

# How Dyslexia Affects Math

## Multisensory Math Handout

True dyscalculia is rare, however the qualities that make it difficult to learn how to read also impact a student's ability to do math. Below are a few examples of how those qualities affect math.

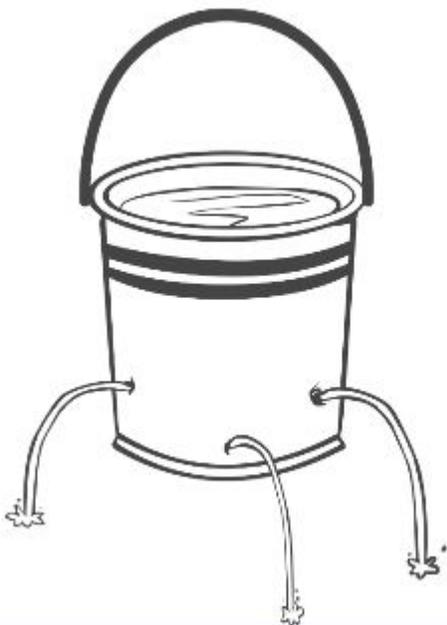
Dyslexic Quality	How it Affects Math
<b>Phonological or Language-Based Memory</b> - Poor ability to recall sounds, syllables, words	Poor working memory affects the speed at which a student pulls their multiplication/division facts.
<b>Rapid Automatic Naming</b> - speed of naming objects, colors, letters	This is one reason all math facts are so difficult to memorize unless we build a symbol or image for them.
<b>Receptive Vocabulary</b> - understanding of words heard	Understanding math vocabulary is difficult
<b>Phonic Skills</b> - understanding of the symbol (letter) to the sound(s) relationship, either individually or in combination with other letters	Difficulty in grasping the name of a number and understanding its magnitude (size). Does the student understand the fiveness of five?
<b>Decoding</b> - ability to use symbol-sound associations to identify (read - pronounce) words	Difficulty in understanding the symbols of math and what they mean such as $5 \times 3$ . "I have 5 groups of 3".
<b>Oral Reading Fluency</b> - ability to read accurately, at a storytelling pace to support comprehension.	Automaticity of math facts is difficult. We use near references to aid memory to increase speed.
<b>Single words</b> - skipping altogether	Students skip operations, confuse them, or don't see that a number is a negative.
<b>Written expression</b> - pulling thoughts out from your brain and putting it on paper	Their inner voice for math calculations and holding number to manipulate them is slow.
<b>Continued on next page...</b>	

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Dyslexic Quality	How it Affects Math
<b>Handwriting</b> - formation of letters	Forming numbers and being able to read them is difficult. Number reversals can be an issue.
<b>Sequence</b> - alphabet, days of the week, etc.	Understanding how numbers increase/decrease in magnitude, calendar skills, structure of a clock, procedures for traditional algorithms.
<b>Directionality</b> - right/left, top/bottom, east/west etc.	Mix up order of operations, solve multi digit addition problems out of order, struggle to line up numbers by place value.

## Why Multisensory Math is the Best Choice



When we place students in a math class without the proper instruction or support, we are essentially adding water to a leaking bucket.

Students struggling with math do not have time to develop skills to mastery and “plug the holes”. New information is not retained and the student continues to drown.

Without multisensory math, students are essentially scooping water with a broken bucket in a sinking ship.

Multisensory math gives students the skills to succeed.

# Resources, Curriculum, & Training for Multisensory Math

Resource	Link
<b>Brain-Sticky Math Facts Cards and Games</b>	<a href="http://go.mathformiddles.com/brainsticky">go.mathformiddles.com/brainsticky</a>
<b>Dyscalculia Solution by Jane Emerson</b>	<a href="https://amzn.to/2l81gFD">https://amzn.to/2l81gFD</a>
<b>Dyscalculia Assessment by Jane Emerson</b>	<a href="https://amzn.to/2l8CBAP">https://amzn.to/2l8CBAP</a>
Curriculum	Link
<b>Math-U-See</b>	<a href="https://mathusee.com/">https://mathusee.com/</a>
<b>Maths No Problem</b>	<a href="https://mathsnoproblem.com/">https://mathsnoproblem.com/</a>
<b>Bridges (look for home-connection PDFs)</b>	<a href="https://www.mathlearningcenter.org/sites/default/files/documents/sample_materials/br2-ag-1ov.pdf">https://www.mathlearningcenter.org/sites/default/files/documents/sample_materials/br2-ag-1ov.pdf</a>
<b>CPM</b>	<a href="https://cpm.org/">https://cpm.org/</a>
Training	Link
<b>Marilyn Zecher's Multisensory Math</b>	<a href="http://asdec.org/Mathematics-1-Online-Course">http://asdec.org/Mathematics-1-Online-Course</a>
<b>Making Math Real</b>	<a href="http://www.makingmathreal.org/">http://www.makingmathreal.org/</a>
<b>Woodin Math</b>	<a href="http://www.woodinmath.com/">http://www.woodinmath.com/</a>
<b>Mortensen Math</b>	<a href="https://www.crewtonramoneshouseofmath.com/mortensen-math.html">https://www.crewtonramoneshouseofmath.com/mortensen-math.html</a>
<b>OG Academic Math</b>	<a href="https://www.mathworkshops.com/">https://www.mathworkshops.com/</a>
Services	Link
<b>Multisensory Math Services for Students</b>	<a href="http://mathformiddles.com">mathformiddles.com</a>



# Guess My Number

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	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50

# PLACE VALUE BATTLESHIP

