Christ Church School, Hampstead
A village school in London inspiring ***life in all its fullness***

Curriculum report to Governors
Maths
October 2021
Subject leader: Kathryn Pagnello

Intent

At Christ Church we recognise that mathematics is an important life skill as well as fundamental to the vast majority of career pathways. Therefore, it is our intent that we provide a high-quality mathematical education which will ensure children move to the next stage of their education being numerate, confident and well-equipped. Through quality first teaching, with our primary aim being mastery of the curriculum for all children, we aim to unlock children's potential in maths and make it a fun, engaging subject which is accessible to all. Our intention is to show children they can master the maths curriculum and that maths is an area where all children can experience success and is not something to be anxious about. With this in mind, we recognise the importance of being fluent in the basics and provide a variety of opportunities for children to practice their automatic recall to make it more rapid and accurate.

All children are encouraged and given the opportunity to reason mathematically and solve problems.

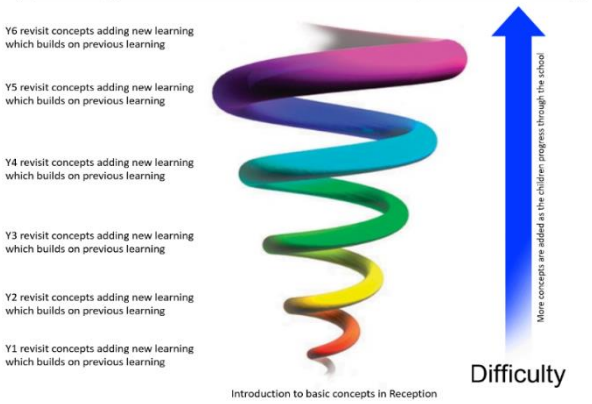
With maths being an interconnected subject, children not only need to make connections and links between mathematical concepts but they need to be provided with concrete experiences of using maths outside the maths lesson. Wherever possible, we aim to use maths in our other subject areas so that children have the opportunity to experience interwoven learning and also to understand the importance of everyday maths in other areas.

Children who are working at greater depth in each year group receive input which challenges their reasoning and problem solving skills using the content which has been taught. Only once a rich offer has been provided where children can demonstrate they can make connections and use and apply their skills broadly would we consider moving on to what might potentially be new content.

A Spiral Curriculum

The manner in which the National Curriculum Programmes of Study are set out leads to spiralled learning between each year group. The children revisit the same mathematical concepts but each time they are introduced to new and more challenging learning which builds upon what has gone before. This not only happens between each year group but also within a year group where teachers design a year group curriculum which spirals back to the main, key areas.

Spiralling Curriculum from Year Group to Year Group



Teaching for Mastery

At Christ Church we do not use any mastery scheme, instead, our view of mastery is aligned with that of Derek Haylock (2019) and the National Centre for Excellence in the Teaching of Mathematics (NCETM):

Mastering maths means pupils acquiring a deep, long-term, secure and adaptable understanding of the subject. The phrase 'teaching for mastery' describes the elements of classroom practice and school organisation that combine to give pupils the best chances of mastering maths. Achieving mastery means acquiring a solid enough understanding of the maths that's been taught to enable pupils to move on to more advanced material. (NCETM, 2019)

Through quality first teaching we aim for all children to acquire mastery in maths. Teachers use the progression document for each strand in maths to ensure learning is built cumulatively. It is important that we check children's understanding of the methods they use and calculations they can do. This is because many of the children are capable, for numerous reasons, of using the most efficient methods quickly and with ease, but there may be underlying gaps.

Key points relating to our intent

Although as a general rule we endeavour to follow the National Curriculum in terms of how it has divided the programme of study for each key stage, we may also choose to teach content earlier or later depending on the cohort. This is done for many reasons and it is specific to our context to ensure the needs of each cohort are met. The National Curriculum helpfully highlights that the set programmes of study are to be met by the end of the relevant key stage.

Children who have learnt different written calculation methods outside school will have their understanding checked through practising our set methods in each year group to ensure their understanding of number is secure (with teaching for mastery in mind). If this is secure, then they will be able to continue to use either method.

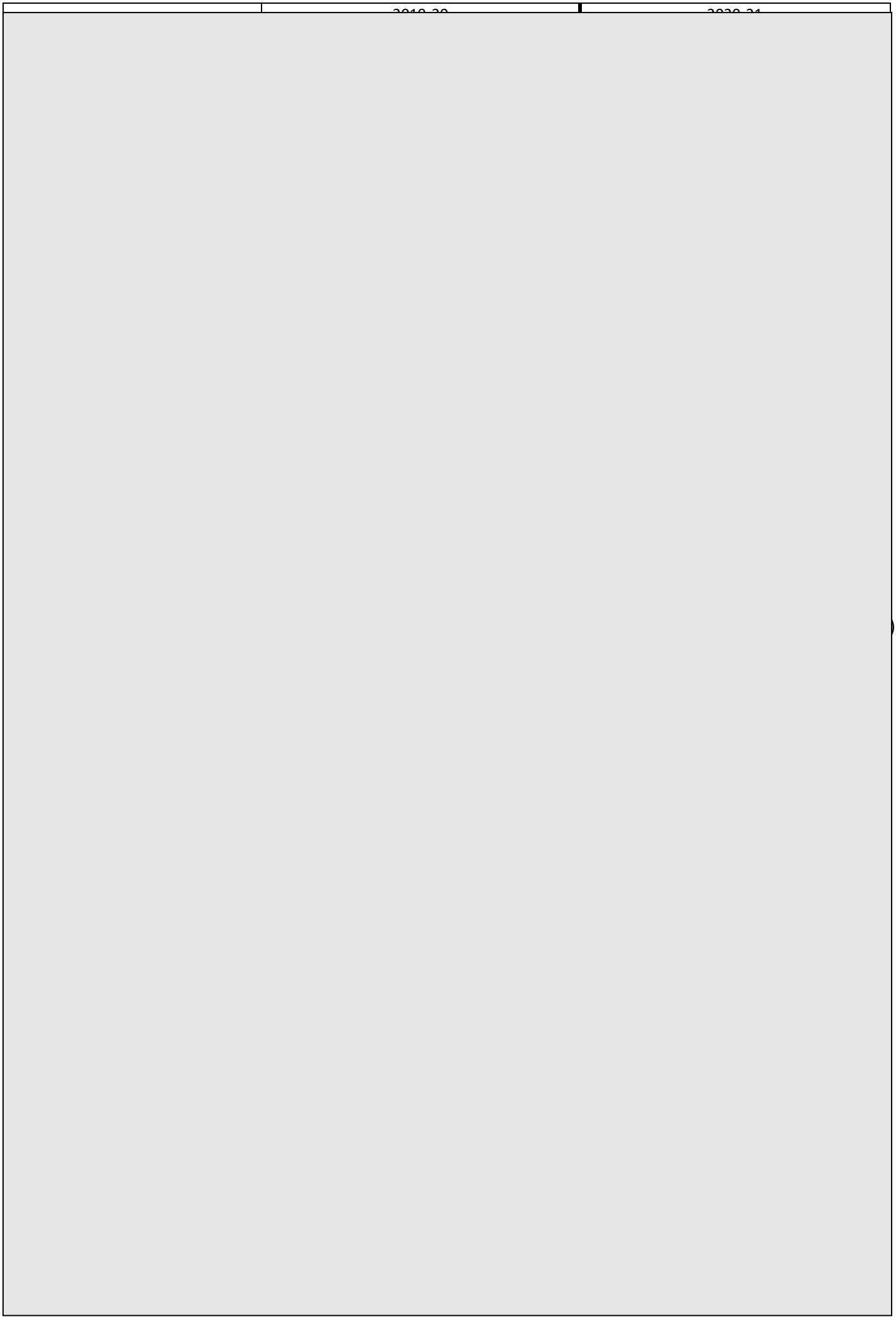
Implementation

- Maths is taught by class teachers with the support of SLT and the subject leader.
- Maths is taught every day when possible to ensure not only curriculum coverage, but also mastering maths so that pupils have a deep and secure understanding of the subject.
- Yearly overviews are used to ensure curriculum coverage across the school.
- CPD is attended by the subject leader and fed back to staff in meetings and training. Subject leader liaises with other Camden Maths subject leaders to learn new practice to share with colleagues.
- Ongoing assessment of children occurs during maths lessons to monitor progress and lessons are planned and adapted to meet children's varying needs.
- Termly assessments are also used to monitor progress (PUMA) and end of year outcomes are reported to parents in children's reports.
- Parents' understanding of how maths is taught and the key calculations is supported by parent workshops in Year 2 and Year 4.
- From Year 2 upwards, children take part in the 'Times Table Challenge'. This endeavours to aid teaching to ensure children are fluent in their times tables by the end of Year 4. To support this, children are tested on their times tables weekly from Year 2 to Year 4. (This sometimes continues in Year 5 depending on the needs of the class). In Y6, times tables are consolidated with weekly 'Bringing Down the Minutes' tests that aim to increase speed and fluency when recalling times table facts.
- Times tables are taught in a specific order to ensure children have a chance to consolidate their understanding of one before moving onto another.
- Some children are closely monitored using fine tracking if teachers and leadership believe they will not reach the end of year expectation in the subject. These children are often also supported with short-term or long-term interventions to ensure progress.
- In Years 4, 5 and 6, children complete arithmetic tests weekly to rehearse key skills. Their results are closely monitored by teachers and shared with parents so that gaps can be addressed.
- Book scrutiny and learning walks are carried out by SLT and the subject leader.
- When possible, opportunities are used to make maths cross-curricular so that children are able to use skills they are already secure with in a different context.
- Children who exceed expectations have the opportunity to take part in the UK Maths Challenge each year and some Year 5 and 6 children are invited to take part in weekend classes at the Royal Institute for Mathematics.
- Home learning in 2020/21 aimed to continue with teaching the curriculum as it would have been delivered in school. Teachers continued to teach topics as set out in their planning and the use of teaching videos meant that many classes had frequent pre-recorded lessons - delivered by their own class teacher - to engage with at home. Maths work submitted was either self-marked by children or marked by teachers via Google Classroom. Weekly testing of arithmetic continued in Years 5 and 6.

Impact

- Consistently high percentage of pupils in KS1 and KS2 exceeding national expectations despite two periods of school closure.
- Positive progress score of 2.7 for KS2 pupils in 2019 (above average)
- Children talk about maths positively and are eager to be challenged.
- Children take part in a range of problem solving activities that draw out their ability to reason about maths.
- Use of morning work and other spaced retrieval activities to rehearse prior learning reinforces our spiralling curriculum.
- Children continued to learn new concepts and revise previously taught concepts during periods of home learning. High levels of engagement and high quality provision meant many children returned to school having made good progress even while learning from home.

Whole school standards (two-year trend)



Last year's key developments and successes in 2020/21:

- Ensure teaching of times tables is preparing all children for the times tables statutory check at the end of Year 4 and provide additional support where necessary. (2020/21 target achieved) – Year 4 teacher attended specific training prior to the check. Interventions took place for children who needed support with their times tables both during the school day and as after school booster sessions. Despite the check being non-statutory, Year 4 children took part in the 2020 multiplication check.
- Support parents' understanding of times tables (why we teach them when we do, ways to help children learn them) with a parent workshop designed by the subject leader. (2020/21 target carried forwards) – A times table workshop was being developed prior to the second period of school closure. As we felt this would be best delivered face to face rather than virtually, this workshop will take place this academic year.
- Finalise and share calculation progression to ensure consistent implementation. (2020/21 target achieved) – calculation policy finalised by maths leader. A staff meeting was used to share this with class teachers and the policy was also published on the website for parents to access.
- Trialling of consistent maths display policy across the school to aid spaced retrieval of previously-learnt material. (2020/21 target achieved) – maths display policy finalised. Maths displays have been rolled out across the school and are consistently used. Children refer to the maths displays to remind them of their prior learning which helps to embed our spiral curriculum.
- Use of homework activities for maths to support spaced retrieval. (2020/21 target achieved) – homework was used consistently as an opportunity to support spaced retrieval, particularly in KS2. Children were able to revise and consolidate key maths learning regularly throughout the year.
- Subject leader to ensure that our yearly overviews match up with the 'Ready to Progress' documents recently produced by the government. (2020/21 target achieved) – The 'Ready to Progress' criteria have been embedded into our curriculum maps to highlight key areas for teachers to ensure they revisit throughout the year. The cumulative building of key concepts to bear in mind which enable children to tackle the next year's curriculum are also highlighted.
- Use booster sessions effectively to help children 'catch up' with any missed or misunderstood concepts from last year due to home learning. (2020/21 target achieved) – Booster sessions were used consistently by class teachers to help children 'catch up' on missed or misunderstood concepts from the 2019 period of school closure in the autumn term and again in the summer term after the 2020 period of school closure. Close monitoring of children's progress in these sessions took place and good progress was made by the vast majority of children who attended.

The **anti-racist curriculum review** document prompted us to reflect on the resources we use for maths and the characters, names and situations used in problem solving activities and in the range of pre-made resources we use. It also prompted us to review whether we use examples from a range of cultures in our shape, space and pattern work; this is an area where we already draw on a range of traditions for examples.

COVID impact – remote learning provision and recovery curriculum

Home learning provision (March–June 2020 and January-March 2021)**:** maths was included as a daily task during home learning and this meant children were constantly exposed to maths and able to learn new content as they would have done in school while also consolidating prior learning. Teaching videos created using Loom were provided for classes which enabled children to access learning in a familiar way with their class teacher teaching and modelling new learning. There were lots of opportunities for children to complete open-ended maths investigations at home and children spoke positively about these.

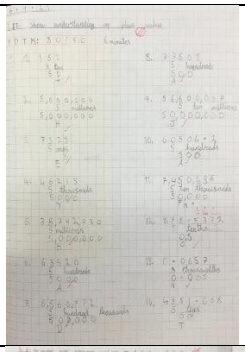
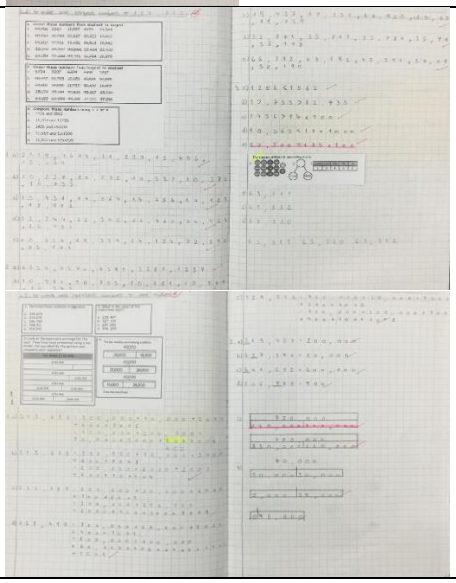
Recovery curriculum: no major adaptations to our Maths curriculum have had to be made for 21/22 school year, however class teachers have been giving more time to recapping skills from the previous year where necessary if they have assessed there are gaps in the class. Where gaps are evident for a small number of children, booster sessions are being used to ensure children keep up. The DfE recovery curriculum document suggests it is crucial to take time to practise rather than moving through the curriculum too quickly and that an emphasis needs to be placed on ensuring children are fluent and confident.

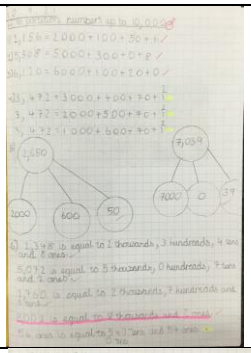
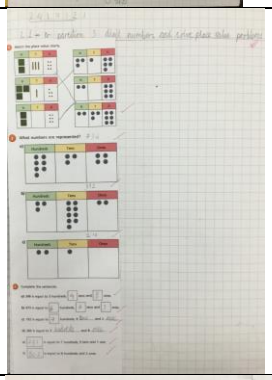
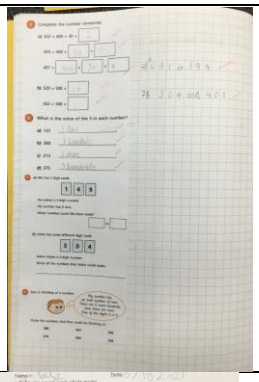
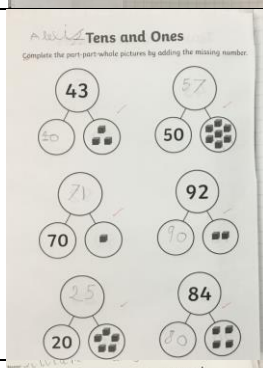
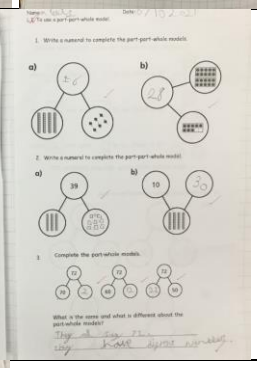
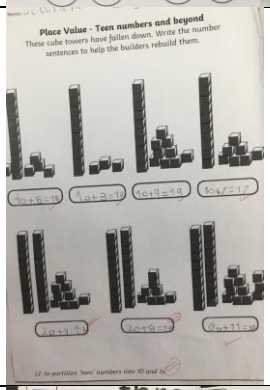
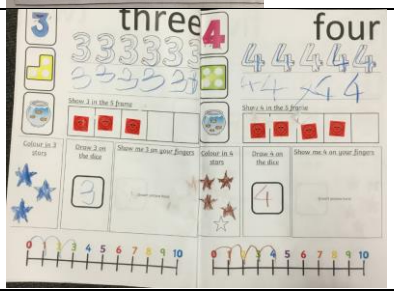
Key targets and actions moving forward (development priorities for 2021/22):

Target and *intended outcome*	Planned actions (including dates where applicable)
1. Ensure participation in extra-curricular maths events are part of recovery plans to ensure enrichment is back to (or above) pre-COVID levels *Children to have experience of taking part in inter school maths events e.g. Christ's Hospital Problem Solving Day*	Subject leader to investigate potential trips and plan these visits (autumn term), including any pre-visit work or follow up work. Share learning from these visit with others – rest of school in assemblies, other staff.
2. Supporting teachers to identify topics for booster and learning recap, using White Rose scheme to support this. *All children to be able to access the curriculum for their current year group despite period of school closure and make expected or above expected progress.*	White Rose maths scheme to be introduced to class teachers as a tool for helping them to sequence and plan lessons with recap and revisiting in mind. (Completed in September 2021) Subject leader to complete two learning walks in the autumn term (one already completed and one to be completed) to monitor recapping and embedding of learning. Class teachers to use own assessments of children to decide on appropriate booster sessions and keep a record of the impact of these throughout the year.
3. Finalise and deliver a times table parent workshop. *Parents to have a deeper understanding of how to help support the teaching of times tables for their children and feel confident in doing so.*	Subject leader to finalise the parent workshop during the autumn term. Times table parent workshop to be promoted and delivered by the subject leader during the spring term. 'Times Tables at Christ Church' leaflet to be produced prior to the workshop to give to parents and information developed to be shared on website.

Work sampling 2020/21 – in school projects and home learning

***the pieces of work shown here show a progression of place value knowledge and skills from Reception to Year 6. Please see the separate document where this work can be seen more clearly.**

Year 6 • Place Value to ten million	
Year 5 • Place value to one million • Place value to one hundred thousand	

Year 4 • Place value to ten thousand	
Year 3 • Place value to one thousand	 
Year 2 • Place value to one hundred	 
Year 1 • Place value of teen numbers and beyond using pictorial representations.	
Reception • Numbers to 10 (formation, ordering)	
Home learning evidence	
KS2 https://christchurchschool.co.uk/wp-content/uploads/2021/02/Year-6-Maths-flag-shapes-and-angles.pdf https://christchurchschool.co.uk/wp-content/uploads/2021/03/Year-5-Maths-area-and-perimeter.pdf	EYFS and KS1 https://christchurchschool.co.uk/wp-content/uploads/2021/01/Year-1-Maths-capacity.pdf https://christchurchschool.co.uk/wp-content/uploads/2021/01/Reception-Clocks-and-time.pdf

https://christchurchschool.co.uk/wp-content/uploads/2021/01/Year-4-Maths-symmetry-and-shape.pdf https://christchurchschool.co.uk/wp-content/uploads/2021/01/Year-3-Maths-equal-and-unequal-parts.pdf	https://christchurchschool.co.uk/wp-content/uploads/2021/02/Reception-Maths-2D-shapes.pdf https://christchurchschool.co.uk/wp-content/uploads/2021/03/Reception-Maths-weight.pdf

Pupil voice

Pupil voice discussions in September 2021 demonstrated that:

Children could talk confidently about what they were currently learning about:

'We are learning about numbers to one million: the place value of the digits, rounding and comparing.' (Y5 pupil)

'We have been learning how to add and subtract 50 and we answered some true and false questions.' (Year 3 pupil)

'I'm learning my 6 times tables in class and we have been learning how to round numbers to 10 and 100.' (Year 4 pupil)

'We've been working on the KFC (keep flip change) method to divide fractions.' (Year 6 pupil)

Children could explain how their current learning built on learning they had done previously:

'Last year we did fractions and we did multiplying so now we know that we can do dividing.' (Year 6 pupil)

'In Year 5 we did learn about fractions and it was tricky but now we're doing it again it helps me.' (Year 6 pupil)

'We did two digit numbers in Year 2 and three digit numbers in Year 3' (Year 3 pupil)

'In Reception we learnt to count so now that I've learnt to count I can count to 100!' (Year 1 pupil)

Children were able to talk about our spiralled curriculum:

'We do spaced retrieval in morning work and homework.' (Year 6 pupil)

'Fractions for example – you do it one year and then you do it again the next year and you build up on it.' (Year 6 pupil)

'The maths display can help us because it reminds us of what we're learning.' (Year 5 pupil)

'In the year 1 classroom that says maths on it and it has different ways of counting in 10s 5s 2s and 1s and looking at that helps me to count.' (Year 1 pupil)

What makes our curriculum provision for Maths exceptional and beyond the expected?

- Exceptional outcomes for children across the school.
- Enrichment opportunities for children for whom maths is a particular strength, for example participation in the UK Maths Challenge and Saturday sessions for Year 5 children with the Royal Institute for Mathematics.

Key points for discussion with governors about this report

- Share impact of our times table challenge and new additional level (ruby) to consolidate times table knowledge.
- Impact of booster sessions to help children 'catch up' after periods of school closure.
- Share final calculation policy and show examples of this in children's books.
- Explain aims of times table parent workshop.