



Buckingham Park

Church of England Primary School

Excellence, through God who strengthens us

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School Policy Document

Maths Subject Policy

Date Adopted by Full Governing board:

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01/09/2023

1. BACKGROUND

- 1.1. At Buckingham Park Church of England Primary School it is important that every member of the school community feels valued and respected, and that each person is treated fairly and well. We are a caring community, built on a clear Christian foundation and rooted in Christian values. We aim to provide the highest quality all round education, for each and every child, in partnership with parents, within the context of a Christian community. In short, 'Excellence, through God who strengthens us'.
- 1.2. All school policies are therefore designed to support the way in which all members of the school can live and work together in a supportive way. It aims to promote an environment where everyone feels happy, safe and secure.
- 1.3. The school has a set of values that are based on Jesus' Sermon on the Mount. These are a means of promoting good relationships, so that people can work together with the common purpose of helping everyone to learn. These values are displayed below and permeate everything we do:

We are kind, helpful and polite
We do our best
We are honest
We share
We are peacemakers
We forgive others
We take care of everything, and everyone

2. INTENT

In Maths, we aim to provide a consistent, progressive and clear journey of learning by delivering lessons that are engaging, fun and that do not cap the learning of any child. We aim for every child to feel inspired, challenged and to make sustained progress regardless of their starting points, ability or background. We aim for children to be excellent mathematicians, for maths to be a well-loved subject and one that children enjoy and therefore speak highly of.

At Buckingham Park Church of England School we aim to support children in achieving economic well-being by equipping them with the skills that they need in order to achieve excellence. We do this by delivering a curriculum that:

- Promotes a love of learning through practical activity, exploration and discussion
- Systematically builds upon prior knowledge so pupils develop their knowledge and skills over time
- Encourages children to develop confidence and competence with numbers and the number system
- Allows children to develop the ability solve problems through decision-making and reasoning in a variety of contexts
- Encourages children to explore features of shape, space and measure and develop a practical understanding of data and how it is collected and presented
- Helps the children to see and understand the value of mathematics in the wider world so they can take advantage of opportunities, responsibilities and experiences in later life
- Encourages children to become fluent with the essentials of mathematics, resulting in their ability to rapidly recall and apply knowledge quickly and accurately
- Allows children to reason and justify, and develop an argument which they can justify and prove using mathematical language and diagrams

3. IMPLEMENTATION

At our school, we teach mathematics to all children, regardless of their starting point, ability or individual need. Quality first mathematics teaching ensures that children are provided with opportunities that enable all pupils to make good progress. Effective, vigorous assessment measures check pupils’ understanding, inform planning and aid identification of misunderstandings to help pupils embed key concepts, use knowledge fluently and develop their understanding, and not simply memorise disconnected facts.

We aim for children to master the areas and domains in Mathematics, narrowing the gap between the most able learners and the least able learners. Through an enriching, robust, progressive curriculum, we expect the majority of children to progress at the same pace, ultimately deepening their learning through contextual understanding. There will be times when, based on the security of the pupils’ understanding, decisions are made about when to progress. Those who are ready to progress will be challenged to deepen their contextual understanding by being offered a variety of rich questioning and low ceiling, high threshold tasks rather than accelerate through to new concepts. Those who are not ready to progress will be given tailored opportunities to consolidate their learning through quality first teaching and intelligent practice.

We believe Mathematics to be a rather abstract concept and in order for children to achieve excellence, they need to have the understanding and competency to progress. As a result, we take the concrete-pictorial-abstract approach and deliver this consistently from Nursery to Year 6.

- Concrete- all pupils regardless of age, ability or starting point, should have the opportunity to use a variety of concrete objects and manipulatives to help them understand the “why” of their challenge.
- Pictorial- pupils should then be secure enough in their understanding to progress to pictorial representations than form a basis for further learning.
- Abstract- further learning is achieved by an abstract approach using numbers and key concepts with the utmost confidence.

An outline of classroom strategy at Buckingham Park CofE Primary School:

Classroom strategy	Implementation
<p>Power Maths</p> <p>At least one hour of the school day, every day.</p> <p>In class teacher guides (for planning), text-books (for whole class problems) and practice books (for independent application)</p> <p>Resources, planning and activities online: www.activelearnprimary.co.uk</p>	<p>At Buckingham Park our main core teaching follows the DfE approved Power Maths programme in Reception to Year 6. Power Maths is built around a child centred lesson design that models and embeds a growth mind-set approach to maths and focuses on helping all children to build a deep understanding of maths concepts.</p> <p>Power Maths is a whole-class mastery programme designed to spark curiosity and excitement and help nurture confidence in maths. It used a CPA (concrete>pictorial>abstract) approach used consistently throughout the school every day, for at least one hour of each school day.</p> <p>The mastery approach allows children to progress through a variety of low threshold high ceiling tasks that allow all children to make progress.</p> <p>Each year group uses real life contexts in each lesson, hand on practical learning and carefully planned questions to explore maths learning through discussion, partner and group work. The questions use intelligent practice for children to complete independently in the final section of the lesson. There are 3 textbooks and 3 practice books to follow in each year group per</p>

	<p>term; 1 for Autumn, 1 for Spring and 1 for Summer. The practice books is where the majority of maths work can be shown however each pupil also have a blue maths journal that evidences other maths learning relevant to them; this could include daily fluency, intervention work or challenge work as an example.</p>
<p>NumBots</p> <p>Recall and fluency in mental addition and subtraction, so that children move from counting to calculating.</p> <p>https://numbots.com/</p>	<p>This is used in Reception and Year 1.</p> <p>This is an online website accessed both in school and at home.</p> <p>Children begin to look at subitising number as it lays the foundation of number bonds. They then move onto number bonds to 5, 10, 20 and 100. NumBots then covers practical strategies for approaching different types of calculations - such as bridging to the nearest 10, near doubles, partitioning numbers and compensating.</p>
<p>TT Rockstars</p> <p>A carefully sequenced programme of daily times tables practice.</p> <p>https://trockstars.com/</p>	<p>This is used across the school from Year 2 to Year 6.</p> <p>This is used 3x weekly in school for children to develop rapid recall of number facts – this is on a paper booklet completed in class.</p> <p>There is also an online website that each child from Year 2 to Year 6 has access to in school or at home. Many competitions are set for children to take part in from Termly Battle of the Bands, battles against other schools and individual battles too. ‘Gigs’ are to be completed monthly by children for teacher assessment.</p>
<p>Maths Whizz</p> <p>An online virtual tutor specifically tailored to children’s specific ability.</p> <p>https://www.whizz.com/</p>	<p>This is used in school from Year 3 to Year 6.</p> <p>An initial assessment is taken at the beginning of the year (and reset throughout the year if deemed appropriate)</p> <p>Children complete a variety of maths tasks to practise skills from the NC objectives. This information is taken from their initial assessment and the online programme constantly tailors lessons and tasks based on the children’s input and progress when completing minutes.</p> <p>This is done online at home and children are given a small amount of time in school to complete some minutes too.</p> <p>Those who struggle to access computers at home are able to complete these at school where possible. Every Monday, gold, silver and bronze certificates are awarded to those children who complete the most progressions and the most minutes. These certificates are displayed in class for all to see.</p> <p>Maths Whizz is also celebrated in phase worship from LKS2 and UKS2 where the winning class is shared each week and a trophy is awarded and displayed in class.</p>
<p>Fluent in 5</p> <p>A mixture of daily arithmetic questions for Year 2 to Year 6 to build number fluency and confidence with number facts. Progression is mapped across the year to ensure skills are built upon in each year group.</p>	<p>At Buckingham Park each class in Year 2 to Year 6 takes part in a Fluent in 5 tasks that are daily arithmetic questions to build number fluency & confidence in short burst learning. Saved on the schools shared drive.</p> <p>These easy to implement set of daily questions are presented in the style of the SATs Arithmetic Paper to develop speed and familiarity before the test. Questions are mapped against a progression document and increase in difficulty over the year. These daily activities have been carefully mapped out to ensure revisiting of key knowledge throughout the year. We strongly believe that short burst learning is vital to support children making progress relevant to them and this is why these tasks are taught every day.</p> <p>The resources can be scaffolded and adapted to ensure every pupil makes progress with the foundations of maths learning.</p>

<p>Saved on the shared drive under: Shares/Curriculum/Subjects/Mathematics/Fluent in 5</p>	<p>This short burst daily learning takes part at different points throughout the day and is not necessarily developed in the hour of maths teaching.</p>
<p>Rapid reasoning</p> <p>A mixture of daily reasoning and problem solving tasks for Year 3 to Year 6. Progression is mapped across the year to ensure skills are built upon in each year group.</p> <p>Saved on the shared drive under: Shares/Curriculum/Subjects/Mathematics/Rapid Reasoning</p>	<p>This is used in Year 3 to Year 6 in each class, daily.</p> <p>This daily maths resource is available on the shared drive, these are used daily with children to improve reasoning and problem solving skills. If children are not ready for the skills of the year group, they can be introduced at the discretion of the teacher and other year group questions can be used to cater to needs of individual children or groups of children.</p>

Mathematics in EYFS

Developing a strong grounding in number is essential so that all children develop the necessary building blocks to excel mathematically. At Buckingham Park mathematics is an integral part of the Early Years curriculum. Mathematics learning is entwined with a carefully planned, personalised Early Years curriculum and activities are set up to encourage children to learn through concrete and pictorial representations through play and adult modelling. This encourages 'maths talk', for children to identify mathematical connections and explore number without the fear of making mistakes. We aim for children to develop positive attitudes towards mathematics that will take them through their journey through our school and into the wider world.

Children will develop a secure base of knowledge and vocabulary and are taught to develop a deep understanding of numbers through counting, investigating relationships and identifying patterns. Concrete apparatus and manipulatives in various forms support children in early years to consolidate their understanding. In addition, activities are planned to develop spatial reasoning and other mathematical topics for example shape, space and measure.

Mathematics in Nursery

In Nursery, children are immersed in mathematics in real life contexts through imaginative play, talk and adult modelling. Please see below the table that outlines the mathematics curriculum in Nursery throughout the year.

Mathematics in Nursery					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Taking part with finger rhymes with numbers, being able to count in everyday contexts,	Taking part with finger rhymes with numbers, being able to count in everyday contexts, building with a range of resources both	Using numbers within play, both accurately and being able to recite to 10. Making marks to represent numbers and	Talking about and making our own patterns Extending ABAB patterns Tally charts Developing subitising skills	Make comparisons between length, weight and capacity. Can talk and explore 2 and 3D shapes learning about their properties.	Being able to describe a familiar route and locations using language such as 'in front' or 'behind'. Beginning to be able to solve real

building with a range of resources and completing puzzles, using maths language to describe groups of numbers or weights with words such as more, less, fewer, heavier and lighter, taller and shorter.	inside and outside, creating patterns using natural items, understanding that when you add another item the quantity changes. Categorising objects in terms of size and weight	recording using a tallies. Learning about shapes and their properties and use them to make buildings or shape pictures. Make bus like vehicles using junk.	Weighing and measuring food items	Solidifying our knowledge of numbers 1-5. Being able to describe a sequence of events using words such as first, then and after that.	world maths problems with numbers up to 5. Solidifying our understanding of numbers 1-5, being able to match quantity to numeral.
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Mathematics in Reception

In reception, they use Gap Analysis on Target Tracker and do Objective Led Planning (OLP) for Maths. They tend to aim the lessons based on where the children are and go from here. This year they have been basing our teaching around OLP used from Target Tracker and also Mastery Maths, whereby they look at a number each week. They also have weekly guided Maths lessons using the grid below. They review Maths weekly and use the Early Learning statements for weekly objectives.

The Power Maths overview for Reception is a complete overview of the objectives that are covered but not in the order stated. Please see below the table that outlines the mathematics curriculum in Reception throughout the year.

Mathematics in Reception					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Numbers to 5- counting to 1, 2, 3, counting 4 and counting to 5	Shape-2D and 3D Shapes and spacial awareness	Number bonds within 5 – introducing the part-whole model	Addition to 10 – Combining 2 groups to find the whole	Addition and subtraction by counting on and back on number lines.	Numbers to 20- Counting to 20
Sorting- sorting into 2 groups	Addition and Subtraction- One more and one less	Numbers to 10 – counting to 6,7 and 8 – counting to 9 and 10	Number bonds to 10 – using a ten frame – Using a part-whole model to 10	Recognising odd and even numbers.	ELG: Children count reliably with numbers from 1-20 – place them in order
Learning to subitise to 5	Number bonds to 5	Comparing numbers within 10 – comparing groups up to 10	Shape and Space – Spatial awareness – 3D shapes – 2D shapes	Doubling, sharing and halving using concrete resources	Numerical patterns – Doubling – halving and sharing – odds and evens
Comparing groups within 5 – comparing quantities of identical objects and non identical objects	Using a 5 frame and 10 frame	Addition to 10 – Measuring length, height and weight		Exploring patterns – making simple patterns – exploring complex patterns	ELG: They solve problems, including doubling, halving and sharing

				<p>ELG: Children to recognise, create and describe patterns</p> <p>ELG: Using quantities and objects, they add and subtract 2 single-digit numbers and count on or back to find the answer</p>	<p>Measure – length, height and distance – weight – volume and capacity</p> <p>ELG: Children use everyday language to talk about size, weight, capacity, position, distance, time and money to compare quantities and objects to solve problems</p>
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Remote learning

Remote mathematics education (if needed) allows all pupils to access lessons and learn, and monitor pupils’ engagement. Feedback is given and discussions take place with parents when needed.

4. IMPACT

In order to truly appreciate the intended vision for our curriculum, you must come in, to immerse and experience this for yourselves.

Our children leave our school with a passion for mathematics with an understanding that mathematics is an important and integral part of everyday life. Children develop a positive, problem solving attitude towards mathematics and a confidence in applying their knowledge in a variety of everyday contexts.

Children move through the mathematics curriculum, regardless of ability, at a similar pace. Pupils at our school are given opportunities to develop a broad, rich and deep understanding of each mathematical area before moving on. This is guided by the professional judgement of our staff members.

Our mathematics books are filled with a range of activities showcasing the children’s ability to move through the concrete, pictorial and abstract methods taught in lessons. This includes evidence of fluency, reasoning and problem solving exercises and some photographic evidence of the equipment, strategies and processes followed to gain a deeper understanding of the mathematical skills.

Teachers use formative and summative assessment methods, including PUMA tests, to ensure children are making sufficient progress from their starting points. As a school we use a variety of methods to analyse the data collected and monitor progress thoroughly to identify areas of support. This coincides with feedback given and interventions set up to support children to become the best mathematicians they can be.

We achieve high outcomes in mathematics at the end of Early Years, Key Stage one and Key Stage Two as demonstrated in the table below.

Cohort in 2021-2022	National Expectations	Expected Standard	Greater Depth Standard
EYFS	65%	73%	-
KS1	68%	75%	27%
KS2	71%	79%	24%

SEN/ Inclusion

At Buckingham Park School, we value, nurture and celebrate the skills and talents of every child.

Our curriculum is aspirational, vibrant, engaging and inclusive. We strive to enable all children to do their best and optimise their potential through quality first teaching, careful planning - in line with developmental stage and interests of cohorts - removal of barriers in accessing the curriculum e.g. writing frames, visual prompts, adapted resources and alternative methods of recording.

The careful planning and learning opportunities are designed to reduce, and ultimately remove gaps between disadvantaged and vulnerable learners and their peers. Our commitment to engaging, inspiring and equipping all learners is at the heart of our curriculum intent and fosters the implementation of our curriculum and the development of skills, in both academic and non-academic subjects equally, ensuring equality of opportunity and a broad and balanced provision- for all learners- in a holistic and personalised way.

Careful consideration is afforded to the broad and diverse offer interwoven throughout our curriculum to reflect our multi-cultural, multi faith school community and so that quality, first-hand experiences are presented in a multitude of ways enabling full participation and maximum engagement. All educational visits are risk assessed and planned, so that every child may access and enjoy these educational opportunities, capitalising on enriching and memorable experiences.