

Mathematics Resources for Minnesota Administrators

5 books

1. Accessible Mathematics: 10 Instructional Shifts That Raise Student Achievement by Steven Leinwand (Heinemann.com) <http://www.heinemann.com/products/E02656.aspx>

Short essays on a particular instructional strategy suitable for PLC or staff meeting discussions. Each Instructional Shifts ends with a “So what should we see in an effective mathematics classroom” section, summarizing that strategy.

2. Number Talks: Helping Children Build Mental Math and Computation Strategies by Sherry Parish (Math Solutions.com) <http://store.mathsolutions.com/product-info.php?Number-Talks-pid270.html>

Book and CD of video clips that show teachers how to have productive discussions in mathematics and to help students make connections among computational ideas.

3. Helping Children Learn Mathematics. National Academies Press. www.nap.edu.

This short summary of the National Research Council’s report “Adding it Up” and answers the question, “What does it take to be successful in mathematics”? Can be read online for free

4. How the Brain Learns Mathematics by David A. Sousa. <http://www.corwin.com>

This book helps build understanding of how to engage students in learning mathematics by examining how our brains work while learning mathematics.

5. 5 Practices for Orchestrating Productive Math Discussions by Margaret S. Smith & Mary Kay Stein. NCTM & Corwin Press, 2011. www.nctm.org

A book that lists 5 practices (anticipating, monitoring, selecting, sequencing, connecting) that strengthen math discussions in the classroom. A short but powerful read.

(optional) **Every Child Can Do Math: Deceptively Simple Activities to Develop Mathematical Thinking, Gr. 3-5** By Yeap Ban Har and Lorraine Walker. (Crystal Spring Books) <http://www.crystalspringsbooks.com/every-child-can-do-math.html>

Available as either a print or e-book, this resource gets at some good thinking in math through simple activities. Also includes questions for teachers to ask students as they are engaged in the activity or following it to bring mathematical ideas to the surface.

4 – Make a team of 4 to attend a thought-provoking symposium

Read the following book and then make plans to attend the MCTM Symposium this spring led by author-neurologist-teacher Judy Willis.

Learning to Love Math: Teaching Strategies That Change Student Attitudes and Get Results by Judy Willis (ASCD) <http://www.ascd.org/Publications/Authors/Judy-Willis.aspx?id=31085086001&nvid=a7b1>

A neurologist who also became a teacher explains strategies for reaching and engaging more learners used brain-based explanations. Judy Willis will keynote the spring MCTM Conference and lead a day-long symposium on April 28th. Bring your team! Link to: <http://www.mctm.org/springconf.php> to register for the symposium.

3 people to follow on Twitter

Twitter provides some of the best PD for a wide audience. Following a few key people in mathematics will connect you to a wide variety of mathematics resources. For more twitter feeds to follow, check out who these 3 are following. (@ddmeyer or example)

Christopher Danielson **@Trianglemancsd**

- Christopher is a MN expert on how K-12 students learn mathematics and does some of the best teacher PD. He has a great blog where he often talks about how his own children think about number.

<http://christopherdanielson.wordpress.com>

The National Council of Teachers of Mathematics **@NCTM**

- NCTM is mathematics national voice. This is the source of great resources for all math leaders.

Minnesota District Mathematics Leaders **@MNmath4all**

- This feed will keep you connected to Minnesota specific mathematics information and resources.

2 iPad apps (these are free!)

- MyScript Calculator. Use your finger to write $3+4$ and watch what happens. Better yet, use your finger to write $5+3=9$ and watch what the MyScript Calculator does.
- Math Motion: Hungry Guppy OR Math Motion: Hungry Fish
This app can be used by students to reinforce decomposing and recomposing numbers. The fish in the game only eats specific numbers. A vent at the bottom of the sea produces bubbles with different numbers inside. In order to feed the fish the student needs to combine the correct bubbles to create the number the fish eats.

1 Free Curriculum Resource

Kathleen Cramer , Tom Post, Terry Wyberg and other University of Minnesota Professors have developed some of the richest curriculum out there around the topic of Rational Numbers. This curriculum is a great resource for grades 3 and above. You can download all 245 pages here <http://www.cehd.umn.edu/ci/rationalnumberproject/rmp1-09.html> The authors also have a 467 page 2nd level located here <http://www.cehd.umn.edu/ci/rationalnumberproject/rmp2.html>

For additional resources follow @MNmath4all on Twitter.