

# Using Math & Science to Open Doors for Our Children's Future

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# You Cubed Video . . .

<https://www.youcubed.org/solving-math-problem/>

# Discussion: Math is . . .

- How does your view of math fit with either the before or after views of these students?
- What issues does this video make you think about (for example, changes in your school's math program)?

# What math do all students need?

- **The Big Three:**
  - **Understanding mathematics** (making sense of it)
  - **Doing mathematics** (skills, facts, procedures)
  - **Using mathematics** (applying math, modeling with mathematics, solving a range of problems)
- **The New Basics:** deep transferable skills for *versatilizing*:
  - Problem solving, reasoning, research, communication, creativity
- **Mathematical Thinking:** Habits of Mind
  - Thinking, reasoning, expecting math to make sense

*Looking at Math Classrooms . . .*

# To consider . . .

- How does the teacher encourage students' mathematical thinking?
- How does s/he stimulate student discourse?
- What kinds of questions does s/he ask?
- What do you notice about the roles of the teacher and students?
- How is this classroom similar / different from mathematics classrooms you see?
- Other things you notice . . .

# Classroom video

- <https://www.teachingchannel.org/blog/2016/05/13/modeling-with-math-nsf/>  
Second-grade lesson on subtraction based on a 'three-act' model. (Second video on the page)
- *Produced by The Teaching Channel.*

# Classroom video

- <http://mass.pbslearningmedia.org/resource/mtc13.pd.math.deb/encouraging-debate/>
- A pre-calculus lesson built on students determining whether there might be a mistake in the coordinates on a graph, taught by a math teacher / debate coach.
- *A PBS Learning Media high school video produced by WGBH/WGBY in Massachusetts.*



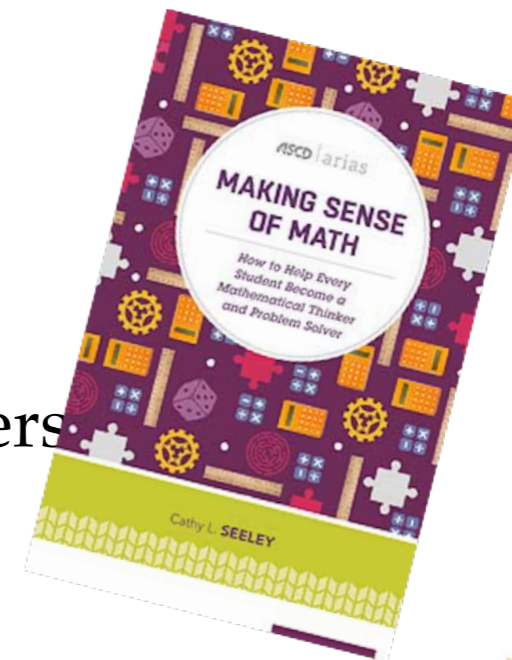
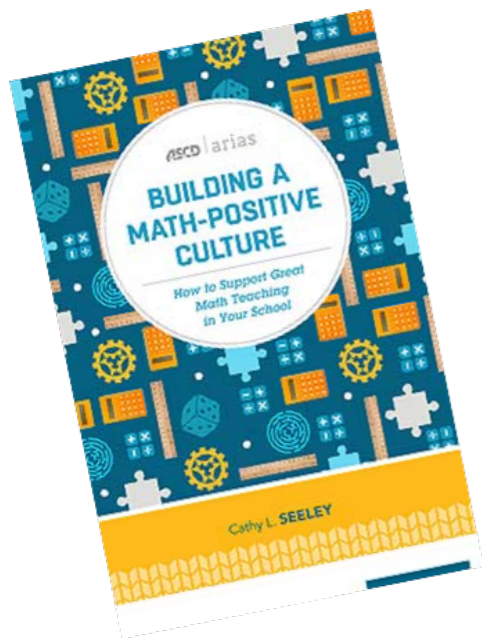
Handout:

Matt Larson, NCTM President:  
“The Elusive Search for Balance”

For a pdf of the slides: [cseeley@utexas.edu](mailto:cseeley@utexas.edu)

Two little books published April 2016  
from ASCD/NCSM/NCTM

*Making Sense of Math* (for teachers)  
*Building a Math-Positive Culture* (for leaders)



*Faster Isn't Smarter--*

*Messages About Math, Teaching, and Learning in the 21st Century*

Second (Expanded/Updated) Edition 2015 (4 new messages)

<http://mathsolutions.com/fasterisntsmarter>

*Smarter Than We Think:*

*More Messages About Math, Teaching, and Learning in the 21st Century*

Published 2014

<http://mathsolutions.com/smarterthanwethink>

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