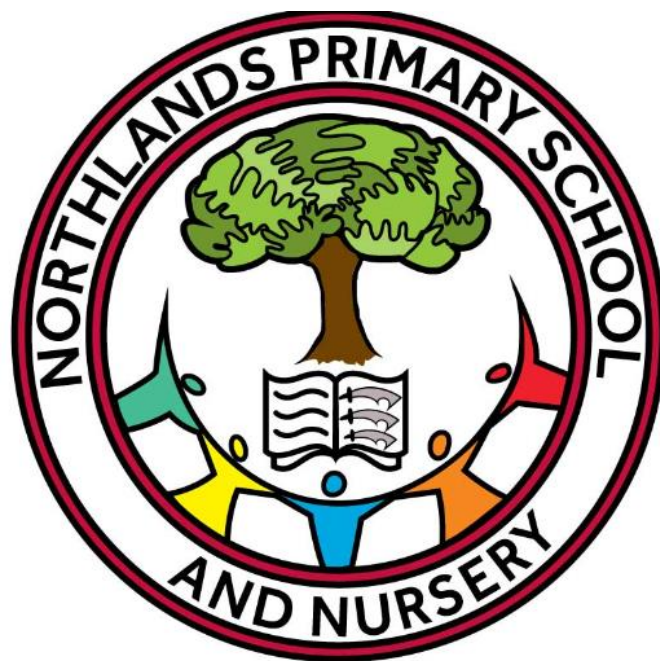


Northlands Primary School and Nursery



Arithmetic and
Fluency

What is Fluency?

Fluency in maths is about developing number sense and being able to choose the most appropriate method for the task at hand; to be able to apply a skill to multiple contexts.

The National Curriculum states that pupils should become fluent in the fundamentals of mathematics through varied and frequent practice. While a part of this is about knowing key mathematical facts and recalling them efficiently, fluency means so much more than this as it allows pupils to delve much deeper.

Fluency is achieved through intelligent and varied practice, repeating the same skill set until it is committed to long-term memory which will allow it to be recalled easily.

Why is fluency important?

Mathematical fluency underpins the entirety of a child's mathematical understanding and is crucial in building their ability to problem solve. If a child does not become fluent in mathematical concepts, they struggle to apply the skills to any problem solving they may need to do. Fluency is important for the following reasons:

- Fluency of key methods and basic facts is a precursor to being able to solve more complex, multi-step problems.
- Having a good level of fluency allows a reduce in cognitive load, meaning that a child's working memory can be focused on the more complex task of reading, comprehending and picking apart the problem.
- Having a good level of fluency allows children to save time and reduces their level of frustration when faced with increasing difficult questions. Children become more confident with problem solving if they are confident with the computational methods.

Teaching fluency and arithmetic

Fluency and arithmetic must be explicitly taught for children to become secure and confident. Fluency should make up the first lesson(s) of any new units, ensuring to use the calculation policy to build upon previous methods taught. Fluency questions should be varied enough to show children different representations of the mathematical concept to build their confidence in applying the methods to different questions.

Times tables and basic number facts

Times table and number bond facts are incredibly important to build children's mathematical fluency. Therefore, these should be **taught** and practiced weekly within Friday arithmetic lessons and timetabled mental maths slots in each class.

TT Rockstars

TT Rockstars is a fantastic resource to encourage children to become fluent in their times tables. Teachers should actively encourage children to log on to TT Rockstars at home as part of their homework and should allow those who would not be able to access at home, to have time to take part on the iPads/computers at school. All classes should have their Leaderboard printed once a week to encourage healthy competition and rewards given for the top 3 each week. The TT Rockstars how-to guide will assist you in being able to do this.

Arithmetic

Teaching arithmetic will be embedded into each unit taught, however the methods should be practised for basic fluency once a week in order to prepare children for both the end of Key Stage 1 and end of Key Stage 2 arithmetic tests.

Children should be tested weekly on the skills taught so far within your year group and recapping objectives from previous year groups - this will be done in Friday's maths lesson following a taught arithmetic element. The questions should be based purely around calculations and the methods needed to solve these.

Year groups should complete a set number of questions weekly, aiming to improve speed and accuracy weekly. Year groups may wish to increase the number of questions or decrease the amount of time given as the year progresses, but below is the minimum expectation for weekly arithmetic tests in each year group:

Year 1 - 4 questions

Year 2 - 6 questions

Year 3 - 8 questions

Year 4 - 8 questions

Year 5 - 10 questions

Year 6 - 15 questions

Key Instant Recall Facts (KIRFs)

The Key Instant Recall Facts outline the main fluency skills children should become confident with in each year group. Every half term, each year group has a small fluency skill to work on becoming accurate and speedy in recalling. This skill should be incorporated into maths lesson starters/plenaries, spare moments in the day to recall and short, discrete sessions as often as possible during that half term. These KIRFs should also be incorporated into weekly arithmetic tests where possible for that half term. Children will take home a support sheet each half term outlining the skill and any useful hints/tips to practice at home as well as in school. The KIRFs are outlined in the Maths Skills Progression Drive.