Division of Teaching and Learning

Digging into the Common Core Learning Standards for Mathematics: Developing Numeracy through the Major Work of the Grade

CHANCELLOR'S PRINCIPALS CONFERENCE
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Department of Education
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Our Focus Today

Develop an understanding of numeracy while considering the connection to the major work of the grade.

- Focus on the CCLSM Domains that are central to building numeracy and how they are designed and structured to support numeracy.
- Examine the coherence of the standards and how the progressions in the standards can be used to inform teaching and learning while promoting numeracy.

Guiding Questions:

- What is numeracy? Why is it important?
- How do the design and structure of the CCLSM inform learning, teaching, and coaching to build students' numeracy?

Agenda

Time	Agenda Item
5 minutes	Introduction
40 minutes	What is Numeracy and Why is it Important?
35 minutes	How does the Structure of the CCLSM Support Numeracy?
10 minutes	Reflection on the implications for teaching and learning

Part 1: What is Numeracy and Why is it Important?

Mental Math

$$36 - 19 = ?$$

Individually, mentally find an answer, paying attention to the thinking and strategies you use.

Mental Math

$$36 - 19 = ?$$

Share with a partner, take turns:

A: Share your answer and your strategy. Explain your thinking to your partner.

B: Try to understand your partner's strategy/thinking. Try to represent (make visible) your partner's thinking on paper.

Mental Math

$$36 - 19 = ?$$

Discuss at your table:

- What were the different strategies used at the table?
- What challenges did you experience in either role (A/B)?

Part 1: What is Numeracy and Why is it Important?

Times	Steps
10 minutes	Mental Math
5 minutes	Brainstorm Aspects of Numeracy
10 minutes	Read and Discuss Excerpt from Book
10 minutes	Look for Evidence of Numeracy in Video Clips
5 minutes	Table Check-in

Looking for Evidence of Numeracy Check-In

Discuss at your table:

- What are you learning and/or wondering?
- How are your teachers currently supporting numeracy at different grade levels?
- How would you describe your students' numeracy?

Part 2: How Does the Structure of the CCLSM Support Numeracy?

Part 2: How Does the Structure of the CCLSM Support Numeracy?

Times	Steps
2 minutes	Activity Introduction
10 minutes	Look for Structure in Cluster Headings
15 minutes	Use Standards to Investigate Structure Further
5 minutes	Share Findings with Table

Investigating Structure Debrief

Discuss at your table:

- What did you find out?
- What is one thing you learned?
- To what extent does the domain you explored demonstrate the coherence of the standards?

Reflection

- How would you help teachers understand and use the structure of the standards to build numeracy in their students?

- How would you use the ideas you explored in this session to inform your observations of teacher instruction and student assessment at your school?

Resources

- Building Powerful Numeracy for Middle and High School Students, Pamela Weber Harris

  Book that takes insights from research on numeracy development in elementary school and applies them to secondary schools; many problem string examples

- Number Talks, Sherry Parish

  Book and DVD about using five- to fifteen-minute classroom conversations around mental math and computation strategies

- Mathematics in the City, http://mitcccny.org

  Workshops and institutes about numeracy and numeracy routines

- How to Learn Math, http://www.youtube.com/watch?v=YFqaMmKRYIQ

  Jo Boaler describes some research on numeracy from her Stanford MOOC "How To Learn Math"

Resources (cont.)

- Context for Learning, Catherine Twomey Fosnot

  Book series of carefully crafted math situations that foster a deep understanding of essential mathematical ideas, strategies, and models
  http://www.contextsforlearning.com/

- Number Strings, http://numberstrings.com/

  Community of teachers and teacher educators interested in the design and pedagogy of number strings

- Math Reasoning Inventory

  An online formative assessment tool focused on number and operations; the video library has over 80 clips of students answering interview questions
  https://mathreasoninginventory.com/home/videolibrary

Please complete your feedback form!

Thank you!