Common Core State Standards

Take a moment…

What is on your mind?

Common Core State Standards

Agenda:
- Understand the Intent of CCSS
- Investigate the Structural Design
- Analyze 1 Domain for Grades 6 – 8
- Explore Implications for Classroom Practice

Common Core State Standards

"Standards for Mathematical Content are a balanced combination of procedure and understanding."

CCSS, p. 17

Common Core State Standards Development

Built on Progressions-

Narrative documents describing the progression of a topic across grade levels, informed by research on children's cognitive development and by the structure of mathematics.

Common Core State Standards Intent

Same goals for all students

Coherence

Focus

Clarity and specificity

4 C's of the Common Core

Communication

Collaboration

Creativity

Critical Thinking

Common Core State Standards Structural Overview

K-8

Grade
Domain
Cluster
Standards

(No pre-K Common Core Standards)

High School

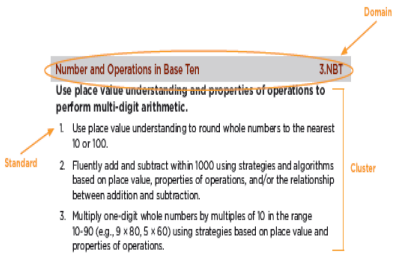
Conceptual Category
Domain
Cluster
Standards

Common Core State Standards

Structural Format:

- Domains are larger groups of related standards.
- Clusters are groups of related standards.
- Standards define what students should understand and be able to do.

Common Core State Standards



Domain Overview

- Look at Domain Overview Chart
- Think/ Pair/ Share
  - What stands out about these domains categories?
  - What implications might your observations have for the scope and sequence of your current content?

Standards in Grades 6 - 8

Grade 6… 29 Standards in 5 Domains
Grade 7 … 24 Standards in 5 Domains
Grade 8 … 28 Standards in 5 Domains

Middle School Mathematics = 81 Standards

Less is More

- Time to deepen conceptual understandings
- Time to engage students in meaningful and relevant mathematics
- Time to identify, highlight and celebrate the mathematical practices as students' demonstrate them

Digging Deeper

- Look at the chart: Cluster Headings Across Grade Levels
- This is the overview of the clusters for this domain- Expressions and Equations

Digging Deeper

Follow these steps:

1. Select grade level
2. Read standards within each cluster
3. (On signal) Find partner who has also read the standards for your same grade level.
4. Use worksheet, Domain: Expressions and Equations Progression to express the standards in your own words.
5. Create a focus question(s) that might be used with students.

Digging Deeper

Follow these steps:

6. Join a table group with others who have worked on the two other grade levels. Make sure that all three grade levels are represented.
7. Report out: Use chart, Cluster Headings Across Grade Levels
   1. Begin with grade 6 first cluster- share understanding and focus questions
   2. Grade 7 shares their understanding and focus questions for their first cluster
   3. Grade 8 shares their understanding and focus questions for their first cluster

Digging Deeper

Follow these steps:

8. Repeat for the other clusters in each grade level.

As a table, what did you notice?

What impact might your findings have on your current grade level content?

Digging Deeper

As a table, what did you notice?

What impact might your findings have on your current grade level content?

Record your table's findings on newsprint.

Feet…Meet…Greet

- On signal, stand and go meet someone with whom you have not worked.
- Greet that person and share some of the ideas that were discussed at your table groups.
- Take a Gallery Walk

  Go around room to see what others have said.

Mathematical Practices and the Common Core State Standards

"The Standards for Mathematical Content are a balanced combination of procedure and understanding. Expectations that begin with 'understand' are often especially good opportunities to connect the practices with content."

CCSS Mathematical Practices: Introduction

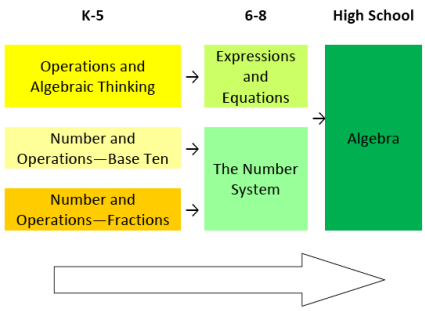
Mathematical Practices and the Common Core State Standards

7.EE

2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. *For example, a + .05a = 1.05a means that "increase by 5% is the same as "multiply by 1.05."*

Which mathematical practice (practices) connects with 7.EE?

Focusing attention within Number and Operations



Where we have been…

Looking back…

- Meaning of Standards for Mathematical Practice
  - Experienced as Learner
  - Reflected as Teacher
- Understanding CCSS
  - Domains -> Clusters -> Standards

Connecting CCSS to Classroom Practice: What Research Tells Us

- On-going cumulative distributed practice improves learning and retention. *(Daily student active reviews)*
- Connection to an individual's prior knowledge significantly influences what is learned in a particular situation. *(Content development)*
- In class formative assessment increases student thinking. (*Students Demonstrate Understanding)*
- Clear, meaningful, specific, timely feedback improves learning. *(Guided Practice)*

Connecting CCSS to Classroom Practice: 6 Secrets of Unit Design

Think back and reflect on the implementation of our lesson, Mathematical Meet and Greet.

Use chart, Six Secrets of Unit Design, to record your thoughts.

Handout is titled "Lesson Design." Change that to "Unit Design" or "Cluster Design."

What **BASIS** should you decide that the lesson could have been better?

Considering our lesson "Mathematical Meet and Greet…

- How was students' prior knowledge addressed in creating the lesson?
- This is Lesson Design Secret # 1.

What **BASIS** should you decide that the lesson could have been better?

Lesson Planning Secret # 2

- How much of the lesson/ material was covered through student exploration or student questioning (as compared to didactic lecture)?
- Did students make conjectures and test predictions, use estimations and discuss ideas with each other?

What **BASIS** should you decide the lesson could have been better?

Lesson Planning Secret # 3

- What kinds of activities were used to engage students and stimulate intellectual rigor?
- Research on physical movement…14 % improvement in student learning.

What **BASIS** should you decide the lesson could have been better?

Lesson Planning Secret # 4

- What kinds of in class formative assessments were used to form the lesson as well as evaluate the effectiveness of the lesson?

What **BASIS** should you decide the lesson could have been better?

Lesson Planning Secret # 5

- Reflect on the depth of conceptual understanding of the content demonstrated by students.
  - How did the lesson provide high cognitive demand task opportunities?
  - Was there evidence of rigor, constructive criticism, and challenging ideas observed?

What **BASIS** should you decide the lesson could have been better?

Lesson Planning Secret # 6

- Reflect on the processes that students were asked to use to manipulate information, arrive at conclusions, and evaluate knowledge claims.
  - Was there evidence that students are part of a learning community?
  - Did students communicate their ideas to others?

6 Secrets of Lesson Design

As leaders, how might you use these "secrets" to support the teaching and learning in your context?

Reflection

- Take a moment for yourself:

3 - Understandings that I have about the CCSS

2 - Action steps that I want to implement

1 - Question (or more) that I have

A Resource

- Bill McCallum at the University of Arizona
- *http://math.arizona.edu/~wmc/*
  - Standards Progressions for Common Core
  - Gr 6- 8 Progression on Expressions and Equations… On your drive!

Common Core State Standards: Appendix A

In terms of Curriculum:

High School uses Courses

K- 5 has Grades

Middle School has both!

Common Core State Standards: Appendix A

CCSS emphasizes rigor.

CCSS values high expectations.

CCSS impact on Middle School Content…

Common Core State Standards: Appendix A

Impact on Middle School Content:

- Two Levels

Common Core State Standards: Appendix A

Implementation Plan

Action Steps: 2011- 2012
2012- 2013
2013- 2014

Common Core State Standards: Appendix A

This is the work for every district.

Create a plan beginning with your non-negotiables.

How will we close the "Aspirations-Tolerance Gap"?