The Forgotten 4th C

Creativity in the Math Class

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***The Math Projects Journal*, Temecula Valley USD**
CMC-S 2017

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#CreativityInMath

The *Student Generated Word Problem*

Write a word problem that can be solved by using an equation, write and solve the equation relating the solution to the original word problem.

The *Student Generated Word Problem*

Student #1: I have 5 Great Danes and 4 Poodles. I get another Great Dane. How many dogs do I have?

Equation #1: 5g + 4p + 1g

Answer #1: 10

The *Student Generated Word Problem*

Student #2: I have 4 shirts. I buy three more. I sell ten. I get left with 4 shirts. How did I get 4?

Equation #2: $4s + 3s - 10 = 4$

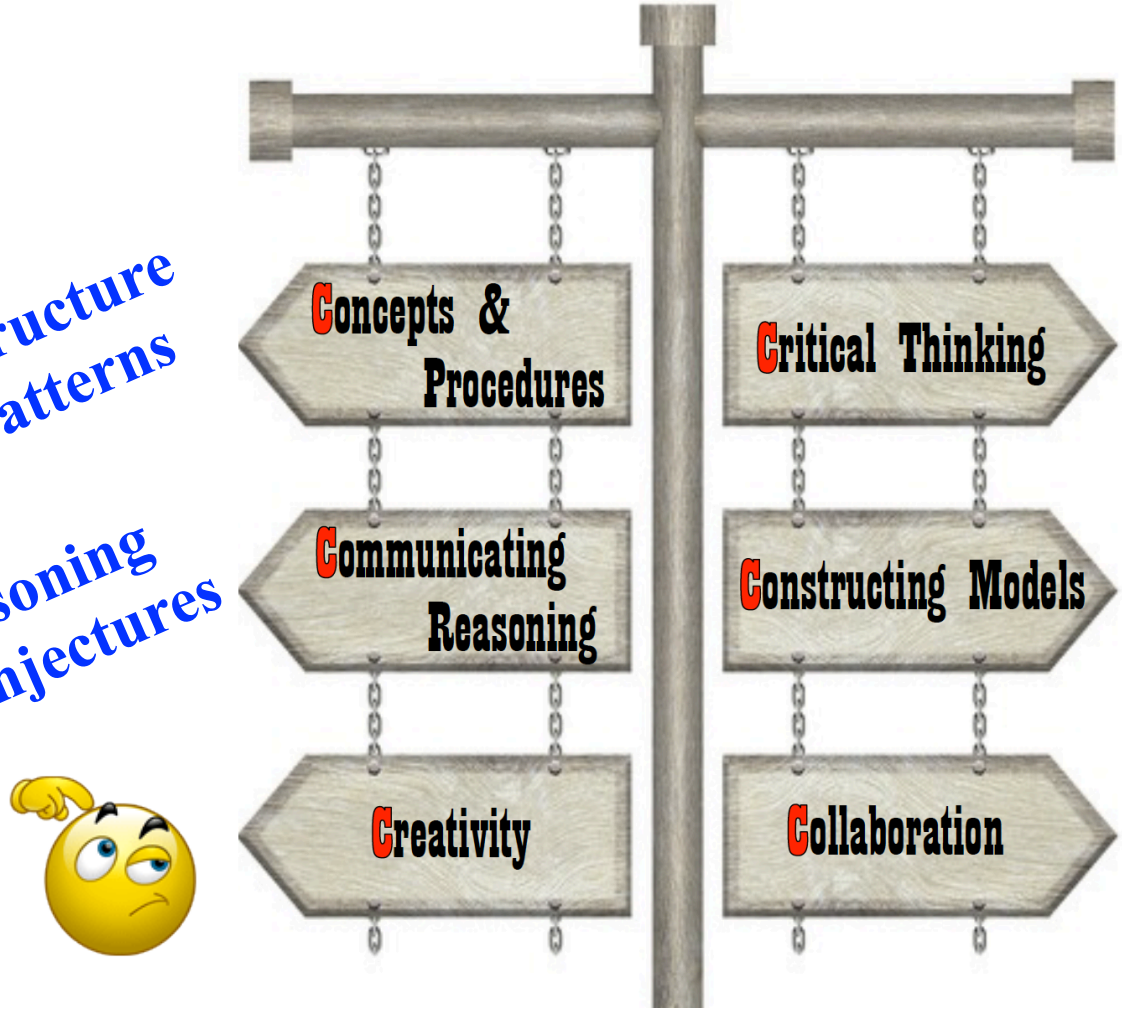
Answer #2: $s = 2$

The 6 C's: Claims–Based Grading

(my one original thought)

#7 Structure
#8 Patterns

#2 Reasoning
#3 Conjectures



#1 Solving
#6 Precision

#4 Models
#5 Tools

Self-Evaluated
w/ veto

Creativity in the Math Class?

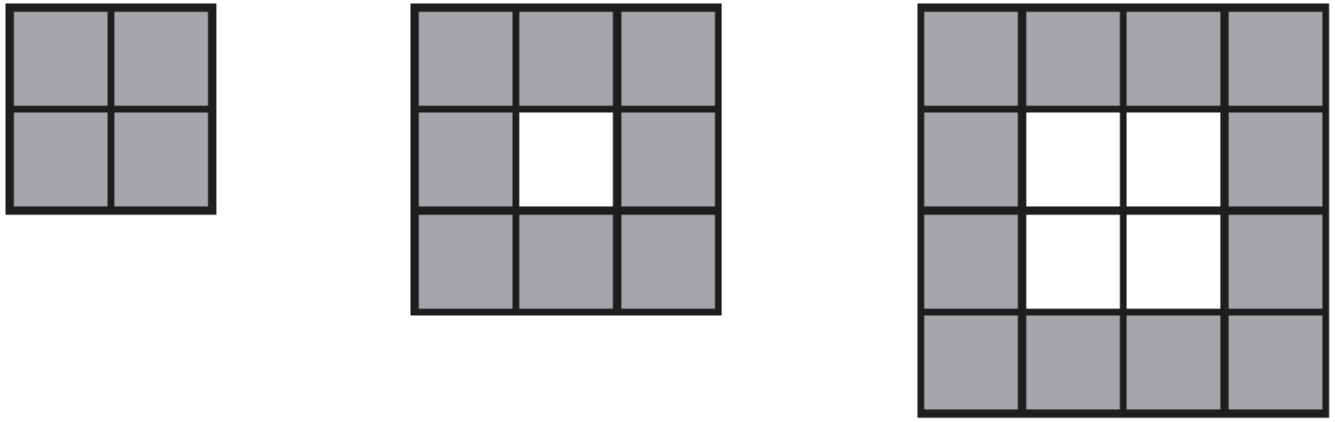
"Mathematics is the most creative invention of the human mind."
-- Brian May, Temecula Valley HS

What it is:

Open Ended
or
Open Middle

What it is not:

Rule Quest



The 4-Digit Problem

$8 + 8 + 8 + 8 = 32$

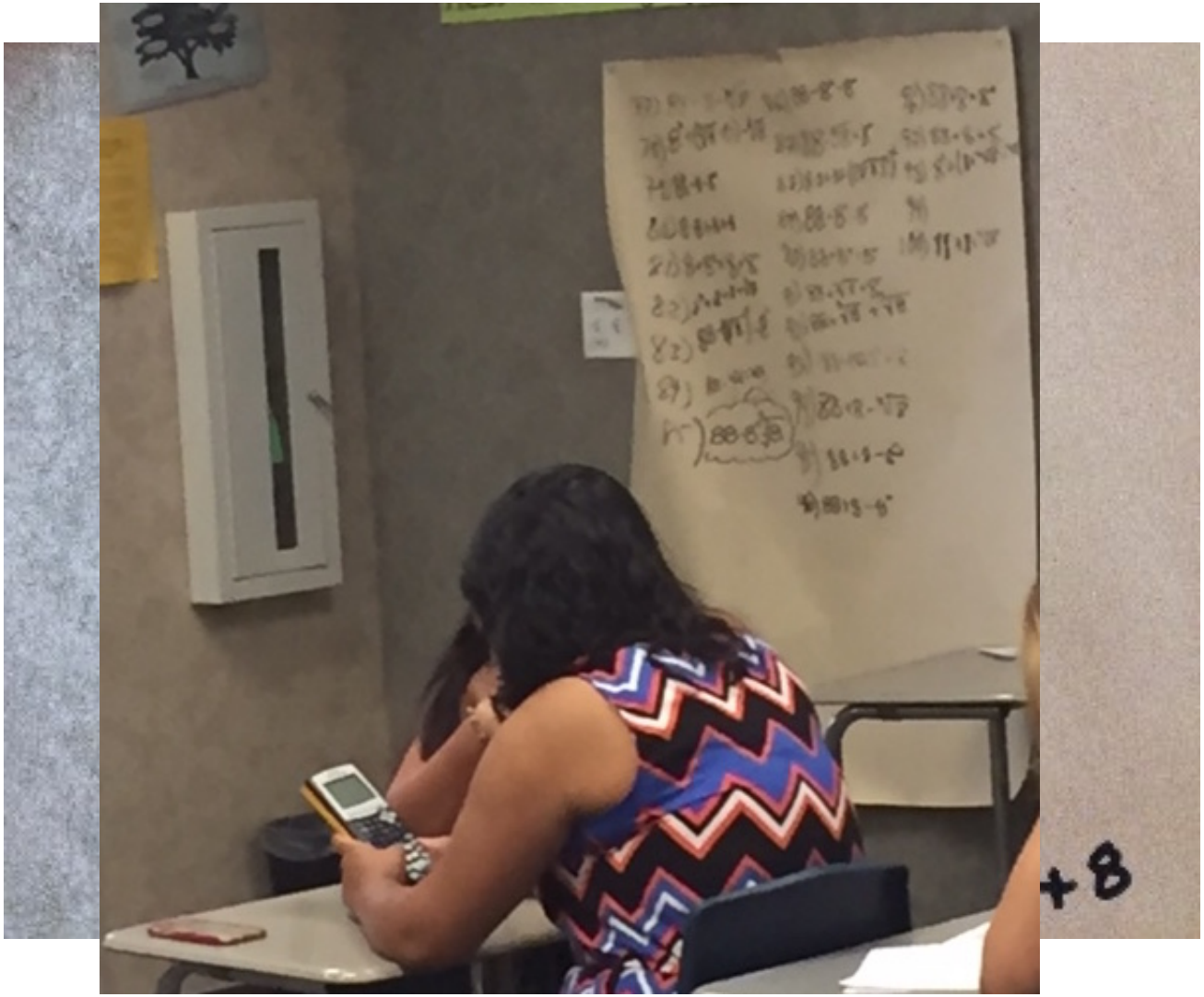
$8^2/8 + 88 = 96$

1) Arrange four 8's to produce 19.

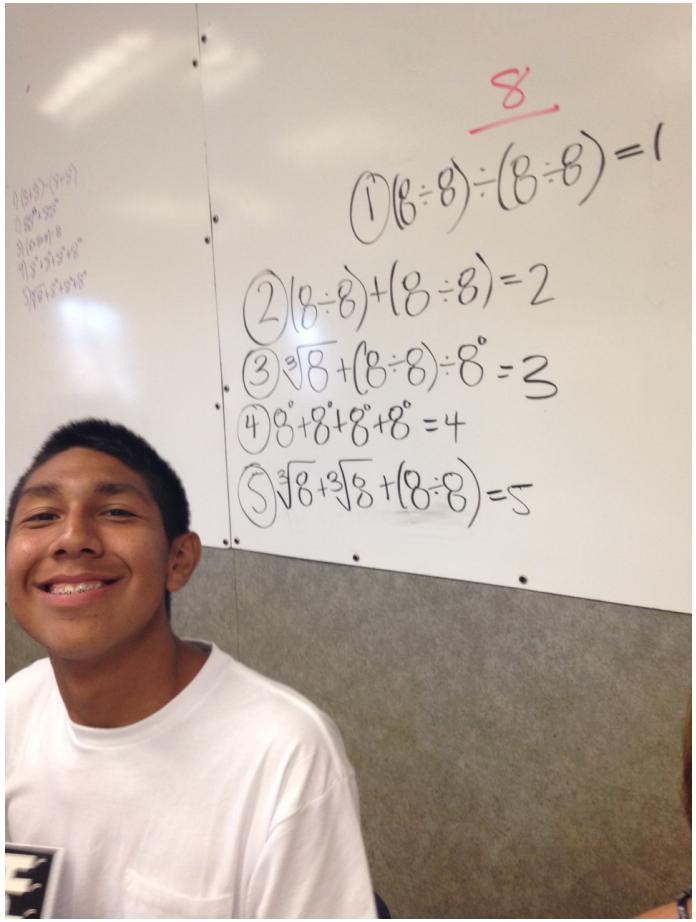
$88 \div 8 + 8$

$8 + 8 + \sqrt[3]{8} + 8^0$

The 4-Digit Problem



The 4-Digit Problem



Number Tricks

Pick a #	5	-4	$\frac{1}{4}$	x
Mult by 2	10	-8	$\frac{1}{2}$	2x
Add 3	13	-5	$3\frac{1}{2}$	2x + 3
Subtract twice original #	3	3	3	2x + 3 – 2x

simplified: 3

common result: always 3

Number Tricks

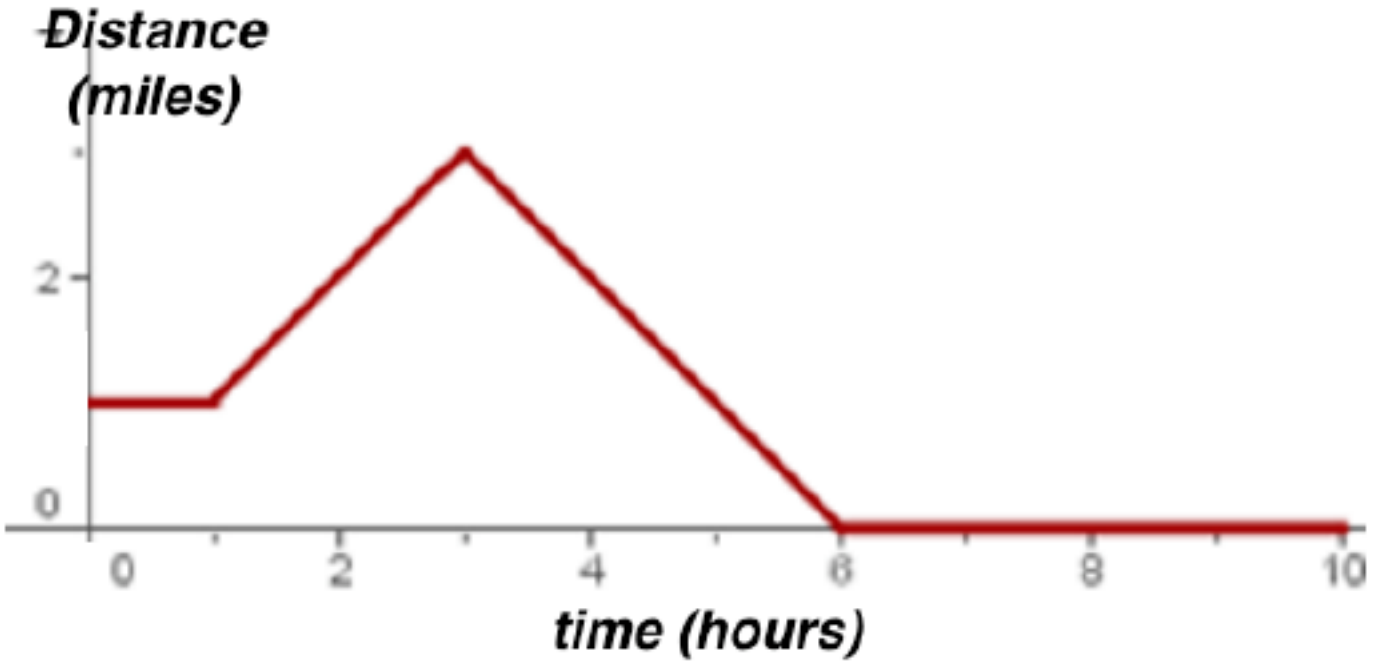
Pick a #	5	-4	$\frac{1}{4}$	x
Add 3	8	-1	$3\frac{1}{4}$	x + 3
Mult by 2	16	-2	$6\frac{1}{2}$	2(x + 3)
Subtract 6	10	-8	$\frac{1}{2}$	2(x + 3) – 6
Subtract the original #	5	-4	$\frac{1}{4}$	2(x + 3) – 6 – x

Create Your Own

simplified: x

common result: number picked

Time to Play …



Creativity & the SMPs

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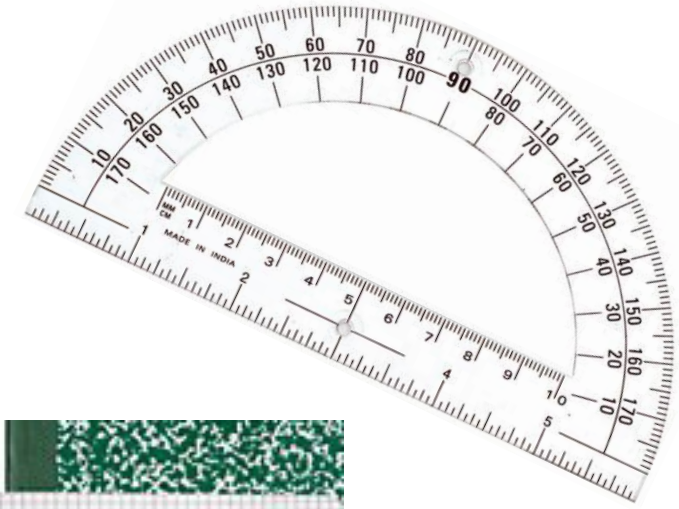
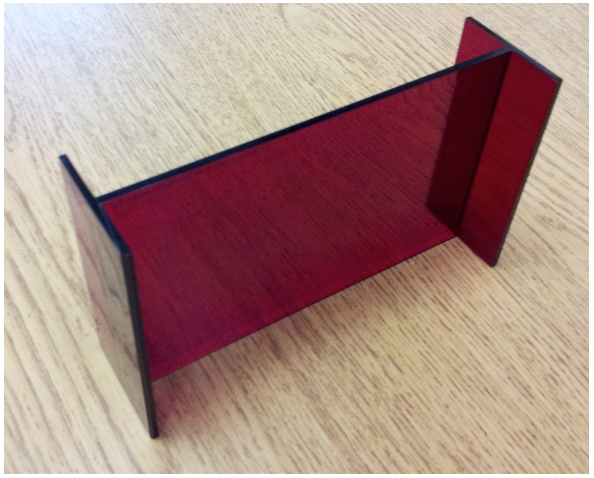
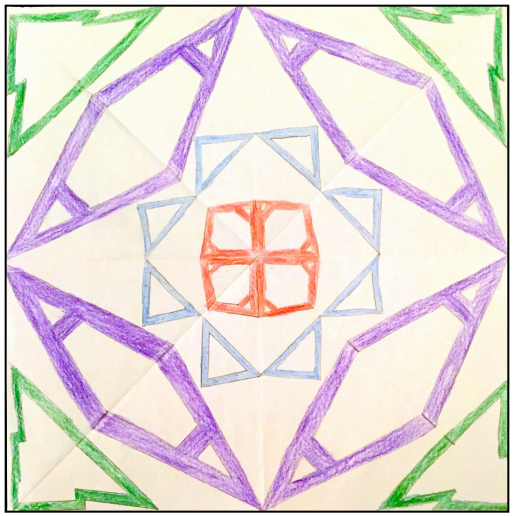
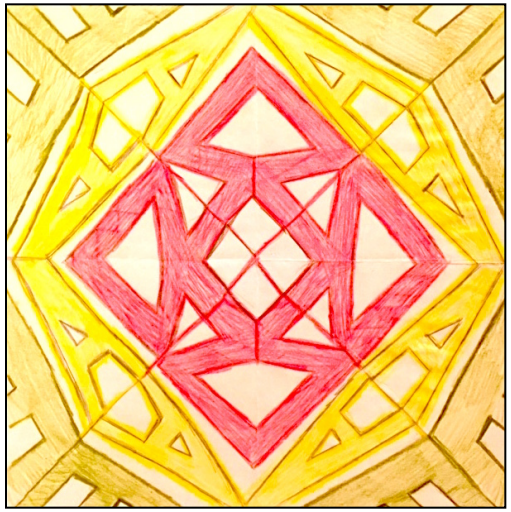
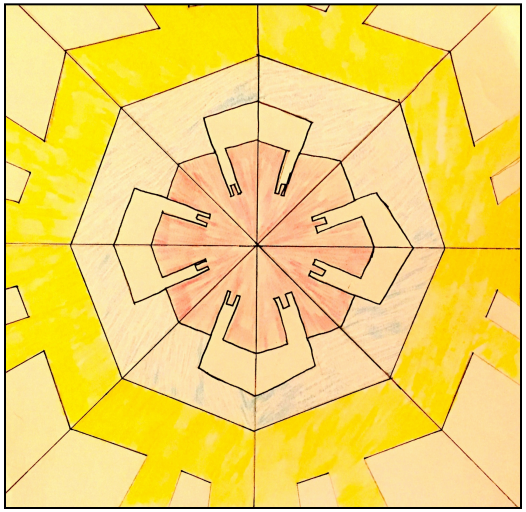


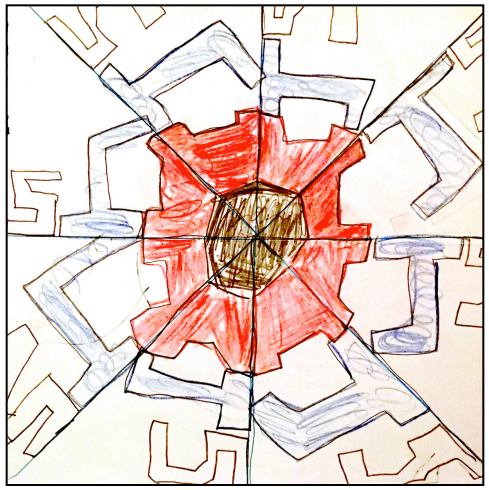


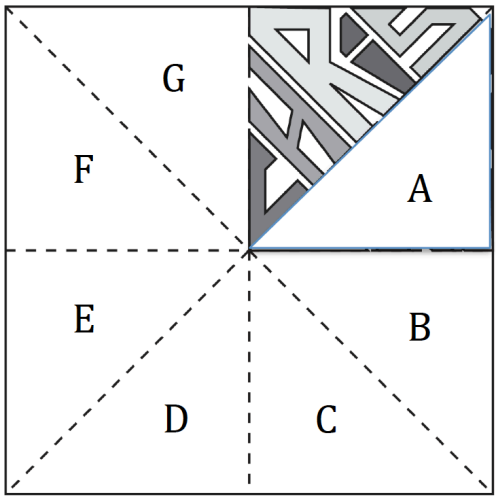
Creativity & the SMPs











Crazy Cola's Double Case

Double Case of 48 Cans

Why Creativity?

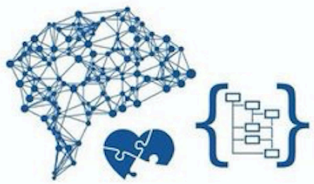
Top 10 skills

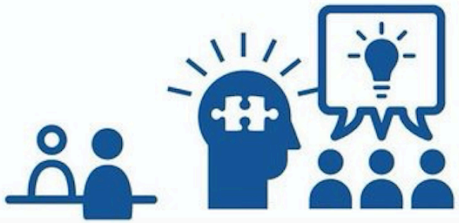
WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

in 2020	in 2015
1. Complex Problem Solving	1. Complex Problem Solving
2. Critical Thinking	2. Coordinating with Others
3. Creativity	3. People Management
4. People Management	4. Critical Thinking
5. Coordinating with Others	5. Negotiation
6. Emotional Intelligence	6. Quality Control
7. Judgment and Decision Making	7. Service Orientation
8. Service Orientation	8. Judgment and Decision Making
9. Negotiation	9. Active Listening
10. Cognitive Flexibility	10. Creativity

Producers, not just Consumers





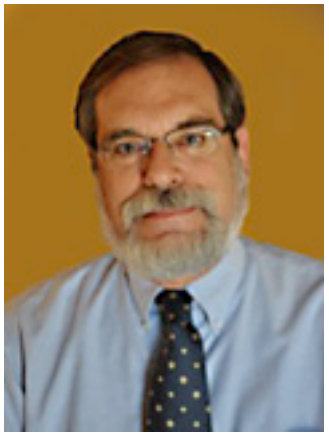
The Take-Away

We need to teach *creativity* in our math classes through more *open ended* & *open middle* tasks.

Call to Action

Fail Grandly

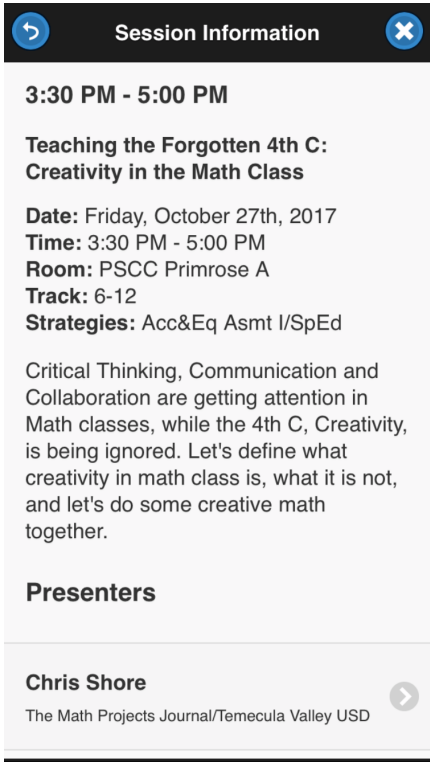
No Real Risk



10%

2-Week Rule

Have your students think creatively …



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

… change the world, one math lesson at a time.

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