POLICY FOR MATHEMATICS

At St John's School we use the teachings of the Church of England to embed the following core Christian values.
These are:

Friendship

Forgiveness

Trust

and Compassion

These values will underpin the following Policy.

This Policy is reviewed annually by the Headteacher

Date Agreed:	March 2021
Review Date:	March 2022
Signed by: Headteacher	A J Smith

At St. John's School we have a firm belief in all core Christian values. We will use teachings of the Church of England, such as compassion, forgiveness and tolerance, to underpin the following policy.

AIMS

The new national curriculum for mathematics aims to ensure that all pupils:

1. Become **fluent** in the fundamentals of mathematics, including thorough 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 to problems

2. Reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, developing an argument, justification or proof using mathematical language.

3. 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.

SCHOOL CURRICULUM

The programmes of study for mathematics are set out year-by-year for key stages 1 and 2. Schools are, however, only required to teach the relevant programme of study by the end of the key stage. All schools are also required to set out their school curriculum for mathematics on a year-by-year basis and make this information available online.

SPOKEN LANGUAGE

The national curriculum for mathematics reflects the importance of spoken language in pupils' development across the whole curriculum – cognitively, socially and linguistically. The quality and variety of language that pupils hear and speak are key factors in developing their mathematical vocabulary and presenting a mathematical justification, argument or proof. They must be assisted in making their thinking clear to themselves as well as others and teachers should ensure that pupils build secure foundations by using discussion to probe and remedy their misconceptions.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT)

Calculators should not be used as a substitute for good written and mental arithmetic. They should therefore only be introduced near the end of key stage 2 to support pupils' conceptual understanding and exploration of more complex number problems, if written and mental

arithmetic are secure. In both primary and secondary schools, teachers should use their judgement about when ICT tools should be used.

TEACHING AND LEARNING

- Mathematics should be taught daily through a dedicated mathematics lesson. Pupils should also be given opportunity to develop and apply their mathematical skills in other subjects.
- Key vocabulary, learning objectives/WALT, learning outcome, should in most occasions be shared with the children at the beginning of a lesson.
- Delivery should include direct teaching and interactive oral work with the whole class and with groups.
- There should be an emphasis on mental calculation. In Key Stage 2, all daily mathematics lessons begin with *'Fluent in Five.'* The children have 5 minutes to complete 5 arithmetic questions using either written or mental strategies. In UKS2, the children have a daily mathematics vocabulary challenge attached to the fluent in five screen. The children are required to explain what the three mathematical words mean.
- Differentiation should be planned where required, with all pupils engaged in mathematics related to a common theme.
- Provision is made for SEN children through differentiated questioning, support and differentiated activities.
- A typical Mathematics lesson based on the NNS is structured thus: Oral work and mental calculation 5-10 minutes, the main teaching activity: 30-40 minutes, a plenary; 10-15 minutes. Teachers should give consideration to the time allocated to mathematical activities to ensure appropriate pace and rigour. The lesson is also flexible.
- Lesson should include mini-plenaries which aim to assess children's learning as it is happening and enable teachers to move children forward or consolidate their learning.
- The teacher and teaching assistant should have a focus group during the main activity and should actively intervene and support with the learning of the children. The teacher and teaching assistant should aim to move between groups thus allowing all children to benefit from their expertise.
- Attention should be drawn to the many diverse uses of mathematics in everyday life, including the mathematics needed in everyday tasks and professions.
- Opportunities to support teaching and learning in Mathematics are planned for and used appropriately.
- All children from Year 1-6 have access to *'Times Tables Rock Stars – TTRS'* an online times table resource which can be accessed at school and at home. Year 1 children access this resource in the summer term or when staff feel a child is ready.

PLANNING

- Teachers should acquire a thorough knowledge of the Numeracy Framework in order to plan appropriately for the whole ability range. All work planned should be in line with the Numeracy Framework and Yearly Programmes of Study.
- Teachers are to plan for Mathematics using the online planning tool 'Abacus,' which is in line with the National Curriculum for Mathematics.
- Teachers are to plan for a discrete Numeracy hour (KS2) and 50 minutes (KS1) each day. This hour is to be planned in line with the Numeracy framework objectives, relative to the unit that should be covered at that time.
- Teachers should plan opportunities for children to discuss and explain strategies and skills used, before, during and after activities and recognise that this is an important part of children's learning.
- Clear planning of mathematical lessons should identify objectives to which the activities match, differentiation of activities, success criteria for each activity, resources, grouping, time allocation, and direct teaching.
- In the Foundation stage teachers will plan in line with the Early Learning Goals.

FOUNDATION STAGE

Foundation stage Numeracy is known as PSRN (Problem Solving, Reasoning and Numeracy. The EYFS states that all 6 areas of the foundation stage should be given equal time. Therefore EYFS numeracy is not taught to a specific hour. Foundation Stage teachers will teach PSRN in line with the EYFS document making assessment judgements based on the 'Early Learning Goals.'

CROSS CURRICULAR LINKS

- Teachers should integrate and apply mathematical skills and knowledge within the framework of the creative curriculum where it is appropriate.

ASSESSMENT AND RECORDING

Assessments will be both formative and summative. Effective assessment will be achieved by:

- Marking of written work and formal assessment tasks.
- Teachers must ensure Mathematics books are close marked. This will include a 'Next Step' which the children will have to answer either orally or with a written explanation.
- Teacher observation whilst children are engaged in a practical activity, to assess whether particular skills are being used.
- On-the-spot comments or mini-plenaries by the teacher to a group or individual, to extend, limit or change direction of the given task.
- Termly Progress Assessment in the form of NFER mathematics test (Year 3-5) will be administered to assess children's development, strengths and weaknesses.
- Termly Progress Assessment in the form of past mathematics SATs papers (Year 6) will be administered to assess children's development, strengths and weaknesses.
- Year 4 will sit the *'MTC – Multiplication Times Table Check'* in June of each academic year.

RESOURCES

- Children should have access to a range of well organised, clearly labelled mathematical resources to develop the ability to select the appropriate tools for a task.
- Teachers will notify the Mathematics co-ordinator of damaged resources.
- Children should be taught how to use the equipment appropriately and independently.
- Teachers to use a diverse range of resource material to cater for all the needs of the children.
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REPORTING TO PARENTS

- Parents are invited to discuss progress twice a year, in terms one and three. Progress in Mathematics is a key element of these discussions. All parents/primary carers receive an end of school year report which includes the pupil's progress and effort in Mathematics.

MONITORING AND REVIEWING

- The policy will be evaluated each year by the co-ordinator along with other teaching staff.
- Teachers should ensure that they are confident with the subject matter and inform the Mathematics co-ordinator of their training and support needs.
- The Mathematics co-ordinator should ensure that she is well-informed of current ideas and abreast of developments in mathematics, by attending appropriate courses, liaising with the mathematics advisory team and other mathematics co-ordinators. The co-ordinator should disseminate gathered information to colleagues.

GOVERNORS

- Governors will play a key role in the monitoring and evaluating of policy and the implementation of Mathematics across the whole school.

- This will include focussed visits, policy evaluation and analysis of results.
- The Mathematics link Governor in conjunction with the Mathematics coordinator will keep governors informed of the implementation and changes in policy and changes in legislation and curriculum.

POLICIES

This policy is in line with other policies and should be read in conjunction with the following:

• Assessment Policy.
• Special Educational Needs Policy.
• ICT Policy.
• Health and Safety Policy.

Subject Leader: Hannah Griffiths.