

Amanda Davey Dyscalculia



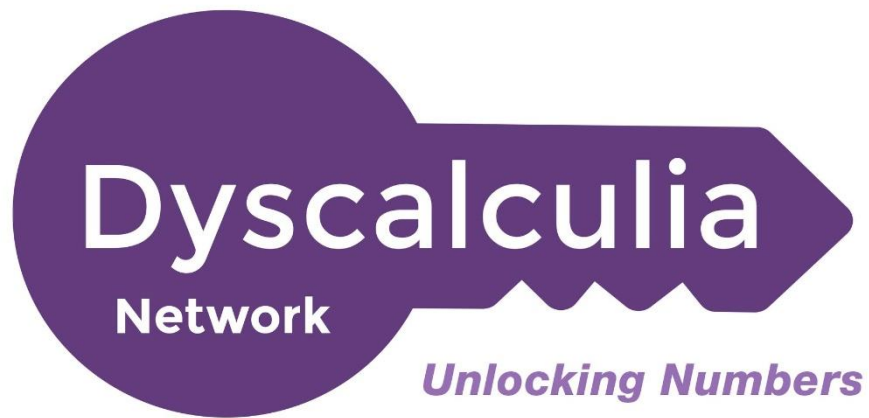
www.amanda-davey-dyscalculia.co.uk

info@amanda-davey-dyscalculia.co.uk



For more information

www.dyscalculianetwork.com

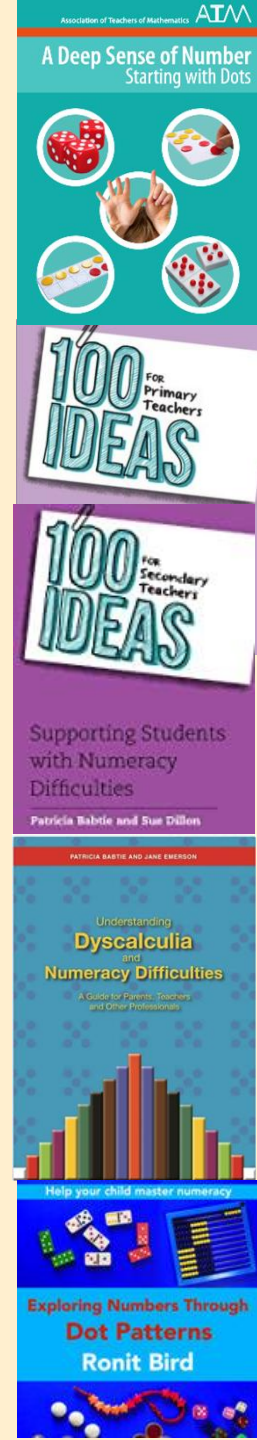


www.dyscalculiaassociation.uk



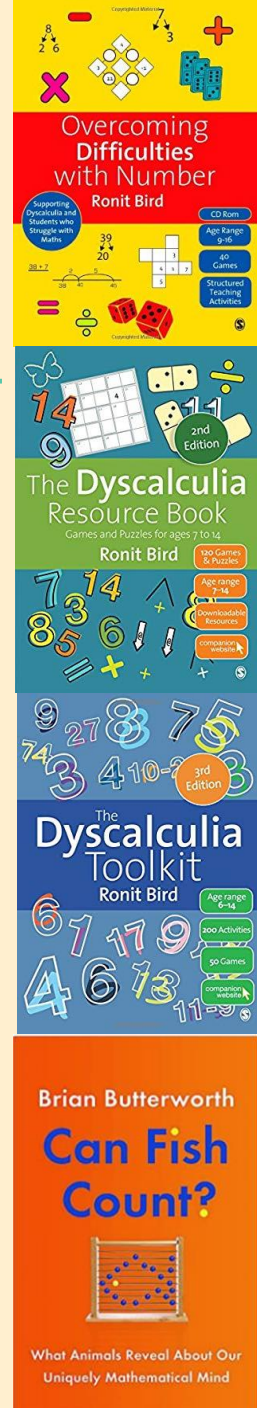
Books

- [Association of Teachers of Mathematics \(2021\) A Deep Sense of Number](#)
- [Babtie, Patricia \(2017\) 100 Ideas for Primary Teachers: Numeracy Difficulties and Dyscalculia](#)
- [Babtie, Patricia and Dillon, Sue \(2019\) 100 Ideas for Secondary Teachers: Supporting Students with Numeracy Difficulties \(100 Ideas for Teachers\)](#)
- [Babtie, Patricia and Emerson, Jane \(2015\) Understanding Dyscalculia and Numeracy Difficulties: A Guide for Parents, Teachers and Other Professionals](#)
- [Bird, Ronit \(2013\) Exploring Number through Dot Patterns \(e-book\)](#)



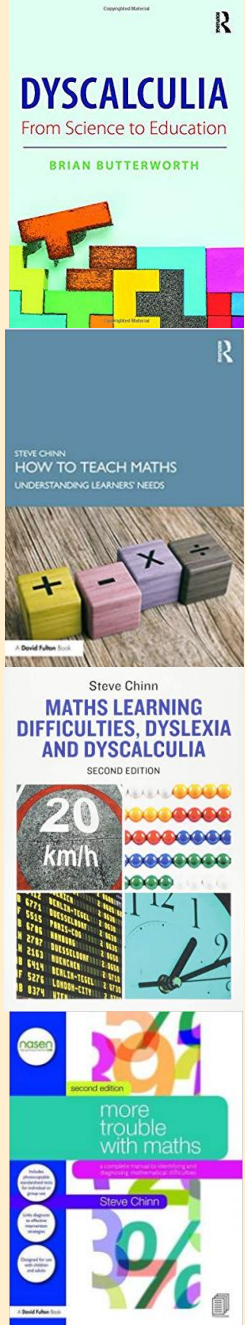
Books

- Bird, Ronit (2009) Overcoming Difficulties with Number: Supporting Dyscalculia and Students who Struggle with Maths
- Bird, Ronit (2011) The Dyscalculia Resource Book: Games and Puzzles for Ages 7 to 17
- Bird, Ronit (2007) The Dyscalculia Toolkit: Supporting Learning Difficulties in Maths
- Butterworth, Brian (2022) Can Fish Count?



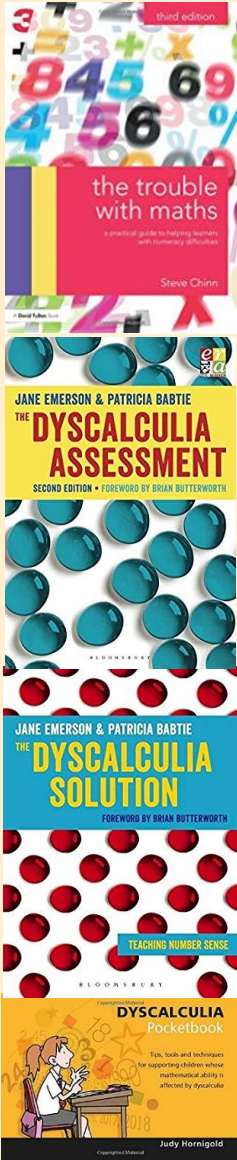
Books

- Butterworth, Brian (2018) Dyscalculia: from Science to Education
- Chinn, Steve (2020) How to Teach Maths: Understanding Learners' Needs
- Chinn, Steve (2018) Maths Learning Difficulties, Dyslexia and Dyscalculia: Second Edition
- Chinn, Steve (2020) More Trouble with Maths: A complete guide to identifying and diagnosing mathematical difficulties (3rd edition)



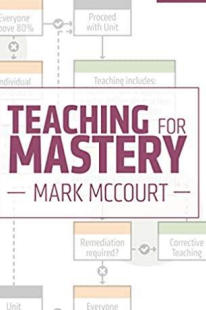
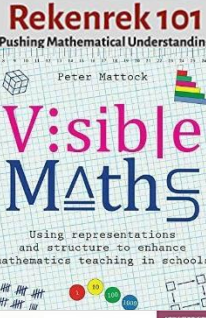
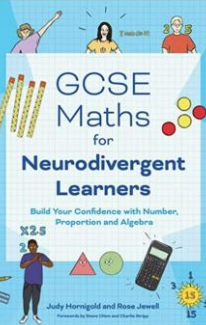
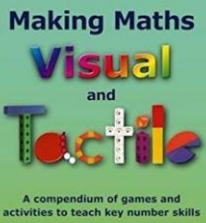
Books

- Chinn, Steve (2021) The Trouble With Maths: A Practical Guide to Helping Learners With Numeracy Difficulties
- Emerson, Jane and Babbie, Patricia (2010) The Dyscalculia Assessment
- Emerson, Jane and Babbie, Patricia (2014) The Dyscalculia Solution: Teaching number sense
- Hornigold, Judy (2016) Dyscalculia Lesson Plans: Books 1, 2 and Resources Kit
- Hornigold, Judy (2015) Dyscalculia Pocketbook 2015 (Teachers' Pocketbooks)



Books

- [Hornigold, Judy and Jewell, Rose \(2022\) GCSE Maths for Neurodivergent Learners: Build Your Confidence in Number, Proportion and Algebra](#)
- [Hornigold, Judy \(2016\) Making Maths Visual and Tactile: A Compendium of Games and Activities to Teach Key Number Skills](#)
- [How, Amy \(2019\) Rekenrek 101: Pushing Mathematical Understanding](#)
- [Mattock, Peter \(2019\) Visible Maths](#)
- [Mattock, Peter \(2023\) Conceptual Maths](#)
- [McCourt, Mark \(2019\) Teaching for Mastery](#)



Websites

General information about dyscalculia

- www.bdadyslexia.org.uk/dyscalculia
- www.dyscalculia.org
- www.dyslexiaaction.org.uk
- www.dyscalculiaassociation.uk
- www.dyscalculianetwork.com
- www.judyhornigold.co.uk
- www.understood.org



Websites

Resources

- www.brainingcamp.com – virtual manipulatives and resources
- www.corbettmaths.com – video tutorials (secondary)
- www.corbettmathsprimary.com – video tutorials (primary)
- www.iseemaths.com – number sense and early maths resources
- www.mathsbot.com – virtual manipulatives and resources
- www.mathsexplained.co.uk – video tutorials



Websites

Resources

- www.mathigon.org/polypad – virtual manipulatives and resources
- www.nrich.maths.org/ - maths activities and challenges
- www.numberstacks.co.uk/ – place value resources
- www.ronitbird.co.uk/ – lots of simple, fun games to play
- www.spotonwithnumbers.co.uk/ – dot pattern resources
- www.twinkl.co.uk/ – fun, printable board games as well as some interactive online games



Screening for dyscalculia

- Numeracy Screener
- Dynamo Profiler
- Dynamo Post 14
- Dyscalculia Screener
- Questionnaire/Checklist (e.g. in Steve Chinn 'More Trouble with Maths')
- Observation



Software and online interventions/programs

- CatchUpNumeracy. Available online: <https://www.catchup.org/interventions/numeracy.php>
- Calcularis (Alemira School). Available online: <https://alemira.com/lp-calcularis-us/>
- Dynamo Maths. Available online: <http://www.dynamomaths.co.uk>
- IXL Learning. Available online: <http://uk.ixl.com/math/>
- NumberGym. Available online: www.numbergym.co.uk
- PhET Simulations. Available online: <https://phet.colorado.edu/en>



Software and online interventions/programs

- **Rapid Maths.** Available online:

<http://www.pearsonschooolsandfecolleges.co.uk/Primary/Mathematics/AllMathematicsresources/RapidMaths/RapidMaths.aspx>

- **Accelerated Maths.** Available online:

<http://www.renlearn.co.uk/accelerated-maths/>

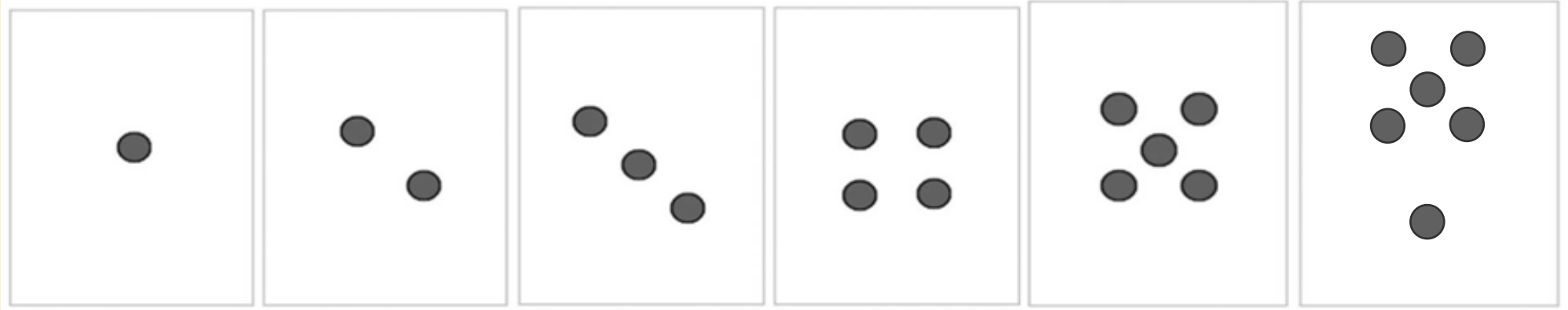
- **FASTT Maths.** Available Online: <https://www.hmhco.com/products/fastt-math/index.htm>

- **Numbershark.** Available online:

<http://www.wordshark.co.uk/numbershark.aspx>



Dot patterns



1

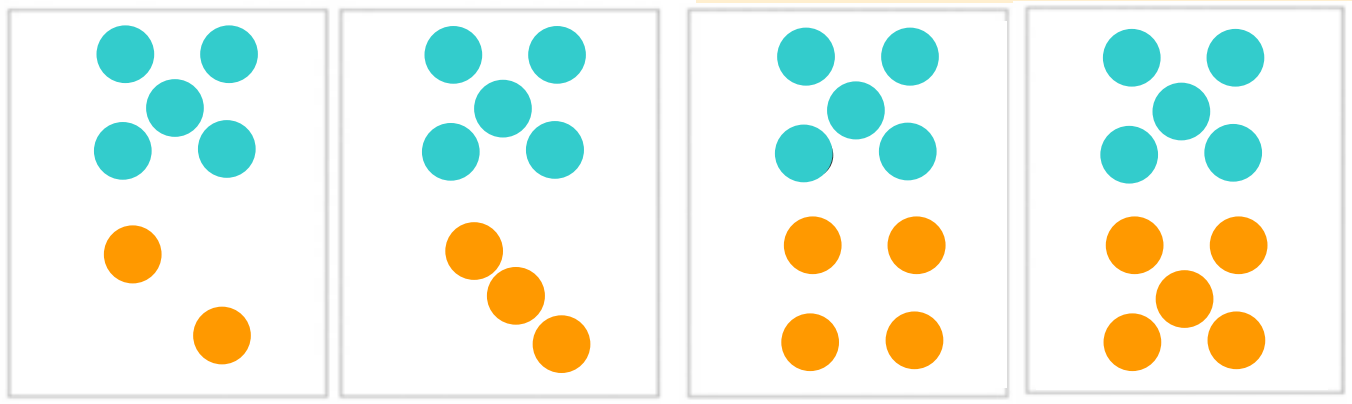
2

3

4

5

6



7

8

9

10



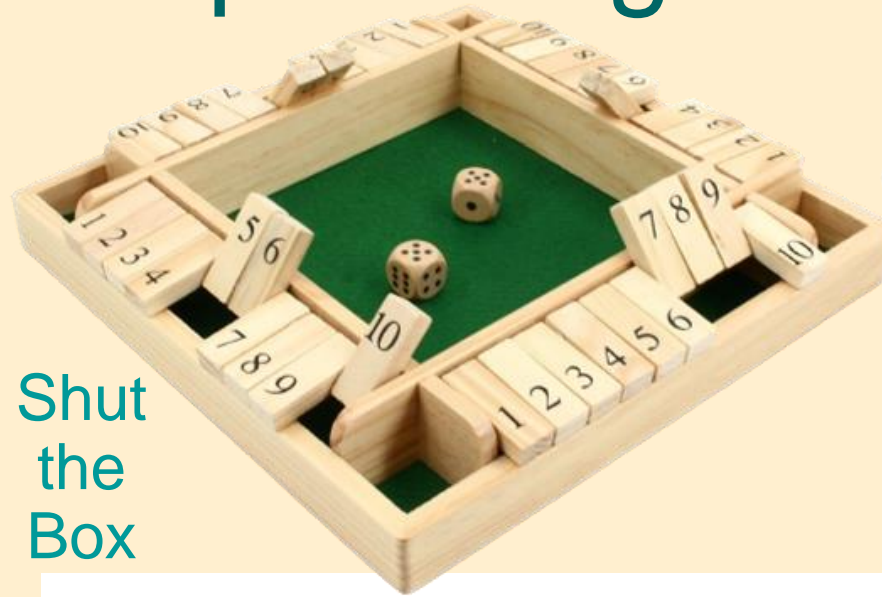
Spot On With Numbers



Spot On With Numbers



Dot pattern games



Shut the Box







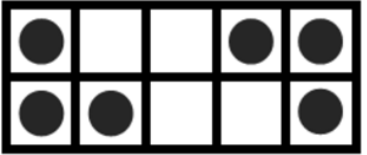


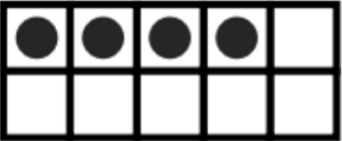
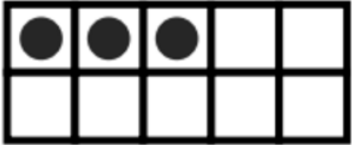

Yahtzee

Dudo / Perudo





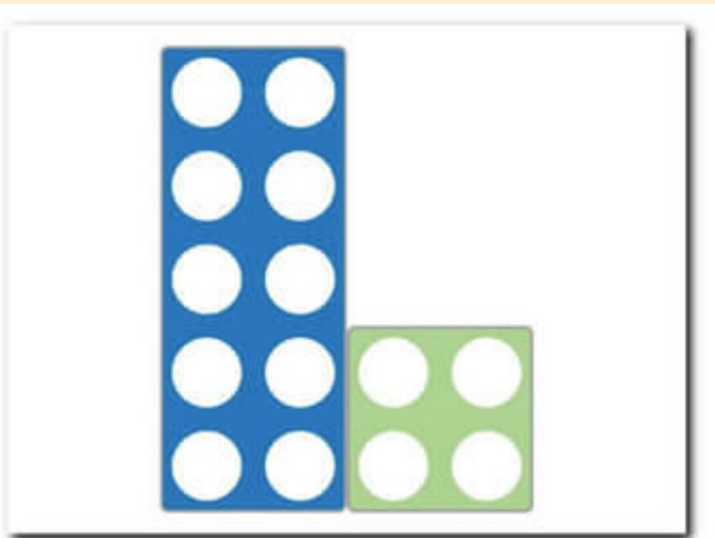
Match Bingo

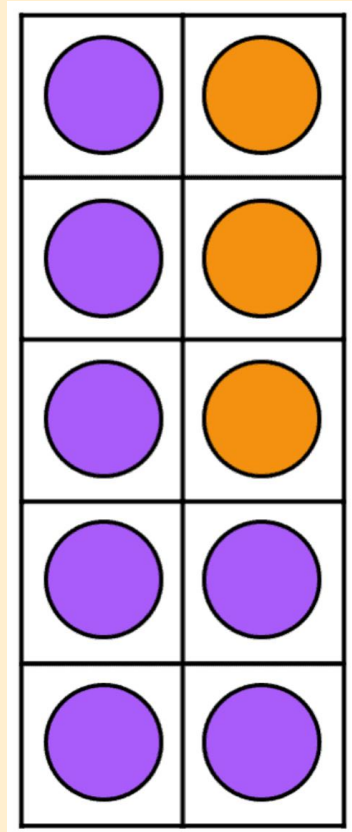


Visualising numbers in other ways

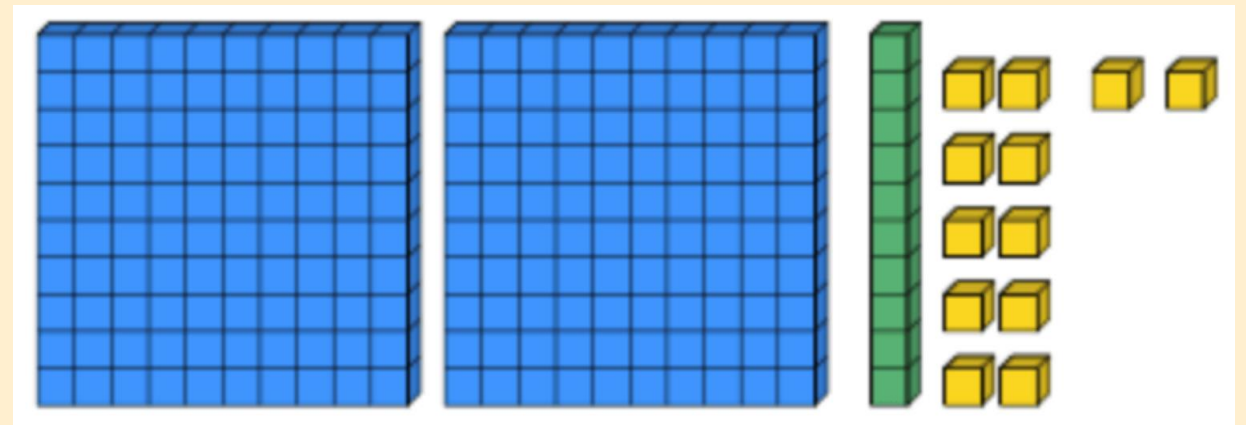
10-frames



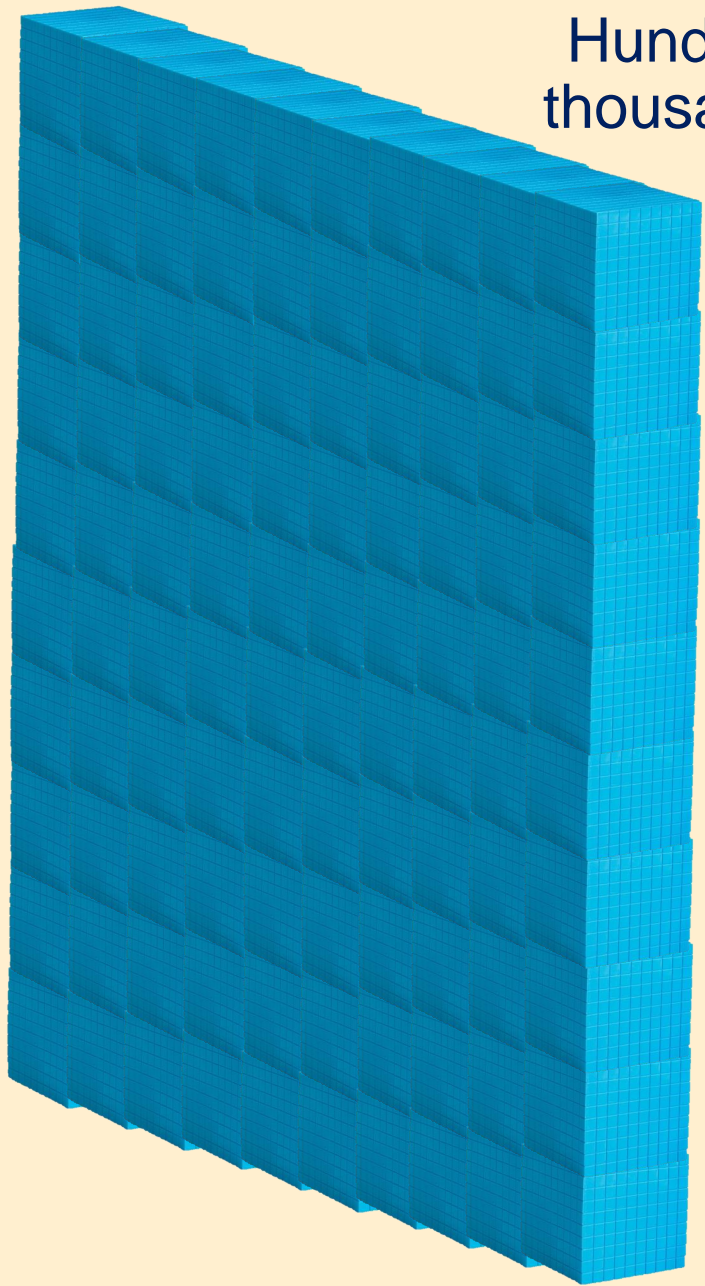
14



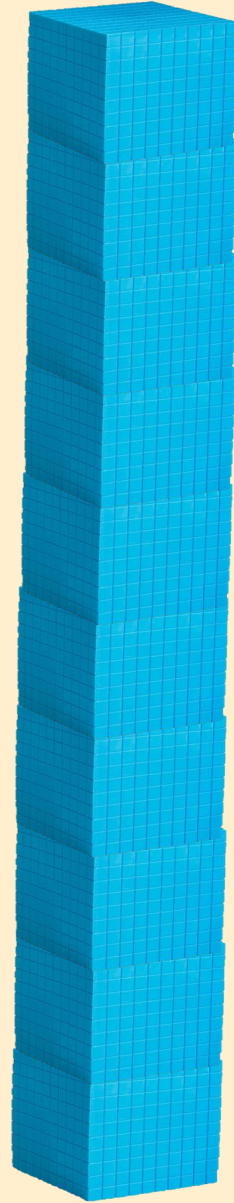
Base 10



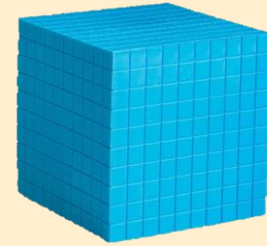
Hundred
thousands



Ten thousands



Unit thousands

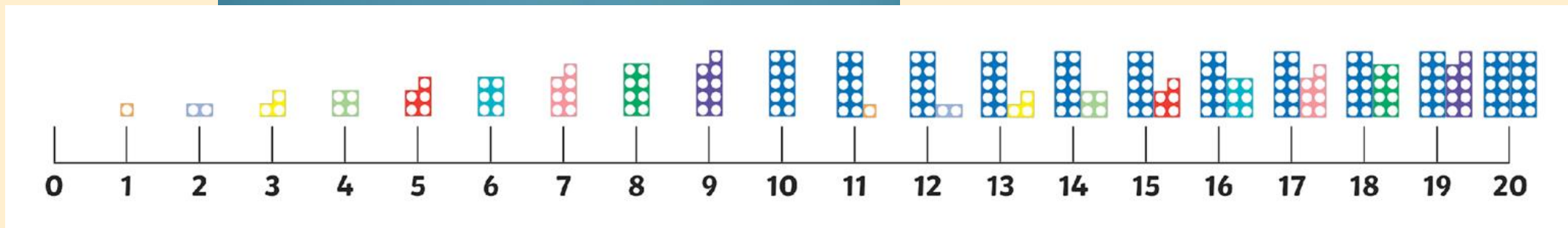


Fluency when counting

- Counting up **AND BACK** in 1s
 - over tens-boundaries
 - over hundreds-boundaries



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



Fluency when counting

Counting up
AND BACK
in 1s over
thousands
boundaries

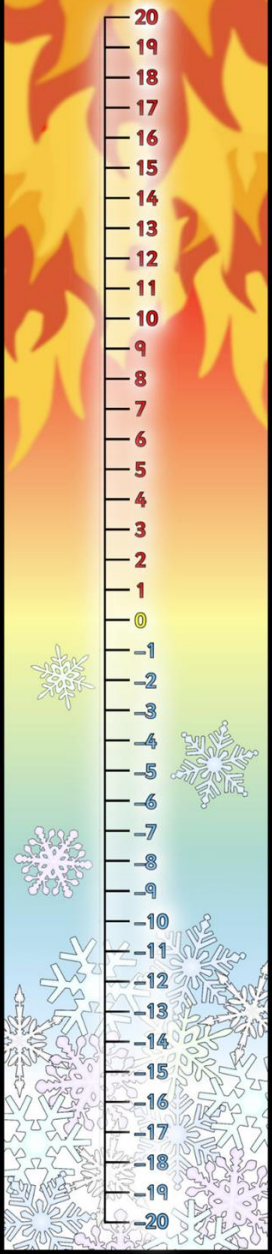
1000 Square

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
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51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
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676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725
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926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950
951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975
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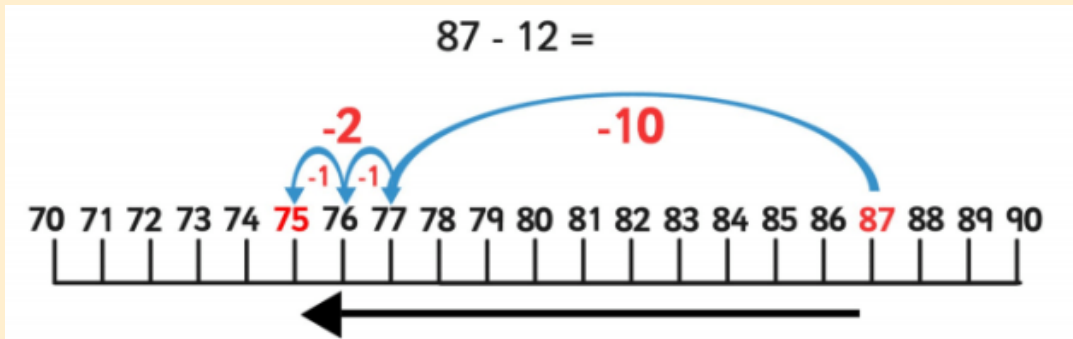
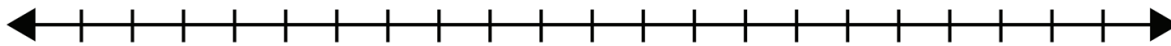
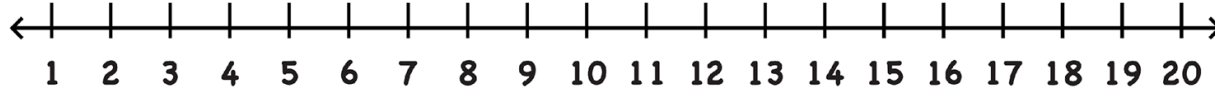
Counting up
AND BACK
in 2s, 5s,
10s and 100s



Number Line



Number lines

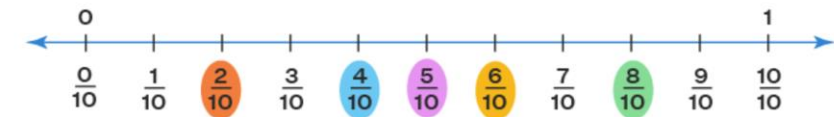
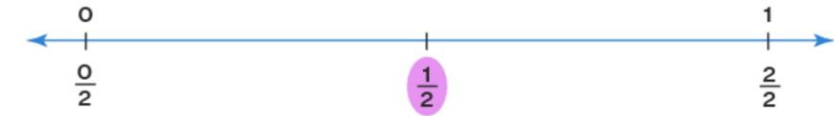


<https://www.twinkl.com/teaching-wiki/number-line>

The number 0 is neither positive nor negative



Equivalent Fractions on Number Line

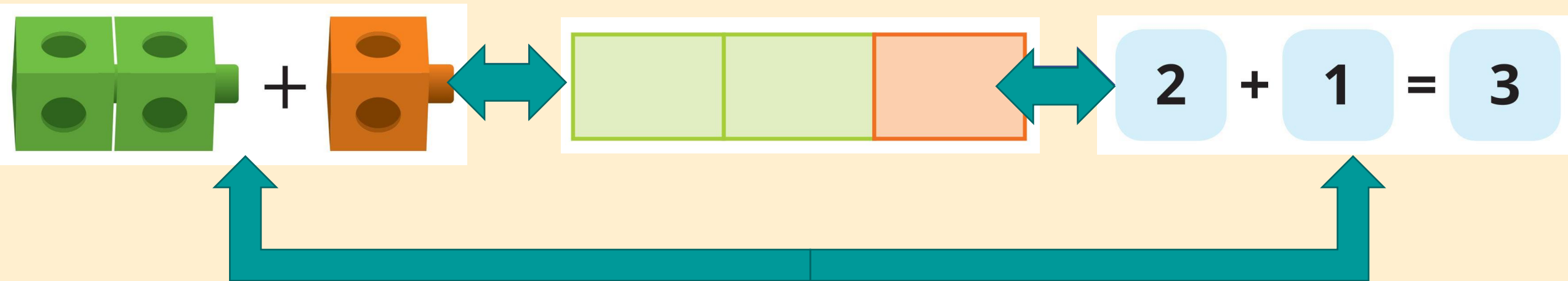


ALWAYS make maths multisensory

Concrete

Pictorial

Abstract



Ten frame
egg boxes

Visualising numbers in a multisensory way



Multilink
cubes



[Egg Carton Math: Make Ten! | School Time Snippets](#)

[Take-Home Manipulative Maths Kit by hand2mind](#)

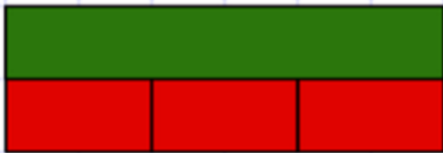
Base 10



Visualising numbers in a multisensory way

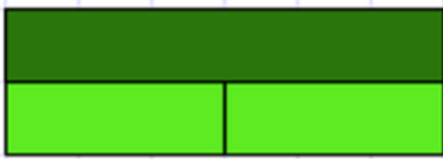
[18 ways to use Numicon | parenttutor.co.uk](https://parenttutor.co.uk)

Cuisenaire rods



$$d = 3r$$

$$r = \frac{1}{3}d$$



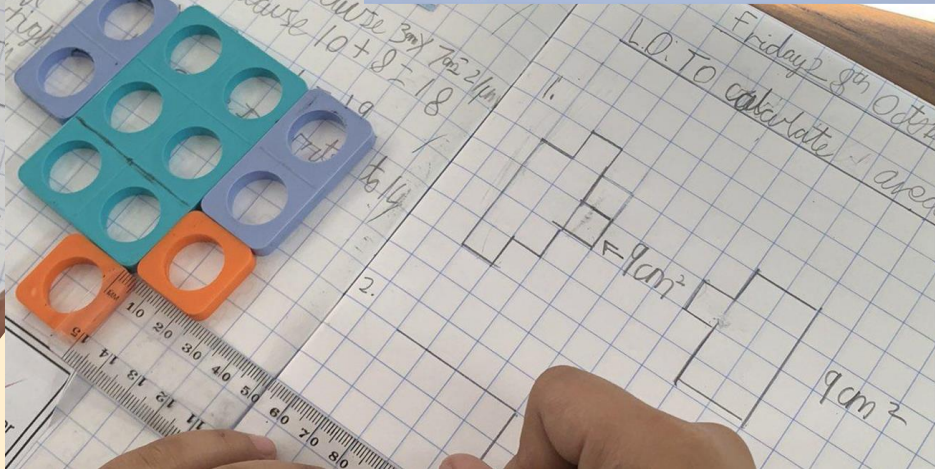
$$d = 2r$$

$$r = \frac{1}{2}d$$

Miss Norledge's Maths Storeroom



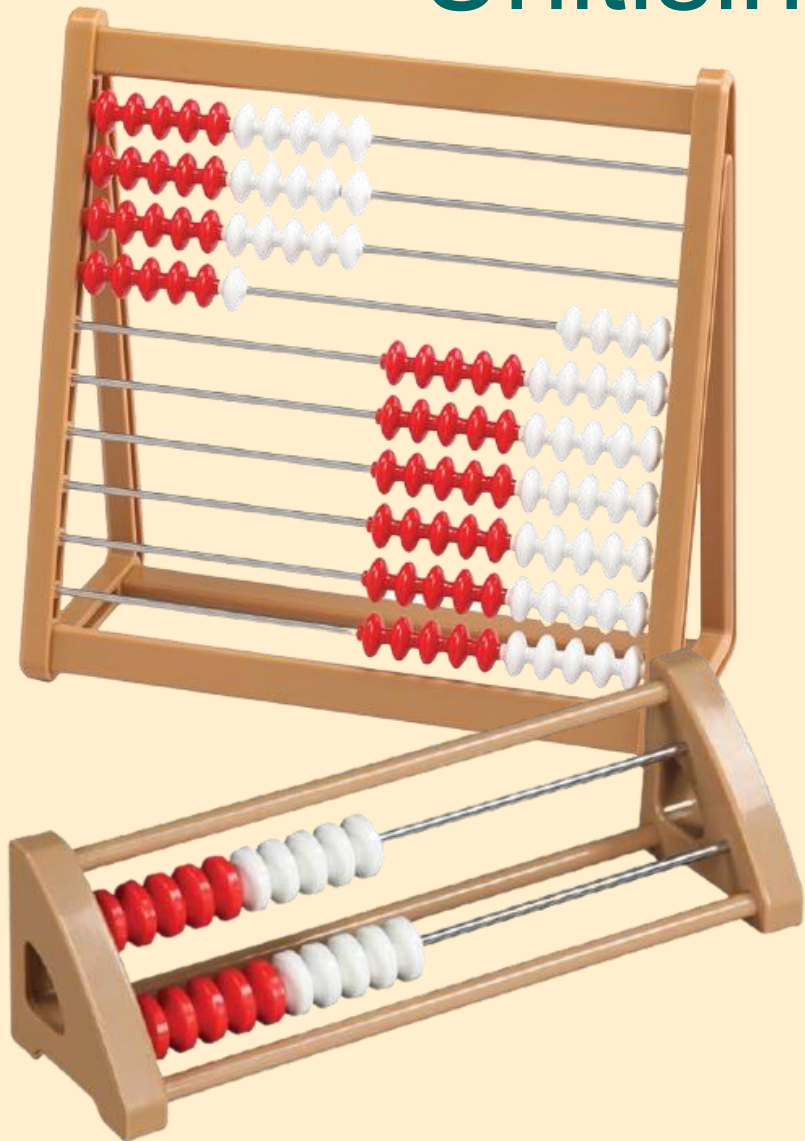
Numicon



@MrMJellis on Twitter



Unitising in a multisensory way



Rekenreks



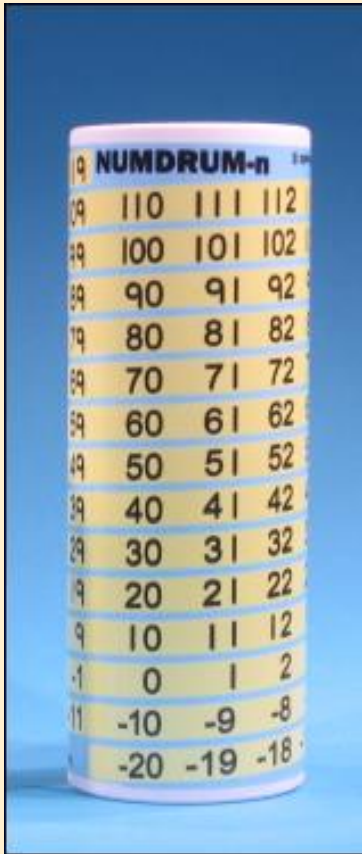
Rekenrek 101
Pushing Mathematical Understanding

Amy How

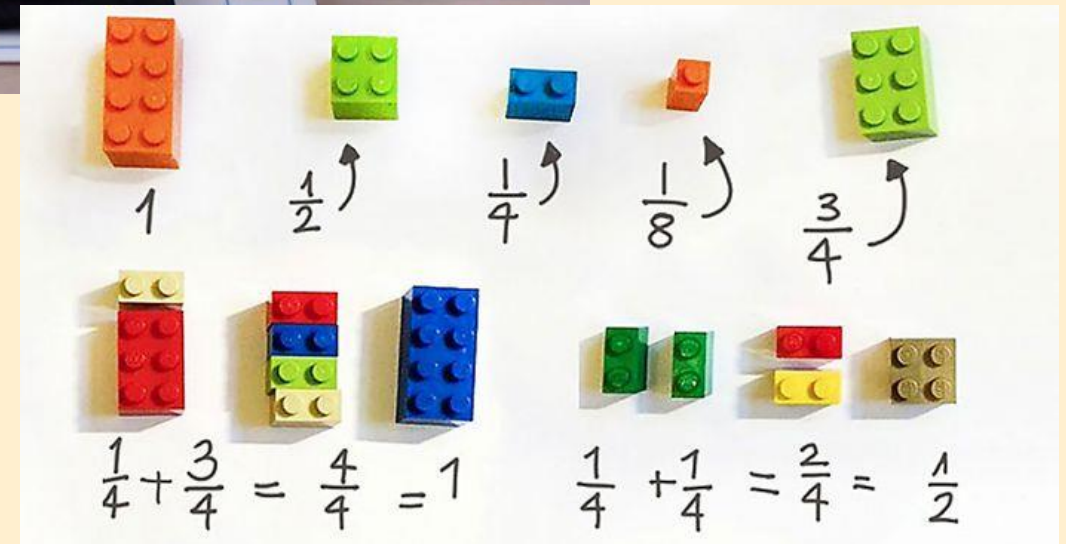


More multisensory resources

Numdrum



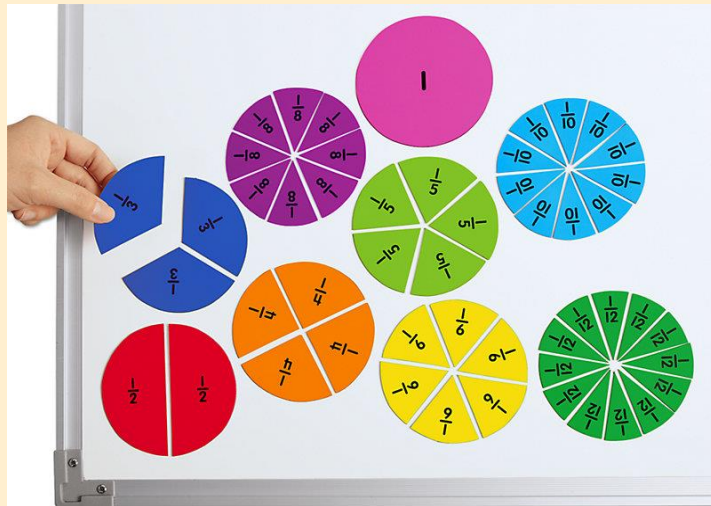
Number Stacks



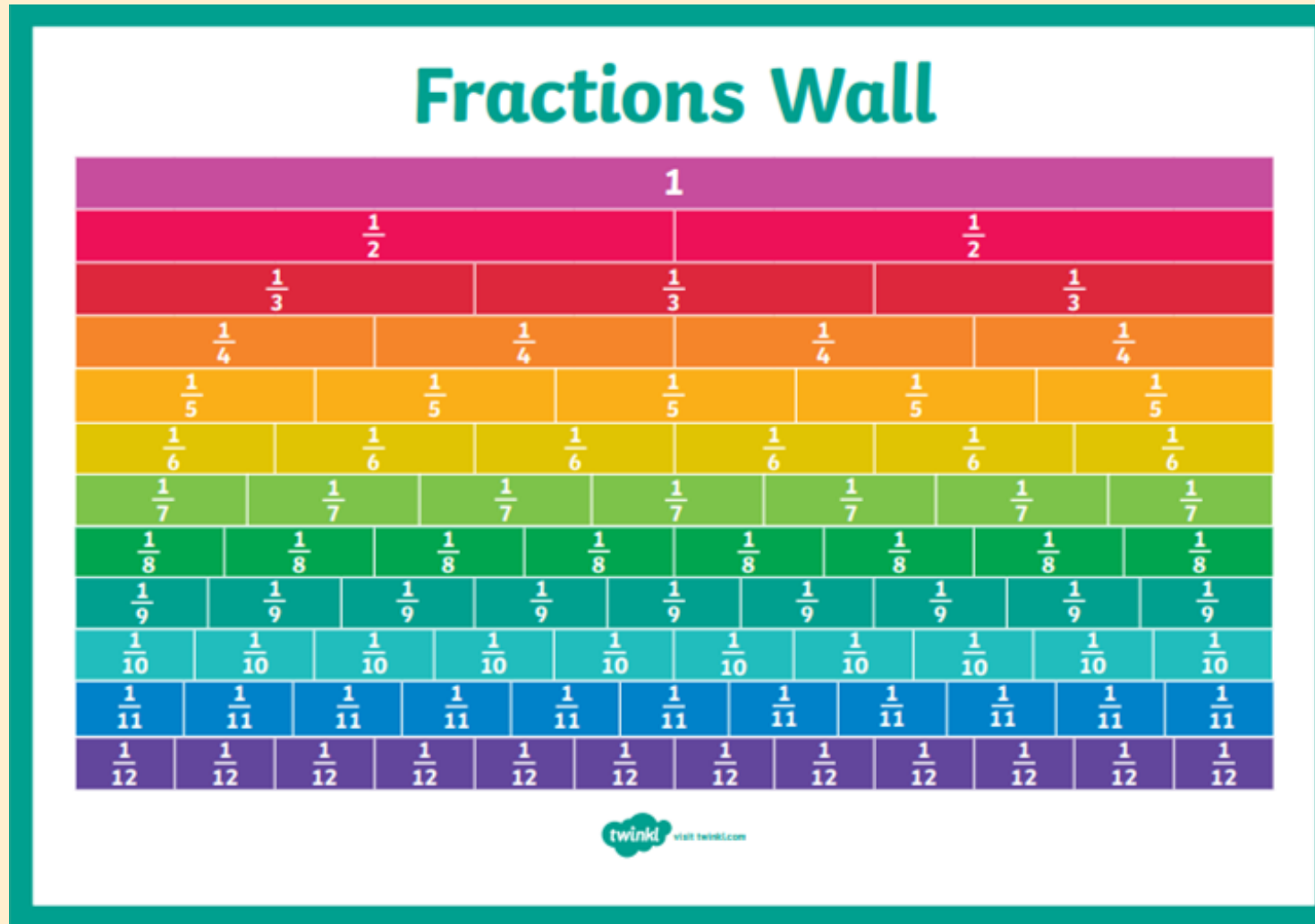
Dyslexia Shop



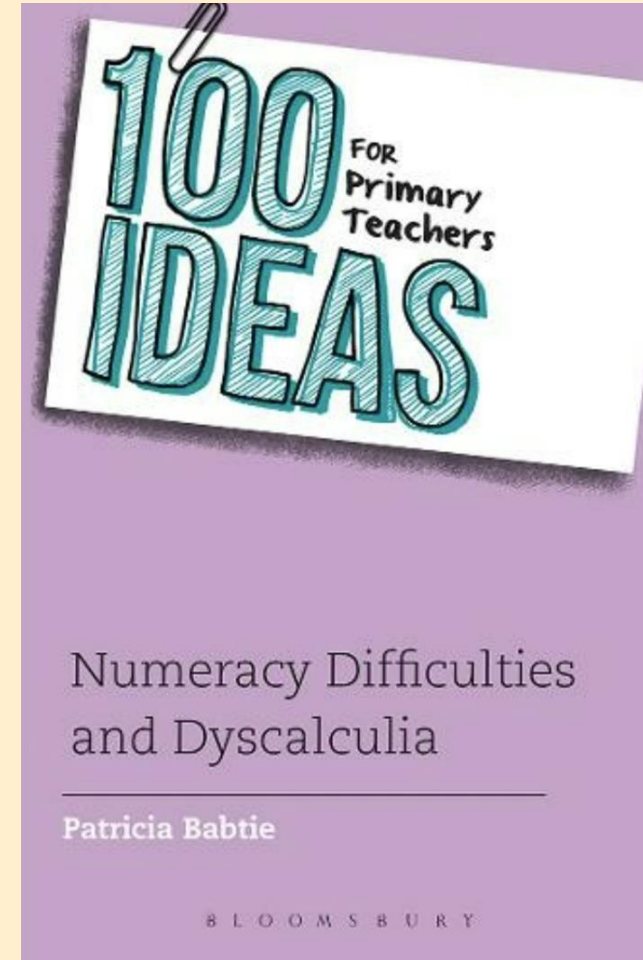
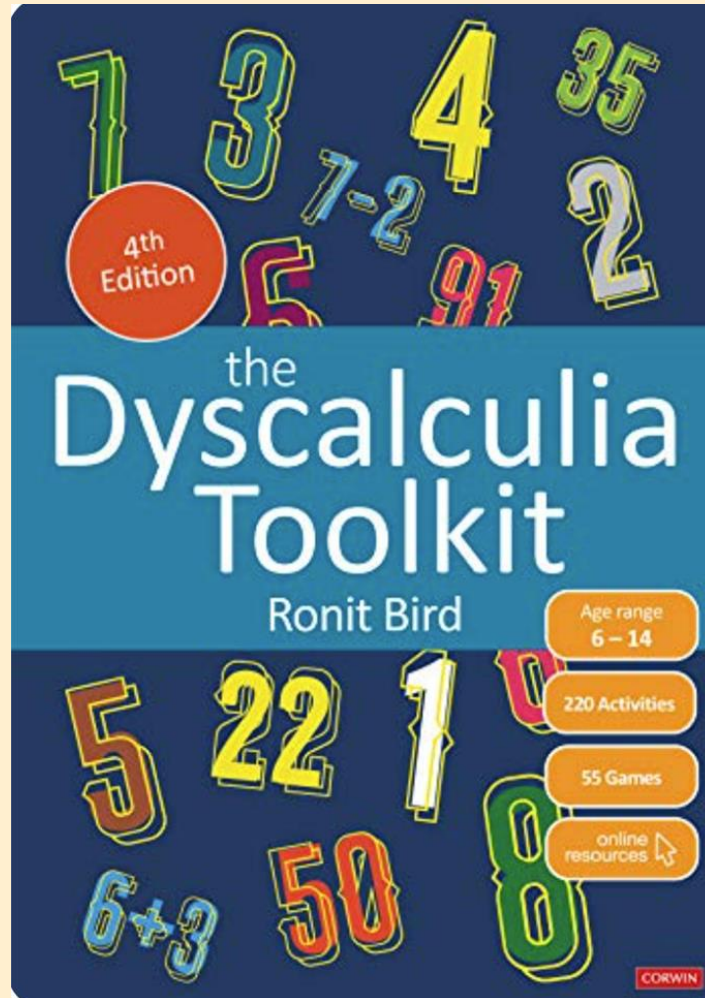
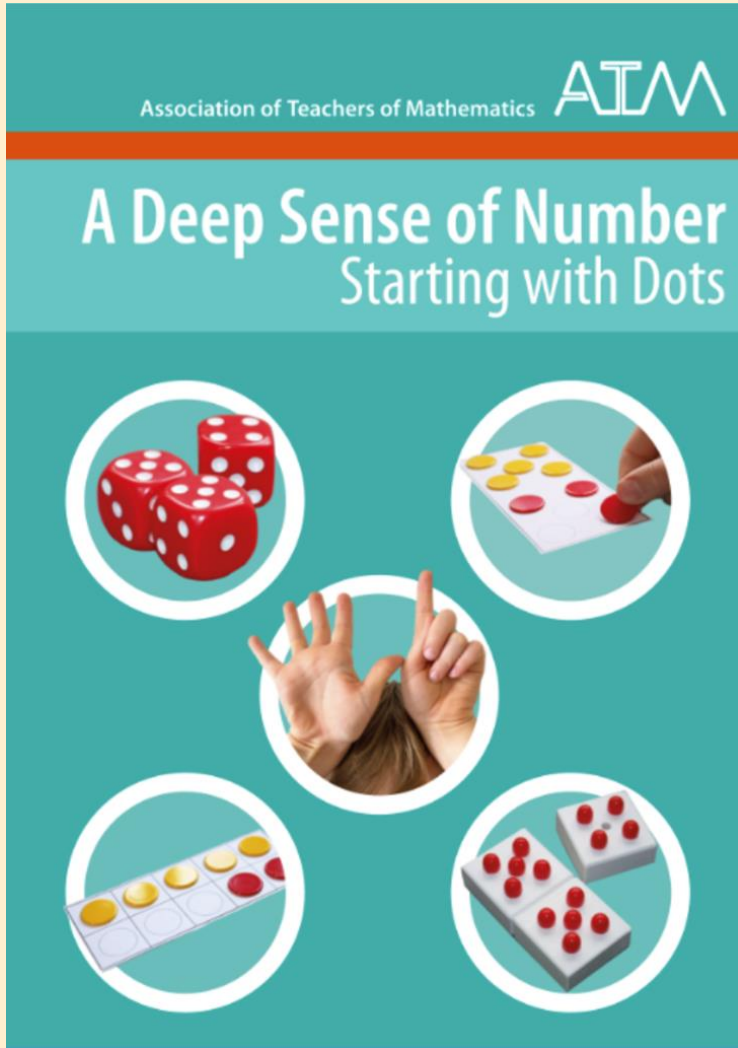
Fraction resources



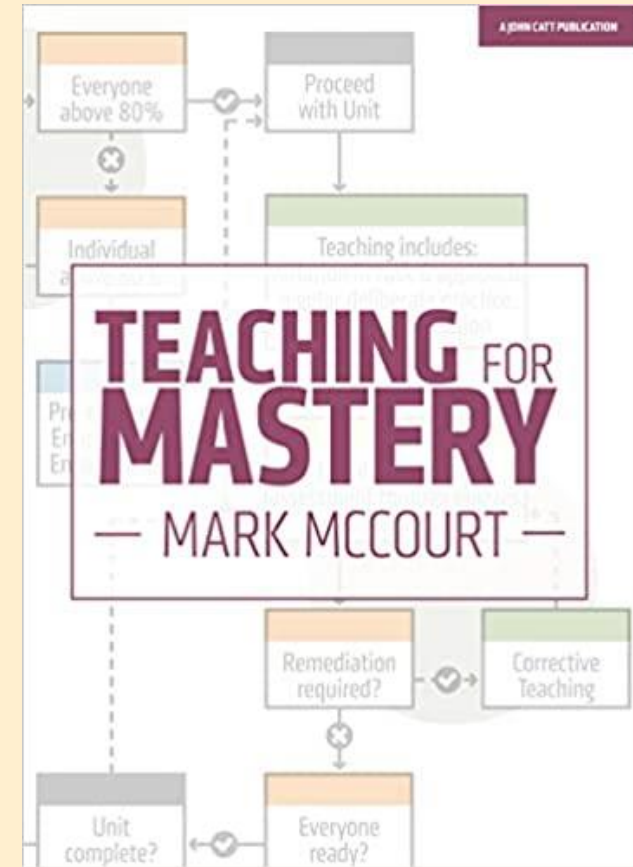
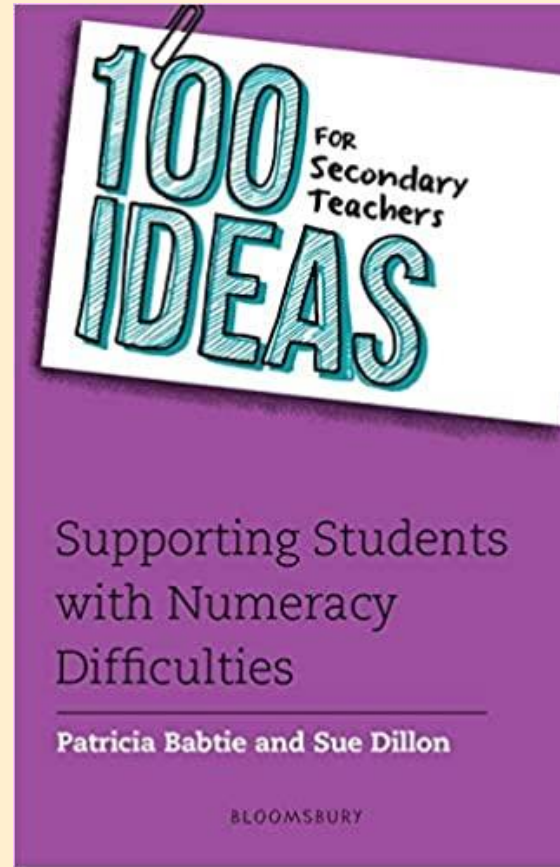
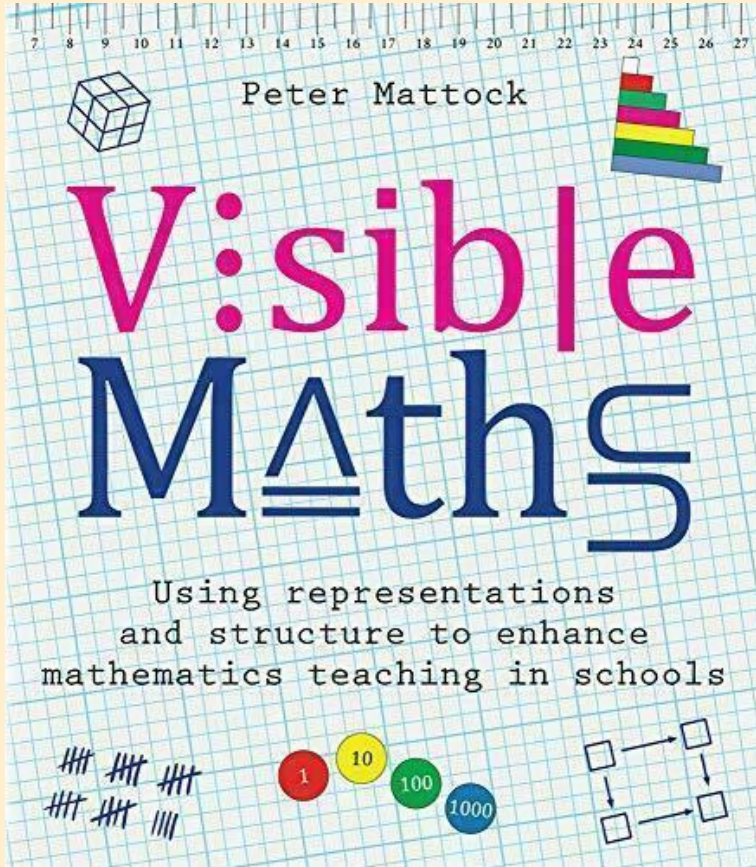
Fraction resources

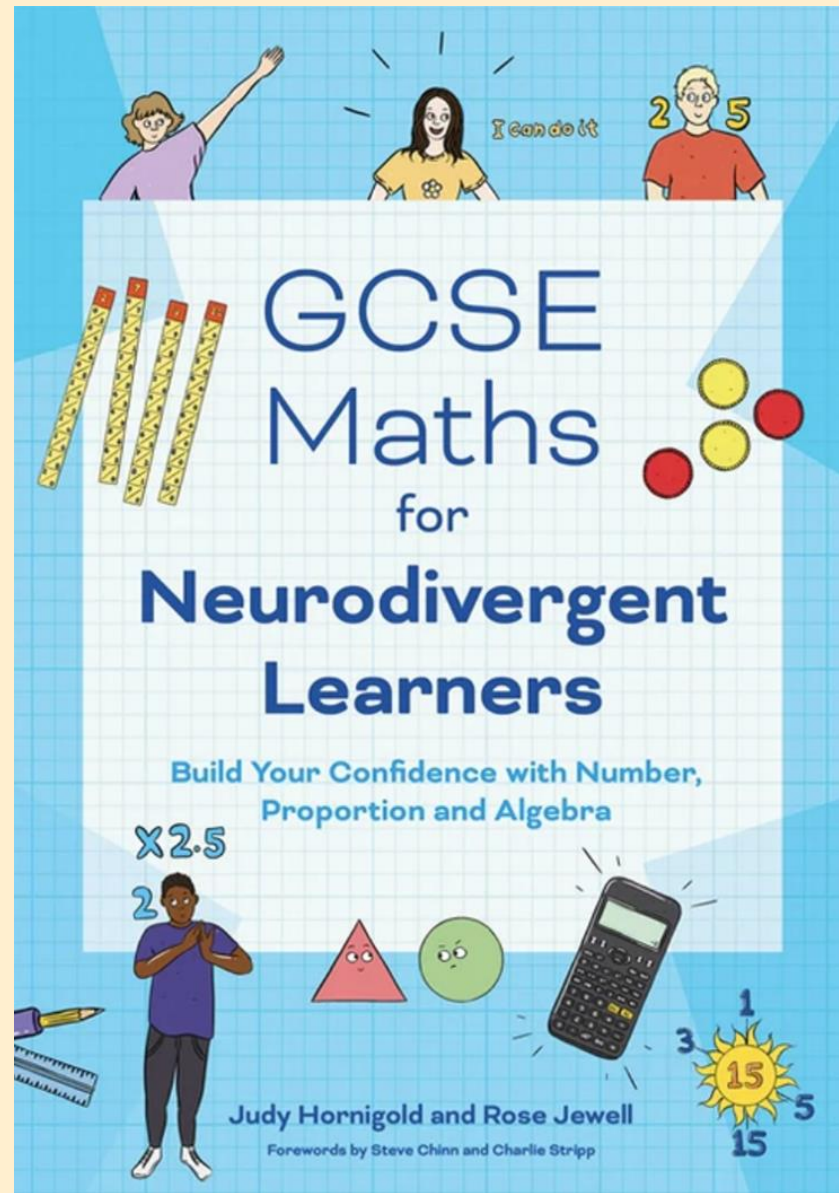






Supporting the secondary curriculum

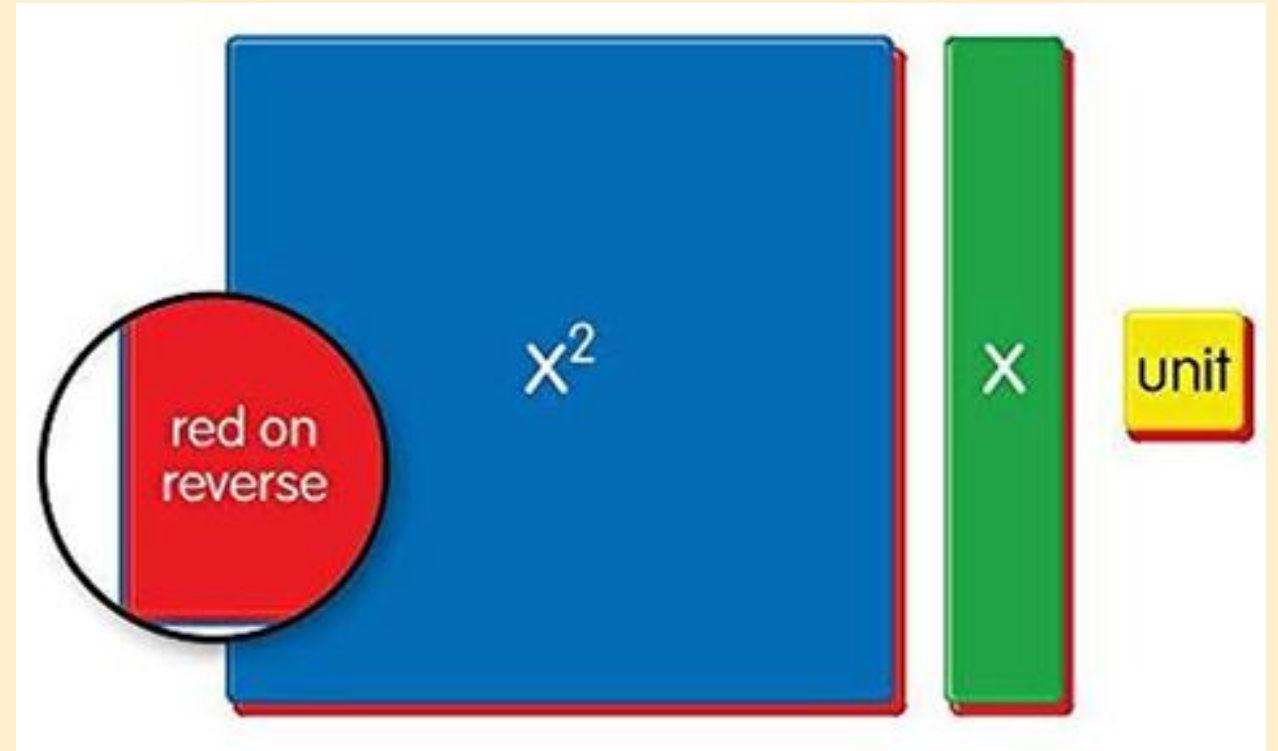
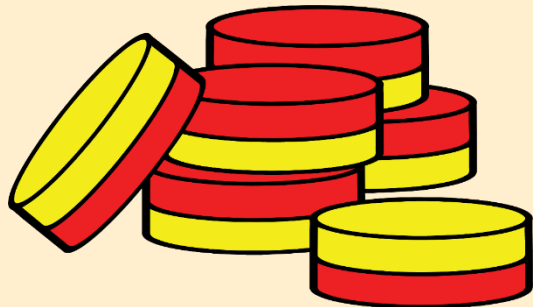
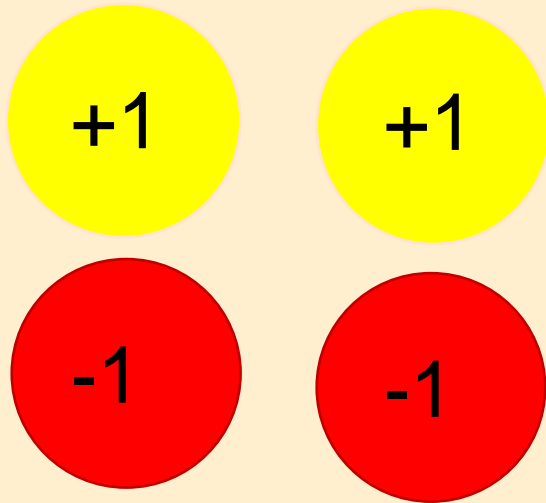




Integers and algebraic equations

Zero pairs

$$+2 - 2 = 0$$



Bernie Westacott on YouTube

With podcaster, Craig Barton, on 'Mr Barton's Maths Podcast'

Teaching maths with
visuals and manipulatives

Part 7 – Demonstration: Negative numbers

Craig Barton
in conversation
with Bernie Westacott



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Part 8 – Demonstration: Simultaneous equations

Craig Barton
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Part 7 – Negative Numbers

Part 8 – Simultaneous Equations





Two More Bingo



$$\square = 9 + 4$$



Addition Bingo

10-Frame

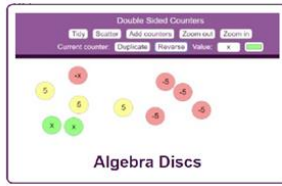


$$7 + 4 = \square$$

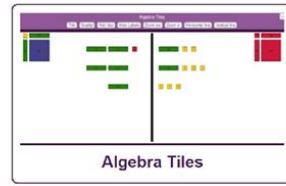
 $6 + 4 = \square$	 $4 + 3 = \square$
 $7 + 1 = \square$	 $5 + 5 = \square$



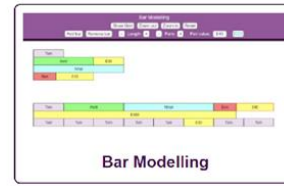
Manipulatives



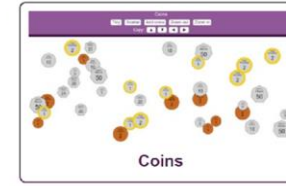
Algebra Discs



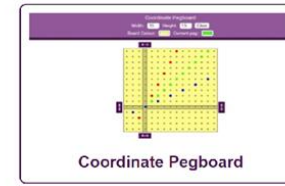
Algebra Tiles



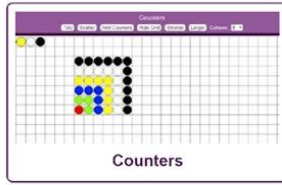
Bar Modelling



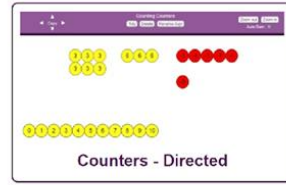
Coins



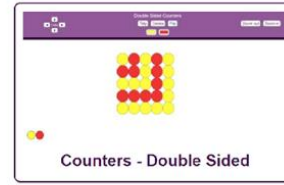
Coordinate Pegboard



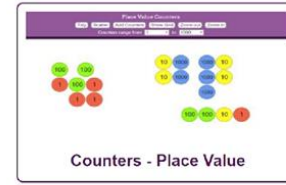
Counters



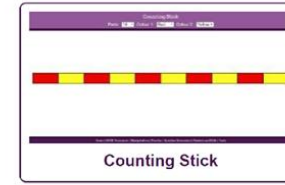
Counters - Directed



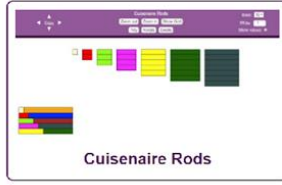
Counters - Double Sided



Counters - Place Value



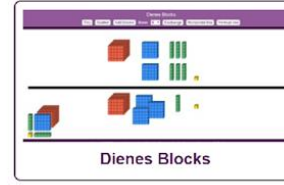
Counting Stick



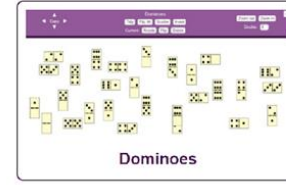
Cuisenaire Rods



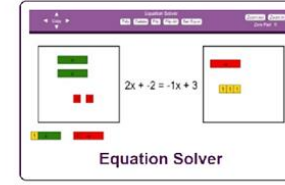
Dice



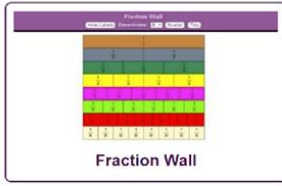
Dienes Blocks



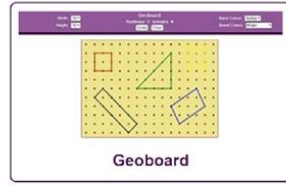
Dominoes



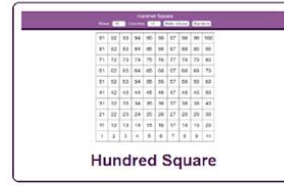
Equation Solver



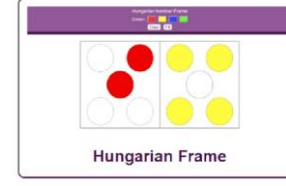
Fraction Wall



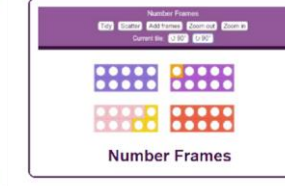
Geoboard



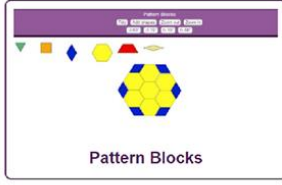
Hundred Square



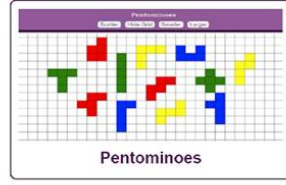
Hungarian Frame



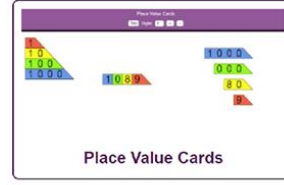
Number Frames



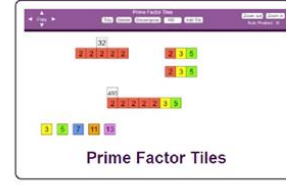
Pattern Blocks



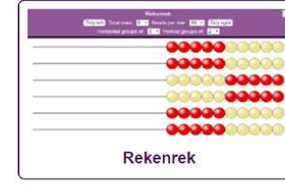
Pentominoes



Place Value Cards



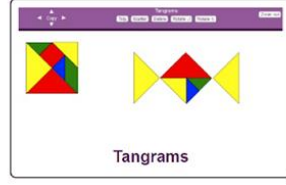
Prime Factor Tiles



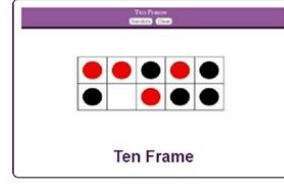
Rekenrek



Tak-Tiles



Tangrams



Ten Frame



Unit Box

Jonathan Hall

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Maths Explained

Video tutorials by Steve Chinn



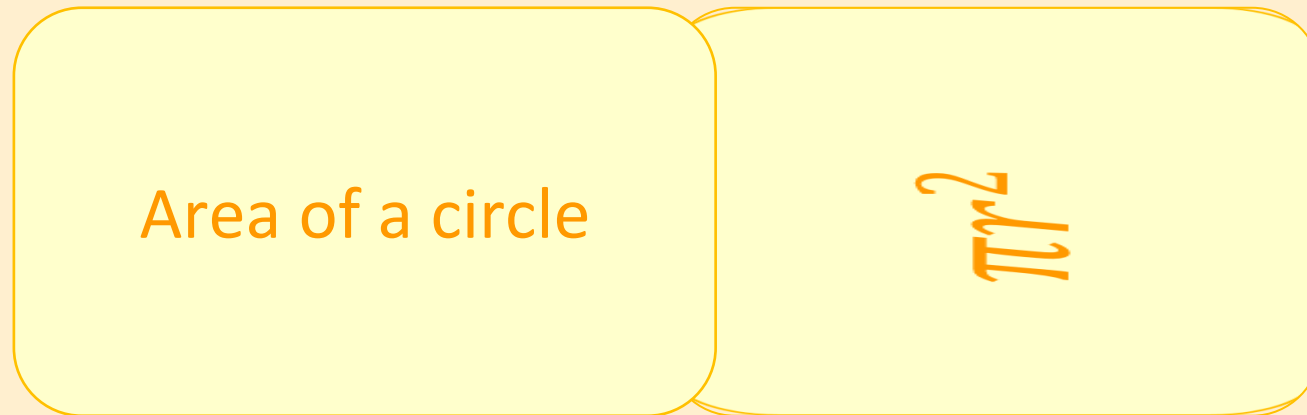
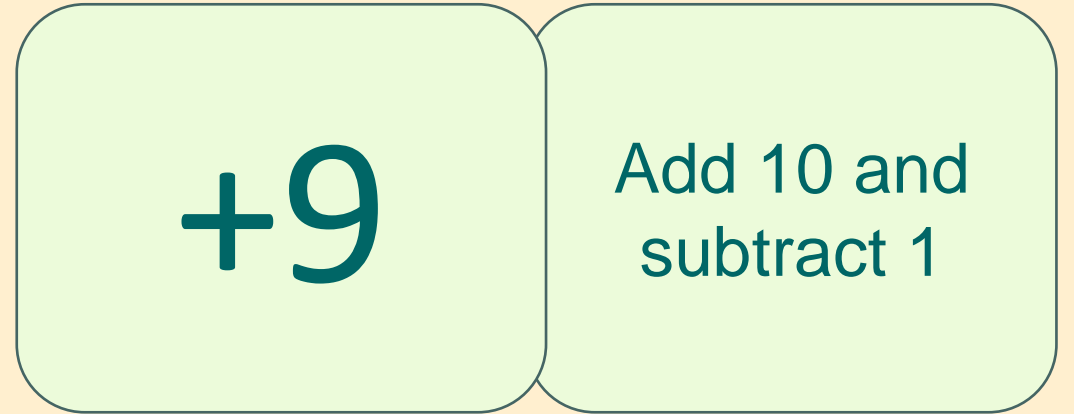
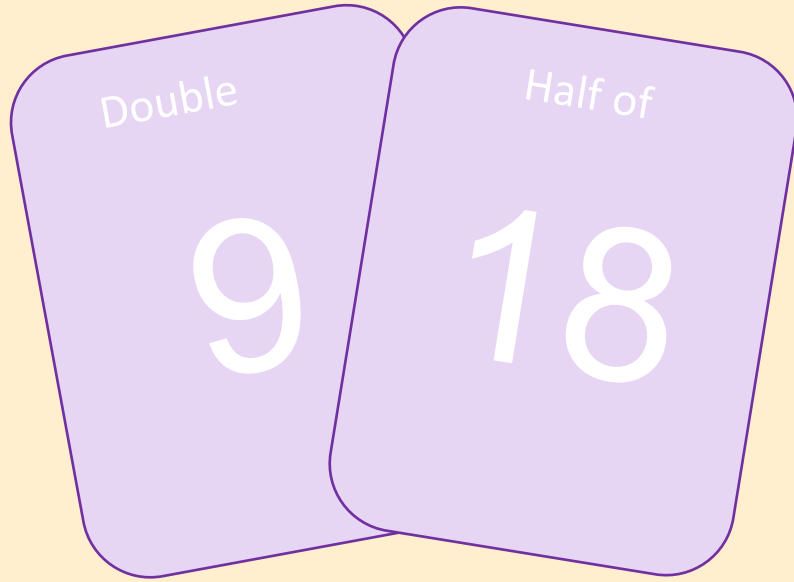
www.mathsexplained.co.uk



The screenshot shows the Mathigon Polypad interface. At the top, there is a navigation bar with 'Mathigon' on the left and 'Courses', 'Polypad', 'Activities', a search icon, and a user profile icon on the right. Below the navigation bar is a sidebar with a 'Tiles' tab and a 'Library' tab. The 'Library' contains categories: 'Geometry', 'Numbers', 'Fractions', and 'Algebra'. Under 'Algebra', there is a section for 'Algebra Tiles' with a grid of tiles: a small orange square labeled '1', a tall green vertical rectangle labeled 'x', a blue square labeled 'x²', a small pink square labeled '-1', a tall pink vertical rectangle labeled '-x', and a large pink square labeled '-x²'. The main workspace features a balance scale. The left pan contains five small orange squares labeled '1'. The right pan contains one tall green vertical rectangle labeled 'x'. On the left side of the workspace, there are two orange squares labeled '1'. On the right side, there are two orange squares labeled '1'. A vertical toolbar on the right side of the workspace contains icons for zooming, undo, redo, grid, eraser, share, lightbulb, and a download icon. At the bottom of the workspace, there is a horizontal toolbar with icons for a mouse cursor, eraser, line tool, text tool, and a color palette.



Memory aids - Fact cards



Reducing cognitive load

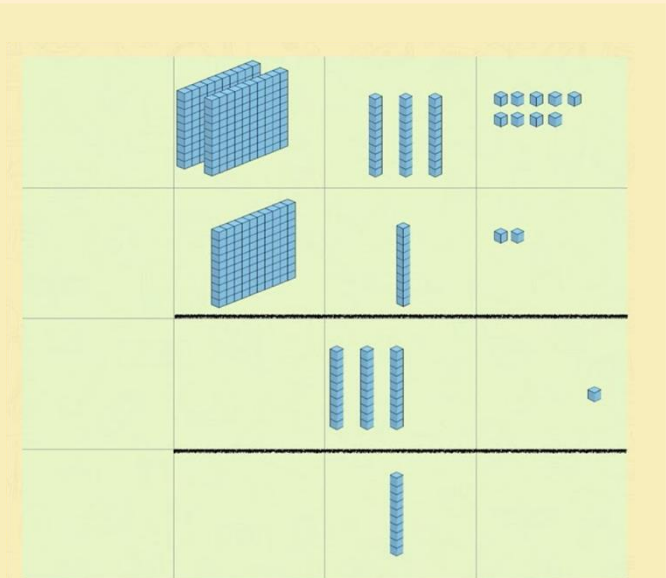
Hundred Square

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

Multiplication Square

×	1	2	3	4	5	6	7	8	9	10	11	
1	1	2	3	4	5	6	7	8	9	10	11	
2	2	4	6	8	10	12	14	16	18	20	22	
3	3	6	9	12	15	18	21	24	27	30	33	
4	4	8	12	16	20	24	28	32	36	40	44	
5	5	10	15	20	25	30	35	40	45	50	55	
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

$$\begin{array}{r}
 239 \\
 + 112 \\
 \hline
 351
 \end{array}$$



$$\begin{array}{r}
 6712 \\
 56 \text{ ---} \\
 \hline
 16
 \end{array}$$



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