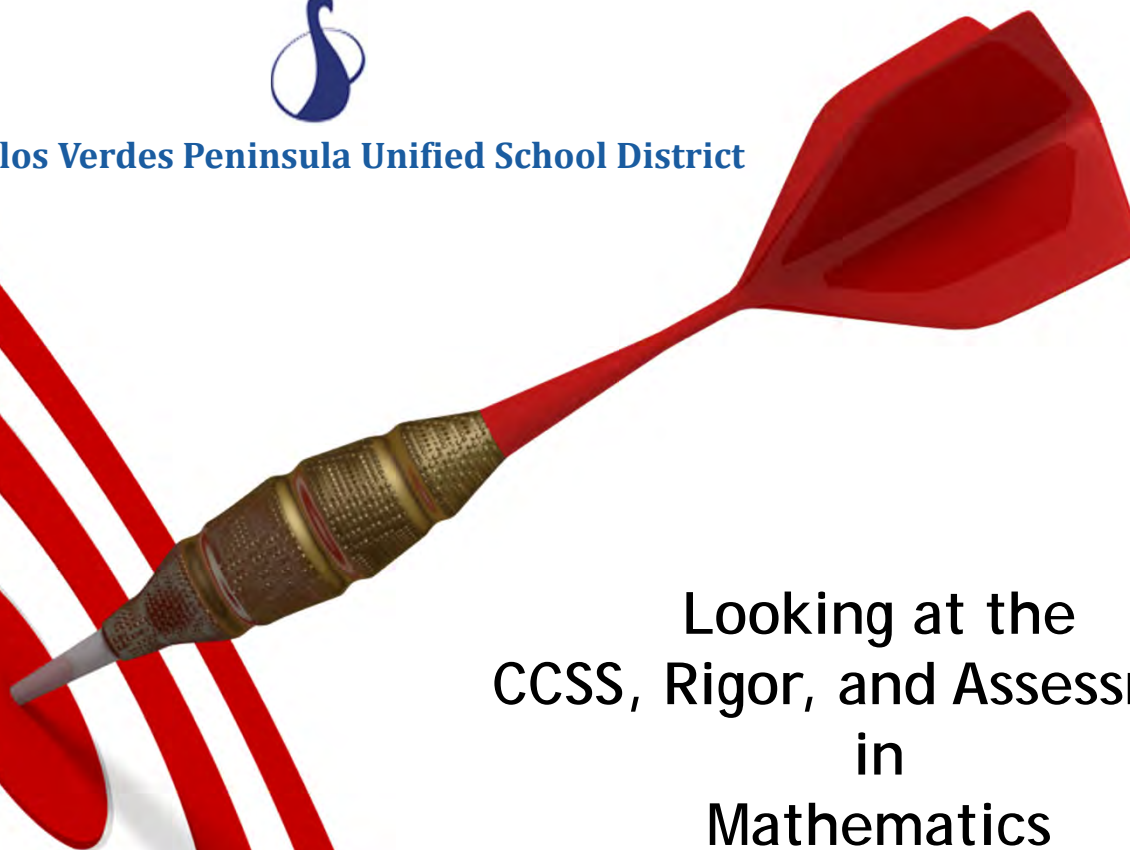












Palos Verdes Peninsula Unified School District



Looking at the
CCSS, Rigor, and Assessment
in
Mathematics

December 3, 2012

Agenda

-  PVPUSD 2012-2013
-  PVPUSD Timeline
-  Depth of Knowledge and Cognitive Rigor Matrix
-  Today's Learning Target
-  Crosswalks
-  Rigor
-  Smarter Balanced Assessment Consortium
-  Sample Assessments





PVPUSD 2012-2013 Professional Development Plan

District Wide

3-4 common K-5, 6-8, 9-12 professional development days

Focus on the 6 Shifts in ELA and Math

- ✓ ELA: Read and Writing Rhetorically, Balancing Informational and Literary Text, Discipline Knowledge, Complexity, Academic Vocabulary
- ✓ Math: Focus, Coherence, Fluency, Application, Dual Intensity, Deep Understanding



School Site

Site specific professional development days

- ✓ Collaborative conversations, inquiry, problem-solving, balance of direct and indirect instruction

Focus on instructional strategies and new systems of assessment

- ✓ Performance base assessments, portfolios, authentic assessments, computer-based assessments



Grade Level/Subject

Focus on curriculum development, unit and individual lesson plans, vertical articulation and common formative assessment analysis of student work, academic rigor

Palos Verdes Peninsula Unified School District

Goal #1

Begin to implement the Common Core State Standards (CCSS) while continuing to foster critical thinking, collaboration, creativity, and communication skills.

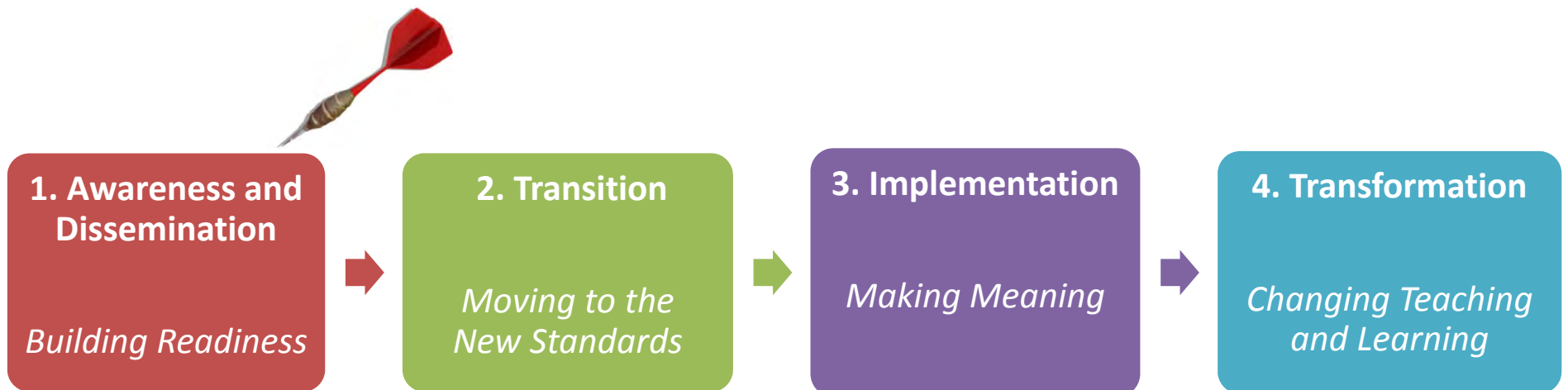
PVPUSD 2012-2013

Objective #2

Identify the major shifts in the CCSS from the current system of standards and assessments in ELA and Math and other core academic areas at their appropriate level.

Common Core State Standards PVPUSD TIMELINE

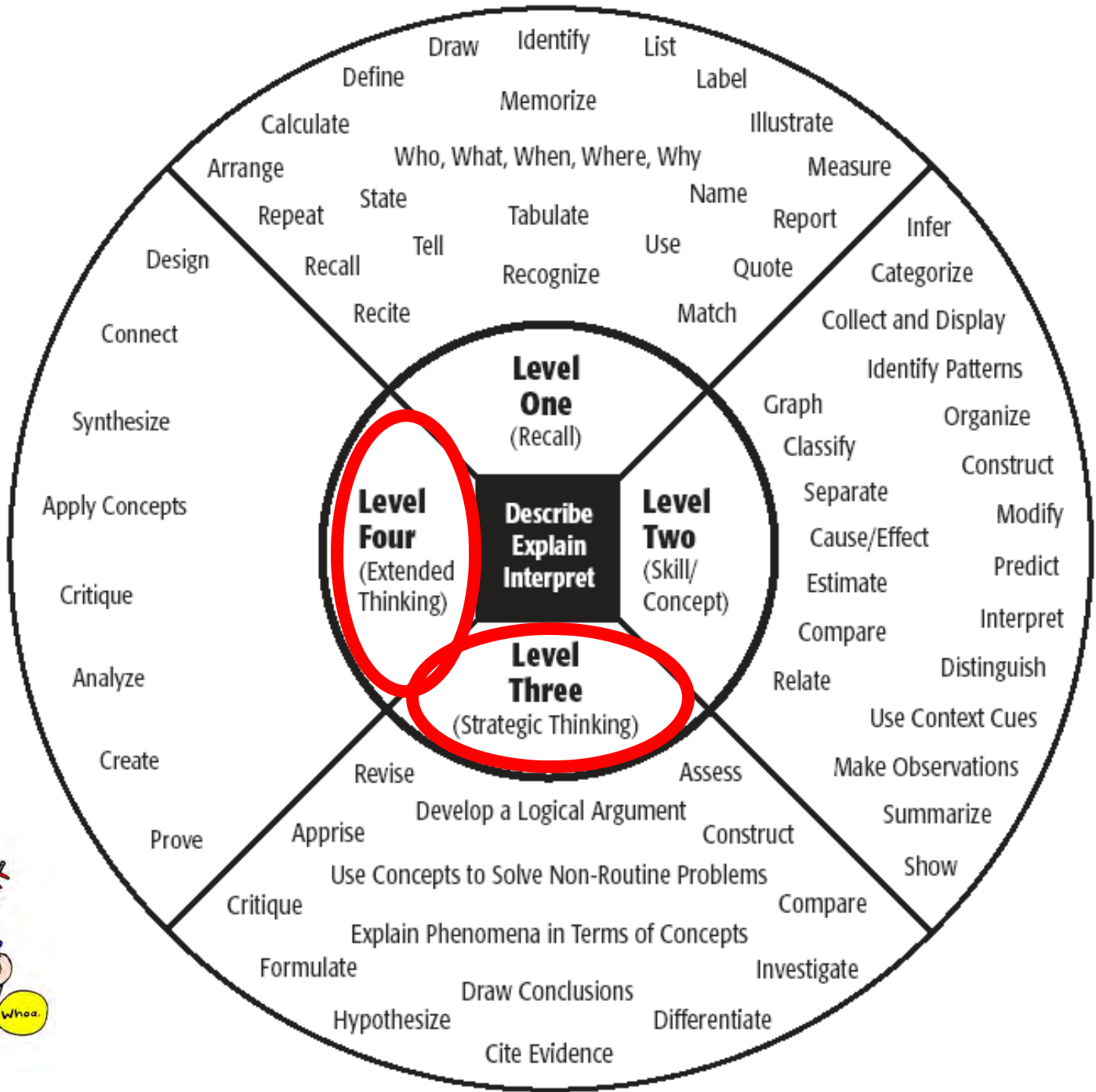
Phases of Implementation



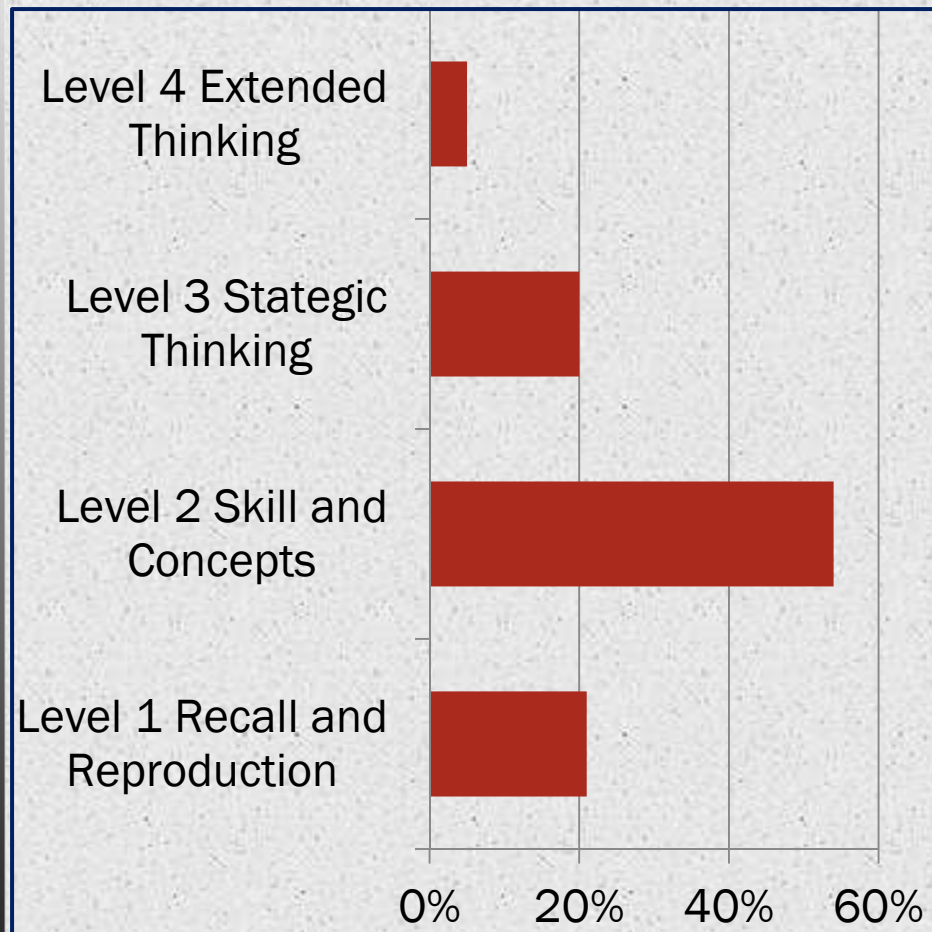
2012-2013: Beginning District Implementation

2014-2015: Full District Implementation

DEPTH OF KNOWLEDGE (DOK)



Depth of Knowledge (cognitive demand) in the CCSS for Mathematics



- 5% are at level 4
- 20% are at a level 3
- 54% are at a level 2
- 21% are at a level 1

COGNITIVE RIGOR MATRIX

A "Snapshot" of the Cognitive Rigor Matrix (Hess, Carlock, Jones, & Walkup, 2009)

+ Type of Thinking (Revised Bloom)	Depth of Thinking (Webb)			
	DOK Level 1 Recall & Reproduction	DOK Level 2 Basic Skills & Concepts	DOK Level 3 Strategic Thinking & Reasoning	DOK Level 4 Extended Thinking
Remember	-Recall conversions, terms, facts			
Understand	-Evaluate an expression -Locate points on a grid or number on number line -Solve a one-step problem -Represent math relationships in words, pictures, or symbols	- Specify, explain relationships -Make basic inferences or logical predictions from data/observations -Use models /diagrams to explain concepts -Make and explain estimates	-Use concepts to solve non-routine problems -Use supporting evidence to justify conjectures, generalize, or connect ideas -Explain reasoning when more than one response is possible -Explain phenomena in terms of concepts	-Relate mathematical concepts to other content areas, other domains -Develop generalizations of the results obtained and the strategies used and apply them to new problem situations
Apply	-Follow simple procedures -Calculate, measure, apply a rule (e.g., rounding) -Apply algorithm or formula -Solve linear equations -Make conversions	-Select a procedure and perform it -Solve routine problem applying multiple concepts or decision points -Retrieve information to solve a problem -Translate between representations	-Design investigation for a specific purpose or research question - Use reasoning, planning, and supporting evidence -Translate between problem & symbolic notation when not a direct translation	-Initiate, design, and conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results
Analyze	-Retrieve information from a table or graph to answer a question -Identify a pattern/trend	-Categorize data, figures -Organize, order data -Select appropriate graph and organize & display data -Interpret data from a simple graph -Extend a pattern	-Compare information within or across data sets or texts -Analyze and draw conclusions from data, citing evidence -Generalize a pattern -Interpret data from complex graph	-Analyze multiple sources of evidence or data sets
Evaluate			-Cite evidence and develop a logical argument -Compare/contrast solution methods -Verify reasonableness	-Apply understanding in a novel way, provide argument or justification for the new application
Create	- Brainstorm ideas, concepts, problems, or perspectives related to a topic or concept	-Generate conjectures or hypotheses based on observations or prior knowledge and experience	-Develop an alternative solution -Synthesize information within one data set	-Synthesize information across multiple sources or data sets -Design a model to inform and solve a practical or abstract situation

Shift in the Cognitive Rigor

Cognitive Level	CCSS	Previous Standards
Remember	3%	8%
Understand	31%	23%
Apply	24%	36%
Analyze	13%	13%
Evaluate	5%	7%
Create	23%	13%

Rigor

Watch the following video: *Rigor and the Common Core State Standards with Barbara Blackburn*

(Time: 1:56)

<http://www.youtube.com/watch?v=z7FpqXDfpBQ>

“Rigor is creating an environment in which each student is expected to learn at high levels, each student is supported so he or she can learn at high levels, and each student demonstrates learning at high levels.”

(Blackburn, 2008)



“Rigor is more than what you teach, it’s how you teach and how students show you they understand.”



TODAY'S LEARNING TARGET

By the end of today's professional development workshop, I will enhance my understanding of how to utilize a variety of resources, which will enable me to meet the Learning Target for the December/January work at my school site with the necessary knowledge to implement the usage of the CCSS crosswalks and the Smarter Balanced Assessment Consortium (SBAC) website.

Site Based Learning Target for December/January

By the next professional development workshop, I will be familiar with the Mathematics crosswalks for the CST and CCSS and be able to identify the differences and similarities. I will also be able to discuss the implications for instruction based upon the increased rigor in CCSS. I will have initial experience with a Mathematics performance task as developed by SBAC.

What will I be able to do?	What idea, topic, subject is important for me to understand so I can use this information?	What will I be asked to do to show that I can do this?	How well will I have to demonstrate my level of understanding?
<p>For the last three months we have learned about the major shifts in the CCSS in ELA</p> <p>Now we are learning about the differences and similarities between the current CST standards and CCSS including the increase in Rigor and the process for assessing student learning</p>	<p>To be able to do this I must learn and understand ;</p> <ul style="list-style-type: none"> • 86.5 % of the ELA CCSS and our current standards are the same • 93.3% of the MATH CCSS and our current standards are the same • The Cognitive Rigor has shifted and ¼ of the standards in ELA and MATH are at the highest levels of DOK • What are the elements of and the expectations for an SBAC Performance Task 	<p>Focus on a lesson from the current standards and identify what students would be doing</p> <p>And compare it to</p> <p>A lesson focused on the CCSS and what students would be doing</p>	<p>I will demonstrate my learning at least at the beginning stage of creating and delivering a lesson aligned to the CCSS</p> <ul style="list-style-type: none"> • Organizing instruction effectively • Assessing student performance aligned to CCSS

Common Core State Standards Mathematics Crosswalks

Focus on

- What's out...
 - ✓ CA Mathematics Standards not found in your grade level CCSS
- What's in...
 - ✓ CCSS not found in your current grade level CA Mathematics Standards
- But mostly...
 - ✓ What is the same and what does it mean...

Questions to Ask

1. What are the implications for instructional planning?
2. What are the implications for assessment?

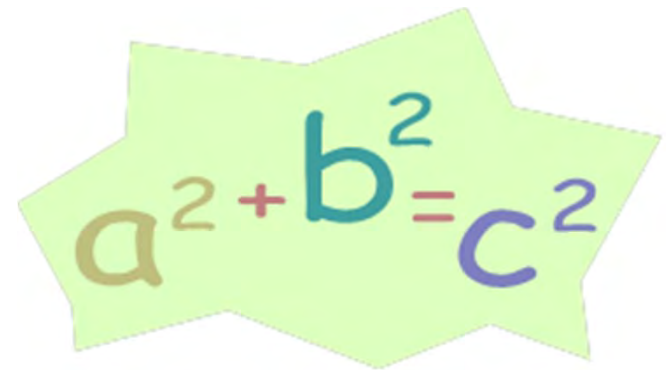


http://www.scoe.net/castandards/multimedia/k-12_math_crosswalks.pdf

- Visit the Sacramento County Office of Education website to view the Mathematics crosswalks, which show the current standards and the CCSS :
 - Grade 6 reference pp. 97-128
 - Grade 7 reference pp. 129-164
 - Algebra I reference pp. 165-175

634 CCSS (for Math)

- * 367 have a very close content match
- * 156 match partially
- * 68 have an implied match
- * 43 do not match



Meaning the 93.3% of the Math Common Core Standards and our previous standards have a strong content match

K-7 Math Standards

Grade	At Same Grade	Earlier	Higher
K	88%	0%	15%
1	88%	4%	8%
2	72%	16%	6%
3	60%	26%	9%
4	46%	20%	14%
5	55%	32%	11%
6	40%	42%	19%
7	40%	60%	0%

SMARTER BALANCED ASSESSMENT CONSORTIUM



Q: What is the SBAC?

- **A:** Smarter Balanced Assessment Consortium
- "SMARTER" stands for "Summative Multi-state Assessment Resources for Teachers and Educational Researchers."
- SBAC is a national consortium of 30 states as of November 14, 2011, that have been working collaboratively to develop a student assessment system aligned to a common core of academic content standards.

Purpose of SBAC

- To develop a **comprehensive and innovative** assessment system for grades 3-8 and high school in English language arts and mathematics aligned to the Common Core State Standards, so that...
- ...students leave high school **prepared for postsecondary success** in college or a career through increased student learning and improved teaching

[The assessments shall be **operational** across Consortium states in the 2014-15 school year]

Adopted: CCSS



Adopted: SBAC



Key Features of SBAC

- Interim, summative, and formative assessment practices and tools
- Variety of item types
 - Selected Response
 - Constructed Response
 - Extended Response
 - Performance Tasks
- Technology
- Adaptive testing
- More powerful reporting
- Digital library of resources and tools for educators

Purpose of Sample Items and Performance Tasks

- Demonstrate rigor and complexity of ELA/literacy and mathematics questions
- Showcase variety of item types:
 - Selected response
 - Constructed response
 - Technology enhanced
 - Performance tasks
- Help teachers to begin planning for the shifts in instruction

New Assessment Will Impact Instructional Delivery

- Will be approximately 40% selected response, computer adaptive
- 60% constructed response
- Performance based component, scored at the site - may be a collaborative activity

Selected Response

Single Response – Multiple Choice

For numbers 1a-1c, select Yes or No to indicate whether each fraction can be placed in the box to make a true inequality.

$$\frac{3}{4} \times \square > \frac{3}{4}$$

1a. $\frac{12}{9}$

Yes No

1b. $\frac{9}{9}$

Yes No

1c. $\frac{9}{12}$

Yes No

Selected Response

Multiple Correct Options

Which of the following statements is a property of a rectangle? Select all that apply.

- Contains three sides
- Contains four sides
- Contains eight sides
- Contains two sets of parallel lines
- Contains at least one interior angle that is acute
- Contains at least one interior angle that is obtuse
- All interior angles are right angles
- All sides have the same length
- All sides are of different length

Constructed Response

The table below shows the number of students in each third-grade class at Lincoln School.

Students in Third-Grade	
Class	Number of Students
Mrs. Roy	24
Mr. Grant	21
Mr. Harrison	22
Ms. Mack	25

There are 105 fourth-grade students at Lincoln School. How many more fourth-grade students than third-grade students are at Lincoln School? Show or explain how you found your answer.

Constructed Response

Extended Response

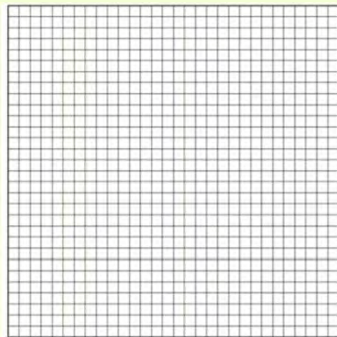
Ms. McCrary wants to make a rabbit pen in a section of her lawn. Her plan for the rabbit pen includes the following:

- It will be in the shape of a rectangle.
- It will take 24 feet of fence material to make.
- Each side will be longer than 1 foot.
- The length and width will measure whole feet.

Part A

Draw 3 **different** rectangles that can each represent Ms. McCrary's rabbit pen. Be sure to use all 24 feet of fence material for each pen.

Use the grid below. Click the places where you want the corners of your rectangle to be. Draw one rectangle at a time. If you make a mistake, click on your rectangle to delete it. Continue as many times as necessary.



Key
□ = 1 square foot

Use your keyboard to type the length and width of each rabbit pen you draw. Then type the area of each rabbit pen. Be sure to select the correct unit for each answer.

[Students will input length, width, and area for each rabbit pen. Students will choose unit from drop down menu.]

Pen 1:

Length: (feet, square feet)

Width: (feet, square feet)

Area: (feet, square feet)

Pen 2:

Length: (feet, square feet)

Width: (feet, square feet)

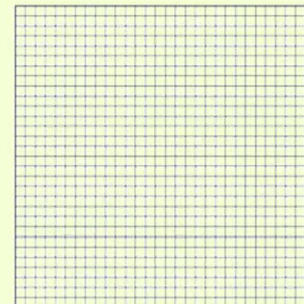
Area: (feet, square feet)

Part B

Ms. McCrary wants her rabbit to have more than 60 square feet of ground area inside the pen. She finds that if she uses the side of her house as one of the sides of the rabbit pen, she can make the rabbit pen larger.

- Draw another rectangular rabbit pen.
- Use all 24 feet of fencing for 3 sides of the pen.
- Use one side of the house for the other side of the pen.
- Make sure the ground area inside the pen is greater than 60 square feet.

Use the grid below. Click the places where you want the corners of your rectangle to be. If you make a mistake, click on your rectangle to delete it.



Key
□ = 1 square foot

Use your keyboard to type the length and width of each rabbit pen you draw. Then type the area of each rabbit pen. Be sure to select the correct unit for each answer.

Length: (feet, square feet)

Width: (feet, square feet)

Area: (feet, square feet)

Performance Task

Grade 8

During the task, the student assumes the role of an architect who is responsible for designing the best plan for a park with area and financial restraints. The student completes tasks in which he/she compares the costs of different bids, determines what facilities should be given priority in the park, and then develops a scale drawing of the best design for the park and an explanation of the choices made. This investigation is done in class using a calculator, an applet to construct the scale drawing, and a spreadsheet.

Technology-Enabled

Selected or Constructed Responses that include Multimedia

Brianna is running for class president. She needs to give a speech to the 4th grade class. Listen to the draft of her speech and then answer the questions that follow.

(Test-takers listen to an audio version of the following speech.)

“Hi, My name is Brianna. I am running for class president, and I hope you will vote for me. You know many of my friends said they would. I am involved in many activities, including track and theater. If I am elected, I will hold several fundraisers so that all students in the 4th grade can go on a trip at the end of the year. Also, we can donate a portion of the money to a charity of our choice. If you want a class president who will work hard for you and listen to your needs, please vote for me next week!”

This speech needs to be revised before the student presents it. Which sentence should be omitted to improve the speech.

- A. I am running for class president, and I hope you will vote for me.
- B. You know many of my friends said they would.
- C. If I am elected, I will hold several fundraisers so that all students in the 4th grade can go on a trip at the end of the year.
- D. If you want a class president who will work hard for you and listen to your needs, please vote for me next week!”

Technology-Enhanced

Collects Evidence through a Non-Traditional Response

Below is a poem, a sonnet, in which the speaker discusses her feelings about a relationship. Read the poem and answer the question that follows.

Remember

by Christina Rossetti

Remember me when I am gone away,
 Gone far away into the silent land;
 When you can no more hold me by the hand,
Nor I half turn to go yet turning stay.
Remember me when no more day by day 5
 You tell me of our future that you plann'd:
 Only remember me; you understand
It will be late to counsel then or pray.
Yet if you should forget me for a while
 And afterwards remember, do not grieve: 10
 For if the darkness and corruption leave
 A vestige* of the thoughts that once I had,
Better by far you should forget and smile
 Than that you should remember and be sad.

In the sonnet "Remember," which two lines reveals a change in the speaker's message to her subject?

SBAC Website

1. Visit the website at <http://www.smarterbalanced.org/>
2. Click on the tab “Smarter Balanced Assessments
3. Click on the sub tab “Item Writing and Review”
4. Click on the text “Smarter Balanced item/task specifications and review guidelines”
5. Locate the content and grade level
6. Open the ZIP files

The screenshot shows the Smarter Balanced Assessment Consortium website. At the top left is the logo with the text "Smarter Balanced Assessment Consortium". To the right are links for "Home", "Contact Us", and "Member States Login". Below these is a "Stay Connected" email icon and a search bar with the placeholder text "What are you looking for?". A navigation bar contains tabs for "ABOUT", "SMARTER BALANCED ASSESSMENTS", "K-12 EDUCATION", "HIGHER EDUCATION", "PARENTS & STUDENTS", and "RESOURCES & EVENTS". The main content area features a large banner for "Trainings for Item Writers & Reviewers" with a sub-headline "Presentations on Smarter Balanced items and performance tasks guide educators in creating next-generation assessments." and a "READ MORE" link. Below the banner are two columns of text. The left column is titled "Smarter Balanced Assessment Consortium" and describes the organization's mission. The right column is titled "School Years" and lists years from 2009-2010 to 2013-2014, with 2012-2013 highlighted. Below the "Latest News" section, there is a link to "Draft Initial Achievement Level Descriptors Released for Public Review" with a brief description and a "READ MORE" link.

Smarter Balanced Assessment Consortium
Smarter Balanced is a state-led consortium developing assessments aligned to the Common Core State Standards in English language arts/literacy and mathematics that are designed to help prepare all students to graduate high school college- and career-ready. [READ MORE](#)

Latest News
[Draft Initial Achievement Level Descriptors Released for Public Review](#)
The Consortium released draft initial achievement level descriptors (ALDs) for feedback and review through January 15, 2013. The initial ALDs describe levels of student performance in English language arts/literacy and mathematics on the Smarter Balanced assessments. Smarter Balanced has also released a college content-readiness definition with associated implications for 12th grade and postsecondary coursework at each achievement level on the 11th grade assessment. Feedback can be submitted through an online survey. [READ MORE](#)

School Years
Smarter Balanced assessments will be implemented in the 2014-15 school year. Click below to see what's happening and when.

- 2009-2010
- 2010-2011
- 2011-2012
- 2012-2013**
- 2013-2014

What's Happening
Working with educators, Smarter Balanced will conduct a pilot test of the assessment system. [READ MORE](#)



Mathematics Assessment Claims

The Mathematics Content Specifications describe the four claims and provide a set of assessment targets for each claim.

40 %

CLAIM 1- **Concepts and Procedures**, which requires students to explain and apply mathematical concepts to interpret and carry out mathematical procedures with precision and fluency.

20 %
Each

CLAIM 2- focuses on **Problem Solving** and requires students to solve complex mathematical problems using knowledge and problem solving strategies.

CLAIM 3- addresses **communicating reasoning** and requires students to clearly and precisely construct viable arguments to support their reasoning and to critique the reasoning of others.

CLAIM 4- focuses on **modeling and data analysis** and requires students to analyze complex, real-world scenarios and construct and use mathematical models to interpret and solve problems.

Alignment to Claims and Assessment Targets

MAT.05.CR.2.0000G.A.157 Claim 2

Sample Item ID:	MAT.05.CR.2.0000G.A.157
Grade:	07
Primary Claim:	Claim 2: Problem Solving Students can solve a range of well-posed problems in pure and applied mathematics, making productive use of knowledge and problem-solving strategies.
Secondary Claim(s):	Claim 1: Concepts and Procedures Students can explain and apply mathematical concepts and carry out mathematical procedures with precision and fluency.
Primary Content Domain:	Number and Operations in Base Ten
Secondary Content Domain(s):	
Assessment Target(s):	2 A: Apply mathematics to solve well-posed problems arising in everyday life, society, and the workplace. 1 F: Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
Standard(s):	5.NF.4
Mathematical Practice(s):	1, 2, 5, 6, 7
DOK:	3
Item Type:	CR
Score Points:	2
Difficulty:	M
Key:	See Sample Top-Score Response.
Stimulus/Source:	
Target-Specific Attributes (e.g., Accessibility Issues):	
Notes:	

ON TARGET

SAMPLE ASSESSMENTS



Let's Take a Look...



1. In grade level groups of 3 or 4, review the sample Performance Task provided.
2. In your grade level group, discuss the implications for current practices in instruction and assessment.
3. Record your ideas on the chart paper and be prepared to share your discussion with the whole group.

Reflection

- What **changes** do you anticipate in your **classroom practice** to prepare students for the higher level SBAC assessments?



Next Steps: Prior to the Next Professional Development

- In order to meet the site based Learning Target and prepare for the next professional Development Workshop , continue discussions around the transition to CCSS, rigor, and assessment

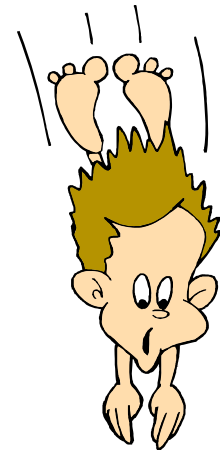
...Individually

...in department meetings

...at staff meetings



Don't be afraid to take the plunge ...
We are all in this together!



Resources

California Department of Education Resources

CDE on iTunes U

<http://www.cde.ca.gov/re/mm/it/>

Child Development Division Resources

<http://www.cde.ca.gov/sp/cd/re/>

Common Core State Standards Resources Website

<http://www.cde.ca.gov/ci/cc/>

Los Angeles County Office of Education

<http://www.lacoe.edu/CurriculumInstruction/CommonCore.aspx>

Professional Development Opportunity Search Form

<http://ww3.cde.ca.gov/prodevops/search.aspx>

SMARTER Balanced Assessment Consortium Webpage

<http://www.cde.ca.gov/ta/tg/sa/smarterbalanced.asp>

Taking Center Stage Act II

<http://pubs.cde.ca.gov/tcsii/index.aspx>

Multi-State Resources

Common Core State Standards Initiative Website

<http://www.corestandards.org/>

EngageNY Common Core

<http://engageny.org/>

SMARTER Balanced Assessment Consortium Webpage

<http://www.k12.wa.us/SMARTER/default.aspx>

