



**Math Solutions**<sup>®</sup>

FOUNDED BY MARILYN BURNS

# **SOMETHING TO TALK ABOUT: PRODUCTIVE TALK IN THE MATHEMATICS CLASSROOM**

Le'Vada Gray

Friday, October 23, 2015

12:30 PM – 1:30 PM

Atlantic City Convention Center, 402

## **MP 3 : Construct viable arguments and critique the reasoning of others.**

“Mathematically proficient can listen to the arguments of others, decide whether they make sense, and ask useful questions to clarify or improve the arguments.”

# Which Does Not Belong?

- 2, 6, 5, 10
- 2, 3, 15, 23
- $\frac{1}{2}$ , 2, 8, 16
- 9, 16, 25, 43

# Processing

- How did Math Talk support you communicating about your mathematical thinking?

# Positive Influences of Math Discourse

- Talk can reveal understanding and misunderstanding.
- Talk supports thinking and learning.
- Talk supports deeper reasoning.
- Talk supports language development.
- Talk supports the development of social skills.

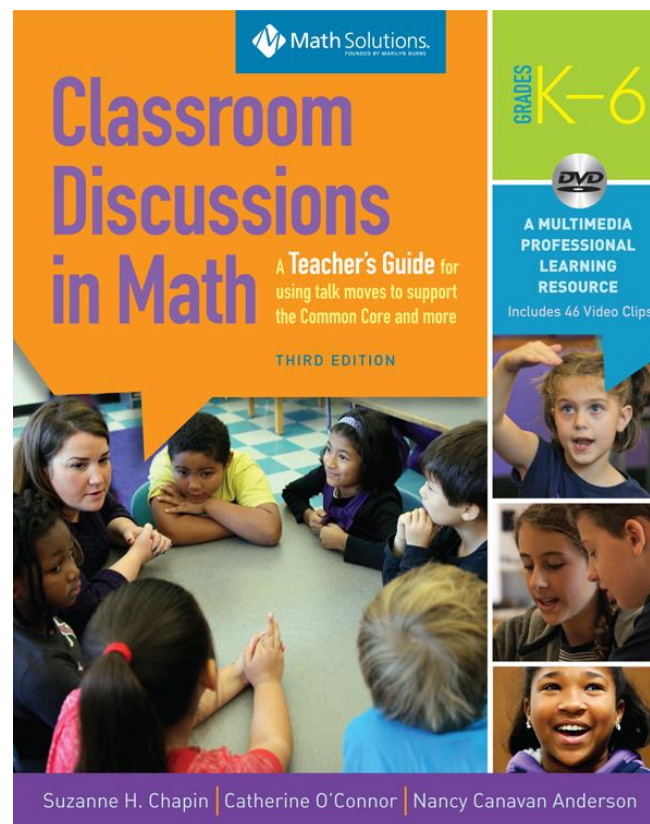
# Project Challenge

Scores on TOMA-2	Beginning	After 2 Years
Below Average	73%	0
Average		23%
Above Average	23%	36%
Superior/ Very Superior	4%	41%

*Classroom Discussions: Using Math Talk to Help Students Learn. Math Solutions Publications, 2001.*

# Talk Moves

- Revoicing
- Repeating
- Reasoning
- Adding on
- Waiting



*Classroom Discussions in Math: A Teacher's Guide for using talk moves to support the Common Core and more, 3<sup>rd</sup> Edition* by Suzanne H. Chapin, O'Connor, and Anderson. Math Solutions Publications, 2013.

# Tell Me All You Can

- The answer is going to be around/about \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be close to \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be between \_\_\_\_\_ and \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be greater than \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be less than \_\_\_\_\_ because \_\_\_\_\_.



# 12 x 7

- The answer is going to be about \_\_\_\_ because \_\_\_\_.
- The answer is going to be between \_\_\_\_ and \_\_\_\_ because \_\_\_\_.
- The answer is going to be less than \_\_\_\_ because \_\_\_\_.
- The answer is going to be greater than \_\_\_\_ because \_\_\_\_.

$$5 \times \frac{2}{3}$$

- The answer is going to be around/about \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be close to \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be between \_\_\_\_\_ and \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be greater than \_\_\_\_\_ because \_\_\_\_\_.
- The answer is going to be less than \_\_\_\_\_ because \_\_\_\_\_.

$861 \div 8$	$29 + 19$	$\frac{2}{3} + \frac{3}{4}$
$75 \times 12$	$22 \times 65$	$345 + 298$
$920 \times 0.8$	$35 \times \frac{3}{4}$	25% of 80

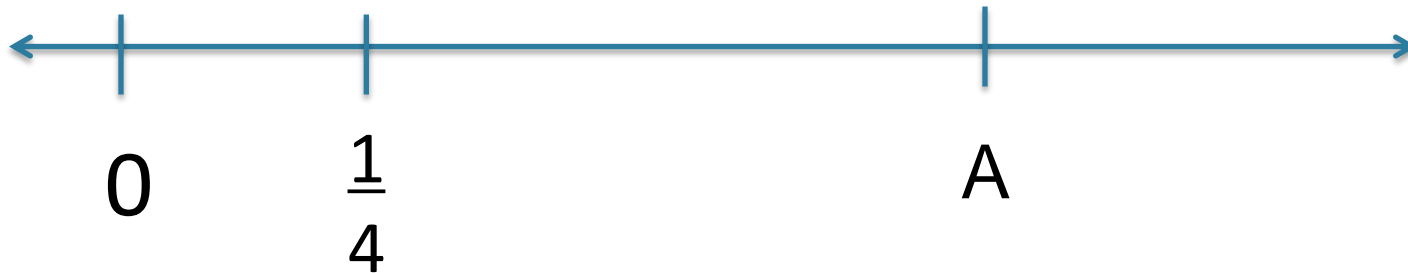
- The answer is going to be about \_\_\_\_ because \_\_\_\_.
- The answer is going to be between \_\_\_\_ and \_\_\_\_ because \_\_\_\_.
- The answer is going to be less than \_\_\_\_ because \_\_\_\_.
- The answer is going to be greater than \_\_\_\_ because \_\_\_\_.

# Processing

## Tell Me All You Can

- How would this activity support students constructing viable arguments and critiquing the reasoning of others?

Which is a better choice,  $\frac{3}{5}$  or  $\frac{7}{8}$  for the location marked A on the number line?



# Processing

## Fractions on a Number Lines

- How did the teacher use Talk Moves to support and assess student understanding?
- What mathematical concepts and thinking did students use to solve this problem?

Which is a better choice,  $\frac{3}{5}$  or  $\frac{7}{8}$ ?

*“I Know That 7/8 is greater than 3/5...” in Classroom Discussions in Math: A Teacher’s Guide for using talk moves to support the Common Core and more, Grades K–6.*

# Processing

## Fractions on a Number Lines

- How did the teacher use Talk Moves to support and assess student understanding?
- What mathematical concepts and thinking did students use to solve this problem?



# Talk Formats

- Whole-class discussion
- Small-group discussion
- Partner talk

# Four Steps to Productive Classroom Discussions

Step 1: Helping individual students clarify and share their own thoughts

Step 2: Helping students orient to the thinking of other students

Step 3: Helping students deepen their reasoning

Step 4: Helping students to engage with the reasoning of others

# Reflection: Math Talk in My Classroom

- How can I use Talk Moves and Talk Formats to support my students to construct viable arguments and critique the reasoning of others?
- What can I do so that Talk Moves are a habit of practice in my classroom?

# High Quality Math Talk

“Our goal is not to increase the **amount** of talk in our classrooms, but to increase **the amount of high quality talk** in our classrooms—the mathematical productive talk.”

*–Classroom Discussions: Using Math Talk to Help Students Learn, 2009*



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**Thank You**

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