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

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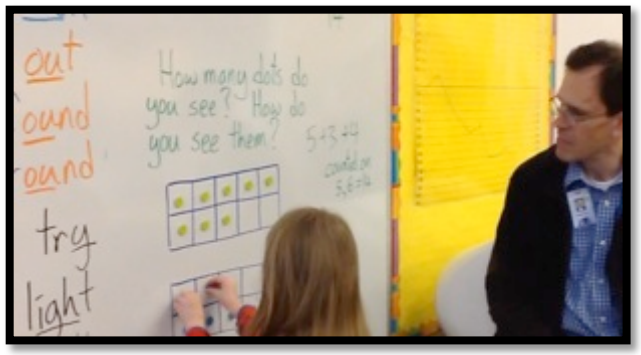
rom Ruth Parker

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!

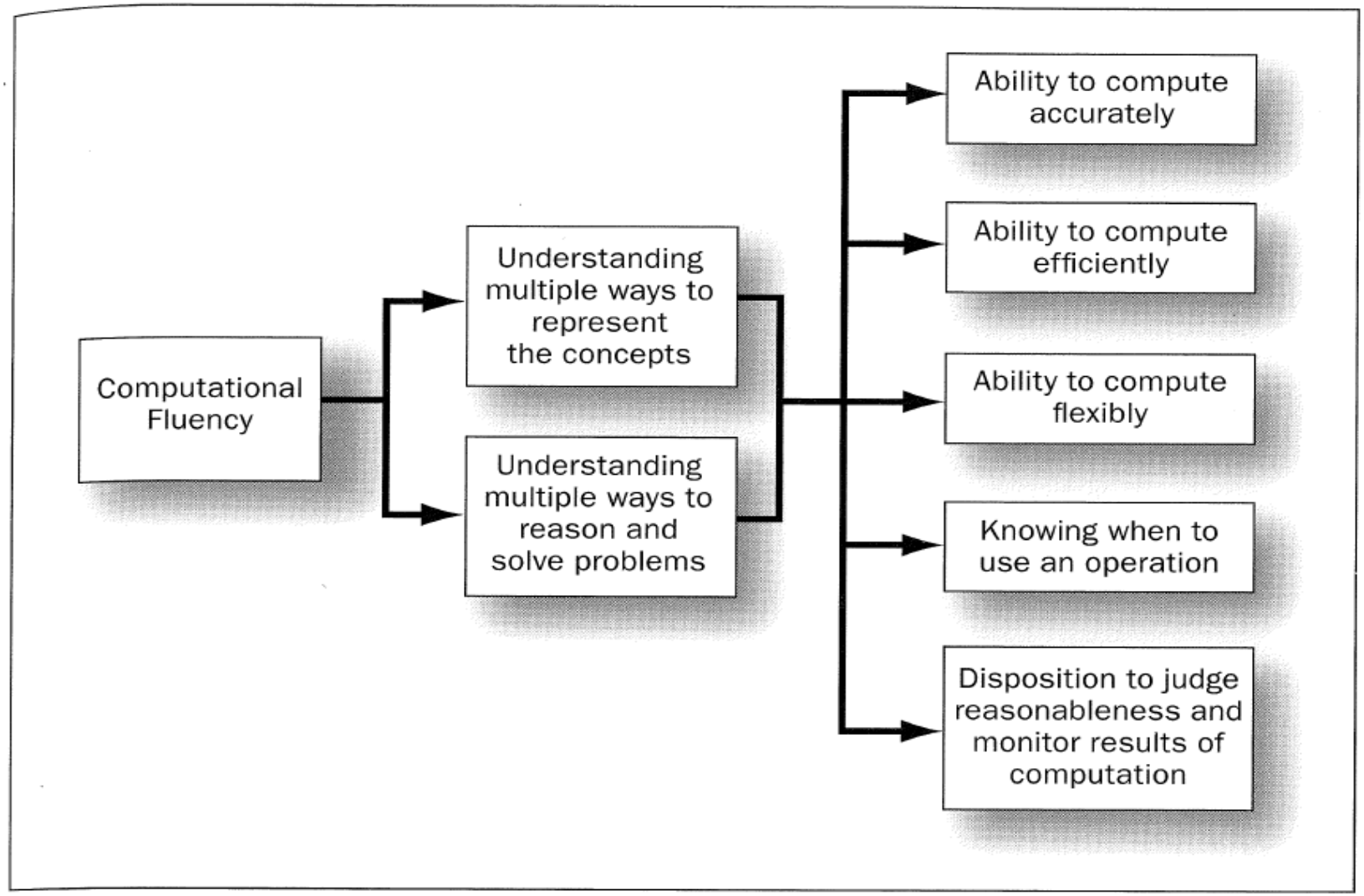
Do a **Number Talk** when you get back to your classroom!

Why Number Talks?

How to Learn Math

Jo Boaler: Number Sense

Attributes of a Fluent Student



Taken from A*chieving Fluency: Special Education and Mathematics*, National Council of Teachers of Mathematics, pg. 107)

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

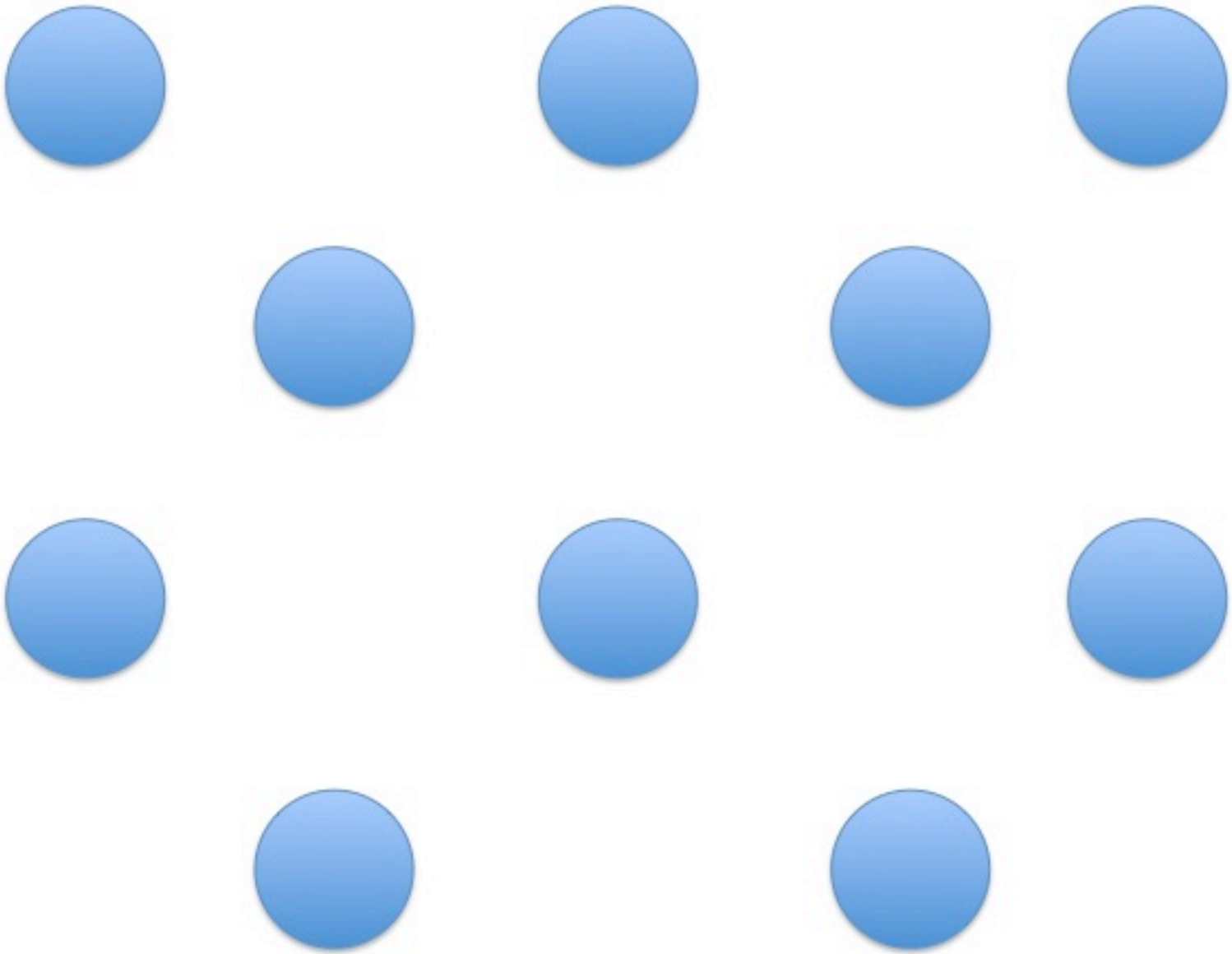
Start with posing problem

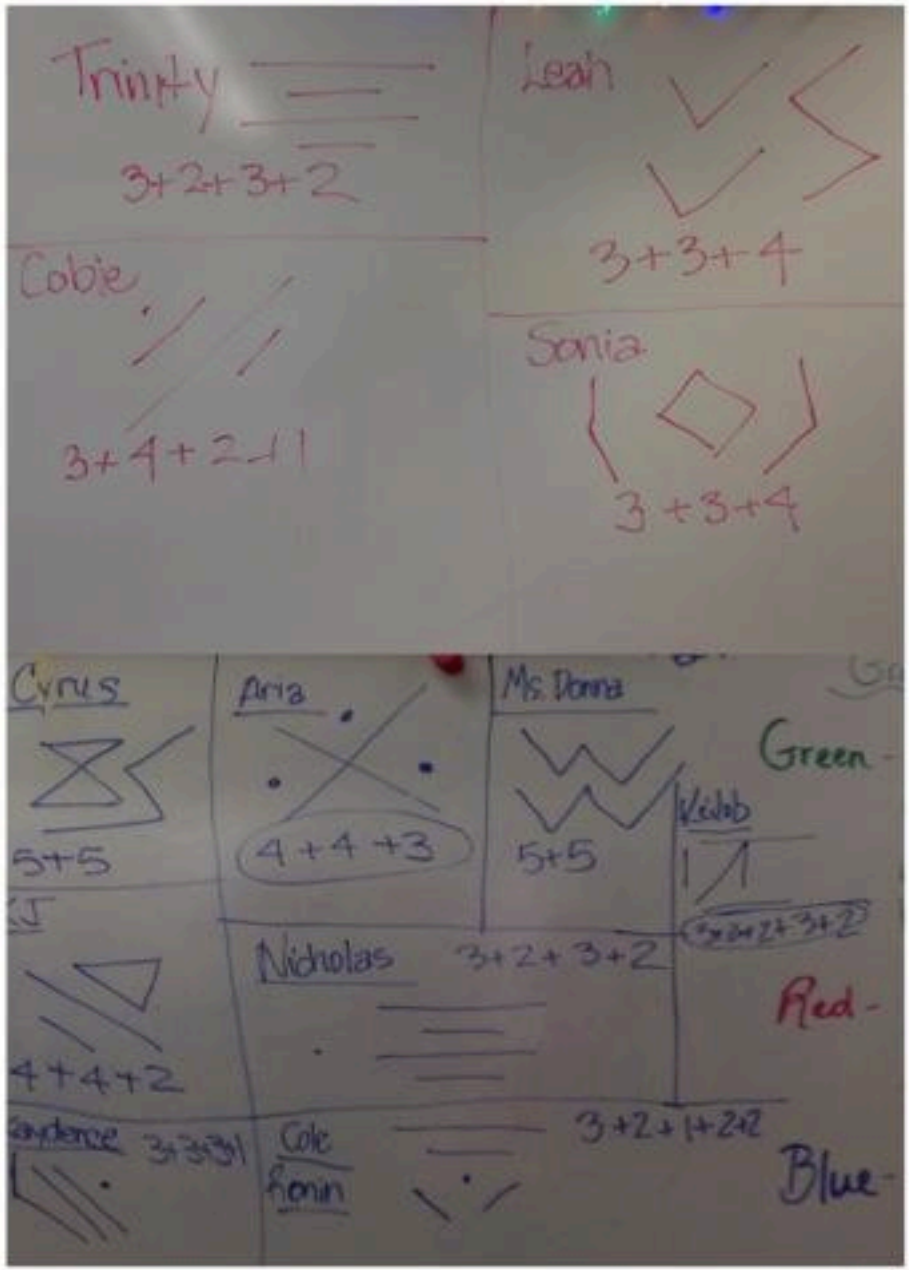
Thumb up in front, think of another strategy – put a finger out

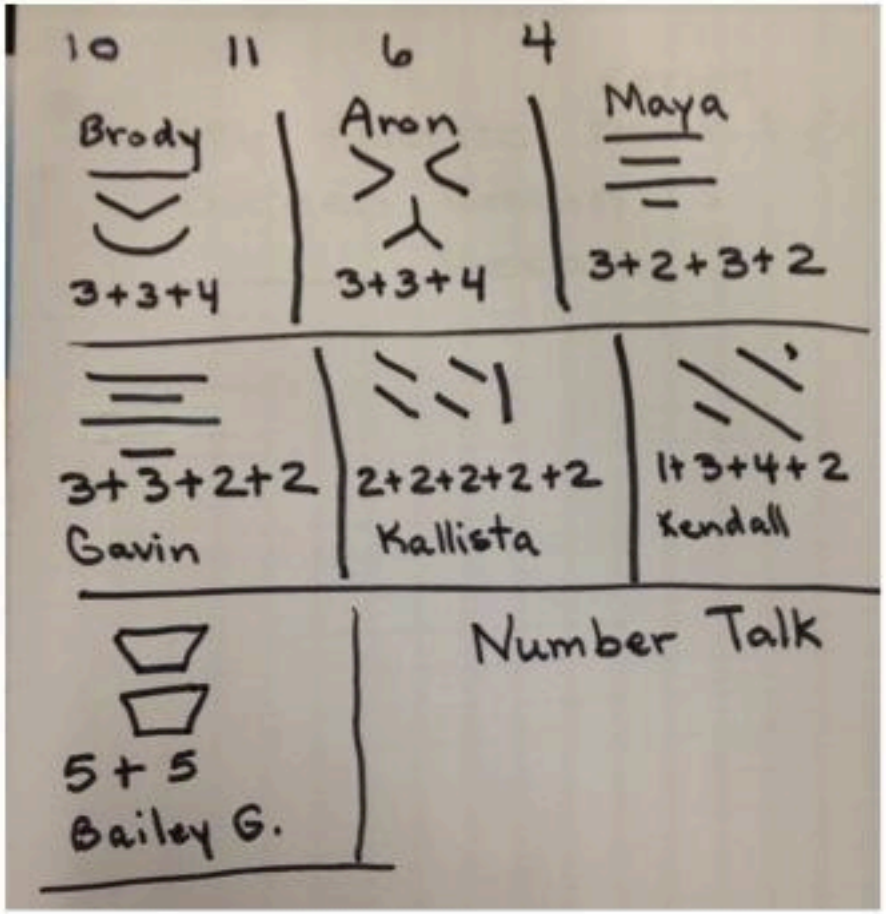
Gathering all answers without judgment

Allowing students to defend answers (or change their answer)

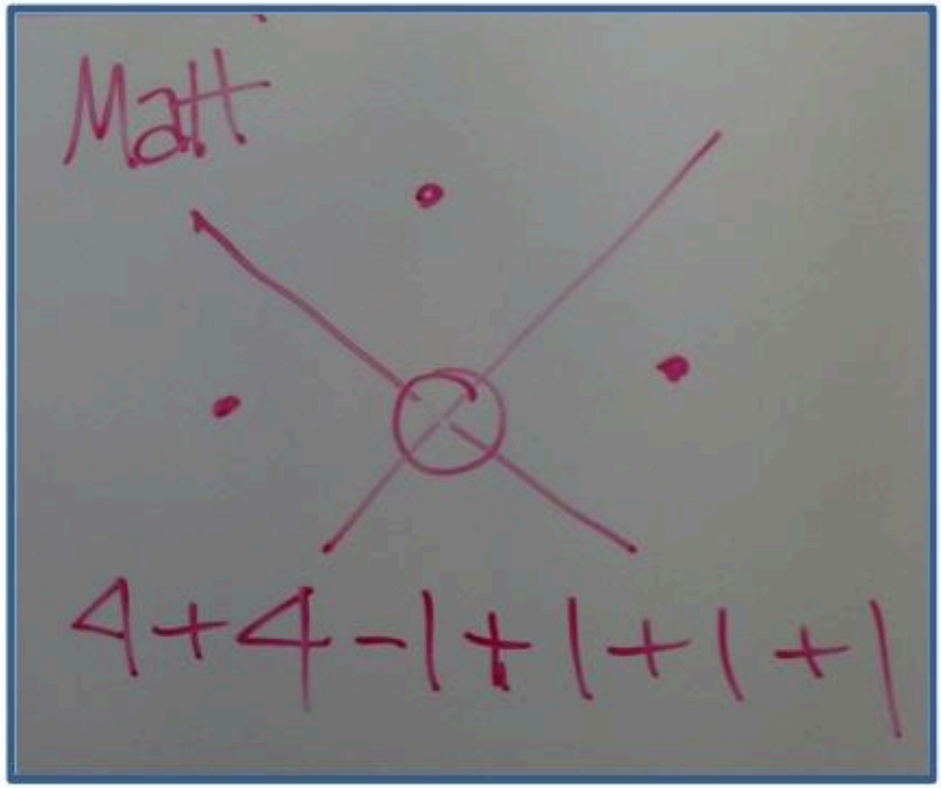
Let’s try a Number Talk!







Examples of Student Thinking

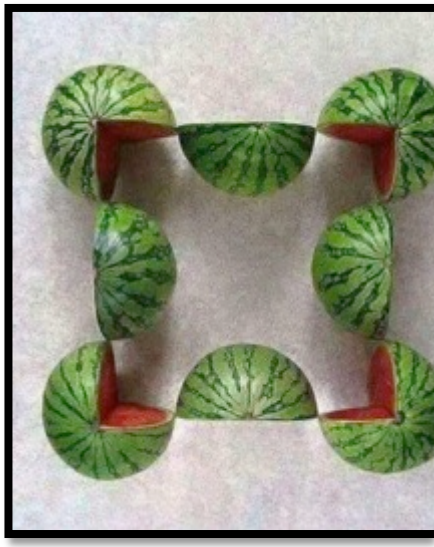

Math
4+4-1+1+1+1

What dots do for us

ots/Images are non-threatening

sed this with students, pre-service
eachers, parents, and other adults

ifferent way to look at what math is –
ocus on strategy not answer



Number Talk

Mathematical relationships remain the same over time.

9 + 7

9 + 13

29 + 73

5,239 + 423

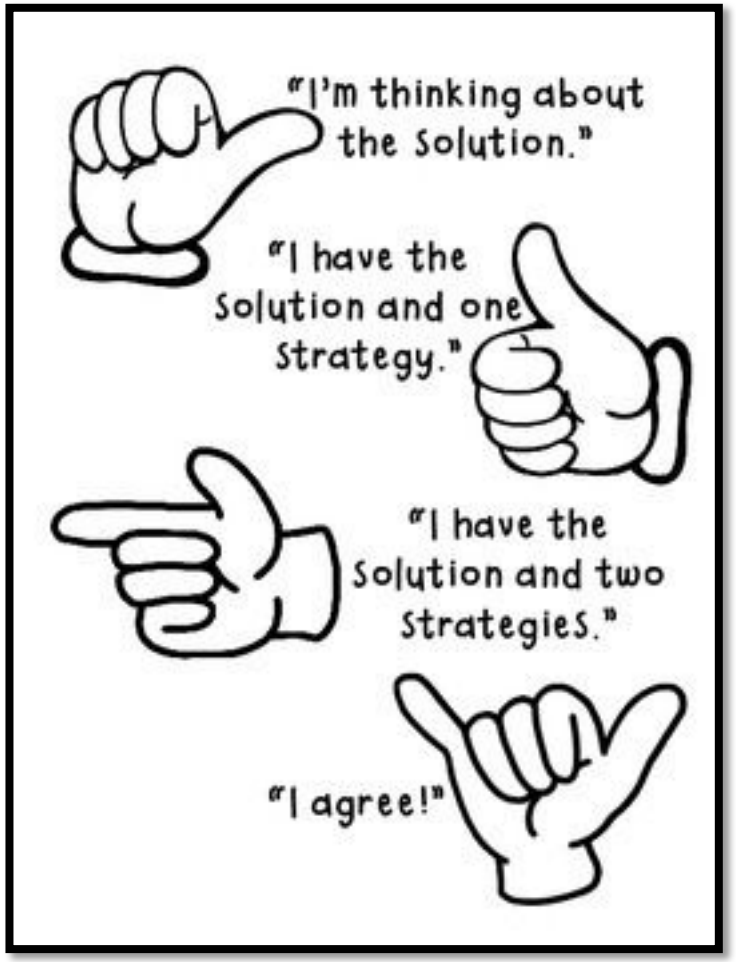
Number Talk

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...?"

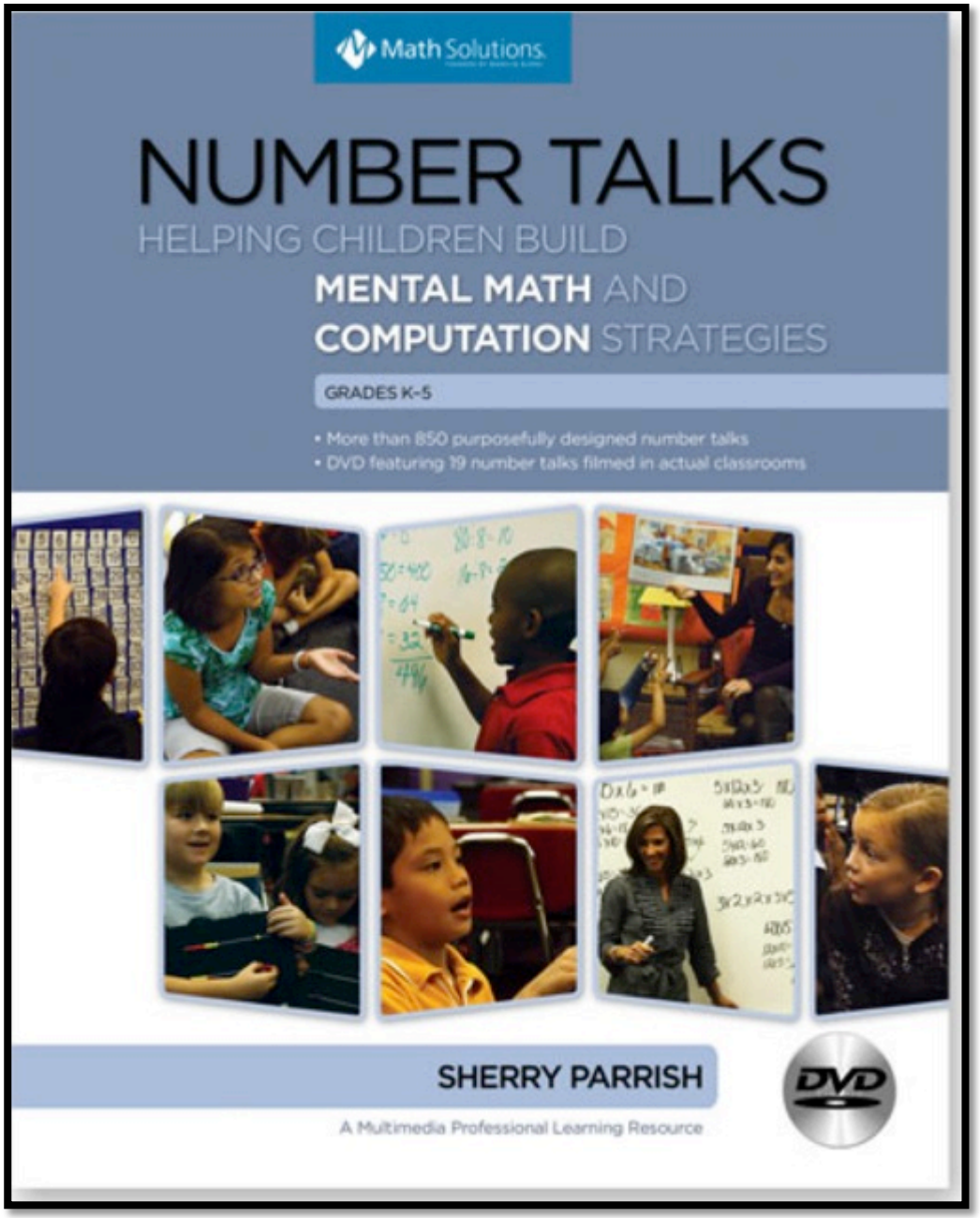
"How did you...?"

"What if...?"

"I don't understand because..."

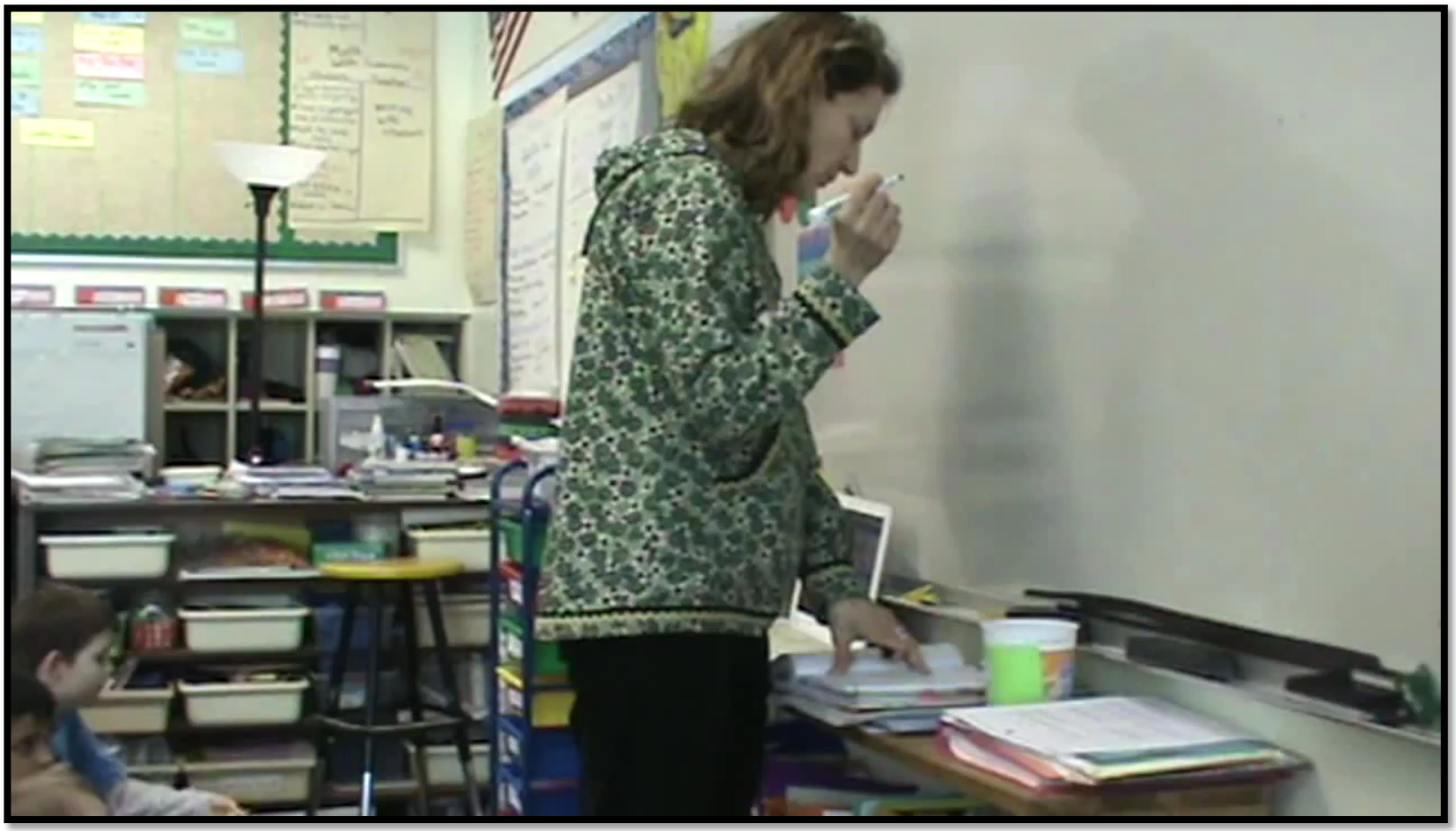
Planning a Number Talk

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



Let's watch the Number Talk

What it might look like in reality



Ways to record student thinking
"Visual tools to model student strategies"

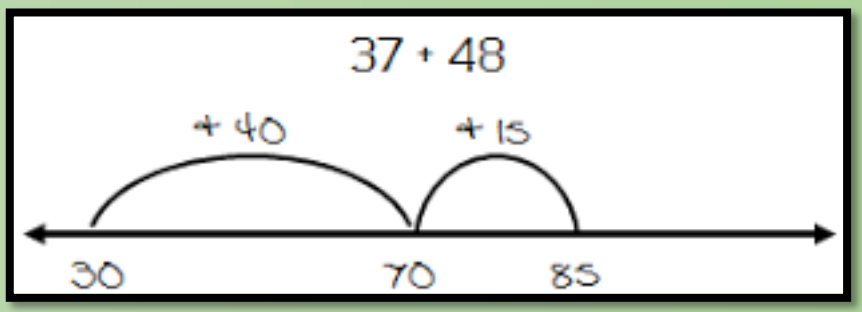
On the sticky notes think of 2 ways you could model studen thinking.

Addition and Subtraction

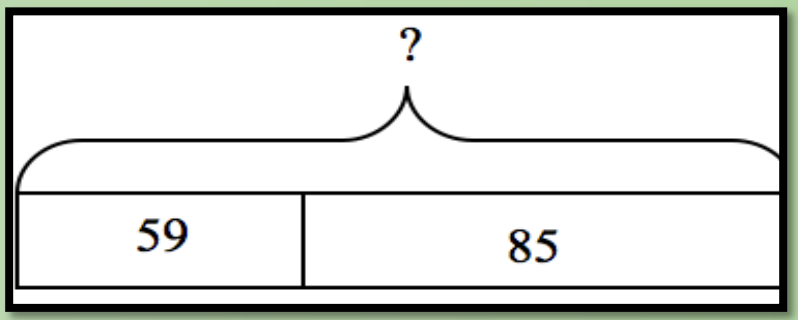
Multiplication and Division

Some visual models

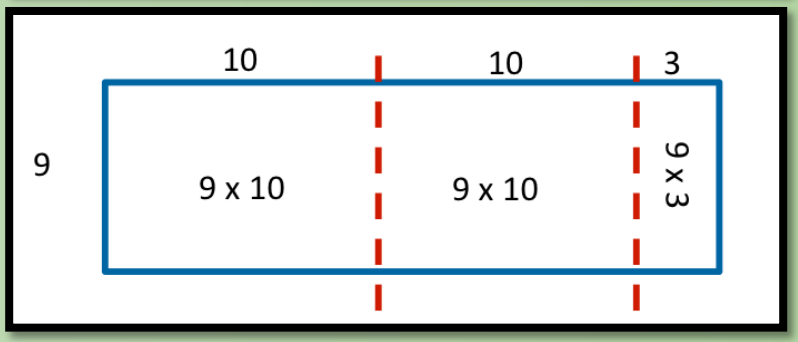
Open Number Line



Bar Model



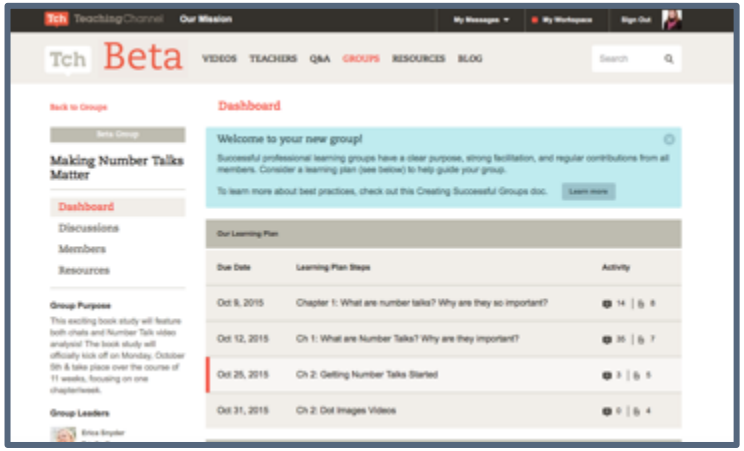
Arrays

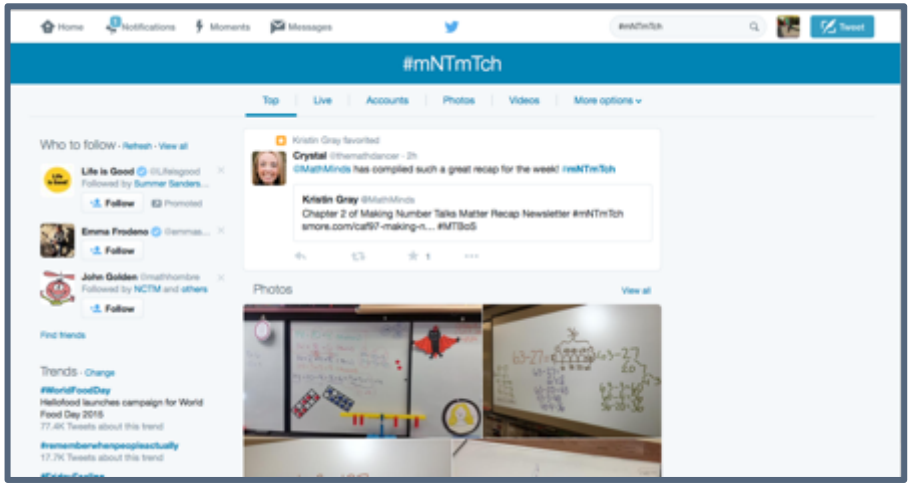


Small Steps

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!





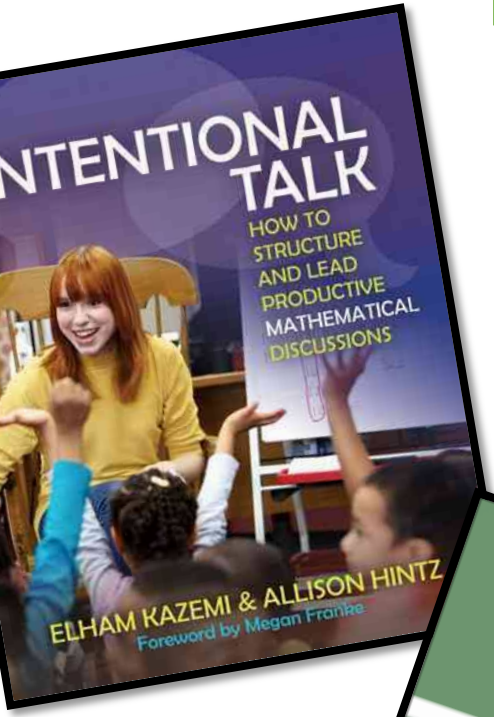
Other Resources

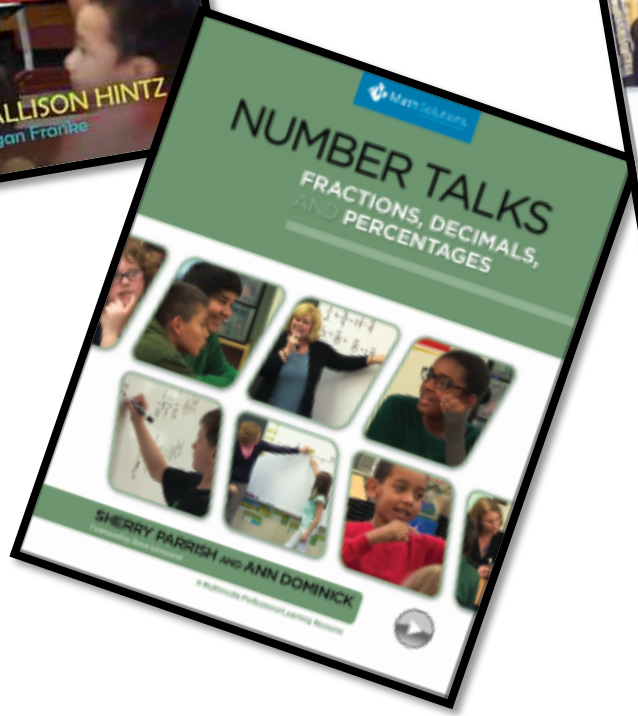
tps://www.youcubed.org/ from Jo Boaler
tp://www.tabletalkmath.com
tp://ntimages.weebly.com/photos.html
tps://talkingmathwithkids.com/
tps://numberstrings.com
tp://visiblethinking.weebly.com/daily-routines.html

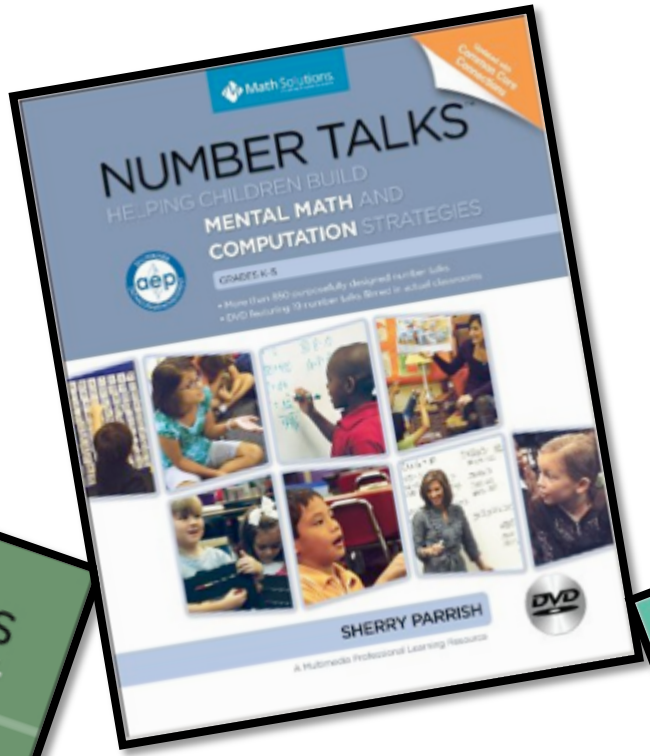
ople to Follow - @DrRuthParker, @NumberTalks

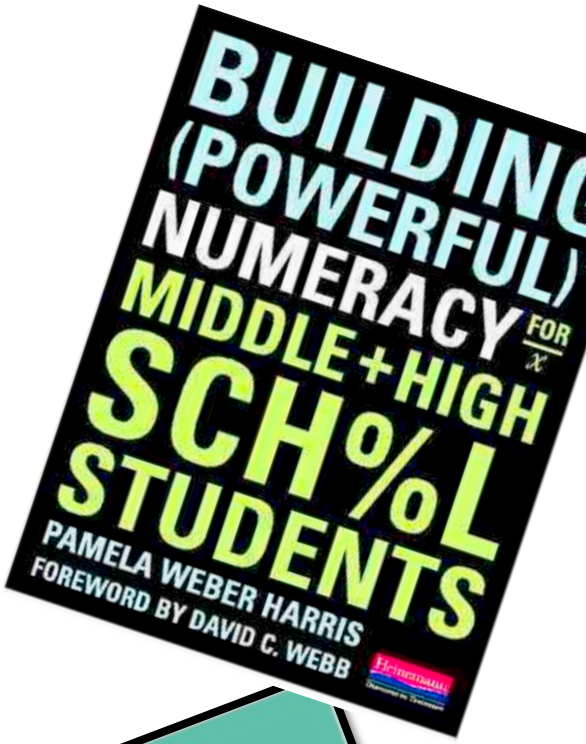
witter searches – #NumberTalksMatter,
lumberTalksChat, #NumberTalks,

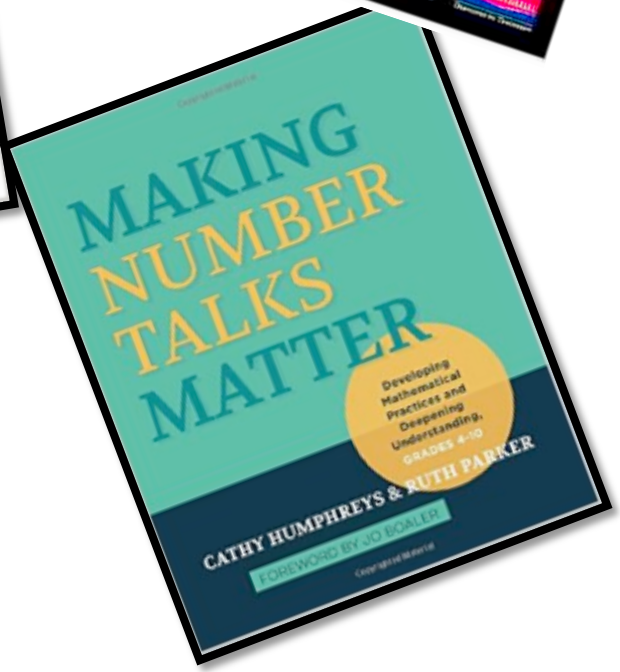
Books


NTENTIONAL
TALK
HOW TO
STRUCTURE
AND LEAD
PRODUCTIVE
MATHEMATICAL
DISCUSSIONS
ELHAM KAZEMI & ALLISON HINTZ
Foreword by Megan Franke


NUMBER TALKS
FRACTIONS, DECIMALS,
AND PERCENTAGES
SHERRY PARRISH AND ANN DOMINICK


NUMBER TALKS
HELPING CHILDREN BUILD
MENTAL MATH AND
COMPUTATION STRATEGIES
SHERRY PARRISH
DVD


BUILDING
(POWERFUL)
NUMERACY
MIDDLE+HIGH
SCH%L
STUDENTS
PAMELA WEBER HARRIS
FOREWORD BY DAVID C. WEBB


MAKING
NUMBER
TALKS
MATTER
Developing
Mathematical
Practices and
Deepening
Understanding,
GRADES 4-10
CATHY HUMPHREYS & RUTH PARKER

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