

NESA Spring Educators Conference 2013

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**Helping Children Build Number Sense  
&  
Computation Skills through Daily Number Talks**  
~ NESA Spring Educators Conference 2013 ~

“But kids need to know their math facts by heart!” How often do we hear that? This workshop aims to clarify the difference between math instruction that focuses solely on rote memorization and the type of instruction that develops numerically powerful children who can both compute and develop meaning about numbers.

During this session, you will learn how to use daily Number Talks as a 5-minute warm at the beginning of any math lesson to promote flexibility with numbers, shared learning and increased confidence in mental math skills.

Our time together will focus on:

- A quick warm-up of the types of mental math strategies we use most frequently in the real world
- Opportunities to try on number talks together as a whole group
- Video samples of number talks in action
- Opportunities to engage in discussion about what we are seeing and how you might implement number talks at your own school

## NUMBER TALK FORMAT

Modify the Format as needed for grades K-1

Just  
5  
minutes  
a day

- ◆ No paper or pencils for now; Just our brains
- ◆ Teacher poses the problem
- ◆ Quiet think time (i.e. No Hollering Out)
- ◆ Thumbs up when you have an answer/No hand raising at first
- ◆ If you think of an answer quickly, think of a second way to solve and put another finger up on your hand
- ◆ Teachers ask for volunteers to share their thinking
- ◆ Try to get as far as you can with your answer today
- ◆ Remember it's not about the product; It's about the process!!!!

### Numerical Power & Number Talks

#### Numerically Powerful Children Can...

- Develop meaning from numbers
- Look for relationships
- Understand & correctly perform computational strategies
- Make sense of numerical situations

#### Number Talks...

- Ongoing Daily Routine
- Flexible in approach
- Student Focused
- Encourages Safe Sharing & **Self** Correction
- Leads to Computational Fluency

*Based on 2006-Kathy Richardson-Math Perspectives In-service Materials*

### Possible Daily Math Routine

- \* Number Talk (5 min.)
- \* Mini-Lesson (5-8 min.)
- \* Student Practice- (30 min.)  
Group Work with Teacher Guidance or Independent Work
- \* Verbal Reflection (10-15 min.)  
or Written Reflection in Math Journal

**Note: You are the expert, which means you know your class and grade level best. Make the routine work for you and your children.**

~ *SUGGESTED STRATEGIES* ~

CATEGORY	FOCUS/UNDERSTANDING
NUMBER FLUENCY	Number Recognition
	One-to-One Correspondence
	Conservation of Numbers
	Composing/Decomposing Numbers

CATEGORY	STRATEGY
ADDITION	Counting All/Counting On
	Doubles/Near-Doubles
	Making Tens
	Making Landmark or Friendly Numbers
	Breaking Each Number into Its Place Value
	Compensation
	Adding Up in Chunks

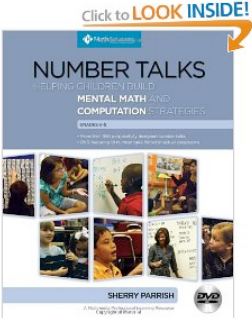

CATEGORY	STRATEGY
SUBTRACTION	Adding Up
	Removal or Counting Back
	Place Value and Negative Numbers
	Adjusting One Number to Create an Easier Problem
	Keeping a Constant Difference

CATEGORY	STRATEGY
MULTIPLICATION	Repeated Addition or Skip Counting
	Making Landmark or Friendly Numbers
	Partial Products
	Doubling and Halving
	Breaking Factors into Smaller Factors

CATEGORY	STRATEGY
DIVISION	Repeated Subtraction or Sharing/Dealing Out
	Partial Quotients
	Multiplying Up
	Proportional Reasoning

Developed by C. Franklin based on Richardson, Kathy.2006.Math Perspectives *Number Talk* Model & Parrish, Sherry. 2010. *Number Talks: Helping Children Build Mental Math and Computation Strategies*

~ **RECOMMENDED RESOURCES** ~

	<p><b>Book:</b></p> <p>Parish, Sherry. <i>Number Talks: Helping Children Build Mental Math and Computation Strategies Grades K-5</i>, Sausalito, CA: Math Solutions, 2010</p>
	<p><b>DVD:</b></p> <p>Richardson, Kathy. <i>Thinking with Number: Number Talks</i>, Bellingham, WA: Math Perspectives</p>
<p><b>This Resource Provides:</b></p> <ul style="list-style-type: none"><li>• Number Talk Instructions</li><li>• Helpful Number Talk PDF files</li><li>• Blackline Masters of Dot Cards</li></ul>	<p><b>Website:</b></p> <p>Math Perspectives</p> <p><a href="http://mathperspectives.com/num_talks.html">http://mathperspectives.com/num_talks.html</a></p>
<p><b>This Resource Provides:</b></p> <ul style="list-style-type: none"><li>• Background information on the importance of developing students' abilities to think and share their understanding around mathematics</li></ul>	<p><b>PDF:</b></p> <p><i>Teaching for Understanding Guiding Principles:</i> Excerpt from Mathematics Model Curriculum Guide, California Department of Education, 721 Capitol Mall, Sacramento, CA, 1987</p> <p><a href="http://www.aps.k12.co.us/instruct/resources/math/sec_note_book/docs/teach4understanding.pdf">http://www.aps.k12.co.us/instruct/resources/math/sec_note_book/docs/teach4understanding.pdf</a></p>
<p><b>This Resource Provides:</b></p> <ul style="list-style-type: none"><li>• An understanding of the difference between rote learning of computational skills and</li></ul>	<p><b>Article:</b></p> <p>Lobato, Joanne &amp; Charles, Randall, <i>A Position Paper on the Development of Numerical Power</i>, Lakewood, Golden, CO:</p>

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developing numerical power	National Council of Supervisors of mathematics (NCSM)
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