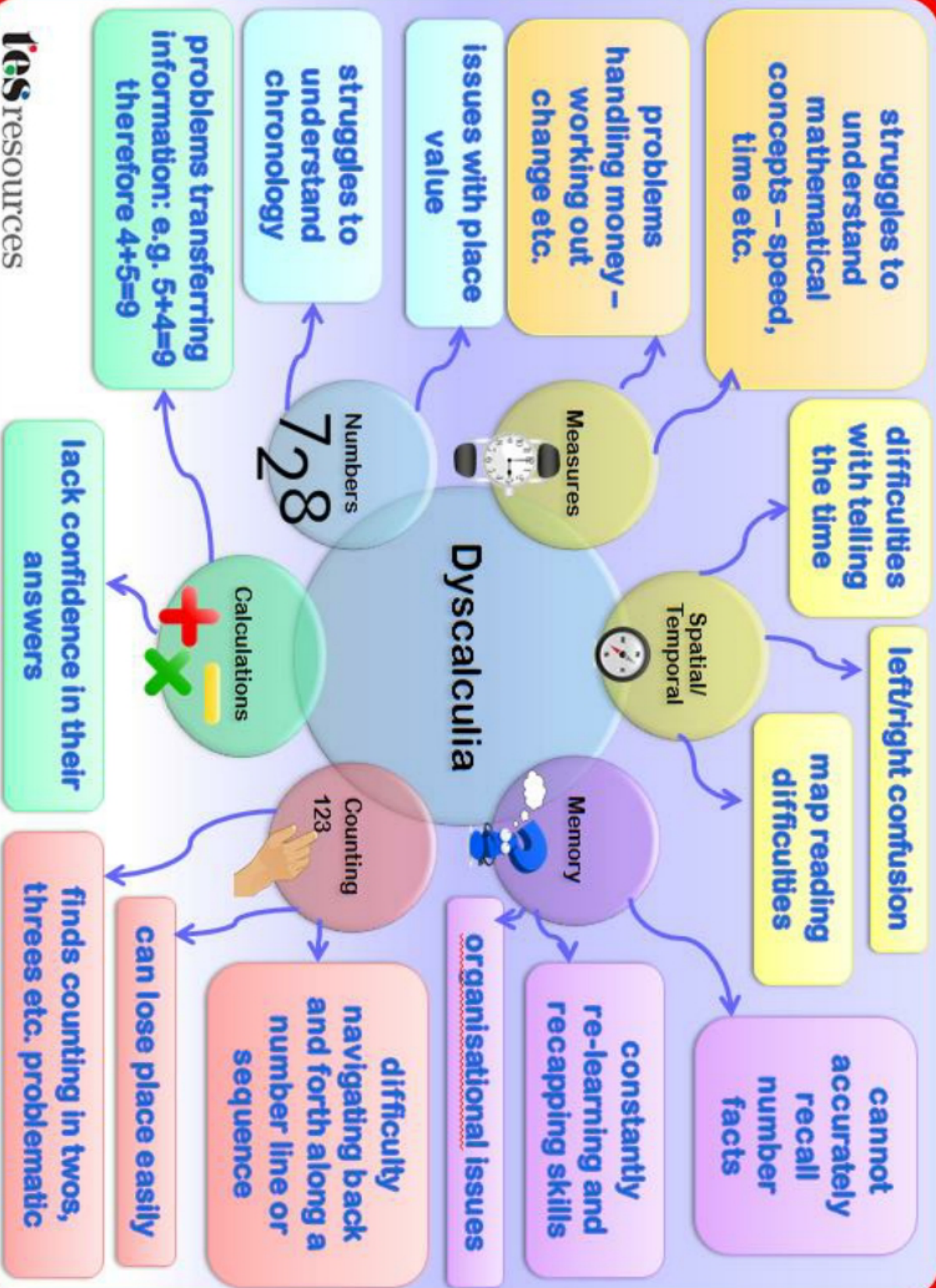




Maths Barriers

(including Dyscalculia)

Information Booklet



Dyscalculia

Definition

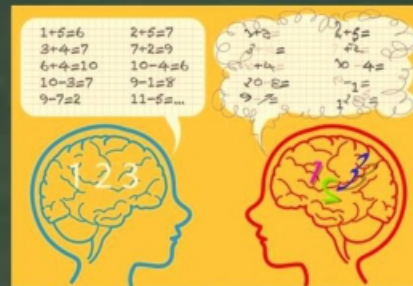
- Dyscalculia means inability to calculate, and is the most widely used term for disabilities in arithmetic and mathematics.

Incidence

- Research suggests that its prevalence is at least 6 percent of the school-aged population.

Symptoms

- May confuse mathematical symbols
- Poor mental arithmetic skills
- Inability to grasp and remember mathematical concepts, rules, formulae, and sequences



Causes

- Poor cognitive skills including visual memory and logical thinking
- Lacks math skills and knowledge

Intervention

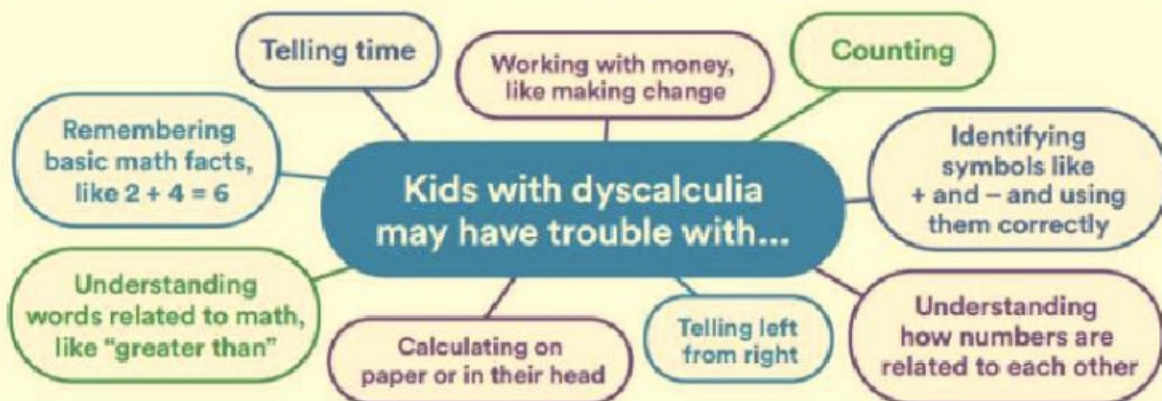
- Improve cognitive skills
- Teach math skills and knowledge

Dyscalculia is...

- ✓ **A learning issue** that makes it hard to understand concepts related to numbers and do tasks like add and subtract.
- ✓ **A common condition.** Some experts say dyscalculia is just as common as dyslexia.
- ✓ **A common co-occurrence.** Dyscalculia can exist on its own but is often found in kids with issues like dyslexia and ADHD.

Dyscalculia is not...

- ✗ **A sign of low intelligence.** You can be very smart and have dyscalculia.
- ✗ **The same thing as math anxiety.** But it often co-occurs with this emotional issue, which involves self-doubt and fear of failure.
- ✗ **A lack of effort.** Kids with dyscalculia need different kinds of interventions to make progress—not more of the same instruction.



Easy tips for students struggling in or with learning difficulties in Maths

- Have a hundred board starting with 1 at the bottom
- Offer times tables in lists instead of a grid
- Use manipulatives (a variety of) and visuals as much as possible (numicons, deans, tens/hundred boards, abacus etc)
- Don't mix operations within the same task
- Shorten the task/tasks so they do not seem overwhelming
- Be aware of what your focus is. Do they HAVE to write out the question or can they just write out the answer on the sheet
- Is language a barrier? Are you testing their English or Maths skills
- Give thinking time
- Check the children's work after 1 or 2 questions so you know they're on track
- Use colours and arrows to highlight the process
- Focus on place value
- Have the learner verbalise their thinking to help YOU understand how their mind is working

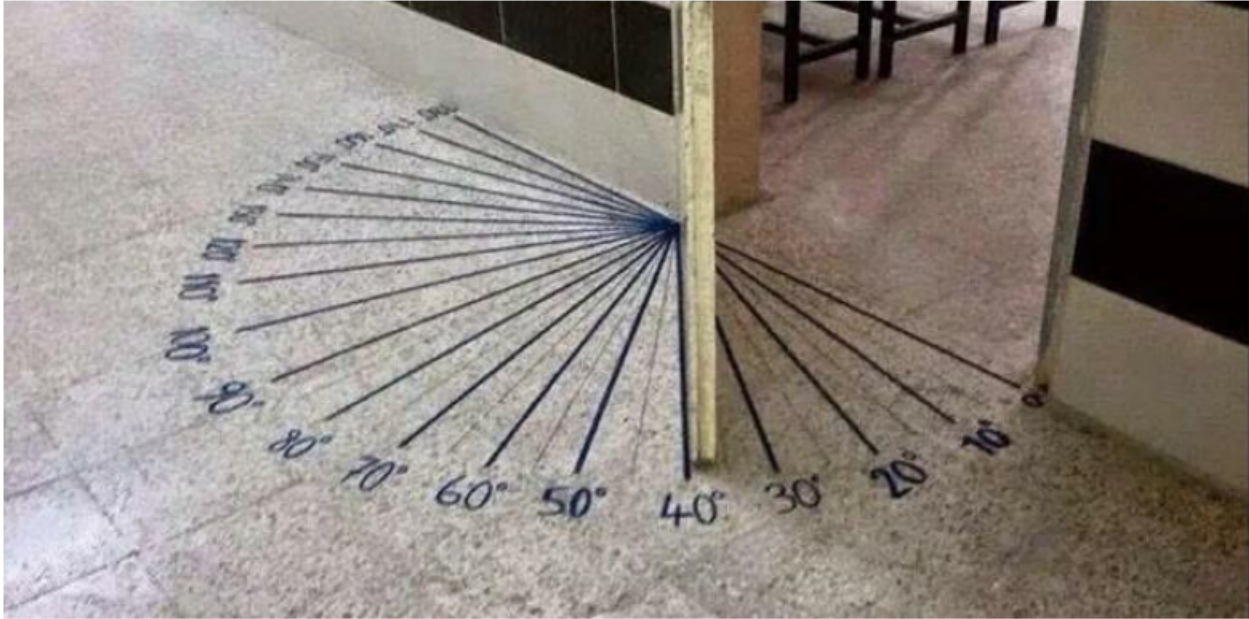
Dyscalculia

Children with Dyscalculia can have difficulties remembering number patterns and understand number-based strategies. Different aids can help them complete work and secure some understanding.

The collage includes: a 10x10 grid with numbers 1-100; a place value chart with columns for Tens, Ones, Hundreds, and Thousands; a number line from 0 to 100; a house-shaped grid with numbers 1-100; and various diagrams and charts illustrating mathematical concepts.

Handwritten math problems showing addition with arrows indicating the process of adding tens and ones:

$$\begin{array}{r} 35 + 20 = 55 \\ 22 + 40 = 62 \\ 63 + 20 = 83 \\ 43 + 40 = 83 \\ 56 + 20 = 76 \end{array}$$



Dyscalculia notebook (for students)

Plastic covered from and back so students can use a whiteboard pen to work on

91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Operation	Concept	Example	Notes
Addition (+)	Place Value	$12 + 34 = 46$	
Subtraction (-)	Place Value	$46 - 34 = 12$	
Multiplication (x)	Place Value	$12 \times 34 = 408$	
Division (÷)	Place Value	$408 \div 34 = 12$	
Order of Operations	PEMDAS		
Properties of Numbers	Commutative, Associative		
Number Lines	Visual representation		
Area and Perimeter	Geometry		
Volume	Geometry		
Temperature	Measurement		
Time	Measurement		
Mass	Measurement		
Length	Measurement		

Laminated tabs so students can easily find the concept they need

(+ & -) (÷ & x): $1\frac{1}{2} = \frac{1}{2} + \frac{1}{2}$

Rounding to the Nearest 1000

7399
7398
...
7351
7350
7349
7348

Round up to 7400

Round down to 7300

Number: 5

- $1 \times 5 = 5$
- $2 \times 5 = 10$
- $3 \times 5 = 15$
- $4 \times 5 = 20$
- $5 \times 5 = 25$
- $6 \times 5 = 30$
- $7 \times 5 = 35$
- $8 \times 5 = 40$
- $9 \times 5 = 45$
- $10 \times 5 = 50$
- $11 \times 5 = 55$
- $12 \times 5 = 60$

Number: 6

- $1 \times 6 = 6$
- $2 \times 6 = 12$
- $3 \times 6 = 18$
- $4 \times 6 = 24$
- $5 \times 6 = 30$
- $6 \times 6 = 36$
- $7 \times 6 = 42$
- $8 \times 6 = 48$
- $9 \times 6 = 54$
- $10 \times 6 = 60$
- $11 \times 6 = 66$
- $12 \times 6 = 72$

Number: 7

- $1 \times 7 = 7$
- $2 \times 7 = 14$
- $3 \times 7 = 21$
- $4 \times 7 = 28$
- $5 \times 7 = 35$
- $6 \times 7 = 42$
- $7 \times 7 = 49$
- $8 \times 7 = 56$
- $9 \times 7 = 63$
- $10 \times 7 = 70$
- $11 \times 7 = 77$
- $12 \times 7 = 84$

Number: 8

- $1 \times 8 = 8$
- $2 \times 8 = 16$
- $3 \times 8 = 24$
- $4 \times 8 = 32$
- $5 \times 8 = 40$
- $6 \times 8 = 48$
- $7 \times 8 = 56$
- $8 \times 8 = 64$
- $9 \times 8 = 72$
- $10 \times 8 = 80$
- $11 \times 8 = 88$
- $12 \times 8 = 96$

Number: 9

- $1 \times 9 = 9$
- $2 \times 9 = 18$
- $3 \times 9 = 27$
- $4 \times 9 = 36$
- $5 \times 9 = 45$
- $6 \times 9 = 54$
- $7 \times 9 = 63$
- $8 \times 9 = 72$
- $9 \times 9 = 81$
- $10 \times 9 = 90$
- $11 \times 9 = 99$
- $12 \times 9 = 108$

Number: 10

- $1 \times 10 = 10$
- $2 \times 10 = 20$
- $3 \times 10 = 30$
- $4 \times 10 = 40$
- $5 \times 10 = 50$
- $6 \times 10 = 60$
- $7 \times 10 = 70$
- $8 \times 10 = 80$
- $9 \times 10 = 90$
- $10 \times 10 = 100$
- $11 \times 10 = 110$
- $12 \times 10 = 120$

Number: 11

- $1 \times 11 = 11$
- $2 \times 11 = 22$
- $3 \times 11 = 33$
- $4 \times 11 = 44$
- $5 \times 11 = 55$
- $6 \times 11 = 66$
- $7 \times 11 = 77$
- $8 \times 11 = 88$
- $9 \times 11 = 99$
- $10 \times 11 = 110$
- $11 \times 11 = 121$
- $12 \times 11 = 132$

Number: 12

- $1 \times 12 = 12$
- $2 \times 12 = 24$
- $3 \times 12 = 36$
- $4 \times 12 = 48$
- $5 \times 12 = 60$
- $6 \times 12 = 72$
- $7 \times 12 = 84$
- $8 \times 12 = 96$
- $9 \times 12 = 108$
- $10 \times 12 = 120$
- $11 \times 12 = 132$
- $12 \times 12 = 144$

Grouped concepts student finds difficult to understand and implement and recall. It's important for students to contribute as much as possible to the notebook

When a new concept is introduced, students can write the process and some examples themselves to help create connections with the strategies

