

Basic practices of Multisensory Structured Language Math (MSL Math)

- Multisensory:
"Make it, draw it, write it."
- Teach the language of math.
- Structured language.
- Student makes a math manual
- Make rule memorable.
- Keep it simple: teach new concepts with simple calculations

- Never teach a concept with a problem you haven't already solved.
- Instruct explicitly (tiny steps)
- Use graphic organizers
- Coding: Use color, parentheses and acronyms to keep track of processes
- Build on familiar concepts

Sources and Resources

Marilyn Zecher. Multisensory Math <http://multisensorymath.com/> Youtube: http://www.youtube.com/channel/UCesc-68xTXm_i06fVI_YWwQ

ASDEC: Atlantic Seaboard Dyslexia Education Center. Multisensory math course distance learning: http://asdec.org/multisensory_math_1_distance Youtube: <http://www.youtube.com/user/ASDECorg>

Christopher Woodin, teacher at Landmark School in Massachusetts. **New book:** *Multiplication and Division Facts for the Whole-to-Part, Visual Learner.*

<http://www.landmarkschool.org/resources/woodinmath>

Youtube: <http://www.youtube.com/user/woodinmath>

Harold Jacobs, *Elementary Algebra*. Freeman.

Mark Driscoll, *Fostering Algebraic Thinking: A Guide for Teaching Grades 6-10*. Heinemann.

Denise Gaskins, *Algebra for Anyone: Getting a Handle on Abstract Math*.

Caution: Preview all videos before setting your child on YouTube. Monitor ads:

JustMathTutoring: www.PatrickJMT.com & Youtube:

<http://www.youtube.com/user/patrickJMT?feature=mhee>

Wayne Loutet (on Youtube as Minkusbc) e.g. "Factoring Hard Trinomials"

Math Mnemonics

Quadratic Formula

For $ax^2 + bx + c = 0$, the value of x is given by:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

To the tune of "Pop Goes the Weasel"

*X is equal to negative b
plus or minus the square root
of b squared minus 4ac
ALL over 2a*

For multiplying integers:

Same sign, positive;

Different sign, negative!

Averages:

*Hey, diddle diddle,
the median's the middle.
You add, then divide for the mean.
The mode is the one you see the most.
And the range is the difference
between.*

Know these oldies?

SohCahToa!

Even adders can multiply on a log table. (E.g., $\log 3 + \log 4 = \log 12$)

Send me more, please!

| | |
|---|-------------------------------------|
| | First, draw the product, like this: |
| $3 \times 5 =$ | 00000 00000 00000 |
| $2 \times 5 =$ | |
| $1 \times 5 =$ | |
| $0 \times 5 =$ | |
| $-1 \times 5 =$ | |
| $-2 \times 5 =$ | |
| $-3 \times 5 =$ | |
| After drawing, write the products in the left column. | |

* When you draw the products, hollow circles are positive; filled-in circles are negative.

| | |
|----------------------------------|---------------------------|
| Start from the bottom this time: | First, draw the products: |
| $-3 \times -5 =$ | |
| $-2 \times -5 =$ | |
| $-1 \times -5 =$ | |
| $0 \times -5 =$ | |
| $1 \times -5 =$ | |
| $2 \times -5 =$ | |
| $3 \times -5 =$ | |

Look for patterns:

- Positive x positive =
- Negative x positive
- Positive x negative
- Positive x positive =

Functions:
Let $f(x) = 2x$
So $y = 2(x)$

| x | y |
|---|---|
| | |
| | |
| | |
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| | |
| | |
| | |

Now try:
 $f(x) = 5x$
so that $y = 5(x)$

| x | y |
|---|---|
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