



Mathematics Policy

Date: September 2018

**'The child grew and became strong in body, mind and spirit.'
(Luke 2. v40)**

St Peter's Church of England School
Collective Worship Policy

Mission Statement

'GROWTH...the journey is never ending...'

At St. Peter's our vision starts with growth.

'The child grew and became strong in body, mind and spirit.'

(Luke 2. v40)

Growth of body; we aim to develop healthy, active, unique children who are confident in the body God has given them. Our uniqueness and individuality bring us together as one community with a common understanding.

Growth of mind; we aim to foster, nurture and develop the knowledge, curiosity and understanding of all.

Growth of spirit; we aim to nurture all members of our school spiritually by developing a core Christian, moral purpose rooted in scripture.

Introduction

This policy outlines the teaching, organisation and management of mathematics taught and learnt at St. Peter's CE Primary School. The schools policy for mathematics is based on the Primary National Curriculum 2014 for Mathematics. The policy has been drawn up as a result of staff discussion and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all the teaching staff. Mathematics is a vital part of everyday life, providing a means of viewing and making sense of the world. It is vital that children are aware of the importance of mathematics beyond the classroom and can use and apply the knowledge, skills and understanding they acquire. It is necessary to provide firm foundations for subsequent mathematical learning and for everyday life in general. At St. Peter's we aim to provide every child with an equal entitlement to a broad and balanced Maths curriculum via which continuity, differentiation and relevance can be catered for.

1. AIMS

1. We aim to offer a Maths curriculum that is based on the Primary National Curriculum for Mathematics, 2014 which is non-sexist, non-racist, appropriate and accessible to the needs and abilities of all our pupils.
2. We aim to enable every child to enjoy mathematics. We nurture positive attitudes by matching the task to the child. We believe that successful learning enables the child to develop the confidence to meet the challenge of new work.

3. We ensure account is taken of what the child already knows when planning maths activities.

4. To give children a firm basis of knowledge and skills so that they are numerate and able to work flexibly and think clearly. We aim to ensure that the children will be fluent in the fundamentals of mathematics, that they will reason mathematically and solve problems with ever increasing confidence and accuracy. The National Curriculum 2014 promotes these key aims.

4. To enable children to work independently and as part of a group to find appropriate strategies for problem solving.

5. To lead children towards the idea that maths is a fun, creative activity, involving imagination, intuition and discovery. "A high-quality mathematics education 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".

Mathematics programmes of study: key stages 1 and 2 National curriculum in England (2013: 3)

6. We aim to provide children with a balanced Mathematical diet, which will include the following... a/ a daily maths lesson. Each day children will participate in a maths lesson, which, in line with The National Curriculum, 2014 will include direct teaching of the whole class and some group, paired or individual work. b/

Practical work.

New concepts will usually be introduced in a practical, interactive way. This will often involve handling concrete materials or via the use of interactive whiteboards. This practice will usually precede any written recording. This practical approach is not simply confined to early year's practice but continues through into Key Stage Two as appropriate. c/ Mental maths. We aim to encourage pupils to develop their own mental mathematics strategies and to become confident in this area. Rapid recall of number bonds and times tables is an essential tool for many mathematical tasks and we encourage children to learn these facts. Each mathematics lesson will start with an Oral Mental Starter to practice these skills. In addition, children in Key Stage 1 & 2 have weekly mental maths tests, and times table tests. In Year 2 & Key Stage 2 all children start the day with a '4 a Day' task which focuses on the four number operations.

Children are invited to discuss strategies used when working out a problem. The times when children "talk" about their maths are highly valued!

Mathematical games.

We aim to make frequent use of games in the classroom. Games can.....

i/ Help with consolidation of concepts and allow children to make use of their knowledge, skills and understanding in a relevant and fun way.

ii/ Be teacher independent.

iii/ Emphasise necessary language/ mathematical vocabulary. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

- iv/ Prompt child/child discussion as well as teacher/child discussion.
- v/ Encourage children to make their own decisions.
- vi/ Keep the child in the learning situation long enough for the concept to be experienced in depth.
- vii/ Motivate children and help to create positive attitudes.
- viii/ Be open ended and can lead to creative and divergent thinking.

Computer and calculator work.

Ongoing use of suitable computer programmes to enhance and support learning, e.g. Education City is apparent throughout the school. Children develop and apply their information technology skills in their study of mathematics. Calculators are introduced near the end of key stage 2 to support pupils' conceptual understanding and the exploration of more complex number problems, when written and mental arithmetic are secure.

2 PLANNING

2.1 Organisation. i/ The National Curriculum for Mathematics provides the basis for teacher's planning. Long term and medium term planning is structured following guidance set out in the National Curriculum for Mathematics. There are four areas for Key Stage 1 Programmes of Study – Number, Geometry, Measure and Statistics. For Years 3 to 5 Programmes of Study there are the four topics as detailed above. In Y6 there are an additional two topics – Ratio & Proportion and Algebra.

From Year One mathematics is timetabled as a subject and taught as such. However there are opportunities to use mathematics in other curriculum areas e.g. measurement in Science and shape in Design Technology. Children are always made aware of the objectives of the lesson and teachers consistently refer back to these objectives throughout lessons.

Short-term plans may include examples from the National Curriculum, other published resources including White Rose resources and plans or the teacher's own ideas. These are adapted to meet the needs of the class. Teachers use their own format but planning should include notes on objectives, vocabulary, differentiated activities, plenary activities including key questions and assessment for learning, extension activities, the use of teacher and TA support and resources.

ii/ The time allocated to the teaching of maths is in line with statutory requirements – currently one 45-60 minute session per day.

iii/ Mathematics cannot be seen in isolation from other areas of the curriculum. We feel that mathematics provides children with the experience to think logically and deal with abstract concepts and skills that can be used across the whole curriculum. There are many opportunities to link mathematics with the science and ICT curriculum. "Teachers should use every relevant subject to develop pupils' mathematical fluency. Confidence in numeracy and other mathematical skills is a precondition of success across the national curriculum".

iv/ At the Foundation Stage maths will often be taught through the particular topic under consideration at the time. This will allow for the child being involved in more relevant and meaningful mathematical tasks and should help to instil a sense of purpose. At other times maths will be subject specific particularly with regards the teaching of certain aspects of number. This is in line with the requirements of statutory framework for the early years foundation stage setting the standards for learning, development and care for children from birth to five, 2014.

Teaching and learning strategies. At St. Peter's we recognise that every teacher has their own teaching style and will use a variety of methods and contexts to teach mathematics. Teachers use a

mixture of direct class teaching, group instruction, problem solving and partner or individual work as appropriate.

At times children may be identified as needing extra support in mathematics. In this case there are some intervention programmes in place to support these children. The intervention resources currently in use are: Precision Teaching, Numicon and booster sessions. The mathematics coordinator and SENDco advise class teachers with regard to appropriate use of interventions. The National Curriculum recognises the need for practical work and the application of mathematics. Making children work through pages of “sums” can no longer be considered good primary practice because no context for learning is provided. However there are occasions when basic arithmetic skills must be consolidated and this method may be appropriate for a short period.

Resources.

i/ Material Resources. In each classroom there is a wide range of appropriate mathematical equipment readily available for all children. These are clearly labelled and organised to ensure easy access, upkeep and replacement. There is also a central store of mathematical equipment in the cupboard in the ICT suite. A full list of all mathematical equipment in school can be obtained from the mathematics coordinator.

ii/ Human Resources. Alongside the class teacher there are a range of other adults to help and aid the children in their mathematical learning. Teaching Assistants should not always be delegated to support lower ability pupils – they can be used to stretch more able pupils, for example. The class teacher ensures that all children in the class have the opportunity to access adult support at least once per week. At times parent helpers will also be used. Clear guidance is always be given to helpers on these occasions. Objectives and expected outcomes are discussed with them prior to the lesson.

Accommodation

Teachers are responsible for creating a stimulating and motivating environment in which mathematical learning will take place. Working walls and displays are an important learning resource. They are seen as interactive learning zones and reflect current work in progress. They are a way of valuing children’s mathematical achievement and an avenue via which the teacher can maintain interest in a particular topic. Teachers use the classroom itself plus any other areas in and around the school when exploring aspects of mathematics.

Parental contribution.

Parents are encouraged to take an active part in the development of their child’s mathematical skills. Parental involvement with home learning tasks is welcomed. We recognise and aim to utilise the valuable source of learning parents have to offer. Home learning is given as laid down in the Home Learning Policy. Periodically parents will be invited into school to observe and become involved in mathematics afternoons and evenings.

PUPIL PROGRESS

Progression On a long term basis teachers will plan to ensure progress is made. Reference to the National Curriculum Programmes of Study is made when planning in the medium term. On a weekly/daily basis teachers differentiate activities to cater for the needs and abilities within the class in order that each child makes progress. This includes adapting activities for children with learning support requirements. Suitable mathematical activities are provided for both the more and less able.

Inclusion.

Teachers aim to meet the three principles essential for an inclusive curriculum. They will

- a/ Set suitable learning challenges- For the low attaining children they provide activities, which are well matched to the needs of the child by drawing on all possible resources, human and concrete. For the more able child work is to be suitably challenging with staff making use of material which encourages mastery of mathematical objectives and skills.
- b/ Respond to pupils diverse learning needs.
- c/ Overcome potential barriers to learning and assessment for individuals and groups of pupils including those with special educational needs and/or Looked After Children.

Assessment.

Assessment takes place at three connected levels: short-term, medium term and long term. These assessments are used to inform teaching in a continuous cycle of planning, teaching and assessment. Teaching a sequence of work involves initial and ongoing planning, informed by assessment of children's learning. Ongoing assessment is an integral part of our teaching. In mathematics it enables the teacher to consistently match work to the abilities and needs of pupils as they progress. Opportunities for assessment are included in teachers' medium and short term plans. The techniques used here will include: - ~~ Observation of children as they work. ~~ Listening to children whilst they are engaged in an activity. Discussion between children can reveal a great deal about the way they are thinking. ~~ Oral questioning of the child by the teacher. Discussion between teacher and child is vital so that the teacher can maximise opportunities for the child to achieve and demonstrate that achievement. ~~ Observation and marking of written work. This should be done with the child whenever possible, particularly at Key Stage One. Children are always given feedback on their performance either verbally, particularly at Key Stage 1 and/or by written comments on their work. Marking is carried out in accordance with the schools Marking Policy. As far as possible the children are involved in the assessment process. Children need to be aware of their capabilities and potential as through this knowledge, motivation, self-esteem and self-confidence can be boosted. As teachers make on going assessment they particularly focus upon any significant achievements the child makes. Targets will be regularly discussed with children. Teachers involve the children in the target setting process. Formal assessment takes place at the end of each Key Stage in the form of SATS. The result of the child's performance will be taken into account along with teacher assessment when planning the most suitable mathematics curriculum to be offered to the child. Results from SATS are analysed to identify whole school, class and individual mathematics targets. The Mathematics Co-ordinator monitors standards across both Key Stages. Discussion amongst staff about standards takes place on a regular basis. Recognition of a child's achievements, however small, that the child makes will affect future learning. This may be the first time a child does something or it may be when the teacher feels he has grasped a particular skill or concept. Information from assessments is recorded in a number of formats: • SIMS Pupil Progress & Attainment Trackers . This is an opportunity to identify any children who are not making sufficient progress and to plan extra support strategies for them.

Parents are kept informed of their child's progress through formal and informal arrangements:

- a/ Parents evenings - when parents can look at work and discuss their child's progress and achievements. At such times parents should find it useful to focus on any significant formative comments that have been written as they make the progression of the child explicit.
- b/ Informal visits by parents to school.
- c/ Headteachers award certificates
- d/ Annually written reports.

Staff Development.

The co-ordinator will address any issues identified by policy review. The co-ordinator will:

- i/ Attend courses to keep abreast of current changes and new ideas. Any useful information from courses attended will be passed on to staff via discussion / staff meetings. Any useful notes,

booklets etc. will be stored with the central maths resources for others to refer to and make use of.

li/Encourage other members of staff to attend courses which may be beneficial and which will support their professional development.

lii/Monitor the standards of mathematics work within the school as far as is possible.
new legislation.