COMMON CORE STATE STANDARDS IN MATHEMATICS

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OBJECTIVE:

1. Let's start at the beginning
2. Philosophy and Shifts for mathematics
3. Standards overview
4. Assessment overview

THE BEGINNING – NATIONALLY 3 MINUTES

You Tube - Hunt Institute - A New Foundation for Student Success

THE BEGINNING - NATIONALLY

- Council of Chief State School Officers (CCSSO): a nonpartisan, nationwide, nonprofit organization of public officials who head departments of elementary and secondary education.
- National Governor's Association (NGA): the collective voice of the nation's governors and one of Washington, D.C.'s most respected public policy organizations.

THE BEGINNING - CALIFORNIA

- Each state could adopt the standards as is or they could add up to 15% more.
- CA added more by including some current 1997 standards, adding an Algebra 1 option in grade 8, and adding Statistics AP and Calculus in high school. Those standards are bold and underlined.
- The standards were adopted in CA on August 2, 2010.

BILL McCALLUM & JASON ZIMBA VIDEO, 8 MINUTES

The Mathematics Standards: How They Were Developed and Who Was Involved - YouTube

THE SHIFTS FOR MATHEMATICS

- **Focus**
- **Coherence**
- **Rigor**

Focus

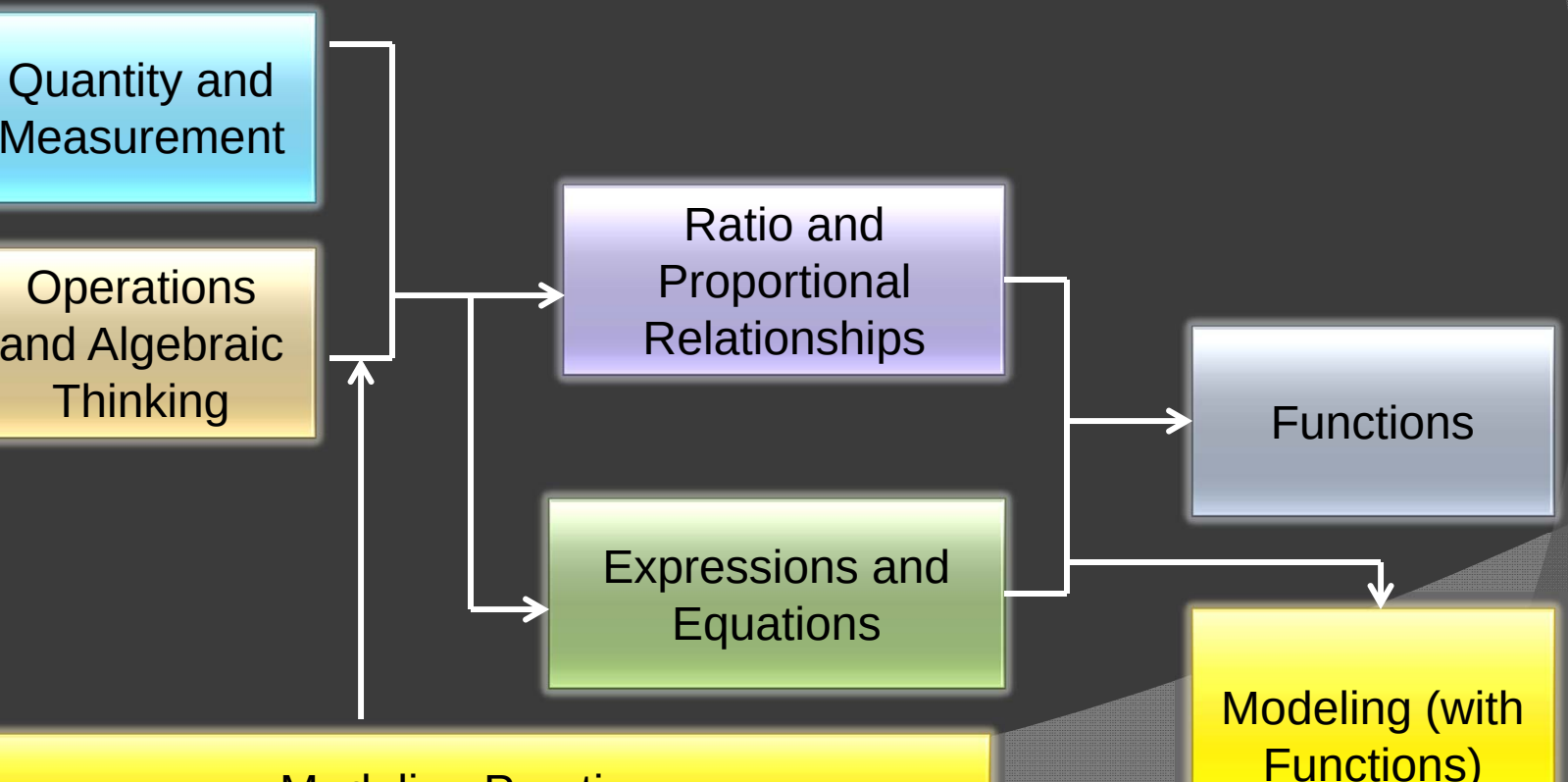
Eraser Power-

Teach Less
Learn More

Coherence

K – 5 6 – 8 9 – 12

Practice Standards K-12



Rigor

Conceptual Understanding

Procedural Skill and Fluency

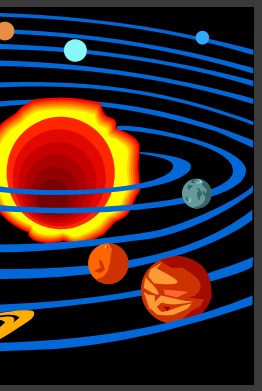
Application

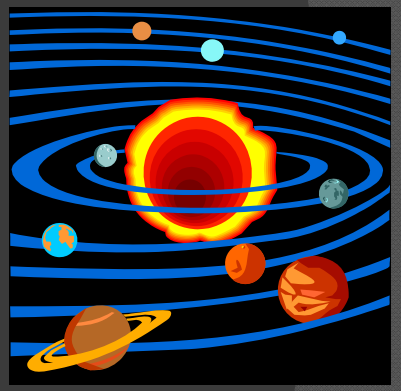
Conceptual Understanding

Understanding the Mathematics vs. Answer-Getting

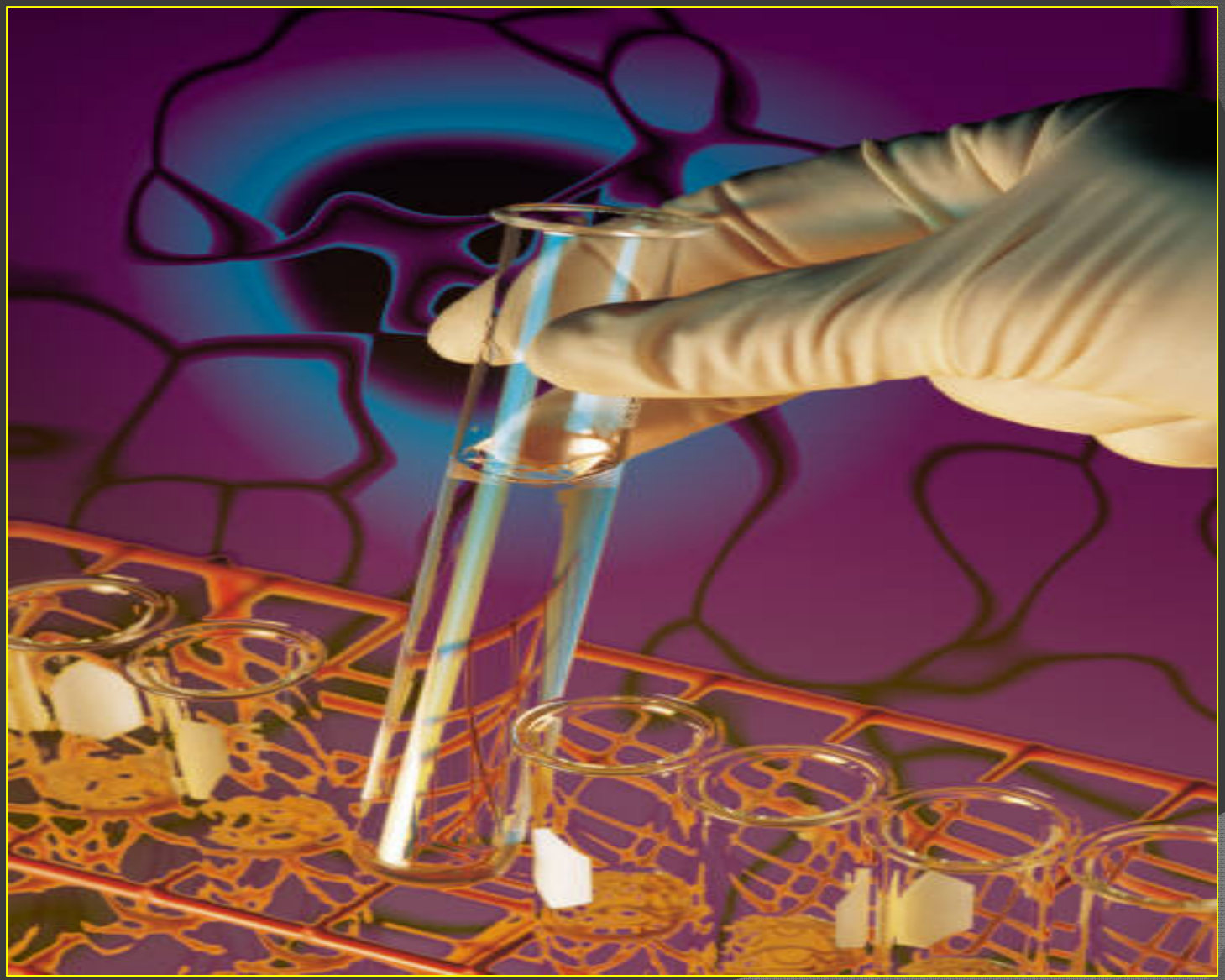
Procedural Skill and Fluency

Application





Knowing how to connect math to life…

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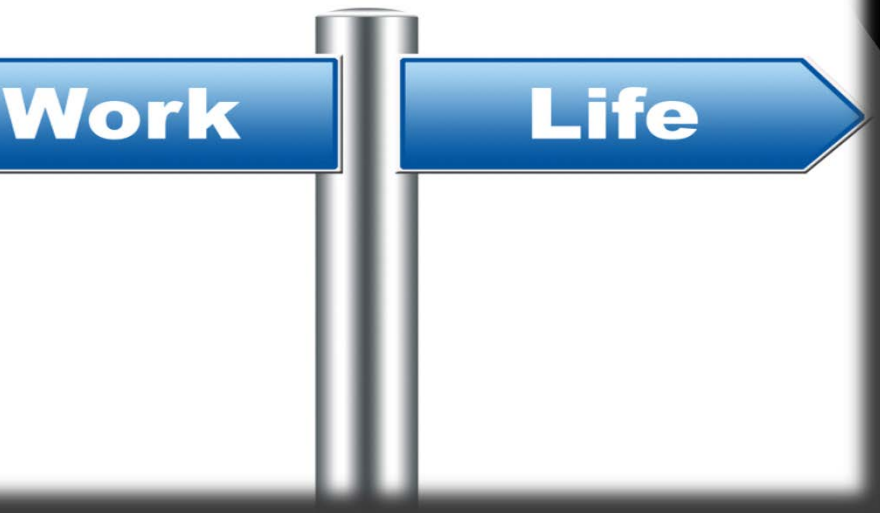

Work
Life

HIL DARO VIDEO
6 MINUTES

hil Daro - The Formative Principles of the Common Core Standards on Vimeo

THINKING ROUTINE: CHALK TALK

THINKING ROUTINE: CHALK TALK

All participants stand around a large sheet of paper. One rson writes a word, phrase or question on the paper and aces colored markers nearby.

Participants randomly add their impressions to the phrase or d comments/questions to the ideas written by others. **No one eaks for several minutes as the process continues.** The sult should resemble a web, and there will be diverse sponses.

What ideas come to mind when you consider this idea? hat connections can you make to others' responses? (Lines) hat questions arise as you think about the ideas and consider e responses and comments of others? (Question marks, derline or star)

inking moves: generate ideas, connect responses, and nsider other viewpoints, compare and contrast

HE STANDARDS – CA 1997

The 1997 CA standards are organized by grade level for K – 7 and are presented in the same five strands.

- Number Sense
- Algebra & Functions
- Measurement & Geometry
- Statistics, Data Analysis, and Probability
- Mathematical Reasoning

The grade 8 – 12 standards are presented under discipline headings instead of grade levels.

HE STANDARDS – CCSS-M for CA

The CCSS are organized by grade level for K – 8 and are presented in different domains. The high school standards are currently listed in conceptual categories.

The 8 Standards for Mathematical Practice are the same K – 12.

CA Algebra 1 for grade 8 is currently under review. Will most likely align with the high school equivalent.

HE STANDARDS – CCSS-M for CA

K – 5 Domains

K	1	2	3	4	5
ounting and rdinality (CC)					
Numbers and Operations in Base Ten (NBT)					
			Number and Operations – Fractions (NF)		
Operations and Algebraic Thinking (OA)					
Measurement and Data (MD)					
Geometry (G)					

HE STANDARDS – CCSS-M for CA

6 – 8 Domains

6	7	8
Ratios and Proportional Relationships (RP)		
The Number System (NS)		
Expressions and Equations (EE)		
		Functions (F)
Geometry (G)		
Statistics and Probability (SP)		

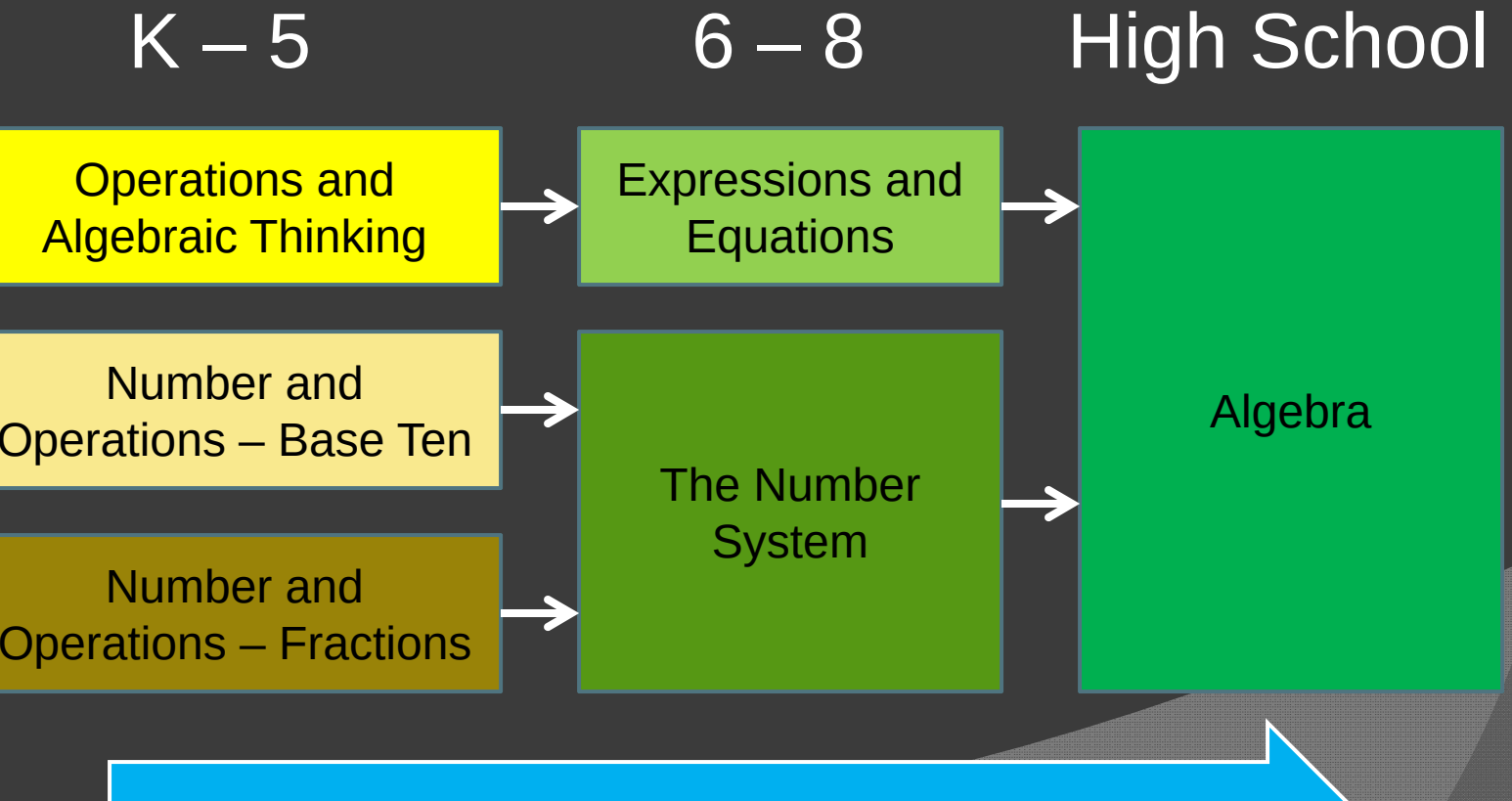
HE STANDARDS – CCSS-M for CA

Conceptual Categories

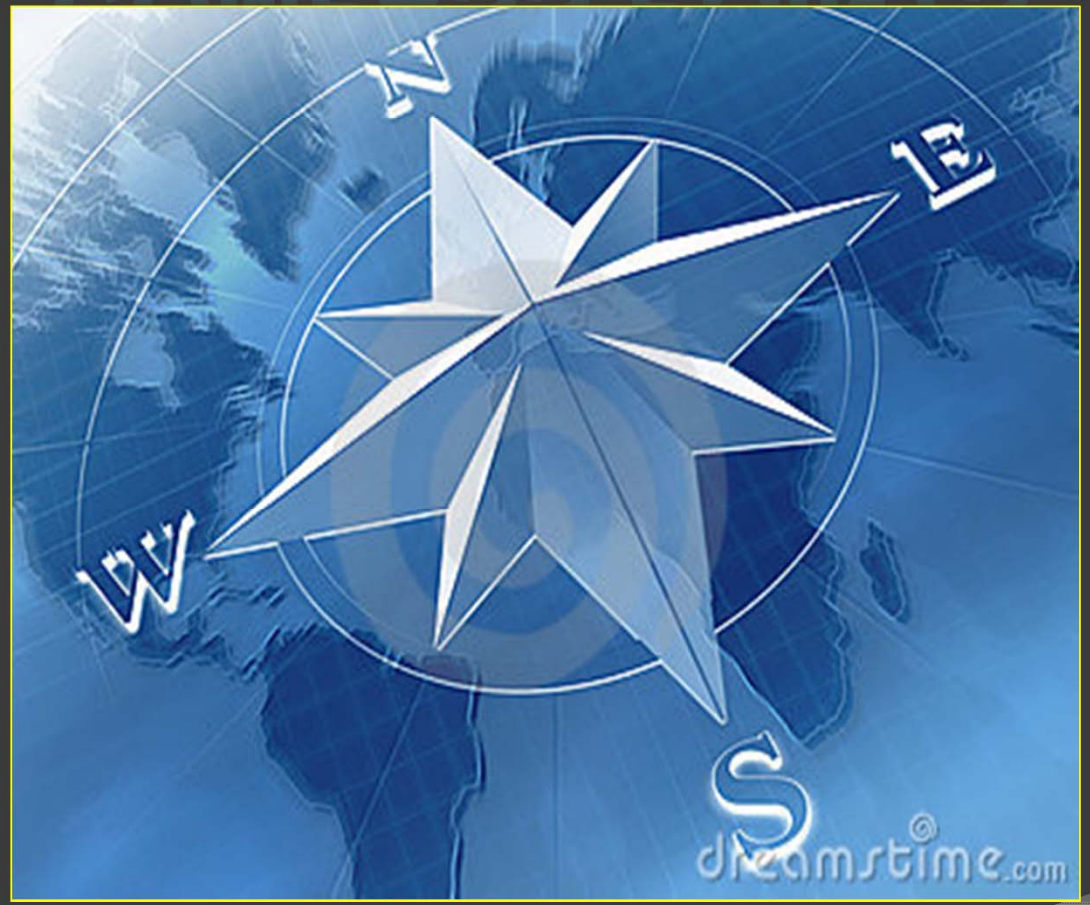
High School
Number and Quantity (N)
Algebra (A)
Functions (F)
Modeling
Geometry (G)
Statistics and Probability (S)

AMPLE OF COHERENCE

ocusing attention within Number and Operations



THINKING ROUTINE: COMPASS POINTS



THINKING ROUTINE: COMPASS POINTS

Draw a compass in the center of your paper and then record responses that correspond to the appropriate direction: **E, W, N, or S.** You will fill out the compass as we go through this section on assessments.

E = Excited What excites you about the new assessments? What's the upside?

W = Worrisome What do you find worrisome about the new assessments? What's the downside?

N = Need to Know What else do you need to know or find out about the new assessments?

S = Stance or Suggestion for Moving Forward What is your current stance or opinion on the new assessments? How might you move forward in preparing for the new assessments?

nking moves: flesh out an idea or proposition and eventually evaluate it

HE ASSESSMENT

Smarter Balanced Assessment Consortium (SBAC)

- CA is a governing state

Testing begins in 2014 – 2015

Summative test in grades 3 – 8, and 11

CA may add grades 2, 9 and 10

MARTER BALANCED

een – governing states, Blue – participating states

ELECTED RESPONSE

raditionally, selected-response (SR) items clude a stimulus and stem followed by three o five options from which a student is rected to choose only one answer. By edesigning some SR items, it is often ossible to both increase the complexity of he item and yield more useful information egarding the level of understanding about the ubject(s) that a student's response emonstrates.

ELECTED RESPONSE – GRADE 3

he number sentence below can be solved using
ns and ones.

67 + 25 = _____ tens and _____ ones

elect one number from each column to make
e number sentence true.

Tens	Ones
○ 2	○ 2
○ 6	○ 5
○ 8	○10
○ 9	○12

ELECTED RESPONSE – GRADE 6

dentify the number(s) that makes each statement true. You may select more than one number for each statement.

1a. $-4.8 + \square =$ a positive number ○ –5.2 ○ 4.9

1b. $\square - 1\frac{1}{2} =$ a negative number ○ $\frac{3}{2}$ ○ $-\frac{7}{3}$

1c. $\square + 5 =$ zero ○ –5 ○ 5

1d. $-2.15 - \square =$ a negative number ○ –1.75 ○ 1.34

ELECTED RESPONSE – ALGEBRA

iven: $(x + 4)^2 - (x - 2)(x + 4)$

or numbers 1a - 1f, determine whether the expressions are quivalent to the expression given above, for all values of x.

a.	24	○Yes	○No
b.	$2(x + 4)$	○Yes	○No
c.	$-2(x - 12)$	○Yes	○No
d.	$6(x + 4)$	○Yes	○No
e.	$(x + 4) - (x - 2)$	○Yes	○No
f.	$(x + 4)[(x + 4) - (x - 2)]$	○Yes	○No

CONSTRUCTED RESPONSE

he main purpose of a constructed-response (CR) em/task is to address targets that are of greater omplexity, requiring more analytical thinking and asoning than an SR item can typically elicit.

ut of necessity, only the CRs that can be computer cored using current technologies will be assigned to the omputer-adaptive component of the assessment. All her CRs will be assigned to a collection of 6 to 9 tasks at are intended to collectively take up to 120 minutes to dminister.

ONSTRUCTED RESPONSE – GRADE 4

scientist watched a group of squirrels collect acorns. Each uirrel **ate** some of the collected acorns and **stored** the rest the collected acorns.

e table below shows data for three squirrels in the group. e number of acorns each squirrel **stored** is missing from e table. Fill in the data that are missing from the table.

Acorns Collected by Squirrels

Squirrel	Number Eaten	Number Stored	Total Number Collected
x	40		100
y	50		105
z	35		95

ONSTRUCTED RESPONSE – GRADE 7

n the following equation, a and b are oth integers.

$$a(3x - 8) = b - 18x$$

/hat is the value of a? ☐

/hat is the value of b? ☐

ONSTRUCTED RESPONSE – ALGEBRA

restaurant serves a vegetarian and a chicken lunch special
ch day. Each vegetarian special is the same price. Each
icken special is the same price. However, the price of the
getarian special is different from the price of the chicken
ecial.

- On Thursday, the restaurant collected $467 selling 21 vegetarian specials and 40 chicken specials.
- On Friday, the restaurant collected $484 selling 28 vegetarian specials and 36 chicken specials.

hat is the cost of each lunch special?

egetarian: _____

icken: _____

XTENDED RESPONSE

order to distinguish the CR items/tasks that
ontribute to the performance task component
om those that are part of the computer-adaptive
omponent, the former will be referred to as
xtended-response (ER) items/tasks.

is intended that no single ER be administered in
olation, but rather as part of a collection of 6 to 9
R items/tasks that will serve to complete the
stribution of content and targets for a well-
esigned assessment, appropriate to each grade.

XTENDED RESPONSE – GRADE 5

s. Phelps bought 4 boxes of crayons at the store to share with her dents. Each box contained a total of 64 crayons.

rt A What is the total number of crayons Mrs. Phelps bought at the store? plain your answer using diagrams, pictures, mathematical expressions d/or words.

Crayons

rt B Mrs. Phelps wants to give each of her students an equal number of e crayons she bought. There are 32 students in Mrs. Phelps' class. How any crayons should each student get?

Crayons

rt C How many more boxes of crayons does Mrs. Phelps need if she wants ch of her students to get 12 crayons? Explain your answer using diagrams, tures, mathematical expressions and/or words.

Boxes of Crayons

XTENDED RESPONSE – GRADE 8

hley and Brandon have different methods for finding square roots.

shley's Method
find the square root of x, find a number so that the product of the mber and itself is x. For example, $2 \cdot 2 = 4$, so the square root of 4 2.

andon's Method
find the square root of x, multiply x by $\frac{1}{2}$. For example, $4 \bullet \frac{1}{2} = 2$, the square root of 4 is 2.

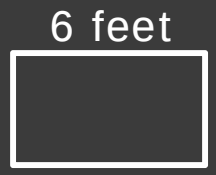
hich student's method is **not** correct?
Ashley's method
Brandon's method

plain why the method you selected is **not** correct.

XTENDED RESPONSE – FUNCTIONS

rt A

e rectangle shown at right has a length of 6 feet.

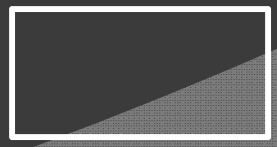


e value of the area of the rectangle, in square feet, is an irrational mber. Therefore, the number that represents the width of the rectangle ust be —

- A whole number
- A rational number
- An irrational number
- A non-real complex number

rt B

e length, *l*, and width, *w*, of the rectangle shown right have values that are rational numbers.



nstruct an informal proof that shows that the value of the area, in square et, of the rectangle must be a rational number.

COMPLETE YOUR COMPASS POINTS.

Communication
Communication

Teacher leaders are a critical component of the flow of transition information to your colleagues at your site.

They will be sharing with you information from the professional development they receive.

Main Purposes of theTeacher Leader in Mathematics

- LEARN
- SHARE
- SHAPE

LEARN

Teacher leaders will learn about the CCSS-M and how their implementation will proceed.

SHARE

Teacher leaders will share what they learn with their staff/department

Teacher leaders will share their staff's/ department's thoughts with us in January, 2013

SHAPE

Teacher leaders will help you shape the implementation process for VUSD kids.


THANK
YOU

/EBSITES:

Smarter Balanced Assessment Consortium: www.smarterbalanced.org

California Common Core State Standards & resources: www.cde.ca.gov/ci/cc

USD CONTACTS

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