Appendix 2 – Maths Analysis

Forsbrook Primary School

Report to Governors SUMMER 2019

Objective 3: To raise standards in Maths through further developing a Maths Mastery Curriculum.

Priorities	What we did
1) To develop the understanding of maths through whole school use of manipulatives and mathematical equipment to support teaching and learning in areas such as geometry.	• Audited maths resources and manipulatives. Ordered new equipment to support children to use concrete apparatus to model the structure of the mathematics being taught. • Staff training sessions on the importance of teaching the structure of the maths being taught and using representations • Purchase of Powermaths (textbook approved resource) to support teachers in delivering a mastery approach.
Outcomes	**Evidence**
Staff are more confident using models and manipulatives eg. Ten frames, dienes, counters to support learning	• Book monitoring shows children are using a range of models and manipulatives to support mathematical structures and to represent problems.

Priorities	What we did
2) Improve rapid recall and knowledge of times table facts and therefore increase attainment in mathematics.	• Times Table Rockstars (TTRS) used across the school to support children in learning multiplication facts. • In September, we introduced half term Key Instant Recall Facts (KIRFs). Each teacher sets a KIRF for the children to learn which helps to develop children's fluency in mathematics. These are available for parents to access via the school website. Teachers are responsible for checking the progress of the children in their class against these KIRFs.
Outcomes	**Evidence**
• In Year 6 over 60% of the class are able to answer questions in under 2 seconds, and this has contributed to their overall ability to calculate mentally. • The Battle of the Bands challenges are motivating and the monthly awards have helped to keep the profile of Times Tables high.	• Data from TTRS shows high engagement in Years 2-6 • 77% of Year 4 are able to answer 21+ out of 25 questions.

Priorities	What we did
3) To further develop a Mastery curriculum, focusing on depth of understanding through developing both procedural and conceptual understanding.	• Improve subject knowledge through staff training sessions • Primary maths mastery specialist training for maths coordinator • School Teacher Research Group with Y1, Y4 and Y6 teacher which involved lesson observation and evaluating the different aspects of the lesson. • Two teachers and one teaching assistant engaged with subject knowledge enhancement courses delivered by the Maths hub.

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Trial of Textbook resource Powermaths which was then rolled out throughout the school in January. This is a high quality, mastery textbook approved by the DfE which supports the aims of T4M.
Whiterose assessments are not used to assess progress at the end of the half term and to inform Teacher Assessment in line with the units the children have been taught.
Pre-teaching and/or same day interventions to ensure that we aim to help children to ‘keep up’ rather than ‘catch up’.
Introduce a weekly arithmetic check to ensure that children are constantly practising these skills and identify any children who need extra support. High expectations of all pupils means that we aim for the majority of children in the class to be able to calculate efficiently, accurately and fluently at AREs.

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<tr><td>Outcomes</td><td>Evidence</td></tr>
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Increased subject knowledge and pedagogy relating to a mastery approach (all evidence based)
Improvement in arithmetic scores
Whole class teaching with high expectations for all
Longer teaching units focusing on deepening children’s understanding of concepts.
Assessment system supports ‘assessment for learning’ as pupils are tested on the topics which have been taught and next steps can be planned appropriately

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Improvement in average % of questions answered correctly since the start of the year in line with ARE

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<tr><th>Class</th><th>Mean % correct Sept</th><th>Mean % correct June</th><th>%increase</th></tr>
<tr><td>Y1H</td><td>59%</td><td>79%</td><td>20%</td></tr>
<tr><td>Y1SS</td><td>60%</td><td>78%</td><td>18%</td></tr>
<tr><td>Y2</td><td>36%</td><td>60%</td><td>24%</td></tr>
<tr><td>Y3</td><td>60%</td><td>66%</td><td>6%</td></tr>
<tr><td>Y4</td><td>41%</td><td>74%</td><td>33%</td></tr>
<tr><td>Y5</td><td>44%</td><td>75%</td><td>31%</td></tr>
<tr><td>Y6</td><td>53%</td><td>88%</td><td>35%</td></tr>
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End of year assessment data shows a positive picture for both progress and attainment in maths. In all year groups (except Year 5), the % of pupils making expected progress in maths is above 90%. In year 5 it is 81% but this is a significant improvement from 69% the previous year. Attainment – the percentage of children achieving the expected standard or higher than expected levels in Key Stage 2 has increased across all year groups. In year 2, a decrease in the % of children achieving could be a result of the discrepancies between the assessment criteria for year 1 and year 2 pupils and this will be monitored closely next year.
Discussions with staff show increased confidence.
“I found the course really useful. Not only to up skill my maths knowledge but to improve practice and support in the classroom. It was also valuable to go through key stage 2 maths activities as I don’t generally work in there but may support in there I the future. Overall, it was great and I found it really useful.” (Sarah Bickerton)

“I have thoroughly enjoyed the maths training. It has given me a clearer insight into the fundamentals required for maths in reception class. The course had an in depth focus on

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	number, this leading towards the changes being made to the EYFS curriculum in the coming years where number will be becoming even more prominent. There was a big focus on the cardinality of number with children needing to become secure with the number in its various ways. I have implemented this learning not just in my teaching but also in the classroom environment where children are challenged to show numbers in various ways. This has worked really well for my emerging and lower expected children. During interventions children are not only saying the number they see, for example like flash cards, they are 'showing that number' so collecting that many cubes, placing that number in a number line, saying what colour flag that number is on, writing the number, writing the number quantity (drawing 5 circles if it is the number 5) etc. I also found that this year in particular my children have a love of maths. I would like to think that is because I now have maths in as many areas of my continuous provision as I can. Children are accessing number challenges daily with challenges within 0-20 and are thriving on challenge. *It was also worthwhile to plan alongside another teacher then be observed and observe her. Overall I would recommend the course to other reception class teachers and also nursery staff. The course gives nursery staff an insight to the requirements of children in maths in the foundation years." (Charlotte Adams)* • Book monitoring shows that maths coverage at a deeper level is very good this year. There is evidence of children using a range of representations to support their learning. The level of challenge and variation in questioning is also good. • Results from a recent staff questionnaire show that all staff are confident with the principles and beliefs of a mastery curriculum.
<u>Other developments - Primary Maths Challenge</u> • In November, we entered the Primary Maths Challenge for the 2nd year. Mrs Stephens ran an intervention group for pupils in Year 6 to help to prepare them using past paper resources. All pupils did really well but two year 6 pupils achieved an exceptional standard and were invited to take part in the February Challenge Bonus Round. They both did extremely with one pupil gaining a silver award and the other achieving bronze. • This year, the Maths Assosciation have introduced a new maths challenge aimed at Year 3 and 4 pupils. 20 higher achieving pupils will be taking this challenge in June. The impact of taking part in the PMC's is that those children working at GD are given the opportunity	<u>Next Steps</u> • Mrs Lockett to continue with the T4M fully-funded programme supporting teachers from 5 other schools. This also involves assigned days working to further develop Mastery at Forsbrook as well as being involved in the PD Lead programme. • Support Branden Hardy with T4M. • Update maths policy and calculation policy • Explore lesson design beyond suggestions in Powermaths to give staff ownership of planning and ensuring that they still feel able to able to be 'creative'.

to take part in a National Competition working on applying their maths skills. The challenge is both motivating and encourages children to “Think outside the box”, raising the profile of maths and creating a buzz about the subject.	