



Implementing the Mathematics Common Core



Washoe County School District
Every Child, By Name And Face, To Graduation™



Thank you!



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Essential Questions

How can district math resources support the implementation of our professional learning into unit/lesson planning and instruction?



Conceptual understanding means.....

- Book bits.....
 - Please select a color from the envelope on your table
 - Find a partner from another table
 - Read and discuss each “bit”. When you’re finished trade colors.
 - Find a partner with another color. Repeat the process.
 - Your goal is to read and discuss every color.



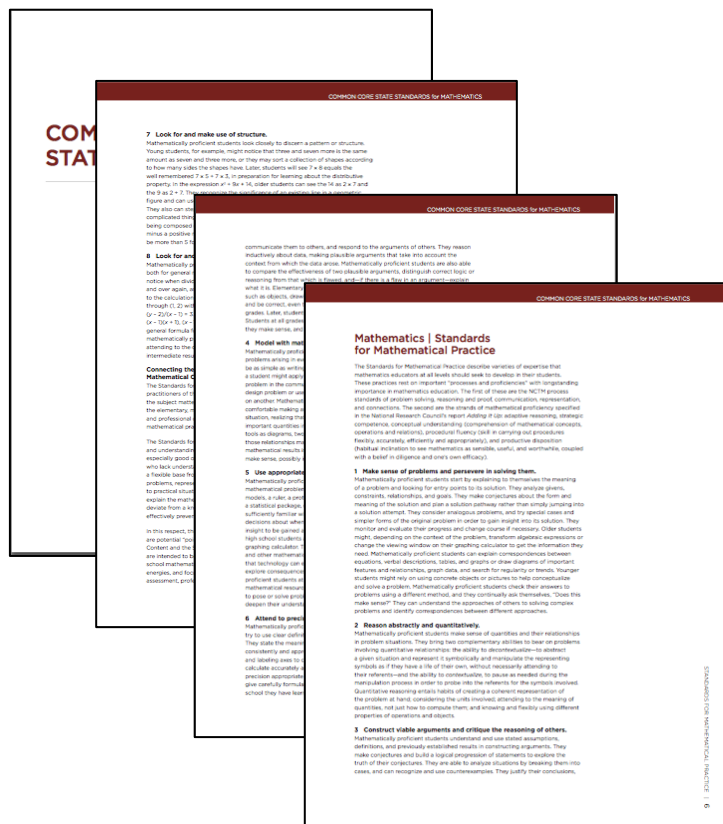
- “Benefits of Teaching through Problem Solving”
By Diana Lambdin, Chapter 5
- **Read**
 - “What Does Understanding Mathematical Ideas Mean?” (Pg. 5)
 - “Problem Solving and Understanding” (Pg. 6-7)
 - “Benefits of Learning with Understanding” (Pg. 7, para 1)
- **Highlight two sentences to discuss**



Connections to Professional Learning

Math Practices

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.**





Connections to Professional Learning

Connection to the Landscape

“While there are progressions and trajectories within mathematics, these often occur in a web-like format. Therefore, they are not necessarily linear.”

Elementary and Middle School Mathematics –Van De Walle, 2010

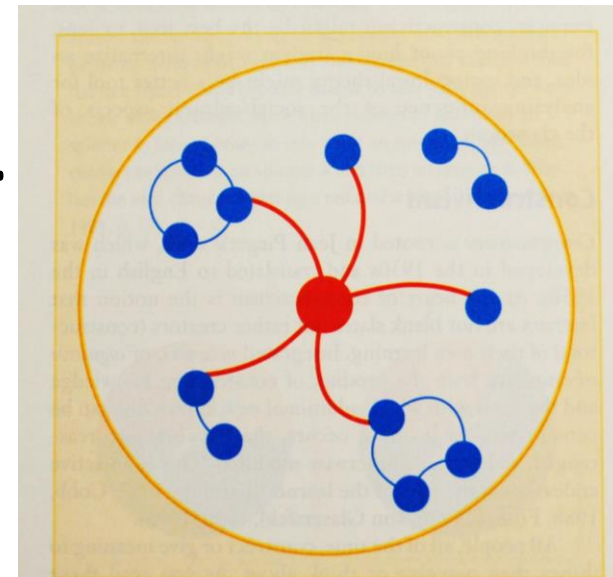


FIGURE 2.7 We use the ideas we already have (blue dots) to construct a new idea (red dot), in the process developing a network of connections between ideas. The more ideas used and the more connections made, the better we understand.



Connections to Professional Learning

District Performance Plan:

COMPONENT II: Inquiry Process & Action Plan Design- Priority Need/Goal 1

Goal 1: WCSD will ensure student success and narrowing achievement gaps by implementing a district-wide curriculum based on Nevada Academic Content Standards (NVACS), designed to meet the needs of ALL students and supporting the curriculum with aligned instruction, assessments, and appropriate curricular resources.

Measurable Objective:

- 2014-2015 will be a baseline year with SBAC assessments, thus there is no true current baseline from which to set objectives. We will expect a temporary decrease in student performance rates during the baseline year of SBAC — our objective is to decrease at a rate less than the state and consortium.
- Each Racial/Ethnic student population and each Special Program student population (i.e. English Language Learners, students with Individualized Education Plans, and students receiving Free/Reduced Lunch) will grow at or above the district's overall Median Student Growth Percentile, as measured by the Nevada Growth Model of Achievement.
- The percentage of site administrators and teachers reporting consistent use of Instructional Practice Guides for lesson planning, and instructional observation and reflection will increase by 20%.
- The percentage of site administrators, instructional coaches, teachers, and instructional ESPs who report familiarity with WCSD Core NVACS Materials and curriculum tools adopted and/or endorsed by WCSD will reach 50% by October 2014 and 75% by May 2015.

Measurable Objectives

- Familiarity with WCSD Core NVACS materials adopted and/ or endorsed to 50% by October 2014.
- Use of Instructional Practice Guides for planning and reflection will increase by 20%



Connections to Professional Learning

District Performance Plan:

Monitoring Plan				
Action Step	Resources and Amount Needed for Implementation (people, time, materials, funding sources)	Artifacts/Evidence of Progress Information (Data) that will verify the action step is in progress or has occurred.	Timelines, Benchmarks, and Position Responsible	Monitoring Status
1. Nevada Academic Content Standards will be implemented at all schools, K-12, with adopted core materials as the base. Instructional Practice Guides will inform the use of materials to supplement the core. (Note: Current curriculum tools are vertically and horizontally aligned with the Nevada Academic Content Standards)	Already in place: Math (K-5) WCSD pacing timelines and curriculum guides; Math (6-12) course guides; ELA (K-6) HM w/ Basal Alignment Project (BAP) and the Read Aloud Project (RAP) supplement with close reading exemplars; ELA (7-8) Curriculum guides. Maintain or Increase Implementation Specialist and/or coaches. Parent guides for standards (to be created) and distributed. Funding: Substitutes and stipends to continue to refine documents after gathering informal and	Base WCSD NVACS Curriculum support materials identified in WCSD electronic and hard copy documents Document strategic communication efforts Instructional Practice Guides/eWalk data; implementation evaluation of NVACS and curriculum	NCCAT-D Indicator School year 2014-2015 Implementation monitored through a team effort to include site administrators, area superintendents, office of academics, and NVACS implementation evaluation team using monitoring tools developed through the evaluation steering committee. Evaluation of curriculum implementation and supports using methods	1.1a; 1.2b

Action Steps

- WCSD Pacing timelines and Curriculum Guides
- Instructional Practice Guides (IPG)



What would you like to focus on for this school year?

• Instructional Practice Guides

– IPG: Core Action 2

• Planning

– Pacing & Unit Guides

• Differentiating Instruction:

– Mathematical Tasks, Models, and Making Learning Visible

CCSS INSTRUCTIONAL PRACTICE GUIDE

MATH K-8

This guide provides concrete examples of what the Core Actions for implementing the Common Core State Standards (CCSS) for Mathematics in grades K-8 look like in daily planning and practice. It is designed as a developmental tool for teachers and those who support teachers and can be used to observe a lesson and provide feedback on its guide lesson.

Date: _____ Class: _____

Teacher: _____ Unit or Lesson: _____

Grade 3 Unit 1: Routines, Review and Assessment

Big Conceptual Idea: Math Practices (CCSS p. 6-8)

Read all unit lessons, and consider highlighting pages 14-15 and applicable Teacher's Reference Manual excerpts prior to unit instruction.

Instructional notes:

Unit 1 focuses on building foundational skills, routines and procedures, and mathematical practices that students will become secure in throughout the year. A number of activities for math that children have encountered in earlier grades provide you with a snapshot of their mathematical background and capabilities. The creating of a cooperative learning environment is essential for whole class discussions, daily lessons, and putting math practices into place. Teachers are modeling the expectations for a productive learning environment. The hands-on nature of this unit nicely supports Van de Walle, Chapter 2 and the concept of "doing mathematics". This will establish a culture of mathematics and respectful mathematics that will establish norms and high expectations throughout the year. Consider incorporating cooperative grouping structures, classroom discussion structures (talk moves) and accountable talk expectations.

Enduring Understandings:

By the end of this unit students are secure in:

- Understanding classroom routines
- How to use resources for accountable talk, tools (number grid, clocks, calculator, and Reference book)
- Access materials in classroom
- How math discussions are held
- Respectfully engaging in conversations

Students are exploring a developing understanding:

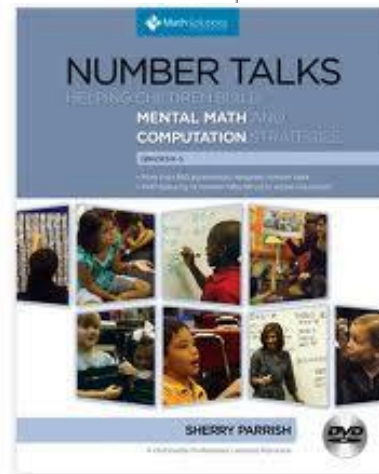
- Math Practices
- Tell and write time to the nearest 10
- Fluently add and subtract within 100
- Operations, and/or the relationship
- Draw a scaled picture graph and a dot

Some generalized misconceptions or partial Mathematical Practices:

Students will begin the Mathematical Practice Important to Facilitate Mathematical Practices

Students often believe may not find value in a difficult to verbalize discussion.

Planning is all about practice





WCSD Curriculum Documents

WCSD Mathematics Curriculum Guide

Grade 3 Unit 1: Routines, Review and Assessment

Big Conceptual Idea: *Math Practices* (CCSS p. 6-8)
Read all unit 1 lessons, unit content highlights pages 15-17 and applicable Teacher's Reference Manual excerpts prior to unit instruction.

Instructional notes:
 Unit 1 focuses on building foundational skills, routines and procedures, and mathematical practices that students will become secure in throughout the year. A number of activities for math that children have encountered in earlier grades provide you with a snapshot of their mathematics background and capabilities. The creating of a cooperative learning environment is essential for whole class discussions, daily lessons, and putting math practices into place. Teachers are modeling the expectations for a productive learning environment. The hands-on nature of this unit nicely supports Van de Walle, Chapter 2 and the concept of "doing mathematics". This will establish a culture of mathematics and respectful mathematicians that will establish norms and high expectations throughout the year. Consider incorporating cooperative grouping structures, classroom discussion structures (talk moves) and accountable talk expectations.

Enduring Understandings:
By the end of this unit students are secure in:

- Understanding classroom routines
- How to use resources for accountable talk, tools (number grid, clocks, calculator, and Reference book)
- Access materials in classroom
- How math discussions are held
- Respectfully engaging in conversations

Students are exploring a developing understanding in:

- Math Practices
- Tell and write time to the nearest minute and measure time intervals in minutes (3.MD.A.1).
- Fluently add and subtract within 1,000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction (3.NBT.A.2).
- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories (3.MD.B.3).

Some generalized misconceptions or partial understandings that teachers may observe during instruction include:

Mathematical Practices	Students will begin the year with varying levels of exposure and understanding within each Mathematical Practice. As students continue to develop into mathematicians, it is important to facilitate meaningful opportunities that allow students to engage in the Mathematical Practices.
Classroom Discussion	Students often believe discussions are teacher lead and the teacher is always right. They may not find value in another student's thinking and strategies. Students may also find it difficult to verbalize their thinking and be active listeners when mathematics is the focus of discussion.

Planning Units to the Common Core Curriculum Resources
 All inquiries should be made to csk@washoeschools.net July 2014

- **Clarify Learning Targets**
 - When planning teachers may write essential questions to support the learning.
 - How will you assess these understandings?
- **Elicit Evidence**
 - What does understanding look like?
 - What evidence will you observe or collect throughout the unit?
- **Differentiating Instruction**
 - Mathematical Tasks, Models, and Making Learning Visible



Connections to Math District Resources

Instruction Practice Guides

CCSS INSTRUCTIONAL PRACTICE GUIDE

CORE ACTION 2: Employ instructional practices that allow all students to master the content of the lesson.

INDICATORS	EVIDENCE OBSERVED OR GATHERED ²	Notes:
A. The teacher uses explanations, representations, and/or examples to make the mathematics of the lesson explicit.	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>Teacher instruction is limited to showing how to get the answer.</p> <p>Teacher instruction goes beyond showing how to get the answer.</p>	
B. The teacher poses high quality questions and problems that prompt students to share their developing thinking about the content of the lesson.	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>Questions and problems do not prompt students to share their developing thinking.</p> <p>Questions and problems prompt students to share their developing thinking.</p>	
C. The teacher provides time for students to work with and practice grade-level problems and exercises.	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>Students are given limited time to work with grade-level problems and exercises.</p> <p>Students are given extensive opportunity to work with grade-level problems and exercises.</p>	
D. The teacher uses variation in students' solution methods to strengthen other students' understanding of the content.	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>A single solution method is provided and discussed.</p> <p>A variety of student solution methods are shared and examined together to support understanding.</p>	
E. The teacher checks for understanding throughout the lesson, using informal, but deliberate methods (such as questioning or assigning short problems).	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>There are few or no checks for understanding or understanding of only a few students is assessed.</p> <p>Checks for understanding are used throughout the lesson to assess progress of all students.</p>	
F. The teacher guides student thinking toward the focus of the lesson and summarizes the mathematics with references to student work and discussion.	<div> <div>1</div> <div>2</div> <div>3</div> <div>4</div> </div> <p>The lesson concludes with no summary of the focus.</p> <p>The mathematics of the lesson is summarized with reference to student work and discussion.</p>	

2 These ratings may be recorded over the course of 12-24 days per grade.

Published 12/1/2013. Send feedback to info@csde.net

STUDENT ACHIEVEMENT PARTNERS Find additional resources at achievethecore.org



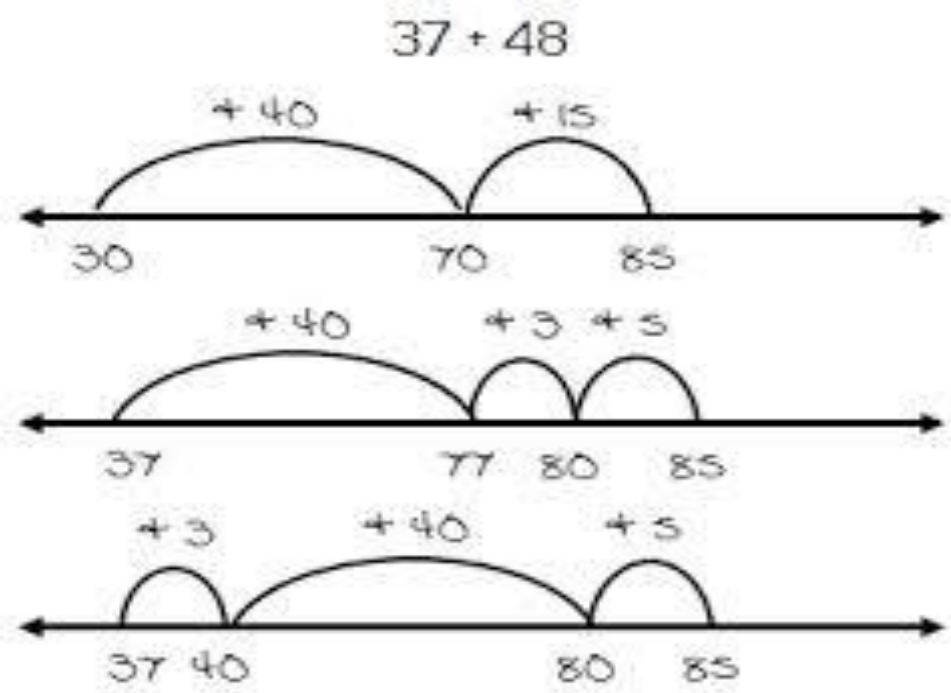
Connections to Math District Resources

Instruction Practice Guides

1. Silently read through Core Action 2 highlighting connections you see to our work from last year and 8/5, 8/6 professional development.
2. Discuss with your table what you highlighted.



Number Strings Challenge (Light)



- Please find partners of opposite colors.
- Select one partner as the mathematician and the other partner as the recorder.
- Partner one solves each problem on one sheet mentally while the other participant scripts their thoughts using a number line.