Think It & Show It!

(8th Grade)

Instructor: Chris Shore
The Math Projects Journal
Temecula Valley USD, CA

shore@mathprojects.com
@MathProjects
#TCMSTL

The 4-Digit Problem

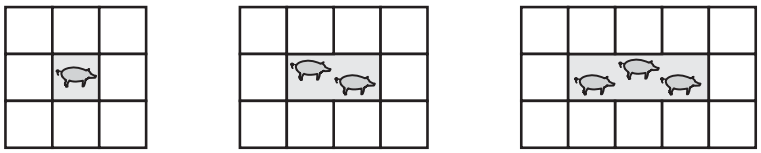
$8 + 8 + 8 + 8 = 32$

$8^2/8 + 88 = 96$

Arrange four 8’s to produce 19.

Pig Pen Algebra

Farmer John is making a pig pen. He is short on materials so he is making the pen out of bales of hay. These bales are shaped as cubes. Farmer John likes to keep things simple, so whenever he gets another pig, he just extends the pen as shown below. Your job is to help Farmer John write a formula to tell him how many bales of hay he will need for a given number of pigs.



1. How would you move the existing bales to make room for another pig?

2. In the space above, draw pens that would hold 4 and 5 pigs respectively.

3. How many bales of hay must be added to an existing pen, to make room for the next pig?

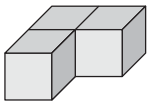
4. Without anymore drawings, complete the chart below for P number of pigs and B number of bales.

P (pigs)	1	2	3	4	5	6	7	8	9	10	20	50
B (bales)	8	10	12									

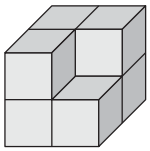
5. How did you figure out your answers for 20 and 50 pigs?

6. According to the pattern in the chart, how many bales would you predict are needed for no pigs?

7. Write an equation that represents the number of bales B needed to pen P number of pigs.



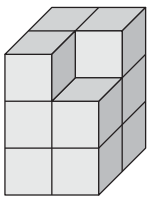
8. Show how to use your new equation to find how many bales are needed for 100 pigs.



9. How many pigs could be penned by 96 bales of hay?

ASSIGNMENT

A tower is built up as shown on the right. Write an equation that represents the number of blocks T needed to build a tower S stories tall.



Name _____
Partner _____

Card Sort (Solution Types)

a) Pair up with a partner and a device.
b) Go to student.desmos.com. (Do not login with Google)
c) Sign in with BOTH your names. (e.g. Alex and Maria = AlexMaria)
d) Class Code: **_____**

1) For each equation, draw a line to the corresponding graph.

one solution	no solution	infinitely many solutions

2) Your created equations with solutions for …

one solution no solution infinitely many solutions

The Clothesline

Name: _____
Date: _____

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. _____, _____, _____

2. _____, _____, _____

3. _____, _____, _____