Welcome to Hidden Sparks Without Walls. We will be starting at 8:30pm.

To alleviate background noise and ensure a quiet session, your audio connection has been muted.

Asking Questions & Sharing Thoughts:
You are encouraged to ask questions and share your thoughts on the Chat.

Please activate the chat feature by clicking in the “Chat bubble” on the control panel on the bottom of your screen.

Audio:
If you would like to call in via phone for audio, please click on the phone icon, select “I will call in” and you will be provided with the call-in number.
About Hidden Sparks

Hidden Sparks is a non-profit whose purpose is to help children with learning differences reach their full potential in school and life. Hidden Sparks supports professional development for Jewish day schools to help increase understanding and support for diverse learners.

Hidden Sparks’ programs combine school-based professional development in learning and positive behavioral support, classroom observation and coaching. Our philosophy is that by helping teachers meet the needs of struggling students, ultimately all students will benefit.

Now in its 12th year, Hidden Sparks has trained 297 coaches and 465 educators in 108 Jewish day schools in New York, New Jersey, Baltimore, Chicago, Florida, Cleveland, Atlanta and 6 Israeli cities.

Please be in touch with our office to find out how to bring Hidden Sparks programs to your school!
Multisensory Math Instruction for ALL Learners

Presented by Adrianne Meldrum
March 18, 2020
Our Guest: Adrianne Meldrum

Adrianne Meldrum is a certified multisensory math instructor and studied under Marilyn Zecher, CALT. She runs a team of multisensory math specialists at mathformiddles.com. Her goal is to make multisensory math available to as many students as possible. Connect with her @ mathformiddles.com.
Overview of the Session

What is Multisensory Math?

Strategies

- Vocabulary
- Directionality & Position
- Organization
- Subitizing
- Math Facts
What is Multisensory Math?
Simultaneous, Multisensory (VAKT)
Simultaneous, Multisensory (VAKT)

Systematic and Cumulative
Simultaneous, Multisensory (VAKT)

Systematic and Cumulative

Direct Instruction
Simultaneous, Multisensory (VAKT)

Systematic and Cumulative

Direct Instruction

Diagnostic
Simultaneous, Multisensory (VAKT)
Systematic and Cumulative
Direct Instruction
Diagnostic
Synthetic and Analytic
**How Dyslexia Affects Math**

**Multisensory Math Handout**

True dyslexia 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 these qualities affect math:

<table>
<thead>
<tr>
<th>Dyslexic Quality</th>
<th>How It Affects Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phonological or Language-Based Memory</td>
<td>Poor working memory affects the speed at which a student pulls that information down, plus, facts.</td>
</tr>
<tr>
<td>Rapid Automatic Naming - instead of naming objects, colors, letters</td>
<td>This is one reason why math facts are so difficult to memorize unless we build a strategy or image for them.</td>
</tr>
<tr>
<td>Receptive Vocabulary - understanding of words heard</td>
<td>Understanding math vocabulary is difficult.</td>
</tr>
<tr>
<td>Phonics Skills - understanding of the symbol (letter) it the sounds (phonic) relationship, whether individually or in combination with other components</td>
<td>Difficulty in grasping the name of a number and understanding its magnitude (size). Does the student understand the likeness of five?</td>
</tr>
<tr>
<td>Decoding - ability to use symbol-sound associations to identify (read - pronounces)</td>
<td>Difficulty in understanding the symbols of math and what they mean such as $9 	imes 3 = 1$ have 5 groups of 3.</td>
</tr>
<tr>
<td>Oral Reading Fluency - ability to read accurately, at a story-telling pace to support comprehension</td>
<td>Automatically of math facts is difficult. We use fewer references to and memory to include longer calculations.</td>
</tr>
<tr>
<td>Single words - skipping altogether</td>
<td>Challenges with operations, confuse them, or don't see them as a number is a negative.</td>
</tr>
<tr>
<td>Written expression - pulling thoughts out from your brain and putting it on paper</td>
<td>Their overall focus on math calculations and solving number is manipulative there is some</td>
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Continued on next page...

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**Resources, Curriculum, & Training for Multisensory Math**

<table>
<thead>
<tr>
<th>Resource</th>
<th>Link</th>
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<tbody>
<tr>
<td>Brain-Boost Math Facts Cards</td>
<td><a href="https://www.hiddensparksonline.com/math-facts">Brain-Boost Math Facts Cards</a></td>
</tr>
<tr>
<td>Dyslexia Solutions by Jane Evanson</td>
<td><a href="https://www.hiddensparksonline.com/hidden-sparks">Dyslexia Solutions by Jane Evanson</a></td>
</tr>
<tr>
<td>Dyslexia Assessment by Josh Evanson</td>
<td><a href="https://www.hiddensparksonline.com/hidden-sparks">Dyslexia Assessment by Josh Evanson</a></td>
</tr>
<tr>
<td>Math-U-See</td>
<td><a href="https://www.mathuese.com">Math-U-See</a></td>
</tr>
<tr>
<td>Math Made Easy</td>
<td><a href="https://www.mathmadeeasy.com">Math Made Easy</a></td>
</tr>
<tr>
<td>Math Tutor</td>
<td><a href="https://www.mathutor.com">Math Tutor</a></td>
</tr>
<tr>
<td>Math Real</td>
<td><a href="https://www.mathreal.com">Math Real</a></td>
</tr>
<tr>
<td>Math on the Go</td>
<td><a href="https://www.mathonthe-go.com">Math on the Go</a></td>
</tr>
</tbody>
</table>
1. *Discuss word parts and meanings.*

2. *Relate to known information.*

3. *Build an image.*

4. *Add movement.*
**Vocabulary Example**

**Numerator** - from the Latin “numerus” for “number”

**Denominator** - from the Latin “denomino” for “name”
2020 Hidden Sparks

\[
\begin{align*}
\text{2 Huskies} & + \text{2 Huskies} = \text{4 Huskies} \\
\text{4 Cats} & + \text{1 Cat} = \text{5 Cats} \\
\text{2 Huskies} & + \text{1 Cat} = \text{3 Huskies} \\
\end{align*}
\]
2020 Hidden Sparks
Directionality & POSITION
My dyslexia makes it difficult to understand sequencing and directionality.

I don’t know left/right and up/down. These take me a second to process; also now/then, here/there, before/after, and so on really confuse me.

@leslie-templeton
143 + 162
143 + 162
TIPS FOR Directionality & POSITION
TIPS FOR Sequencing Steps
1. **Chunk it—short and snappy!**

2. **Create a visual.**

3. **Add movement.**
Who’s messing with my x?

How are they messing with my x?

Opposite operation?

Apply to both sides of the equal sign!
TIPS FOR

Organization
Organization Tips

1. Near point references.
2. Graphic organizers.
3. Cut the clutter.
Organization Tips
Organization Tips

Keep a binder:

- 100s chart
- Number line
- Place value chart
- Multiplication chart
- Graph paper - large & small
- Math vocab
- Blank page - whiteboard
- Steps, organizers, & examples
TIPS FOR

Subitizing & Pattern Recognition
Beginnings of Patterns
Beginnings of Patterns
Beginnings of Patterns
Beginnings of Patterns
Fiveness of 5
Decomposition of 7
9 + 7

9 + ___ + 6 = ______
9 + 7

9 + ___ + 6 = ______
9 + 7

9 + ___ + 6 = ______
65 + ___ + 2 = ____

65 + \_5\_ + 2 = \_72\_
Super Charge ANY Curriculum with Subitizing
<table>
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<th>Tens</th>
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TIPS FOR

Math Facts
Timed testing = math anxiety

Stress blocks working memory.
Low achievers try to memorize instead of using numbers flexibly.

Learning through strategies develops better performance.
Guess My Number

- Thinking about how numbers relate to one another
- Even/Odd
- Focus on one place value at a time
- Figuring out what’s the opposite

Part of Brain-Sticky Math Fact Games

![Guess My Number Table](image)
Make A Ten

- Subitizing
- Fluency practice
- Score keeping

with tally marks

Developed by Marilyn Zecher
Expanded Form

What is the value?

6 2 5

What is the value?

9 1 1

____ + _____ + _____

____ + _____ + _____
What’s it Made of?

- Subitizing
- Read quantities with hands
- Manipulate one place value at a time
- Consider using craft sticks as well

Math Mat by Marilyn Zecher
Fluency and Memorization

Memorizing easily ≠ higher achievement or IQ

Fluency is a result of number sense.
Strategies: Addition

1. Make it hands-on.

2. Use a story.

3. Apply subitizing.
Equation Boards

- Organize thinking
- Plenty of space to move blocks
- Ties to the abstract
Pyramid Solitaire

- Subitizing
- Add to 10 (basic skills)
- Add to 13 (advanced skills)
- Flexible thinking

Brain-Sticky Subitizing Math Fact Cards
1. Make it hands-on.

2. Use a story.

3. Apply subitizing.
Strings with Wings

- **Skip Counting**
- **Division**
- **Fractions**

*Developed by Marilyn Zecher*
Island Conquer

- 6-sided dice (2)
- Area model
- Simple Multiplication

Problems

Original Game by Laura Candler - This is Our Take on the Game
**Brain-Sticky Cards**

- Subitizing
- Decomposition
- Relationships
- Number Talks
- More complex numbers
C-R-A Sequence

Concrete

Representational

Abstract

\[
\frac{1}{3} + \frac{1}{3} = \frac{2}{3}
\]
### Upcoming Hidden Sparks Without Walls Sessions

<table>
<thead>
<tr>
<th>Date</th>
<th>Session Details</th>
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</table>
| Wed., May 6, 2020  | **For Teachers** Developing the Art of Asking Powerful Questions in the Classroom  
|                    | Presented by Dr. Laya Salomon                                                     |
| Wed., May 20, 2020 | **For Teachers** Teaching Self-Regulation in Young Children  
|                    | Presented Jeanine Fitzgerald                                                    |

If you are interested in bringing Hidden Sparks to your school or city, please contact us:  
212-767-7707 or sara@hiddensparks.org
Contacting Hidden Sparks

Contact Presenter:
Adrienne Meldrum
mathformiddles.com

Contact Hidden Sparks:
www.hiddensparks.org
news@hiddensparks.org (212) 767-7707
www.facebook.com/HiddenSparks
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