

1

Tap Into Teen
Minds at: **iPadpalooza** JUNE 17-19
2014

Kyle Pearce

tapintoteenminds.com/ipadpalooza

 kyle.pearce@outlook.com

 www.tapintoteenminds.com

 [@MathletePearce](https://twitter.com/MathletePearce)



2

QUESTIONS DURING
SESSION?



TWEET IT!

TWEET YOUR QUESTION AND MENTION:

@MathletePearce

...and I'll do my best to answer during the session!

3

ABOUT ME

- Windsor, ON
- Math Teacher / Math Coach
- Apple Distinguished Educator
- Apple Authorized Trainer



 www.tapintoteenminds.com

 [@MathletePearce](https://twitter.com/MathletePearce)

4

Theory of Action

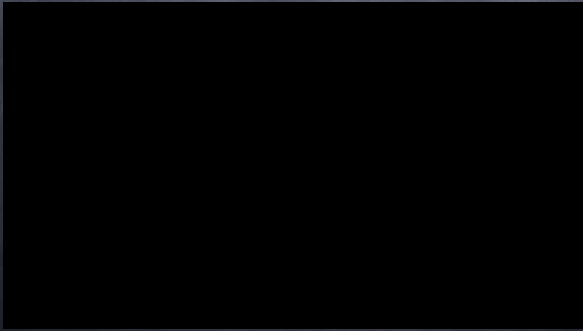
Effective Teaching Practice
+
Transformational Technology Use

Increased Student Success

www.tapintoteenminds.com @MathletePearce



5

Struggling Students



www.tapintoteenminds.com @MathletePearce

6

Students First, Not Stuff  

“Putting technology first – simply adding a layer of expensive tools on top of traditional curriculum – does nothing to address the new needs of modern learners”

(Richardson, W (2013). Students First, Not Stuff. Educational Leadership, 10–14.)

www.tapintoteenminds.com @MathletePearce

Redefining Digital Learning in Mathematics

- 30 iPads
- Projector
- Apple TV

Teacher Learning and Leadership Program for
EXPERIENCED TEACHERS

www.tapintoteenminds.com @MathletePearce

7

The SAMR Model

R REDEFINITION
previously inconceivable task

M MODIFICATION
significant task redesign

A AUGMENTATION
functional improvement

S SUBSTITUTION
no functional change

Source: cagelessthinking.com

8

Presenting via iPad Mirroring

www.tapintoteenminds.com @MathletePearce

9

10

Wireless Document Camera




The image shows a black Apple TV device connected to a camera icon. Below this is a screenshot of an iPad's AirPlay interface. The AirPlay menu is open, showing 'iPad' and 'Kyle's MacBook Pro' as available destinations. The 'iPad' option is selected with a checkmark. The background of the iPad screen shows a video player interface with play, pause, and skip buttons.

www.tapintoteenminds.com @MathletePearce

11

Descriptive Feedback on Student Work

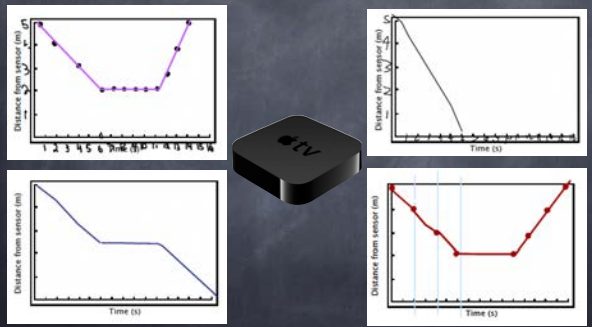


The image shows a camera icon connected to a Google Drive icon. Below this is a photograph of a student's math work. The work includes a multiplication problem: $5.49 \times \frac{1}{3} = 1.83$. Below this is a division problem: $5.49 \div 4 = 1.37$. At the bottom, there is a calculation: $1.37 \times 3 = \$4.11$ for 3 bottles. The background of the photo shows a collection of colorful math manipulatives.

kylep.ca/1fuAWti @MathletePearce

12

Sharing Student Work



The image shows an Apple TV device in the center, surrounded by four graphs. Each graph plots 'Distance from sensor (m)' on the y-axis against 'Time (s)' on the x-axis. The top-left graph shows a purple parabolic curve opening upwards. The top-right graph shows a grey line that starts at a high point and decreases linearly to zero. The bottom-left graph shows a blue line that starts at a high point, decreases linearly to a constant value, and then decreases linearly again. The bottom-right graph shows a red parabolic curve opening upwards.

kylep.ca/1fLDfep @MathletePearce

No Typing Necessary

ANNOTATE ON YOUR iPad

www.tapintoteenminds.com @MathletePearce

13

GoodNotes: For Writing

kylep.ca/1mCckKZ @MathletePearce

14

Writing With Ease

Zoom Tool

Zoom Box

Therefore,

kylep.ca/1mCckKZ @MathletePearce

15

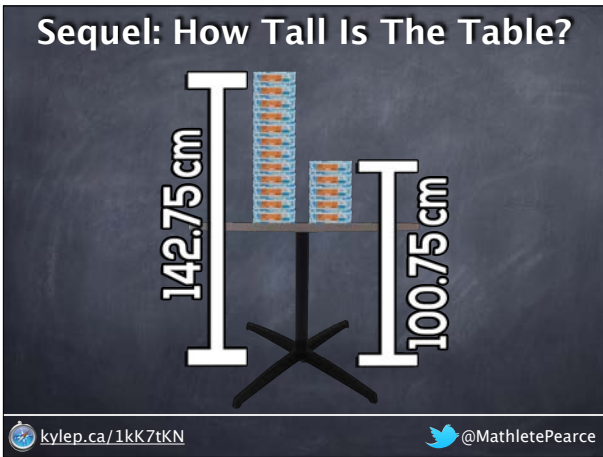
Paper Stacks

16



Sequel: How Tall Is The Table?

17



REAL WORLD MATH WWW.TAPINTOTEENMINDS.COM

How Tall Is The Table?

What is the equation of this relation?

$142.75 - 100.75 = 42.00$

7 stacks = 42 cm

$\frac{42}{7} = 6$ cm (each)

$12 \times 6 = 72$ cm (stacks)

The diagram shows a table with two stacks of paper. The table height is 100.75 cm. The total height with stacks is 142.75 cm. Handwritten annotations include '7 stacks', '12 stacks', '5 stack', and 'Height?'. A large 'X' is drawn over the diagram. Social media handles 'kylep.ca/1kK7tKN' and '@MathletePearce' are at the bottom.

18

REAL WORLD MATH WWW.TAPINTOTEENMINDS.COM

How Tall Is The Table?

What is the equation of this relation?

Handwritten notes:
 Height of the table
 Height of stacks on left side
 Height of stacks on right side
 Space between stacks
 Total stacks
 How much each stack is
 Height of paper
 Height of the space of paper

$142.75 - 100.75 = 42$
 $42 \div 7 = 6$
 $5 \times 6 = 30$
 $100.75 - 30 = 70.75$

kylep.ca/1kK7tKN @MathletePearce

19

Handwritten notes:
 height of stack on left
 height of stack on right
 Space between right & left stack
 extra stacks on left
 each stack is
 if there's 5 stacks on the right and each package is 6cm you could multiply 5x6 to get the height of the paper stack on the right.

$142.75 - 100.75 = 42$
 $\frac{42}{7} = 6$
 $5 \times 6 = 30$
 $100.75 - 30 = 70.75$

kylep.ca/1kK7tKN @MathletePearce

20

Equations Given 2 Points

Handwritten notes:
 Algebraic Equation Given 2 Points
 Slope
 m = $\frac{y_2 - y_1}{x_2 - x_1} = \frac{142.75 - 100.75}{7 - 0} = \frac{42}{7} = 6$
 y-intercept
 m = 6, b = 70.75
 Equation: $y = 6x + 70.75$

FIND TABLE HEIGHT
 (initial value/y-int)

70.75
 $y = 6x + b$
 $142.75 = 6(7) + b$
 $142.75 = 42 + b$
 $100.75 = b$

Equation: $y = 6x + 70.75$

kylep.ca/1kK7tKN @MathletePearce

21

Saving Content

The diagram illustrates three primary methods for saving content from a document. At the top, a document icon with a blue pen is shown. Three arrows point downwards from this icon to three categories: iTunes (with a purple music note icon), Email (with a blue envelope icon), and Cloud. The Cloud category is further detailed with four icons: Google Drive (green and yellow), Dropbox (blue), OneDrive (blue and white), and Box (blue and white). At the bottom, the website www.tapintoteenminds.com and the Twitter handle [@MathletePearce](https://twitter.com/MathletePearce) are listed.

22

One-Way Sync

The diagram shows the 'One-Way Sync' settings in an application. On the left, a document icon is labeled 'Auto-Magically!' with arrows pointing to icons for Dropbox, Google Drive, OneDrive, and Box. On the right, a settings menu titled 'Cloud Storage and One-Way Sync' is shown. Under 'Cloud Storage', there are toggle switches for 'box' (OFF), 'Dropbox' (ON), 'Google Drive' (ON), and 'SkyDrive' (OFF). Under 'One-Way Sync', the 'One-Way Sync' toggle is circled in red and is turned ON. Other settings include 'Sync Over Wi-Fi or Bluetooth Only' (OFF), 'Cloud Storage' (Dropbox), 'Folder' (GoodNotes), and 'File Format' (PDF). A small disclaimer at the bottom states: 'One-Way Sync will automatically upload your documents and changes to the destination folder. Be aware that it will delete all files not uploaded by itself in that folder.' At the bottom, the website www.tapintoteenminds.com and the Twitter handle [@MathletePearce](https://twitter.com/MathletePearce) are listed.

23

Cloud Shared Folders

The diagram illustrates how various applications can share content to cloud storage. At the top, several application icons are shown: a document with a pen, a film strip, 'daceri' (a green hand icon), a pencil, a bar chart, a presentation screen, and a purple star icon. Arrows from each of these icons point downwards to a central blue cloud. Inside the cloud are four icons representing cloud storage services: Google Drive, Dropbox, OneDrive, and Box. At the bottom, the website www.tapintoteenminds.com and the Twitter handle [@MathletePearce](https://twitter.com/MathletePearce) are listed.

24

25

Accessible Anywhere

The diagram illustrates content accessibility across different devices. At the top center is a tablet displaying a math problem: "Which Should I Buy?" with two options: "Option #1" (a pencil) and "Option #2" (a notebook). Below this, three arrows point to a desktop computer monitor, a tablet, and a smartphone, each displaying the same content adapted to its screen size. The text "Computer", "Tablet", and "Smartphone" is placed below their respective images.

www.tapintoteenminds.com @MathletePearce

26

Multi-Tasking

The image shows a multi-tasking interface with three overlapping windows. The background window is a home screen with various app icons. The middle window shows a web browser with a page titled "Mac OS X 10.11.2 El Capitan". The right window shows a social media feed with a blue header and several posts. The text "Multi-Tasking" is centered at the top.

www.tapintoteenminds.com @MathletePearce

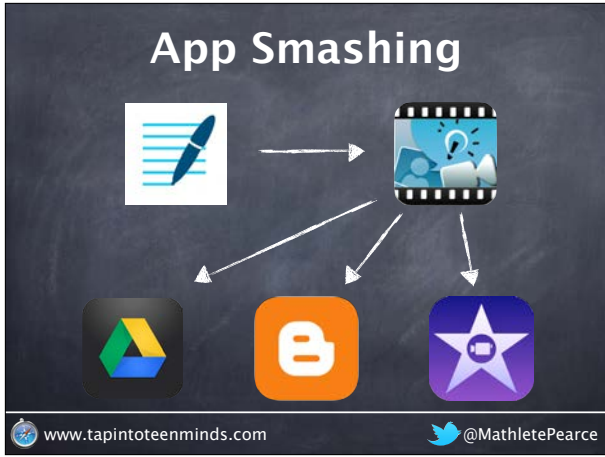
27

App Smashing

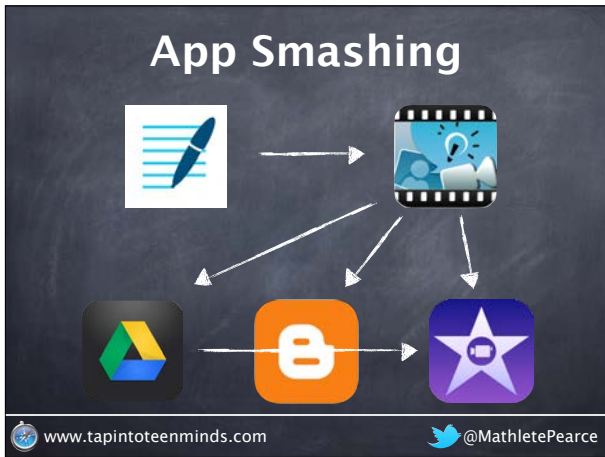
A grid of 12 app icons arranged in three rows and four columns. The icons include: a pencil on a notepad, a bar chart, a presentation screen, a star with a speech bubble, a notepad with a pencil, a film strip with a lightbulb, the Google Drive logo, a leaf, an elephant, the WordPress logo, a hand pointing to a screen, and a stylized letter 'B'.

www.tapintoteenminds.com @MathletePearce

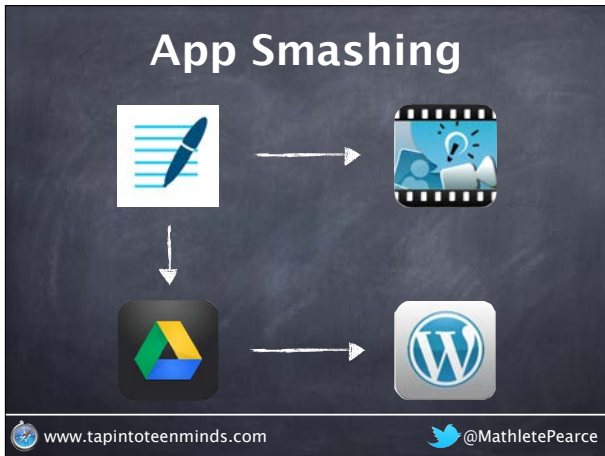
28



29



30



31

App Smashing

www.tapintoteenminds.com @MathletePearce

32

Reciprocal Teaching

www.tapintoteenminds.com @MathletePearce

33

Doceri

www.tapintoteenminds.com @MathletePearce

Recording With Doceri



Tap into TeenMinds

How Tall Is The Short Table?

Finding The Equation
of a Line Given
Two Points (x,y)

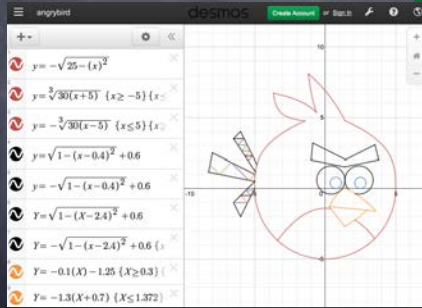
TapintoTeenMinds.com

34

kylep.ca/1kK7tKN

@MathletePearce

Desmos

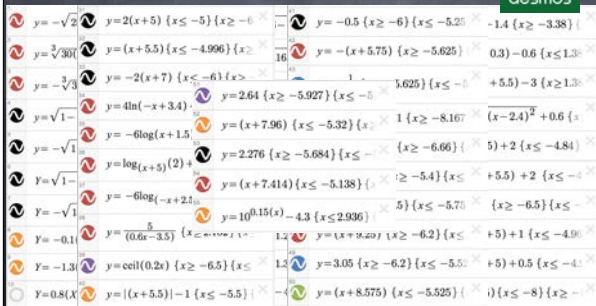


35

www.tapintoteenminds.com

@MathletePearce

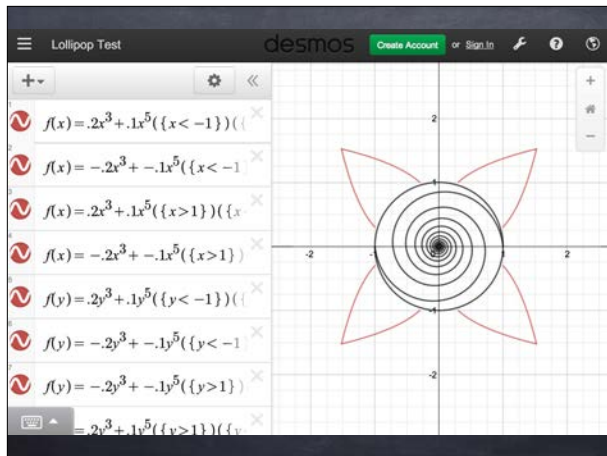
Bad Example? Maybe



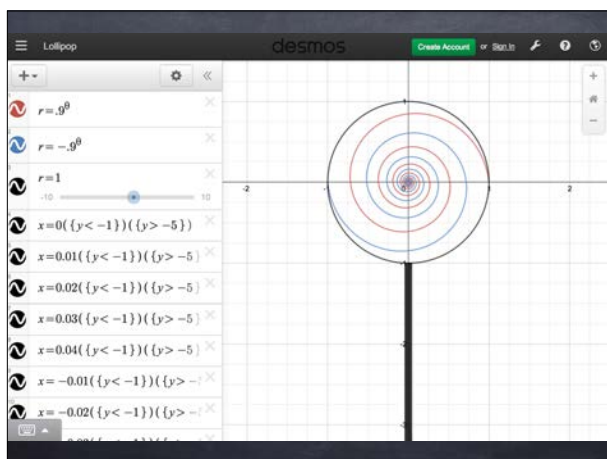
36

www.tapintoteenminds.com

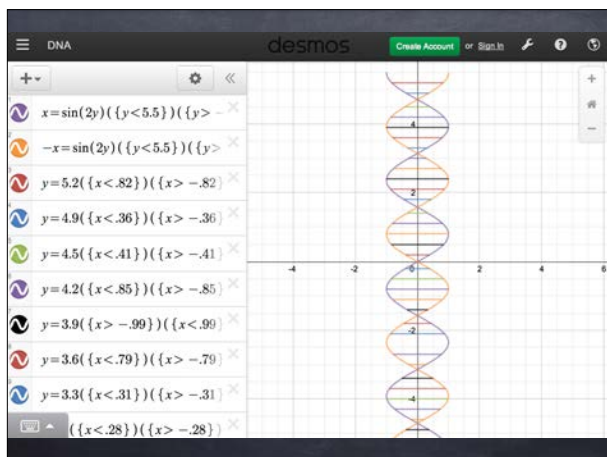
@MathletePearce



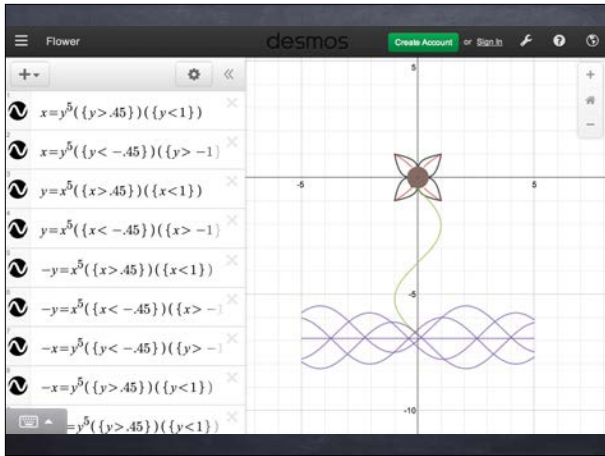
37



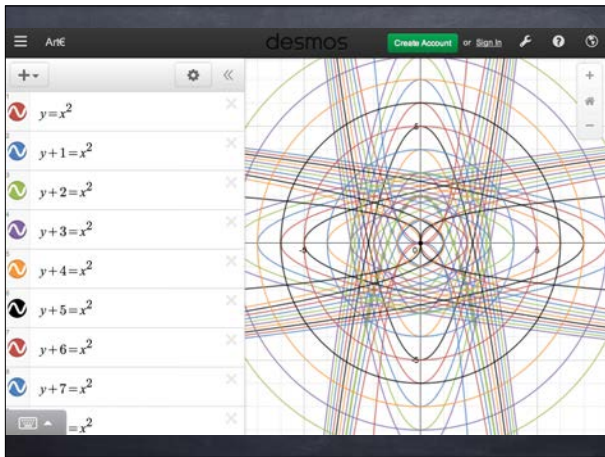
38



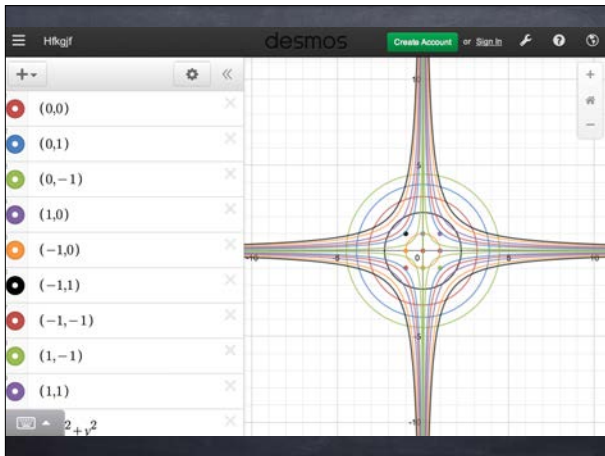
39



40



41

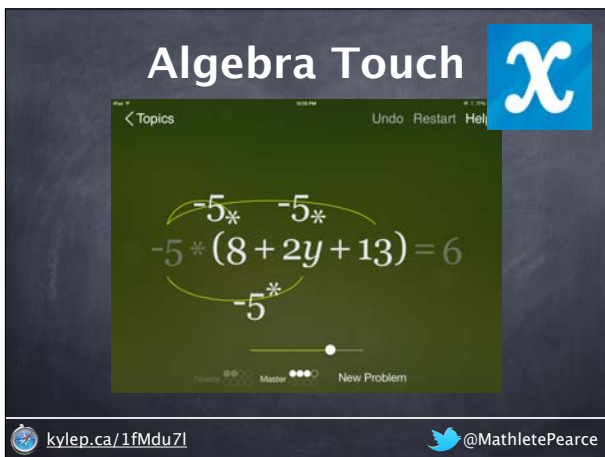


42

43




44



45



46



Embed in Lesson

www.tapintoteenminds.com

Visual Representation **Numerical Representation**

1


SAME AS

SAME AS

Algebraic Representation

kylep.ca/1e7Wegp @MathletePearce

47



Embed in Lesson

www.tapintoteenminds.com

Graphical Representation **Numerical Representation**

1

SAME AS


SAME AS

Algebraic Representation

$$A = B - c + c - B + x$$

kylep.ca/1e7Wegp @MathletePearce

48



SAME AS

$$A = 0 + 0 + x$$

3

SAME AS

$$A = x$$

kylep.ca/1e7Wegp @MathletePearce

Oh No! Fractions!

LAB 1
5/6

Find the common denominator

SHOW ME! FOUND IT!

www.tapintoteenminds.com @MathletePearce

49

Puppet Pals: Director's Pass

Simple animated movies!

Pras Star

PUPPET PALS
Award winning educational app!

www.tapintoteenminds.com @MathletePearce

50

Tellagami

a table of values.

TIME	# of Flaps
0	0
1	54
2	108
5	216
6	324

of Flaps!

AK! Rising to the Right! Rising "What" TIME

www.tapintoteenminds.com @MathletePearce

51

FluidMath

$y = mx + b$
 $b = 1$

$y = ax^2 + b$

$y = |x - h| + k$

$y = |x - h| + k$

www.tapintootenminds.com @MathletePearce

52

GeoGebra

Veranschaulichung von Funktionen

$g(x) = \frac{1}{x^2}$
 $g(x) = \sin(x)$
 $h(x) = g(x)$

www.tapintootenminds.com @MathletePearce

53

Gizmos

Vertical: $a(x - h)^2 = y - k$
 $0.16(x - 3.0)^2 = y - 3.0$

Show polynomial form:
 $y = 0.16x^2 - 1.22x + 1.99$

Explore geometric definition:
 $L_1 = 0.85$
 $L_2 = 0.85$

Show the distance of c:
 $|a| = \frac{1}{4p}$ $c = 1.55$

www.tapintootenminds.com @MathletePearce

54

socrative

ROOM: 51134
Dashboard

Start a Quiz Quick Question
Space Race Exit Ticket
Manage Quizzes

www.tapintoteenminds.com @MathletePearce

55

Growing Success

7 Fundamental Principles

www.tapintoteenminds.com @MathletePearce

56

7 Fundamental Principles

To ensure that assessment, evaluation, and reporting are **valid and reliable**, and that they lead to the **improvement of learning** for all students, teachers use practices and procedures that:

www.tapintoteenminds.com @MathletePearce

57

7 Fundamental Principles



“are carefully planned to relate to the curriculum expectations and **learning goals**...”

58



www.tapintoteenminds.com



@MathletePearce

7 Fundamental Principles



“are **communicated clearly** to students and parents at the beginning of the school year or course and at other **appropriate points throughout** the school year or course;”

59



www.tapintoteenminds.com



@MathletePearce

7 Fundamental Principles



“are ongoing, **varied** in nature, and administered over a period of time to provide **multiple opportunities** for students to demonstrate the full range of their learning;”

60



www.tapintoteenminds.com



@MathletePearce

61

7 Fundamental Principles



“provide **ongoing** descriptive feedback that is clear, specific, meaningful, and **timely** to support improved learning and achievement;”



www.tapintoteenminds.com



@MathletePearce

62

7 Fundamental Principles



“develop students’ self-assessment skills to enable them to **assess their own learning**, set specific goals, and plan next steps for their learning.”



www.tapintoteenminds.com



@MathletePearce

63

*33 Excellent job - but you have a couple areas you can still grow in...
44 Participation more and completing tasks will surely help!*

Unit 4 Test - Modelling With Graphs - Part Deux!

Name: _____ Date: _____

1. You are given a graph that represents the **Amount of Water in a Hot Tub vs. Time**.
a) Complete the **description**, **table**, and **graph** representing this same relationship.

Equation: $y = 12x + 200$

Time	# of Water
0	200 L
3	212 L
6	224 L
9	236 L
12	248 L
15	260 L
18	272 L

direct slope



kylep.ca/1kK7tKN



@MathletePearce

REAL WORLD MATH WWW.TAPINTOTEENMINDS.COM

3. The following graph represents Sidney Crosby's (NHL Hockey Player) NHL Career Goals Scored vs. Number of Games Played This Season.
Find the *slope / rate of change / constant of variation* using *rise over run*. Clearly label the rise and the run on your graph to assist in your explanation.

rise $\frac{18}{41}$
run

$y = \frac{18}{41}x + 769$

what does $\frac{18}{41}$ mean?

Learning Goal: 34 - I can determine the rate of change (slope) of a line using rise over run.

4. Find the *equation* of the linear relation in the table below. Show your work.

www.tapintoteenminds.com @MathletePearce

64

Google Drive Cloud Storage

www.tapintoteenminds.com @MathletePearce

65

Google Sheets

I can use the distributive property to eliminate brackets in order to solve first-degree equations.

I can solve first-degree equations with fractional coefficients using a variety of tools and strategies.

Student Number

I can rearrange order

UNIT 3 LEARNING GOALS & PROGRESS - S

Practice	U3 QUIZ	Test	Practice	U3 QUIZ	Test	Student Number	Practice
3	2	2	3	4	2	30300937	3
3	3	4	3	4	4	31700805	3
2	3	4	2	4	4	35000988	3
3	1	1	1	2	2	37900878	3

www.tapintoteenminds.com @MathletePearce

66

Standard Based Grading

67

Student Number	I can solve first-degree equations with fractional coefficients using a variety of tools and strategies.		
	Practice	U3 QUIZ	Test
30300937	3	4	2
31700805	3	4	4
35000988	2	4	4
37900878	1	2	2

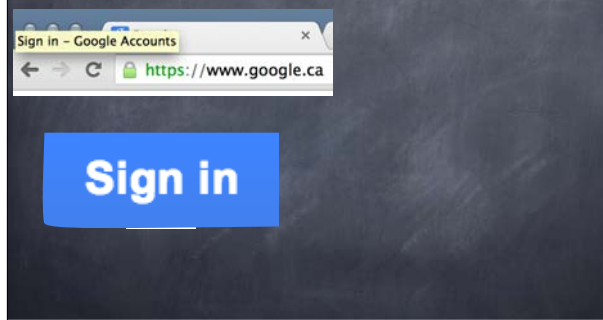
Create Your Own!

68



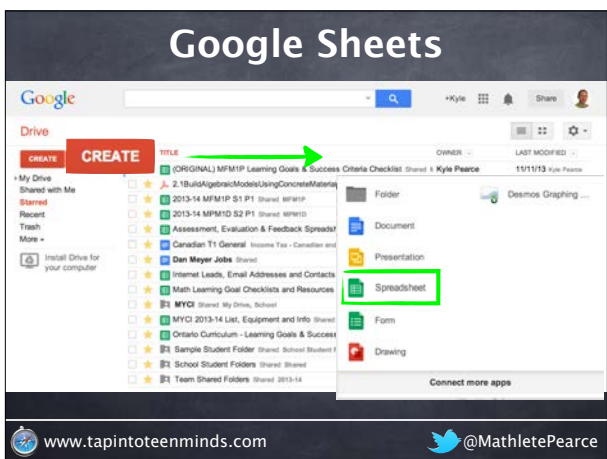
Create Your Own!

69

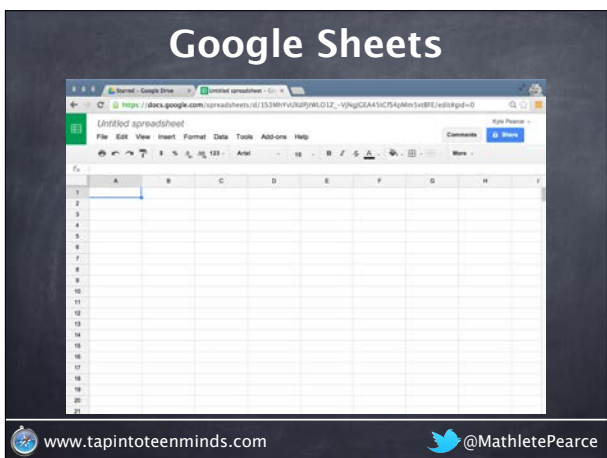




70



71



72

Google Sheets

Name File Add Headers

Add Sheet Rename Sheet

www.tapintoteenminds.com @MathletePearce

73

Conditional Formatting

Highlight Cells

Conditional Formatting

www.tapintoteenminds.com @MathletePearce

74

Conditional Formatting

Select Conditions

www.tapintoteenminds.com @MathletePearce

75

76

Publish to the Web

www.tapintoteenminds.com @MathletePearce

77

Real World Math Problems

Record and create Dan Meyer 3 act math tasks

www.tapintoteenminds.com/3act-math @MathletePearce

78

<http://tapintoteenminds.com/3act-math/>

Cookie Cutter

79



Cookie Cutter

80



Cookie Cutter

81



Cookie Cutter

82



Cookie Cutter

83



Cookie Cutter

84



85

$A = \pi r^2$

Why do we need π ?


Discuss & Explore With A Partner

[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

86

Why do we need π ?

$A = \pi r^2$




[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

87

Why do we need π ?

$A = \pi r^2$



Wonderings:

What percentage of the square is green?

What percentage is purple?

[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

Why do we need π ?

$$A = \pi r^2$$

DOES A
RELATIONSHIP
EXIST?



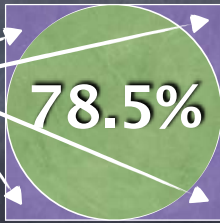
88

[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

Why do we need π ?

$$A = \pi r^2$$

21.5%



89

[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

Why do we need π ?

$$A = \pi r^2$$

What percentage of
the square is green?



What percentage is
purple?

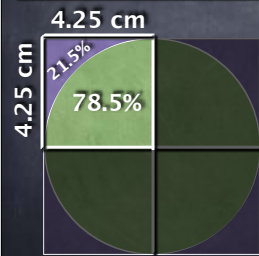
90

[@MathletePearce](#) www.tapintoteenminds.com [@JustinLevack](#)

Why do we need π ?

$$A = \pi r^2$$

91



How Does This Proportion Relate to π ?

$$A = (4.25)^2 (0.785)4$$

$$A = (4.25)^2 (3.14)$$

$$A = \pi(4.25)^2$$

@MathletePearce www.tapintoteenminds.com @JustinLevack

Why do we need π ?

$$A = \pi r^2$$

92



How Does This Proportion Relate to π ?

$$A = (4.25)^2 (0.785) (4)$$

$$A = 14.17 (4) \text{ cm}^2$$

$$A = 56.72 \text{ cm}^2$$

@MathletePearce www.tapintoteenminds.com @JustinLevack

My Next Step in Redefining Mathematics Education

93



www.MathBlogs.ca

www.tapintoteenminds.com @MathletePearce

Learning Goals Based Blogging

I can describe a situation that would represent the graph of a two-variable relationship.

www.MathBlogs.ca

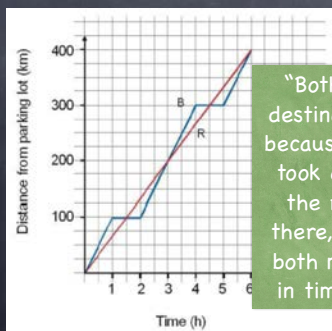
94



www.tapintoteenminds.com



@MathletePearce



"Both cars got to the final destination at the same time, because although the blue car took a couple of breaks and the red car drove straight there, the lines on the graph both meet at the same point in time at the end." - Jenna

www.MathBlogs.ca

95



www.tapintoteenminds.com



@MathletePearce

Register for a Free Account

MathleteBlogs.com

Currently Powering 69 Blogs

Get Blogging! LOGIN REGISTER

Home How It Works Create a Blog Add a Blog View Blogs Contact

STUDENT MATH BLOGS

GET A FREE MATH BLOG OR ADD YOUR EXISTING ONE!

Register for a FREE Wordpress Math Blog

with a customizable domain name:

YOURNAME.mathblogs.ca

Already have a blog? ADD IT!

LEARN MORE!

www.MathBlogs.ca

96



www.tapintoteenminds.com



@MathletePearce

97

Pick Your Own Domain

MathleteBlogs.com

Currently Powering 60 Blogs

Get Blogging! LOG IN REGISTER

Home How It Works Create a Blog Add a Blog View Blogs Contact

STUDENT MATH BLOGS

GET A FREE MATH BLOG OR ADD YOUR EXISTING ONE!

Register for a FREE Wordpress Math Blog with a customizable domain name: YOURNAME.mathblogs.ca

Already have a blog? ADD IT!

LEARN MORE!

www.MathBlogs.ca

www.tapintoteenminds.com @MathletePearce

98

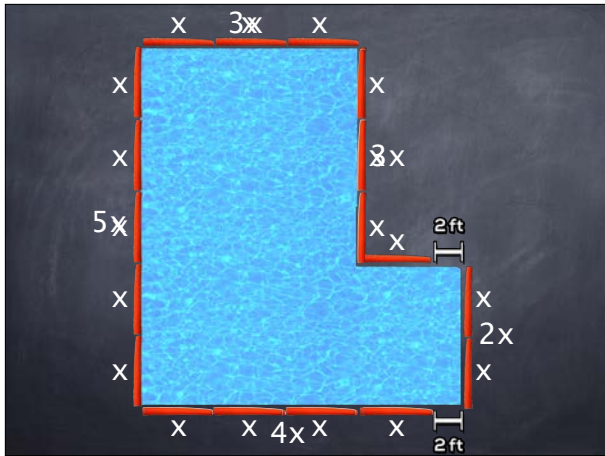
Find the Perimeter & Area of the Figure

Perimeter
 $= 3x + 18x + 4 + 2 + 2x + 4x + 2 + 5x$

www.tapintoteenminds.com @MathletePearce

99

www.tapintoteenminds.com @MathletePearce



100

Pool Noodles

Let x represent the length of a pool noodle.

$P = 18x + 4$

www.tapintoteenminds.com @MathletePearce

101

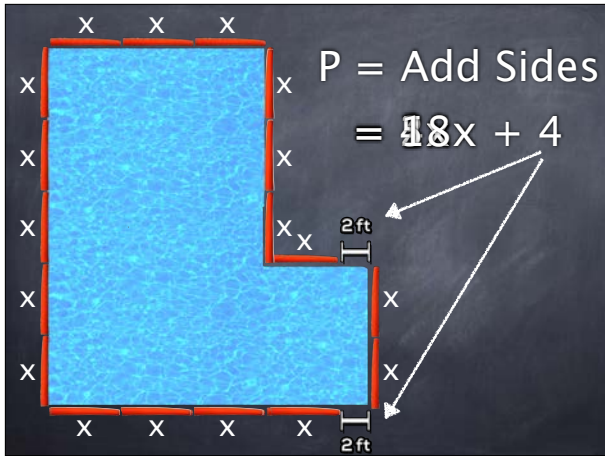
Pool Noodles

Let x represent the length of a pool noodle.

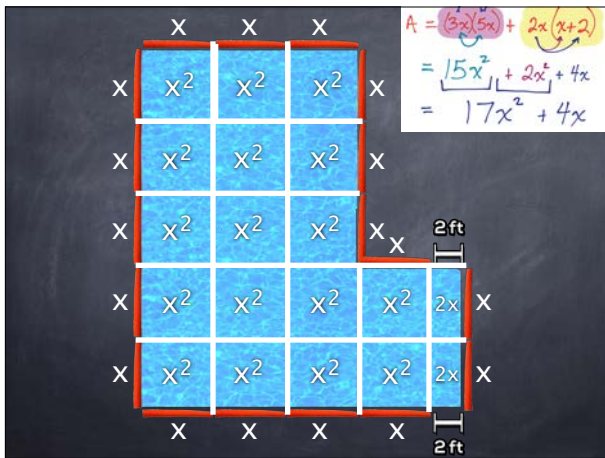
$A = 17x^2 + 4x$

www.tapintoteenminds.com @MathletePearce

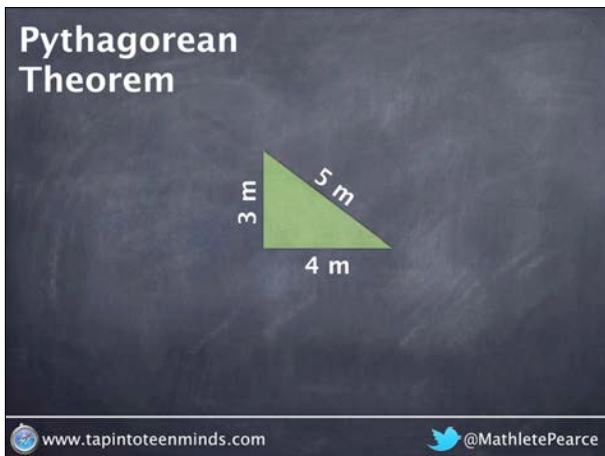
102



103



104



105

Flipped Classroom With Assessment



eduCanon.com

www.tapintoteenminds.com @MathletePearce

106

Resources & Feedback

Please complete the survey
to help me improve

tapintoteenminds.com/ipadpalooza

Your feedback is appreciated!

www.tapintoteenminds.com @MathletePearce

107

Reach Out!



Kyle Pearce

tapintoteenminds.com/ipadpalooza

 kyle.pearce@outlook.com

 www.tapintoteenminds.com

 @MathletePearce

108