Why would you like your child to be more confident and better at maths?

Success is a choice. Your child must want to do better at Maths – whether by choice or by bribery ☺

Contents

The good and the bad news:

The good news: guaranteed improvements in maths tests
- it takes a student only 15 minutes every school day

The bad news: parents have a role to play

40 years ago, my parents were given a tip to help boost both my confidence with arithmetic and my maths test results. It worked. What's more it has since worked with all those it has been shared with and who have then used it.

The WOW factor was looking at this analogue tool now, with an understanding of neuroscience and realising that I have been the beneficiary of neuroscience based learning for 40 years !

Norman Doidge in his groundbreaking book on brain plasticity "*The Brain that changes itself: Stories of Personal Triumph from the Frontiers of Brain Science*" contains an interesting quote that I wish more parents would make as a poster that the child had to read each day before doing some brain exercise:

> "**If you want to lift a hundred pounds, you don't expect to succeed the first time. You start with a lighter weight and work up little by little. You actually fail to lift a hundred pounds, every day, until the day you succeed. But it is in the days when you are exerting yourself that the growth is occurring**."

So why do this maths based brain training routine?

Every top athlete spends time repeatedly doing the basics so that he or she never has to think about the basics when they are performing. Someone who wants to be good at netball or football must be good at running and catching/kicking the ball. Top performers never think: "now to run, I have to put my left foot in front of my right foot; then my right foot in front of my left foot; then repeat that very fast". They just do it. The top athlete "knows" what to do and doesn't waste time thinking about it

Imagine how much easier doing mathematics would be for you if you don't have to think about the numbers - you just "know them"? More to the point, you know the relationships between the numbers.

Most high school mathematics is based on knowing some rules and speed results from being confident with the relationship between the numbers.

For example

4 x 6 = 24 is pretty easy; as is 2 x 12 = 24; as is 3 x 8 =24

When you can complete the 169 answers to the table square in less than 3 minutes, you are so familiar with the relationships between these numbers that you do not have to think in order to recognise some empowering bits of knowledge. Continuing the above example:

You can look at the number 24 and "know" the factors are: 4, 6, 2, 12, 3, 8 and of course 1 & 24

So what, you ask?

Well now doing fractions is easy; factorising in algebra is easier; in fact, any problem working with numbers is so much easier when you don't have to think about the numbers - you know the relationships because you have practiced 15 minutes every weekday until you can complete a random single table square in less than 3 minutes.

Does it work?

In the tutoring business, the first part of building confidence with numbers was this exercise. Every student then improved. We now know how neuroscience works and underpins building learning capacity

> **It works every time** a person focuses on achieving the target of 3 minutes and practices daily. He or she will feel their confidence grow because their time improves every week.

Hence the importance of recording your Personal Best times regularly in the progress chart – it allows you to see measured progress. The mental exercise "lubricates" the brain cells and prepares your mind for thinking. Success breeds success. Success with tables then helps you be confident of success with other parts of mathematics. Even adults I tutored doing the mathematics for their Pilot exams did this first, achieving the 3 minute target, which then made the maths easier.

So what's the tip that allowed me become really confident with maths and earn some pocket money with my "wins"?

The neuroscience principles:	Maths coaching tip
• Daily (5 times per week) brain exercise – focussed	Maximum of 10 minutes allowed, never any more time
• Slightly more challenging each time	First challenge - just complete more of the 169 answers within the 10 minutes; then 100% correct and then improve the time
• Small rewards to recognise each success increment reinforce the value of doing the exercise	The Personal Best is on the fridge and dated for all to acknowledge the latest improvement; 40 years ago I earned 50c every time I improved my time and had 100%. There was an added bonus of double the previous days reward if I bettered my time on consecutive days
• Consistency is vital	Every day of the school term
• the Goal	When all 169 answers can be done in 3 minutes or less, 100% correct and done 3 days in a row. That is when you have earned the right to stop

The tool makes it easy to start, how well you do is entirely in your hands.
If you do it for 1 week there won't be much change, do it for a year and math tests become easier.

Rules

1 No Cheating
2 No Calculators, no notes
3 At the start each day, the sheet is face down until time starts
4 Time stops when pen or pencil is put down
5 Any wrong answers SHOULD be written out correctly 10 (ten) times (max 5 tables)
6 The time only counts if there are 169 correct answers

Example of Prizes:

$1 First time all 169 answers completed in less than 10 minutes (good effort)
$1 First time all 169 answers completed in less than 10 minutes & 100% correct
$1 Each 15 second improvement & 100% correct
$10 First time under 3 minutes & 100% correct (with the numbers jumbled)

My nephew moaned that it would be easier if he could just do the standard tables in order. So we timed me doing both:

Jumbled – 2:17
Standard – 2:18

When you know your tables without thinking, it doesn't matter if they are jumbled.

Jumbled 1

X	9	2	11	1	12	0	7	3	10	4	8	5	6
9													
2													
11													
1													
12													
0													
7													
3													
10													
4													
8													
5													
6													

Tracking your progress – how many months until you beat the 3 minute mark 3 times in a row?

Name **Birth date** _____

Date first attempt _____ **Completed** _____ **Correct** _____ **Time** _____

Date	Target Time			Date	Target Time			Date	Target Time		
	10:00	not 100%	**$1**		**7:30**		**$1**		**4:45**		**$1**
	10:00	100%	**$1**		**7:15**		**$1**		**4:30**		**$1**
	9:45		**$1**		**7:00**		**$1**		**4:15**		**$1**
	9:30		**$1**		**6:45**		**$1**		**4:00**		**$1**
	9:15		**$1**		**6:30**		**$1**		**3:45**		**$1**
	9:00		**$1**		**6:15**		**$1**		**3:30**		**$1**
	8:45		**$1**		**6:00**		**$1**		**3:15**		**$1**
	8:30		**$1**		**5:45**		**$1**		**3:00**		**$10**
	8:15		**$1**		**5:30**		**$1**		**2:45**		**$3**
	8:00		**$1**		**5:15**		**$1**		**2:30**		**$5**
	7:45		**$1**		**5:00**		**$1**		**2:15**		**$10**

The answers

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

Standard

X	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													

Jumbled 2

X	6	9	2	12	0	11	5	10	1	8	3	7	4
6													
9													
2													
12													
0													
11													
5													
10													
1													
8													
3													
7													
4													

Jumbled **3**

X	4	6	10	3	12	0	7	1	11	2	9	5	8
4													
6													
10													
3													
12													
0													
7													
1													
11													
2													
9													
5													
8													

Blank

X													