
Implementing Standards for Mathematical Practice

— August 11, 2017 —
Leah Kosmos

Agenda



- Where did the Standards for Mathematical Practice (SMP) come from?
- SMP Activity
- Function Machine Task

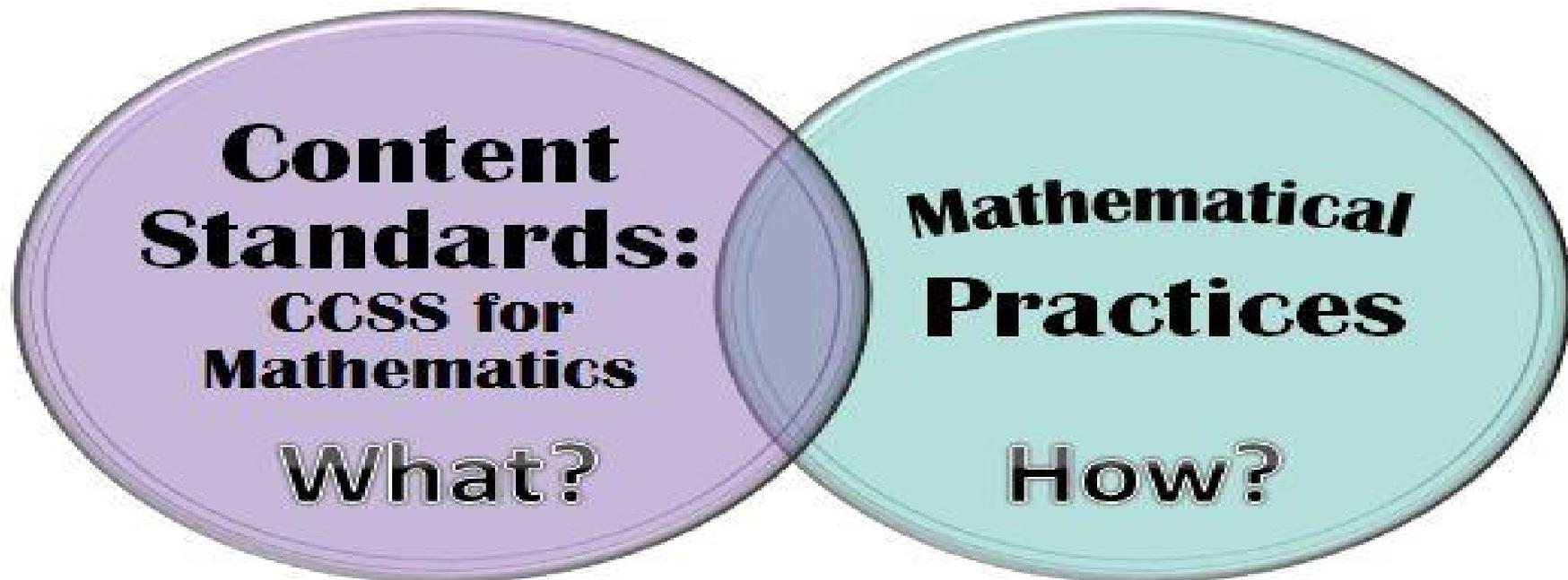
What are the Standards for Mathematical Practice?

"The Standards for Mathematical Practice describe varieties of expertise that mathematics educators at all levels should see to develop in their students"

-Common Core State Standards for Mathematics

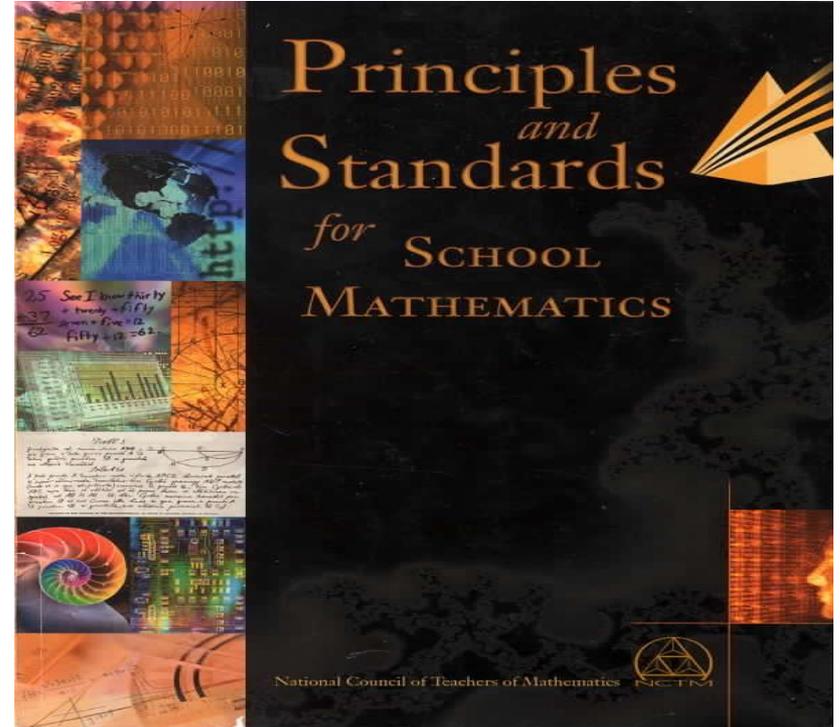
They require a shift from an emphasis on answer getting to sense making.

Standards for Mathematical Practice (SMP)

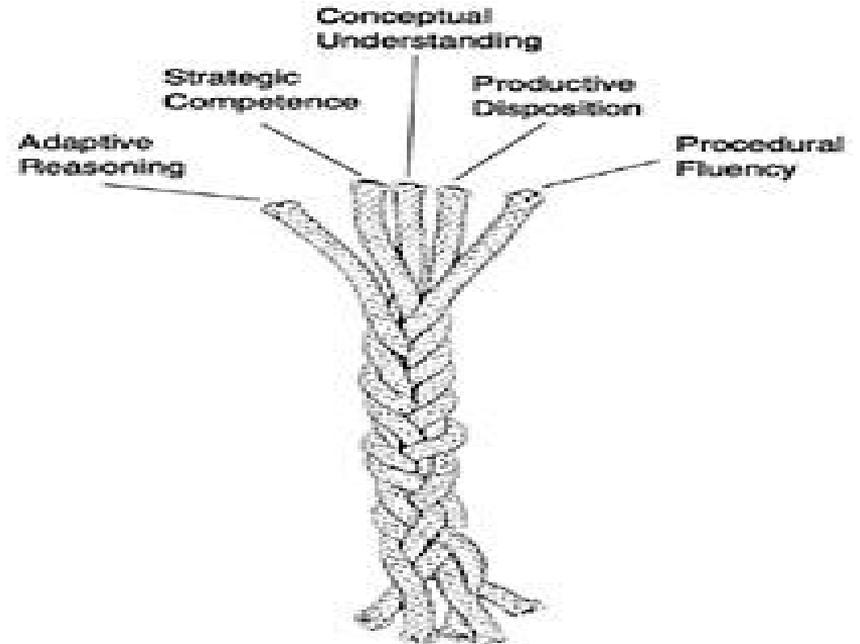
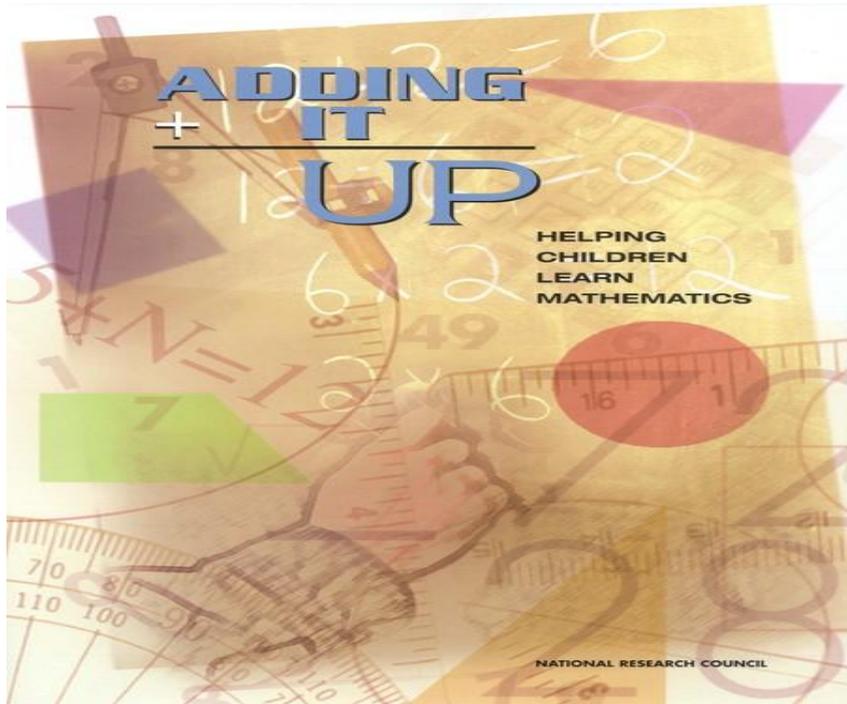


NCTM Process Standards

- Problem Solving
- Reasoning and Proof
- Connections
- Communication
- Representation



Adding It Up: Helping Children Learn Mathematics



Intertwined Strands of Proficiency

The 8 Standards for Mathematical Practice

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Standards for Mathematical Practice Activity



Standards for Mathematical Practice

Overarching habits of mind of a productive mathematical thinker

1. Make sense of problems and persevere in solving them.

6. Attend to precision.

2. Reason abstractly and quantitatively.

3. Construct viable arguments and critique the reasoning of others.

4. Model with mathematics.

5. Use appropriate tools strategically.

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

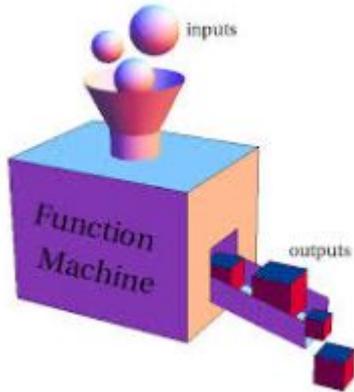
Reasoning and explaining

Modeling and using tools

Seeing structure and generalizing

Function Machines Task

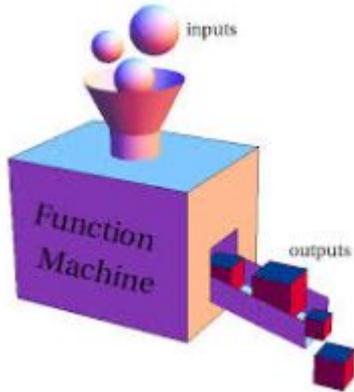
Please use private reasoning time to look through this Task.



Function Machines Task

Find a partner and clarify the instructions of the task.

Develop a plan/strategy you and your partner will use to work through the task.



Reflect back on Function Machines Task

What Standards for Mathematical Practice did you engage in while working through the task while working on it individually and with a partner?

Aha Moments?



Thank you...

A fountain pen nib is positioned at the end of the handwritten text, appearing to have just finished writing the final period. The nib is black with a gold-colored tip and is resting on the white paper.

Who created the Standards for Mathematical Practice and Why?

Phil Daro

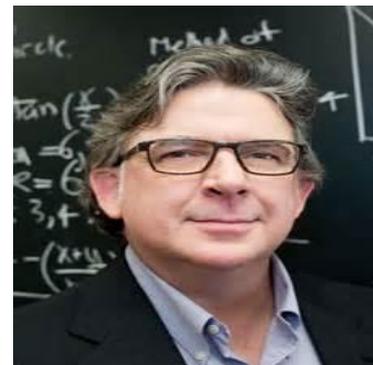
Jason Zimba

William McCallum

Mathematics Educator

Physicist

Mathematician



Phil Daro

