at St John's:

- Through daily (4-5 times per week) lessons
- Through daily (4-5) spaced recall sessions
- Through weekly number bond/timestables sessions

Long Term Planning

At St John's, we follow the White Rose Scheme as our over-arching Long Term Plan.

Medium Term Planning

As part of the White Rose Scheme, we follow the progression of 'Small Steps' to ensure that children are building systematically on their learning within the unit and year. This also ensures that children are building on their learning from previous year groups.

Short Term Planning

Weekly Maths planning is completed by teachers in order to adapt and tailor Maths teaching for the needs of the children in our classes. These weekly plans list the specific learning objectives for each lesson and give details of how the lessons are to be taught.

Class Teachers also plan a **4,3,2,1 session** of retrieval questions at the beginning of every lesson. These are questions that are related to the learning children took part in 4 weeks, 3 weeks, 2 weeks and 1 week before the lesson. This allows children to revisit areas of learning and give teachers time to address areas that children need further work on whilst embedding learning into long-term memory.

3. Teaching and Learning

Our principal aim is to develop children's fluency, reasoning and problem-solving skills in mathematics. Daily lessons ensure all children have access to fluency, reasoning and problem-solving questions. Lessons at St John's follow a consistent progression through two processes.

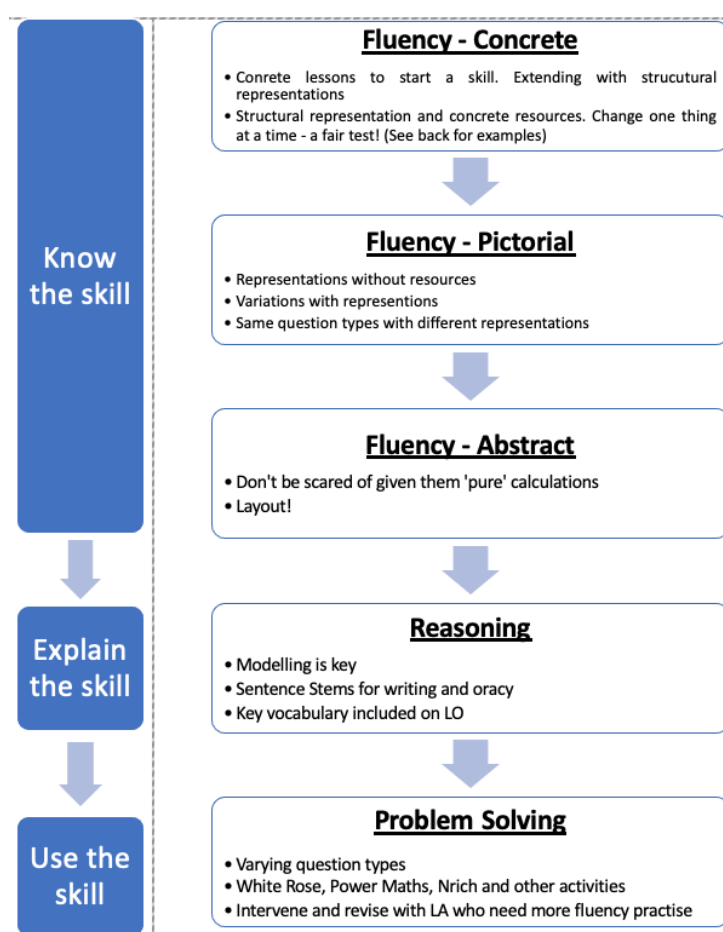
Becoming fluent in a skill through the CPA progression.

- Concrete Resources
- Pictorial Representations
- Abstract Question

Deepening their understanding through:

- Reasoning
- Problem Solving

This will normally mean that children attempt fluency (using concrete resources and pictorial representations), reasoning and problem-solving questions in each lesson. However, through the assessment judgement of the teacher, this progress may be elongated over the course of more than a lesson.



In all classes at St. John's, 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. As we adopt a Mastery approach to Maths, the vast majority of the children attempt the same tasks and objectives. They are supported to succeed through the means of concrete resources, other scaffolds and adult support. When this is not possible, for example with children who are working significantly below their chronological age, we provide tasks of the year group the child is assessed to be working at. As much as possible, this is to match the overall objectives the class are working on.

Some children are selected to work in our intervention program: Numberstacks. These children are chosen through teacher assessment at the end of a unit. These are led by the class teaching assistants. After they have completed the intervention block, they are reassessed to monitor their progress.

Year 6 are also given additional targeted support to enable them to best prepare them for the SATS in May.

Timestables

To ensure children are fluent in their mental calculations, we have our own timetable challenge. Children complete a timed challenge once a week which is targets to be at the current timetable the child is working at.

8x gold	Titanium
8x silver	11x12x platinum
8x bronze	12xgold
4x gold	12xsilver
4x silver	12xbronze
4x bronze	11xgold
3x gold	11xsilver
3x silver	11xbronze
3x bronze	6x7x 9x platinum
2x 10x 5x platinum	9xgold
10x gold	9xsilver
10x silver	9xbronze
10x bronze	7xgold
5x gold	7xsilver
5x silver	7xbronze
5x bronze	6xgold
2x gold	6xsilver
2x silver	6xbronze
2x bronze	3x4x 8x platinum

Children progress through timestables sequentially.

Bronze	The timestable in order	20 seconds
Silver	50 multiplication facts	3 minutes
Gold	30 division Facts	3 minutes

Platinum– Once a child has completed the group of timestables, they complete a challenge that mixes multiplication facts, division facts and missing number questions from the timestables.

Titanium – 60 questions from all timestables that mix multiplication facts, division facts and missing number questions

Titanium Titans - 100 questions from all timestables that mix multiplication facts, division facts and missing number questions

4. Teaching in the Early Years Foundation Stage

We teach mathematics in our reception and nursery classes. As the class is part of the Foundation Stage of the National Curriculum, we relate the mathematical aspects of the children's work to the objectives set out in the Development Matters and ELG, which underpin the curriculum planning for children aged three to five.

In Nursery, children receive two Maths carpet sessions per week. In Reception, children receive three carpet sessions per week and then receive immediate verbal feedback. They also take part in one Whole Class activity that is related to the book or topic that the children are immersed in.

We give all the children ample opportunity to develop their understanding of number, measurement, pattern, shape and space through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

5. Mathematics and Inclusion

At St. John's School we teach mathematics to all children, whatever their ability, as Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children.

Teachers provide learning opportunities that are matched to the needs of children with learning difficulties. This means that children working significantly below their chronological ages work and are assessed at the Year group appropriate to them.

Work in mathematics takes into account the targets set for individual children in their Individual Education Plans (IEPs). Numberstacks is used as our Maths intervention.

6. Assessment and Feedback

During the Lesson

At St John's, we believe that the most effective form of feedback is the immediate feedback that can be given in the lesson. This may be through individual work with a student, group work and whole class marking or using a visualiser.

After the Lesson

We make short-term assessments in pupils' books through regular marking. This includes making corrections and 'next steps' to help children progress. Books are marked to the lesson objectives and lesson 'steps to success'.

During and After the Unit

We summatively assess children at the end of each unit. This data is collated onto the Maths Assessment Grids which create a picture of each child in Maths and the class as a whole. The assessment grids are then used to identify gaps that need to be revisited through the use of 4,3,2,1 sessions to inform intervention groups.

In the EYFS, practitioners use formative and summative assessment. Summative assessment takes the form of observations and discussions with each child through a combination of adult focused and self-initiated learning opportunities. This evidence is presented in their individual profile books. Summative assessment takes the form of a 1-1 maths assessment with the class teacher at the end of each term.

At the end of the Term

We then assess children at the end of each term using the White Rose arithmetic and reasoning assessments. This allows us to assess whether the learning has fully embedded into a child's long-term memory compared to at the end of the teaching block. Again, these assessments are collated on the school assessment grids. Teachers meet with the Head Teacher and Inclusion lead to discuss the attainment and progress of children to identify additional support or interventions where required.

At the end of the Year

We make final assessments based on a combination of these assessment tools. These end of year assessments are recorded on Target Tracker and shared with parents in Parents Evening and End of Year reports. The assessment grids are

also passed onto and discussed with the children's subsequent teacher. This gives them as much of a picture of the Mathematicians in the class as possible.

7. Links with other areas of the Curriculum

English

Reading, writing and comprehension skills have become increasingly important to children as Mathematicians. Being able to explain mathematical thinking and to decode and understand the meaning behind questions is now an embedded part of our National Curriculum. We use the skills taught in English in Maths by explicitly model their application in lessons. This is done through modelling written answers to reason questions and breaking down what questions are asking through pictorial and spoken means.

Across the Mathematic curriculum, younger children enjoy stories and rhyme that rely on counting and sequencing. Older children encounter mathematical vocabulary, graphs and charts when using non-fiction texts.

The Wider Curriculum

In these subjects, children apply their mathematical knowledge in two main ways. The first main way is through the representation of data. This may be seen in Science in the writing-up stages of experiments where they may use graphs to represent what they have found or in History lessons when understanding the population figures in tables and graphs.

The second important Mathematical skill that children will transfer in other subjects is through shape and measurements. In planning stages of DT or Science experiments, children will be required to use accurate measurements of designs and use direction and shape knowledge to organise their work practically.

Personal, social and health education (PSHEC) and citizenship

Mathematics contributes to the teaching of personal, social and health education, and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The study of famous mathematicians around the world contributes to the cultural development of our children.

8. Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in mathematics is the responsibility of the mathematics subject leader. This will include:

- providing a clear vision for maths lessons at St John's
- providing and implementing a consistent approach to learning timetables
- providing and maintaining maths interventions
- regularly conferencing with staff to discuss teaching and learning in maths
- being informed about current developments in the subject

The mathematics subject leader meets with the headteacher to evaluate strengths and weaknesses in the subject and indicate areas for further improvement. The headteacher allocates regular management time to the mathematics subject leader so that s/he can review samples of children's work and undertake lesson observations of mathematics teaching across the school. A named member of the school's governing body is briefed to oversee the teaching of numeracy. This governor meets regularly with the subject leader to review progress.

Approved by staff _____ (head) on _____

Approved by Governors _____ (chair of C&S committee) on _____

Review: October 2022