St Pauls Primary School,
Maths Intent, Implementation and Impact

The intention of our Maths Curriculum:

At St Pauls CE Primary School, Newcastle, we are committed to ensuring that all learners become confident and enthusiastic mathematicians who develop a life-long love of maths. We aim that every child, regardless of their background, ability or needs are able to succeed and achieve. To do this we aim to provide an environment where children become fluent in the fundamentals of maths, are able to follow a line of enquiry using reasoning skills and apply their mathematics to solve problems.

- *A cumulative curriculum.*

We apply a *cumulative curriculum*, which means that the units of study are organised into distinct domains. Pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. It is important that all learners will have opportunities to identify patterns or connections in their Maths work in order to predict and reason.

- *Mastery.*

When teaching maths, we intend to provide a curriculum which caters for the needs of *all individuals* and sets them up with the necessary skills and knowledge for them to become successful in their future pursuits in education and work. We incorporate sustained levels of challenge through varied and high quality activities with a focus on fluency, reasoning and problem solving. We aim to deliver a ***mastery approach*** where our learners are required to explore maths in depth and in a variety of contexts, using mathematical vocabulary to reason and explain their workings.

A wide range of mathematical resources are used and pupils explore concepts and calculations in concrete, pictorial and abstract contexts. They are taught to explain their choice of methods and develop their mathematical reasoning skills. We encourage resilience and adaptability, as well as the acceptance that struggle is often a necessary step in learning. Our curriculum allows learners to better make sense of the world around them relating the pattern between mathematics and everyday life.

Teachers have high expectations, underpinned by our belief that all learners can succeed and make progress from their starting points.

We intend for all learners to become *fluent* in the fundamental knowledge, skills and understanding of mathematics through varied and frequent practice of increasing complexity, so that learners develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.

We supplement this learning with the teaching of ***reasoning and problem solving***. We intend for all learners to reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language. We also intend for all learners to 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.

To develop mastery, we aim for all learners to secure *long-term*, *deep* and *adaptable* understanding of maths which they can apply in different contexts.

<u>The implementation and organisation of our curriculum:</u>

- *The curriculum map.*

The National Curriculum is the foundation of the Maths Curriculum at St Pauls. We then use the Essentials Curriculum to identify key objectives, and our medium-term plans outline opportunities for learners to develop knowledge, skills and understanding across all objectives. The *sequence* of our medium-term plans broadly follow that of White Rose Maths.

The expectation is that the majority of learners will move through the programmes of study at broadly the same pace. Learners who grasp concepts *rapidly* are challenged through rich and sophisticated reasoning and problem solving tasks, before any acceleration through new content. Those who are not sufficiently fluent will have further opportunities to explore the concept – using concrete materials and pictorial models where appropriate – before moving on.

- *Outline of a Maths lesson.*

Lessons start with learners being set short tasks based on *prior learning*, to ensure knowledge and fluency are maintained and developed. This time also offers the chance for staff to support learners with consolidation or pre-teaching, ensuring they are confident with skills required for the upcoming session.

We adopt a ***concrete-pictorial-abstract*** approach, in order to deliver appropriately challenging work for all individuals. We utilise a range of mathematical resources in classrooms including Numicon, Base-10 and counters ('concrete equipment'). When learners have grasped a concept using concrete equipment, images and diagrams are used ('pictorial') prior to moving to abstract questions. Solely abstract work in maths requires that children understand a concept thoroughly, and demonstrate that they are able to apply their knowledge and understanding to answer and solve maths *without* equipment or images.

Throughout our teaching, we continuously monitor learners' progress against expected attainment for their age, making formative assessment notes where appropriate and using these to inform our teaching. Summative assessments are completed at the end of each term and their results inform both discussions in termly Pupil Progress Meetings with the SLT and data we input on the Depth of Learning tracking system. The main purpose of all assessment is to always ensure that we are providing excellent provision for every learner.

- *Additional resources (intervention and home-learning).*

In order to advance individual learners' maths skills in school *and* at home, learners have access to Mathletics and Times Tables Rock Stars. In Lower KS2, maths homework is set weekly, using

Mirodo and in Upper KS2 homework if set weekly using SATS Companion. Homework in Key Stage One is set on OneNote and reflects the learning in school from that week.

- *Development.*

We continuously strive to better ourselves and frequently share ideas during staff training.

We take part in training opportunities and regional networking groups focused on developing skills for mastery in maths, such as the *Great North Maths Hub*.

We actively promote Maths throughout school, and have established a range of interactive displays that promote fluency and recall of multiplication facts, consolidation of recently learned concepts, and provide an opportunity for children to engage in maths discussion with peers outside of daily lessons.

The process for *monitoring* the Impact of our Curriculum

The aim of our curriculum is to ensure that *all* of our children have the best possible start to engaging with maths. The consistent structure of our lessons, the whole-school provision of a shared and cohesive resource base, and the shared *practice* (vocabulary and models) serve to ensure that *all* of our children can engage successfully with maths.

- *Pupil voice.*

Through discussion and feedback, learners talk enthusiastically about their maths lessons and speak about how they love learning about maths. They can articulate the context in which maths is being taught and relate this to real life purposes. Learners show confidence and believe they can learn about a *new* maths area and apply the knowledge and skills they already have.

- *Expectations and assessment.*

Mathematical concepts or skills are mastered when a child can independently demonstrate fluency, use the mathematical language to explain their ideas, and apply the concept to new problems in unfamiliar situations. Learners are expected to demonstrate a quick recall of facts and procedures, including the recollection of the multiplication tables.

As they progress through school, we expect a growing flexibility and fluidity to move between different contexts and representations of maths. Learners show a high level of pride in the presentation and understanding of the work. They are also able to recognise relationships and make connections in maths lessons. Teachers plan a range of opportunities to use maths inside and outside school to help develop this ability further.

At the end of each year we expect the learners to have achieved age related expectations for their year group. Some learners will have progressed further and achieved greater depth and learners who have gaps in their knowledge receive appropriate support and intervention. Our aim is for all learners to develop a life-long love and curiosity of maths, while securing a long-term, deep and adaptable understanding, which they can apply in different contexts.

The map from intent, to implementation, to impact serves to provide a curriculum which enables our children to gain the knowledge, skills, and understanding necessary to prepare them for life beyond primary school. We seek to see our pupils flourish and become equipped with the tools needed to make a positive contribution in the world at each stage of their life.