Support for dyscalculia

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**Key teaching strategies**

- Start from the beginning and build up skills
- Practice little and often
- Visualise and use practical equipment at all levels
- Simple, consistent vocabulary
- Teach one method and stick with it
- Use games, music and ‘real’ activities
- Reduce copying from board
- Share methodology with parents and tutors
- Take away time pressures
- Reduce anxiety

**Model, support, independent**

**Model:** show procedure at least twice  
**Support:** do procedure together at least twice  
**Independent:** watch student do procedure independently at least twice

**Use peers to model procedures**
Place Value Support

- Re-write horizontal calculations into vertical form
- Re-write vertical calculations into horizontal form!
- One way of recording
- Use squared paper
- Line up paper before the lesson
- Use Dienes blocks/Base Ten throughout KS2
- Have model of methodology on table
- Use calculator for checking

Numeral Support

- Daily practice in short bursts
- Regular practice with practical apparatus
- Have number lines/squares always available
- Use consistent colours on numberlines (multiples of 5 and 10)
- Use consistent mathematical language
- Use consistent symbols (1, 1, 1)
- Extra time for calculations

Executive Functioning Support

- Reinforce and praise use of concrete materials
- Minimise copying from board
- Always lay materials out in the same way
- Always write calculations in same way
- Use practical apparatus
- Encourage drawing
- Highlight key words; biggest number
- Talk through steps as they are done
- First 3 examples supported, with correct layout and answers
- Watch peers work examples out
- Sit with more advanced group
Mathematical language for calculation

- **Add**: plus, make, total, more
- **Subtract**: leave, less, difference between, take away
- **Multiply**: times, groups of, multiple of, repeated addition, lots of, multiplied by
- **Divide**: share, divided by, equal groups of, divide, share equally, balance, same as
Maths Mat v1

My Number Line

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Number and words to 20

0-zero
1-one
2-two
3-three
4-four
5-five
6-six
7-seven
8-eight
9-nine
10 - ten
11-eleven
12-twelve
13-thirteen
14-fourteen
15-fifteen
16-sixteen
17-seventeen
18-eighteen
19-nineteen
20-twenty

2 times table
0×2=0
1×2=2
2×2=4
3×2=6
4×2=8
5×2=10
6×2=12
7×2=14
8×2=16
9×2=18
10×2=20

5 times table
0×5=0
1×5=5
2×5=10
3×5=15
4×5=20
5×5=25
6×5=30
7×5=35
8×5=40
9×5=45
10×5=50

10 times table
0×10=0
1×10=10
2×10=20
3×10=30
4×10=40
5×10=50
6×10=60
7×10=70
8×10=80
9×10=90
10×10=100

My 2D Shapes

square
circle
rectangle
cylinder
cube
pentagon
sphere
pyramid
triangle
hexagon
pentagon
prism

Maths Symbols

+ add
− minus
× multiply
÷ divide
= equals
≠ not equal
≡ is equivalent to
≠ not equivalent to

My 3D Shapes

cuboid
cube
prism

Basic Fractions

1 whole
2 halves
4 quarters

1 2 3 4

www.communication4all.co.uk
## Place Value

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Maths Games

Sorting by size

You will need a pack of playing cards. Place the pack face down on the table. Take it in turns to turn 2 cards face up. Place the card with the largest number on the red box and the card with the smallest number on the blue box. You can also play this game with small toys of varying sizes.
Walk the plank

Both players line up cubes between 3 and 12
Roll 2 dice and add the numbers together.
Take the opponent's sum cube.
First person to take all of the other player's cubes wins.

Variations:
Use three dice (number line to 18)
Use dice with bigger numbers (e.g. to 12 or 20)
Use shuffled playing cards instead of dice
### Crooked Rules

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**Teaching objective:** Understand and apply place value

**Resources:** Crooked rules boards, pencils, dice.

**Activity:** A game suitable for up to four players. The object of the game is to make the SMALLEST number.

1. Take turns to roll the dice.
2. Write the number in an unfilled space on your row.
3. Carry on until the places are filled.
4. The winner is the player with the smallest number.

**Questions to ask:**

Where is the best place to put a small digit?
Where is the best place to put a large digit?

**Alternatives:**

Make largest number Use 0 - 9 dice
Change the column headings [Thousands Hundredths Tens Units or Tens Units . tenths]
Allow pupil to write digit in opponent’s number!!
Fall in the Water

Teaching objective: Practise mental addition

Resources: Paper, pencil, 2 dice.

Activity: A game suitable for up to four players. The object of the game is to reach a total of 40 first.
1. Take turns to roll the dice.
2. Choose one of the numbers on the dice and add that number to your running total.
3. Numbers 10, 20 and 30 are “in the water”. If a player reaches one of these numbers then he ‘falls in the water’ and nothing is added to his score. (E.g. if a player is on 26 and rolls a double 4 then his total will reach 30 whichever die he chooses. His total stays at 26 and the next player rolls the dice)
4. The winner is the player who reaches 40 first.

Alternatives:
- Each player starts at 50 and numbers are subtracted. Winner is first person to reach 0
- Change the ‘numbers in the water’.
- Change the start and/or end totals
- Change the dice from 6 sides to 8, 12, 20 sides or a combination
Dyscalculia support

WEBSITES:
British Dyslexia Association: www.bdadyslexia.org.uk
Dyscalculia.Org: www.dyscalculia.org
About Dyscalculia www.aboutdyscalculia.org
YouCubed www.youcubed.org
National Numeracy UK www.nationalnumeracy.org.uk
DysTalk www.dystalk.com
Facebook Dyscalculia Forum @dyscalculia
Dyscalculia Me www.dyscalculia.me.uk
Ronit Bird Resources www.ronitbird.com

BOOKS:
Judy Hornigold: Dyslexia Pocketbook (Teacher Pocketbook series)
Steve Chinn (ed): International Handbook of Dyscalculia and Mathematical Learning Difficulties
Brian Butterworth: The Mathematical Brain
Paul Moorcraft: It just doesn’t add up (Tarquin)
Ronit Bird: The dyscalculia Toolkit (Sage)

RESOURCES:
Maths Explained Video Tutorials www.mathsexplained.co.uk
Numicon www.numicon.com
Cuisenaire www.cuisenaire.co.uk
Primary School Resources (UK) www.primaryresources.co.uk
Twinkl resources and games www.twinkl.co.uk
Maths is fun www.mathsisfun.com
Snappy maths www.snappymaths.com
Sparklebox www.sparklebox.co.uk

TECHNOLOGY:
RM EasiMaths (England) www.rmeasimaths.com
Dynamo Maths www.dynamomaths.co.uk
Quick Maths app
Hit the Button app www.topmarks.co.uk/maths-games/hit-the-button
Dexteria Dots app
Numbershark