

Mentimeter Survey

Go to **www.menti.com** and use the code
37 01 00

What is your experience with doing Number Talks?
What is your grade level? You may select more than one.

Your response will help determine our presentation for today.

How We Use Number Talks to Engage All Learners

Michelle Daml, Curriculum Coordinator
@northpoleteach

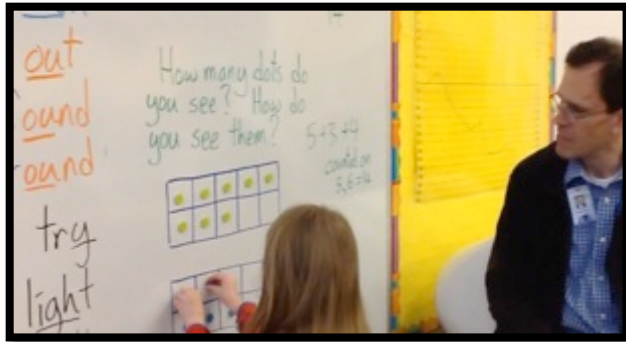
Samantha Wuttig, Mentor Teacher
@swuttig

Fairbanks North Star Borough School District



from Ruth Parker

I used to think my job was to teach students to see what I see. I no longer believe this. My job is to teach my students to see; and to recognize that no matter what the problem is, we don't all see things the same way. But when we examine our different ways of seeing, and look for the relationships involved, everyone sees more clearly; everyone understands more deeply.



Overview

What is a **Number Talk**?

How do I do a **Number Talk**?

What do I need to think about when doing a **Number Talk**?

Our **GOAL** for you!

Do a **Number Talk** when you get back to your classroom!



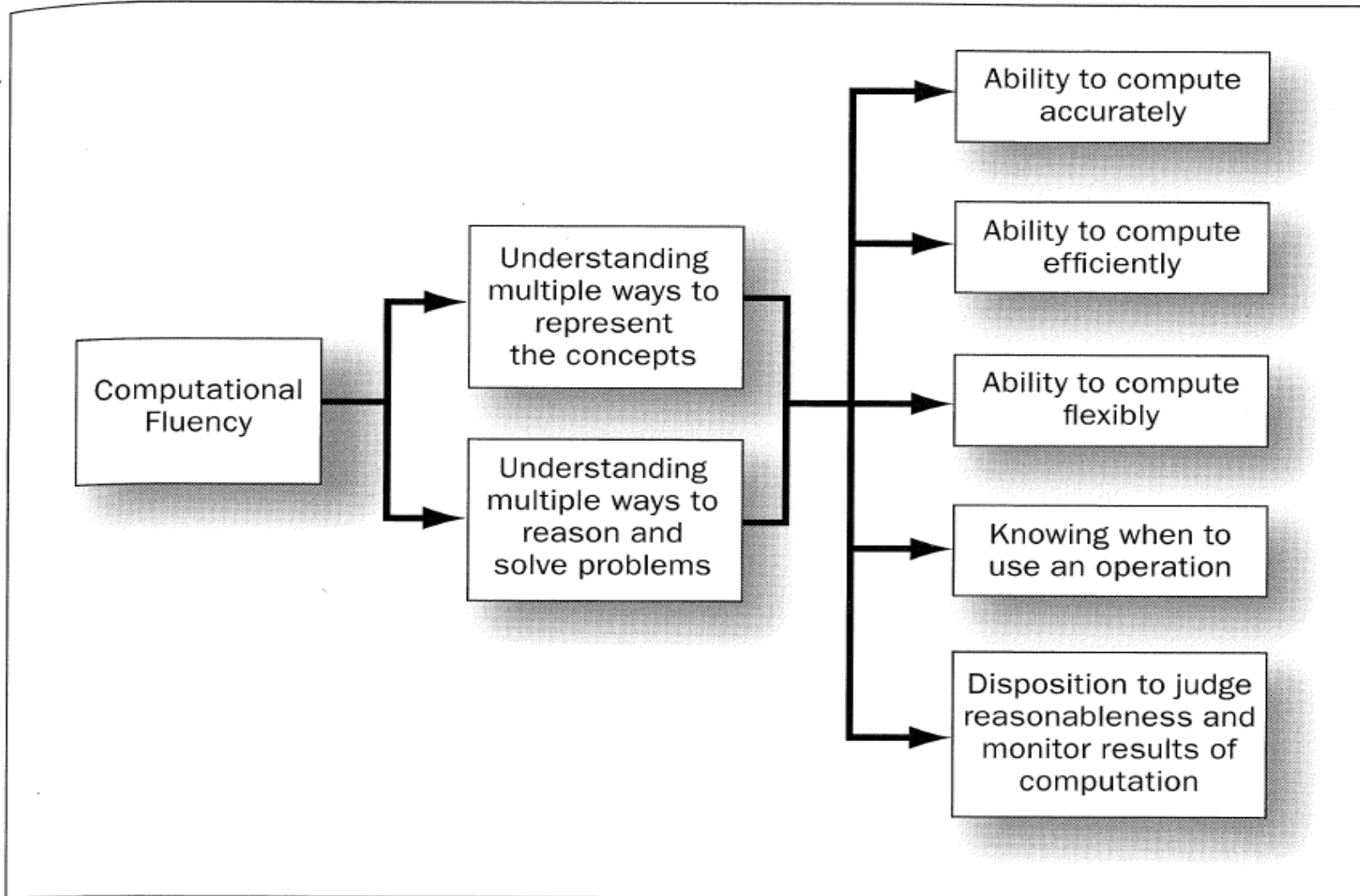
Why Number Talks?

How to Learn Math

[Jo Boaler: Number Sense](#)



Attributes of a Fluent Student



What makes a Number Talk?

Planned problems that focus on a strategy

5 to 15 minutes

Solved mentally by all students

Students share thinking

Teachers record thinking

Structure of a Number Talk

Select a location

Take 5 to 15 minutes

Start with posing problem

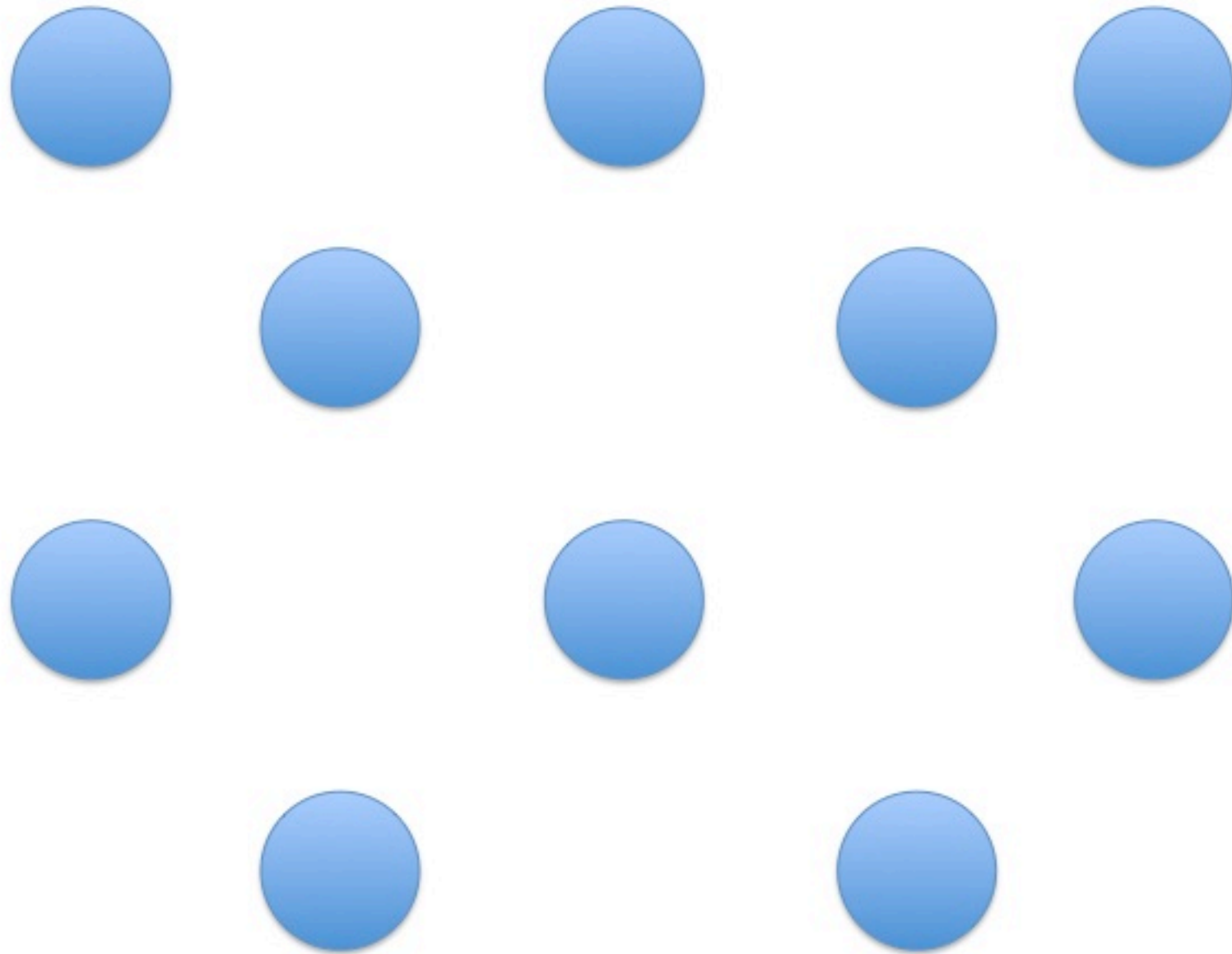
Thumb up in front, think of another strategy – put a finger out


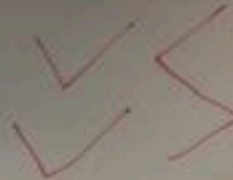



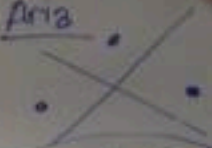

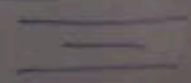



Gathering all answers without judgment


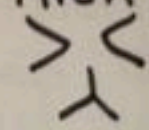
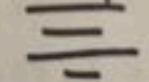
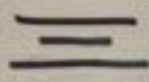
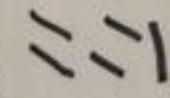
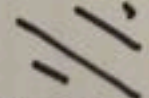
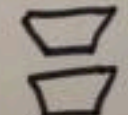
Allowing students to defend answers (or change their answer)

Let's try a Number Talk!



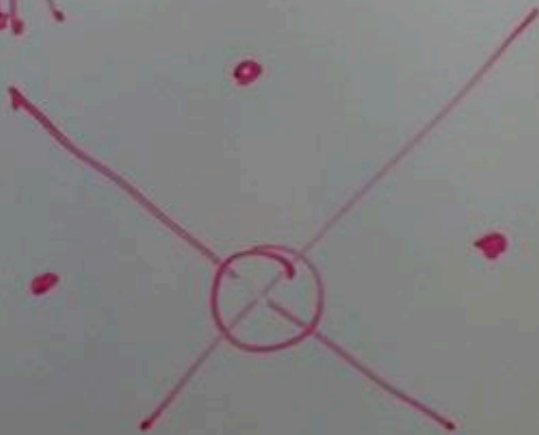


<p>Trinity</p>  <p>$3+2+3+2$</p>	<p>Leah</p>  <p>$3+3+4$</p>		
<p>Cobie</p>  <p>$3+4+2+1$</p>	<p>Sonia</p>  <p>$3+3+4$</p>		
<p>Cyrus</p>  <p>$5+5$</p>	<p>Aria</p>  <p>$4+4+3$</p>	<p>Ms. Donna</p>  <p>$5+5$</p>	<p>Green-</p>
<p>Nicholas</p>  <p>$3+2+3+2$</p>	<p>Kidd</p>  <p>$3+2+2+3+2$</p>	<p>Red-</p>	
<p>Cydney</p>  <p>$3+3+3+1$</p>	<p>Cole Finin</p>  <p>$3+2+1+2+2$</p>	<p>Blue-</p>	

<p>10</p> <p>Brody</p>  <p>$3+3+4$</p>	<p>11</p> <p>Aron</p>  <p>$3+3+4$</p>	<p>6</p> <p>Maya</p>  <p>$3+2+3+2$</p>	<p>4</p>
<p>Gavin</p>  <p>$3+3+2+2$</p>	<p>Kallista</p>  <p>$2+2+2+2+2$</p>	<p>Kendall</p>  <p>$1+3+4+2$</p>	
<p>Bailey G.</p>  <p>$5+5$</p>	<p>Number Talk</p>		

Examples of Student Thinking

Math



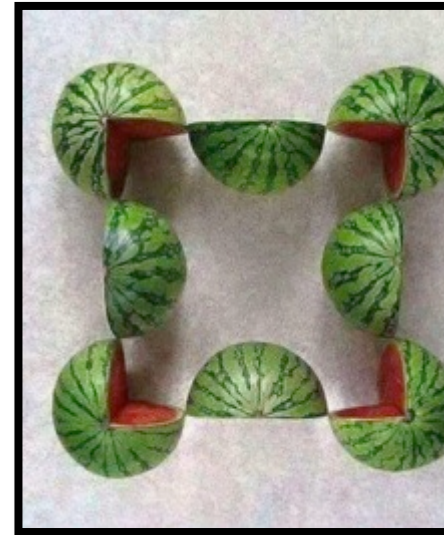
$$4 + 4 - 1 + 1 + 1 + 1$$

What dots do for us

Dots/Images are non-threatening

Used this with students, pre-service teachers, parents, and other adults

Different way to look at what math is – focus on strategy not answer



Number Talk

Mathematical relationships remain the same over time.

$$9 + 7$$

$$9 + 13$$

$$29 + 73$$

$$5,239 + 423$$

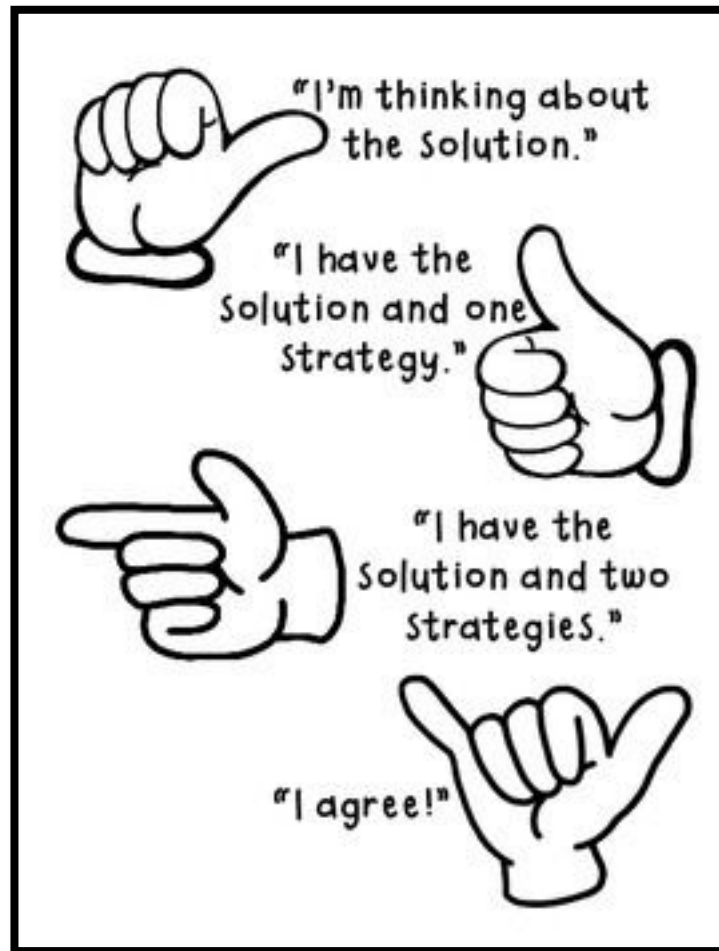
Number Talk

Mathematical relationships remain the same over time.

$$2\frac{7}{8} + \frac{5}{8}$$

$$7.9 + 4.7$$

How to Plan for a Number Talk



Number Talks

"My strategy was..."

"I can prove it because..."

"I agree with ___ because ___."

"I disagree because...."

"Why did you...?"

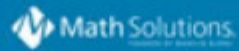
"How did you...?"

"What if...?"

"I don't understand because..."

Planning a Number Talk

<p>Anticipate different methods students might use for solving the problem</p>	<p>Plan how you will record student methods</p>
<p>Generate the kinds of questions you will need to be prepared to ask to fully understand and represent a student's method</p>	<p>Think about what you might do if very few strategies emerge, if there are wrong answers, etc.</p>



NUMBER TALKS

HELPING CHILDREN BUILD
**MENTAL MATH AND
COMPUTATION STRATEGIES**

GRADES K-5

- More than 850 purposefully designed number talks
- DVD featuring 19 number talks filmed in actual classrooms



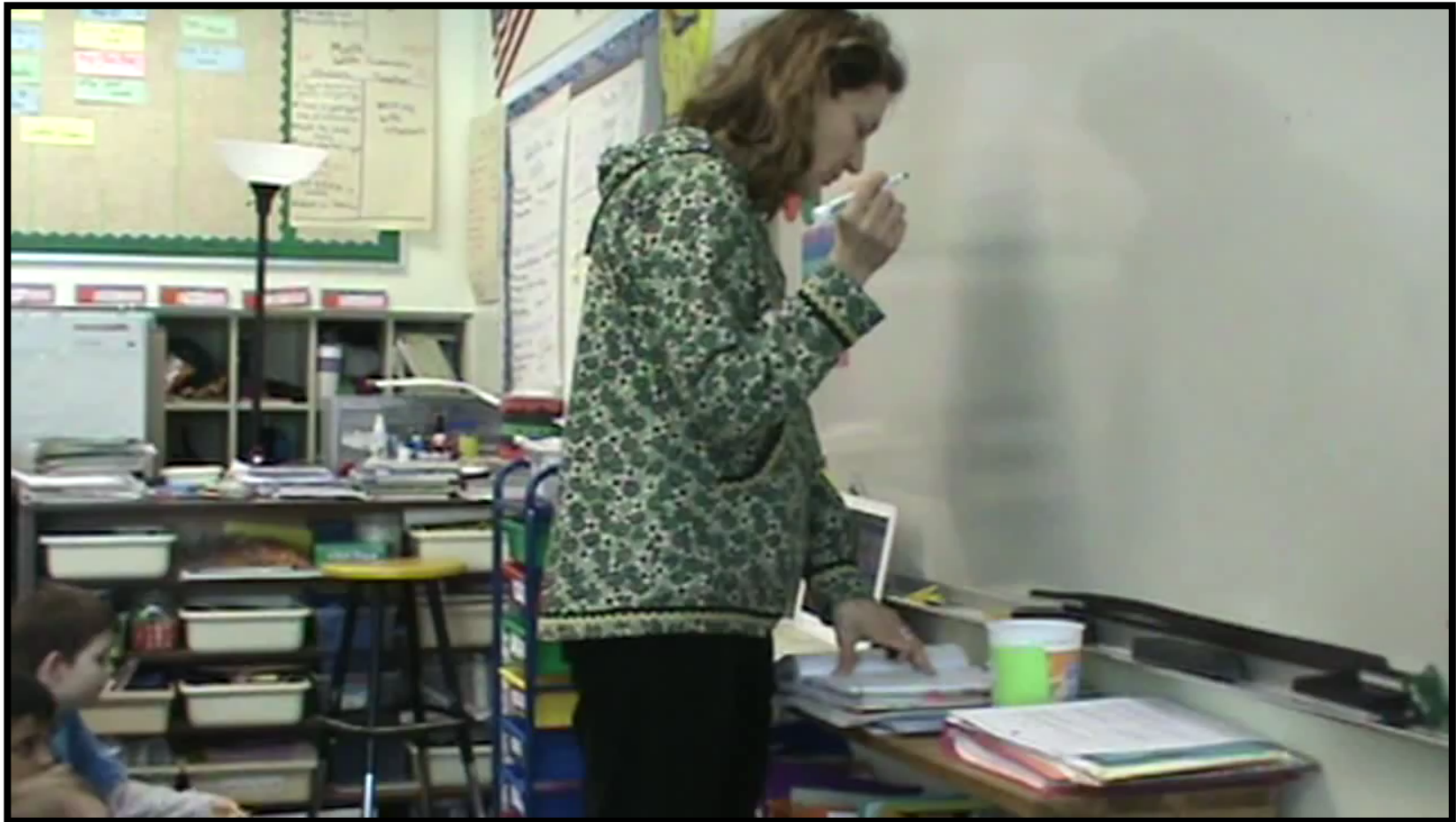
SHERRY PARRISH

A Multimedia Professional Learning Resource

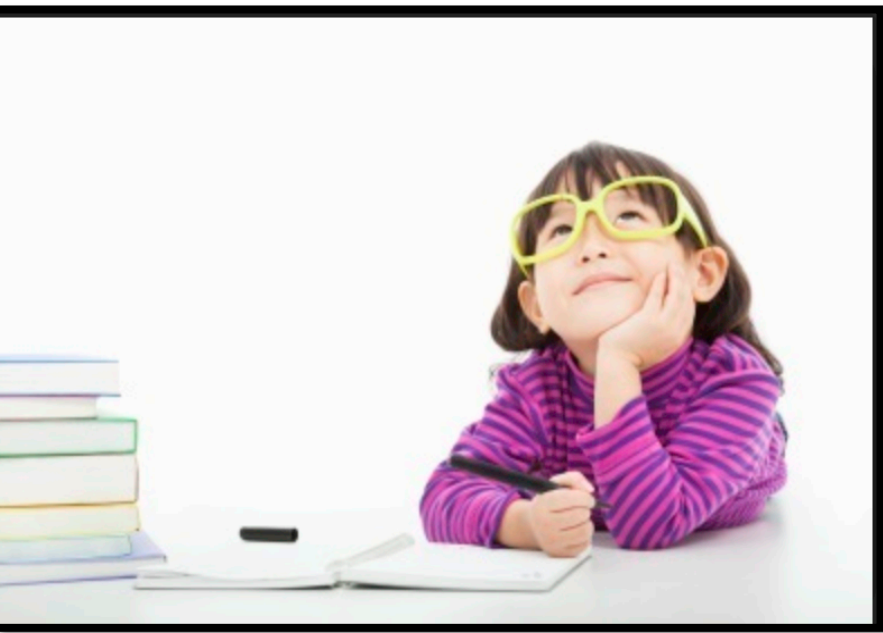


Let's
watch the
Number
Talk

What it might look like in reality



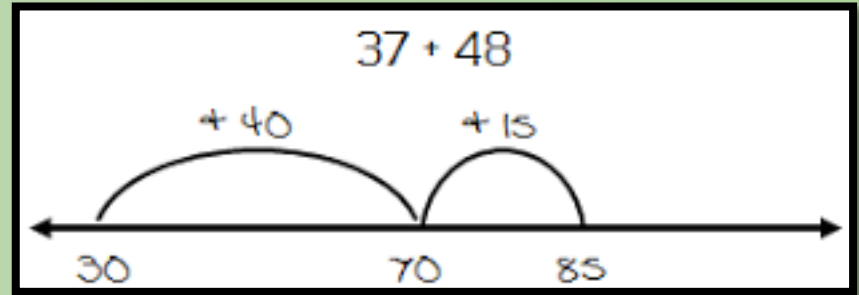
Ways to record student thinking
“Visual tools to model student strategies”



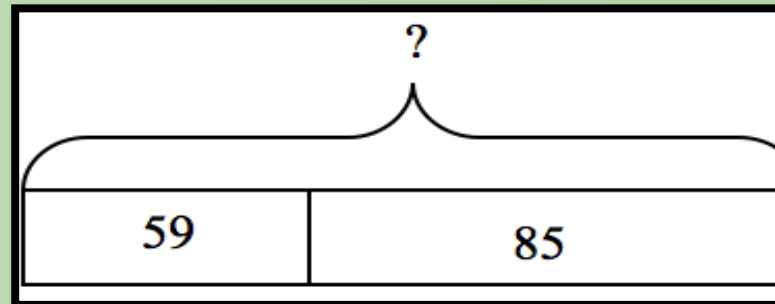
On the sticky notes
think of 2 ways you
could model student
thinking.

Some visual models

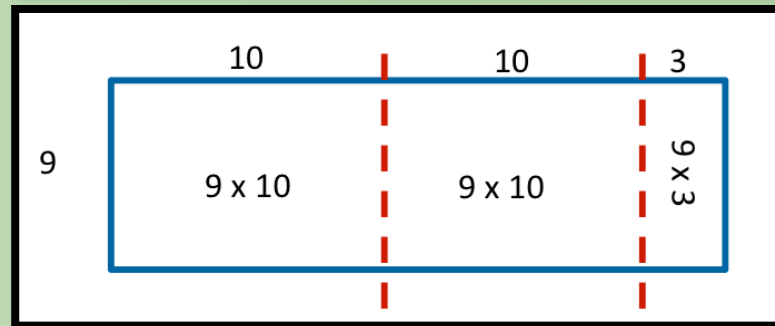
Open Number Line



Bar Model



Arrays





Small Steps

1. Start with smaller problems to elicit thinking from multiple perspectives.
2. Be prepared to offer a strategy from a previous student.
3. It is alright to put a student's strategy on the back burner.
4. As a rule, limit your number talks to five to fifteen minutes.
5. Be patient with yourself and your students as you incorporate number talks into your regular math time.

How to Continue on this Journey!

The screenshot shows the TCh Beta dashboard for a group named 'Making Number Talks Matter'. The dashboard includes a navigation menu with options like 'Videos', 'Teachers', 'Q&A', 'Groups', 'Resources', and 'Blog'. A central message welcomes the user to their new group and provides a link to a 'Creating Successful Groups' document. Below this, there is a 'Our Learning Plan' table with columns for 'Due Date', 'Learning Plan Steps', and 'Activity'. The table lists several chapters with their respective due dates and activity counts.

Due Date	Learning Plan Steps	Activity
Oct 8, 2015	Ch 1: What are number talks? Why are they so important?	14 6
Oct 12, 2015	Ch 1: What are Number Talks? Why are they important?	36 7
Oct 25, 2015	Ch 2: Getting Number Talks Started	3 5
Oct 31, 2015	Ch 2: Dot Images Videos	0 4

The screenshot shows the Facebook page for 'Making Number Talks Matter Book Study'. The page features a cover photo with social media icons for Twitter and Facebook, and a red button that says 'Join Us...'. The cover photo also includes text about the book study, such as 'When: Starting October 5th, 2015' and 'Hosts: Tamar & Facebook'. The page has 761 likes and a post from 'Making Number Talks Matter Book Study' titled 'Chapter 2 Recap Newsletter' with a link to a Smore.com document.

The screenshot shows the Twitter profile for '#mNTmTch'. The profile includes a bio, a header image, and a list of 'Who to follow' including users like 'Life is Good', 'Emma Fredens', and 'John Golden'. There are also 'Trends' listed, such as '#WorldFoodDay' and '#RememberWhenWasActually'. The main content area shows a tweet from 'Crystal' (@themathdancer) mentioning 'Kristin Gray' and a link to a Smore.com document.

Other Resources

<https://www.youcubed.org/> from Jo Boaler

<http://www.tabletalkmath.com>

<http://ntimages.weebly.com/photos.html>

<https://talkingmathwithkids.com/>

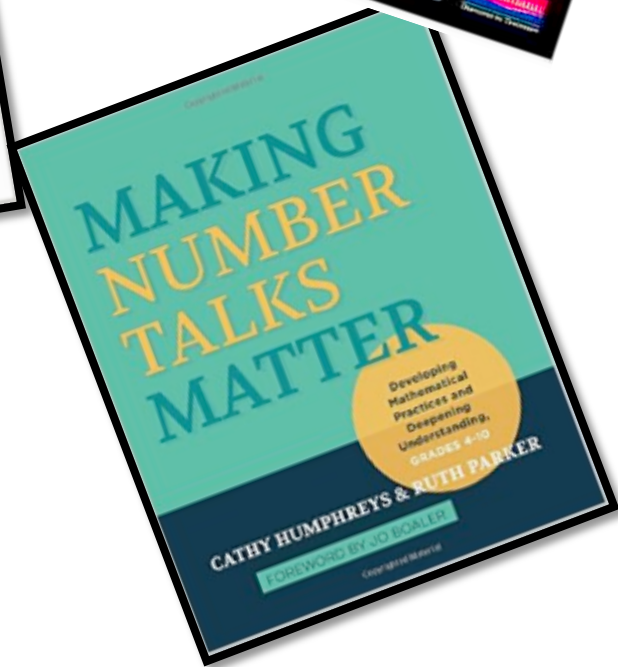
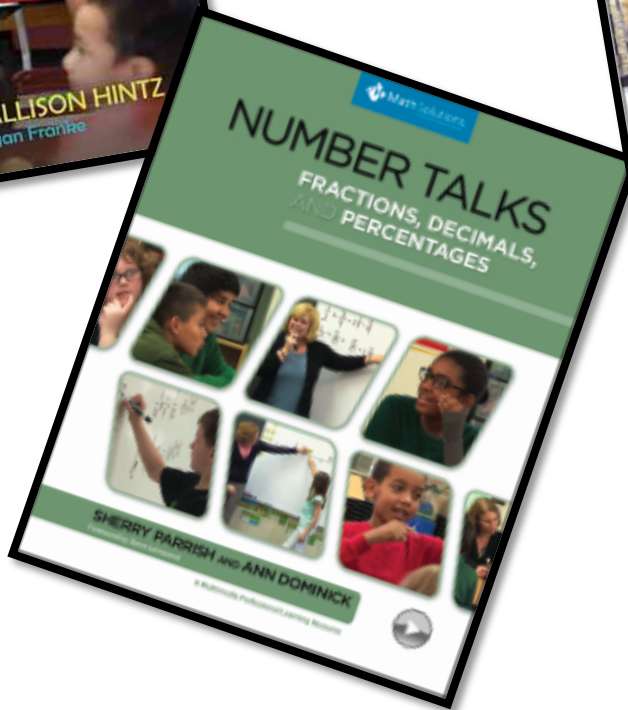
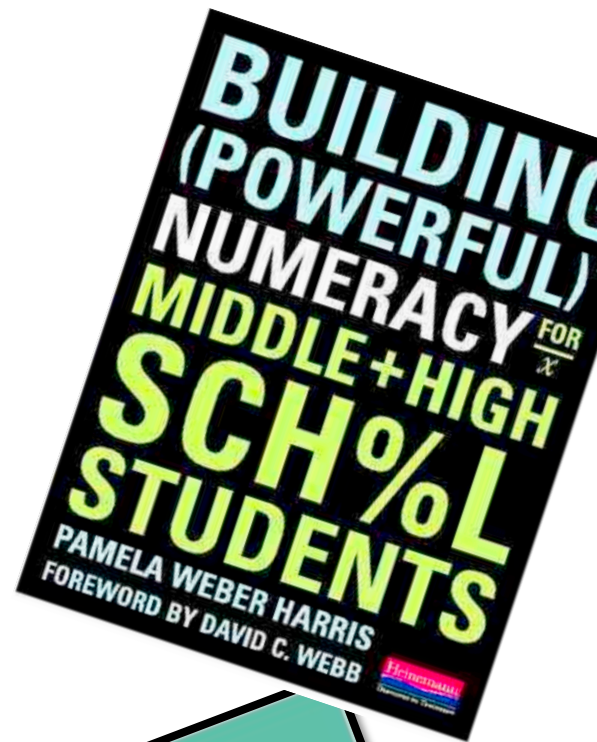
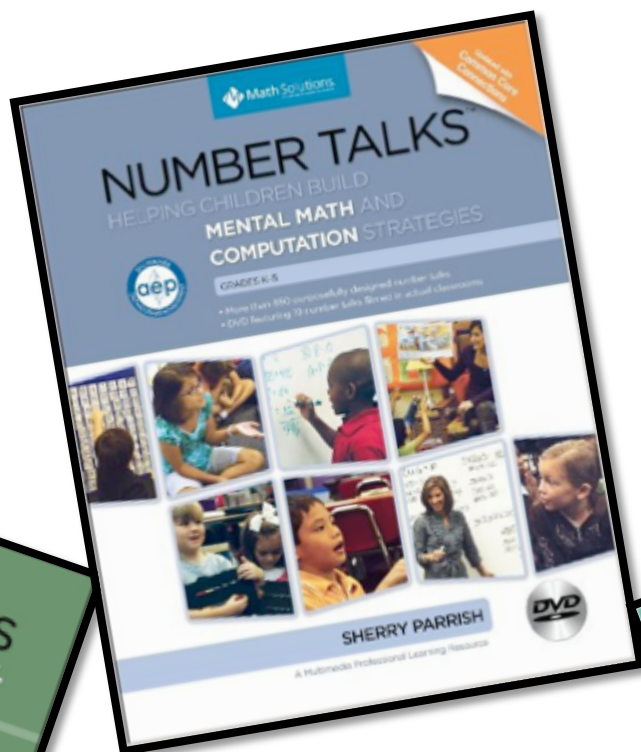
<https://numberstrings.com>

<http://visiblethinking.weebly.com/daily-routines.html>

People to Follow - @DrRuthParker, @NumberTalks

Twitter searches – #NumberTalksMatter,
#NumberTalksChat, #NumberTalks,

Books



Mentimeter Survey

Facilitated discussion

Go to **www.menti.com** and use the code
74 35 41



Link to all our informatio

<http://bit.ly/2fSeS1b>