St Peter & St Paul
CofE Primary School

Mathematics Policy

2020 - 2021

(This policy has been drafted having regard for the school's Christian ethos.)

	Date	Signed
Agreed by Staff:	July 2020	Mr Steve Ginn Head Teacher
Agreed by Governors:		Mrs N Ford Chair of Governors
Lead:	Emily Burden, Carla Harris & Katie Thornton	
Review date:	July 2021	

Our School Mission Statement

We see it as our mission to grow the whole child - intellectually, emotionally, physically, socially and spiritually. To provide them, within a Christian environment, with every learning opportunity possible and to empower them to be the leaders of tomorrow.

Mathematics Policy

Aims and Objectives:

St Peter and St Paul CofE Primary School aims to ensure that our children leave the school with a positive attitude and enthusiasm for mathematics. We aim to provide children with the skills and understanding to support their further learning. In order to achieve this, teachers must:

- present mathematics as an enjoyable and interesting activity, involving enquiry and experimentation
- encourage an inquisitive attitude to mathematics
- foster high standards of achievement in mathematics
- enable children to acquire and develop mathematical language, skills, knowledge and understanding within their individual capabilities
- equip children with strategies to enable them to apply mathematics to real and unfamiliar situations within and beyond the classroom
- develop an appreciation of the real value and fascination of mathematics as well as its usefulness in life

Thus children will be able to:

- develop a positive and confident attitude to mathematics
- make an active contribution to their own learning, by developing the skills of independence and enquiry
- become confident and competent working with mathematics
- develop an understanding of the ways in which information is gathered and presented
- become thinkers and problem solvers
- develop a clear understanding of the language of mathematics
- develop logical thinking, enabling them to record work clearly and in a variety of ways
- develop the skills, knowledge and understanding needed in daily life

Teaching and Learning Styles:

Teachers will utilise a variety of teaching and learning strategies as outlined below.

- Children are normally taught in their own year groups within differentiated mathematics groups or mixed ability pairs at the discretion of the class teacher. Children might be taught in other year groups if it is considered appropriate and in the best interests of the child.

- Work is carried out using a balance of individual, paired and group work.

- Children are encouraged, particularly in KS2, to choose their own challenge to work on within the lesson. They choose this based on their confidence and ability in that area of maths. These challenges are carefully planned by staff in an age appropriate way. Staff monitor which challenge children choose and may make suggestions in order to help particular children choose the correct challenge for that day. There are often three differentiated challenges on offer: Challenge 1, Challenge 2 and Challenge 3.

- Greater Depth challenges are often available for children to work on in addition to their main challenges in class. These are not just targeted at the Higher Ability pupils, or for those who finish first, but are actively encouraged for all to have a go at. These too can be differentiated in order to allow all pupils to stretch and challenge their existing knowledge.

- Teachers demonstrate, explain and illustrate mathematical ideas to fully involve pupils and maintain their interest through appropriately demanding work.

- Teachers use and expect pupils to adopt mathematical notation and vocabulary once it has been taught.

- Speaking and listening activities and techniques such as talk partners, barrier games, and hot seating are used to help children understand ideas and reflect on their work.

- Teachers consider the learning styles of their children. For example visual or kinesthetic learners might be given additional resources such as manipulative 3D objects, pictures or ICT equipment.

- Mathematical errors and misconceptions should be dealt with as they are identified in a positive and supportive way.

- The emphasis on the pupil's learning begins with mental strategies, leading onto informal jottings and finally to formal representations as laid out for year groups in the Primary Framework and the School’s Calculations guidance.

- The teaching and learning of mental methods is emphasised throughout the school. Pupils are taught a variety of mental calculation strategies.

- Children are given a variety of mathematical approaches to solving problems. They are encouraged to develop their own mathematical strategies as well as learning standard methods.

- Calculators are used as a teaching tool at the professional judgement of the teacher.

- Teaching assistants are trained in supporting children in all parts of the maths lesson including the delivery of intervention work to groups and individuals.

- Pupils are expected to present work neatly.

- Homework for all pupils is set in accordance with the Homework Policy.

Teaching Tools and Strategies:

These are some of the tools and strategies teachers use to engage pupils in learning:

- ICT including Interactive whiteboard technology

- Thematic cross-curricular work

- Awareness of Multiple Intelligences

- Learning Styles including Visual, Auditory, Kinesthetic

- Creativity

- First Hand experiences eg: Trips and Visits and visitors

- Research projects

- Home learning and family learning tasks/projects

- Extended school opportunities

Because children learn best when they have time to reflect and talk about their experiences, there will be evidence in the classroom of:

- Time for relevant talk and discussion

- Appropriate independent behaviour

- Talk being valued, through children and adults listening and responding to each other

- Children discussing and completing tasks in pairs and groups

- Development of active listening skills

- Opportunities for reflection and concentration

Maths/Numeracy Curriculum Planning:

We want all children to develop into confident and competent mathematical thinkers and to be able to use maths in real life situations. To achieve this we follow the new National Curriculum introduced in September 2014. However, teachers must adapt this structure when necessary to meet the individual needs of our children.

Using the National Curriculum teachers in KS1 and KS2 will plan a daily mathematics lesson for each class, which will last approximately 60 minutes. This will incorporate a daily counting session, a mental maths session and teaching and learning session based on the current unit of work. In addition to the daily maths lessons teachers are expected to seek opportunities to incorporate maths into their afternoon topic work and daily school life.

When planning lessons or units of work teachers will:

- Review children's existing knowledge, skills and understanding and make decisions about the priorities for teaching and learning.

- Use their previous assessments and knowledge of the children to decide which of the ideas they: are ready to take further; need to consolidate; could explore through problem solving/enquiry; or need to be taught directly.

- Provide rich, varied and exciting activities which develop children in a range of ways. This will include making links with other curriculum areas and making use of the local environment.

- Include prompting, probing and promoting questions to support discussion or assessment.

- Ensure opportunities for children to engage in oral and mental work are built into every lesson.

Some of the following elements of ***'Using and Applying'*** must be embedded into every numeracy lesson:

- **Problems Solving**
- **Representing** *(analyse, record, do, check, confirm),*
- **Reasoning***(create, deduce, apply, explore, predict, hypothesise, test)*
- **Enquiry** *(plan, decide, organise, interpret, reason, justify)*
- **Communicating** *(explain methods and solutions, choices, decisions, reasoning).*

Long term planning for each year group in KS1 and KS2 is based on the teaching programme in the new National Curriculum (September 2014).

Medium term plans must be produced for each half-term outlining the units to be taught and any topic based work.

Short term planning must be recorded each week. It should show a sequence of activities that will promote progression. These plans must state the specific learning objectives (from the new National Curriculum) to be taught in each lesson, success criteria, vocabulary, questions, daily counting activity, oral and mental starters, plenaries, main teaching activities and differentiated activities.

Foundation Stage:

Mathematical Development within our Early Years setting is planned in line with the Early Years Foundation Stage Profile (EYFSP), Development Matters and Early Learning Goals. The EYFSP states that children must be supported in developing their understanding of **Problem Solving, Reasoning and Numeracy**. This Area of Learning and Development includes seeking patterns, making connections, recognising relationships, working with numbers, shapes, space and measures, counting, sorting and matching. Children use their knowledge and skills in these areas to solve problems, generate new questions and make connections across other Areas of Learning and Development.

We support children in developing their understanding of problem solving, reasoning and numeracy in a broad range of contexts in which they can explore, enjoy, learn, practise and talk about their developing understanding. We offer opportunities for these skills to be practised, in order to give children confidence and competence in their use. Their Mathematical understanding is further developed through stories, songs, games and imaginative play.

Development Matters is used in the Foundation Stage as part of our ongoing observations and assessments. It is used to see where our children are at developmentally, to support our planning and guide us on the next steps needed.

Special Educational Needs (SEN):

At St Peter and St Paul CofE Primary School, all children are taught a full Maths curriculum, whatever their ability. Through our teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs.

Assessment is a vital tool in the teaching of Mathematics, designed to monitor children's progress and measure attainment. It is used to determine what children know, understand and can do, and where they need further support to secure next steps in learning. Assessment opportunities should be built into every lesson. A range of assessment methods are used as appropriate.

These include:

- Children's work marked promptly and in accordance with the school marking policy.
- Listening to what children say and questioning them to ascertain their level of understanding.
- Planned or informal observations by teachers and teaching assistants, to observe, listen and take notes of key points, both seen and heard.
- Baseline assessment at the beginning of Reception year.
- EYFSP assessment at the end of the Reception year.
- End of unit tests may be administered as may mental maths tests at the discretion of the class teacher.
- Summative Standardised Assessment Tests (SATs) in Year 2 and Year 6. These results are analysed by the co-ordinator for curricular strengths and weaknesses, which then inform future curriculum planning and development.
- Summative assessments for Years Three, Four and Five.
- Self-assessment by children using purple pens.

Maths assessment data is recorded using the school's online tracking tool 'Pupil Asset'. This is used to record formative and summative assessments. Teachers' judgements against specific learning objectives are used to calculate the child's level of achievement, recorded either as Beginning, Developing, Embedded or Mastered. This snapshot of pupil and class ability is then used for lesson planning, tracking, target setting and analysis.

Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

If necessary, to develop a child's Maths skills, Intervention through School Action and School Action Plus will lead to the creation of an Individual Education Plan (IEP) with specific Maths targets.

Parents are informed of their child's progress at Parents Evenings and through a written end of year report.

Resources:

There are a range of resources to support the teaching of numeracy across the school. Some of these resources are kept in the central storage area, whilst age specific resources are often kept in classrooms.

Roles and Responsibilities:

The Maths Coordinator is responsible for writing and updating the subject action plan for the school SIDP and responding to the needs of teaching staff. The Maths Coordinator will also monitor planning, teaching and children's work in books, alongside SLT. It is the responsibility of the maths coordinator to order resources and ensure they are organised and readily available.

The class teacher is responsible for planning and assessment within their own class. Plans and assessment data should be evaluated by the senior leadership team and numeracy co-ordinator in line with the school's monitoring timetable. Two-way feedback should be provided as necessary to ensure the policy/planning works for everyone.

The school governors determine, support, monitor and review the teaching of Maths at St Peter and St Paul CofE Primary School. In particular they:

- Monitor how effective teaching and learning strategies are in terms of raising pupil attainment.

- Monitor the effectiveness of the school's teaching and learning of Maths through the school self-review processes and monitoring schedule. These include reports from the Maths Coordinator in the termly report to Governors.

We believe that parents have a fundamental role to play in helping children with their Maths. We do all we can to inform parents about what and how their children are learning by:

- Sending information to parents at the start of each term in which we outline the topics that the children will be studying during that term at school.

- Making them aware of our Calculation Policy on our website.

- Providing ideas and websites to support maths at home.

- Hosting maths cafes where parents are invited to learn alongside their children at school.

- Providing written reports annually to parents in which we explain the progress made by each child and indicate how the child can improve further.

- Holding termly parent and child consultation evenings

- Operating an 'open-door' policy where parents are encouraged to seek support as and when appropriate.

In turn, we expect parents to help their children by supporting them with their Maths homework and allowing them to practice their Maths in everyday situations.

Homework:

Homework is set in line with the school's policy and at the discretion of the class teacher. Homework is seen as a vital part of children's Maths learning as they progress through the school.

Monitoring and Review:

The monitoring of the standards of the children's work and of the quality of teaching in Maths is the responsibility of the Maths Coordinator and SLT, who follow a monitoring cycle. The Maths Coordinator is also responsible for supporting colleagues in their teaching, for keeping informed about current developments in Maths and for providing a strategic lead and direction for their subject in the school.

Period of Review:

This policy will be reviewed on an annual basis.

Document History

Version	Date	Comments
Issue 1	March 2013	Initial draft adopted by governors
Issue 2	July 2015	Reviewed and amended to reflect the new curriculum
Issue 3	July 2016	Reviewed by Maths Coordinator, staff and HT
Issue 4	October 2019	Reviewed by HT. Appropriate amendments made.
Issue 5	July 2020	Reviewed by Maths Coordinators.