

Specific learning difficulties in math can appear as trouble recalling math facts, understanding concepts, understanding the language of mathematics, or planning. **Emotional blocks** from years of failure can look like disabilities. **Other learning disabilities** can affect math performance: difficulty in reading, memory, or in processing language, or visual-spatial relationships, or trouble following a sequence of steps. The best introductions I know are LDonline.org/indepth/math, and “When the Numbers Won’t Add Up: Number Problems in Children,” chapter 12 of Drs. Brock and Fernette Eide’s book, *The Mislabeled Child*.

Attitude

- Work on your own attitude first.
- Work on your child’s attitude: praise perseverance, choose best time of day, limit math facts drill to 5-10 minutes, daily, consider modest rewards, use untimed drills, large print, give the context of the lessons.
- Why study math? Merely to meet a requirement, or to learn, be creative, see patterns, solve problems? Read Denise Gaskins’ books, including *Let’s Play Math*, *70 Things to Do with a Hundred Chart*, and the *Math You Can Play* series, with books of games on counting and other pre-addition skills, another on addition and subtraction, and a third on multiplication and fractions.

Multisensory Structured Language Math (MS Math)

Teaching strategies:

- “Build it, draw it, write it;”
- Teach language of math.
- Structured language.
- Student makes 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

Learn how to apply these Multisensory Math principles:

- Marilyn Zecher multisensorymath.com and her YouTube Channel. For more in-depth parent or teacher training, see her Multisensory Math courses online at asdec.org.
- Chris Woodin’s tips, handouts, and videos: cwoodinmathfacts.tripod.com/sitebuildercontent/sitebuilderfiles/2xfactlearning.pdf is brilliant work on teaching multiplication and division. See also Landmarkschool.org/resources/woodinmath
- Kathy Kuhl’s site, LearnDifferently.com, has more than a dozen blog posts on teaching math, from math facts to algebra. Search “math” and send questions.

Mastering Math Facts

- Drilling: Give the child several options each day: flash cards, 100 chart board game with 10-sided dice, Wrap-Ups, bouncing on mini-trampoline. LearnDifferently.com
- Look at *Addition the Fun Way* and *Multiplication the Fun Way* from citycreek.com .
- Better yet, you and your children can make up your own stories to recall the facts.
- Skip-counting is good preparation and review for multiplication. Skip-counting tapes: *Rap with the Facts*, *Audio Memory*, *Math-U-See*, *Multiplication Rock*.
- See Marilyn Zecher's and Christopher Woodin's materials above.

General Resources for Basic Math

- Denise Gaskins, *Let's Play Math* and her *Math You Can Play* series.
- Marilyn Zecher and Chris Woodin, above.
- DonnaYoung.org has some good general downloadable resources.
- Dyslexia, creativity and Woodin at dyslexia.yale.edu/math.html
- Teaching math concepts dyslexia.yale.edu/resources/educators/instruction/math-naming-problems/
- **Use both fraction circles** <http://donnayoung.org/math/fraction.htm> **and fraction bars** www.fractionbars.com/OrderInfo.html
- Use memory aids, also called mnemonics, e.g., onlinemathlearning.com/math-mnemonics.html The principles of using mnemonics are LDonline.org/article/13717
- Cindy Neuschwander's stories teach math concepts: *Sir Cumference & the First Round Table*, *Sir Cumference & the Dragon of Pi*, etc.
- Build reasoning skills! *Critical Thinking Books and Software* criticalthinking.com
- M.C. Escher's drawings are fun to see, try to copy, or take inspiration from.
- Math games and pattern blocks sold by Timberdoodle.com. My favorite for small kids is Tiny Polka Dot.

Hands-on math curricula

- *RightStart Mathematics*, K-8, Rightstartmath.com
- *Math-U-See*, Steve Demme's K-12 series, mathusee.com
- *Moving With Math* is a K-8 curriculum, with lots of review using manipulatives. They sell Unifix Cubes, Base 10 Blocks, Fraction Circles. movingwithmath.com
- *Making Math Meaningful*, by David Quine, Cornerstone Curriculum, K-6, plus algebra, geometry. Available from RainbowResource.com

Resources for Consumer Math

Boy Scouts Personal Management merit badge pamphlet
Larry Burkett books: *Money Matters for Kids* and *Money Matters for Teens*.
Christine Field, *Life Skills For Kids*, chapter 8.
www.mymoney.gov, choosetosave.org, irs.gov

High School Math

- Harold Jacobs wrote three excellent books: *Mathematics: A Human Endeavor*, *Elementary Algebra*, and *Geometry*, 3rd edition.
- *Geometer's Sketchpad* software lets students “construct objects, figures, & diagrams and explore their mathematical properties by dragging objects with the mouse.”
Curricula for algebra 1 & 2, geometry, pre-calculus, dynamicgeometry.com

Video/computer classes:

- ALEKS online self-paced classes. Free 48 hour trial ALEKS.com
- Watch demos on websites such as www.videotext.com (pre-algebra through pre-calculus) and mathusee.com from preschool through Calculus.
- Teaching Textbooks covers Math 4 through Pre-Calculus. Teaches use of graphing calculators in its Algebra course. TeachingTextbooks.com (don't forget the final 's'!)

For those with more severe difficulties

Simple Math, www.semplemath.com
Learning Palette: math facts review with less fine motor skill required
DeAnna Horstmeier's book series and related materials, such as *Teaching Math to People with Down Syndrome and Other Hands-On Learners*.
See Chris Woodin, above.