

Volume 2, No. 1

## Assistive Technology Newsletter

# Tech Talk

Helping children learn to their full potential

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## Math Challenges and Your Child

Building mathematical skills has lifelong implications for learners, such as paying bills, creating budgets and arriving at work on time. Primary focus is no longer placed on memorization of math facts and procedures; rather, it is placed on students knowing why and what they are doing so that they can apply this knowledge to solve real-world problems. Students may experience challenges in a variety of areas for which assistive tools may increase their ability to be successful using math. These include:

their memory banks when needed. Slow or inaccurate computational speed may inappropriately convince students that they are not ready for higher level math concepts. It might also keep them from completing lengthy assignments. Calculators or math grids might help students with memorization difficulties tackle higher level concepts with the efficiency required for work completion.

### Math Literacy

Students may struggle with the ability to read math notation, organize steps needed to solve problems, write math notation or share completed projects (which, in a math context, may require some type of geometric structure, graph, or equation set). Problems with math literacy may lead to difficulties with word problems, and performance of multiple-step problems. Text readers, step-by-step math website supports, task maps and electronic graphic supports for project completion may decrease student dependence on adults for help in completing math work.

### Visual Processing

Students use their brains to perceive, manipulate or navigate visual information related to math. Poor visual processing can affect how they see or align numbers and work with geometrical shapes. Providing concrete models and labels can help students understand spatial and visual concepts. Talking calculators, graph paper, object or electronic manipulatives and visual supports assist student work completion.

### Physical Access

Physical access to the tools used in the math curriculum (the book/workbook, calculator, pencil or paper) may be difficult for students who have motor challenges. Writing struggles may impact a student's ability to write math symbols in small answer or work spaces. Electronic text, on-screen calculators, adapted pencils and enlarged work papers are among the solutions helpful for students who struggle with physical access.

### Reading and Writing Math Language

Mathematical and scientific notation offer an entirely different vocabulary and concept set for students to learn. Difficulties with language may impact students' understanding of math, ability to draw out the key points of a word problem, or interpretation of meaning from a chart or graph. On-line, iPad app or personal, simplified concept dictionaries may provide support solutions.

### Memorization for Math Facts:

Students may understand the concept of math facts, but struggle with the memorization required to call them from

*To learn more about how your child might benefit from assistive technology to support math, contact your child's IEP team leader.*



## Using AT at Home

### Coin-u-lator



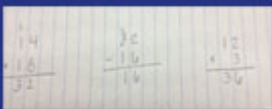
Coin- counting calculator teaches basic money concepts using realistic coins and dollar bill buttons

### Highlight Computation Sign



Help your child visually attend to computational signs on worksheets

### Adapted Paper for Math



Turn lined paper to help your child keep columns straight when working on problems.



## Low-Mid Tech Math Supports

### Visual Instructional Supports

- Magnets, Cuisinaire Rods
- Number stamps
- Math tables/grids
- Tracking aids, graph paper
- Number, carry, borrow, fraction and measure lines
- Specialized rulers with magnification or large print
- Master Fractions/Rulers/Clock/Angles ([www.themasterruler.com](http://www.themasterruler.com))
- Graphic organizers (outline steps of problem)
- Individual whiteboards
- Talking Flashcards

### Adapted Calculators:

- Large-button calculators
- Talking calculator
- Scanning Calculators
- Subject Specific Calc. (i.e.: fraction)
- Conversion Calculator
- Money Calculator

## Apps that Support Math

*Math Drills* (Instant Interactive)

*Splash Math* (Study Pad, Inc.)

*Operation Math Code Squad* (SpinLight Studio)

*MultiFlow: Times Tables Reimagined* (Dactyl Applications)

*Long Multiplication* (Esa Helttula & iDevBooks)

*Math !!!* (Math Pentagon Math)

*Door 24-Math* (Curric. Assoc. LLC)

*Algebra Touch* (Regular Berry Software, LLC)

*iTooch Junior High School* (EduPad)

*Talking Scientific Calculator* (Adam Croser)

*Quick Graph + Your Scientific Graphing Calculator* (Columbiamug)

## Parent Question

**How do I help my child who has trouble knowing how to do math homework?**

Suggest that your child:

1. Underline key words in story problems that identify the operations to be used.
2. Find specific examples of similar problem solutions from notes/texts.
3. Draw/make a model of the question asked.
4. Use number lines, objects, graphs or visuals to show identified quantities.
5. Use a visual support that provides a list of guided questions -
  - a. Where should you start the problem?
  - b. What operations will be used?
  - c. Did you show your work?
  - d. Did you check your work?
  - e. Did you answer the question?
  - f. Can you solve the problem another way?
6. Use on-line homework helpers.

Resist the temptation to do homework for your child.

## Software/Web Supports

### General

-Onion Mountain Technology:

[www.onionmountaintech.com/](http://www.onionmountaintech.com/)

-WATI AT for All Learners:

[assistivetech-](http://assistivetech-4alllearners.wikispaces.com/Supporting+Math)

[4alllearners.wikispaces.com/Supporting+Math](http://4alllearners.wikispaces.com/Supporting+Math)

### Virtual Manipulatives

-Virtual Cuisenaire Rods:

[www.arcytech.org/java/integers/integers.html](http://www.arcytech.org/java/integers/integers.html)

-Virtual Geoboards -

[nrich.maths.org/content/id/2883/circleAngles.swf](http://nrich.maths.org/content/id/2883/circleAngles.swf)

-Standards Based Virtual

*Manipulatives :Illuminations*  
[illuminations.nctm.org](http://illuminations.nctm.org)

-National Library of Virtual

*Manipulatives:*

[nlvm.usu.edu/en/nav/vlibrary.html](http://nlvm.usu.edu/en/nav/vlibrary.html)

### Vocabulary and Concepts

-A Math Dictionary for Kids:

[www.amathsdictionaryforkids.com](http://www.amathsdictionaryforkids.com)

-Animated Math Dictionary:

[www.harcourtschool.com/glossary/math2/index\\_temp.html](http://www.harcourtschool.com/glossary/math2/index_temp.html)

-Translating Word Problems:

[www.purplemath.com/modules/translating.htm](http://www.purplemath.com/modules/translating.htm)

### Math Tools

-Virtual Pencil:

[www.hentermath.com](http://www.hentermath.com)

-Algebra Tiles: =Mb1+Tools

[go.hrw.com/hrw.nd/gohrwr\\_rls1/pKeywordResults?keyword=Mb1+Tools](http://go.hrw.com/hrw.nd/gohrwr_rls1/pKeywordResults?keyword=Mb1+Tools)

-Online Calculators and Algebra Tools:

[go.hrw.com/hrw.nd/gohrwr\\_rls1/pKeywordResults?keyword=Mb1+Tools](http://go.hrw.com/hrw.nd/gohrwr_rls1/pKeywordResults?keyword=Mb1+Tools)

### Homework supports:

[www.purplemath.com](http://www.purplemath.com)

[www.math.com](http://www.math.com)

[www.cpm.org/students/homework](http://www.cpm.org/students/homework)

[www.mathgoodies.com](http://www.mathgoodies.com)

[www.kahnacademy.org](http://www.kahnacademy.org)

[www.webmath.com](http://www.webmath.com)