

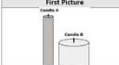
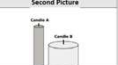


Top Teacher Moves Spiraling & Re-Engagement

Day 4, Mar 10, 2025


Chris Shore
The Math Projects Journal
clotheslinemath.com
 Murrieta Valley USD

First Picture	Second Picture
	
<p>Time = 0 hrs</p> <p>Candle A initial height = 20 cm Candle B initial height = 10 cm</p>	<p>Time = 1 hr</p> <p>Candle A height after 1 hour = 16 cm Candle B height after 1 hour = 9 cm</p>

shore@mathprojects.com
[@MathProjects](https://www.instagram.com/MathProjects)
[#TopTeacherMoves](https://twitter.com/TopTeacherMoves)

1

Your Rockstar



2

Re-Engaging With Our Learning

**Revisiting the
Top Teacher Moves**

VISION of CLOTHESLINE: Team Progress on Vision (1-3)

• Describe in _____ how we are using _____ resources when we are engaged and learning ready.

GOALS/INTENTIONS: Team Progress on Goals (1-3)

• Students must believe in _____

• Teachers must believe in _____

To Reach & Teach THOSE KIDS: Team Progress on Those Kids (1-3)

• We need a P _____

• Students need _____ Engagement

• P _____

• P _____

The Standards of MATHEMATICAL PRACTICES: Team Progress on The SMPs (1-3)

• _____

• _____

• _____

• _____

• _____

• _____

Dual Topics means to have a lesson objective that states both C _____ & P _____

The Explicit Teaching of THOUGHTS: Team Progress on Thinking (1-3)

Teaching problem solving is all about the C _____

INTERVENTIONS: Team Progress on Intervention (1-3)

Four Types of Intervention: Monitoring Work Completion, Check/Support, Open/Extend/Challenge/Share

Top Teacher Moves, Clothesline

Chris Shore, Solutions Inc. 2024.01

1) Individually

2) Collaboratively

3) Resourcefully

3

Re-Engaging With Vision & Mindset

Develop motivated, resilient, compassionate learners who are college and career ready.



Students must believe in Themselves & Teacher
Teachers must believe in Themselves & Students

4

Re-Engaging With Those Kids

To Reach & Teach 'Those Kids':

- We need a Paradigm shift
- Students need
 - Mo ptions Engagement
 - Pre requisite skills and Number sense
 - Higher order Thinking skills



5

Re-Engaging With Thinking

1. Solving Problems
2. Reasoning
3. Viable Arguments
4. Modeling
5. Tools
6. Precision
7. Structure
8. Repeated Reasoning



Dual Targets means to have a lesson objective that states both
Content & Pactices

Teaching problem solving is all about the Task.

6

Re-Engaging with Intervention



7

Re-Engagement with Group Work

Direct instruction on procedures should occur between
Concepts development and opportunities for
Applications.

- The 3 types of group structures are
Homogenous, **H**eterogenous & **R**andom.
- The 3 principles of making group work work with less work are:
Norms, **V**igilance & **A**ccountability.

8

Re-Engagement with Your Goals

ACADEMIC: 3% increase for EL Students. Your prediction = ?%

CULTURAL: 3% increase in Celebrations. Your prediction = ?%

The ultimate goal of any Professional Learning Community is

Continuous **I**mprovement

of all students learning **G**rade **L**evel or higher.

Your Problem to Solve ?.

Your Top Teacher Move ?.

9

Your Progress

Top Teacher Moves

1. High Expectations for and Communicated to ALL Students
2. Dual Objectives for the Explicit Teaching of Thinking
3. Warm-Up on Prerequisite Skills & Numeracy
4. No-Options Engagement
5. Tasks! (60% of the time)
6. Group Work, Norms & Group Quizzes
7. Concepts-Procedures-Applications (C.P.A. Progression)
8. Lapboards (Engagement, Feedback Techniques)
9. 3-Reads, Close Reading
10. Higher-Order Thinking Questions
11. Chunking
12. Gradual Reel-In
13. Manipulatives & Measurement
14. Structured Notes with Feedback
15. Cumulative Assignments & Assessments
16. Re-Engagement instead of Re-Teaching
17. Use Student Thinking in Formative Assessment
18. Differentiation by Extension
19. Instructional Technology
20. Process Reward System
21. Boot Camp (Unit 0)
22. Reflective Conclusion
23. Home Base: Teach Students How to Play School; More Textbooks for Students, Less for Teachers

Problem = 3.0
Top Move = 2.9

Progress 1-5
★★★★★
FIVE STAR RATING

bit.ly/CordovaMath
Response Day 4

10

Celebrations & Challenges

Proximity & Overt
Response (Up & Doing)



Number Sense
Activities

Tasks

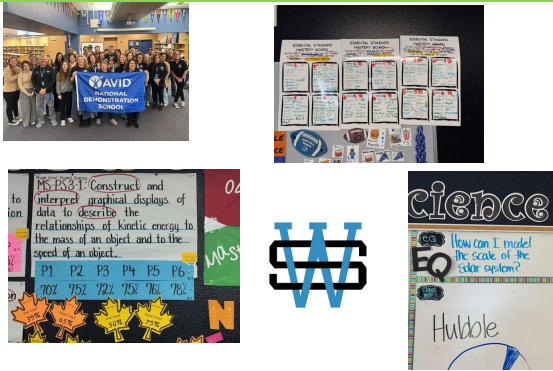
11

GVC Celebrations



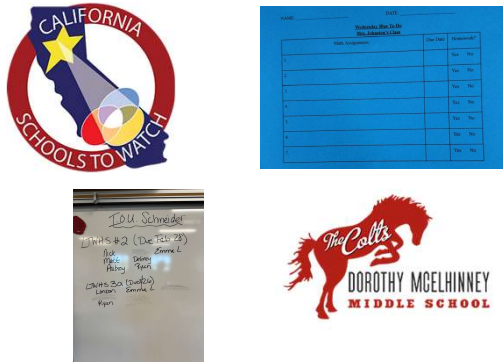
12

Collaborative Celebrations



13

Those Kids Celebrations




14

Top Moves Celebrations




15

PLC Tights



Tight Elements in a PLC

1. Educators work **collaboratively** rather than in isolation, take collective responsibility for **students learning**, and clarify the commitments they make to each other about how they will work together.
2. The fundamental structure of the school becomes the collaborative team in which members work **interdependently** to achieve common goals for which all members are **individually accountable**.
3. The team establishes **quantifiable and visible curriculum** and by unit, so all students have access to the same **knowledge and skills** regardless of the teacher to whom they are assigned.
4. The team develops **common formative assessments** to frequently gauge and influence student learning.
5. The school has created a system of **interventions** and extensions to ensure students who struggle receive **timely** and support for learning in a way that is timely, diagnostic, and systematic, and students who demonstrate proficiency can extend their learning.
6. The team uses **evidence** of student learning to inform and **improve** the individual and collective practice of its members.



Bulfinch • Bulfinch
 Fisher • Many • Martin

LEARNING BY DOING

16

Top Teacher Moves Our 5 Days Together

Aug 5: Reaching & Teaching ‘Those Kids’
Oct 7: Top Teacher Moves; Expectations & Tasks
Jan 13: Concepts, Applications & Group Work
GVC: Scope & Sequence, and Pacing

Mar 10: Re-Engagement & Spiraling
GVC: Essential Standards

Apr 28: Grading & Student Reflection
GVC: Final Exam 1

- Empowerment to Build Thinking Classrooms
- Effective Alternative to Foundations Pathway

17

Group Work & GVC Our Objectives Today

- The Value of **Spiraling**
Assignments & Assessments
- Experience **Re-Engagement Activities**
- **GVC: Essential Standards**

18

Group Work & GVC Our Success Criteria Today

- Schedule your **Semester Re-Engagement**
- Schedule a **Spiral Assignment**
- Identify your Math I **Essential Standards**

19

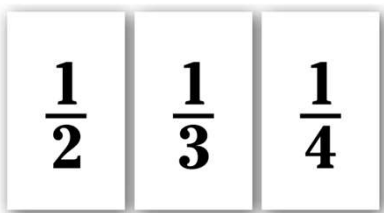
Clothesline Math

The Master Number Sense Maker!



20

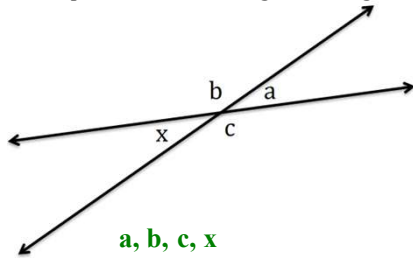
Clothesline Math Introduction



21

Clothesline Math Geometry

G.CO.9: See the structure of vertical angles and linear pairs to prove that vertical angles are congruent.



22

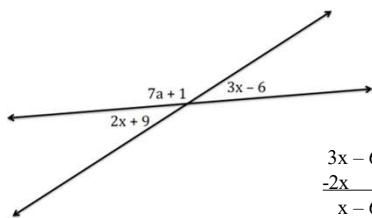
Break



23

Clothesline Math Geometry with Algebra

A.REI.1: Solve equations with variables on both sides to determine the measure of vertical angles.



2x + 9, 3x - 6, 2x, 3x, x

$$\begin{aligned}
 3x - 6 &= 2x + 9 \\
 -2x &= -2x \\
 x - 6 &= 9 \\
 +6 &= +6 \\
 x &= 15
 \end{aligned}$$

24

Clothesline Math Handout

The Clothesline

For each set, record the given values, expressions or drawings. After the discussion of their placement on the clothesline, record them on the number line.

1. _____

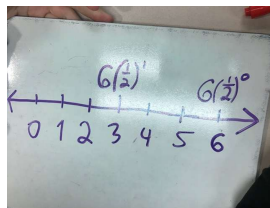
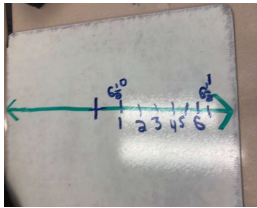
Discussions, Deductions & Decisions

25

Clothesline Math as Warm-Ups

$$y = 6\left(\frac{1}{2}\right)^x$$

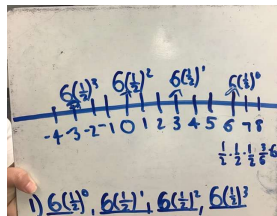
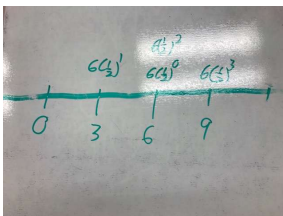
$$6\left(\frac{1}{2}\right)^0 \quad 6\left(\frac{1}{2}\right)^1$$



26

Clothesline Math as Warm-Ups

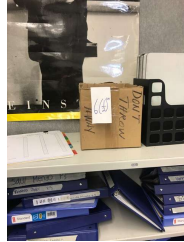
$$6\left(\frac{1}{2}\right)^2 \quad 6\left(\frac{1}{2}\right)^3$$



27

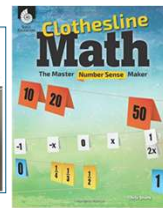
Clothesline Math as Warm-Ups

$$6\left(\frac{1}{2}\right)^{100}$$



28

Clothesline Math My Contributions



#clotheslinemath

29

Clothesline Math From Around the World



30

Clothesline Math Reflection

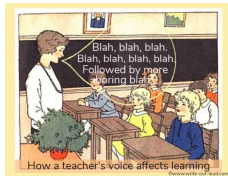


Why Clothesline Math?



31

Re-Teaching vs. Re-Engagement



**Same thing
slower & louder**



**Experience the
content in a new way**

32

Re-Engagement vs. Re-Teaching

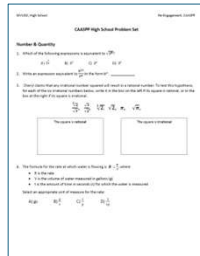


Re-Teaching	vs.	Re-Engaging
teaching the unit again		revisiting student thinking
addressing missing basic skills		addressing conceptual understanding
do the same problems over		examine the task from different perspectives
more practice, learn procedures		critique approaches, make connections
focus mostly on underachievers		engage entire class in mathematics
cognitive load usually lower		cognitive load usually higher
Same thing slower & louder		Experience the content in a new way

33

CAASPP Re-Engagement Practice Test

Identify the prompts you teach in Math I.



Choose the 5 hardest problems for your students.

34

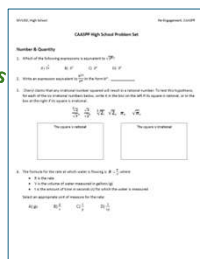
Re-Engagement Game



35

CAASPP Re-Engagement Practice Test

For which questions are you preparing your students?



For which are you not preparing them?



36

Lunch




Up next: Essential Standards

37

CAASPP Re-Engagement Performance Task


In what ways are you preparing your students for this?

High School The Engagement Task

CAASPP High School Practice Performance Task
English Language Arts

25. Your friend Abby is making a tower. She is using a few round cans and she has two types of candles on hand. She wants to know how high the tower will be. She plans to use the same number of candles, and she has the same base for it. She has the candles in two packages. She can choose that each candle has a different height.


First Package



Candle A

Time 10 min
Candle A is 10 cm high and is 10 cm wide.

Second Package



Candle B

Time 15 min
Candle B is 15 cm high and is 15 cm wide.

26. Can Abby build a tower that is the same height as the height of the tower after 10 minutes of burning?

27. Can Abby build a tower that is the same height as the height of the tower after 15 minutes of burning?

28. Can Abby build a tower that is the same height as the height of the tower after 20 minutes of burning?

29. Can Abby build a tower that is the same height as the height of the tower after 25 minutes of burning?

30. Can Abby build a tower that is the same height as the height of the tower after 30 minutes of burning?

In what ways are you not?

38

Unit Re-Engagement

Class: _____ Date: _____


Unit 1: Algebraic Thinking

1. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

2. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

3. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

4. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.




5. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

6. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

7. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

8. A student is given the equation $2x + 3 = 7$ and is asked to solve for x . The student writes $x = 2$. Is this correct? Explain your reasoning.

Are your students doing this kind of math?



39

Semester/EOY Re-Engagement

MA02. Math 1

Name: _____ Per: _____

Equations & Inequalities

1-4) Solve for x:

- $3x - 7y = 21$
- $-3x + 5y = -25$
- $P = m + 2b$
- $8 - 5x = 11 + 3x - 6 + x$

5) Solve three different equations and give the three solutions below. Match the number of the solutions with each result.

A) $x = 20$ _____ B) One Solution
 C) $x = x$ _____ D) No Solution
 E) $7x = 21$ _____ F) Infinitely Many Solutions

6) Solve for the indicated variable.

- $3x - 7y = 42 + 6 + x$
- $8x + 50y = 12 + 4x + 20$
- $52x = 21 + 4x + 4$

7) Create an example of an equation of the form, $ax + by = c$, that has the given number of solutions. Solve your equation to show that it meets the criteria.

One Solution _____ No Solution _____ Infinitely Many Solutions _____

Your End Re-Engagement

Modeling Types of Functions

3-4) Match one of the types of functions with each of the four examples given.

Quadratic Exponential Growth Exponential Decay

5) From Table

x	1	2	3	4
y	1	4	9	16

x	1	2	3	4
y	1	2	4	8

x	1	2	3	4
y	1	2	3	4

x	1	2	3	4
y	1	0.5	0.25	0.125

6) From Equation

$800 = 40 - 20x + 2$ $h(t) = 1.6t^2$ $P(t) = 2^t$

7) From Graphs

8) From Scenarios

- Three parents give a penny on the first day of the month, two on the second, 4 on the third, doubling the number of pennies given each day.
- The flight of the group rockets that we launched.
- A given amount of radioactive material has a half-life of 50 years.
- You make \$1 an hour.

9) From Visual Patterns

40

Study Guide Re-Engage Experience

"I loved seeing my students engaged with mathematical discussions. Students were eager to work in their groups, help each other and present on the posters around the classroom."



They took ownership of the work and felt very comfortable showing their work around the room. This is the best way to prepare students for a summative exam."

-- Monica Trillo, Murrieta Mesa

41

Reaching & Teaching ALL Kids Low-Investment, High-Yield Strategies

Top Teacher Moves

1. High Expectations for and Communicated to ALL Students
2. Dual Objectives for the Explicit Teaching of Thinking
3. Warm-Up on Prerequisite Skills & Numeracy
4. No-Options Engagement
5. Task! (60% of the time)
6. Group Work, Norms & Group Quizzes
7. Concepts-Procedures-Applications (C-P-A Progression)
8. Lapboards (Engagement, Feedback Techniques)
9. 3-Reads, Close Reading
10. Higher-Order Thinking Questions
11. Chunking
12. Gradual Reel-In
13. Manipulatives & Measurement
14. Structured Notes with Feedback
15. Cumulative Assignments & Assessments
16. Re-Engagement instead of Re-Teaching
17. Use Student Thinking in Formative Assessment
18. Differentiation by Extension
19. Instructional Technology
20. Process Reward System
21. Boot Camp (Unit 0)
22. Reflective Conclusion
23. Home Base: Teach Students How to Play School; More Textbooks for Students, Less for Teachers

Which of these did you see in the Re-Engagement Activities?

42

Re-Engagement Protocol

Monday	Tuesday	Wednesday	Thursday	Friday
Intro & Unit Set 1	Unit Set 2	Formative Day	Unit Set 3 & 4	
Formative/Reflective Day	Pre-Final Activities	Final Exams	Final Exams	Final Exams



**Calendar YOUR
Re-Engagement**



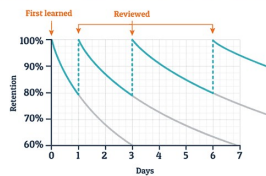
Monday	Tuesday	Wednesday	Thursday	Friday
Intro & Set 1	Practice Set 2	Correct & Reflect	Practice Set 3	Practice Set 4
Correct & Reflect	PT Day 1	PT Day 2	Correct & Reflect	Formative Day
Quiz A	Quiz B	Quiz C (PT)	Correct & Reflect	Formative Day

43

Cumulative Homework Spaced vs. Massed Practice

Effect size = 0.71

Typical Forgetting Curve for Newly Learned Information



44

Cumulative Homework Spaced vs. Massed Practice

Learn Practice Practice



45

Cumulative Homework

BIG IDEAS MATH
A Common Core Curriculum
Ron Larson Laurie Boswell
A Balanced Approach

Weekly Review #18
SHOW ALL WORK. DUE 4/19/23

Name _____ Period _____

1. Simplify the following expression:
 $6.2x - 5.7x + 4.1$

2. Select all of the equations that have a solution of 4.
a. $-4x + 24$ b. $5x + 3$ c. $5 + x = 1$
d. $x - 14 = 0$ e. $3.42x + 7.49$

3. Use the integers -9 to 9 to make a true expression.
a. Positive integer b. Negative integer

4. Which statement correctly describes the relationship shown by the graph?

5. If a model car is built on a scale of 1:100,000, how long is the real car?

6. Which equation is the rule for the pattern in the table?

x	y
-1	-5
1	-1
3	3

a. $y = 2x - 3$ b. $y = 5x$

7. $\angle M$ and $\angle P$ are complementary angles. $\angle M$ is 4 times bigger than $\angle P$. What is the measure of $\angle M$?

46

Break



10

minutes until



**We Determine your
ESSENTIAL Standards.**

47

Guaranteed and Viable Curriculum Essential Standards

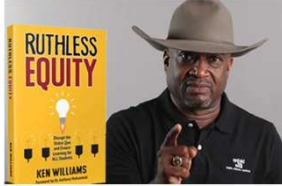


**Every Student, Every Day
Without Predictions**



48

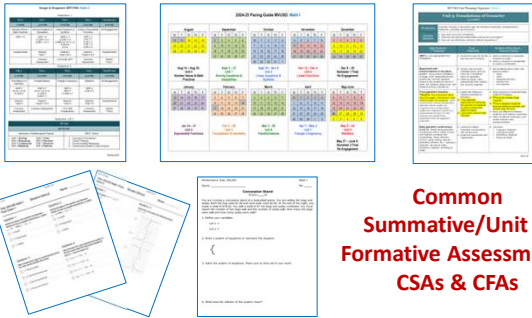
Guaranteed and Viable Curriculum Guaranteed Learning



“Equitable practice begins with identifying **grade-level essential learning outcomes** in every course and content area. Do you see any mention of “except for?”

49

Teamwork Guaranteed and Viable Curriculum Your GVC

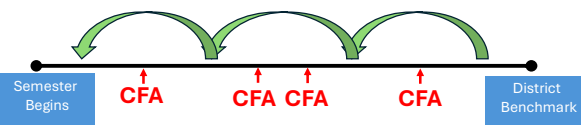


**Common
Summative/Unit &
Formative Assessments
CSAs & CFAs**

50

Guaranteed and Viable Curriculum Goal for Key Principle 1 of 3

Common **UNIT** Assessments



Common **FORMATIVE** Assessments

So, limit your number of Essential Standards

51

Top Teacher Moves Our Norms

- **Advance the Vision: *Develop motivated, compassionate and resilient learners who are college and career ready.***
- **All Voices**
 - **Keep it Professional, Not Personal**
 - **Consensus, Not Compromise**

52

Teamwork Guaranteed and Viable Curriculum Your Scope & Sequence

Unit	Topic	Standards	Assessments	Resources
Unit 1	Linear Equations & Functions	1.EE.1, 1.EE.2, 1.EE.3, 1.EE.4, 1.EE.5, 1.EE.6, 1.EE.7, 1.EE.8, 1.EE.9, 1.EE.10, 1.EE.11, 1.EE.12, 1.EE.13, 1.EE.14, 1.EE.15, 1.EE.16, 1.EE.17, 1.EE.18, 1.EE.19, 1.EE.20, 1.EE.21, 1.EE.22, 1.EE.23, 1.EE.24, 1.EE.25, 1.EE.26, 1.EE.27, 1.EE.28, 1.EE.29, 1.EE.30, 1.EE.31, 1.EE.32, 1.EE.33, 1.EE.34, 1.EE.35, 1.EE.36, 1.EE.37, 1.EE.38, 1.EE.39, 1.EE.40, 1.EE.41, 1.EE.42, 1.EE.43, 1.EE.44, 1.EE.45, 1.EE.46, 1.EE.47, 1.EE.48, 1.EE.49, 1.EE.50, 1.EE.51, 1.EE.52, 1.EE.53, 1.EE.54, 1.EE.55, 1.EE.56, 1.EE.57, 1.EE.58, 1.EE.59, 1.EE.60, 1.EE.61, 1.EE.62, 1.EE.63, 1.EE.64, 1.EE.65, 1.EE.66, 1.EE.67, 1.EE.68, 1.EE.69, 1.EE.70, 1.EE.71, 1.EE.72, 1.EE.73, 1.EE.74, 1.EE.75, 1.EE.76, 1.EE.77, 1.EE.78, 1.EE.79, 1.EE.80, 1.EE.81, 1.EE.82, 1.EE.83, 1.EE.84, 1.EE.85, 1.EE.86, 1.EE.87, 1.EE.88, 1.EE.89, 1.EE.90, 1.EE.91, 1.EE.92, 1.EE.93, 1.EE.94, 1.EE.95, 1.EE.96, 1.EE.97, 1.EE.98, 1.EE.99, 1.EE.100	Unit 1 Assessment	Unit 1 Resources
Unit 2	Quadratic Equations & Functions	2.EE.1, 2.EE.2, 2.EE.3, 2.EE.4, 2.EE.5, 2.EE.6, 2.EE.7, 2.EE.8, 2.EE.9, 2.EE.10, 2.EE.11, 2.EE.12, 2.EE.13, 2.EE.14, 2.EE.15, 2.EE.16, 2.EE.17, 2.EE.18, 2.EE.19, 2.EE.20, 2.EE.21, 2.EE.22, 2.EE.23, 2.EE.24, 2.EE.25, 2.EE.26, 2.EE.27, 2.EE.28, 2.EE.29, 2.EE.30, 2.EE.31, 2.EE.32, 2.EE.33, 2.EE.34, 2.EE.35, 2.EE.36, 2.EE.37, 2.EE.38, 2.EE.39, 2.EE.40, 2.EE.41, 2.EE.42, 2.EE.43, 2.EE.44, 2.EE.45, 2.EE.46, 2.EE.47, 2.EE.48, 2.EE.49, 2.EE.50, 2.EE.51, 2.EE.52, 2.EE.53, 2.EE.54, 2.EE.55, 2.EE.56, 2.EE.57, 2.EE.58, 2.EE.59, 2.EE.60, 2.EE.61, 2.EE.62, 2.EE.63, 2.EE.64, 2.EE.65, 2.EE.66, 2.EE.67, 2.EE.68, 2.EE.69, 2.EE.70, 2.EE.71, 2.EE.72, 2.EE.73, 2.EE.74, 2.EE.75, 2.EE.76, 2.EE.77, 2.EE.78, 2.EE.79, 2.EE.80, 2.EE.81, 2.EE.82, 2.EE.83, 2.EE.84, 2.EE.85, 2.EE.86, 2.EE.87, 2.EE.88, 2.EE.89, 2.EE.90, 2.EE.91, 2.EE.92, 2.EE.93, 2.EE.94, 2.EE.95, 2.EE.96, 2.EE.97, 2.EE.98, 2.EE.99, 2.EE.100	Unit 2 Assessment	Unit 2 Resources
Unit 3	Exponential Equations & Functions	3.EE.1, 3.EE.2, 3.EE.3, 3.EE.4, 3.EE.5, 3.EE.6, 3.EE.7, 3.EE.8, 3.EE.9, 3.EE.10, 3.EE.11, 3.EE.12, 3.EE.13, 3.EE.14, 3.EE.15, 3.EE.16, 3.EE.17, 3.EE.18, 3.EE.19, 3.EE.20, 3.EE.21, 3.EE.22, 3.EE.23, 3.EE.24, 3.EE.25, 3.EE.26, 3.EE.27, 3.EE.28, 3.EE.29, 3.EE.30, 3.EE.31, 3.EE.32, 3.EE.33, 3.EE.34, 3.EE.35, 3.EE.36, 3.EE.37, 3.EE.38, 3.EE.39, 3.EE.40, 3.EE.41, 3.EE.42, 3.EE.43, 3.EE.44, 3.EE.45, 3.EE.46, 3.EE.47, 3.EE.48, 3.EE.49, 3.EE.50, 3.EE.51, 3.EE.52, 3.EE.53, 3.EE.54, 3.EE.55, 3.EE.56, 3.EE.57, 3.EE.58, 3.EE.59, 3.EE.60, 3.EE.61, 3.EE.62, 3.EE.63, 3.EE.64, 3.EE.65, 3.EE.66, 3.EE.67, 3.EE.68, 3.EE.69, 3.EE.70, 3.EE.71, 3.EE.72, 3.EE.73, 3.EE.74, 3.EE.75, 3.EE.76, 3.EE.77, 3.EE.78, 3.EE.79, 3.EE.80, 3.EE.81, 3.EE.82, 3.EE.83, 3.EE.84, 3.EE.85, 3.EE.86, 3.EE.87, 3.EE.88, 3.EE.89, 3.EE.90, 3.EE.91, 3.EE.92, 3.EE.93, 3.EE.94, 3.EE.95, 3.EE.96, 3.EE.97, 3.EE.98, 3.EE.99, 3.EE.100	Unit 3 Assessment	Unit 3 Resources
Unit 4	Geometry	4.GE.1, 4.GE.2, 4.GE.3, 4.GE.4, 4.GE.5, 4.GE.6, 4.GE.7, 4.GE.8, 4.GE.9, 4.GE.10, 4.GE.11, 4.GE.12, 4.GE.13, 4.GE.14, 4.GE.15, 4.GE.16, 4.GE.17, 4.GE.18, 4.GE.19, 4.GE.20, 4.GE.21, 4.GE.22, 4.GE.23, 4.GE.24, 4.GE.25, 4.GE.26, 4.GE.27, 4.GE.28, 4.GE.29, 4.GE.30, 4.GE.31, 4.GE.32, 4.GE.33, 4.GE.34, 4.GE.35, 4.GE.36, 4.GE.37, 4.GE.38, 4.GE.39, 4.GE.40, 4.GE.41, 4.GE.42, 4.GE.43, 4.GE.44, 4.GE.45, 4.GE.46, 4.GE.47, 4.GE.48, 4.GE.49, 4.GE.50, 4.GE.51, 4.GE.52, 4.GE.53, 4.GE.54, 4.GE.55, 4.GE.56, 4.GE.57, 4.GE.58, 4.GE.59, 4.GE.60, 4.GE.61, 4.GE.62, 4.GE.63, 4.GE.64, 4.GE.65, 4.GE.66, 4.GE.67, 4.GE.68, 4.GE.69, 4.GE.70, 4.GE.71, 4.GE.72, 4.GE.73, 4.GE.74, 4.GE.75, 4.GE.76, 4.GE.77, 4.GE.78, 4.GE.79, 4.GE.80, 4.GE.81, 4.GE.82, 4.GE.83, 4.GE.84, 4.GE.85, 4.GE.86, 4.GE.87, 4.GE.88, 4.GE.89, 4.GE.90, 4.GE.91, 4.GE.92, 4.GE.93, 4.GE.94, 4.GE.95, 4.GE.96, 4.GE.97, 4.GE.98, 4.GE.99, 4.GE.100	Unit 4 Assessment	Unit 4 Resources
Unit 5	Statistics	5.ST.1, 5.ST.2, 5.ST.3, 5.ST.4, 5.ST.5, 5.ST.6, 5.ST.7, 5.ST.8, 5.ST.9, 5.ST.10, 5.ST.11, 5.ST.12, 5.ST.13, 5.ST.14, 5.ST.15, 5.ST.16, 5.ST.17, 5.ST.18, 5.ST.19, 5.ST.20, 5.ST.21, 5.ST.22, 5.ST.23, 5.ST.24, 5.ST.25, 5.ST.26, 5.ST.27, 5.ST.28, 5.ST.29, 5.ST.30, 5.ST.31, 5.ST.32, 5.ST.33, 5.ST.34, 5.ST.35, 5.ST.36, 5.ST.37, 5.ST.38, 5.ST.39, 5.ST.40, 5.ST.41, 5.ST.42, 5.ST.43, 5.ST.44, 5.ST.45, 5.ST.46, 5.ST.47, 5.ST.48, 5.ST.49, 5.ST.50, 5.ST.51, 5.ST.52, 5.ST.53, 5.ST.54, 5.ST.55, 5.ST.56, 5.ST.57, 5.ST.58, 5.ST.59, 5.ST.60, 5.ST.61, 5.ST.62, 5.ST.63, 5.ST.64, 5.ST.65, 5.ST.66, 5.ST.67, 5.ST.68, 5.ST.69, 5.ST.70, 5.ST.71, 5.ST.72, 5.ST.73, 5.ST.74, 5.ST.75, 5.ST.76, 5.ST.77, 5.ST.78, 5.ST.79, 5.ST.80, 5.ST.81, 5.ST.82, 5.ST.83, 5.ST.84, 5.ST.85, 5.ST.86, 5.ST.87, 5.ST.88, 5.ST.89, 5.ST.90, 5.ST.91, 5.ST.92, 5.ST.93, 5.ST.94, 5.ST.95, 5.ST.96, 5.ST.97, 5.ST.98, 5.ST.99, 5.ST.100	Unit 5 Assessment	Unit 5 Resources

53

Teamwork Guaranteed and Viable Curriculum Your Essential Standards

Key for Academic Standards	4 Point Scale to % Conversion
4-Exceeds	3.00-4.00 A
3-Proficient	2.50-3.00 B
2-Emerging	2.00-2.50 C
1-Significant Gaps	1.50-2.00 D
Below 1.50 F	
SEMIESTER 1 Standards	UNIT 1 Chap. GRADE
Solve linear and absolute-value equations. A-REI.1 Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. A-REI.3 Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters. [A-REI.1, A-REI.3 and finding these]	Unit 1 (Ch 1)
Write and solve linear equations to model real-world situations. A-CED.1 Create equations and inequalities in one variable including ones with absolute value and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions. A-CED.3 Represent constraints by equations or inequalities, and by systems of equations and inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. A-CED.4 Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm's law $V = IR$ to highlight resistance R .	Unit 1 (Ch 1)
Solve/Graph linear and absolute-value inequalities on a number line. A-REI.3.1 Solve one-variable equations and inequalities involving absolute value, graphing the solutions and interpreting them in context.	Unit 2 (Ch 2)

54

Solve Your Name

$$V = Bh$$

$$B = \frac{V}{h}$$

- | | |
|----------------------------------|----------------------------------|
| 1. $A = bc$ | Area of a Rectangle |
| 2. $A = \frac{1}{2}bh$ | Area of a Triangle |
| 3. $A = \pi r^2$ | Area of a Circle |
| 4. $A = \frac{1}{2}(b_1 + b_2)h$ | Area of a Trapezoid |
| 5. $\pi = \frac{C}{d}$ | Definition of π |
| 6. $C = 2\pi r$ | Circumference of Circle |
| 7. $V = bwh$ | Volume of a Rectangular Prism |
| 8. $V = Bh$ | Volume of a Prism |
| 9. $V = \frac{1}{3}Bh$ | Volume of a Pyramid |
| 10. $V = \pi r^2 h$ | Volume of a Cylinder |
| 11. $V = \frac{1}{3}\pi r^2 h$ | Volume of a Cone |
| 12. $V = \frac{M}{D}$ | Density & Volume |
| 13. $F = \frac{dp}{dt}$ | Force of Momentum |
| 14. $I = prt$ | Simple Interest |
| 15. $d = rt$ | Distance |
| 16. $y = mx + b$ | Slope-Intercept Form |
| 17. $P = 4s$ | Perimeter of a Square |
| 18. $P = 2l + 2w$ | Perimeter of a Rectangle |
| 19. $E = IR$ | Voltage of a an Electric Circuit |
| 20. $P = IR$ | Power of a an Electric Circuit |
| 21. $a + b + c = 180$ | Triangle Sum |
| 22. $Ax + By + C = 0$ | Standard Form of a Line |
| 23. $Ax + By + Cx + D = 0$ | Standard Form of a Plane |
| 24. $K = \frac{1}{2}mv^2$ | Energy |
| 25. $s = \frac{1}{2}at^2$ | Distance |

55

Teamwork Guaranteed and Viable Curriculum

Next Steps

Post Essential Standards to Google Drive



Use next year... for CSA & CFA

Final Exam 1



56

Group Work & GVC Our Objectives Today

➤ The Value of **Spiraling** 

Assignments & Assessments

➤ Experience **Re-Engagement Activities** 

➤ **GVC: Essential Standards** 

57

Group Work & GVC Our Success Criteria Today

- Schedule your **Semester Re-Engagement**
- Schedule a **Spiral Assessment**
- Identify your Math I **Essential Standards**

58

Evaluation



bit.ly/CordovaEval4

59

Our Next Day

Apr 28

- Top Teacher Moves**
1. High Expectations for and demonstrated by all students
 2. Dual Objectives for the Explicit Teaching of Thinking
 3. Warm-Up or Formative Entry & Exitway
 4. No Opt-Out Engagement
 5. Task (90% of the time)
 6. Group Work, Norms & Group Goals
 7. Concrete Procedures Application (I-P-A Progression)
 8. Evidence of Engagement, Feedback Techniques
 9. A-B-C's, Class Meeting
 10. Higher-Order Thinking Questions
 11. Challenging
 12. Gradual Release
 13. Monitoring & Assessment
 14. Instructional Games with Feedback
 15. Cumulative Assignments & Assessments
 16. No Engagement Outside of the Teaching
 17. One Student Thinking in Formative Assessment
 18. Differentiation by Interest
 19. Instructional Technology
 20. Process-Based System
 21. Band Camp (20% of)
 22. Reflection/Conclusion
 23. Home Base: Teach Students How to Play School, Move Teachers to Students, Love for Teachers

Arctic's 1st Overview

Item	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
1. High Expectations for and demonstrated by all students	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
2. Dual Objectives for the Explicit Teaching of Thinking	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
3. Warm-Up or Formative Entry & Exitway	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
4. No Opt-Out Engagement	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
5. Task (90% of the time)	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
6. Group Work, Norms & Group Goals	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
7. Concrete Procedures Application (I-P-A Progression)	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
8. Evidence of Engagement, Feedback Techniques	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
9. A-B-C's, Class Meeting	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
10. Higher-Order Thinking Questions	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
11. Challenging	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
12. Gradual Release	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
13. Monitoring & Assessment	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
14. Instructional Games with Feedback	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
15. Cumulative Assignments & Assessments	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
16. No Engagement Outside of the Teaching	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
17. One Student Thinking in Formative Assessment	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
18. Differentiation by Interest	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
19. Instructional Technology	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
20. Process-Based System	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
21. Band Camp (20% of)	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
22. Reflection/Conclusion	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
23. Home Base: Teach Students How to Play School, Move Teachers to Students, Love for Teachers	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0

Top Teacher Moves

Student Name: _____

Question 1: _____

Question 2: _____

Question 3: _____

Question 4: _____

Grading & Reflection
GVC: Final Exam 1

60

So Reach & Teach Those Kids ...

...with the faith that they can learn it,
and that we can teach it to them,

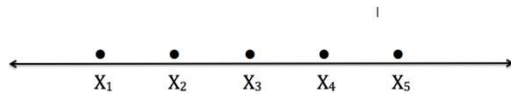


...and change this world,
one math lesson at a time.

61

Clothesline Math Stats

Students will broaden their knowledge of variability
and statistical processes.



Smaller Range

Smaller Standard Deviation

Smaller Average

62

Cumulative Group Quiz

Geometry
Shore _____ Name _____

CONSTRUCTING MODELS

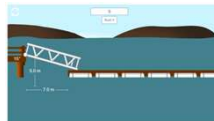
16. Watch this video clip from the movie *Isle of Dogs*: <http://bit.ly/ShoreShore>
How much less dirt would a boy dig if his shore is 1" shorter than the standard shore?

CRITICAL THINKING

17. Go to the following link: <http://www.ck12.org/geometry/area-of-a-triangle/>
What is the shortest possible length of the ramp that will connect the docks? Support your answer mathematically.

CREATIVITY

18. Draw a composite solid that has a volume between 100 cm³ and 200 cm³.



63

Progressive Equations

Progressive Equations

Score _____

Solve

1) $x + 2 = 8$

2) $x - 20 = 45$

3) $4x = 12$

4) $15x = 3$

5) $\frac{1}{2}x = 6$

6) $\frac{x}{20} = 80$

7) On his lunch break, Crosby purchases a piece of pizza and a salad. The total order is \$9.25. If the pizza cost \$5.50, then how much was the salad? Write and solve an equation to represent this situation.

For which essential skills would this vehicle be useful?

64

Reaching & Teaching ALL Kids Low-Investment, High-Yield Strategies

- Top Teacher Moves**
1. High Expectations for and Communicated to ALL Students
 2. Dual Objectives for the Explicit Teaching of Thinking
 3. Warm-Up on Prerequisite Skills & Numeracy
 4. No-Options Engagement
 5. Tasks! (60% of the time)
 6. Group Work, Norms & Group Quizzes
 7. Concepts-Procedures-Applications (C-P-A Progression)
 8. Lapboards (Engagement, Feedback Techniques)
 9. 3-Reads, Close Reading
 10. Higher-Order Thinking Questions
 11. Chunking
 12. Gradual Reel-In
 13. Manipulatives & Measurement
 14. Structured Notes with Feedback
 15. Cumulative Assignments & Assessments
 16. Re-Engagement instead of Re-Teaching
 17. Use Student Thinking in Formative Assessment
 18. Differentiation by Extension
 19. Instructional Technology
 20. Process Reward System
 21. Boot Camp (Unit 0)
 22. Reflective Conclusion
 23. Home Base: Teach Students How to Play School; More Textbooks for Students, Less for Teachers

Which of these did you see in the Cumulative Assignments & Assessments?

Note: Re-Engagement can be cumulative.

65
