



Shankhill C of E Primary School

*Our vision: Creative learning, personal achievement and happiness.
Enabling everyone to flourish and 'to live life in all its fullness'. (John 10:10)*

MATHS POLICY

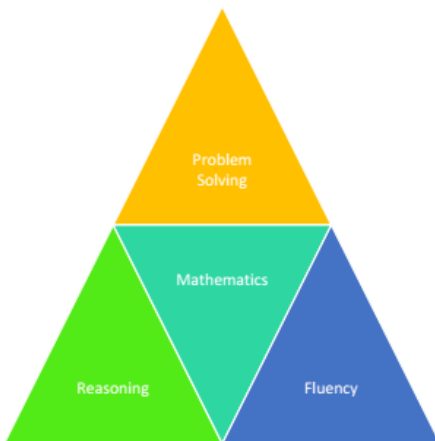
Intent

Our carefully planned and progressive curriculum is designed with the target of all children mastering mathematics. To help us achieve this ambitious goal, we understand the important role that our school vision, values and virtues play, as they help our children become rounded learners, who are ready to succeed to the best of their ability to 'be the best me I can be'. Our aim is for all children to be confident, enthusiastic and creative mathematicians, who are able to transfer their knowledge and skills into the rest of their education and their everyday lives.

Shankhill School is ambitious for every child including pupils with SEND and other vulnerable groups. Reasoning and problem solving opportunities are available for all pupils (no matter where they are in their learning) in recognition that we believe everyone can be a successful mathematician, and these skills are integral in meeting that aim.

All teaching staff take part in regular (once a half term) professional development (CPD) during staff meetings with the maths lead sharing the latest research and developments relevant to this subject. All staff have the opportunity to take part in their own CPD with relevant maths courses (NCETM, NNW mathshub) signposted. The maths lead also attends once a half term cluster meetings (Brampton) to support their leadership development.

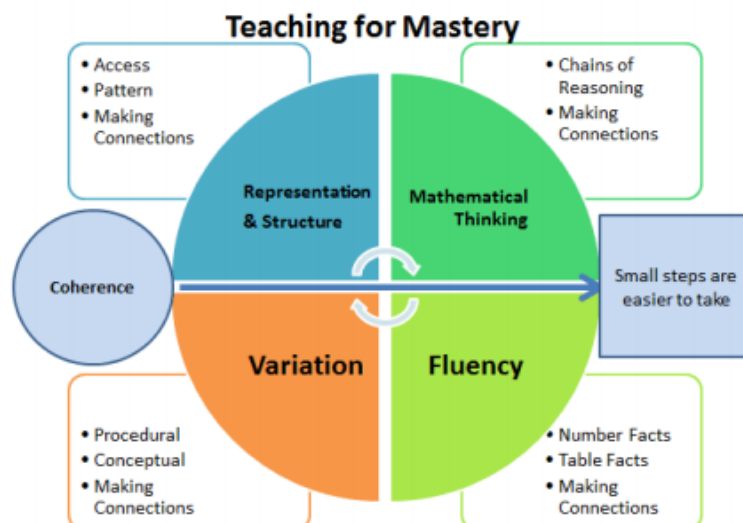
At Shankhill School, we will ensure that our children reach these ambitions by making sure they meet the National Curriculum expectations, to:



- become fluent in the fundamentals of mathematics, through varied and fluent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall knowledge rapidly and accurately,
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language,
- 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 smaller steps and persevering in seeking solutions.

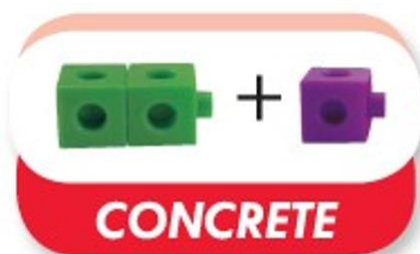
Implementation

Across our school we mastery approach. develop children's understanding of concepts from the to the end of Y6. We can achieve in teach for secure and of mathematical small steps.



teach using a This is designed to knowledge and mathematical Early Years through believe all children mathematics and deep understanding concepts through

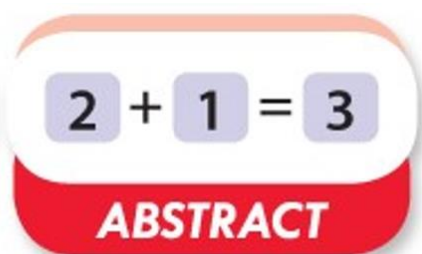
New concepts will be introduced using a 'Concrete, Pictorial and Abstract' approach; enabling all children to experience hands-on learning when discovering new mathematical topics.



CONCRETE



PICTORIAL



ABSTRACT

Concrete is the 'doing' stage, using concrete objects to solve problems. It brings concepts to life by allowing children to handle physical objects themselves.

Pictorial is the 'seeing' stage, using representations of the objects involved in maths problems. This stage encourages children to make a mental connection between the physical object and abstract levels of understanding, by drawing or looking at pictures, circles, diagrams or models which represent the objects in the problem.

Abstract is the 'symbolic' stage, where children are able to use abstract symbols to model and solve maths problems.

In every lesson, previous learning will be revisited (with a focus on skills or knowledge, which connect to our current learning, as well as other concepts) to ensure this is retained in our long term memory.

In Shankhill School, we follow the National Curriculum and primarily use the White Rose Scheme of Work as a guide to support teachers with their planning and assessment. All children are taught their own discrete year group curriculum. Teachers also draw on a variety of other planning resources to enhance children's learning and provide a bespoke teaching and learning experience that is designed to interest, inform and inspire our children. (These include: NCETM mastering number, arithmetic and fluency, reasoning and problems solving, Tara Loughran)

Teaching Mathematics in Early Years

In our Early Years, children are given the opportunity to develop their understanding of number, shape, space and measure through a combination of child initiated, adult led and supported in the moment learning experiences.

We follow Shankhill's *Development Matters* (2021) to ensure the Early Years Foundation Stage objectives are met and children are taught the prerequisite skills for mathematics in the National Curriculum. (This document includes enhancements by combining aspects from both *Development Matters* & *Birth to 5*.) We understand that providing this secure base, through using a range of manipulatives and activities, will ensure children have the vocabulary, knowledge, skills and 'Can Do' attitude, which will allow them to master mathematics in the future.

Children in Early Years have both daily Mastering Number (NCETM) discreet sessions and short teacher led inputs followed by guided provision incorporating White Rose SOL. Mastering Number is used to ensure the children to have a strong and robust understanding of number. This combines with a Concrete-Pictorial-Abstract approach across the whole school which allows children to understand all strands of mathematics from different aspects.

We also explore maths through in the moment learning, such as a range of play provocations, which promote curiosity both independently, and are supported by teachers as play partners, where there is plenty of scope for exploration. Maths is also emphasised in all aspects of the daily routine e.g. snack time, lining up etc. Maths through real life and meaningful experiences, using practical hands on resources both inside and outside is key in Early Years.

After initial assessment in the Early Years, areas of need are identified and mathematics interventions can take place throughout the teaching week, if required.

Teaching Mathematics in KS1 and KS2

Within KS1, the Early Years approach is built upon as we move to more formal learning. Children continue to have daily Mastering Number sessions to ensure a solid understanding of number. Within taught lessons, children follow our six-part learning structure that continues into KS2.

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| Connect | - Each lesson begins with Flashback Four, where children are asked to recall previous learning in order to ensure that it is within their long term memory. The content of this deliberate interleaved, spaced and retrieval practice can be connected to the new learning we are beginning in the next part of the lesson (if there is a link). |
| Explain | - New vocabulary, knowledge and skills are taught explicitly. |
| Example | - Teachers then teach new concepts whilst ensuring any misconceptions are addressed. Teachers use concrete - pictorial - abstract methods to demonstrate this new learning. |
| Attempt | - The class will then attempt examples together and independently, receiving instant feedback both times, to help them progress. |
| Apply | - Then children will complete their own work, based on developing fluency of the new concept in a range of different representations. |
| Challenge | - Children will then have the opportunity for their understanding to be deepened through reasoning, problem solving or challenges. Planned challenges include discussions and debates about True or False statements. |

Supporting the Teaching

In addition to offering every child our mastery approach of learning, every child from Nursery —Year 6 has access to Mathseeds, My Maths and/or Times Tables Rock Stars, depending on their stage of learning. These intelligent learning programmes assess learning knowledge and understanding and use this to tailor learning to correctly challenge and enrich learning, or activities can be selected by teachers to consolidate, extend and enhance learning to meet a desired learning intention.

In our inclusive school, all pupils are supported through high quality small group, cohort specific wave 1 teaching. Where pupils require specific or additional support to master the curriculum and maintain pace and depth of learning in line with their peers and/or age-related expectations, wave 2 or 3 additional support and interventions will be delivered by trained teaching staff. For instance, 1st Class @ Number intervention in KS1.

Assessments

Assessment for learning should occur throughout the entire maths lesson, enabling teachers and teaching assistants to adapt their teaching/input to meet the children's needs. There should be a mixture of teacher marking and self-assessment taking place 'in the moment' as this allows children to receive instant feedback which can be acted upon. It allows the children to understand where they are up to in their learning and the next step to move forward.

In Early Years, assessment for learning is an on-going process throughout the day and plays an important part in our Plan, Do, Review approach to the Early Years curriculum.

Teachers use the National Curriculum Year group expectations that are in our mathematics progression document - based on the White Rose scheme and DfE Ready to Progress Criteria - to monitor the children's progress in mathematics and supplement this by gathering evidence over the course of each half term. This formative assessment builds over the course of the academic year to provide a full picture of where each child is in their learning. Teachers use this information to inform planning for groups and individual pupils.

Summative assessments are made at least once per term in order to provide further understanding of the level a child is working at and to ensure teachers have a more rounded judgement of each pupils' abilities. We use end of block assessments from White Rose and end of term assessments to track progress and attainment.

Regular pupil progress meetings take place during staff meetings to ensure that children who are not making expected progress are focused upon and necessary interventions are put in place to support their progress.

In the Early Years, individual pupils are tracked and assessed on an ongoing basis. The results from this are collated every half term and these observations are used to inform planning and 'next steps' learning to enable learning to be progressed and gaps closed.

Impact

The impact of the mathematics curriculum will be monitored using a variety strategies, including:

- Formative Assessment
- Summative assessment
- Pupil progress meetings
- Book looks and Pupil Book Study
- Pupil and staff voice opportunities (i.e. questionnaires)
- Observations

These will show that children at Shankhill School are being given the opportunity to flourish. Lessons will use a variety of resources to move children through our Concrete - Pictorial - Abstract style of learning. A range of different representations of mathematical concepts will be evident in books as well as opportunities for children to practice their fluency, reasoning and problem solving skills.

This will culminate in pupils at Shankhill School being confident, creative and enthusiastic mathematicians, who are ready for the next stage in their education.