**Clayton Village Primary School**

Maths Vision

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history’s most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore 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.

Our Maths Intent

The national curriculum for mathematics aims to ensure that all pupils:

* become fluent in the fundamentals of mathematics, including through varied and frequent practice so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
* reason mathematically by following a line of enquiry and developing an argument, justification or proof using mathematical language
* can 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.

 At CVPS, these skills are embedded within Maths lessons and developed consistently over time. It is important that children are able to recognise the importance of Maths in the wider world and that they are also able to use their mathematical skills and knowledge confidently in their lives in a range of different contexts. We want all children to enjoy Mathematics and to experience success in the subject, with the ability to reason mathematically. We are committed to developing children’s curiosity about the subject, as well as an appreciation of the beauty and power of Mathematics.

Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. The expectation is that the majority of pupils will move through the programmes of study at broadly the same pace. However, decisions about when to progress should always be based on the security of pupils’ understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

Implementation

The content and principles underpinning the 2014 Mathematics curriculum and the Maths curriculum at CVPS are:

* Teachers reinforce an expectation that all children are capable of achieving high standards in Mathematics.
* The large majority of children progress through the curriculum content at the same pace.
* Differentiation is achieved by emphasising deep knowledge and through individual support
* Teaching is underpinned by methodical curriculum design and supported by carefully crafted lessons and resources to foster deep conceptual and procedural knowledge.
* Practice and consolidation play a central role. Carefully designed variation within this builds fluency and understanding of underlying mathematical concepts.
* Teachers use precise questioning in class to test conceptual and procedural knowledge and assess children regularly to identify those requiring support, so that all children keep up.

To ensure whole school consistency and progression, the school follows the White Rose Schemes of Learning. The White Rose Schemes of Learning break down the national curriculum into small steps to ensure that the NC objectives are taught progressively. Alongside this, to ensure that staff at all levels understand the pedagogy of the approach, the DfE approved ‘Power Maths scheme and the NCETM Spine materials are used to enhance staff subject knowledge and provide conceptual fluency.

The Clayton Maths approach

New concepts are shared within the context of a real world problem. This promotes an awareness of maths in relatable real-life contexts that link to other areas of learning. Maths lessons take the form of ‘I do’ (Teacher modelling of concrete, pictoral and abstract procedures and concepts.) The use of stem sentences can support this. ‘We do’ which is children’s time to work in groups, pairs or individually to apply the procedures and concepts modelled to them. ‘I do’ is independent application of the procedure and/or concept at a level of support or challenge that is appropriate to individual children. In years 2 to 6, break time is used for AFL of the children conceptual and procedural understanding and grouped according to the level of support or challenge needed. Challenge can take the form of ‘rich and sophisticated’ problems from the White Rose Maths Small Steps guidance, NCETM and ‘I see reasoning/problem solving resources. Power Maths also provides a reflect task if needed for the children to review, reason and reflect on learning and enables the teacher to gauge their depth of understanding. Support and challenge should happen throughout the lesson but the children should work on the same learning objective to ensure that mastery for all. The I do, We do, You do sequence can happen repeatedly within a lesson if this supports the children’s understanding.

Concrete, pictoral and abstract methods are carefully chosen and are modelled in lessons. The representations being used need to pull out the concept being taught and in particular the key difficult point. The representation will create an image in the learner’s mind which will progress them on to being able to complete abstract calculations without needing to rely on the concrete or pictoral representation.

From Year 1 to Year 6, children will practice and consolidate their learning in fast maths sessions. Fast maths is the practice of facts the children need to know from memory or the practice of calculation methods already taught with the aim of becoming increasingly fluent. Fast maths takes place a minimum of 3 times a week. Children are taught and modelled strategies for answering the questions as fluently as possible. Concrete and pictoral resources are available for children who require them. Flexible guided groups, led by an adult are used to support the children that need it. Assessment of fast maths results and strategies, allows teachers and leaders to see who needs further support.

Some children need support in understanding and remembering key mathematical concepts and facts. Assessment for learning informs the flexible and careful use of grouping and adults in maths lessons which means children’s misconceptions and fluency are quickly and accurately supported. Adults can also use the precision teaching method to support children.

Coverage

Please click on the link below and select your child’s year group and term. This will allow you to look at the coverage during the term.

<https://whiterosemaths.com/resources?year=year-1>

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| --- | --- | --- | --- |
|  | **Autumn** | **Spring** | **Summer** |
| **EYFS** |  |  |  |
| **Year 1** |  |  |  |
| **Year 2** |  |  |  |
| **Year 3** |  |  |  |
| **Year 4** |  |  |  |
| **Year 5** |  |  |  |
| **Year 6** |  |  |  |

Planning and Assessment

At Clayton, we encourage a collaborative approach to planning so that staff can share good practice and ask for support if needed. Where possible, this will be done by the subject leaders. Staff should use and White Rose scheme of learning and small steps guidance, Power Maths and the NCETM spine materials to plan their lessons. Short term planning is done on a weekly basis with teachers making alterations following assessment for learning. Teachers also plan activities and additional tasks which offer smaller steps and support and ‘rich and sophisticated’ problems which provide further challenge for children who are able to progress deeper in their learning. CVPS provides White rose Maths, Power Maths, NCETM and I see reasoning/problem solving to address these needs. This ensures that all children are able to complete tasks with appropriate levels of support and challenge.

**Assessment for Learning:** Children receive effective feedback through teacher assessment in line with our feedback policy and AfL is integral to the design of each lesson; The structure of the teaching sequence, ensures that children know how to be successful in their independent work. Common misconceptions are addressed within the teaching sequence and key understanding within each ‘small step’ is reviewed and checked by the teacher and the children before progression to further depth.

**Formative Assessment:** Short term assessment is a feature of each lesson. Observations and careful questioning enable teachers to adjust lessons and brief other adults in the class if necessary. At the end of each blocked unit of work, the children also complete the Power Maths end of unit check. The outcome of this is used by the teacher to ensure that any identified gaps in understanding can be addressed.

**Summative Assessment:** Teachers administer a termly arithmetic paper and reasoning and problem-solving paper from NTS Assessments for Y3, Y4 and Y5. The results of these papers are used to identify children’s ongoing target areas, which are communicated to the children, as well as to parents and carers at Parents Evening. They are also used alongside the end of unit assessments and outcomes of work, to inform the whole school tracking of attainment and progress for each child in line with National Curriculum age related expectations. Assessment data in maths is reviewed throughout the year to inform support and to also ensure that provision remains well-informed to enable optimum progress and achievement. End of year data is used to measure the extent to which attainment gaps for individuals and identified groups of learners are being closed. This data is used to inform whole school and subject development priorities for the next school year.

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