OUR JOURNEY FOR MAKING THE CCSSM A REALITY

CMC North – December 6, 2014

Sophia Burr and Christine Roberts

Who's in the room?

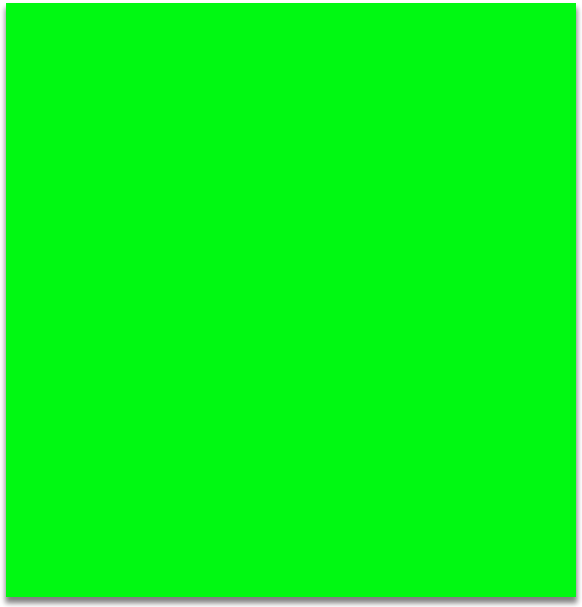
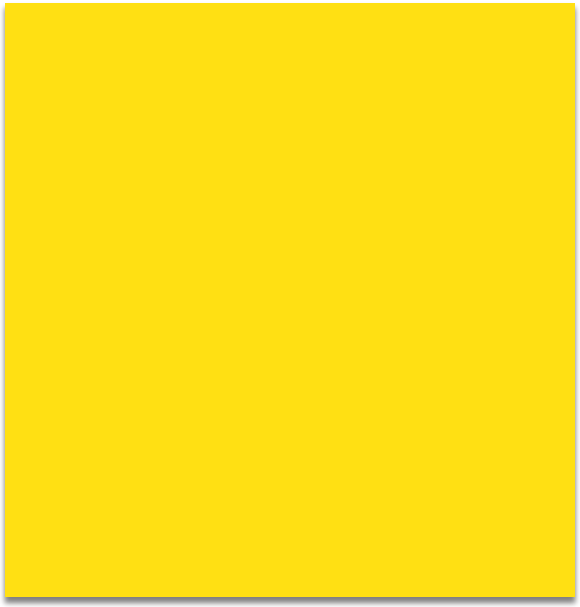




Table Introductions . . .

With your group,

- Introduce yourself: name, role, grade levels
- Describe a time you enjoyed learning math.
- Describe a time when you enjoyed teaching math.

Goals

- Share our journey of implementation, including cycles of professional development, district-wide math routines, and unit/chapter planning

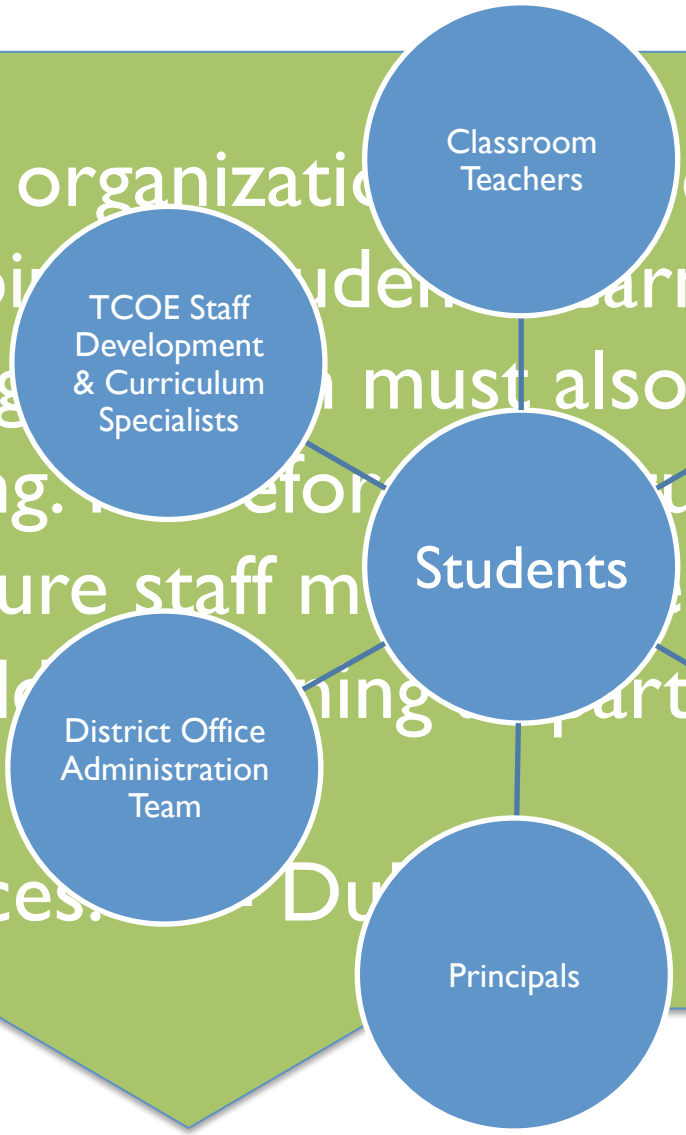
- Explore, discuss, and ask questions about our experiences with implementation

Our Journey…

Year	Description of Activity
2010 – 2011	Build awareness and knowledge of CCSSM K-12
2011 – 2012	Implementation of CCSSM in grades K – 1 and 8
2012 – 2013	Implementation in grades TK, K – 1, 2, and 8
2013 – 2014	Implementation in grades TK – 9. Created units for grades K – 6. Grades 7 – 9 adopted curriculum
2014 – 2015	Continue implementation. Adopted CCSSM curriculum for grades K – 6 and 7 – Math 2
2015 and Beyond	Strengthen implementation and work on coherence through vertical articulation. Implement Math 3.

Teamwork Makes the Dream Work!

"If the organizati ecome effective in helpi uden arn, lts in the org must also ually learning. efor ures created to ensure staff m ngage in job-embed ning part routine work practices. Du



DUSD Mathematics Vision Statement

Through high quality mathematics instruction and assessment, DUSD students will have the mathematics content knowledge, conceptual understanding, and problem solving ability to succeed in college and career.

Cultivating Excellence

Dinuba Unified School District

DUSD Mathematics Vision Statement:

Through high quality mathematics instruction and assessment, DUSD students will have the mathematics content knowledge, conceptual understanding, and problem solving ability to succeed in college and career.

Mathematics Instruction	Mathematics Assessment
• Rigorous tasks with age appropriate complexity of reasoning	• Use of Formative Assessment Processes within daily lessons in order to make immediate adjustments to instruction and learning
• Strong conceptual understanding	• Use of rigorous, standards aligned common end of unit assessments to inform instruction and learning
• Alignment to grade level content standards and the Standards for Mathematical Practice	• Use of rigorous standards-aligned, summative benchmarks three times a year to analyze achievement trends

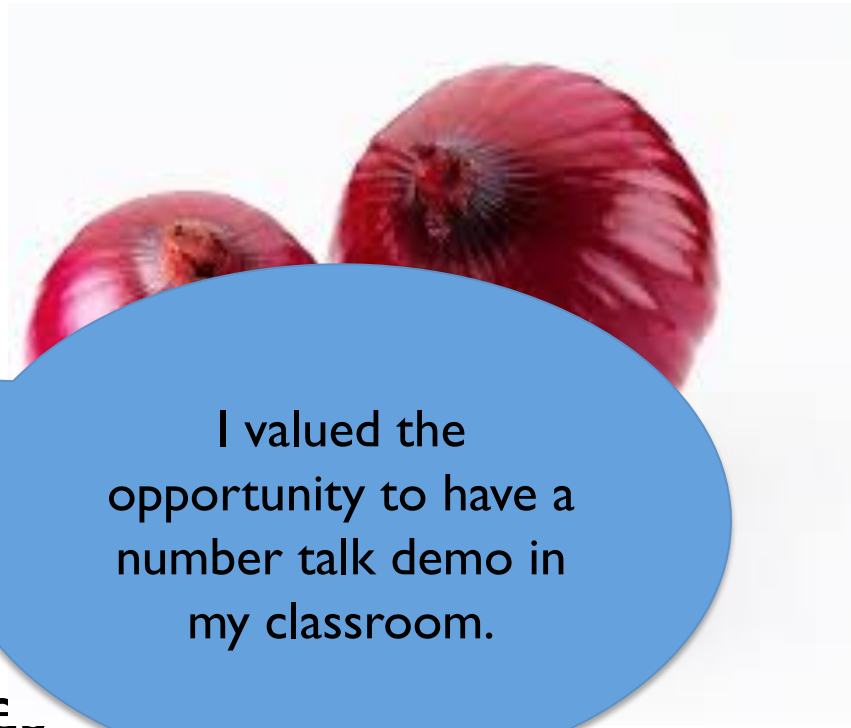
The PLC Teaching-Assessing-Learning Cycle

1. ***Grade level or department teams agree on the learning targets for the unit and design/agree upon the common unit and common assessment instrument.***
2. ***Teachers implement the unit using formative assessment processes.***
3. ***Students take action on in-class formative assessment feedback.***
4. ***Students use formative assessment instruments for motivation, reflection and action.***
5. ***Grade level or department teams use ongoing assessment feedback to improve instruction.***

Layers of Su

- On-going Professional Development
- Strategies Booklet
- Classroom Demos
- Lesson Study
- Chapter/Unit Planning
  - Chapter Overviews
  - Chapter Assessment Guide

The ability to work together, navigate the completion of tasks in teams, and establish ownership of our shared decisions.

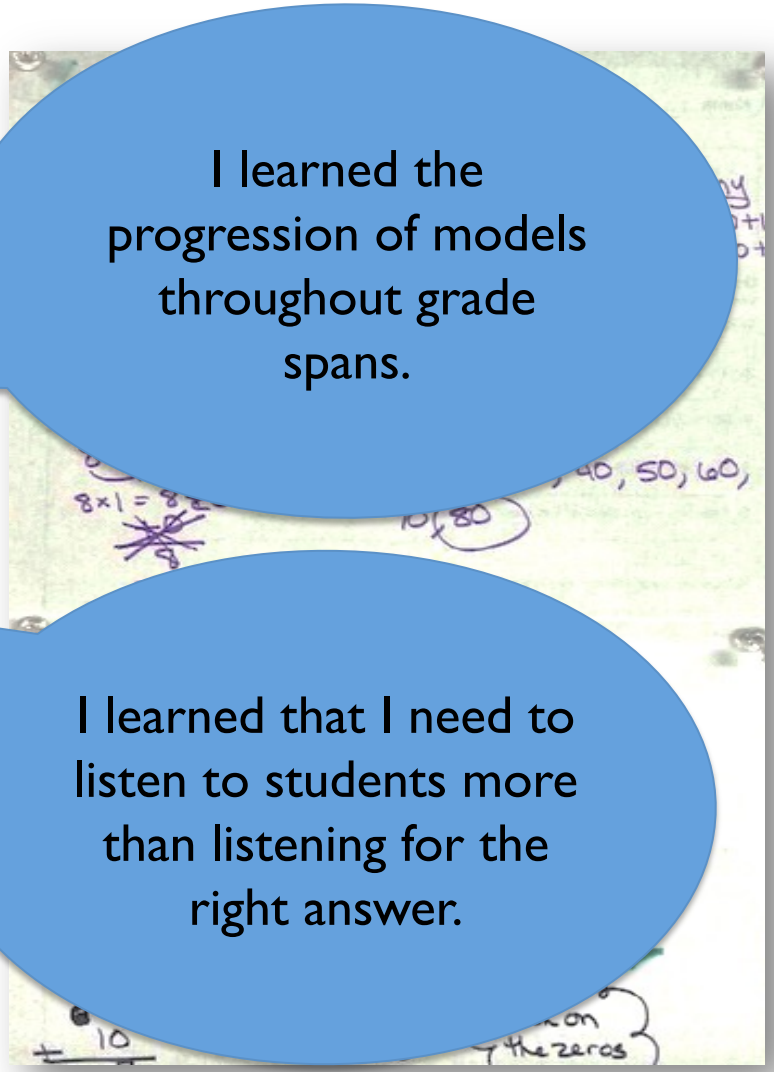


I valued the opportunity to have a number talk demo in my classroom.

Cycles of Professional Development

In an excellent mathematics program, educators hold themselves and colleagues accountable for the mathematical success of every student and for their personal and collective professional growth toward effective teaching and learning mathematics.

Guiding Principles for School Mathematics, NCTM *Principles to Actions*, 2014

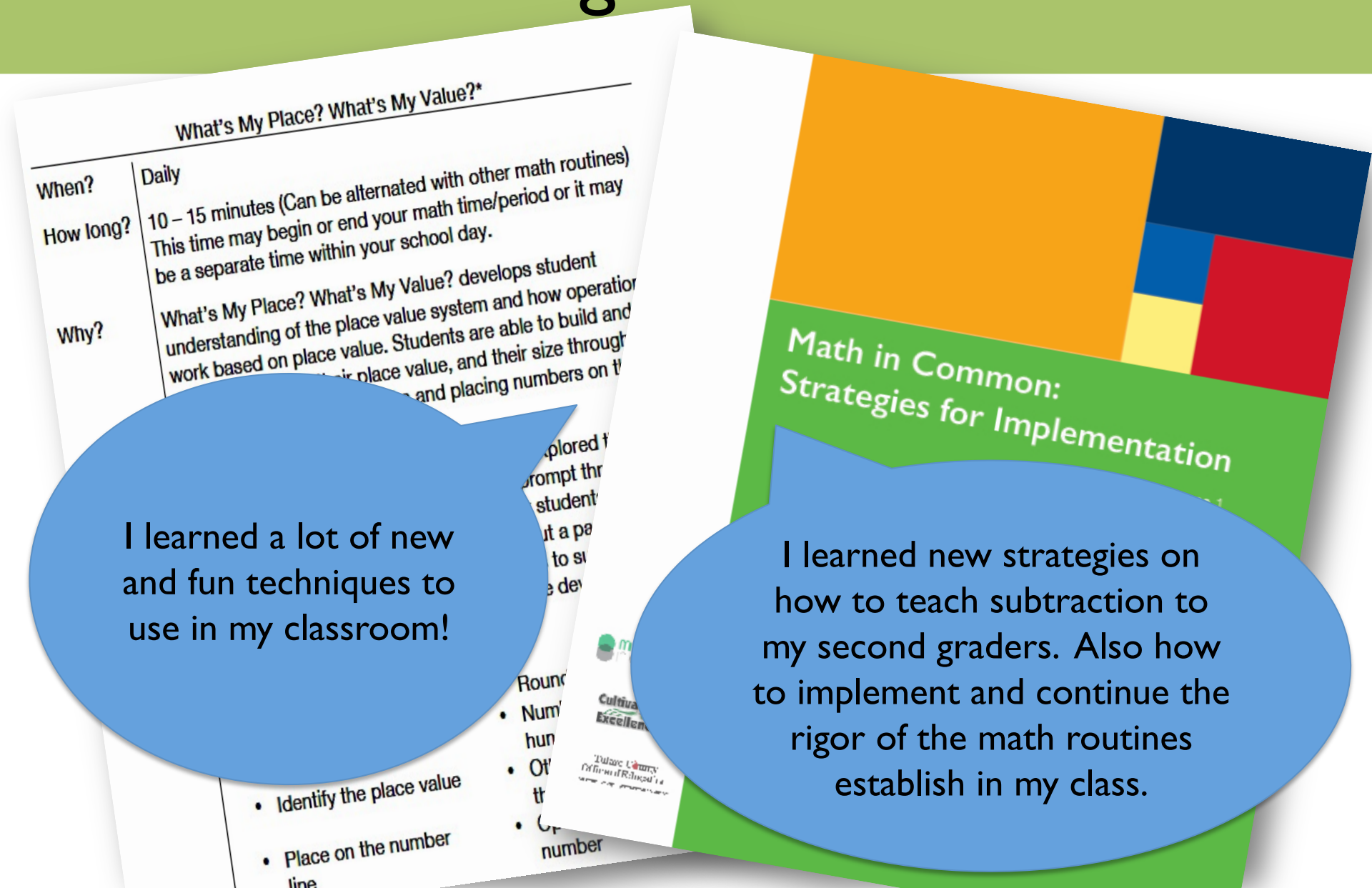


Cycles of Professional Development

2010 – 2013	2013 – 2014	2014 – 2015
• TCOE 2 Day Implementation Institutes	• Summer Unit Planning (optional)	• Summer Chapter Support and Assessment Planning (optional)
• TCOE book studies (optional)	• Grade-level planning days to support implementing grade levels	• Grade-level planning days to support implementing grade levels

• Grade-level planning days to support implementing grade levels	• 3 District Mathematics Professional Development days for each grade level
	  • Number Talks
	  • NBT Progression, What's My Place? What's My Value?
	  • OA Progression, coherence of operations
		• 2.5 District Mathematics Professional Development days for each grade level
		  • Mathematical Practices
		  • Instructional Models, Math Strategies
		  • Tape Diagrams

Strategies Booklet



Standards for Mathematical Practice

Overarching Habits of Mind

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

6. Attend to precision.

Reasoning & Explaining

2. Reason abstractly and quantitatively.

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

Modeling & Using Tools

4. Model with mathematics.

5. Use appropriate tools strategically.

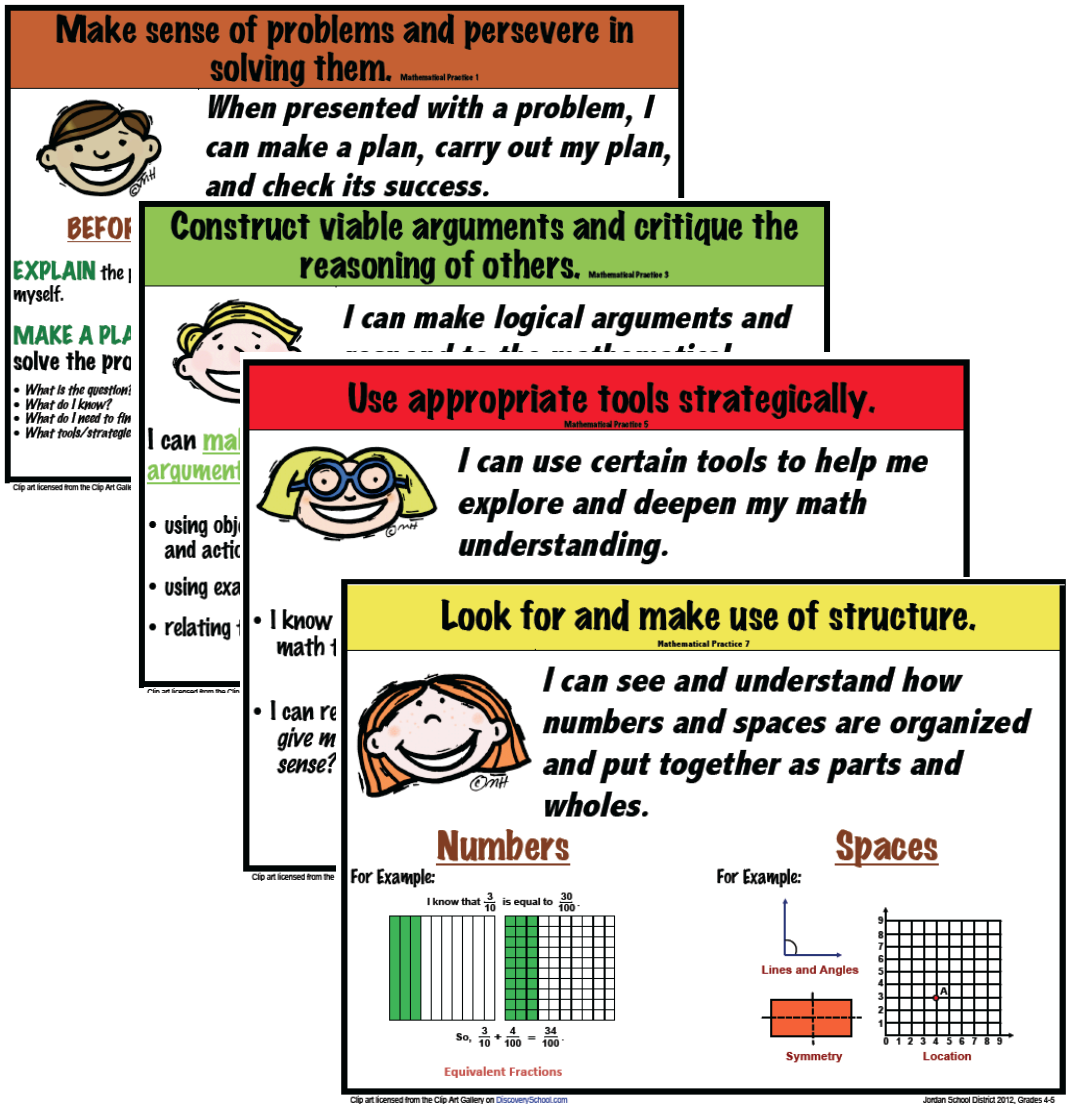
Seeing Structure & Generalizing

7. Look for and make use of structure.

8. Look for and express regularity in repeated reasoning.

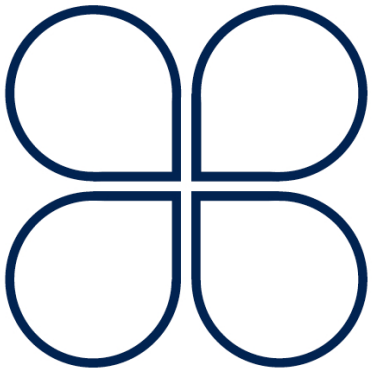
Implementation of SMPs

- Purposefully plan SMPs in lessons
- PDs for developing content knowledge of SMPs 1, 3, 5, 7 in 2014 – 2015
- PDs for developing content knowledge of SMPs 2, 4, 6, 8 in 2015 – 2016



2014 – 2015 CCSS Math Implementation

- Continue and Deepen District Math Routines
  - Number Talks
  - What's My Place? What's My Value?
- Teach CCSSM Standards to their Full Depth
  - Implement Go Math! Curriculum
  - Focus on the Math Practices
  - Continue to use CCSSM aligned resources (previous units, PD materials, other resources)
- Use the formative assessment process to teach – assess – reteach.



Formative Assessment Process

District Math Routines: Number Talks and What's My Place? What's My Value?

Professional development and teacher implementation began during the 2013 – 2014 school year.

Number Talks and What's My Place? What's My Value? Demos

2014- 2015
Continued focus and classroom support

What: Teachers will watch a 25 – 30 minute Number Talks demo. Please have an independent work activity for students to do afterward in order to have a 15 – 20 minute debrief conversation.

Who: Your students with Sophia or Christine while you get to observe!

When: Each school will have 1 day of demos in August (see below). We are hoping to visit 8 – 10 classes per school site.

Jefferson – Monday, August 18
Wilson – Tuesday, August 19
Grand View – Thursday, August 21
Kennedy – Monday, August 25
Roosevelt – Tuesday, August 26
Lincoln – Friday, August 29

Sign up with your API Coach!

Questions???
Email: Sophia, sburr@dinuba.k12.ca.us
Christine, croberts@ers.tcoe.org

What: Teachers will watch a 20 [illegible] What's My Value? demo. Please have an independent work activity for students to do afterward in order to have a 15 – 20 minute debrief conversation.

Who: Your students with Sophia while you get to observe!

When: Each school will have 1 day of demos in October (see below). Sophia is hoping to visit 6 classes per school site.

Wilson – Friday, October 10
Jefferson – Tuesday, October 14
Grand View – Monday, October 20
Kennedy – Tuesday, October 21
Roosevelt–Wednesday October22
Lincoln – Monday, October 27

Sign up with your API Coach!

Questions???

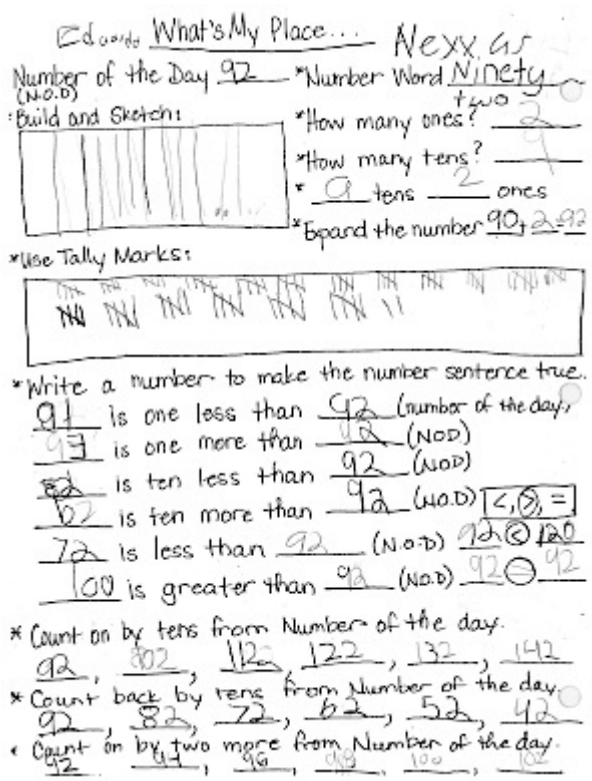
Classroom Demonstrations

- Demonstrations by DUSD Math Coach, TCOE Math Curriculum Specialist, or site coaches followed by a debrief.
- Follow up demos, team teaching, and observations will continue to provide support to build teacher capacity.

1. District adopted math routines
2. Launch, Explore, Summarize Instructional Model
3. Go Math Lesson demos
4. Lesson Study Cycle

Cooperative Learning and Engagement

2014 – 2015
Kagan
Cooperative
Learning



Edwards What's My Place... Nexxus

Number of the Day (N.O.D) 92 *Number Word Ninety two

*Build and Sketch:

*How many ones? 2

*How many tens? 9

* 9 tens 2 ones

*Expand the number 90 + 2 = 92

*Use Tally Marks:

*Write a number to make the number sentence true.

91 is one less than 92 (number of the day)

93 is one more than 92 (NOD)

82 is ten less than 92 (NOD)

102 is ten more than 92 (NOD) < > =

72 is less than 92 (N.O.D) 92 < 120

100 is greater than 92 (N.O.D) 92 > 42

* Count on by tens from Number of the day.

92, 102, 112, 122, 132, 142

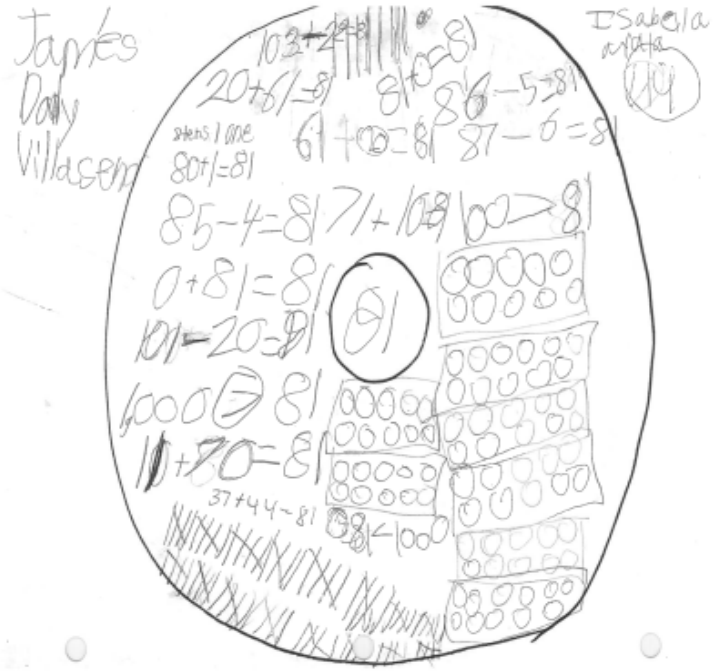
* Count back by tens from Number of the day.

92, 82, 72, 62, 52, 42

* Count on by two more from Number of the day.

92, 94, 96, 98, 100, 102

Collaborative Efforts

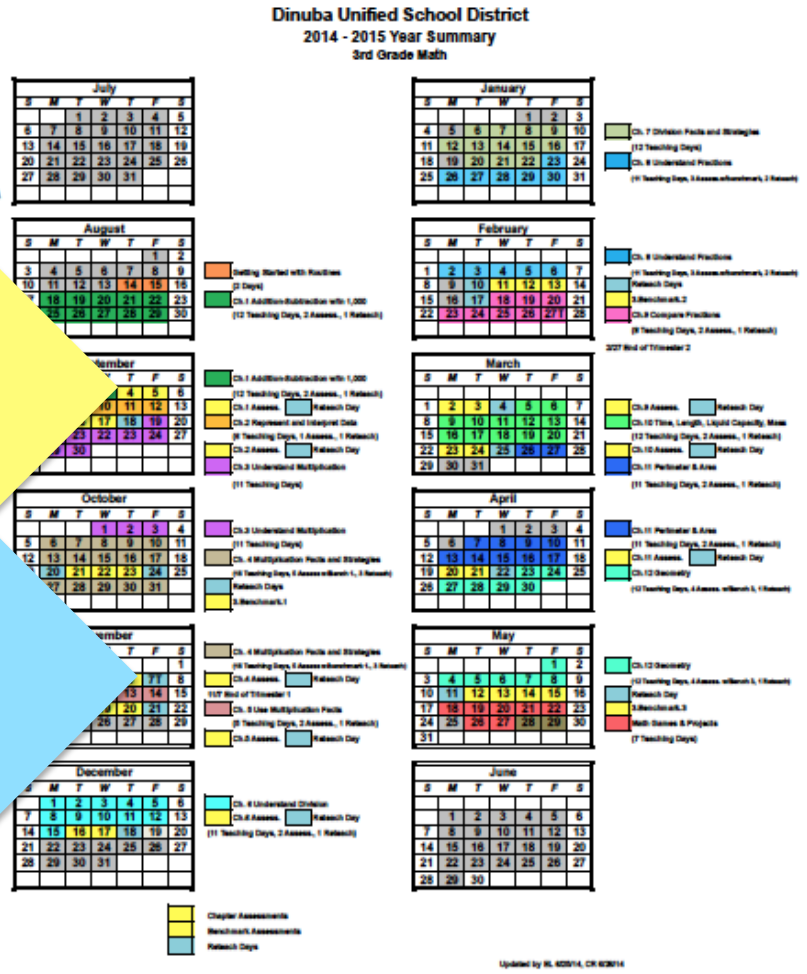


Grade Level Math Overview Documents

1. Pacing Overview
2. Assessment Schedule
3. Report
4. Math Ye… Summary

Yellow – Assessment Days

Light Blue – Reteach Days

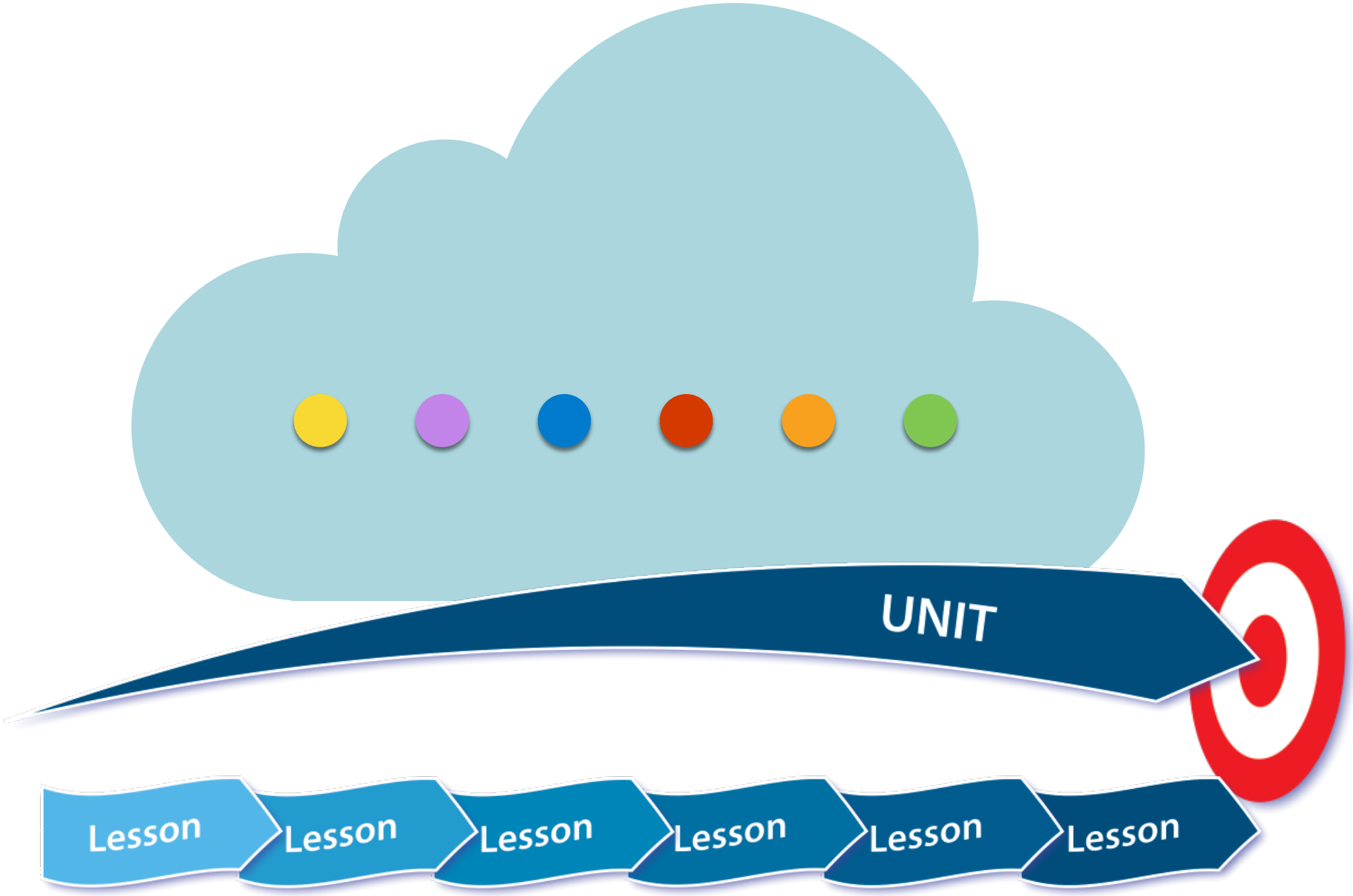


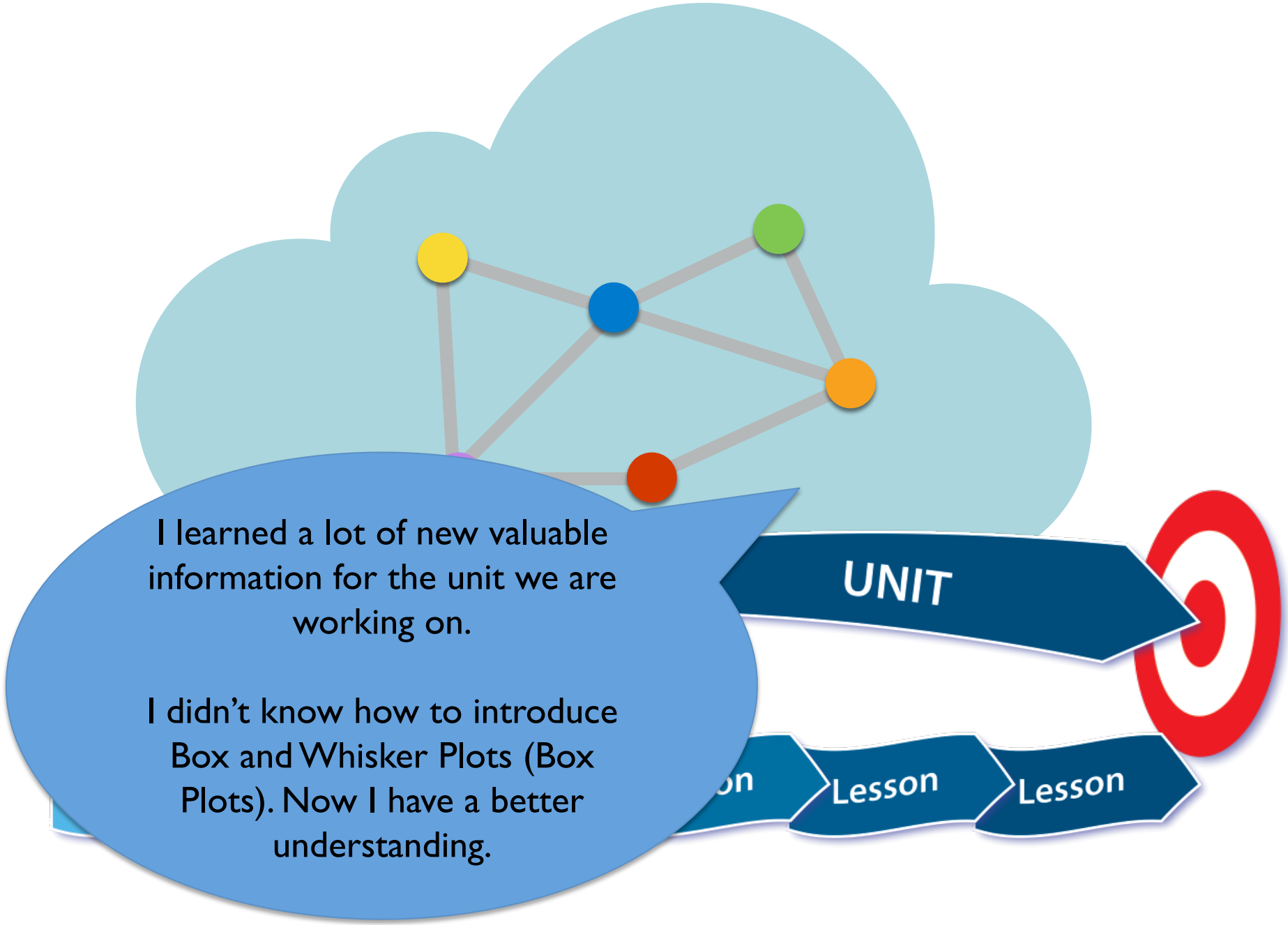
CCSSM Planning and Implementation

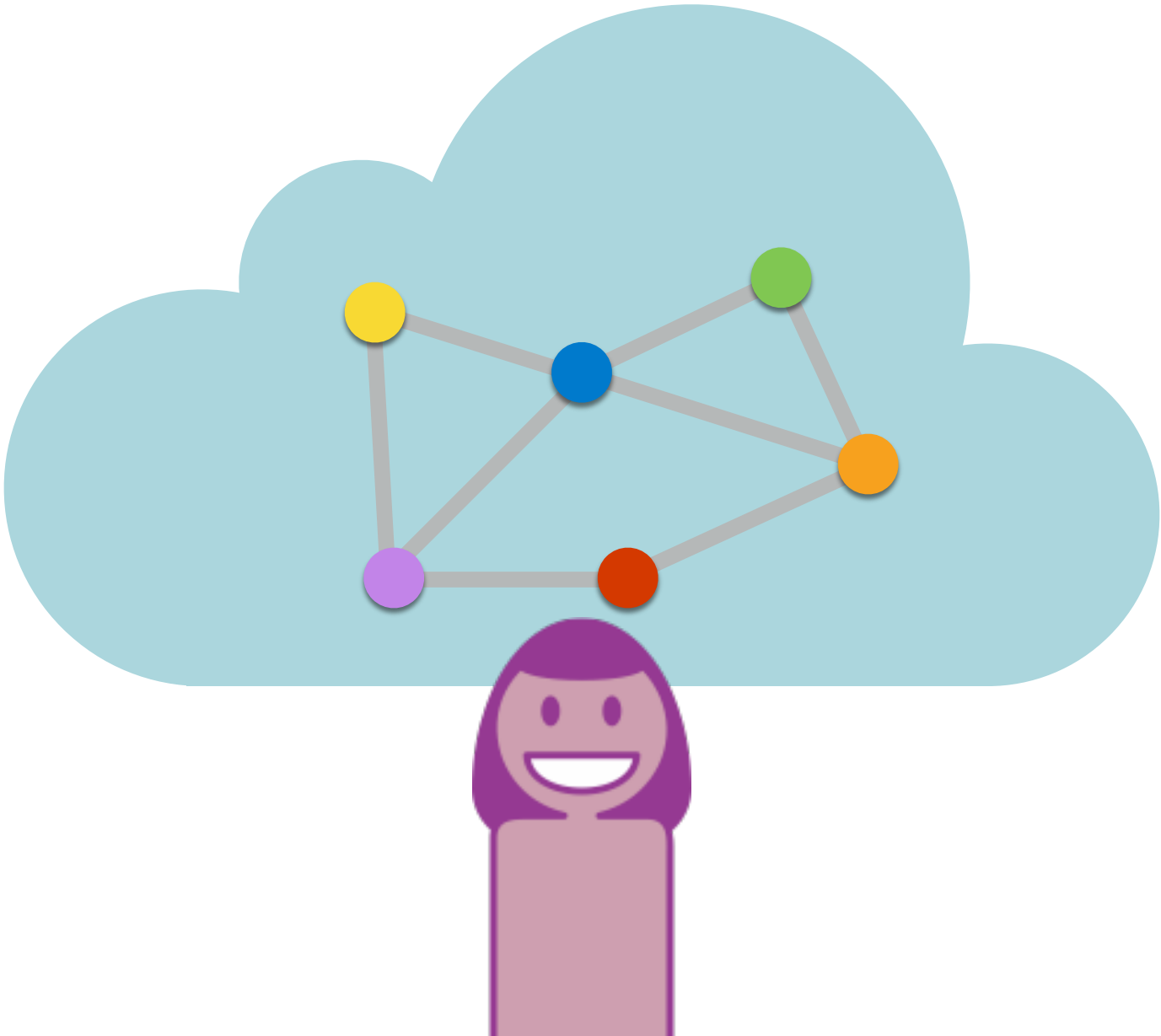
Effective teaching of mathematics establishes clear goals for the mathematics that students are learning, situate
within learning prog
and uses the goals
instructional decisi

I learned there are different levels that our students are at. If we know what level a student is at, then we can help them and show them other ways to think. Sometimes our students may show us a new way of solving a problem that we hadn't thought of.

Mathematics Teaching Practices,
NCTM *Principles to Actions*, 2014


UNIT
Lesson
Lesson
Lesson
Lesson
Lesson
Lesson


I learned a lot of new valuable information for the unit we are working on.
I didn't know how to introduce Box and Whisker Plots (Box Plots). Now I have a better understanding.
UNIT
Lesson
Lesson



CCSSM Implementation

Expectations:

- Teach the CCSSM standards to their full depth and rigor
- Use Go Math! and other CCSSM aligned resources to teach the standards

What does this mean?

- Every standard should be taught, not necessarily every lesson
- You should scale back the lessons so that they are *manageable* while developing student understanding

Chapter Overviews to Support Teachers with Curriculum

Chapter 3 - Basic Facts and Relationships
Overview & Support
Trimester 1

Days: 12 Teaching, 2 Reteach (Assessment is embedded in T1 Benchmark) (Originally 15 Teaching Days – edited at 2nd Grade PD Day)

Dates: 10/1-10/17 (Originally 9/29 – 10/17), 2.Benchmark 1 Window 1/13-10/24
(Reteach 10/20, Test 10/21-10/23, Reteach 10/24)

Standards: 2.OA.1, 2.OA.2, 2.OA.4, 2.NBT.2

Represent and solve problems involving addition and subtraction.

1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.[1]

Add and subtract within 20.

2. Fluently add and subtract within 20 using mental strategies.[2] By end of Grade 2, know from memory all sums of two one-digit numbers.
4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends.

Understand place value.

2. Count within 1000; skip-count by **2s**, 5s, 10s, and 100s. **CA**

Suggested Routines:
WMP? , Number Talks, Hundreds Chart

Manipulatives:
Whiteboard, Math Mountain Cards (Fact Family Triangles), Two Color Counters, Connecting Cubes

Vocabulary:
Sums, doubles, addends, count on, number sentence, differences, related facts, count back, bar model, row, column, array

repeated addition, number bonds

Looking Ahead:
See Dropbox for line plots to use throughout the year. Line plots begin in chapter 8.

Color Coding:
Green- This lesson is good to go!
Yellow- This lesson has notes that you want to include in teaching.
Red- Skip it! This lesson does not accurately reflect the standard.

Essential Question: How can you use patterns and strategies to find sums and differences for basic facts?

Lesson-by-Lesson Overview:

Lesson Standard Approx. # of Days	Title	Materials	Vocab	Notes
Show What You Know (0.5 days spread)	Show What You Know			• Critical Area: The project on page 116B could be used for early finishers. • Remember to do even and odd throughout on WMP?
3.1 (1 day) 2.OA.2 10/1	Use Doubles Facts	Whiteboard	Sums, doubles	• Launch – Use Read Aloud or Use Doubles Dominos • Explore – Use the Explore from the book, continue to explore in small groups using doubles dominoes – pick a domino out of a bag. If it's a double, write the equation and draw it. If not, put it back. Continue exploring. • Summarize – Create your own double domino. Write the equation. Pair Share and share examples as a class. Teacher summarizes the learning. For example, What did we learn about today? Doubles What is a double? Doubles are

Unit Plans: Developed by Teachers and Coaches in 2013-2014

Grade
TK.Unit.1 Sorting and Counting
Standards: TK.MD.3
Envision Topic 1 Sorting and Classifying
24 Teaching Days (8/26/13 – 9/27/13)
TK.MFA.Unit 1 (9/24/13 – 9/27/13)

Standards:
TK.MD.3 Create a sort of objects by color, shape, or size. Give the count for each category.
TK.CC.1 Count to 50 by ones.
TK.CC.1a Identify written numerals to 10.
TK.CC.2 Count forward beginning from a given number less than 10 within the known sequence (instead of having to begin at 1).
TK.CC.3 Write numbers from 1 to 20. Represent a given number of objects with a written numeral 1 – 20. *Note: TK students will write 1-10 by December and 1-20 by May.

Routine Time Ideas (Daily 10-15 Minutes)	***Daily Calendar Routine:*** • Count to 50 by ones. • Numeral and dot card match • Write numbers 1- 5 (thru October), numbers 0-10 (thru December), 0-20 (January thru May) • Continue teaching and reinforcing sorting and counting concept with groups of items. ***Race to the Top Tracing*** • 0-9 dice • Race to the Top Tracing Handout
Literature Connections	• ***Sorting***: http://www.amazon.com/Sorting-Counts-Henry-Arthur-Pluckrose/dp/0516454587 - reader_0516454587 • ***A Pair of Socks:*** http://www.amazon.com/Pair-Socks-MathStart-Matching-Level/dp/0064467031 • ***Shape Cards:*** sorting shape cards available for purchase http://www.montessoriforeveryone.com/Geometric-Shapes-Matching-Cards_p_196.html

Day Date	***CCSS Standards***	***Lesson/Activity***	***Materials***

Day 1
8/14/13
	TK.CC.1
	TK.CC.1a
	TK.CC.2
	TK.CC.3
		Exploring Math Manipulatives and Routines
		Ideas:
		• Dot Cards for Subitizing
		  ○ How many dots do you see?
		  ○ How do you see them?
		• Race to the Top
		  ○ Dice 0-9
		  ○ Race to the Top Recording Sheet
		• Exploring Math Manipulatives:
		  ○ Pattern blocks
		  ○ Bear Counters
		  ○ Square tiles
		  ○ Buttons, other items that can be used as manipulatives
			-Dot cards
			-Numeral cards
			-Race to the Top
			Handout
			-Dice 0-9
			-Classroom math manipulatives

Day 2 8/15/13 Day 3 8/16/13			

Day 4
8/19/13
 	
Day 5
8/20/13
 	
Day 6
8/21/13
 	
Day 7
8/22/13
 	
Day 8
8/23/13
	TK.CC.1
	TK.CC.1a
	TK.CC.2
	TK.CC.3
		Exploring Math Manipulatives and Routines
		Ideas:
		• Dot Cards for Subitizing
		  ○ How many dots do you see?
		  ○ How do you see them?
		• Race to the Top
		  ○ Dice 0-9
		  ○ Race to the Top Recording Sheet
		• Exploring Math Manipulatives:
		  ○ Pattern blocks
		  ○ Bear Counters
		  ○ Square tiles
		  ○ Buttons, other items that can be used as manipulatives
			-Dot cards
			-Numeral cards
			-Race to the Top
			Handout
			-Dice 0-9
			-Classroom math manipulatives

TK.Unit.1 Week 1 Focus: Sorting items into two groups Emphasize: counting of objects, 1-to-1 correspondence Vocabulary: sort, categorize, objects/items, count, same/alike, different, classify, attributes			

Day 1
8/26/13
	TK.MD.3	***Routine***
		Launch – Discuss Same and Different, Envision Topic 1, Teacher's Edition p. 1F
		
		Introduce Kagan Structure: Stand Up, Sit Down
		Adapted from Envision Topic 1, Teacher's Edition p.1K Social Studies
		• Students will be seated on the carpet.
		• When a prompt is said that applies to them, they stand up.
		• When it does not apply to them, they sit down.
		• Prompts:
		  ○ You are at school.
		  ○ You are wearing a white shirt. (Repeat with other colors and clothing items)
		  ○ You are a boy.
			- 5-6 Teacher Created Sorting Stations:
			-Bears
			-Linker cubes
			-Pattern blocks
			-cars/trucks
			-Etc.
			-Use the Sorting

Sample Assessments 2014-2015

4 **There are 8 boys and 8 girls at the party. Write the equation to show the sum.**

_____

Is there an even or odd number of children at the party?

_____

Explain how you know using words and/or pictures.

6.NS.7

30

The level of the top of the water in the ocean is considered to be at an altitude of zero (0) feet.

- The ocean floor at a particular dive site is –20 feet.
- A diver is located at –5 feet at the same site.
- The captain of a boat is located at an altitude of 15 feet above the diver.

30a. Draw a picture that includes the location of the diver, the ocean floor, and the captain of the boat.

For numbers 30b-30e, select True or False for each statement.

30b. The distance from the captain to the diver is greater than the distance from the top of the water to the ocean floor.	True ◯	False ◯
30c. The distance from the captain to the top of the water is the same as the distance from the diver to the ocean floor.	True ◯	False ◯
30d. When the diver swims to a depth of –10 feet, the diver will be the same distance below the top of the water as the captain is above the top of the water.	True ◯	False ◯
30e. When the diver swims to a depth of –10 feet, the diver's distance to the ocean floor will be equal to diver's distance to the top of the water.	True ◯	False ◯

Sample Assessments 2013-2014

2.OA.1 MFA

Name _____ Date _____

Eric had 25 cookies on a plate. His dog ate 12 cookies off the plate. How many cookies are left?

Show the total using counters.

Show the total by drawing pictures.

Write an equation for the word problem.

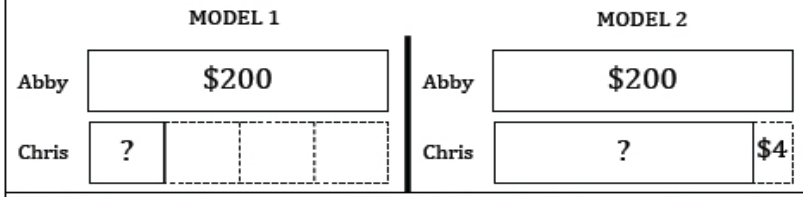
Explain how you found the total.

4.Unit.2 MFA 4.OA.1 – 4, 4.MD.4

Name: _____ **Date:** _____

22) Abby and her friend Chris each ran a lemonade stand on their streets. Abby lives on a busy street, but Chris does not. When Abby and Chris compared what they had earned, Chris said, "Wow! You made $200! That's 4 times as much as I earned!" This made Abby wonder how much Chris earned.

Look at the two models below that Abby drew to figure out how much Chris earned.



a) Which model best represents the relationship between Abby and Chris's earnings?

circle one: model 1 model 2

b) Explain why you think the model you chose best represents the relationship between Abby and Chris's earnings.

c) Next, identify the amount of money that Chris earned at his lemonade stand.

Chris earned $_____ at his lemonade stand.

Sample Assessments 2013-2014

Nets and 3-D Solids

Name	
Class/Period	

9A. Sketch the unfolded net as well as the 3-D object it folds into.

Sketch the net here.	*Sketch the 3-D Solid formed by the net here.*

9B. Identify the shapes in the net. Find the Perimeter and area of each shape.
(Ignore the gray tabs; those are used for gluing the shape together.)

Number	Type of Shape	Perimeter	Area
1			
2			
3			
4			
5			
6			

9C. Find the Surface Area of the Figure.

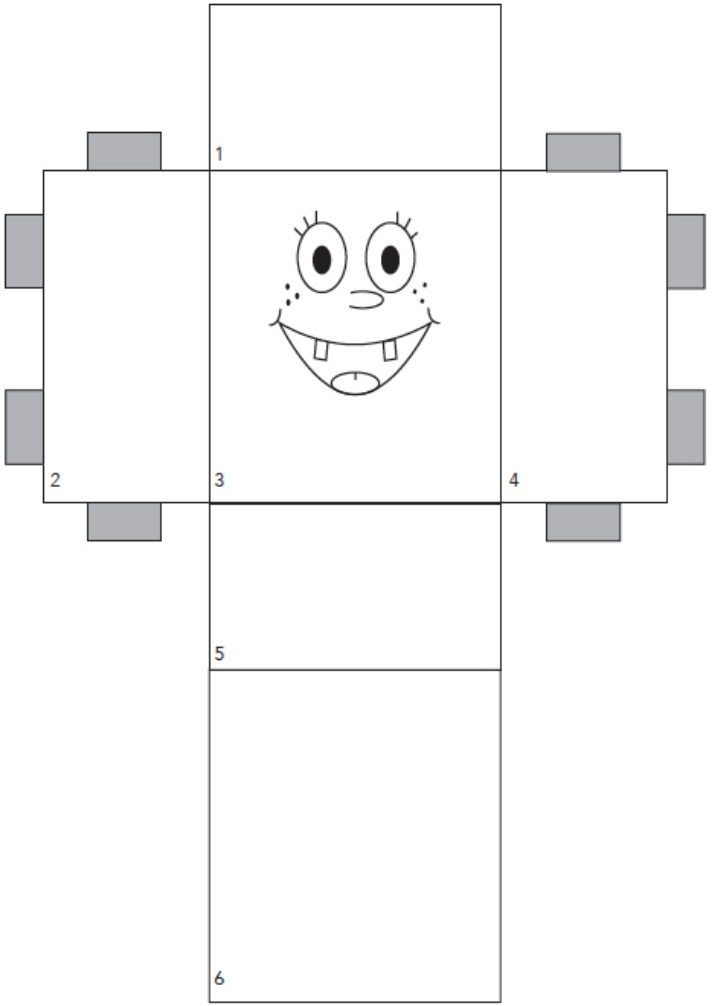
The surface area of my figure is _____.

9D. Assemble the Net into a 3-D object. What is the name of the figure created by your net?

This figure is called a _____.

9E. Find the Volume of your figure. (Do this part only if your 3-D object is a cube or a prism)

This volume of this figure is _____.



Lesson Study Cycles

DUSD CCSS-Math Lesson Study Process

Outcomes:

- Deeper understanding of the Standards for Mathematical Practice
- Deeper understanding of new CCSS-M standards for your grade level
- Deeper understanding of the Launch, Explore, Summarize instructional model
- A polished lesson for future use
- New knowledge that can be applied to future lessons and math content
- Opportunity to collaborate with colleagues? Priceless!

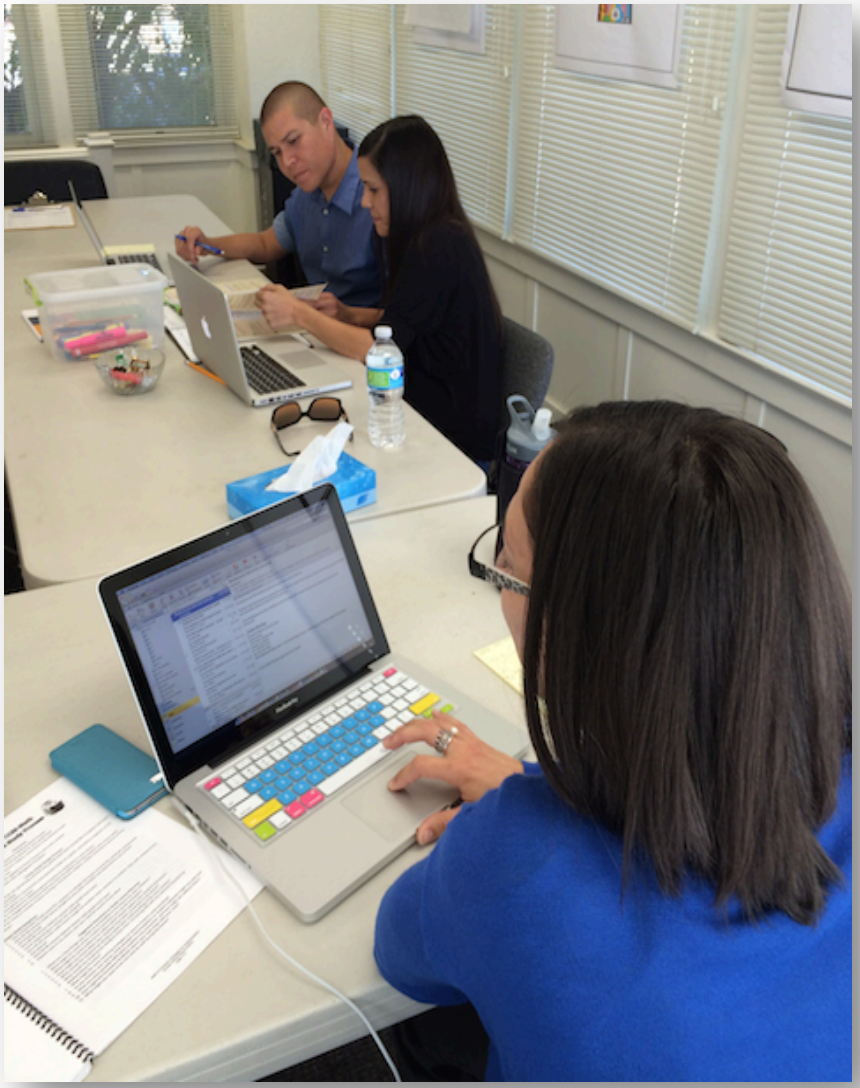
Lesson Study Design Process

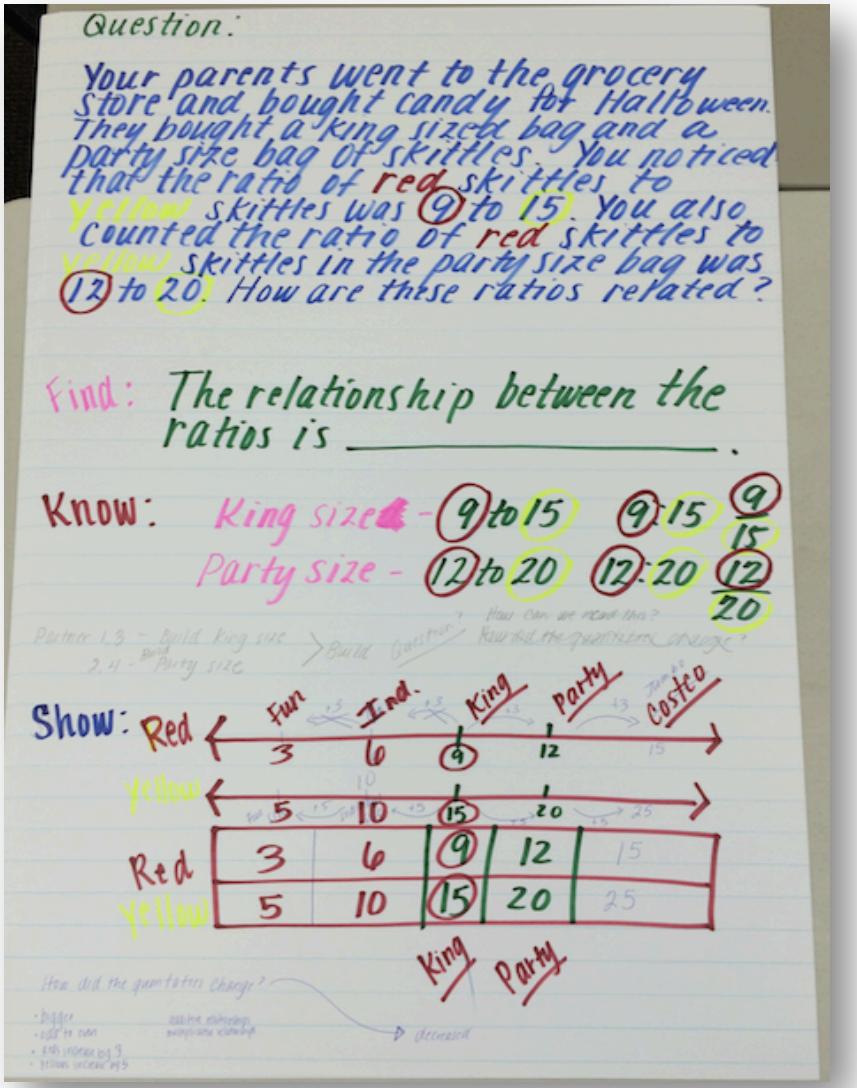
1. Choose a lesson from an upcoming unit that your grade level team would like to explore and build a deeper understanding.
2. Use the Launch, Explore, Summarize instructional model as a guide, and select a segment of the model to strengthen as a team.
3. Decide on a Standard for Mathematical Practice to emphasize in your lesson.
4. Include an engagement structure that you want to explore and may support your lesson goals.
5. Look for ways to include student writing in the launch, explore, and/or summarize portion of the lesson.

Lesson Study Sequence:

1. Two consecutive Grade Level PLC sessions to design the lesson around the attached components
2. One 45-60 minute math lesson taught by one team member and observed by rest of team
3. 15 minute break
4. One 60-90 minute Debrief session with grade level team
5. Lunch depending on school site schedule
6. One 45-60 minute math lesson taught by another team member to another class with revisions from the debrief
7. One 60-90 minute Debrief session with grade level team
8. Repeat cycle if you desire and your debrief session times allow

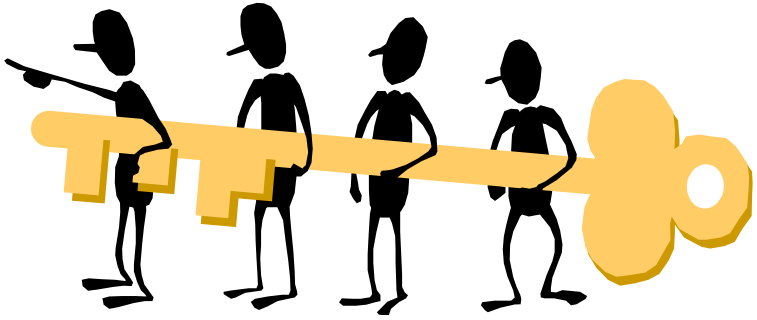
Lesson Study Cycles



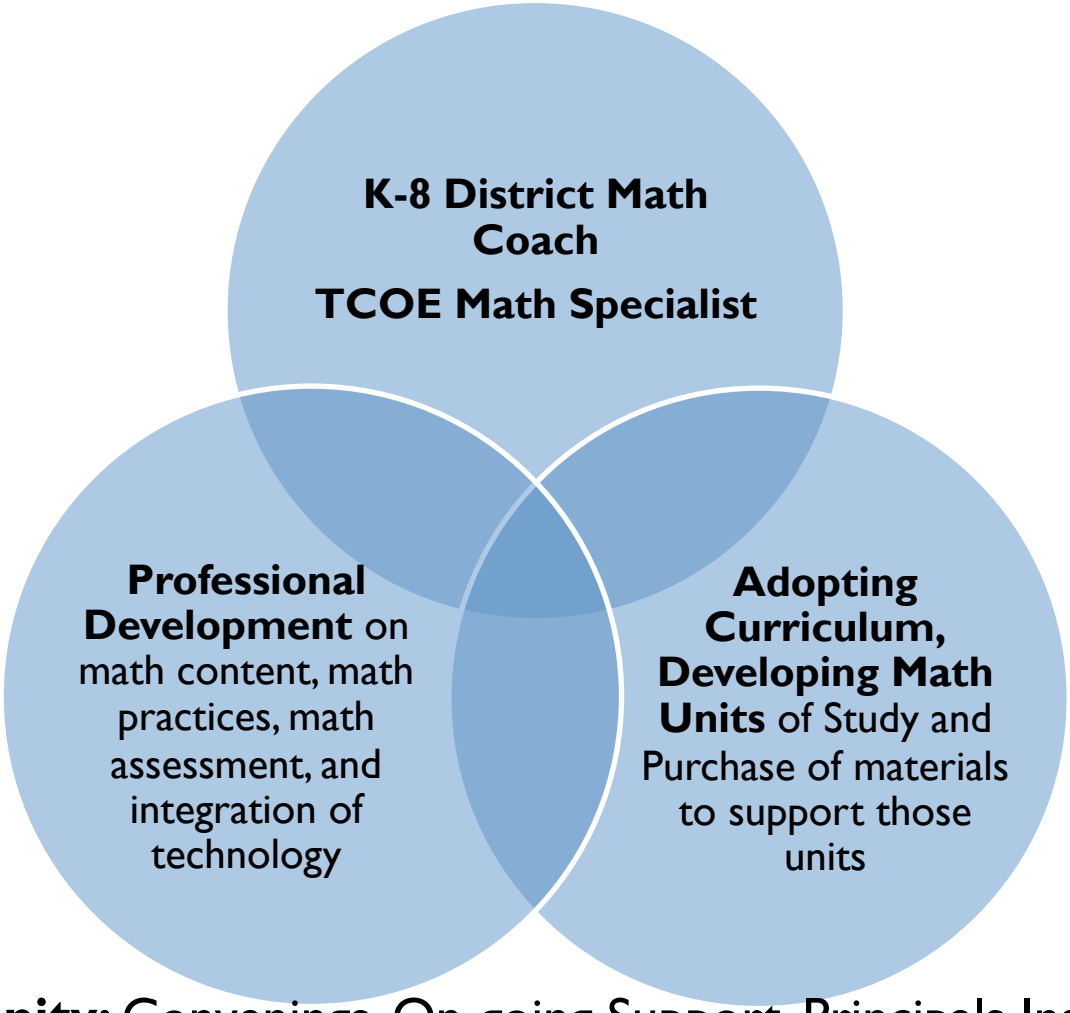


Math in Common Grant…

- We have joined nine other committed and capable California districts as Math in Common grantees: Elk Grove, Garden Grove, Long Beach, Oakland, Oceanside, Sacramento City, San Francisco, Sanger, and Santa Ana.
- We have participated in a cross-district community of practice to share the challenges and successes we encounter in implementing the standards.
- Tools are being developed and lessons being learned from our districts that will be made available to all districts in California.



How will the Math in Common Grant support our efforts?



MiC Community: Convenings, On-going Support, Principals Institute

Reflection

Action

Investigation

Confirmation

Common Core Connect

Tulare County Office of Education
Jim Vidak, County Superintendent of Schools

Supporting California's Common Core State Standards

Search for Media | Type in a keyword and click on the Search icon or Enter on Keyboard | Advanced Search

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Mathematics Speakers
Steve Leinwand & Max Ray

REGISTER

Join two dynamic speakers as they share effective mathematics teaching and assessment practices, as well as methodologies for helping students verbalize problem solving.

"Our simple to use keyword and standards-based search tools make it easier than ever to find incredible Mathematics resources."

Julie Joseph
Mathematics Consultant, TCOE

commoncore.tcoe.org

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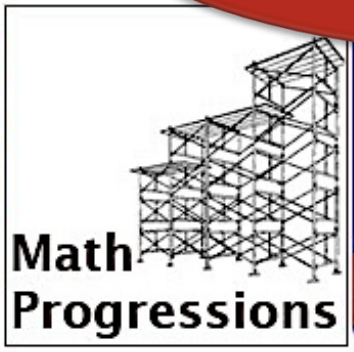

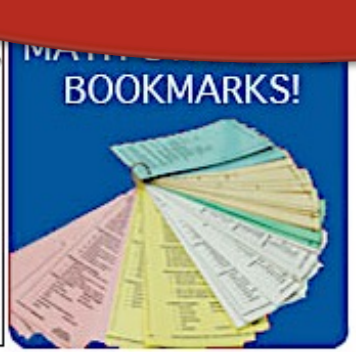

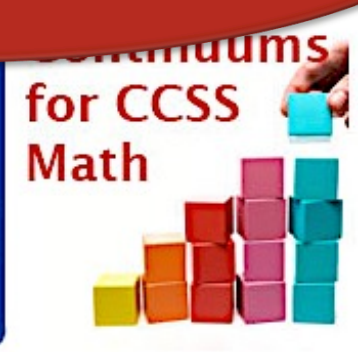

Dinuba
UNIFIED SCHOOL DISTRICT

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Cultivating Excellence

dusd.dinuba.k12.ca.us

CALENDAR

« JUNE 2013 »

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9	10	11	12	13	14	15
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23	24	25	26	27	28	29
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OUR MISSION

"Empowering Each Student to Succeed in Life."

Dinuba's Tenets

Resources

- Dinuba Unified School District
  http://dusd.dinuba.k12.ca.us/
- Tulare County Office of Education Website
  www.tcoe.org/commoncore
- Tulare County Office of Education's
  Common Core Connect
  http://commoncore.tcoe.org

- Christine Roberts, TCOE Mathematics Curriculum Specialist
  croberts@ers.tcoe.org
- Sophia Burr, DUSD TK – 8th grades Math Coach
  sburr@dinuba.k12.ca.us