CONTEXT IS CRITICAL:

6TH-12TH GRADE THREE-ACT MATH TASKS

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Lindsey Herlehy, NBCT

ACT 1

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WHAT DO YOU NOTICE?

WHAT DO YOU WONDER?

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-50
-30
-20

WHAT IS THE MAIN PROBLEM THAT WE WANT ANSWERED?

How many sticky notes will cover the file cabinet?

ESTIMATE THE SOLUTION TO THE MAIN PROBLEM.

Too Low estimate

Too High estimate

Place your **just right** estimate along the number line. Be sure to label!

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ACT 2

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Estimate the dimensions…

Height:
72 inches

Width:
36 inches

Depth:
18 inches

Sticky note

Estimate the dimensions...

Sticky note

Dimensions:
3” x 3”

ACT 3

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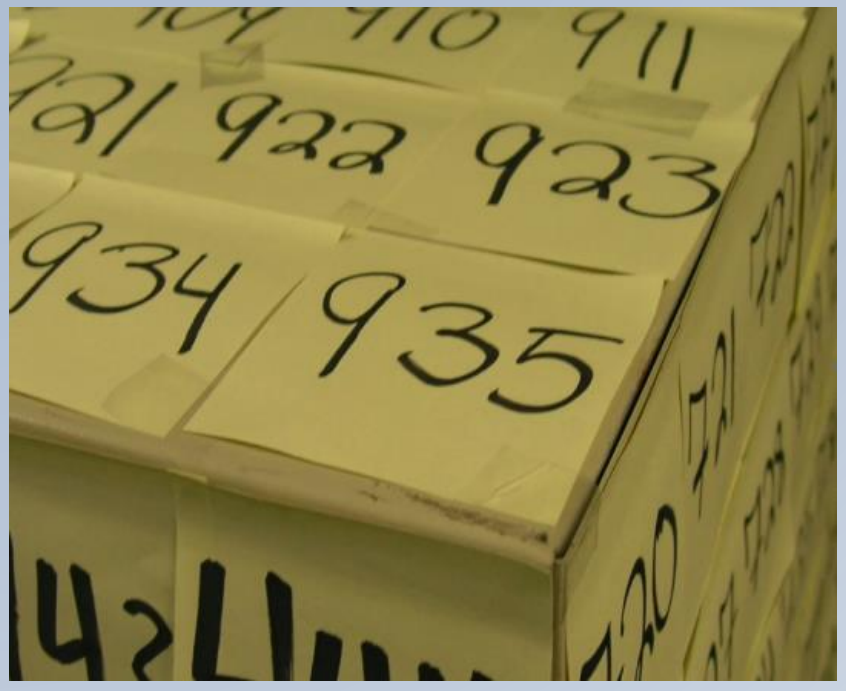
20

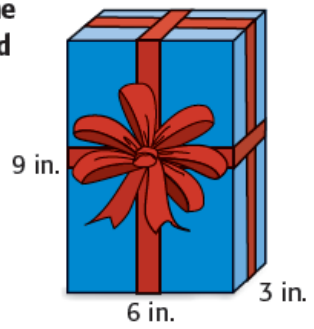
HOW DO THESE TWO PROBLEMS DIFFER?



REAL-WORLD EXAMPLE **Find the Surface Area**

1 **GIFTS** **Find the surface area for the amount of wrapping paper needed to cover the gift.**

Find the area of each face.



top and bottom:
$2\ell w = 2 \times 6 \times 3$ or 36

front and back:
$2\ell h = 2 \times 6 \times 9$ or 108

two sides:
$2wh = 2 \times 3 \times 9$ or 54

Add to find the surface area.

The surface area is 36 + 108 + 54 or 198 square inches.

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"IF YOU CAN ASK QUESTIONS ABOUT IT, IT'S IN YOUR REAL WORLD. IF YOU CAN GUESS ABOUT IT, IT'S IN YOUR REAL WORLD. IF YOU ARE ABLE TO ARGUE ABOUT IT, IT'S IN YOUR REAL WORLD."

- DAN MEYER

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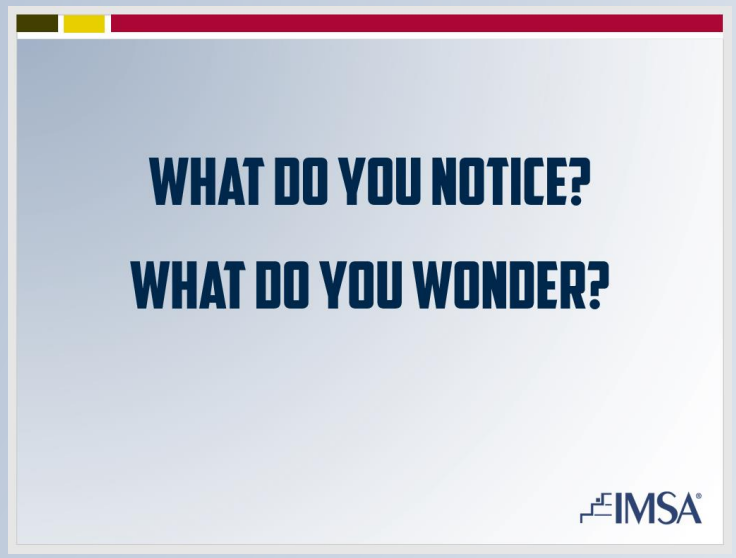
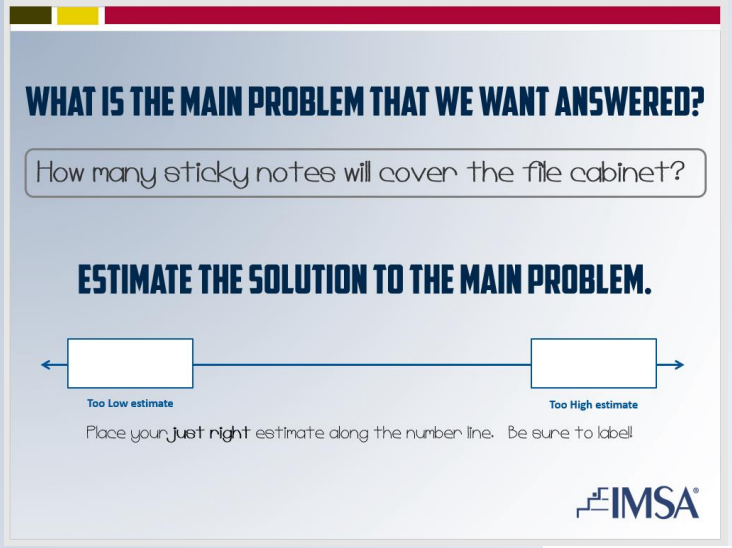
ACT 1

"Introduces the central conflict of your story clearly, visually and viscerally, using as few words as possible."

- Notice and Wonder
- Engage in "Goldilocks guessing"
- Collect data and invite all learners to participate





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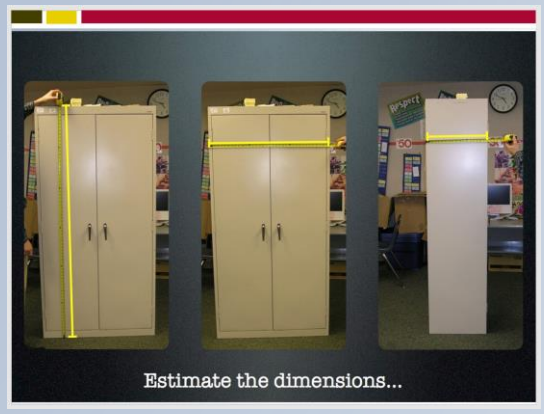
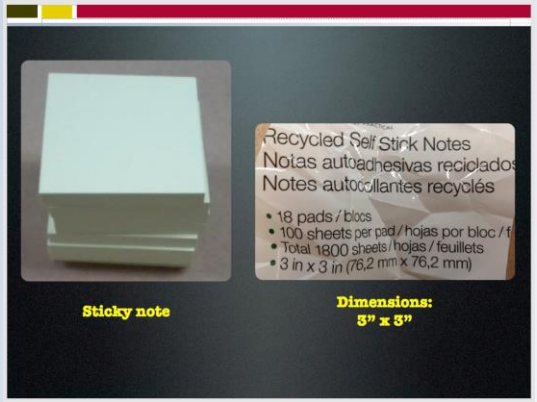
ACT 2

"The student overcomes obstacles, looks for resources and develops new tools."

- Investigate the constraints and requirements of the problem
- "Mess" with the problem
- Identify and collect valuable information needed to solve





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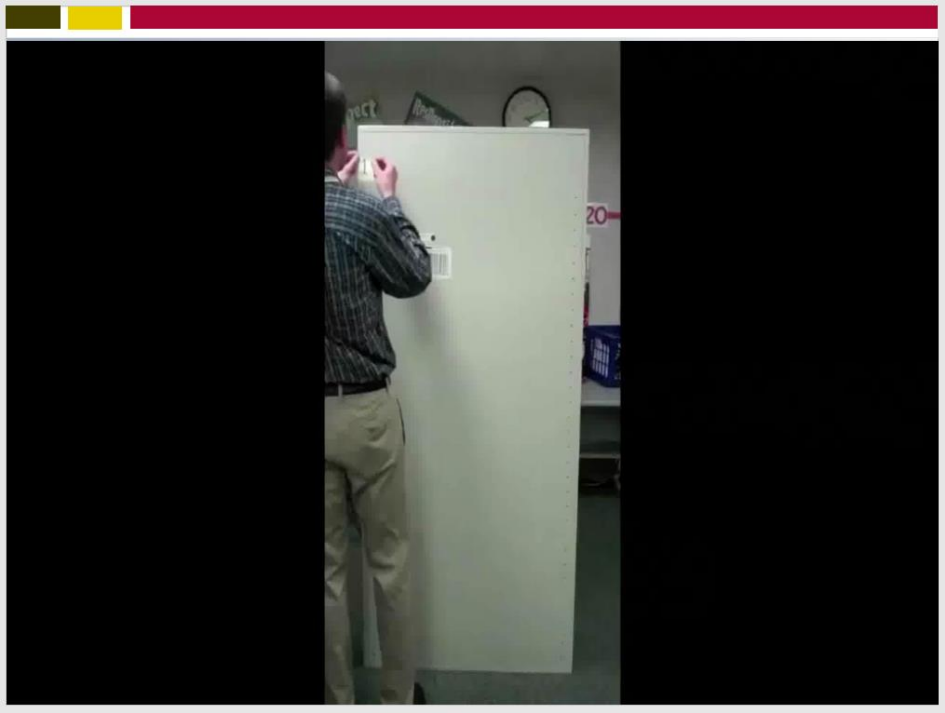
ACT 3

"Resolve the conflict and set up a sequel or extension."

- Evaluate the reasonableness of the answer and sources of error
- Formalize the content
- Reflect on the skills needed to solve the problem
- Investigate additional questions



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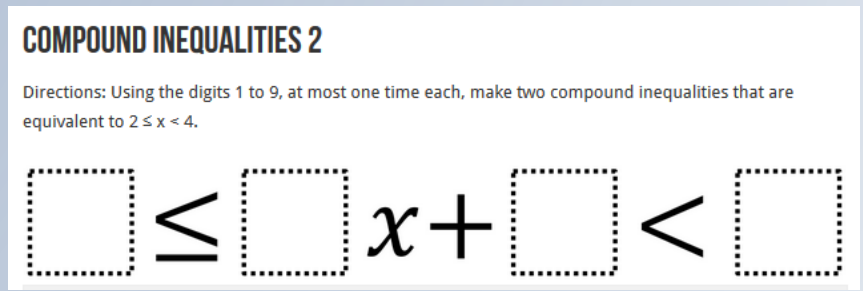
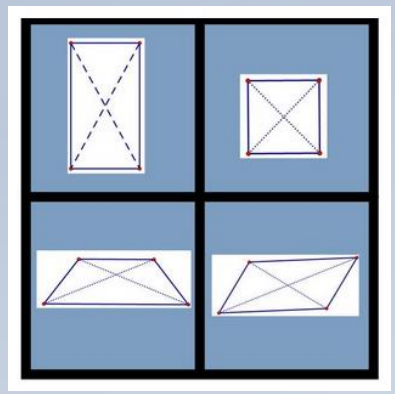
THIS IS ALL GREAT, BUT WHERE DO I START?

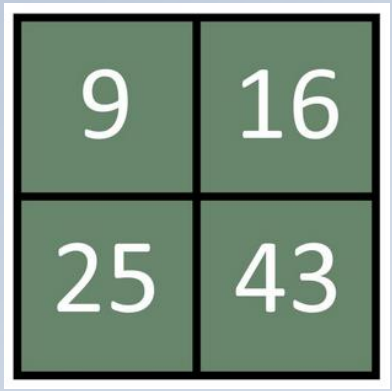
WWW.ESTIMATION180.COM

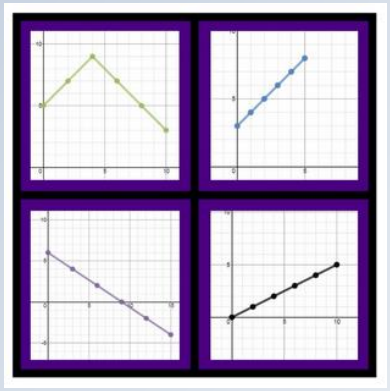
WWW.OPENMIDDLE.COM



WODB.CA







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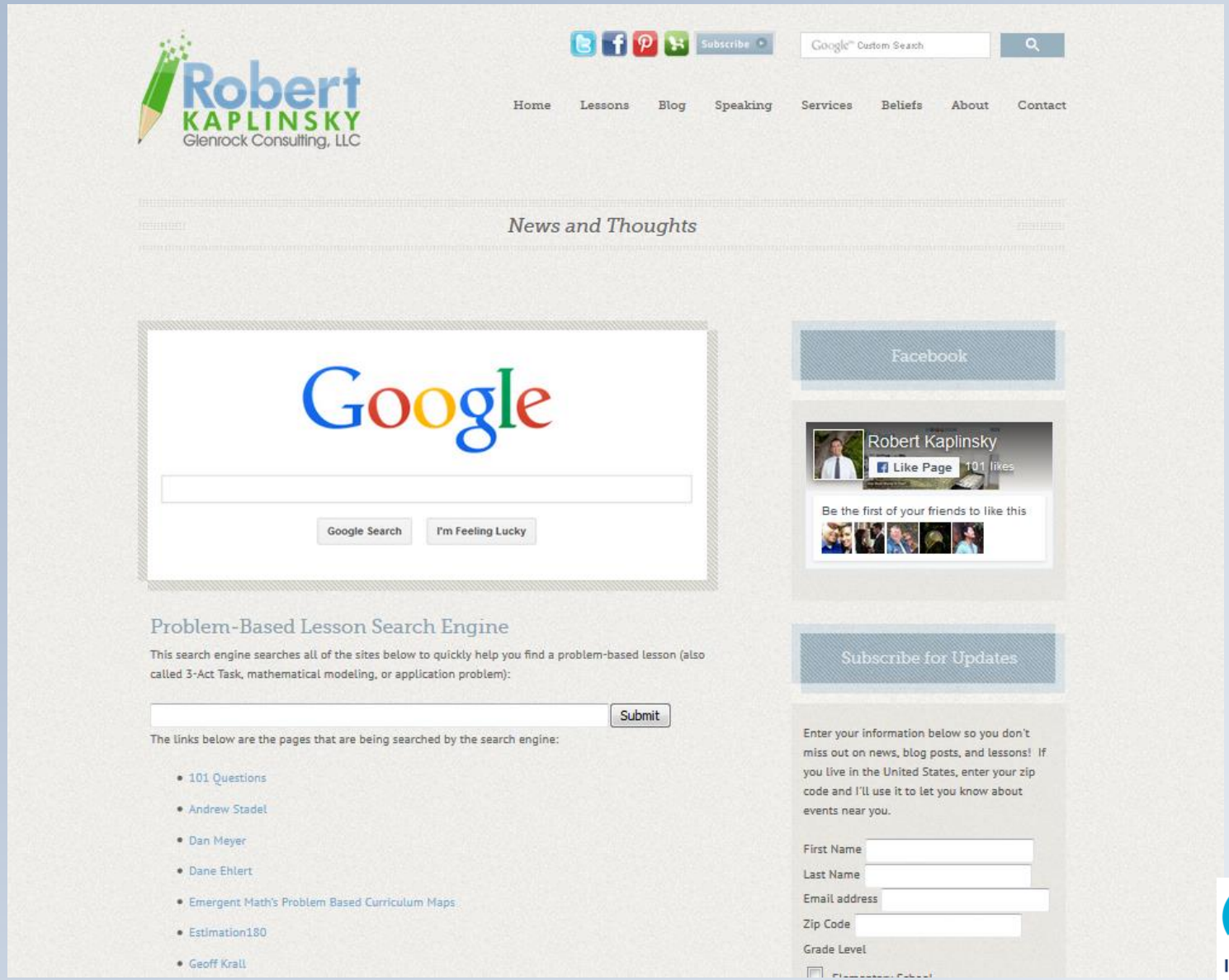

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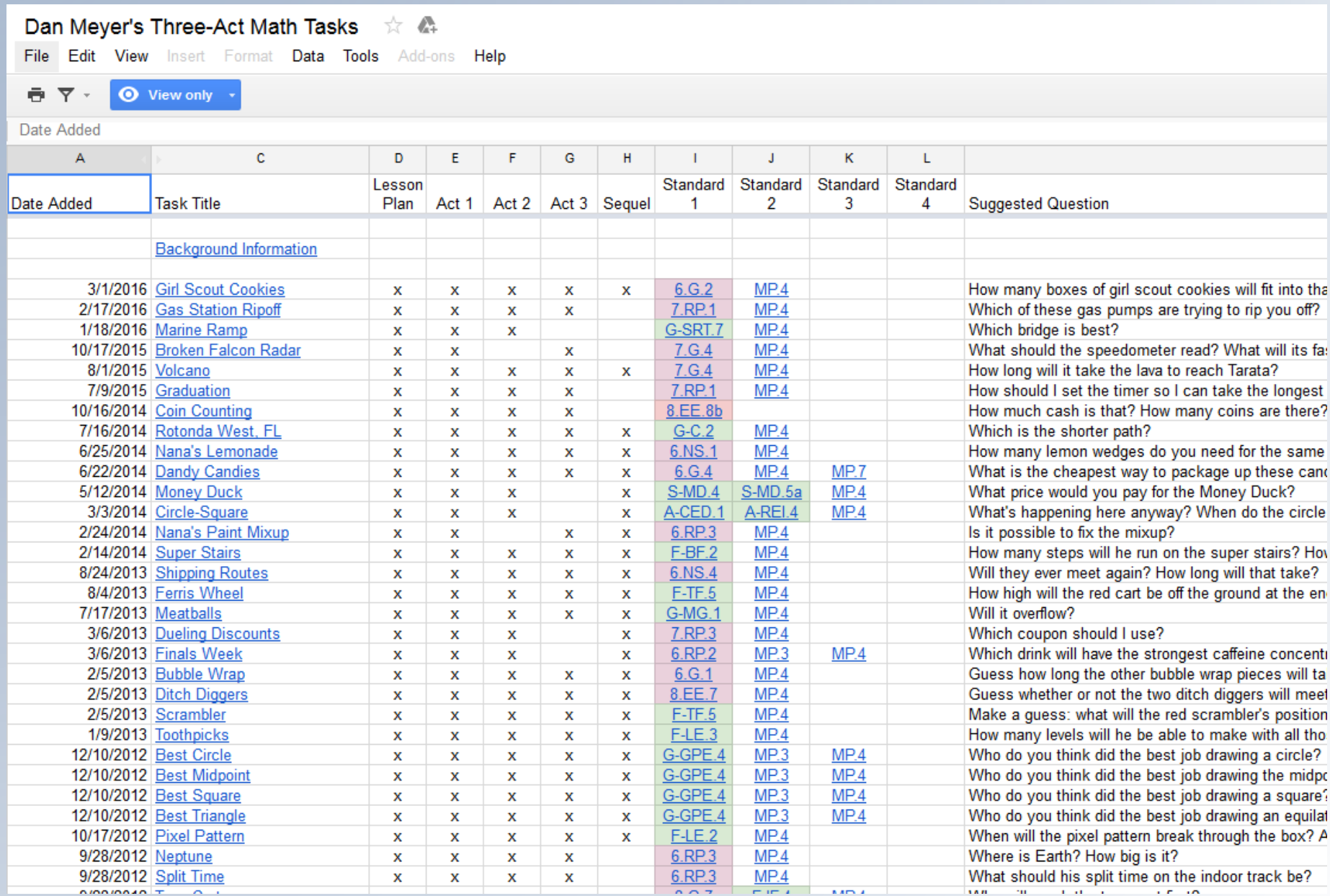


Dan Meyer's Three-Act Math Tasks

File Edit View Insert Format Data Tools Add-ons Help

View only

Date Added

A	C	D	E	F	G	H	I	J	K	L	
Date Added	Task Title	Lesson Plan	Act 1	Act 2	Act 3	Sequel	Standard 1	Standard 2	Standard 3	Standard 4	Suggested Question
	Background Information										
3/1/2016	Girl Scout Cookies	x	x	x	x	x	6.G.2	MP.4			How many boxes of girl scout cookies will fit into tha
2/17/2016	Gas Station Ripoff	x	x	x	x		7.RP.1	MP.4			Which of these gas pumps are trying to rip you off?
1/18/2016	Marine Ramp	x	x	x			G-SRT.7	MP.4			Which bridge is best?
10/17/2015	Broken Falcon Radar	x	x		x		7.G.4	MP.4			What should the speedometer read? What will its fa
8/1/2015	Volcano	x	x	x	x	x	7.G.4	MP.4			How long will it take the lava to reach Tarata?
7/9/2015	Graduation	x	x	x	x		7.RP.1	MP.4			How should I set the timer so I can take the longest
10/16/2014	Coin Counting	x	x	x	x		8.EE.8b				How much cash is that? How many coins are there?
7/16/2014	Rotonda West, FL	x	x	x	x	x	G-C.2	MP.4			Which is the shorter path?
6/25/2014	Nana's Lemonade	x	x	x	x	x	6.NS.1	MP.4			How many lemon wedges do you need for the same
6/22/2014	Dandy Candies	x	x	x	x	x	6.G.4	MP.4	MP.7		What is the cheapest way to package up these can
5/12/2014	Money Duck	x	x	x		x	S-MD.4	S-MD.5a	MP.4		What price would you pay for the Money Duck?
3/3/2014	Circle-Square	x	x	x		x	A-CED.1	A-REI.4	MP.4		What's happening here anyway? When do the circle
2/24/2014	Nana's Paint Mixup	x	x		x	x	6.RP.3	MP.4			Is it possible to fix the mixup?
2/14/2014	Super Stairs	x	x	x	x	x	F-BF.2	MP.4			How many steps will he run on the super stairs? Hov
8/24/2013	Shipping Routes	x	x	x	x	x	6.NS.4	MP.4			Will they ever meet again? How long will that take?
8/4/2013	Ferris Wheel	x	x	x	x	x	F-TF.5	MP.4			How high will the red cart be off the ground at the en
7/17/2013	Meatballs	x	x	x	x	x	G-MG.1	MP.4			Will it overflow?
3/6/2013	Dueling Discounts	x	x	x		x	7.RP.3	MP.4			Which coupon should I use?
3/6/2013	Finals Week	x	x	x		x	6.RP.2	MP.3	MP.4		Which drink will have the strongest caffeine concentı
2/5/2013	Bubble Wrap	x	x	x	x	x	6.G.1	MP.4			Guess how long the other bubble wrap pieces will ta
2/5/2013	Ditch Diggers	x	x	x	x	x	8.EE.7	MP.4			Guess whether or not the two ditch diggers will meet
2/5/2013	Scrambler	x	x	x	x	x	F-TF.5	MP.4			Make a guess: what will the red scrambler's position
1/9/2013	Toothpicks	x	x	x	x	x	F-LE.3	MP.4			How many levels will he be able to make with all tho
12/10/2012	Best Circle	x	x	x	x	x	G-GPE.4	MP.3	MP.4		Who do you think did the best job drawing a circle?
12/10/2012	Best Midpoint	x	x	x	x	x	G-GPE.4	MP.3	MP.4		Who do you think did the best job drawing the midpc
12/10/2012	Best Square	x	x	x	x	x	G-GPE.4	MP.3	MP.4		Who do you think did the best job drawing a square?
12/10/2012	Best Triangle	x	x	x	x	x	G-GPE.4	MP.3	MP.4		Who do you think did the best job drawing an equilat
10/17/2012	Pixel Pattern	x	x	x	x	x	F-LE.2	MP.4			When will the pixel pattern break through the box? A
9/28/2012	Neptune	x	x	x	x		6.RP.3	MP.4			Where is Earth? How big is it?
9/28/2012	Split Time	x	x	x	x		6.RP.3	MP.4			What should his split time on the indoor track be?

MIDDLE SCHOOL

RATES, RATIOS AND PROPORTIONS

PYTHAGOREAN THEOREM

LINEAR FUNCTIONS

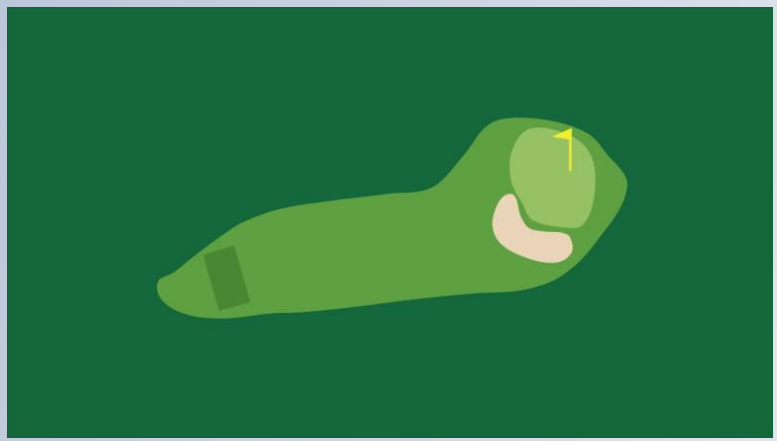
AREA AND CIRCUMFERENCE OF A CIRCLE

ALGEBRA

BUILDING FUNCTIONS

GEOMETRY

EXPRESSING GEOMETRIC PROPERTIES WITH FUNCTIONS



PRE-CALC

TRIGONOMETRIC FUNCTIONS

STATISTICS

INTERPRETING CATEGORICAL AND QUANTITATIVE DATA

THANK YOU!

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