



## CASE STUDY REPORT

# Using 1:1 Tuition to Improve Attainment in Numeracy

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*This study was originally published in 2010 as part of the 'What Works Well' initiative, part of the National Strategies for Education in England.*

## Abstract

**Background:** The purpose of the study was to identify strategies to raise attainment in Numeracy at the end of Key Stage 2, with 1:1 tuition being one of these strategies. The success criteria were improved attitude to maths, recall of multiplication tables, accuracy in the use of the rules of number, and ability to tackle problems.

**Aims:** The main aim of the 1:1 tuition strategy was to improve the confidence and attainment of children in Numeracy by developing their basic skills and ability to tackle problems.

**Methods:** The participants in this case study are the headteacher, middle leader, national strategies consultant, SIP, subject leader, teacher, and tutors. They are responsible for implementing the 1:1 tuition strategy and monitoring the progress of the children. The methods used included 1:1 training sessions, tracking procedures, observation outcomes, pupils' work, test results, and CPD materials. The aim was to improve confidence and attainment in numeracy.

**Findings:** The 1:1 tuition strategy has improved the children's confidence and attainment in numeracy, with improved recall of tables and accuracy in use of four rules, and increased participation in KS2 Maths National Curriculum tests. Seven of the eight children made at least 3 points of progress in their numeracy.

**Implications:** The findings suggest that regular practice of times tables and the rules of number is essential for children in Key Stage 2, and that 1:1 tuition can help improve confidence and attainment in numeracy. The school has implemented tracking procedures to identify children who need support and monitor their progress.

*This abstract was generated by Camtree using a large language model (LLM) and added to the original report in 2023.*

**Keywords:** Primary education; Mathematics

## Introduction

### What were your reasons for doing this type of development work?

Following a dip in the attainment of children in Numeracy at the end of Key Stage 2 a number of strategies were identified and implemented to raise attainment, 1:1 tuition was one of these strategies.

The school's tracking procedures identified children, at the start of Year 6, who were not on track to make sufficient progress in Numeracy. A number of these children were deemed as requiring the intensive support offered by the 1:1 intervention.

### Who might find this case study useful?

- Headteacher
- Middle leader
- National Strategies consultant
- SIP (School Improvement Partner)
- Subject leader
- Teacher

## Description

### What specific curriculum area, subject or aspect did you intend to have impact on?

- Mathematics

### How did you intend to impact on pupil learning?

We aimed for the children to develop confidence and resilience in the area of numeracy. We wanted there to be an impact on their basic skills (knowledge of tables and use of the four rules) and an ability to tackle the questions in the Mathematics Key Stage 2 National Curriculum tests.

### What were your success criteria?

- Improved attitude to maths
- Improved recall of the multiplication tables
- Improved accuracy in the use of the rules of number
- Ability to tackle problems involving mathematical concepts identified as areas for development by class teacher

### What information or data did you use to measure progress towards your success criteria?

- Observation outcomes
- Pupils' work
- Test results

### Describe the CPD approaches you used

The tutors received the 1:1 training sessions organised by the Local Authority and used the documents provided by The National Strategies (Developing one-to-one Tuition: Guidance for Tutors).

The children to be helped by the 1:1 interventions were identified using the school's tracking procedures. The tutors met at school and their role was discussed in the following way:

- The aims of the 1:1 sessions were explained (see introduction)

- The tutors were provided with the completed 'Nottinghamshire LA Tuition Plan' for their child.
- Tutors planned a sequence of lessons, the goal of which was to improve the children's confidence and attainment in numeracy.

### Who provided you with support?

- External agency

### How were you supported?

The Local Authority provided training for the Head Teacher and the tutors. At these sessions the LA advisers shared the resources which were available to the schools (Passport to Success, Nottinghamshire LA Tuition Plan, Testbase). The trainee tutors were made aware of the necessary CRB arrangements whilst the Head Teachers were made aware of the contractual arrangements and the need for the school to adopt a 'Lone working Policy'.

As the person responsible for the implementation of the 1:1 tuition strategy and the school's Numeracy coordinator I was the person who the tutors contacted if they required further help. A number of the tutors had been involved in the early role out of the 1:1 intervention in 2009 and so coached the new tutors when necessary.

### Impact

#### What has been the overall impact on pupil learning?

- Discussion between tutors and pupils indicate that the children are more confident in attempting Numeracy problems
- Recall of tables and accuracy in use of four rules has improved
- Participation in KS2 Maths National Curriculum tests was possible and a number of the children helped with 1:1 tuition are expected to meet Level 4 standard

#### Thoughts you think are relevant to overall impact on learning

As one of the tutors I came to realise the importance of regular practice of the times tables and the rules of number is essential throughout Key Stage 2 and the children who had been identified as requiring 1:1 support had poor recall of tables facts and were inconsistent and slow in completing calculations involving the rules of number. Other tutors reported similar difficulties with the pupils they were working with. This has led to the school tracking the children's progress in the rules of number and their recall of the tables facts and ensuring consolidation is occurring regularly throughout Key Stage 2.

#### Quotes you think are relevant to overall impact on learning

All the children reported that they found the sessions useful and helpful.

When asked whether they enjoyed the sessions they replied:

'The sessions were enjoyable.'

'The sessions were sometimes a bit hard, but were worthwhile'.

'I enjoyed the sessions and they helped me learn more.'

When asked what they found useful about the sessions they replied:

'The individual help the teachers gave me was great.'

'Practising the four rules, tables and working on place value was particularly helpful.'

'The lessons made me more confident.'

'The maths games on fractions were fun.'

'The help the teacher gave me with division was helpful.'

Suggestions for improvement included having a break in the session.

### Quantitative evidence of impact on pupil learning

- Periodic teacher assessment
- Test results

### Qualitative evidence of impact on pupil learning

- Logs or interviews
- Observation outcomes
- Pupils' work

### Describe the evidence of impact on pupil learning

Eight children were identified as being able to benefit from 1:1 tuition. Of the eight, four of the children were awarded a Level 4 for their Numeracy Teaching Assessment. However, of possibly more interest, seven of the eight children made at least 3 'points' of progress in their Numeracy since the start of the intervention; five of the children made five or more points of progress.

All of the children reported that they had found the 1:1 intervention beneficial.

### What has been the impact on teaching?

The school has re-focused its attention on ensuring the children are confident in their use of the rules of number and that there is clear progression through the school on the methods used by the children. The calculation policy of the school is in the process of being updated to reflect these findings.

### Evidence of impact on teaching

- Evidence from planning
- Improvements in curriculum documentation

### Describe the evidence of impact on teaching

There have been a number of developments in planning of Numeracy at the school which have originated from the findings of the 1:1 tutors. These include:

- Weekly planning now includes a requirement to identify the mental/oral work which is to consolidate children's knowledge and understanding.
- Data collected on children's knowledge and application of the rules of number is used to 'target' the children during their guided maths sessions.
- Testbase and 'Pitch & Expectation' section of renewed framework used to encourage children to use their Numeracy skills to solve appropriate problems.

## What has been the impact on school organisation and leadership?

The 1:1 strategy has become part of the SEN provision provided by the school. It is the intervention used by staff to help children who require an intensive, personalised intervention to bring them back on track.

## Evidence of impact on school organisation and leadership

The SENCO and Assessment coordinator now work more closely together in identifying children who require differing levels of intervention and the school's tracking procedures now identify the children for the interventions and monitor the progress the children make.

## Summary

### What is the crucial thing that made the difference?

Using the school's tracking procedures, which is based on 'Point Scores', to identify the pupils requiring support and the monitoring of the impact has made the crucial difference in ensuring the impact of the interventions can be measured.

### What key resources would people who want to learn from your experience need access to?

The following resources were particularly valuable for the sessions:

### What CPD session and resources were particularly useful?

The following LA and school resources were valuable:

- Nottinghamshire LA 'Tuition Plan' and 'Passport to Success'
- Activity sheets to consolidate recall of tables, place value and rules of number

### If another individual or school was attempting to replicate this work, where would they start and what would the essential elements be?

After identifying the children who require the 1:1 intervention, a school using this approach would need to:

- Ask class teachers to identify the areas for development for the children (for example, 'place value', 'fractions, percentages', 'mental maths') using the 'One to One Tuition Plan'
- Tutors to plan sessions to develop the children's knowledge and understanding in the areas identified using the 'Passport to Success as a means of communication between home and the tutor.
- Monitoring of the impact of the intervention offered

### What further developments are you planning to do (or would you like to see others do)?

Discussion amongst the tutors has identified that recall of the tables, understanding of place value, accuracy in the use of the four rules, mental maths skills and the ability of children to solve word problems were common 'Areas of Learning' which required targeting. Development of the Numeracy Curriculum at the school will take this into account.

## Supplementary Materials

This report is accompanied in the library by the following supplementary material:

- Nottinghamshire LA Tuition Plan.doc
- Pupil Passport to Success Nottinghamshire.doc
- Place Value and Tables practise Example.doc
- Place Value doubling, halving and 4 rules Example.doc

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This case study was originally published as part of the 'What Works Well' section of the National Strategies for Education in England. The National Strategies were professional programmes aiming for improvements in the quality of learning and teaching in schools in England. 'What Works Well' involved teaching practitioners from all phases and areas of education sharing accounts of real developments which had improved learning and teaching, and made a difference to pupil progress. 'What Works Well' case studies were designed to support practice transfer and include sufficient detail and resources to enable others to implement the effective practice described. They were reviewed by experts prior to publication as 'User Generated Content' (UGC) under a licence which encouraged reuse and derivative works, but which precluded commercial use.

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