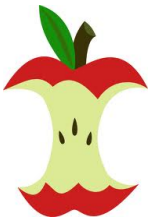
GET to the CORE OF THE CORE



COMMON CORE STATE STANDARDS INITIATIVE

Chris Shore
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Temecula Valley USD

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@MathProjects
#CMCS15
#CorewithShore

MPJ

GET to the CORE OF THE CORE

Purpose of the Core

Perseverance through the Change

Progression towards the Goal

MPJ

GET to the CORE OF THE CORE

Purpose

MPJ

GET to the CORE OF THE CORE

$$6 + 4 + 4 + 8 = 21$$

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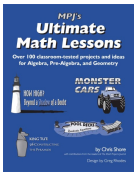
GET to the CORE OF THE CORE

The Common Core has been around long before they called it the Comon Core.



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GET to the CORE OF THE CORE

COMMON CORE STATE STANDARDS INITIATIVE

Teach students to THINK and COMMUNICATE their thinking.

These are the 21st Century Skills.

MPJ

GET to the CORE OF THE CORE

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GET to the CORE OF THE CORE

Think & Communicate

are the 21st Century Skills.

Obtain & Retain

were the 20th Century Skills.

MPJ

The 6 Shifts

engage^ny

We are redefining RIGOR.

Shift 1	Focus	Teachers significantly narrow and deepen the scope of how time and energy is spent in the math classroom. They do so in order to focus deeply on only the concepts that are prioritized in the standards.
Shift 2	Coherence	Principals and teachers carefully connect the learning within and across grades so that students can build new understanding onto foundations built in previous years.
Shift 3	Fluency	Students are expected to have speed and accuracy with simple calculations; teachers structure class time and/or homework time for students to memorize, through repetition, core functions.
Shift 4	Deep Understanding	Students deeply understand and can operate easily within a math concept before moving on. They learn more than the trick to get the answer right. They learn the ma...
Shift 5	Application	Students are expected to use math and choose the appropriate concept for application even when they are not prompted to do so.
Shift 6	Dual Intensity	Students are practicing and understanding. There is more than a balance between these two things in the classroom – both are occurring with intensity.

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GET to the CORE OF THE CORE

Think & Communicate

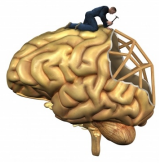
The 6 Shifts = The 21st Century Skills

MPJ

The 4 C's

EdLeader21

We are redefining LEARNING and SCHOOL.



Critical Thinking

Communication

Collaboration

Creativity

60%

MPJ

GET to the CORE OF THE CORE

Think & Communicate

The 4 C's = The 21st Century Skills

MPJ

The 4 Claims

Smarter Balanced Assessment Consortium

We are redefining ASSESSMENT.

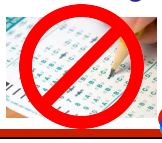
Concepts & Procedures

30%

Critical Thinking

Communicate Reasoning

Construct Models



MPJ

Old School vs New School

1 What is 6050.287 rounded to the nearest ten?

A 6050

B 6100

C 6050.29

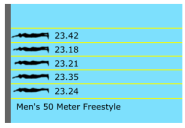
D 6050.3

MPJ

Old School vs New School

43025

Five swimmers compete in the 50-meter race. The finish time for each swimmer is shown in the video.



Explain how the results of the race would change if the race used a clock that rounded to the nearest tenth.

MPJ

Old School vs New School

33 $2\frac{1}{3}+4\frac{1}{2}=$

A $6\frac{1}{6}$

B $6\frac{1}{5}$

C $6\frac{2}{5}$

D $6\frac{5}{6}$

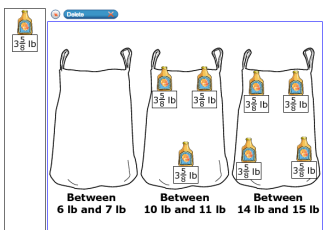
MPJ

Old School vs New School

43328

Jared is testing how much weight a bag can hold. He plans to put juice bottles into three bags. He wants each bag to have a total weight within the given range.

- Drag juice bottles into each bag so that the weight is within the given range.
- Leave the bag empty if the given range is not possible using juice bottles.



MPJ

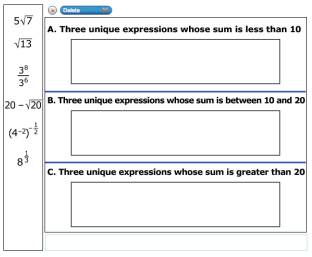
SBAC Claim: Concepts & Procedures

42906

A. Drag into the box exactly three unique expressions whose sum is less than 10.

B. Drag into the box exactly three unique expressions whose sum is between 10 and 20.

C. Drag into the box exactly three unique expressions whose sum is greater than 20.



MPJ

SBAC Claim: Critical Thinking

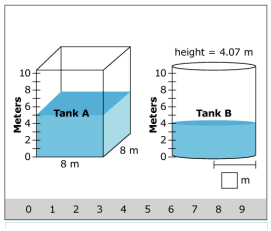
42968

Two water tanks are shown. Tank A is a rectangular prism and Tank B is a cylinder. The tanks are not drawn to scale.

Tank A is filled with water to the 10-meter mark.

Click Tank A to change the water level. The volume of water that leaves Tank A is transferred to Tank B, and the height of the water in Tank B is shown.

Drag one number into the box to show the approximate radius of the base of Tank B.



SBAC Claim: Communicate Reasoning

43052

Tony is buying a used car. He will choose between two cars. The table below shows information about each car.

Car	Cost	Miles Per Gallon (MPG)	Estimated Immediate Repairs
Car A	$3200	18	$700
Car B	$4700	24	$300

Tony wants to compare the total costs of buying and using these cars.

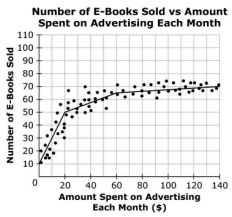
- Tony estimates he will drive at least 200 miles per month.
- The average cost of gasoline per gallon in his area is $3.70.
- Tony plans on owning the car for 4 years.

Calculate and explain which car will cost Tony the least to buy and use.

SBAC Claim: Models & Data

43028

Tyler earns $3.00 for every e-book he sells on his website. (E-books are books that are available electronically.) He investigated the relationship between the amount spent on advertising each month and the number of e-books sold. He used this information to determine the lines of best fit shown in this graph.



What is the greatest amount Tyler should spend on advertising each month? Show your work or explain how you found your answer.

GET to the CORE OF THE CORE

Think & Communicate

The 4 Claims = The 21st Century Skills

The 8 Practices

The Practices are for the students.

COMMON CORE STATE STANDARDS INITIATIVE

Common Core Math is all about the Practices.

Mathematical 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.

The 8 Practices

COMMON CORE STATE STANDARDS INITIATIVE

Standards of Content vs Standards of Practice

Fluency

Deep Understanding

Multiplication as Grouping

ELEMENTARY

Multi-Step Word Problems

Algebra 1 Grades 6-9

Explain Reasoning

Statistics

Transformations

Secondary

Exponential Relations

Functions

The 8 Practices

COMMON CORE STATE STANDARDS INITIATIVE

Mathematical 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.

MPJ

GET to the CORE OF THE CORE

Think & Communicate

The 8 Practices =

The 21st Century Skills

MPJ

GET to the CORE OF THE CORE

The 6 Shifts

+ The 4 C's

+ The 4 Claims

+ The 8 Practices

= The 21st Century Skills

MPJ

GET to the CORE OF THE CORE

6 + 4 + 4 + 8 = 21

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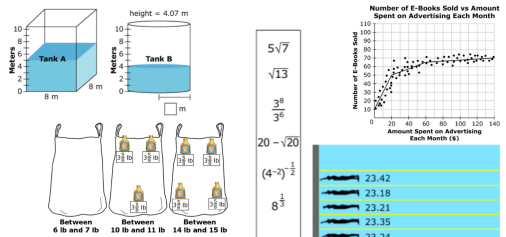
GET to the CORE OF THE CORE

Perseverance

MPJ

What Does This Say About Your New Job Description?



Car	Cost	Miles Per Gallon (MPG)	Estimated Immediate Repairs
Car A	$3200	18	$700
Car B	$4700	24	$300

$5\sqrt{7}$

$\sqrt{13}$

$\frac{3^8}{3^6}$

$20 - \sqrt{20}$

$(4^{-2})^{-\frac{1}{2}}$

$8^{\frac{1}{3}}$

MPJ

The New Classroom

by Achieve the Core

"This change requires a different style of instruction than what many have come to call 'sit and get.'

… teachers will have to encourage much more student work and student discourse and engage in far less teacher talk."

The Common Core is only a new expectation; It does not dictate a change in instruction… It only demands it.

MPJ

GET to the CORE OF THE CORE

Progression

MPJ

Explicit Teaching of Thinking

H.O.T.S.

Dr. John Star

"Math does not teach Problem Solving."

"Only the explicit teaching of thinking teaches thinking."

MPJ

Defining Problem Solving

Exercise

Problem

Don't Know How

Don't Have the Ability

Crisis

MPJ

Re-Orientation: This is THE Progression!

Notes-Oriented → Task-Oriented

30% *Dual Targets* 70%

Content* and *Practice

Daily!

MPJ

Task-Oriented Progression

70%

What is a Task?

30%

Notes & Drill

"A *mathematical task* is a problem or set of problems that focuses students' attention on a particular mathematical idea and/or provides an opportunity to develop or use a particular mathematical habit of mind."

-- Adding it up (2001)

8 Practices

MPJ

Task-Oriented Progression

What is a Task?

"a problem that provides an opportunity to develop mathematical ideas and [thinking]."

-- Adding it up (2001)

Tasks = Problems used to teach Content & Practices

Task-Oriented Progression

Dr. Peg Smith

"It's all about the task.
It's all about the task.
It's all about the task."

Tasks Are For Whom?

Accelerated Remedial Math Students with Rich & Robust Tasks

Dr. Uri Treisman

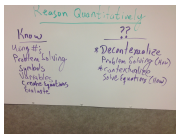
ALL Kids!

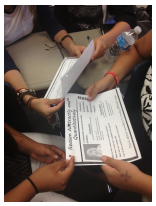
Dave Foster

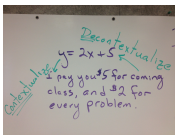
50% False Positives
Among 8th Grade Geometry
From CST to SBAC

Explicit Instruction through Tasks in Algebra

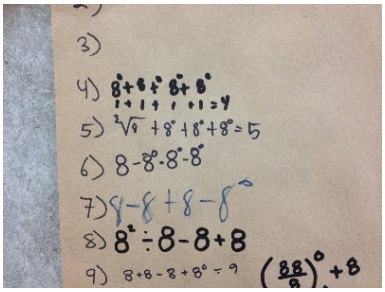
Target: We will use order of operations and quantitative reasoning to write expressions for a given value.







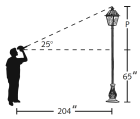
Explicit Instruction through Tasks in Algebra



Explicit Instruction through Tasks in Algebra

"not quit"

Target: We will persevere in solving problems with trigonometry.

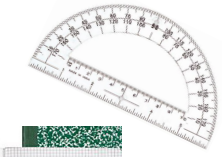


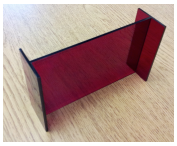
Use Ratios
Substitute
Plot Points
Use Formulas
TesAssumptions
Write an Equations
Guess-n-Check
Measure

Common Sense
Fight the Gravity Storm
Use Tools
Reverse the Steps
Draw
Use Properties
Teamwork
Wrestle the Bear

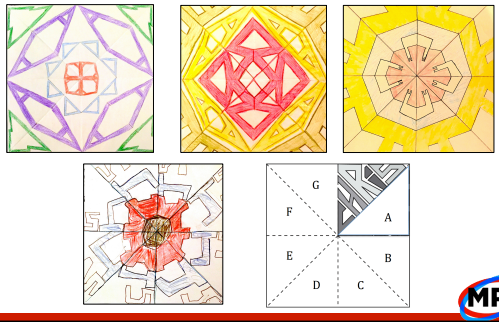
Creativity through Tasks

Creativity through Tasks



Creativity through Tasks



Classroom Models

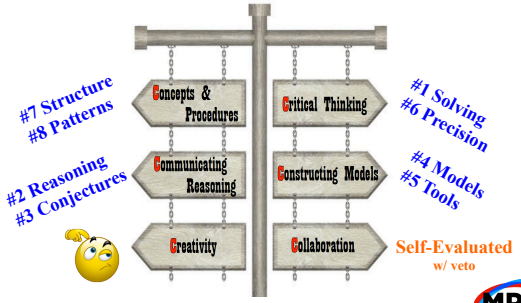
Algebra 180 Blog

Geometry 180 Blog

www.mathprojects.com

The 6 C's: Value–Based Grading

(my one original thought)



The Take-Aways

Purpose
The Common Core is all about teaching students to *think & communicate,*

Perseverance
so our *job description* has changed …

Progression
to the *explicit teaching* of the Standards of Content & the Standards of Practice by being *task-oriented.*

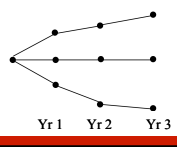
Call to Action

2-Week Rule

Teacher Action is the Difference

"The greatest influence in the quality of the education that a student receives is the decisions that a teacher makes on a daily basis."

-- Dr. William Schmidt, University of Michigan



Teacher Action is the Difference

Teachers matter most.
-- Dr. William Schmidt, University of Michigan

Teachers matter most.
-- Peg Smith, University of Pittsburgh

Teachers matter most.
-- Tim Kanold, Adlai E. Stevenson HS, Chicago

Poverty matters … a lot.
-- Dr. Uri Treismen, University of Texas, Austin

Teachers matter most.
-- David Foster, Silicon Valley Math Initiative, CA

Teach students to *think & communicate* …

…with the faith that they can learn it, and that we can teach it to them, because what we do matters… the most.

www.mathprojects.com

Send your text message to this Phone Number: 37607

11090 (poll code) *(1 space)* 0-3 0-3 0-3 *(1 space)* _____ Other comments (words)

- 0-3: well-prepared & knowledgeable
- 0-3: engaging & effective
- 0-3: Matched title & description

Example: 11090 323 Inspiring, good content