Implementing the COMMON CORE MATH STANDARDS

FREE WEBINAR: Wednesday, May 16, 2012 2 to 3 p.m. ET

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Erik Robelen
Assistant editor, Education Week
Implementing the Common Core Math Standards

**Expert Presenters:**

**Kay Sammons**, elementary math coordinator, Howard County School District, Md.

**Matt McLeod**, math coordinator, Chicago School District
An on-demand archive of this webinar will be available at www.edweek.org/go/webinar in less than 24 hrs.
Implementing the Common Core State Standards in Elementary Mathematics

Kay B. Sammons
Coordinator of Elementary Mathematics
Howard County Maryland
Howard County

72 schools, 40 elementary
50,000 students

- Title 1 elementary schools
- Elementary schools with full-time math coaches
- Full-time RECC programs
- Elementary school enrollments range from 350 to 1,000
Collaboration

Secondary Mathematics
Public Relations
Early Childhood
School Administration
Gifted and Talented
Special Education
Making Connections

- Joint meeting with five Maryland districts
- Math Coaches
- Focus Groups
Curriculum Development

- Implementation plan
- Delivery system
- Scope and Sequences
Laying the Foundations...
Concept Progressions

(1.NBT.1) Extend the counting sequence.
1. Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

<table>
<thead>
<tr>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>1.NBT.1</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Rote to 50  • Backwards (connected to 1.OA.5)</td>
<td>Rote to 100  • Backwards (connected to 1.OA.5)</td>
<td>Rote to 100 (K)  • Start with any number  • Backwards (connected to 1.OA.5)</td>
</tr>
<tr>
<td>Count objects to 20 (K)  • Organizing by groups  • Represent objects with numerals</td>
<td>Count objects to 50  • Organizing by 10s  • Represent objects with numerals</td>
<td>Count objects to 100  • Organizing by 10s  • Represent objects with numerals</td>
</tr>
<tr>
<td>Read/write to 20 (K)</td>
<td>Read/write 50</td>
<td>Read/write 100</td>
</tr>
</tbody>
</table>
Kindergarten “goes live”
1.NBT.1

Numbers and Operations in Base Ten (1): Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

<table>
<thead>
<tr>
<th>Quarter 1</th>
<th>Quarter 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</td>
<td>Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.</td>
</tr>
<tr>
<td>a. Count to 120 orally, starting at any number less than 120.</td>
<td>d. Represent a number of objects up to 120 with a written numeral.</td>
</tr>
<tr>
<td>b. Read numerals up to 120.</td>
<td></td>
</tr>
<tr>
<td>c. Write numerals up to 120.</td>
<td></td>
</tr>
</tbody>
</table>

** Continue in quarters 3 and 4 through routines and classroom discussion.**

**Enduring Understanding**
Understanding place value leads to number sense and efficient strategies for computation.

**Essential Questions**
How does a digit's position affect its value?
### Print Resources

<table>
<thead>
<tr>
<th>Resource</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brain Compatible Activities for Mathematics K-1</strong></td>
<td>(12-13)</td>
</tr>
<tr>
<td><strong>Developing Mathematics with Unifix Cubes</strong></td>
<td>Three Cubes on your Fingers (46-47)</td>
</tr>
<tr>
<td><strong>Math Intervention: Building Number Power K-2</strong></td>
<td>(20-30)</td>
</tr>
<tr>
<td><strong>Math Intervention: Building Number Power K-2</strong></td>
<td>(100-103)</td>
</tr>
<tr>
<td><strong>Roads to Reasoning (Grade 1)</strong></td>
<td>Class Pets (30-33)</td>
</tr>
<tr>
<td><strong>Roads to Reasoning (Grade 1)</strong></td>
<td>How Many? (6-7)</td>
</tr>
<tr>
<td><strong>Roads to Reasoning (Grade 1)</strong></td>
<td>On the Farm (8-9)</td>
</tr>
<tr>
<td><strong>Roads to Reasoning (Grade 1)</strong></td>
<td>Pool Party (76-79)</td>
</tr>
</tbody>
</table>
Assessing 1.NBT.3

Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols >, =, and <.

Learning Targets:
- I can determine when a two-digit number is greater than, less than, or equal to another two-digit number.
- I can explain why a two-digit number is greater than, less than, or equal to another two-digit number.
- I can record the comparison using the symbols >, <, and =.

Formative Assessments

exit ticket 1NBT3.docx
gr1FA_1NBT3.docx
gr1FA_1NBT3-2.docx
gr1FA_1NBT3-3.docx
gr1FA_1NBT3-4.docx
exit_ticket_1NBT3.docx
Assessments

• Understanding PARCC
• Developing Plan for Assessments
  • Beginning and End-of-Year
  • Quarterly
  • Formative Assessments to drive instruction
  • Developing items
Professional Development

- Kindergarten Teachers
- Primary Teachers
- Intermediate Teachers
- Administrators
Parents and Community

- Created online resources
- Presented at PTA and International Nights
- BOE Television Spots
- Newsletters
- Parent Friendly Practices
- “What Your Child Will Learn” with parent friendly standards
Questions?

Kay B. Sammons
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Implementing the CCSS demands a significant cultural shift
Chicago Public Schools
Transition to the CCSS-M

Matt McLeod
Math Specialist
Department of Mathematics and Science
2011 – 2012 Facts and Stats

683 schools ~405,000 students
~25,000 teachers, ~43,000 employees

86% from low-income families

African American – 42%
Latino – 44%
White – 9%
Asian – 3%

Budget – $5.11 Billion

Source: Office of Strategy, Research and Accountability
District Structure

Central Office → 14 ES Networks → 5 HS Collaboratives → 1 Alternative Schools Network → 683 Schools

= Provides guidance and support
## CCSS Instructional Shifts

### Literacy
1. Regular practice with complex text and its academic vocabulary
2. Building knowledge through content-rich informational text
3. Reading and writing grounded in evidence from text

### Mathematics
1. Focus on critical areas to develop deep conceptual understanding and procedural fluency
2. Integrate the mathematical practice standards throughout instruction
3. Maintain coherence and continuity to link learning within and across grades
CPS Mathematics Content Framework: Position Paper-Bridge Plan

**Bridge Plan**: Term used to describe the 3-year transition to implementation of the CCSS-M.

<table>
<thead>
<tr>
<th>Grade Band</th>
<th>‘12-’13 Year 1</th>
<th>‘13-’14 Year 2</th>
<th>‘14-’15 Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-5</td>
<td>Optional Work with Math Practices</td>
<td>Implement Mathematics Content Framework 2.0 (Grades K-5)</td>
<td>100% CCSS-M Content</td>
</tr>
<tr>
<td>6-8</td>
<td>Implement Mathematics Content Framework 1.0 (Grades 6-8 )</td>
<td>Implement Mathematics Content Framework 2.0 (Grades 6-8 )</td>
<td>100% CCSS-M Content</td>
</tr>
<tr>
<td>High School</td>
<td>Implement Mathematics Content Framework 1.0 (Algebra I and Geometry)</td>
<td>Implement Mathematics Content Framework 2.0 (Algebra I, Geometry, and Algebra II)</td>
<td>100% CCSS-M Content</td>
</tr>
</tbody>
</table>
CPS Mathematics Content Framework: Overview

CPS Mathematics Content Framework 1.0

- Position Paper
- CPS Mathematics Planning Guide 1.0
- Mathematics Toolsets for Assessments, Rigorous Tasks, and Professional Learning
<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Big Idea(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades 6 – 8</td>
<td>Expressions and Equations Domain</td>
</tr>
<tr>
<td>Algebra I</td>
<td>• Linear and Exponential Relationships</td>
</tr>
<tr>
<td></td>
<td>• Quadratic Functions and Modeling</td>
</tr>
<tr>
<td>Geometry</td>
<td>• Congruence, Proof, and Constructions</td>
</tr>
<tr>
<td></td>
<td>• Circles With and Without Coordinates</td>
</tr>
</tbody>
</table>
Getting it to the classroom

CPS Mathematics Content Framework

- Content specialists
- Early Adopters
- Network ISLs

Teacher Leaders

Classroom Teachers
Thank you!

- Jesch A. Reyes, Director  
  Department of Mathematics and Science  
jareyes1@cps.k12.il.us

- Matthew S. McLeod, Math Specialist  
  Department of Mathematics and Science  
msmcleod@cps.k12.il.us
A learning trajectory is...a researcher-conjectured, empirically-supported description of the ordered network of constructs a student encounters through instruction (i.e. activities, tasks, tools, forms of interaction and methods of evaluation), in order to move from informal ideas, through successive refinements of representation, articulation, and reflection, towards increasingly complex concepts over time.

(Confrey et al., 2009)
CCSS signals shift from deficit model to individual learning progression model.
Ability to track and improve student progress each day becomes even more critical.

How we measure student progress:

- **Fig 1: Yesterday**
  - Beginning of Year
  - End of Year

- **Fig 2: Tomorrow**
Wireless Generation Webinar Series
Implementing CCSS

www.wirelessgeneration.com/beacon-webinar-archive

Jere Confrey PhD
Research Author

Cynthia Shields
New Hanover County Schools

Ellen Edmonds
Wireless Generation
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Implementing the Common Core Math Standards

Required Reading from *Education Week*:

**Special Report: Math, Literacy and Common Standards**

Nearly every state has signed on to use the Common Core State Standards as a framework for teaching English/language arts and mathematics to students. This report examines the progress some states have made in implementing the standards, what preparations need to be undertaken, and the challenges that policymakers and educators face in achieving the goals of the standards.
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