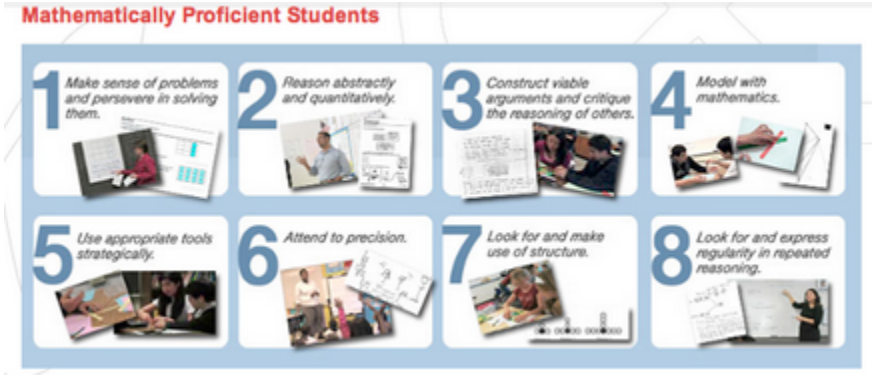
Math Standard Unit Plan

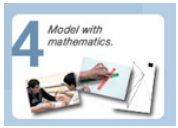
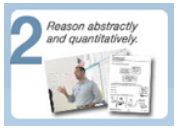
To embed the SMPs with care for each standard, I've created the following chart to guide the teaching and roll-out for each standard.

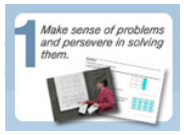
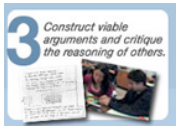
Standard:



Plan

Stage/ Focus Standards	**Materials/Actions**	**Specific Standard Planning Notes**
1. Planning SMP Description	• Teacher plans standards' unit.	
2. Tool Play and Exploration 	• Collection of tools related to the standard. • Students examine, explore, and utilize tools. • Students share/discuss problem solutions in math talk space.	
3. Tool Explore Share/Vocabulary	• Meet in share space, share results of exploration,	

	vocabulary, tool use.	
4. Modeling    	• Teacher shares model with structure (s) via explicit teaching, video, drama, or other venue. • Students take notes in their student math journals (online or off). • Students assess and reflect their learning of the standard. Next steps are created and implemented.	
5. Practice, Collaborate, Conference and Review. 	• Students practice standard with tools, vocabulary, and structure with practice sets and problems. Apply all standards. • Students check in classmates, then with teacher for conference.	
6. Open Response Project/Problem Base Learning (PBL)	• Students work in teams to solve problems and/or complete projects. • Appy all standards.	

		
7. Students PBL Presentations. 	• Students present work to classmates for feedback, discussion, and response. • Apply all standards.	

*Formative assessments will inform standard delivery, study, and practice throughout the unit.

Grade Four Standards Presentation:
A presentation of all the fourth grade standards with guiding videos, links.

PARCC Modules: http://www.parcconline.org/samples/mathematics/grade-4-mathematics

Mathematics Grade 4 Standards Parcc and DOR 2011 List	Time of year	EDM Pages, Material	Other Teaching Resources/Notes

Numbers and Operations in Base Ten			
Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form.			
Compare two multi-digit numbers based on meanings of the digits in each place, using >, =, and <			
Use place value understanding to round multi-digit whole numbers to any place.			
Knows addition and related subtraction facts through 12 + 12.			
Fluently add and subtract multi-digit whole numbers using the standard algorithm.			
Knows multiplication facts and related division facts through 12 X 12.			
Find all factor pairs for a whole number in the range 1–100. Note whether the whole number is prime or composite			
Determine whether a given whole number in the range 1–100 is a multiple of a given one-digit number			
Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers			
Divide to find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors.			

Operations and Algebraic Thinking			
Uses the four operations with whole numbers to solve problems, and Represent these problems using equations with a letter standing for the unknown quantity			
Generate and analyze a number or shape pattern that follows a given rule.			
Number and Operations - Fractions and Decimals			
Demonstrates an understanding of fraction benchmarks, unit fractions, equivalencies and ordering.			
Compare fractions by finding a common denominator or by comparing that fraction to benchmark fractions.			
Applies and extends previous understanding of addition, subtraction to fractions.			
Multiply fractions by whole numbers to solve problems.			
Understand decimal notation for fractions, and compare decimal fractions.			
Measurement			

Solve problems using the four operations involving measurement and conversion of measurements from a larger unit to a smaller unit involving distances, intervals of time, liquid volumes, masses of objects, and money.			
Make and a line plot to display a data set of measurements in fractions of a unit (1/2, 1/4, 1/8) and solve problems involving addition and subtraction.			
Apply the area and perimeter formulas for rectangles in real-world and mathematical problems.			
Geometry			
Draw and identify lines and angles, and classify two dimensional figures by properties of their lines and angles, or the presence or absence of angles of a specified size.			
Understand concepts of angles, and measure angles using a protractor.			
Recognize, identify, and draw line(s) of symmetry for two-dimensional figures.			

Standards for Mathematical Practice	Notes

Make sense of problems and persevere in solving them.	
Reason abstractly and quantitatively.	
Construct viable arguments and critique the reasoning of others.	
Model with mathematics.	
Use appropriate tools strategically. (ruler, yard stick, meter stick, protractor. . .)	
Attend to precision.	
Look for and make use of structure (tables, charts, number lines, venn diagrams, line plots. . .)	
Look for and express regularity in repeated reasoning (notices patterns, number relationships. . .)	

From PARCC: Key 4th grade math concepts

Key: ■ Major Clusters; □ Supporting Clusters; ○ Additional Clusters

Operations and Algebraic Thinking

- ■ Use the four operations with whole numbers to solve problems.
- □ Gain familiarity with factors and multiples.
- ○ Generate and analyze patterns.

Number and Operations in Base Ten

- ■ Generalize place value understanding for multi-digit whole numbers.
- ■ Use place value understanding and properties of operations to perform multi-digit arithmetic.

Number and Operations — Fractions

- ■ Extend understanding of fraction equivalence and ordering.
- ■ Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- ■ Understand decimal notation for fractions, and compare decimal fractions.

Measurement and Data

- □ Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.
- □ Represent and interpret data.
- ○ Geometric measurement: understand concepts of angle and measure angles.

Geometry

- ○ Draw and identify lines and angles, and classify shapes by properties of their lines

Interesting example of a way to cluster standards into unit design--from doe site.

MA 2011 Code	MA 2011 Standard (with Focus Highlighted)	Resources	Key Vocabulary	Assessment	Pacing
2.NBT.3 3.NBT.1 **3.NBT.2** **3.OA.8** 3.MD.1	Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction. Tell and write time to the minute and measure time intervals in minutes. Solve word problems…of time intervals… e.g., by representing the problem on a number line diagram.	Investigations Unit 1 Sessions 1.3, 1.4, 1.6, 1.8, 2.2, 2.3, 2.4, 2.6, 2.7, Investigations Unit 3 Sessions 1.1, 1.2, 1.6, 2.1, 2.2, 2.3, 2.4, (3.1), 3.2, 3.3, 3.4, 3.5, 3.7, 4.2, 4.3, 4.4, 4.5	Digit Sum Difference Equation Number line Landmark numbers Ones Tens Hundreds Thousands	**District Pre & Post**	These lessons should be completed by the middle of October.

LPS Teacher Notes:

2.NBT.3 Read and write numbers through 1000, in numeral, word, and expanded form. (Extend beyond 1000, based on student understanding.)

Unit 1 Session 1.5 Capture 5 game played as needed for place value knowledge.
Unit 1 Session 1.6 Collect $2.00 necessary for 2011-2012. After 2012 use game for the maintenance of money skills.
Unit 1 Session 2.7 suggested for additional support for place value if needed.
Unit 3 Session 3.1 Activity 3 Introducing What Time Is It? begins to address 3.MD.1 This standard will need to be supplemented. See Tracking Time Representing Time on an Open Timeline article.
Sample materials for problem structures included – see Van De Walle Addition and Subtraction Structures.
CC Glossary Table 1 Problem Structures included
***Supplemental materials needed for 2-step addition/subtraction word problems.**

Supplemental Material:
Addition Subtraction Problem Situations Here Van de Walle and table 1 CC
Tracking Time Open TimeLine NCTM Article

Draft Map 2011