

# Math Tips and Tricks

## Dealing with math phobia

Help learners understand the history of the issue.

What is the worst that could happen if you fail?

Humor - <http://www.rd.com/jokes/math/>

Pie is not round,  $\pi r^2$

Use silly examples

Everyday items

An angle is a hinge, doors have hinges.

A balance scale to help explain algebra problems.

Colored candy to help explain fractions and percents.

## Break down math, to the simplest parts, so that they experience success first!

Use your diagnostics to start students with math that they only need a refresher.

## Have students work in groups, where possible.

Explain the rules of group work.

No one just tells someone else the answer.

If you get different answers, you both have to figure out why and who is right.

Explain how helping each other helps them learn more.

Lecture = 5%

Group discussion = 50%

Practice by doing = 75%

Teaching = 90%

## Develop mnemonics

P - ( )

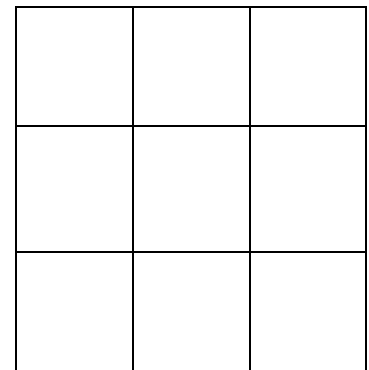
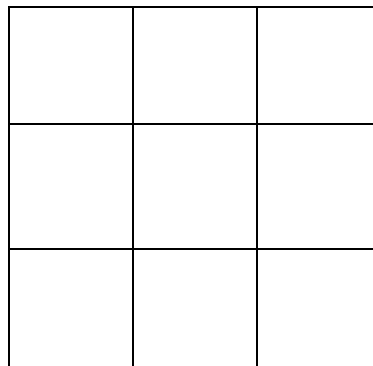
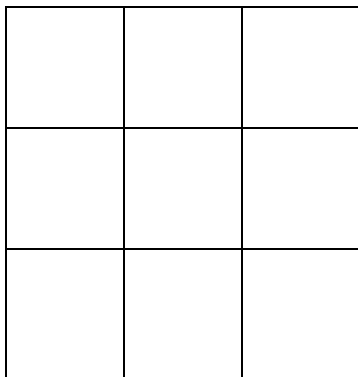
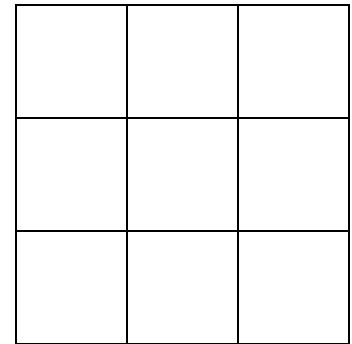
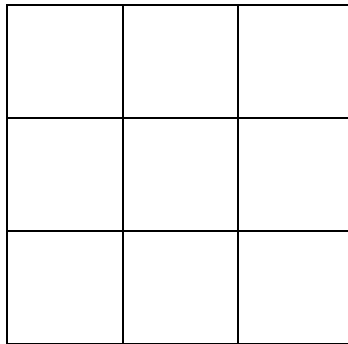
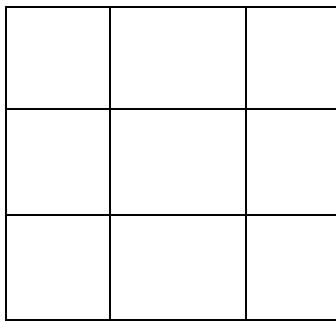
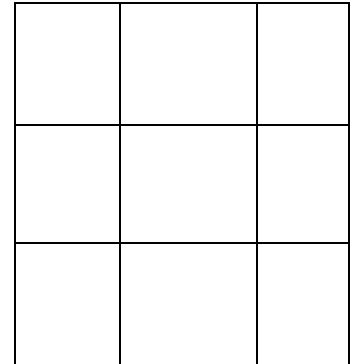
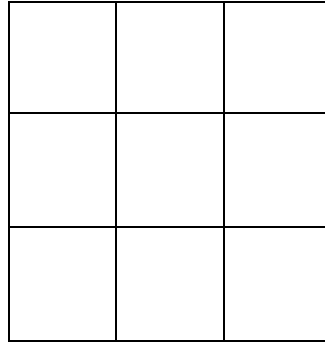
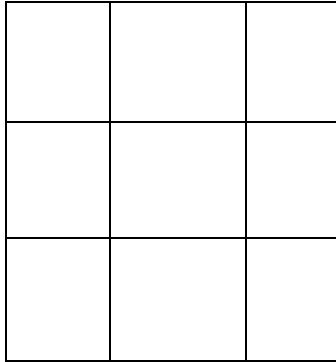
E -  $x^2$

M - x, /

A - +, -

# Tic Tac Toe Math

A method for process learners instead of memorization.



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Complete system available from Learning disAbilities Resources: [www.learningdifferences.com](http://www.learningdifferences.com)

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## Math Tips and Tricks

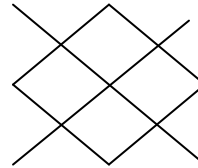
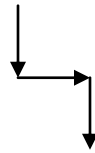
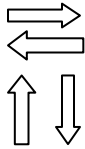
### Tic Tac Toe Math directions:

- 1) Make your grids and number them in the top left hand corner.
- 2) In the center of each grid, do your 5's
  - . > Odd: 5
  - . > Even: 0
- 3) Put doubles into the 2<sup>nd</sup> position
- 4) Use the \* ends to add to 10
- 5) Patterns:

. Odd: Arrows

Even: Chair

5's: diamond X



- 6) Make the numbers get bigger every box on each grid.

Helpful patterns to remember:

Basic Pattern		
1	4	7
2	5	8
3	6	9

Odds	Evens
1	2
3	4
5	6
7	8
9	10

Adds to 10								
1	2	3	4	5	6	7	8	9
9	8	7	6	5	4	3	2	1
10	10	10	10	10	10	10	10	10

Doubles								
1	2	3	4	5	6	7	8	9
1	2	3	4	5	6	7	8	9
2	4	6	8	10	12	14	16	18

# Tic Tac Toe Math

1	4	7
2	5	8
3	6	9

4	16	28
8	20	32
12	24	36

7	28	49
14	35	56
21	42	63

2	8	14
4	10	16
6	12	18

5	20	35
10	25	40
15	30	45

8	32	54
16	40	64
24	48	72

3	12	21
6	15	24
9	18	27

6	24	42
12	30	48
18	36	54

9	36	63
18	45	72
27	54	81

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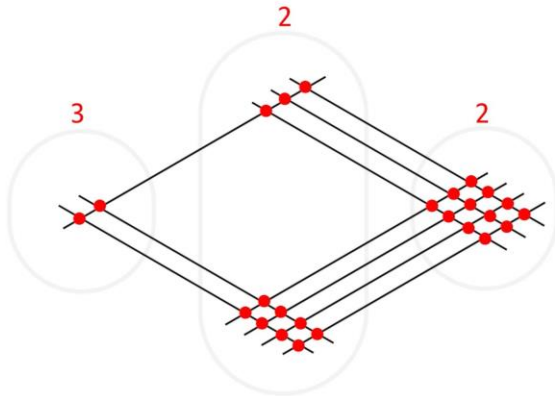
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# Line Multiplication Method

<https://www.youtube.com/watch?v= AJvshZmYPs>

$$23 \times 14 = 322$$



You will sometimes need to carry with this method, just as you do with regular multiplication.

**Keeping lines straight - use notebook paper turned sideways!**

		2	3	
		+	+	
		7	6	8
	X		4	2
3	1	5	3	6
3	0	7	2	
3	2	2	5	6

## Division in Color

To keep division straight - use graph paper and colors for operations:

										.
									x	
									-	
						2	6	4		
			8	2	1	1	2			
				1	6					
					5	1				
					4	8				
						3	2			
						3	2			
							0			

## Percent Boxes

Part	Percent
Whole	100

$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$
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- 1) Fill in the two numbers that you know.
- 2) Cross multiply
- 3) Divide by the third number

This does not require the student to remember how to convert from decimals to percents by moving the decimal point. It also allows students to have one static system for computing percents.