



Fairfields
Teaching School Alliance

SENDCOs working with Subject Leaders

**Presented by
Lesley Tobin & Jack Davies – Thrapston Primary School**

Rationale – What did we want to find out?

- 1. Why were some Year 4 children (lower ability/SEN & PP) not making expected progress in Maths?**
- 2. What gaps did these children have?**
- 3. How could we target the gaps and also use this piece of work for school improvement?**

Aim:

- 1. Focused on an area of SEND – Dyscalculia and collaborated with Maths Lead and Intervention Teacher to develop a deeper understanding of the specific gaps children were showing**
- 2. Use this assessment information to identify where the gaps fitted with NC, and plan accordingly**

Methodology – What did we do?

- **Dyscalculia Assessment – Brian Butterworth**
- **Mapped all the specific areas of mathematical difficulty from the assessment on to the NC, eg. Number sense & counting, calculation, place value, multiplication and division, word problems.**
- **Identified children that we felt had gaps in their learning (both SEND and LA), but particularly those not at ARE**
- **Assessed the children in depth to find out their specific gaps**
- **Mapped their achievements using the Summary Numeracy Profile grid which identified specific areas to target**
- **Intervention Teacher planned specific lessons for a number of children**
- **Evaluated outcomes and reassessed**

Some positives....

- Gave immediate things to work on
- Children enjoyed feeling special – part of a project
- Assessment was actually fun
- children's attitudes to maths considered, were motivated as they could see exactly what elements they needed to work on and see success easily
- Has raised questions, helped us to explore exactly where our LA/SEND children actually were within the maths strand
- Initiated further improvements to whole school improvements, ie where 'counting' sits within our lessons, have we forgotten this is a key skill, have children secured basic counting skills or moved on too quickly?
- Often SEND/LA are sitting somewhere on NC but very difficult to pinpoint exactly where – assessment highlighted this

Some negatives....

- ▶ Time element to assess, meant that teacher could only concentrate on one area of difficulty, ie number sense, how would we be able to incorporate the other assessment areas.
- ▶ Questions arose how TAs were being used, are teachers planning for the TA to focus on these children daily for specific time until child has achieved it eg. In registration maybe
- ▶ How could we use our 20 day challenge to deliver some of these gaps?
- ▶ Target cards focus on end of year outcomes, do we need to use developmental and progression learning ladders?
- ▶ Highlighted the idea that are we doing enough 'formative assessment' and is teaching targeting the right areas from this?

Assessment Summary Sheet

Appendix 4: The Dyscalculia Assessment Summary Numeracy Profile

Name [redacted]

Date of birth _____

Date of assessment 22 → 23 / 5 / 17

Age at assessment _____

NUMBER SENSE AND COUNTING

- Subitising
 - Estimating
 - up to 10
 - more than 10 *less accuracy.*
 - Counting forwards
 - in 1s
 - in 10s *+ 100 only*
 - in 5s *to 75*
 - in 2s *to 10.*
 - Counting backwards
 - in 1s *Wrong answers: 51, 49, 47*
 - in 10s *from 50 u. slowly.*
 - in 5s
 - in 2s etc.
 - Reading
 - two-digit numbers (TU)
 - larger numbers
 - Writing
 - two-digit numbers (TU)
 - larger numbers x
- General confusion over tens & "one" number i.e. 17 or 71*

CALCULATION

- Addition +1, +2
 - one more +1
 - two more +2
- Subtraction -1, -2
 - one less -1
 - two less -2
- Dot patterns 1-6
- Doubles
 - up to 10
 - up to 20 x
- Near doubles
 - up to 10
 - up to 20 x
- Bonds of ten
 - addition x
 - subtraction - *but not recognising*
- Number bonds 1-9 *NB: Simply counting back.*
 - addition x
 - subtraction
- Bonds of tens
 - addition (e.g. $47 + 7 = 50$)
 - subtraction (e.g. $70 - 6 = ?$) x
- Bonds multiples of 10
 - addition (e.g. $30 + 7 = 100$)
 - subtraction (e.g. $100 - 80 = ?$) x

Verbalizing was main problem plus

PLACE VALUE

- Principle of exchange
- 10 plus a single digit/Tens plus
 - 10 plus a single digit ($10 + n$)
 - tens plus a single digit ($20 + n$)
- Bridging *With support.*
 - units + units (e.g. $8 + 5$)
 - tens + units (e.g. $34 + 7$)
- Place value HTU
 - same units subtraction x (e.g. $36 - 6$)
- Addition +10
 - ten more x
- Subtraction -10
 - minus ten -
- Subtraction strategies
 - doubles *only by counting back.*
 - bridging back
 - counting on (shopkeeper's method) -

MULTIPLICATION AND DIVISION

- Multiplication
 - demonstration of meaning
- Key tables:
 - x5 x10
- Other tables:
 - x2 x4 x6 x8
 - x3 x7 x9
- Division
 - grouping concept
 - sharing concept

WORD PROBLEMS

- addition
- subtraction
- multiplication
- division

FORMAL WRITTEN NUMERACY

- addition
- subtraction
- multiplication
- long multiplication
- short division

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Date of birth _____

Date of assessment 16/5/17

Age at assessment _____

NUMBER SENSE AND COUNTING

Subitising

Estimating

up to 10

more than 10

Counting forwards

in 1s

in 10s

in 5s

in 2s

Counting backwards

in 1s

in 10s

in 5s

in 2s

Reading

two-digit numbers (TU)

larger numbers

Writing

two-digit numbers (TU)

larger numbers

CALCULATION

Addition +1, +2

one more +1

two more +2

Subtraction -1, -2

one less -1

two less -2

Dot patterns 1-6

Doubles

up to 10

up to 20

Near doubles

up to 10

up to 20

Bonds of ten

addition

subtraction

Number bonds 1-9

addition

subtraction

Bonds of tens

addition (e.g. $47 + 7 = 50$)

subtraction (e.g. $70 - 6 = ?$)

Bonds multiples of 10

addition (e.g. $30 + 7 = 100$)

subtraction (e.g. $100 - 80 = ?$)

PLACE VALUE

Principle of exchange

10 plus a single digit/Tens plus

10 plus a single digit ($10 + n$)

tens plus a single digit ($20 + n$)

Bridging

units + units (e.g. $8 + 5$)

tens + units (e.g. $34 + 7$)

Place value MTU

same units subtraction

(e.g. $36 - 6$)

Subtraction -10

ten more

Subtraction -10

minus ten

Subtraction strategies

doubles

bridging back

counting on (shopkeeper's method)

used column method - mostly correct

- counting error (on fingers)

MULTIPLICATION AND DIVISION

Multiplication

demonstration of meaning

Key tables:

x5 x10

Other tables:

x2 x4 x6 x8

x3 x7 x9

Division

grouping concept

sharing concept

WORD PROBLEMS

addition

subtraction

multiplication

division

FORMAL WRITTEN NUMERACY

addition

subtraction

multiplication

long multiplication

short division

Results:

Work is still ongoing....

Child A (SEND) – Year 4

Had been working on differentiated tasks in lessons, however, not achieving well.

Needed a way of specifically identifying the child's needs. Highlighted gaps in number bonds, highlighted memory issues, counting forwards and backwards in various steps.



➔ Child B – Year 4 (lower ability)

Identified huge gaps in knowledge, clearly had moved on too quickly.

Copied others. Couldn't count over the decades/centuries. Needed lots of modelling, but understood number bonds and patterns. Hadn't grasped any place value.



Outcomes

Intense intervention and 20 day challenge has targeted these areas and the children have gained success in achieving small steps. Time has been invested to ensure they internalise these skills. More confident with number bonds. Previously a child had said 'I can't count in 2s from 27'. Barriers were based on own anxiety/emotional feeling about maths.

So what.....

- 1. Was the exercise useful?**
 - 2. Did the tool serve its purpose?**
 - 3. What difficulties did we have?**
 - 4. What successes did we have?**
 - 5. How will we use this in the future?**
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Thanks for listening!

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