

CC ALGEBRA ETOOLS - T

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## General eTools

# Algebra Tiles (CPM)

This tutorial describes how to use the Algebra Tiles including additional features.

**Click on the link below to access eTool.**

[Algebra Tiles \(CPM\)](#)

## 1. The top bar has three main parts: Pen & Paper Icon, '?' Icon, and the Arrow Icon.

1. Select the Pen & Paper Icon to:

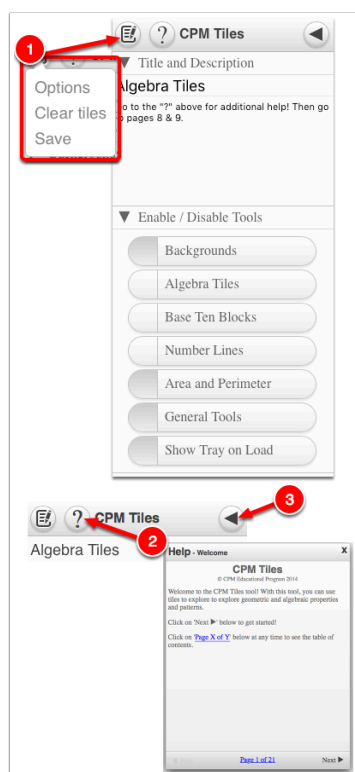
Options - Add Title and Description and Enable/Disable Tools.

Clear Tiles - This will remove all the tiles that are in the tile area.

Save - This will save all the changes made.

2. Select the '?' icon for directions.

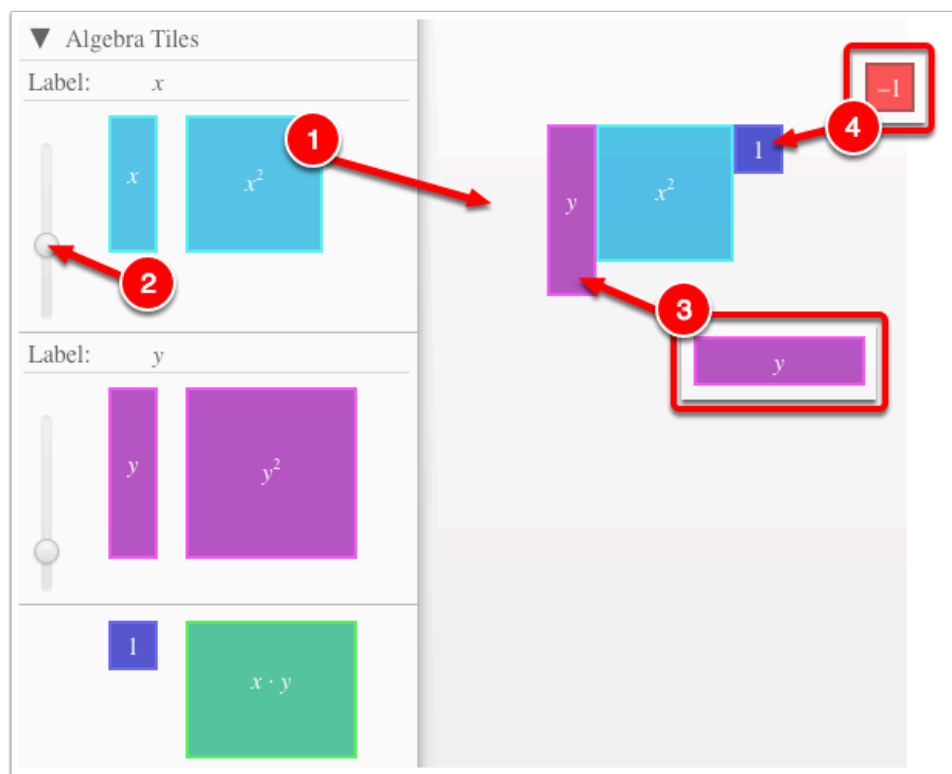
3. Select the Arrow Icon at the right to open and close the tray.



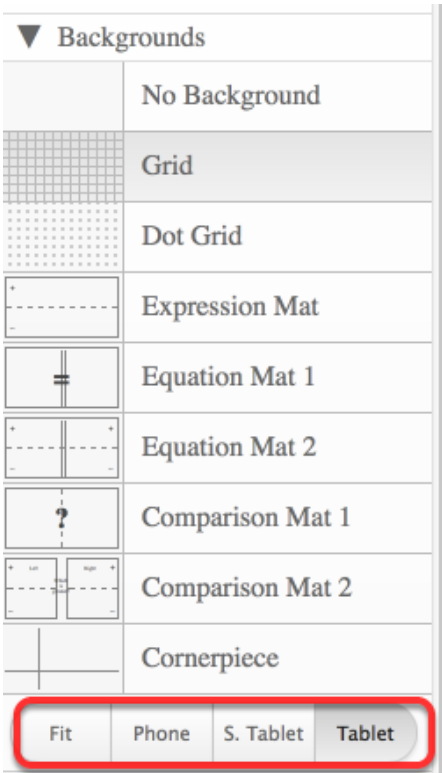
## 2. Drag tiles from the tray at the left to the display area at the right.

1. Select one of the tiles and drag it to the tile area.

2. Use the sliders in the tray to change the size of the tiles.
  3. Double click tiles to change orientation (horizontal/vertical).
  4. Click on a tile once to change the sign (+ -).
- Note: The color of the tile will turn to red for negative sign.

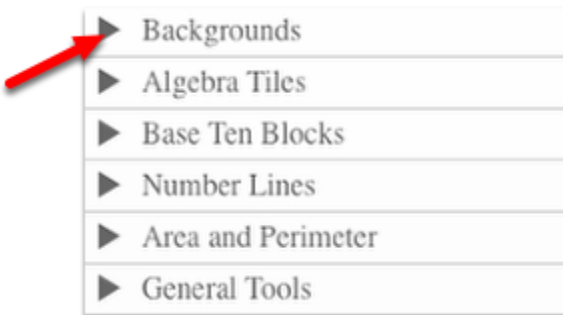


**3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.**



**4. Choose from a variety of different tiles:**

- Click the arrow next to the tool to view/hide the options for each tool.



**Click on the link below.**

## 1. Drag tiles from the tray to the Display area.

- Add tiles and copy and paste them to the display area.
- Select all tiles and drag to the tray to remove the tiles.



- Located in the General Tools
- Drag out and choose border/no border and color.
- Double click to rotate.
- Click to add text.

CPM Tiles

Pattern Tiles & Dot eTool

1. Use the square below for tiles.
2. Use the dot in the General Tools for dots.
3. Right Click or tap hold for color options.
4. Copy and paste for large number of tiles and dots.
5. Select all and drag to this tray to remove.
6. Select and drag to the mat textboxes in the General Tools menu to use as labels.
7. SAVE your work by copying and pasting the URL found in the Pencil/Paper icon above to a doc or spreadsheet.

Backgrounds

Area and Perimeter

General Tools

Text

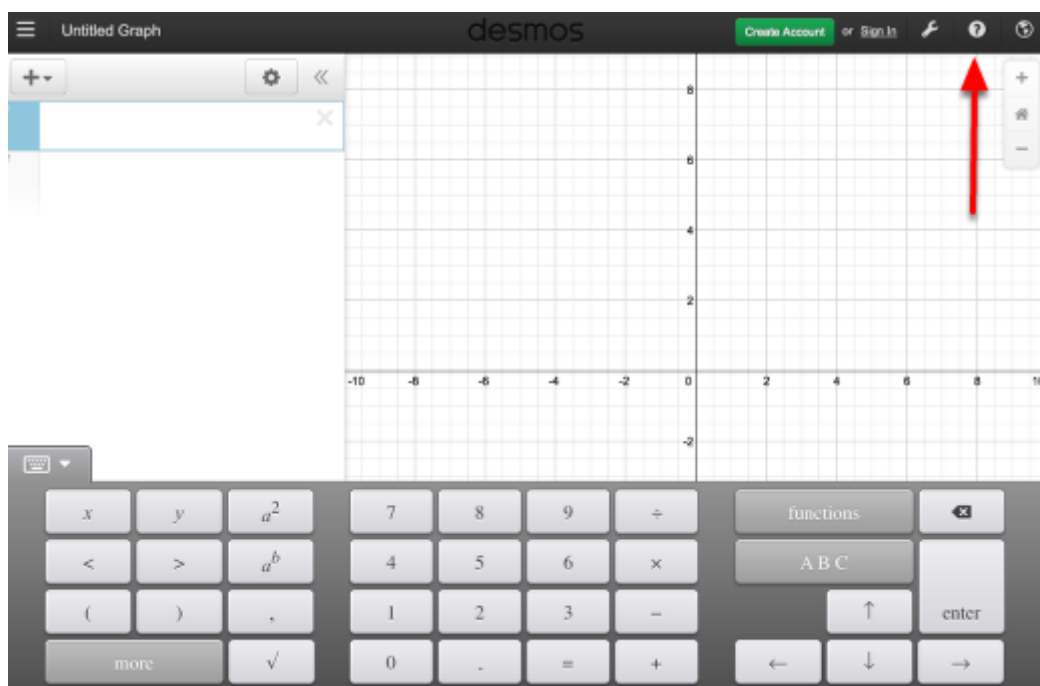
# Desmos Graphing Calculator

This free graphing calculator allows students to create a free account to save all of their graphs, animations, and projects created.

Click on the "Desmos Graphing Calculator" link below.

[Desmos Graphing Calculator](#)

1. Click on all of the buttons. Try it out! For extra help, click the "?".



2. Click on the interactive tours below for help to create:

[Sliders](#)

[Tables](#)

[Advanced Tables](#)

[Restrictions](#)

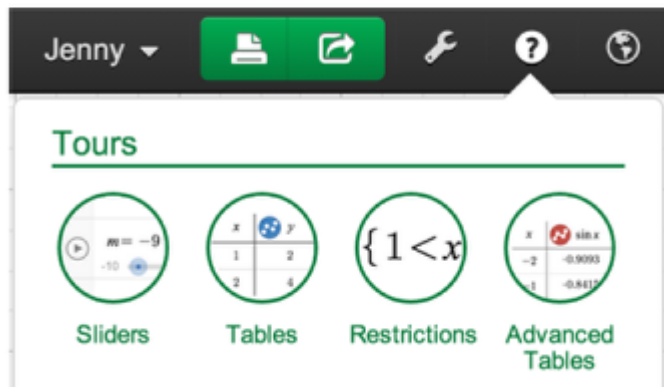
### 3. The interactive tours will NOT let you make a mistake! Try the links above!

#### Interactive Tours



Team Desmos  
posted this on December 29, 2013 22:13

Try one (or all!) of the interactive tours to learn more about sliders, tables, restrictions, and more:



### 4. Need additional help? Watch these very short excellent videos!

[Desmos Introduction](#)

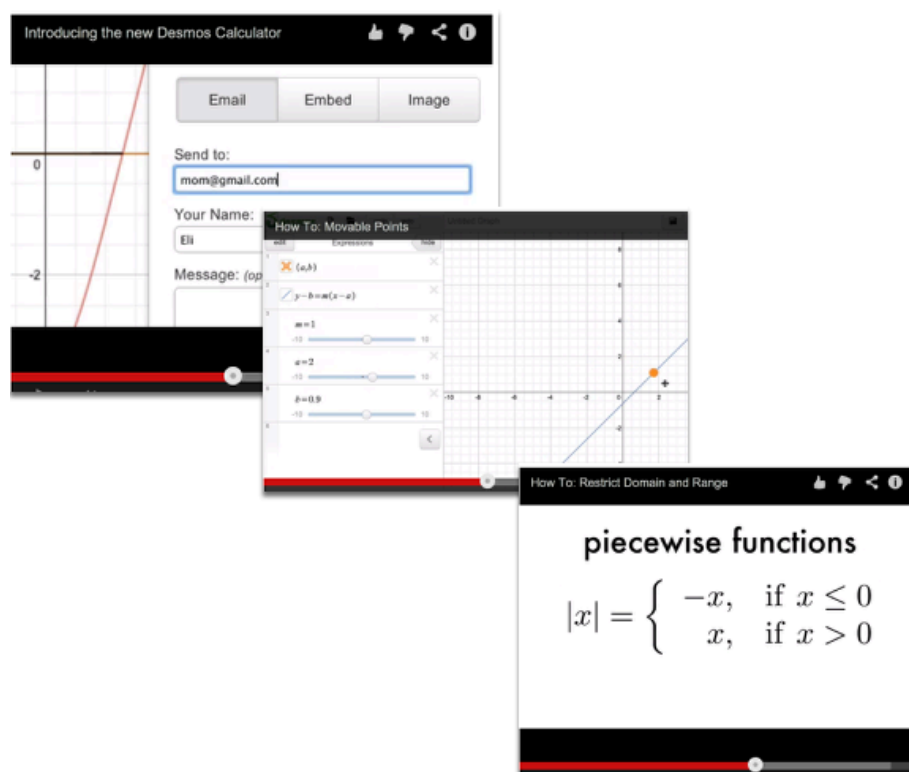
[Moveable Points](#)

[Graph Inequalities](#)

[Piece-Wise Function](#)



## 5. The video links will help you with many of your graphing projects!



## 6. If you still need help, check out Desmos "Knowledge Base"

[Desmos Knowledge Base](#)

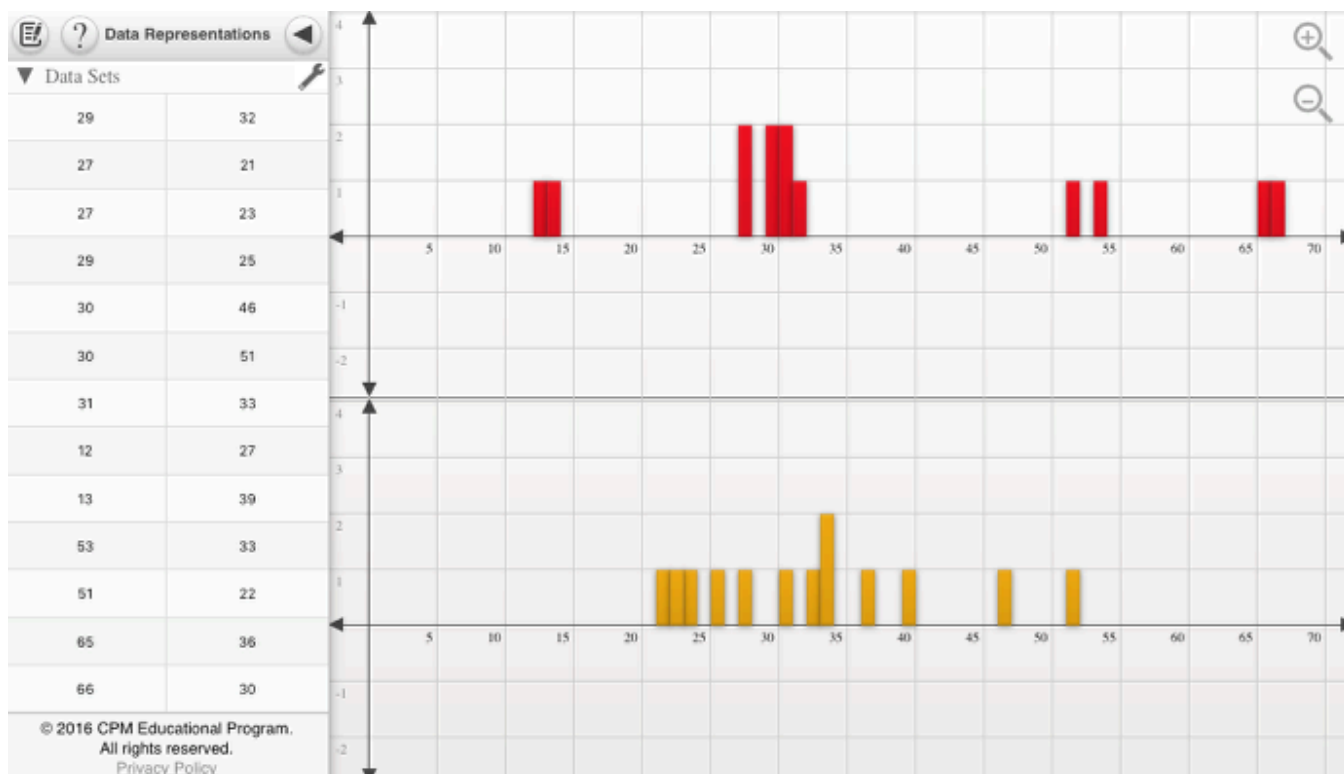
# Data Representations (CPM)

Click the link below for “CPM Data Representations”

[CPM Data Representations](#)

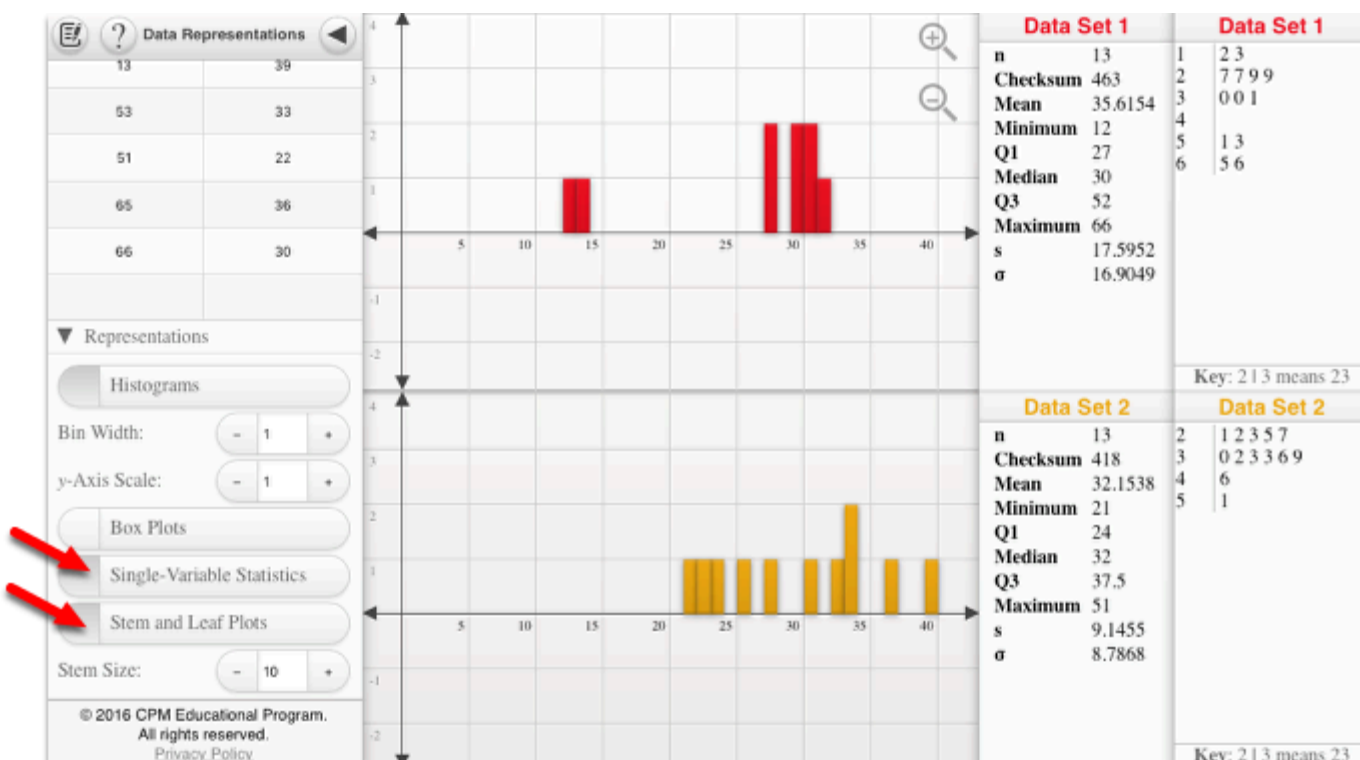
## 1. CPM Data Representations:

Type in up to two sets of data into the columns under the Data Sets tab. Click the wrench to sort or change the graph color. Click the Data Sets arrow to hide the data.



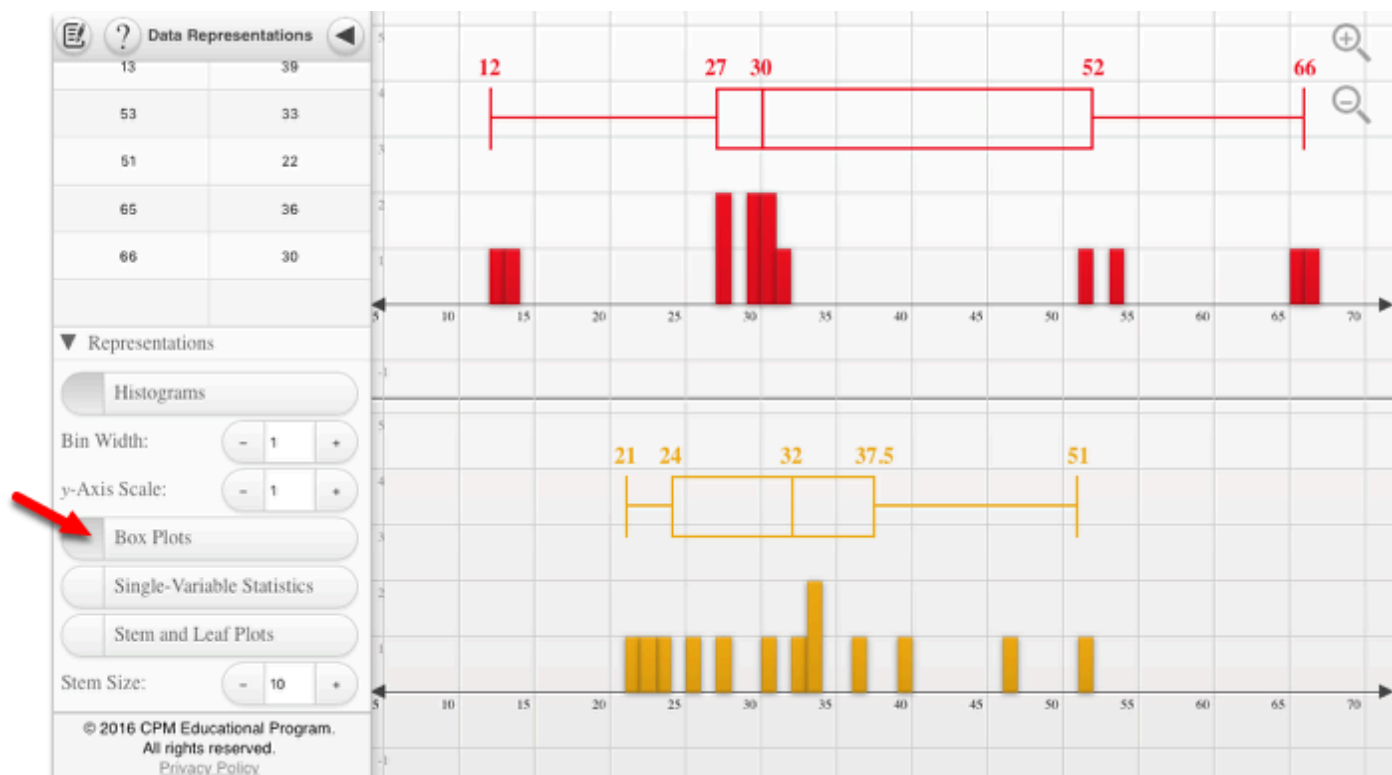
## 2. Single-Variable Statistics or the Stem and leaf Plots:

When choosing Single-Variable Statistics or the Stem and Leaf Plots from the left tray, the data/plot(s) show from the right. Unclick from the left to close the trays at right.



### 3. Box Plots

Note: Use the zoom in and out buttons at the upper right to position the histograms in a friendly window. On a computer, you can use the mouse wheel. On a tablet, use two fingers to pinch or spread data.



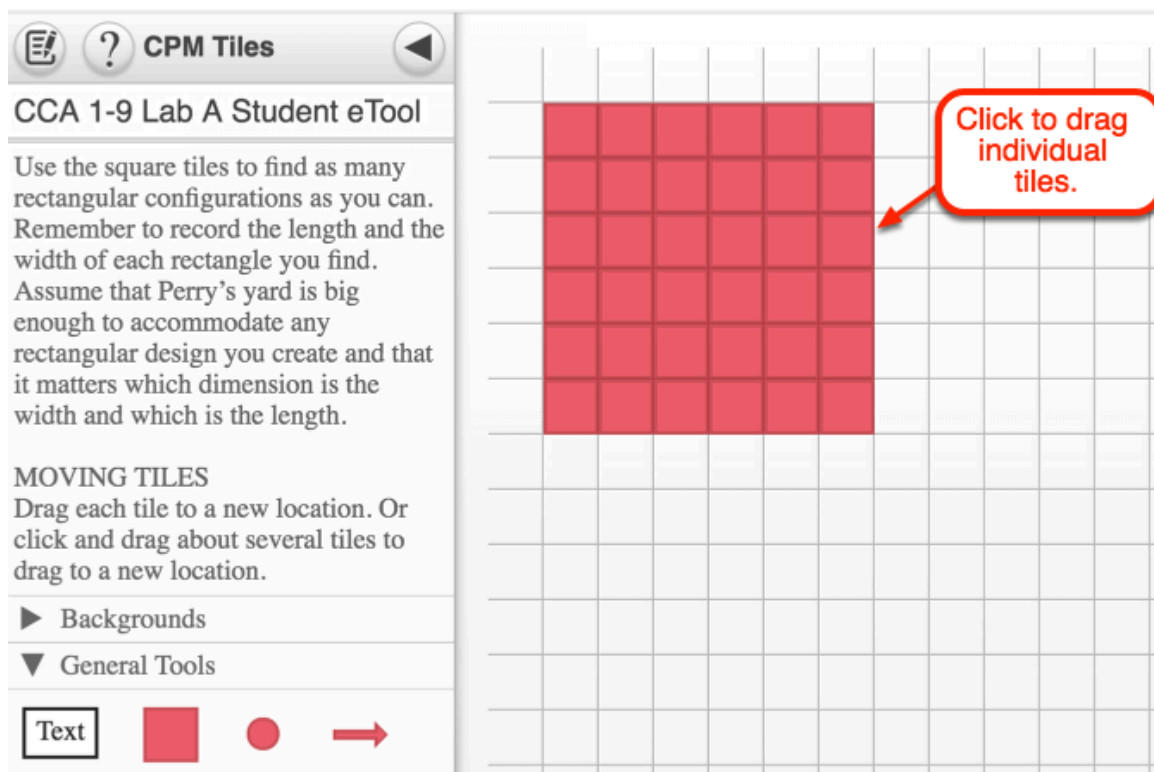
# Chapter 1

## CCA 1.1.2: 1-9 Lab A Student eTools (CPM)

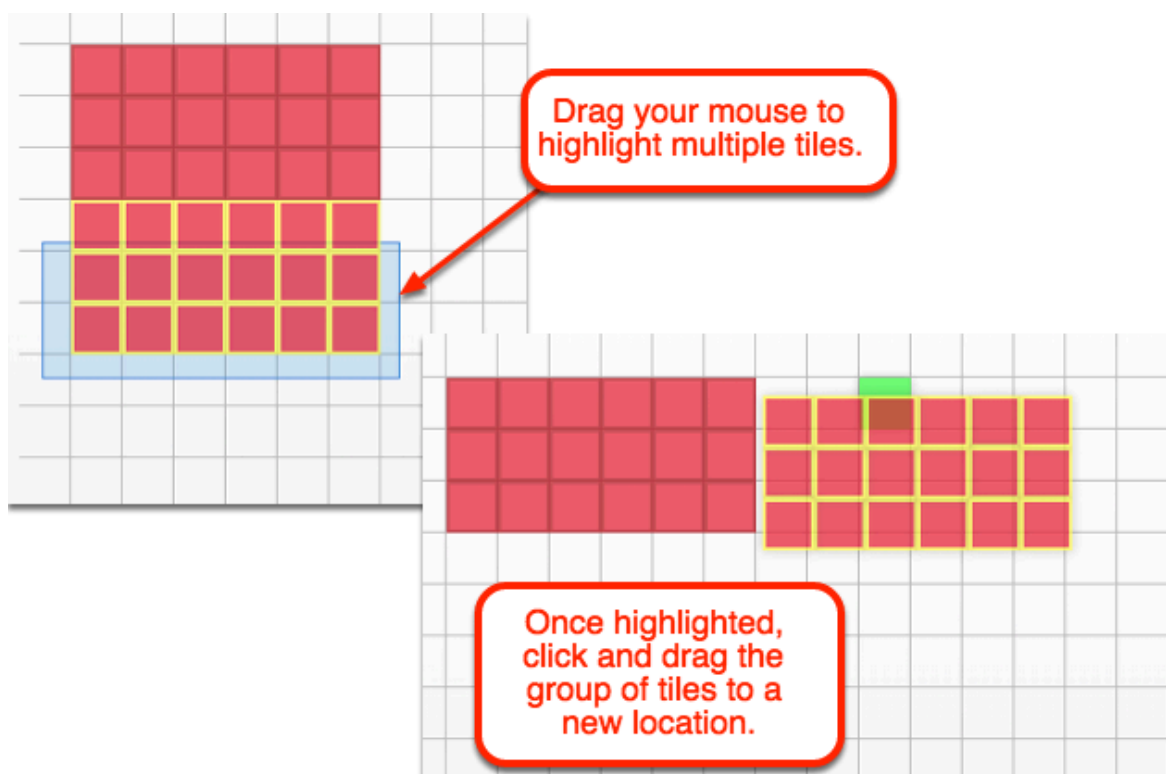
Click on the link below for the "1-9 Lab A Student eTool" (CPM)

[1-9 Lab A Student eTool \(CPM\)](#)

**1. Lab A Hot Tub Design: Drag to build rectangular shapes recording the length and width.**



## 2. Drag several tiles at once.



## CCA 1.1.2: 1-11 Lab Student eTools (Desmos)

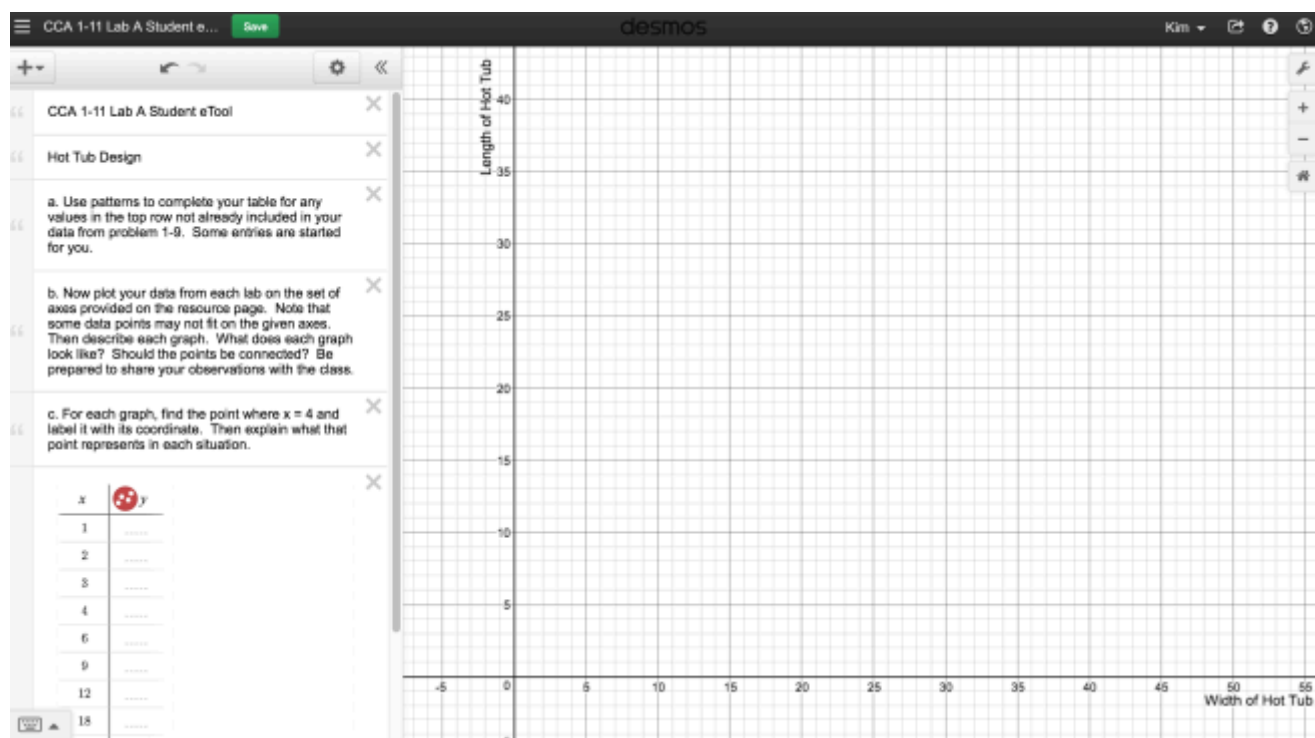
Click on the links below for the "1-11 Lab Student eTools" (CPM & Desmos)

[1-11 Lab A Student eTool \(Desmos\)](#)

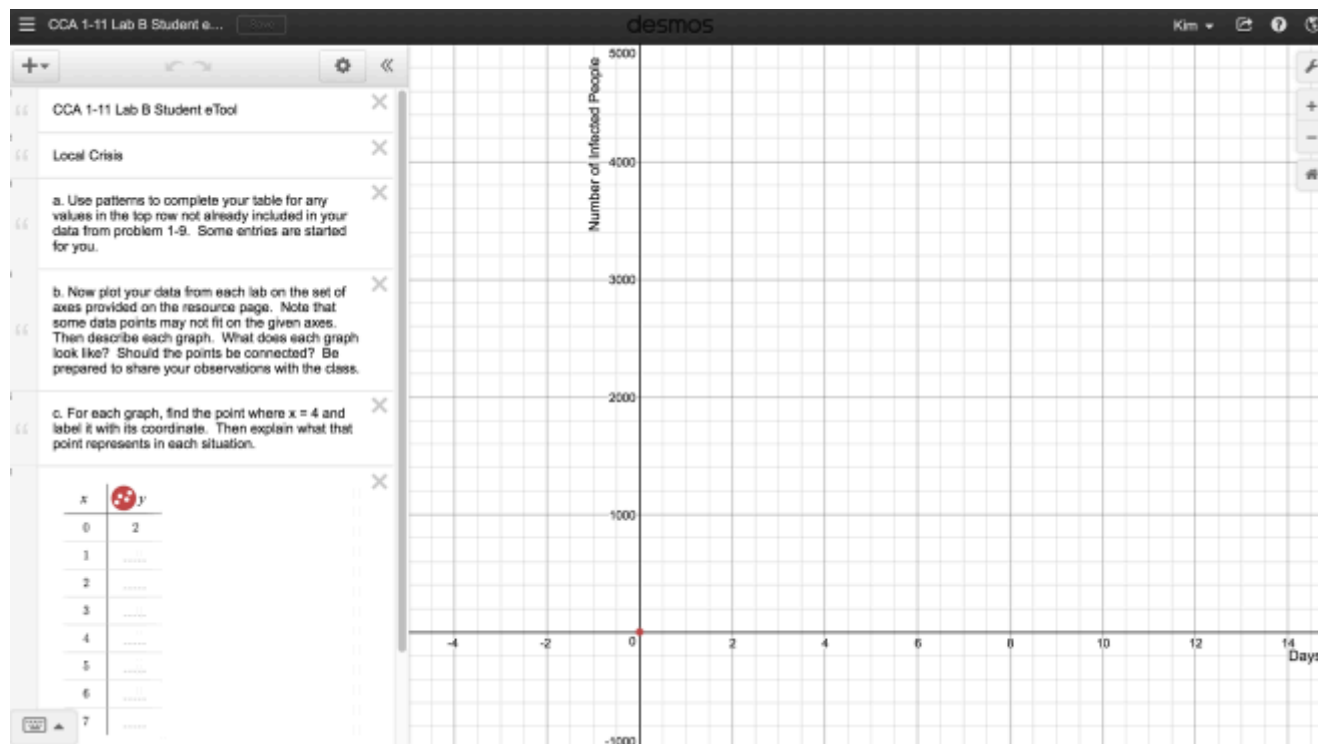
[1-11 Lab B Student eTool \(Desmos\)](#)

[1-11 Lab C Student eTool \(Desmos\)](#)

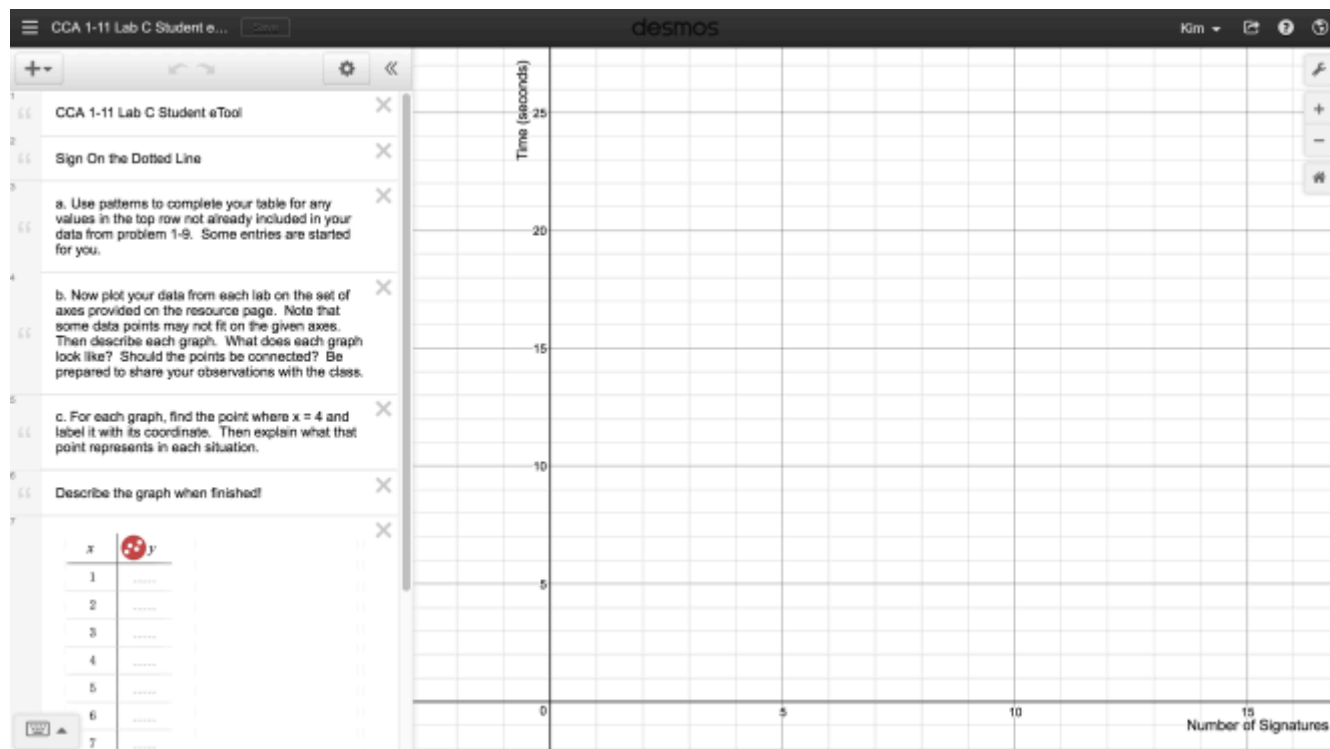
**1. Lab A: Record the "Width" and "Length" in the table below.**



## 2. Lab B: Record the "Days" and "Number of Infected People" in the table below.



## 3. Lab C: Record the "Number of Signatures" and "Time (seconds)" in the table below.





## CCA 1.1.2: 1-11 Lab Answer eTools (Desmos)

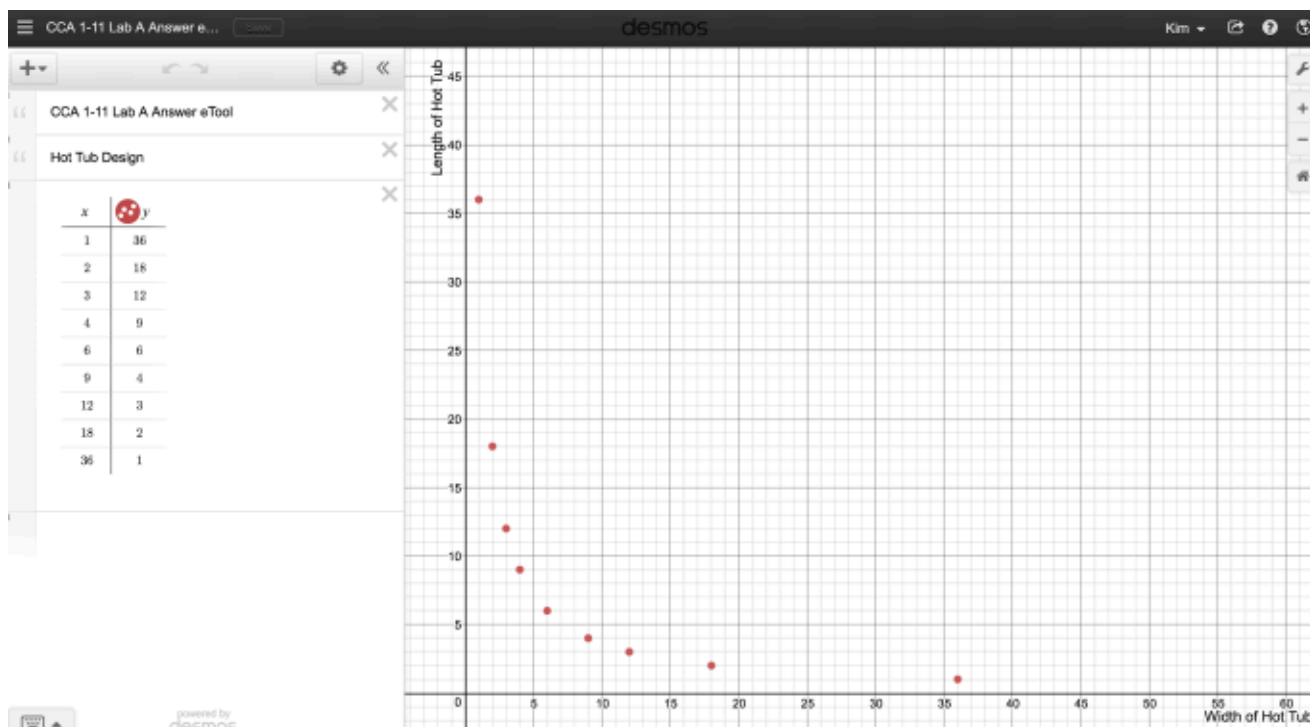
Click on the linkw below for the "1-11 Lab Answer eTools (Desmos)."

[1-9 Lab A Answer eTool](#)

[1-9 Lab B Answer eTool](#)

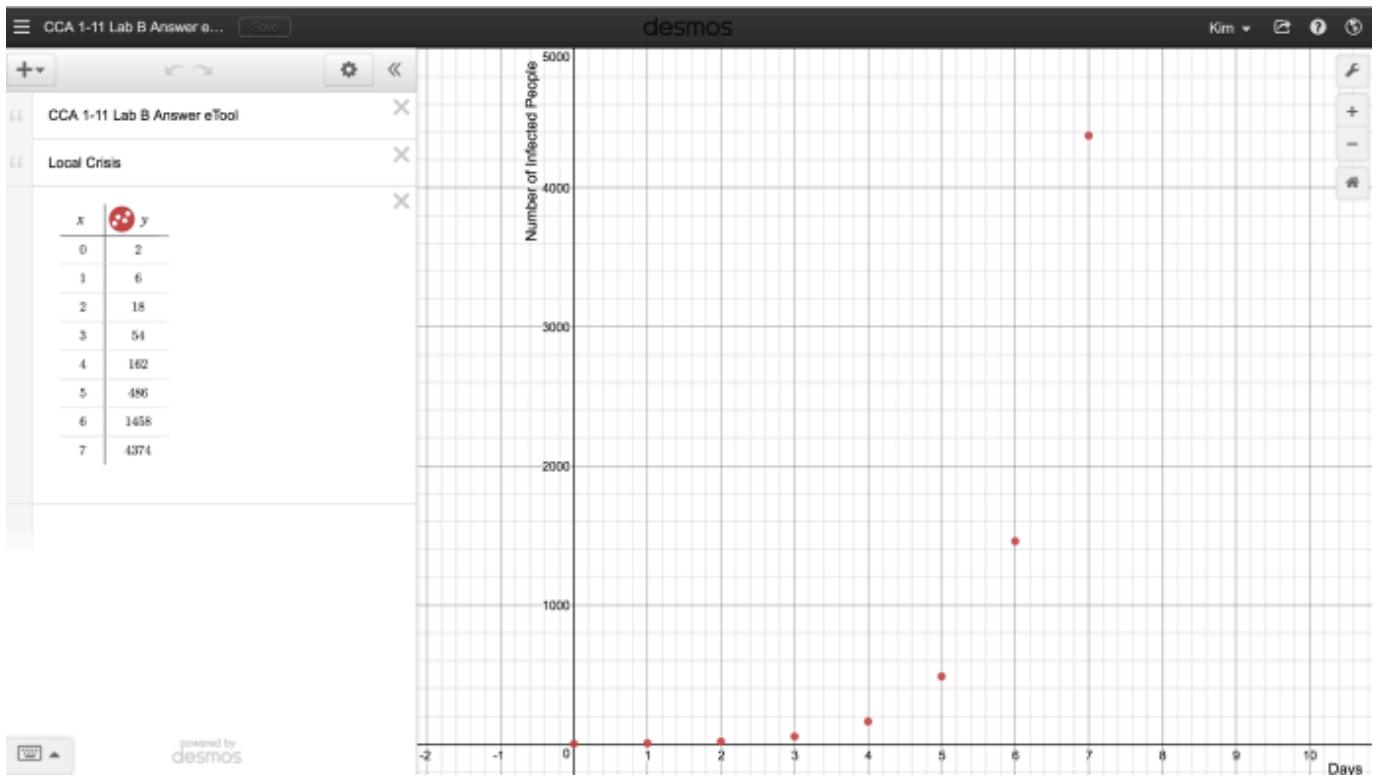
### 1. Use this tool to:

- Verify student work.
- Launch a class discussion describing the graph.



### 2. Use this tool to:

- Verify student work.
- Launch a class discussion describing the graph.

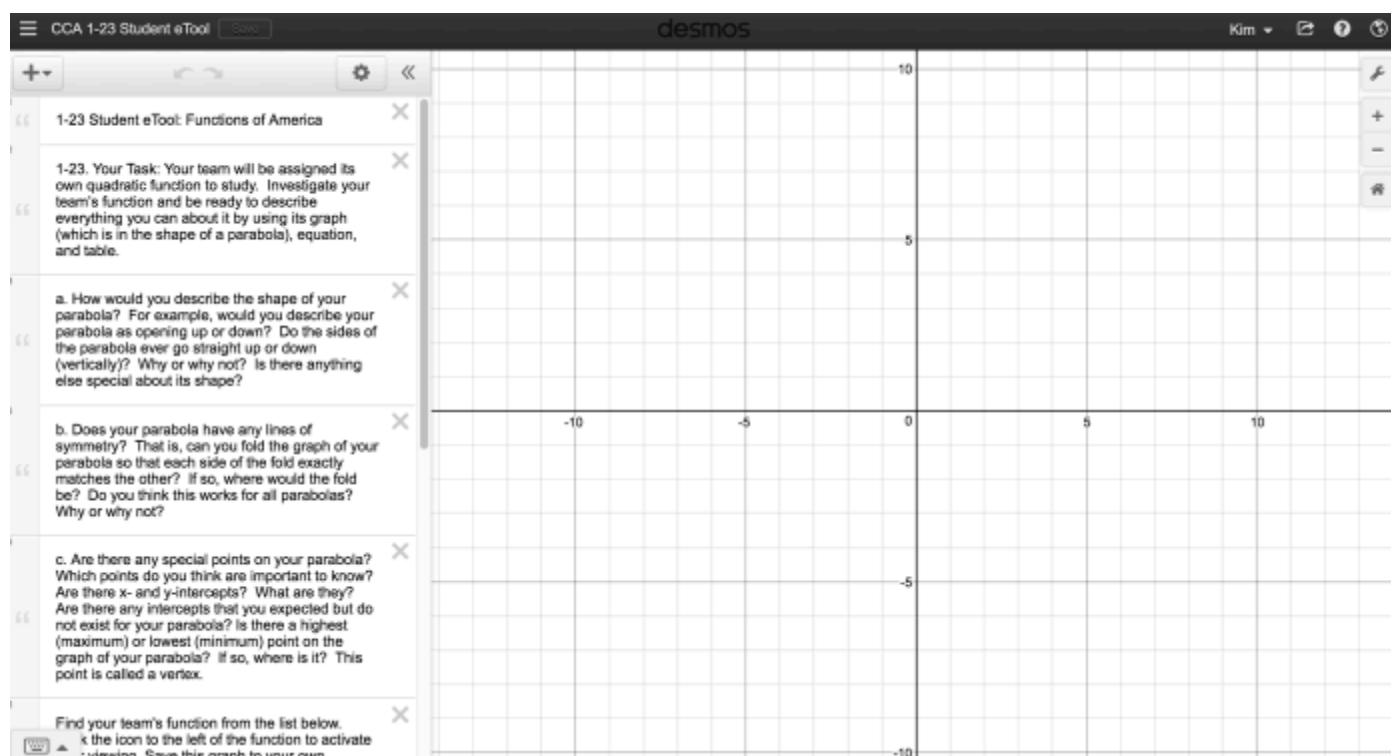


## CCA 1.1.3: 1-23 Student eTool (Desmos)

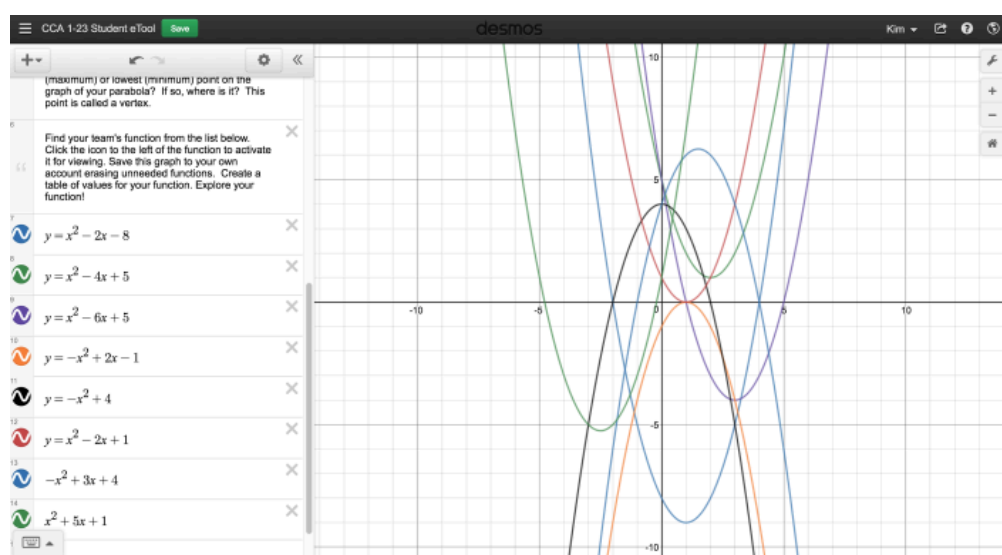
Click on the link below for the "1-23 Student eTool (Desmos)."

[1-23 Student eTool \(Desmos\)](#)

1. Click on the "white" circles to view graphs. Teams can customize this graph by deleting unneeded graphs and modifying the one for their project.



2. Graphs when they are all open!

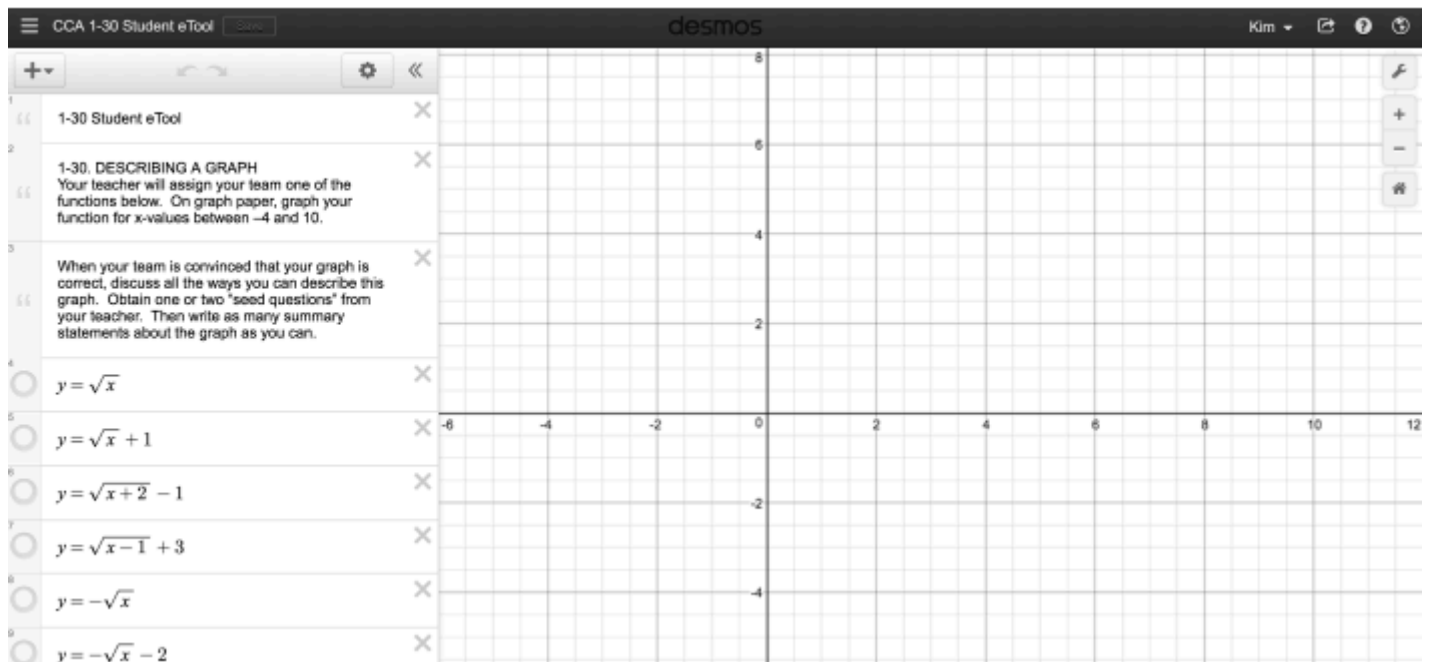


## CCA 1.2.1: 1-30 Student eTool (Desmos)

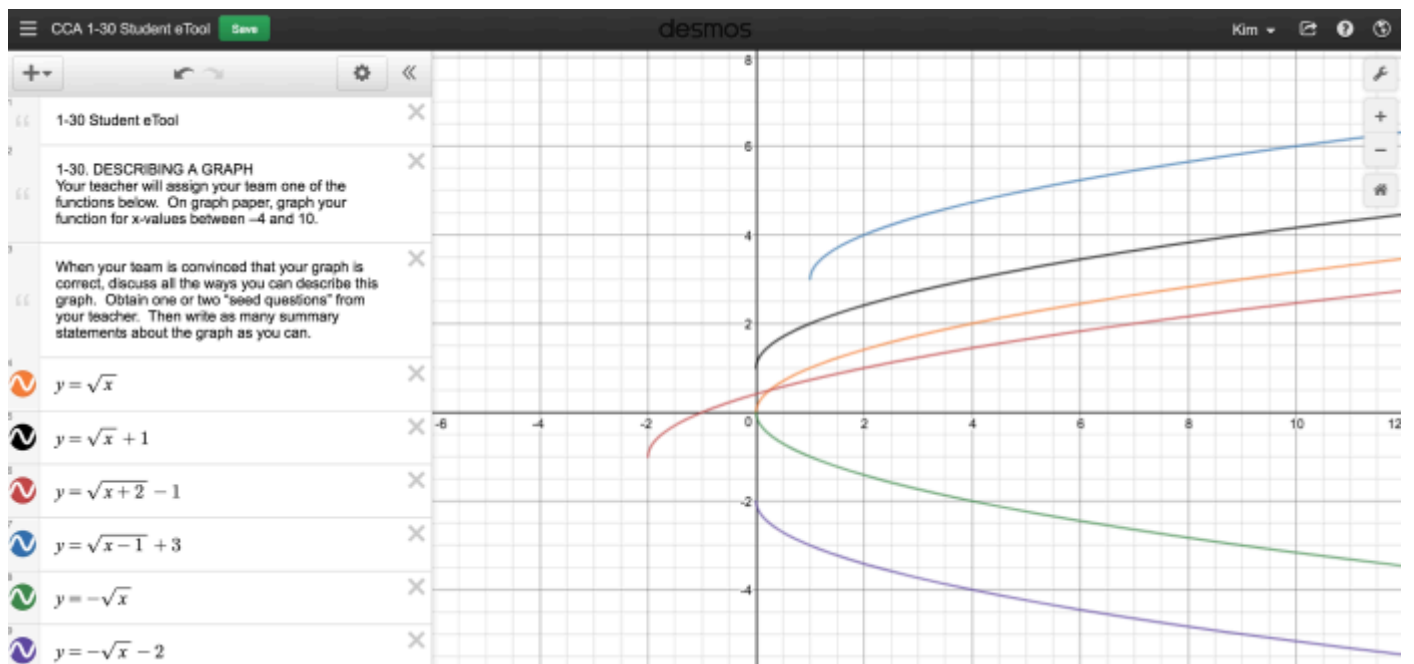
Click on the link below for the "1-30 Student eTool (Desmos)."

[1-30 Student eTool \(Desmos\)](#)

1. Click on the "white" circles to view graphs. Teams can customize this graph by deleting unneeded graphs and modifying the one for their project.



2. Graphs when they are all open!



## Chapter 2

## CCA 2.1.1: 2-1, 2-2 & 2-5 Student eTool (CPM)

Click on the link below for the "2-1, 2-2 & 2-5 Student eTool (CPM)."

[CCA 2-1 Student eTool \(CPM\)](#)

[CCA 2-2 Student eTool \(CPM\)](#)

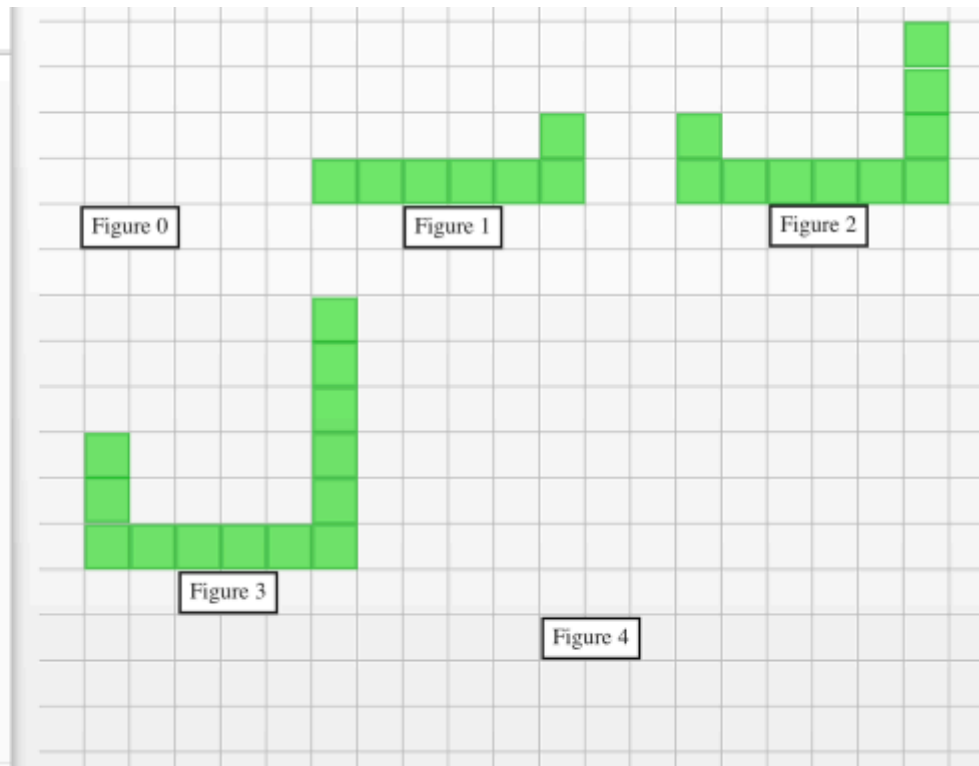
[CCA 2-5 Student eTool \(CPM\)](#)

### 1. 2-1: Build Figures 0 & 4.

#### CCA 2-1 Student eTool

Complete the following tasks for Pattern A, recording your work on the resource page or on your paper as appropriate.

- What do you notice about the pattern?
- Sketch the next figure in the sequence (Figure 4) for Pattern A on your resource page. Figure 0 is the name of the figure that comes before Figure 1. Sketch Figure 0.
- By how much is tile Pattern A growing? Where are the tiles being added with each new figure?
- What would Figure 100 look like for Pattern A? Describe it in words. How many tiles would be in the 100th figure? Find as many ways as you can to justify your conclusion.
- Write an equation that relates the figure number,  $x$ , to the number of tiles,  $y$ .



## 2. 2-2: Build Figures 0 & 4.

**CCA 2-2 Student eTool**

a. What do you notice about the pattern?

b. Sketch the next figure in the sequence (Figure 4) for Pattern A on your resource page. Figure 0 is the name of the figure that comes before Figure 1. Sketch Figure 0.

c. By how much is tile Pattern A growing? Where are the tiles being added with each new figure?

d. What would Figure 100 look like for Pattern A? Describe it in words. How many tiles would be in the 100th figure? Find as many ways as you can to justify your conclusion.

e. Write an equation that relates the figure number,  $x$ , to the number of tiles,  $y$ .

## 3. 2-5: Build Figures 0 & 4.

**CPM Tiles**

**CCA 2-5 Student eTool**

a. Draw Figures 0 and 4 for this pattern on the resource page.

b. Write an equation for the number of tiles in this pattern. Use color to show where the numbers in your equation appear in the tile pattern. Use  $x$  for the figure number and  $y$  for the number of tiles in the figure.

c. Make a table for the equation you wrote in part (b). Does the information in your table match the figures in the tile pattern?

d. What is the same about this pattern and Pattern C? What is different? What would those similarities and differences look like in a tile pattern?

e. What do the similarities and differences in part (d) look like in the equations?

f. What do the similarities and differences look like in the table?

## CCA 2.1.1: 2-1, 2-2, & 2-5 Answer eTool (CPM)

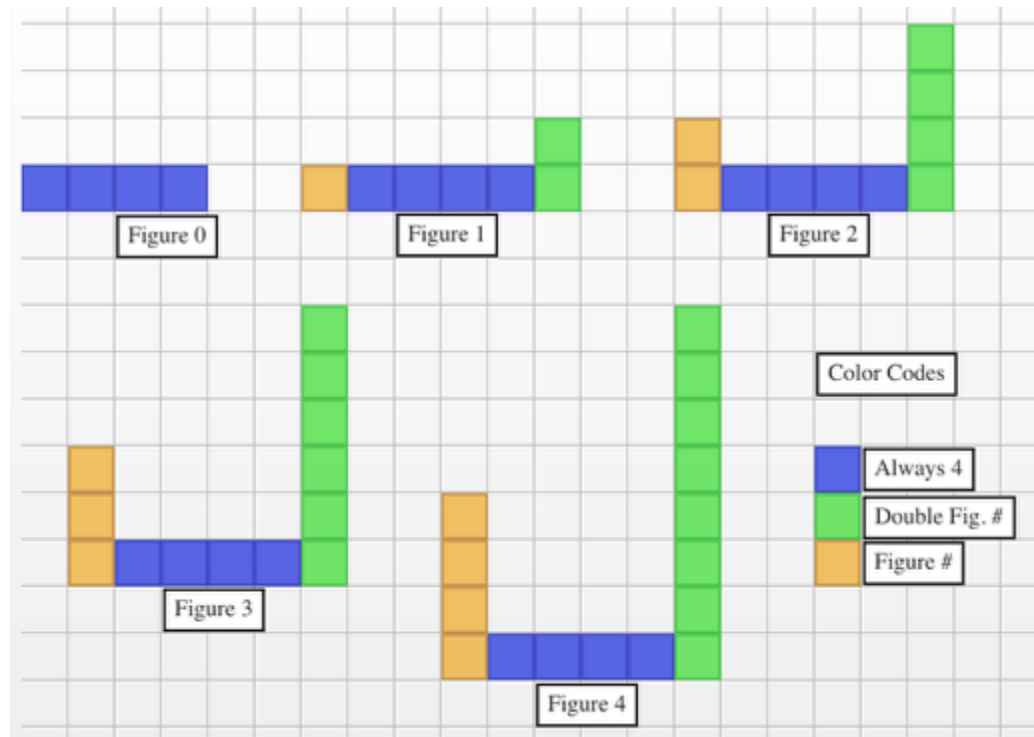
Click on the link below for the "2-1, 2-2 & 2-5 Answer eTool (CPM)."

[CCA 2-1 Answer eTool \(CPM\)](#)

[CCA 2-2 Answer eTool \(CPM\)](#)

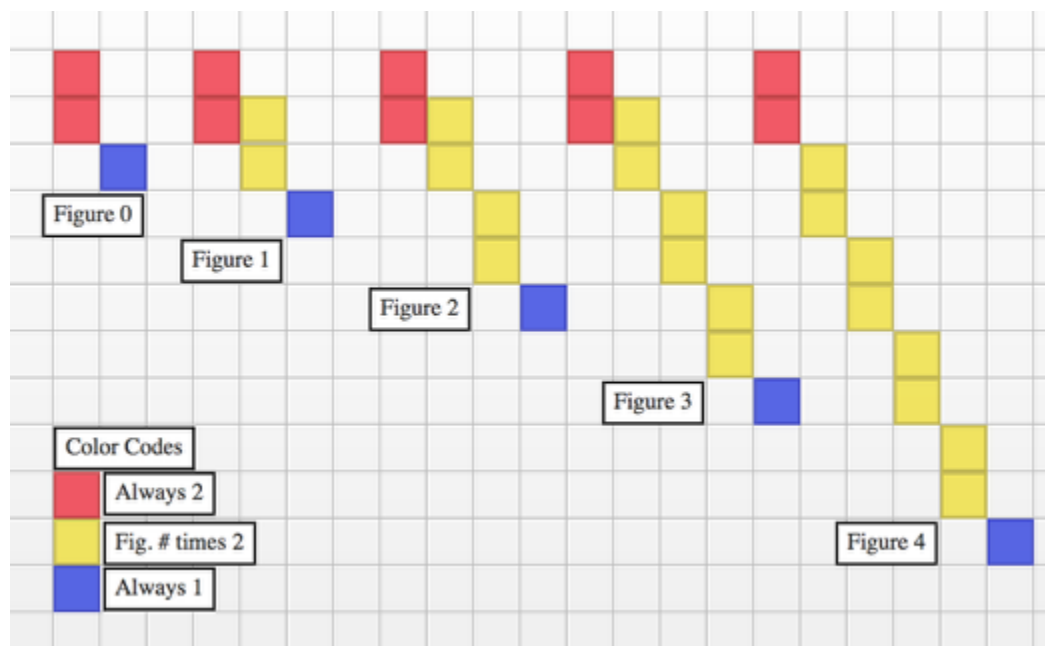
[CCA 2-5 Answer eTool \(CPM\)](#)

### 1. 2-1: Possible Answer

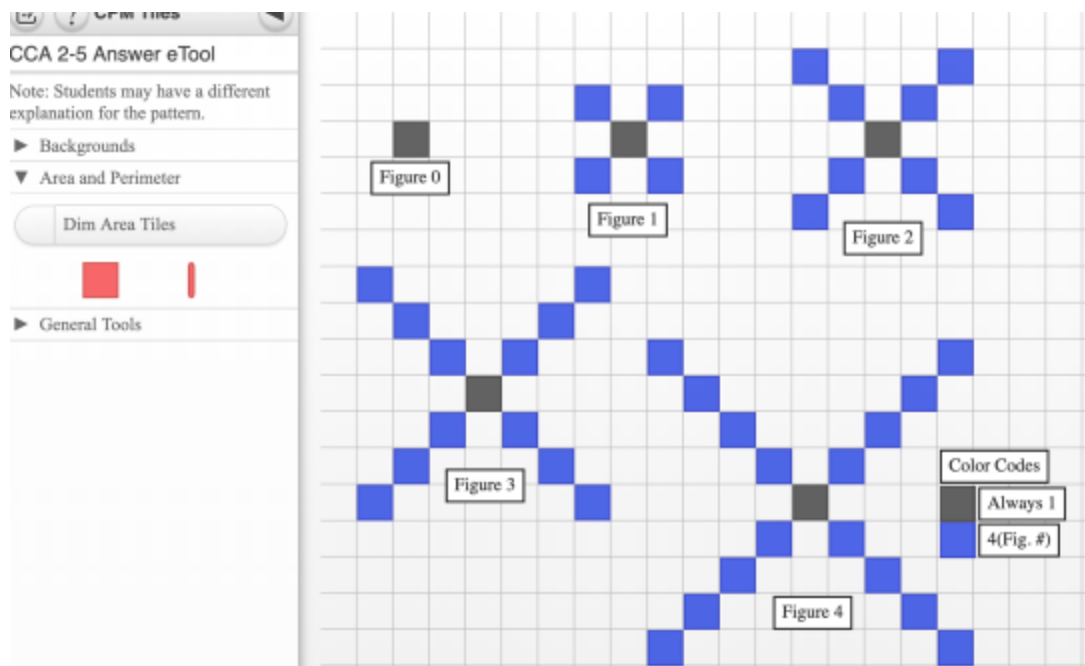




## 2. 2-2: Possible Answer



## 3. 2-5: Possible Answer

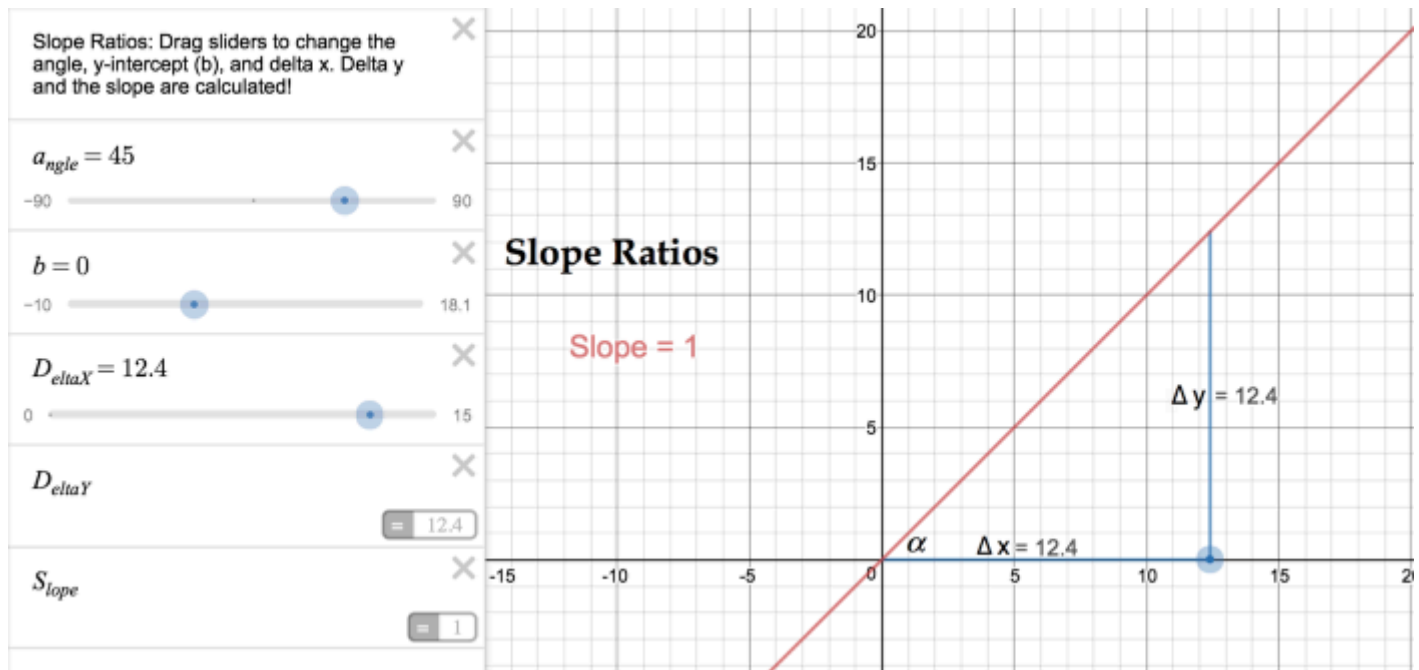


## CCA 2.1.2: Slope eTool (Desmos)

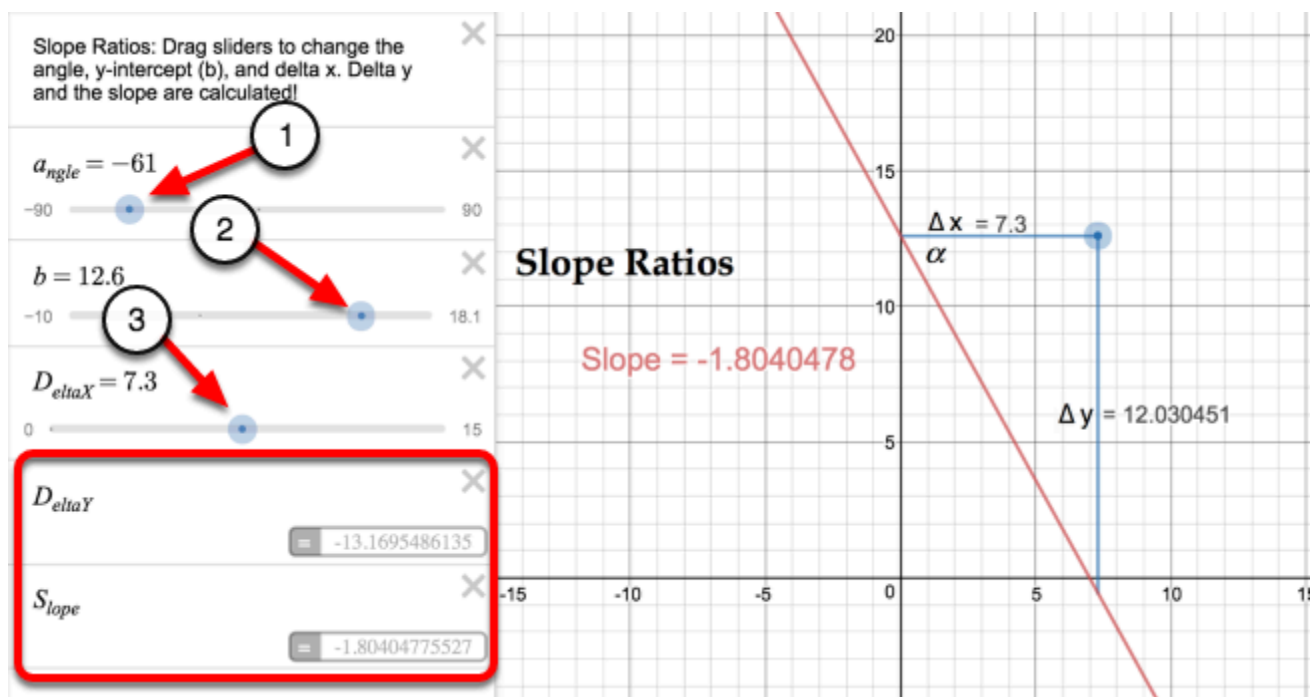
Click on the link below for the "Slope eTool (Desmos)."

[CCA Slope Tool \(Desmos\)](#)

1. Move sliders to change the angle, y-intercept(b), and delta x.



2. After moving the sliders, the slope and delta y are calculated.

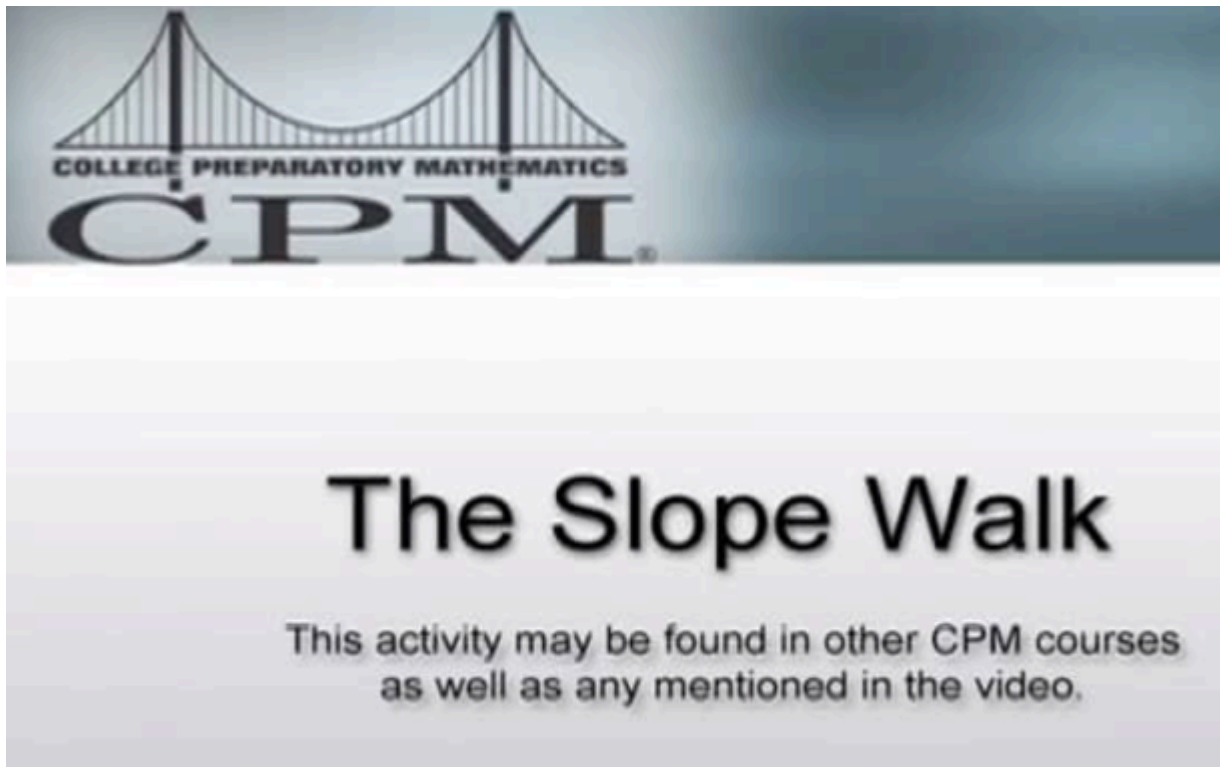


## CCA 2.2.1: Slope Walk Teacher Video

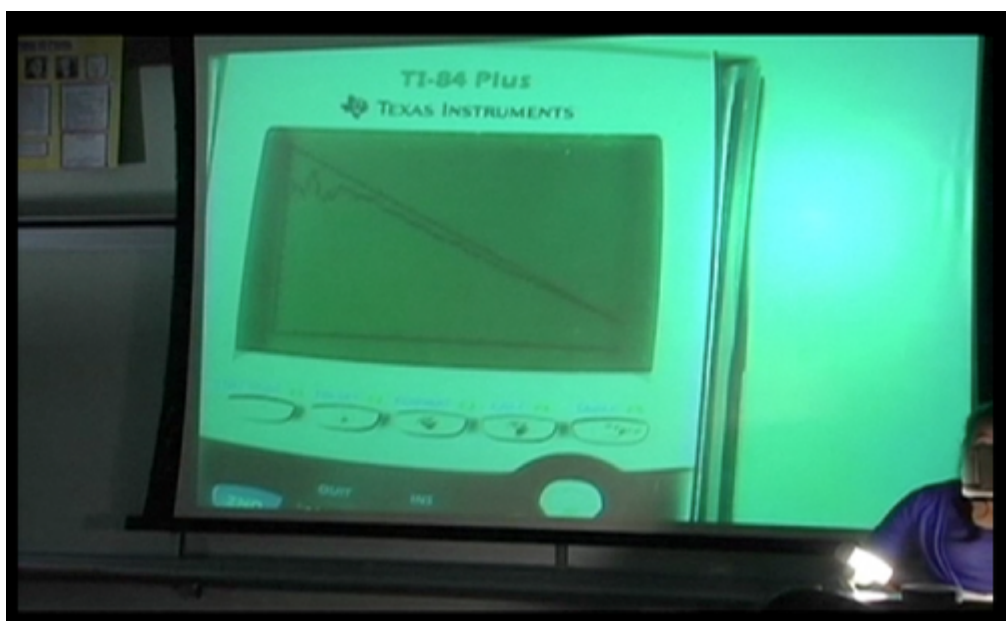
Click on the link below for the "Slope Walk Video"

[Slope Walk video](#) 

### 1. Slope Walk Video:



### 2. Slope walk as a whole class activity:

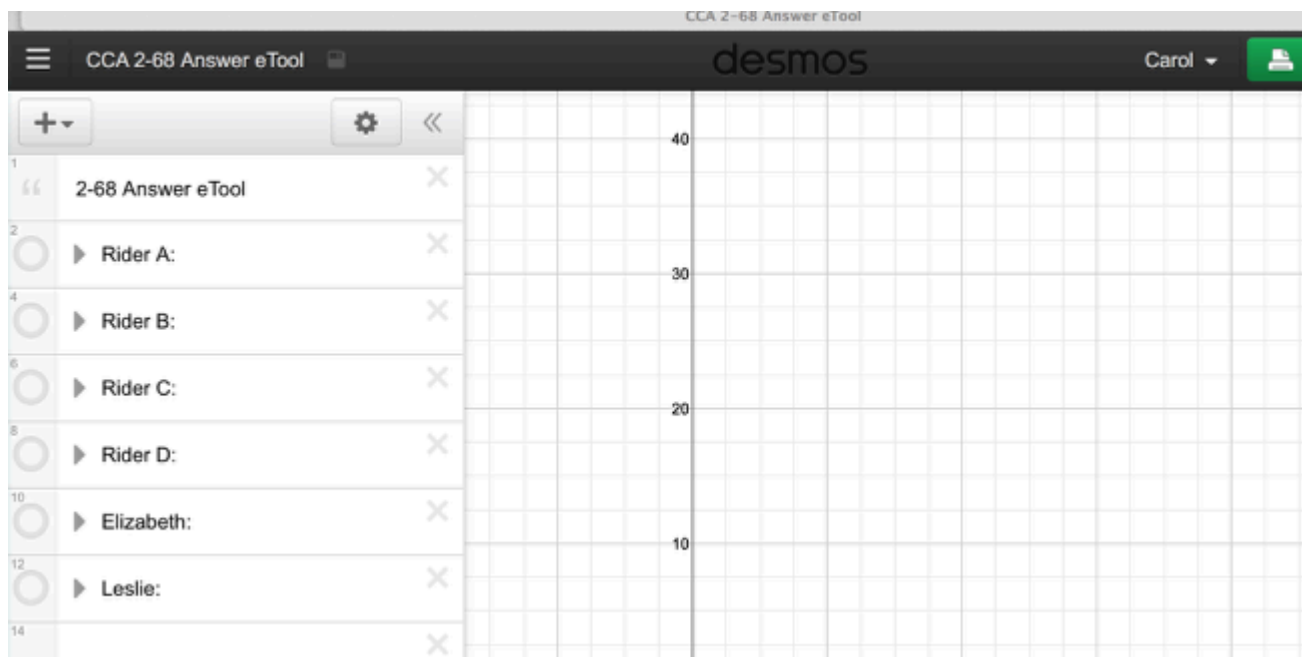


## CCA 2.2.3: 2-68 Answer eTool (Desmos)

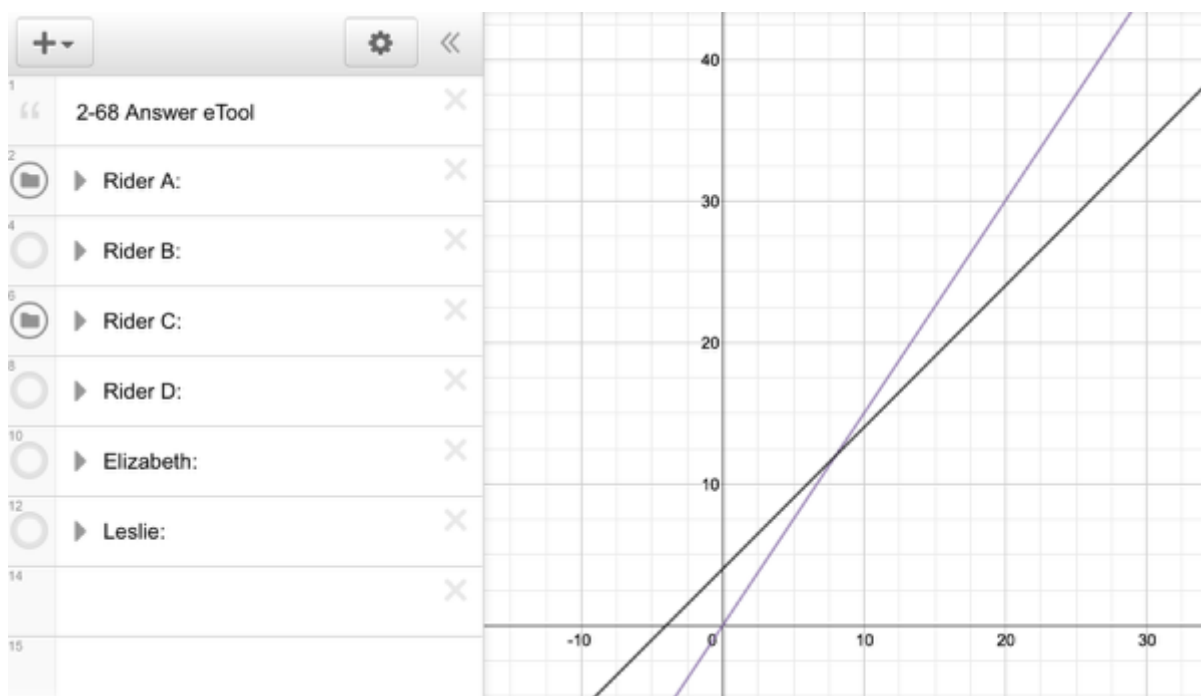
Click on the link below for the "2-68 Answer eTool (Desmos)."

[CCA 2-68 Answer eTool \(Desmos\)](#)

### 1. 2-68: Answer Graphs



### 2. Click on the white circles to view graphs.



## CCA Extension: Save the Earth: Practice Games 1-3 (Desmos)

Click on the link below for the "Save the Earth (Desmos)."

[CCA Save the Earth: Practice Games 1-3 \(Desmos\)](#)

1. Click and unclick the Game desired.

Save the Earth: Practice Games 1-3

Game Directions:

Type in functions above to cross the most points. Your game points equals the number of (points crossed)<sup>2</sup>. Then move your points to the upper left corner to indicate they are out of play. When all points are crossed, click the circle on the left of the game. Then click the next game's circle.

Type your function below:

$y = (\text{your rule})$

Type your function

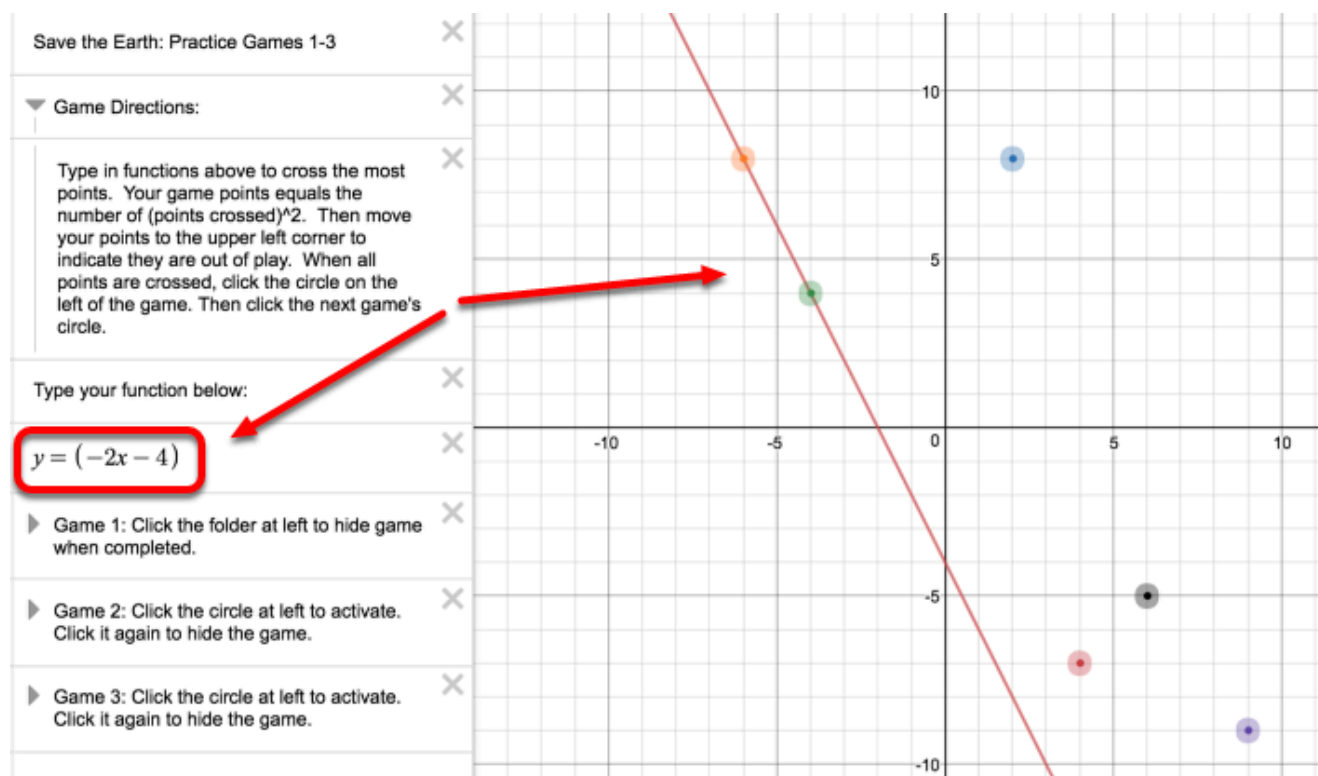
Game 1: Click the folder at left to hide game when completed.

Game 2: Click the circle at left to activate. Click it again to hide the game.

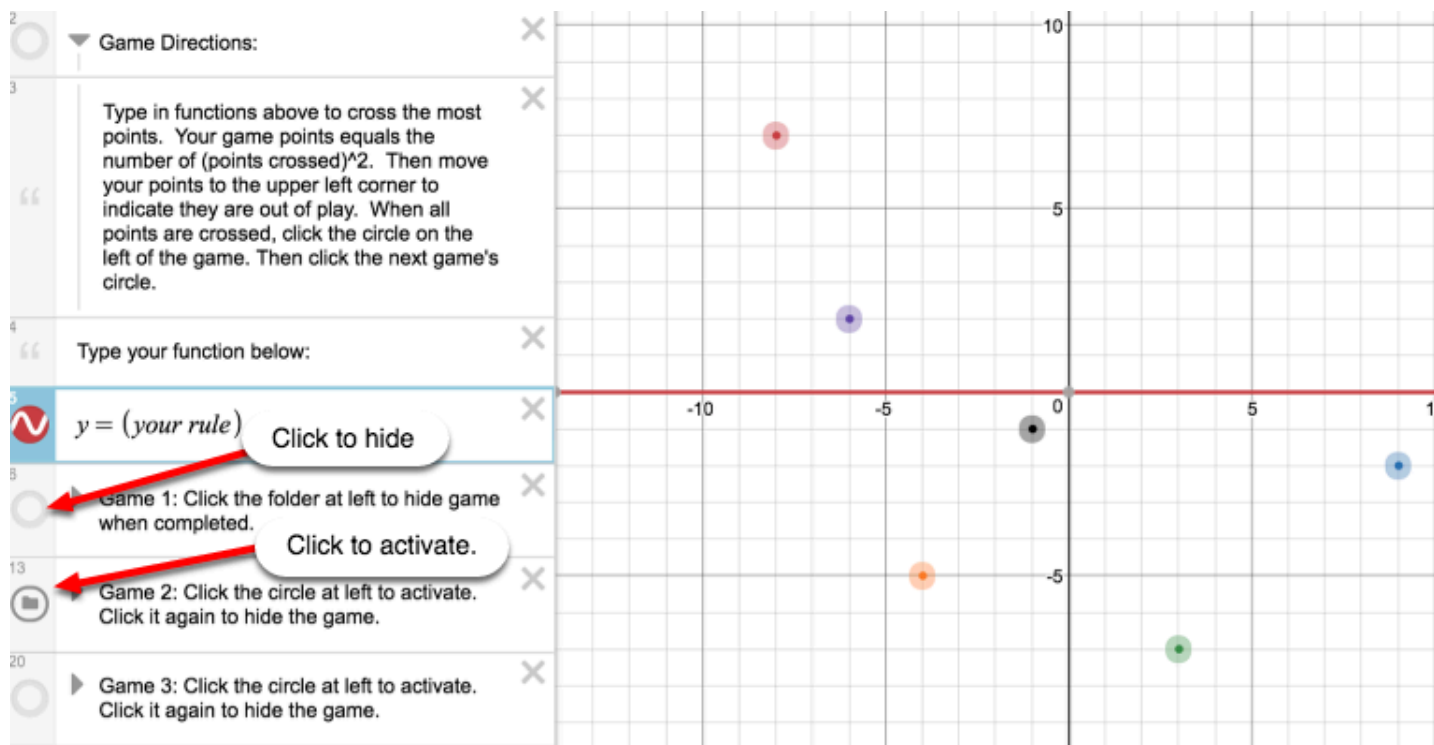
Game 3: Click the circle at left to activate. Click it again to hide the game.

The coordinate plane shows the following points: (2, 8), (5, 4), (-2, 3), (-6, 9), (8, -10), (4, -5), (0, -5), and (9, -9).

## 2. Game 1: See example below for an entered function.



## 3. Game 2:



### 4. Game 3:

1

Save the Earth: Practice Games 1-3

X

2

Game Directions:

X

3

Type in functions above to cross the most points. Your game points equals the number of (points crossed)<sup>2</sup>. Then move your points to the upper left corner to indicate they are out of play. When all points are crossed, click the circle on the left of the game. Then click the next game's circle.

X

4

Type your function below:

X

5

$y = (your\ rule)$

X

6

Game 1: Click the folder at left to hide game why

Click to hide.

X

13

Game 2: Click the circle at left to activate. Click it again to hide the game.

Click to activate.

X

20

Game 3: Click the circle at left to activate. Click it again to hide the game.

X

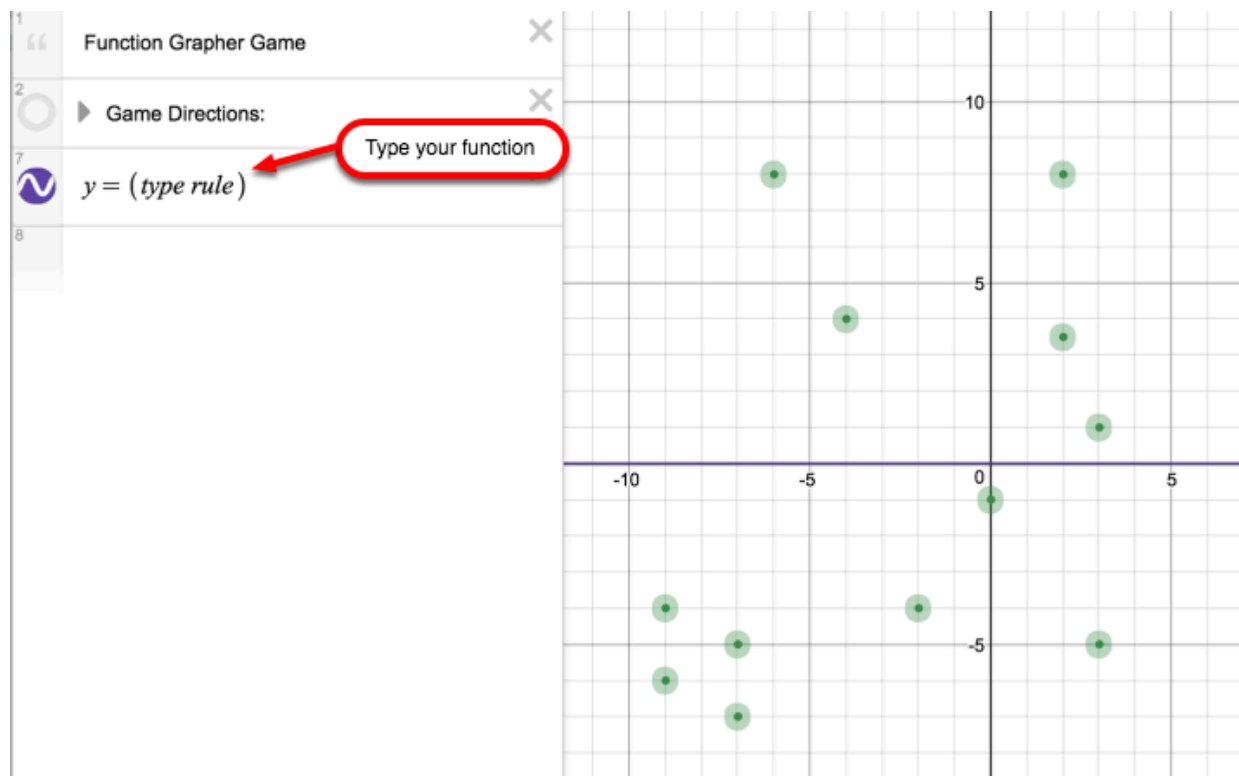
27

## CCA Extension: Function Grapher Game (Desmos)

Click on the link below for the "Function Grapher Game (Desmos)."

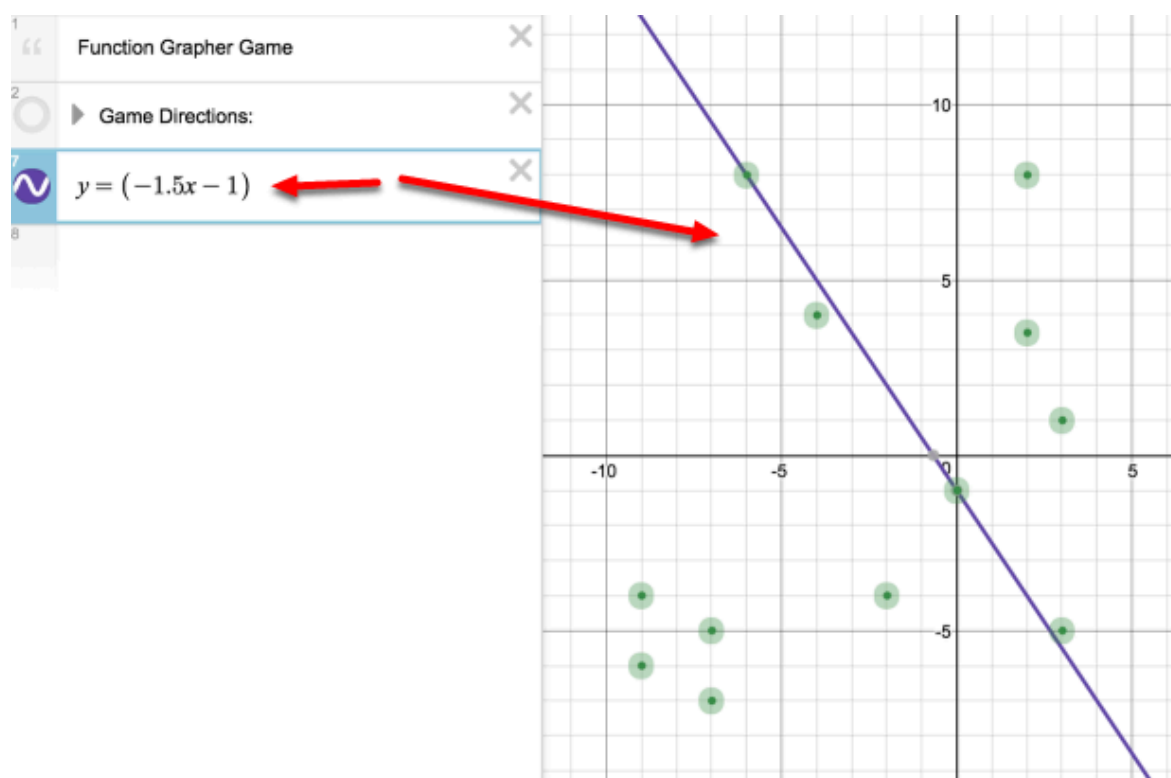
[CCA Function Grapher Game \(Desmos\)](#)

1. Click the checkbox "Show Points". Unclick the "Directions" checkbox for more room.





## 2. Enter your function:

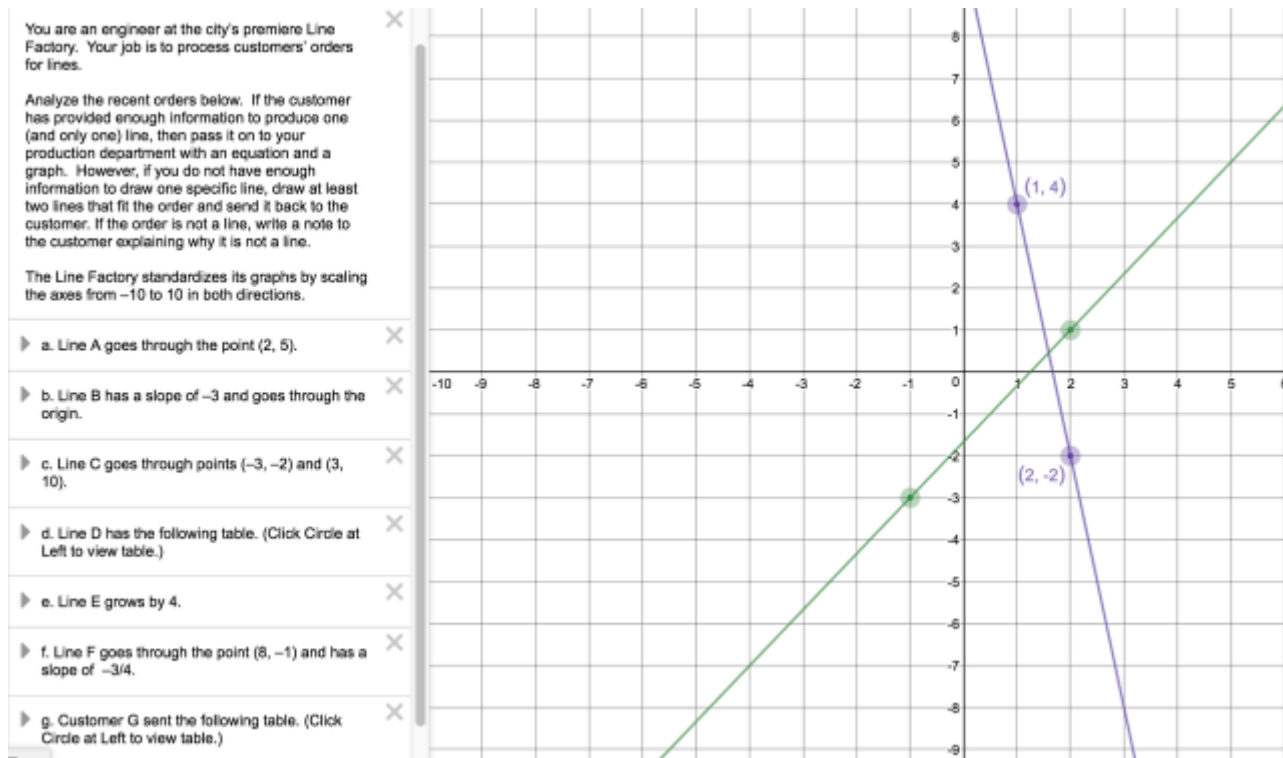


## CCA 2.1.4: 2-37 Student eTool (Desmos)

Click on the link below for the 2-37 Student eTool (Desmos).

[CCA 2-37 Student eTool \(Desmos\)](#)

### 2-37 Student eTool:

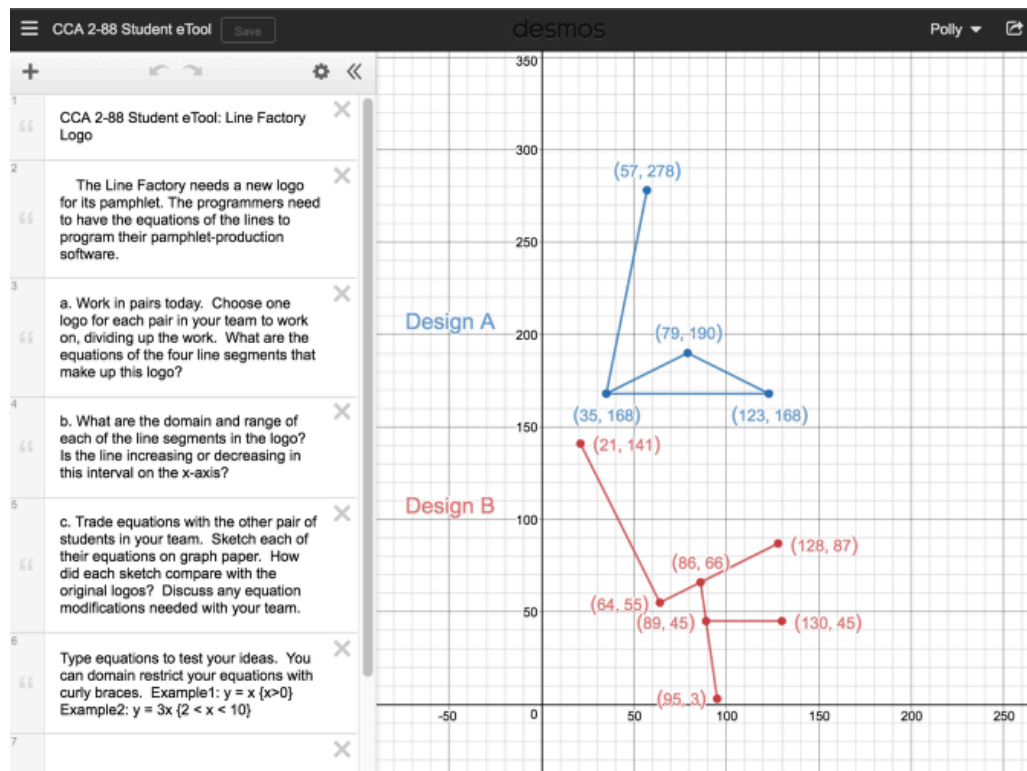


## CCA 2.3.2: 2-88 Line Factory Logo (Desmos)

Click on the link below for 2-88 Line Factory Logo eTool (Desmos):

[CCA 2-88 Line Factory Logo \(Desmos\)](#)

### CCA 2-88: Design A and B.



# Chapter 3

## CCA 3.2.1: 3-31a, 3-31b, & 3-31c Student eTool (CPM)

Click on the link below for the "3-31a, 3-31b & 3-31c Student eTool (CPM)."

[3-31a Student eTool \(CPM\)](#)

[3-31b Student eTool \(CPM\)](#)

[3-31c Student eTool \(CPM\)](#)

### 1. 3-31a Student eTool:

The screenshot displays the "CCA 3-31a Student eTool" interface. On the left, a sidebar contains a "CPM Tiles" header, a question mark icon, and a "3-31a Student eTool" title. Below the title is a text box with instructions: "3-31a. Write an equation (without simplifying) for each representation below. Build each equation on an Equation Mat, solve for the variable by making 'legal' moves, and check your solution." Underneath the instructions is a section titled "Algebra Tiles" with a dropdown arrow. Below this, there are two input fields: "Label: x" and "Label: y". The "x" field has a slider and two blue tiles labeled "x" and "x^2". The "y" field has a slider and two purple tiles. The main area is a 2x2 grid of algebra tiles. The top-left quadrant contains a blue "1" tile, a red "-1" tile, and two red "-1" tiles. The top-right quadrant contains a red "-x" tile, a red "-1" tile, and two red "-1" tiles. The bottom-left quadrant contains a red "-x" tile and a red "-x" tile. The bottom-right quadrant contains a blue "1" tile, a blue "1" tile, and a red "x" tile. The grid is divided by a dashed horizontal line and a solid vertical line.

## 2. 3-31b Student eTool:

CPM Tiles

CCA 3-31b Student eTool

3-31b. Write an equation (without simplifying) for each representation below. Build each equation on an Equation Mat, solve for the variable by making "legal" moves, and check your solution.

Algebra Tiles

Label:  $x$

Label:  $y$

## 3. 3-31c Student eTool:

CPM Tiles

CCA 3-31c Student eTool

3-31c. Write an equation (without simplifying) for each representation below. Build each equation on an Equation Mat, solve for the variable by making "legal" moves, and check your solution.

Algebra Tiles

Label:  $x$

Label:  $y$

## CCA 3.2.2: 3-45 Student eTool (CPM)

Click on the link below for the "3-45 Student eTool (CPM)."

[3-45 Student eTool \(CPM\)](#)

### 3-45 Student eTool:




**CPM Tiles**

**CCA 3-45 Student eTool**

Your teacher will present this group of tiles to the class:

- Using your own tiles, arrange the same group of tiles into one large rectangle, with the  $x^2$  squared tile in the lower left corner. On your paper, sketch what your rectangle looks like.
- What are the dimensions (length and width) of the rectangle you made? Label your sketch with its dimensions, then write the area of the rectangle as a product, that is, length  $\cdot$  width.
- The area of a rectangle can also be written as the sum of the areas of all its parts. Write the area of the rectangle as the sum of its parts. Simplify your expression for the sum of the rectangle's parts.
- Write an equation that shows that the area written as a product is equivalent to the area written as a sum.

▼ General Tools

Text   

The workspace on the right shows a collection of algebra tiles arranged in a rectangle. The tiles include:

- One large blue square tile labeled  $x^2$  in the bottom-left corner.
- Eight red rectangular tiles labeled  $x$ .
- Eight small blue square tiles labeled  $1$ .

The tiles are arranged to form a rectangle with a total width of  $3x + 2$  and a total height of  $2x + 3$ . The area of the rectangle is  $(3x + 2)(2x + 3) = 6x^2 + 13x + 6$ .

# Chapter 4



## CCA 4.2.3: 4-56a Student eTool (CPM)

Click on the link below for the "4-56a Student eTool (CPM)."

[4-56a Student eTool \(CPM\)](#)

### 1. 4-56a Student eTool:

CCA 4-56a Student eTool

4-56. AVOIDING THE MESS: THE ELIMINATION METHOD

a. Jeanette's first equation is on the Equation Mat as shown at right.

b. "Add the same tiles to both sides" is a "legal" tile move. Jeanette can add anything she wants to both sides of the equation. If she wanted to, she could choose to add 16 to both sides. You will see in a moment why that makes sense.

c. But 16 is equal to  $-3y + 5x$ , according to the original equations in problem 4-55. On the left side, instead of adding 16, Jeanette decides to add  $-3y + 5x$ . After all, 16 is equivalent to  $-3y + 5x$ .

d. Write a new equation for the result of Jeanette's addition to both sides of the equation. Notice that you now have only one equation with one variable. What happened to the y-terms? Simplify and then solve this new equation for the remaining variable.

e. Use your solution for x to find y. Check to be sure your solution makes both original equations true.

f. Now use algebra tiles and the elimination method to solve the system of equations below for x and y. Check your solution.

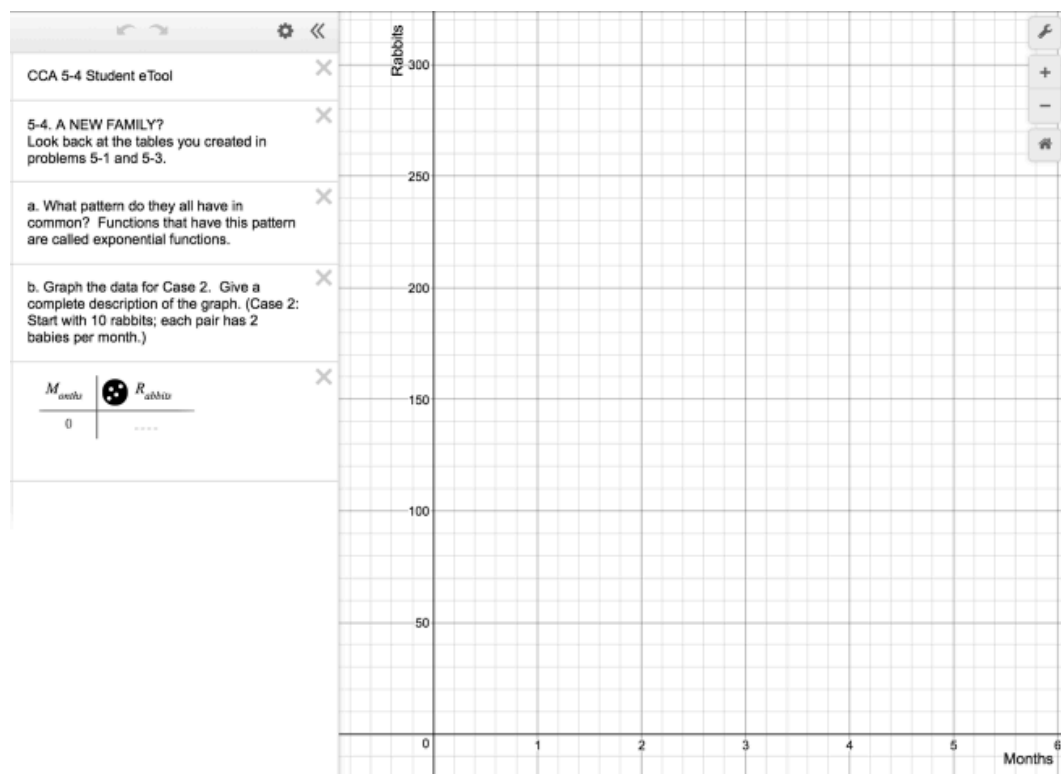
# Chapter 5

## CCA 5.1.1: 5-4 Student eTool (Desmos)

Click on the link below for the "5-4 Student eTool (Desmos)."

[5-4 Student eTool \(Desmos\)](#)

**1. Problem 5-4: Input the data for case 2 (problem 5-3) in the table below left. Give a complete description of the graph.**

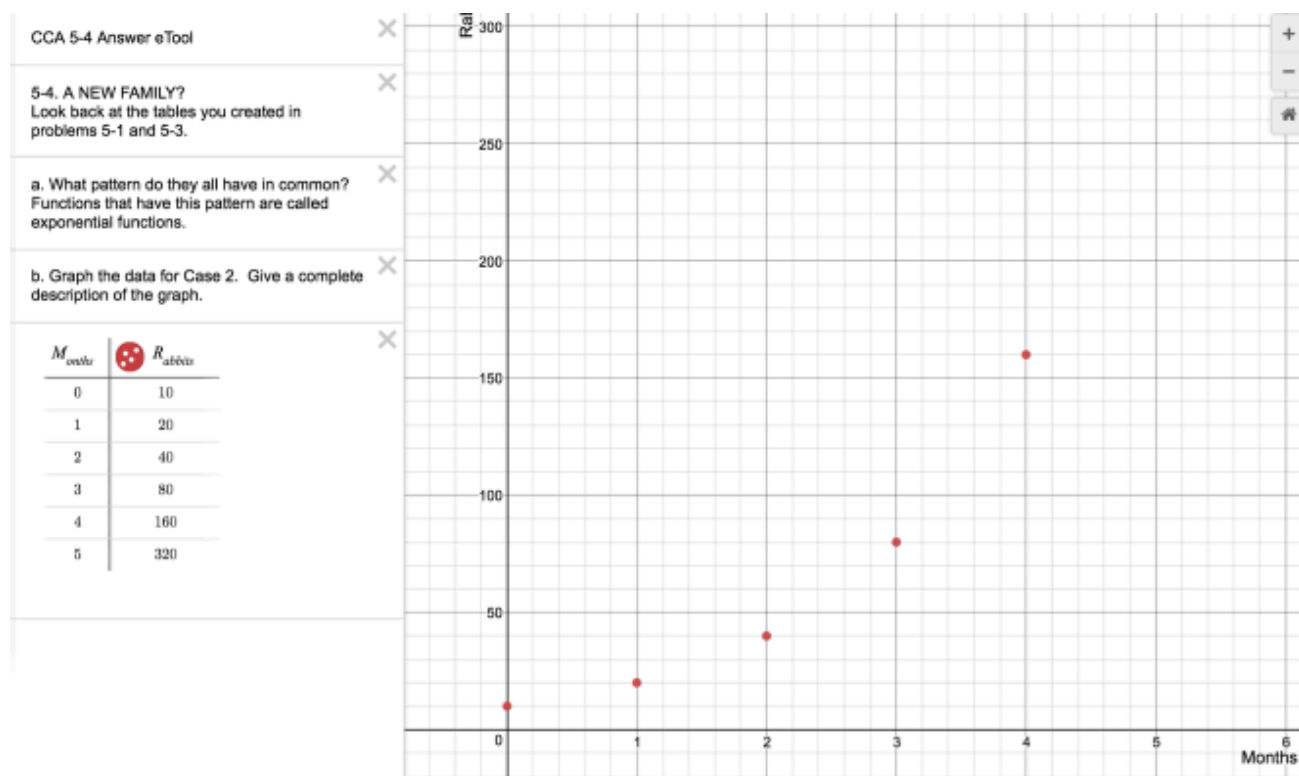


## CCA 5.1.1: 5-4 Answer eTool (Desmos)

Click on the link below for the "5-4 Answer eTool (Desmos)."


[5-4 Answer eTool\(Desmos\)](#)


### 1. 5-4: Graph for Case 3 (problem 5-3)



## CCA 5.1.2: Bounce Lab Videos: pt 1 & pt 2

Click on the link below for the "Bounce Lab Videos: pt 1 & pt 2"

[Bounce Lab: pt 1](#) 

[Bounce Lab: pt 2](#) 

### 1. First Video:



2-20 Many games depend on how a ball bounces. For example, if different basketballs rebounded differently, one basketball would bounce differently, one basketball would bounce differently off of a backboard than another would, and this could cause basketball players to miss their shots.



### 2. Collect data:



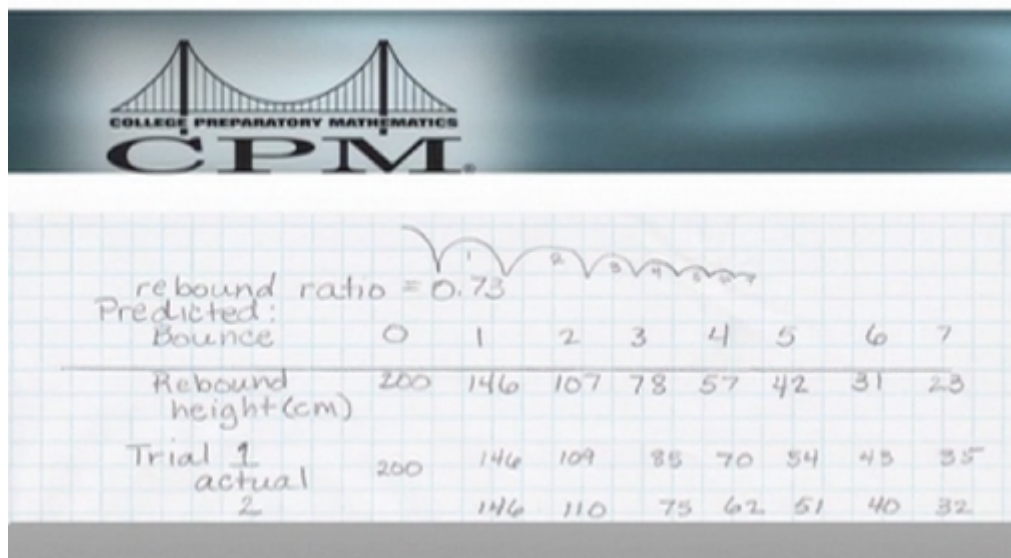
### 3. Use technology:



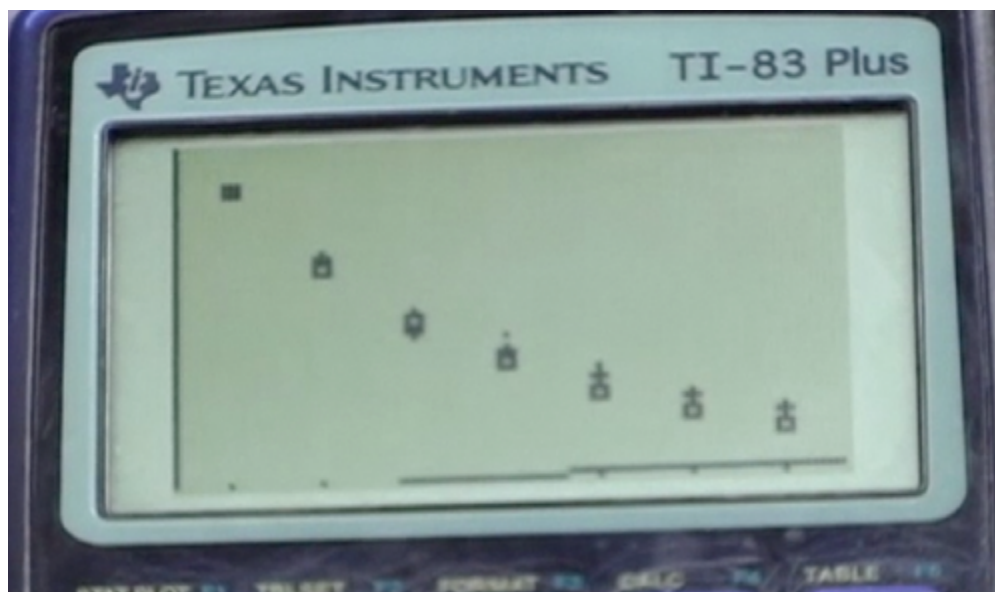
### 4. Second Video:



## 5. Record data:



## 6. Graph data:

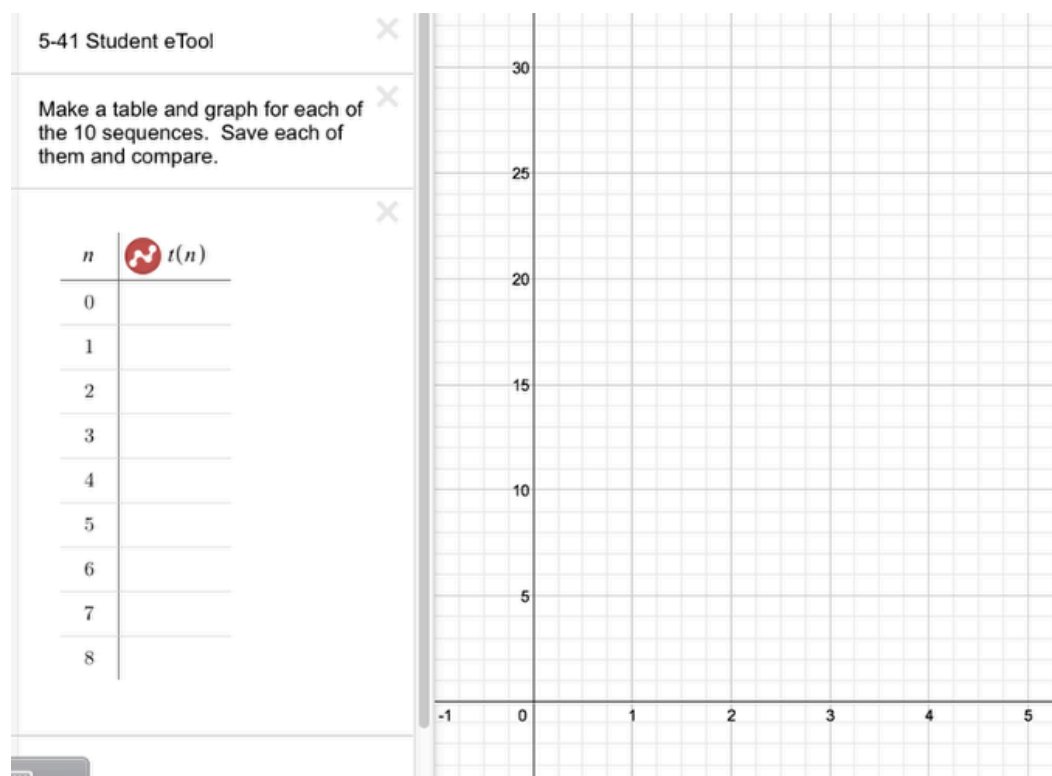


## CCA 5.2.1: 5-41 Student eTool (Desmos)

Click on the link below for the "5-41 Student eTool (Desmos)."

[5-41 Student eTool \(Desmos\)](#)

### 1. 5-41:



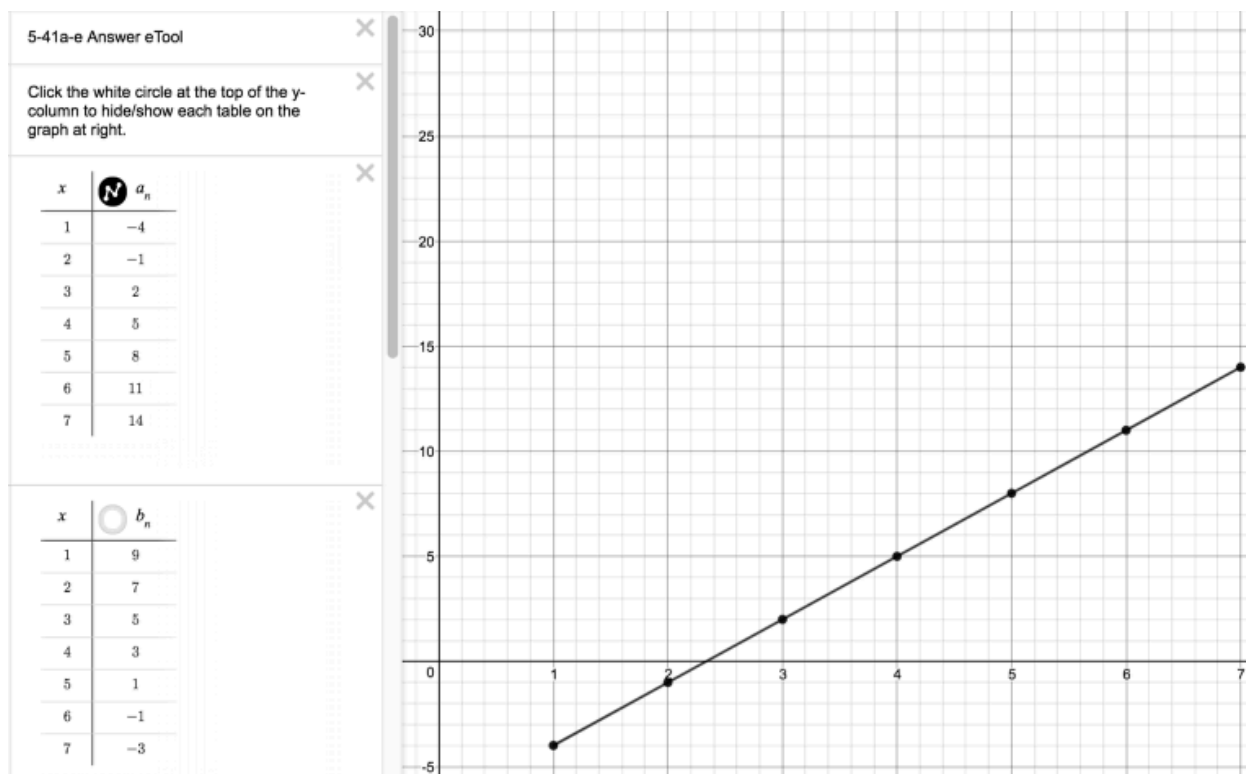


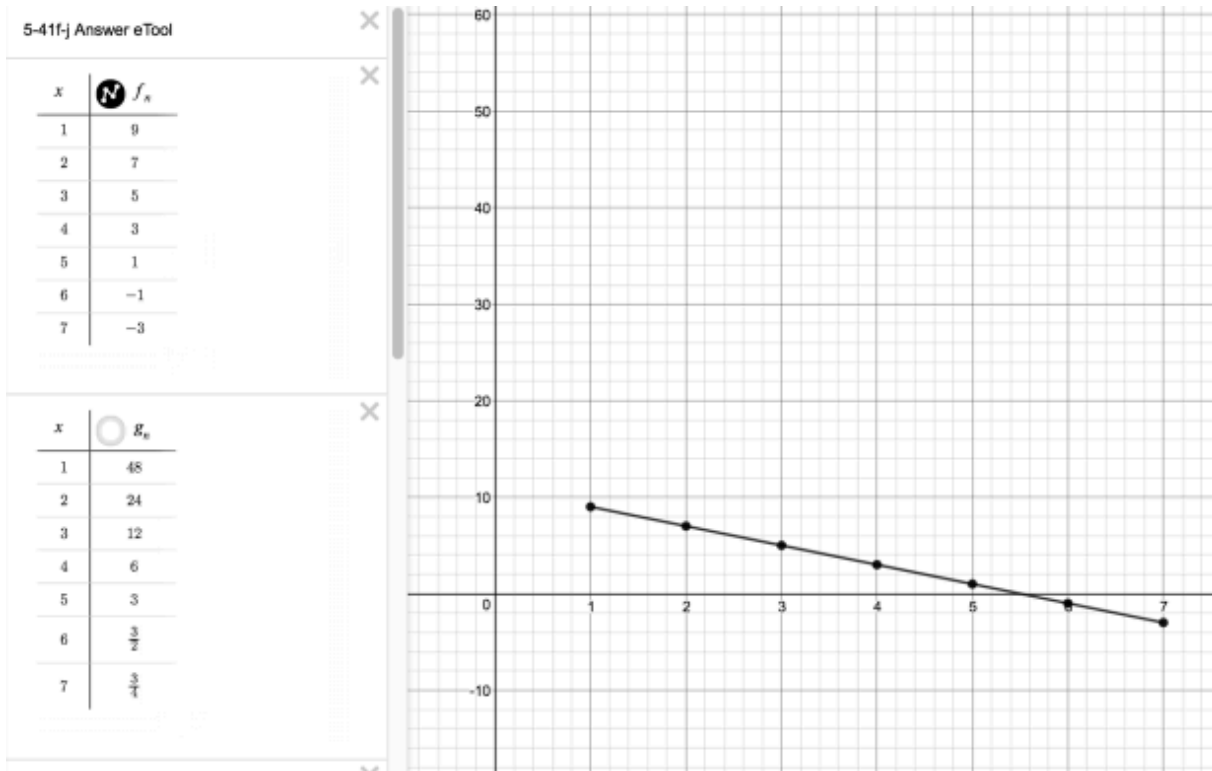
## CCA 5.2.1: 5-41 Answer eTools (Desmos)

Click on the link below for the "5-41 Answer eTool (Desmos)."

[5-41 Answer \(a\)-\(e\) eTool \(Desmos\)](#) [5-41 Answer \(f\)-\(j\) eTool \(Desmos\)](#)

1. Each table is associated with 5 graphs. Click on each table to view additional columns.





## CCA 5.3.1: 5-82 & 5-83 Student eTool (Desmos)

Click on the link below for the "5-82 & 5-83 Student eTool (Desmos)."

[5-82 Student eTool \(Desmos\)](#)

[5-83 Student eTool \(Desmos\)](#)

### 1. CCA 5-82 Student eTool (Desmos)

CCA 5-82 Student eTool

---

5-82. PATTERNS OF GROWTH

---

Your Task:

---

- Represent these three sequences on a graph. Use a different color for each sequence. Although the graph is discrete, connect the points so you can see the patterns more easily.

---

- Consider the "Discussion Points" below for each sequence as you investigate the growth of these three sequences. You can discuss the sequences in any order.

---

- Be prepared to share your results with the class.

---

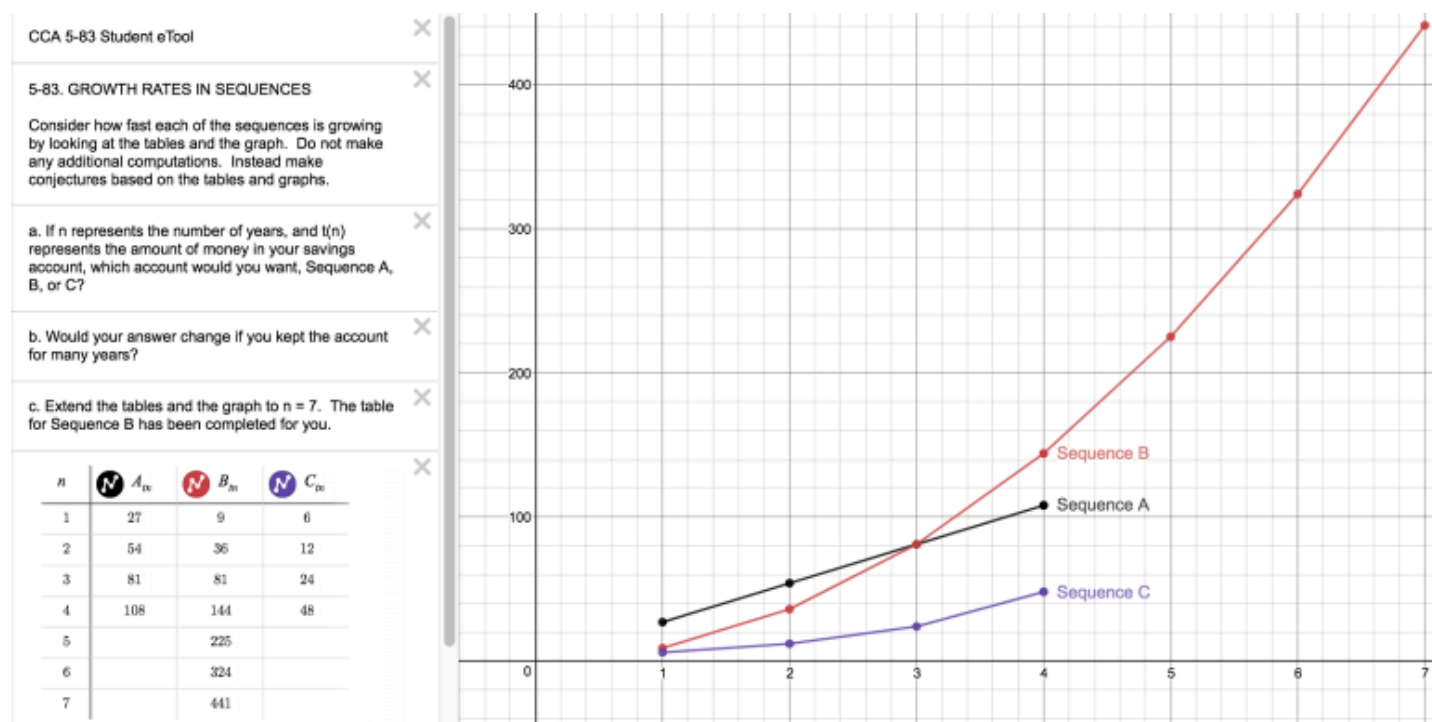
$n$	$A_n$	$B_n$	$C_n$
1	----	----	----
2	----	----	----
3	----	----	----
4	----	----	----

$n$	$f(n)$
1	27
2	54
3	81
4	108

$n$	$f(n)$
1	9
2	36
3	81
4	144

$n$	$f(n)$
1	6
2	12
3	24
4	48

## 2. CCA 5-83 Student eTool (RP 5.3.1B)

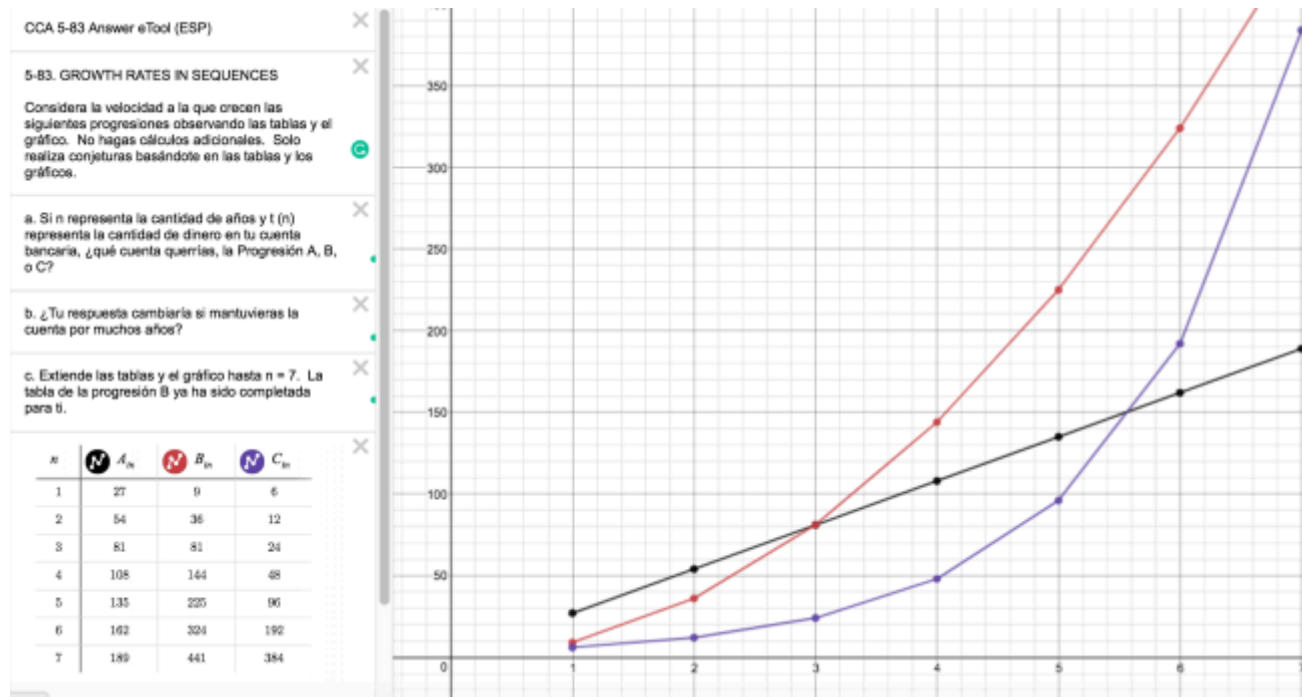


## CCA 5.3.1: 5-83 Answer eTool (Desmos)

Click on the link below for the "5-83 Teacher eTool (Desmos)."

[5-83 Answer eTool \(Desmos\)](#)

### 1. 5-83 Answer graphs:



# Chapter 6

## CCA 6.1.1: View Tube Data Collection Video

Click on the link below for the "View Tube Data Collection Video"

[View Tube Data Collection](#) 

### 1. Step 1:



## 2. Step 2:

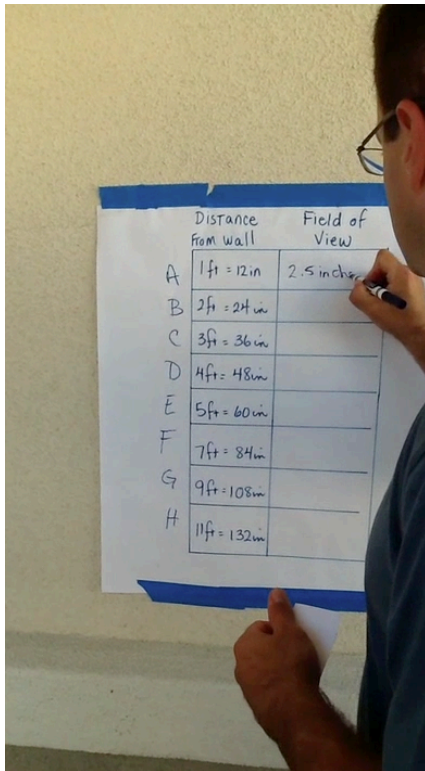


## 3. Step 3:





#### 4. Step 4:



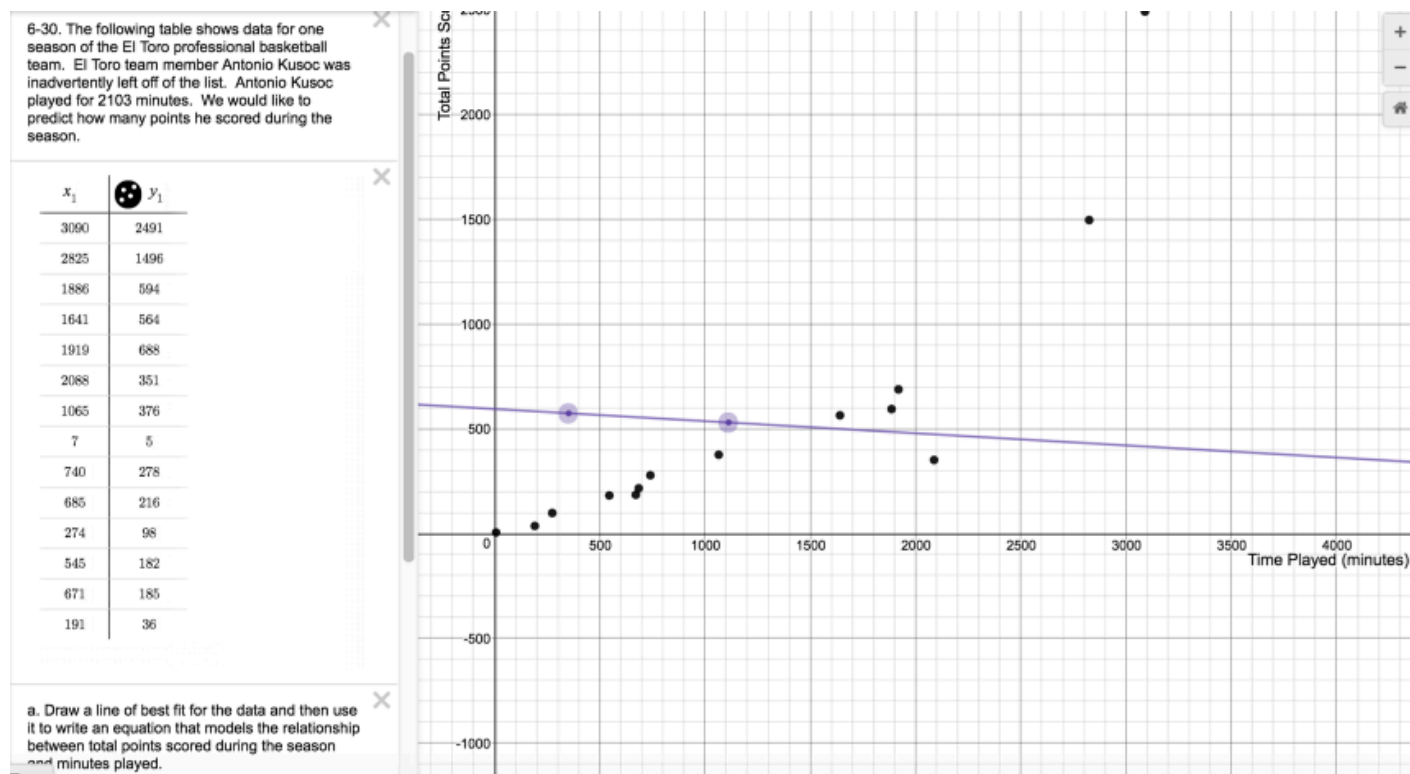
	Distance from wall	Field of View
A	1 ft = 12 in	2.5 inches
B	2 ft = 24 in	
C	3 ft = 36 in	
D	4 ft = 48 in	
E	5 ft = 60 in	
F	7 ft = 84 in	
G	9 ft = 108 in	
H	11 ft = 132 in	

## CCA 6.1.4: 6-30 Student eTool (Desmos)

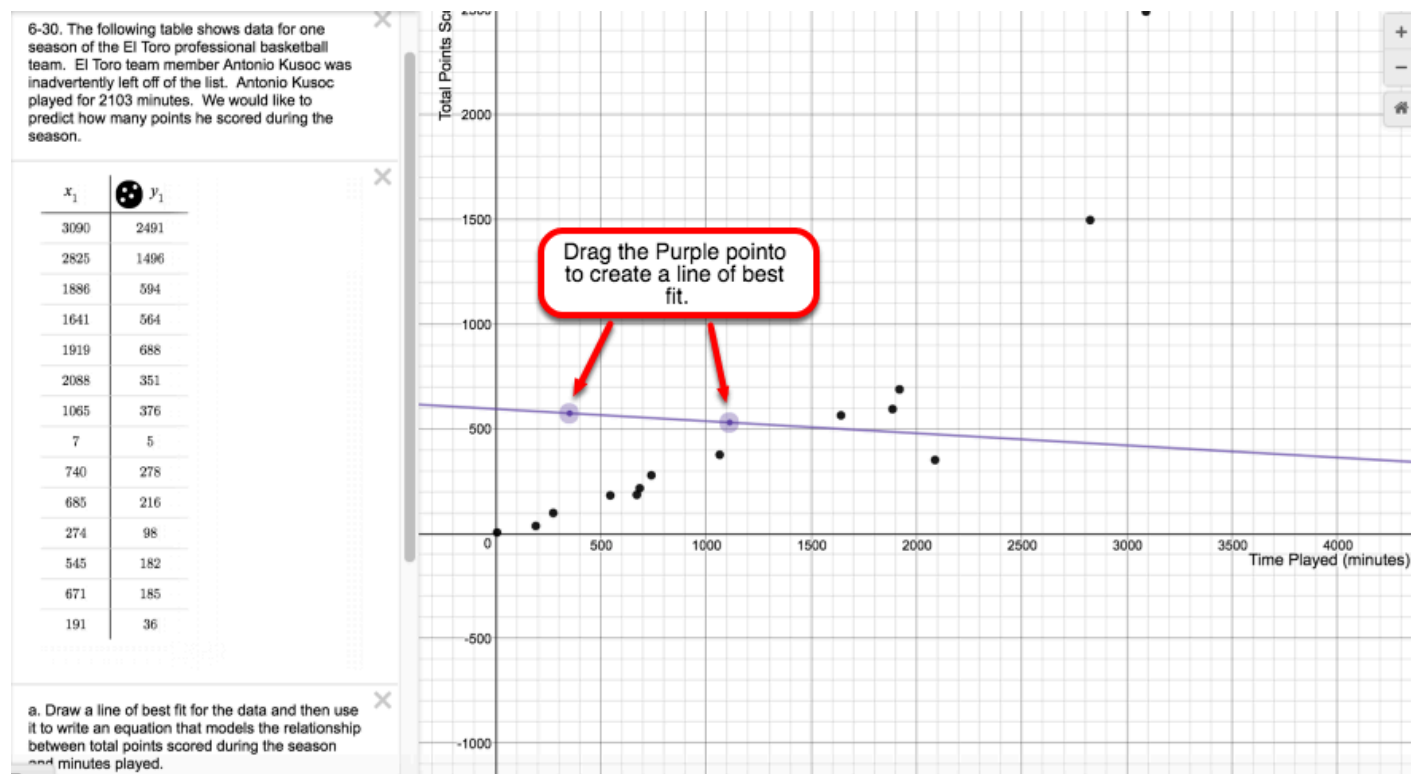
Click on the link below for the "6-30 Student eTool (Desmos)."

[6-30 Student eTool \(Desmos\)](#)

### 1. CCA 6-30



## 2. Drag the purple line to create a line of best fit.

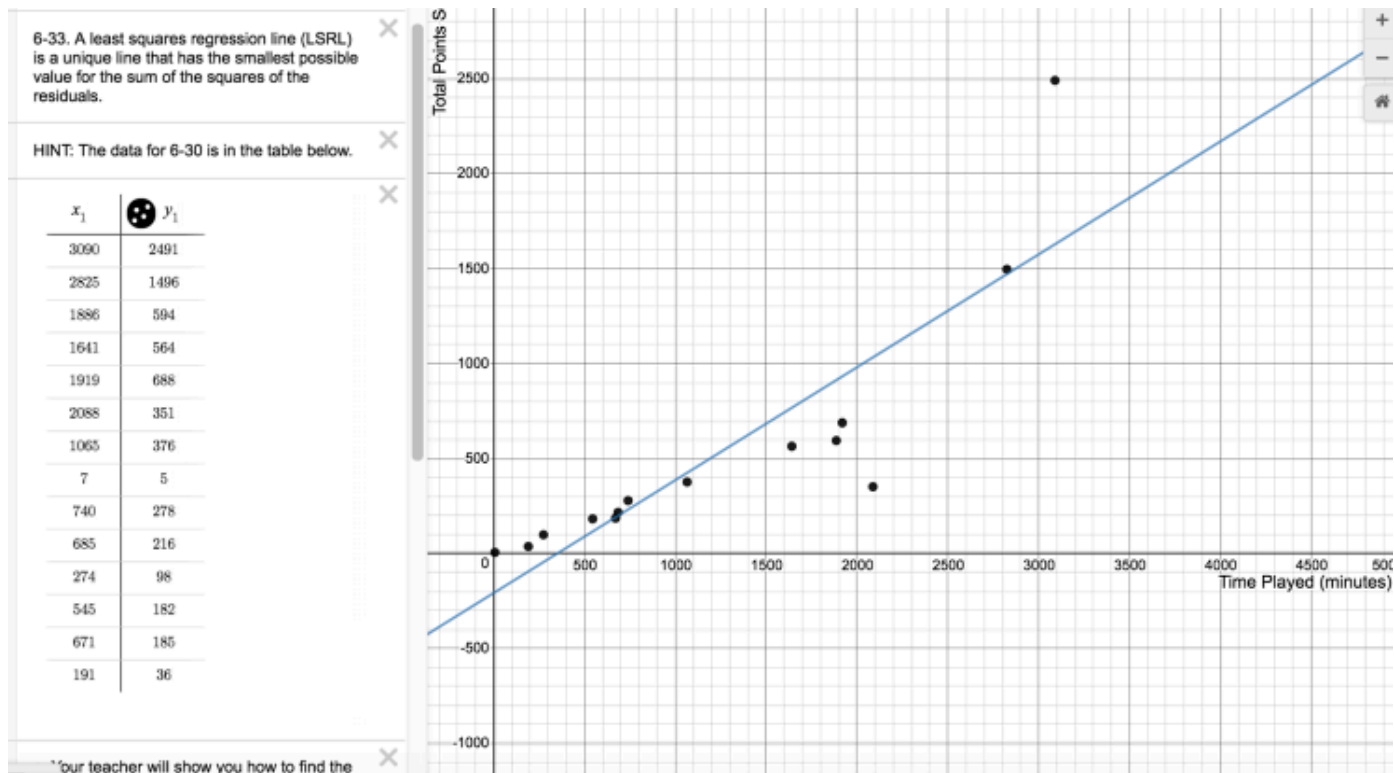


## CCA 6.1.4: 6-33 Student eTool (Desmos)

Click on the link below to access eTool.

[6-33 Student eTool \(Desmos\)](#)

Use this eTool to make a scatterplot and solve problem 6-33.



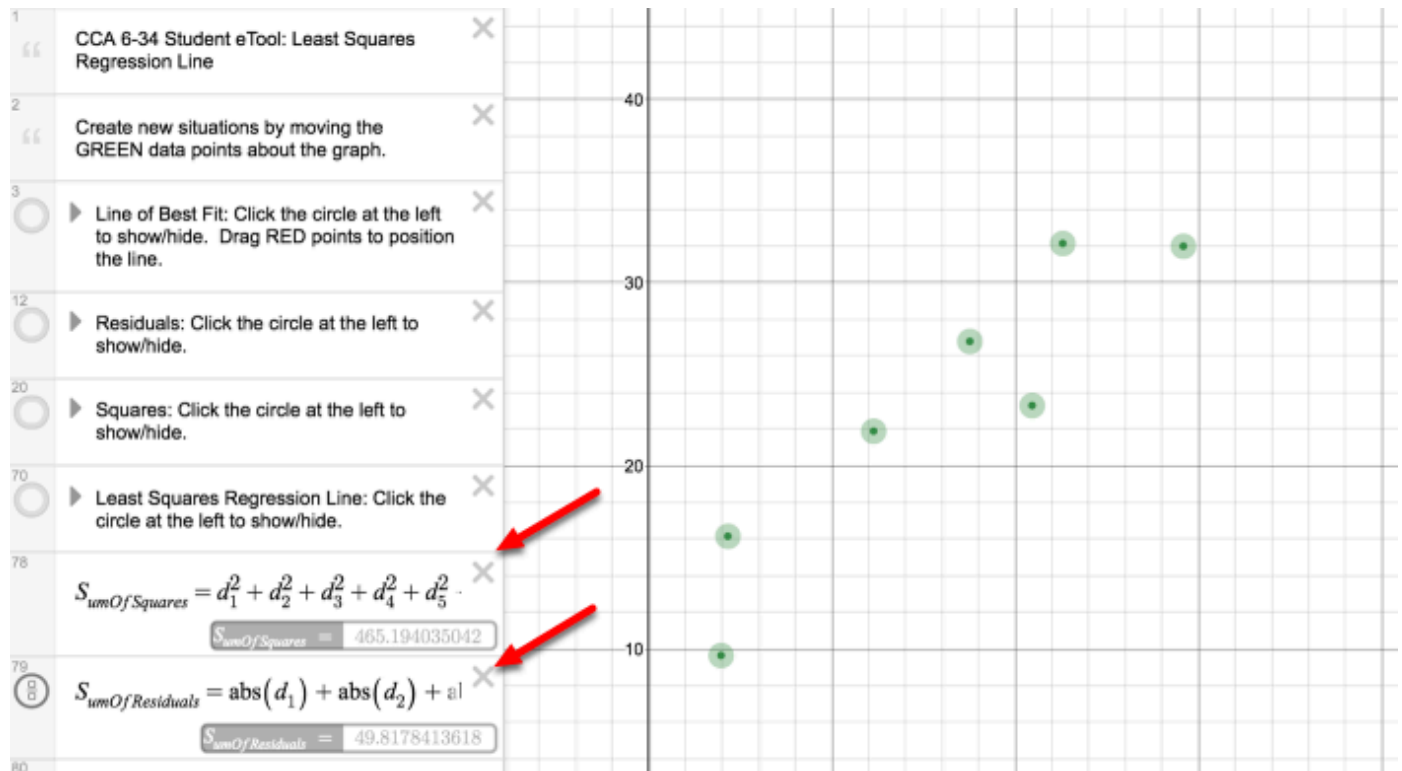
## CCA 6.1.4: 6-34 Student eTool (Desmos)

Click on the link below for the 6-34 Student eTool (Desmos).

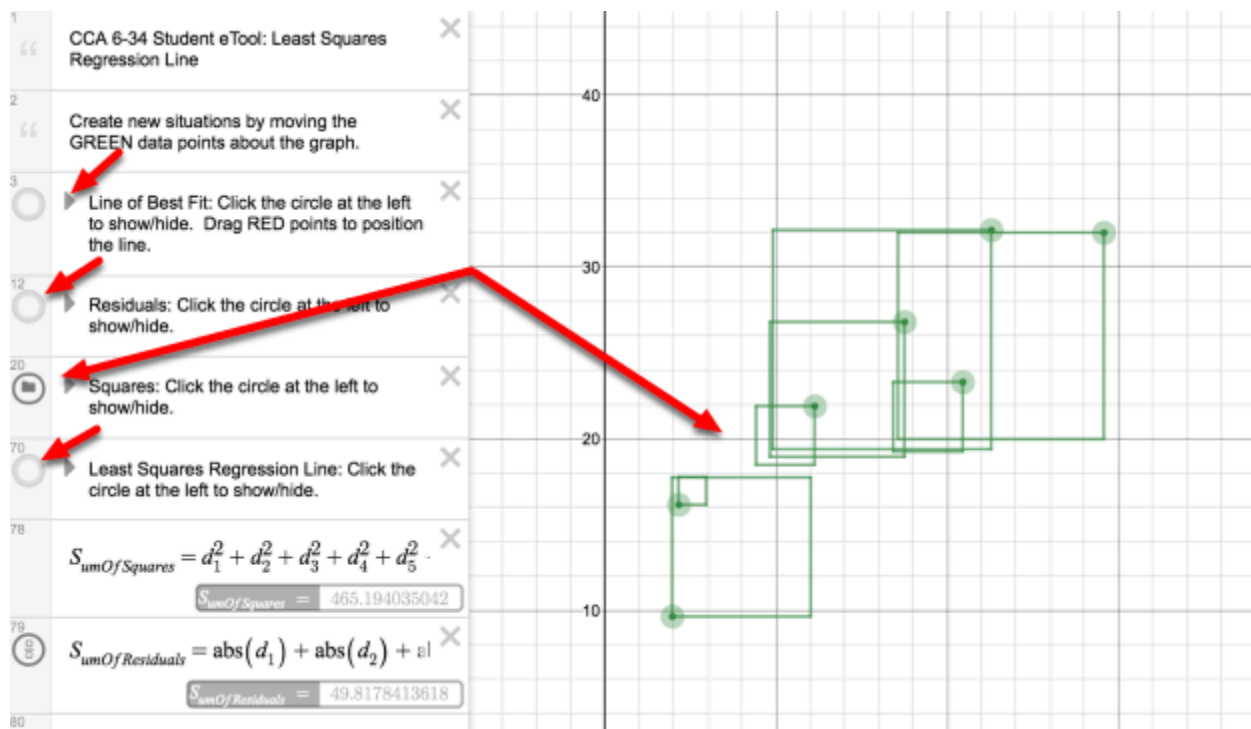
[6-34 Student eTool \(Desmos\)](#)

### 1. Least Square Regression Line

- Move data points about
- Sum of the Squares and Residuals will be adjusted accordingly.



## 2. Click the folder circles for the indicated information.



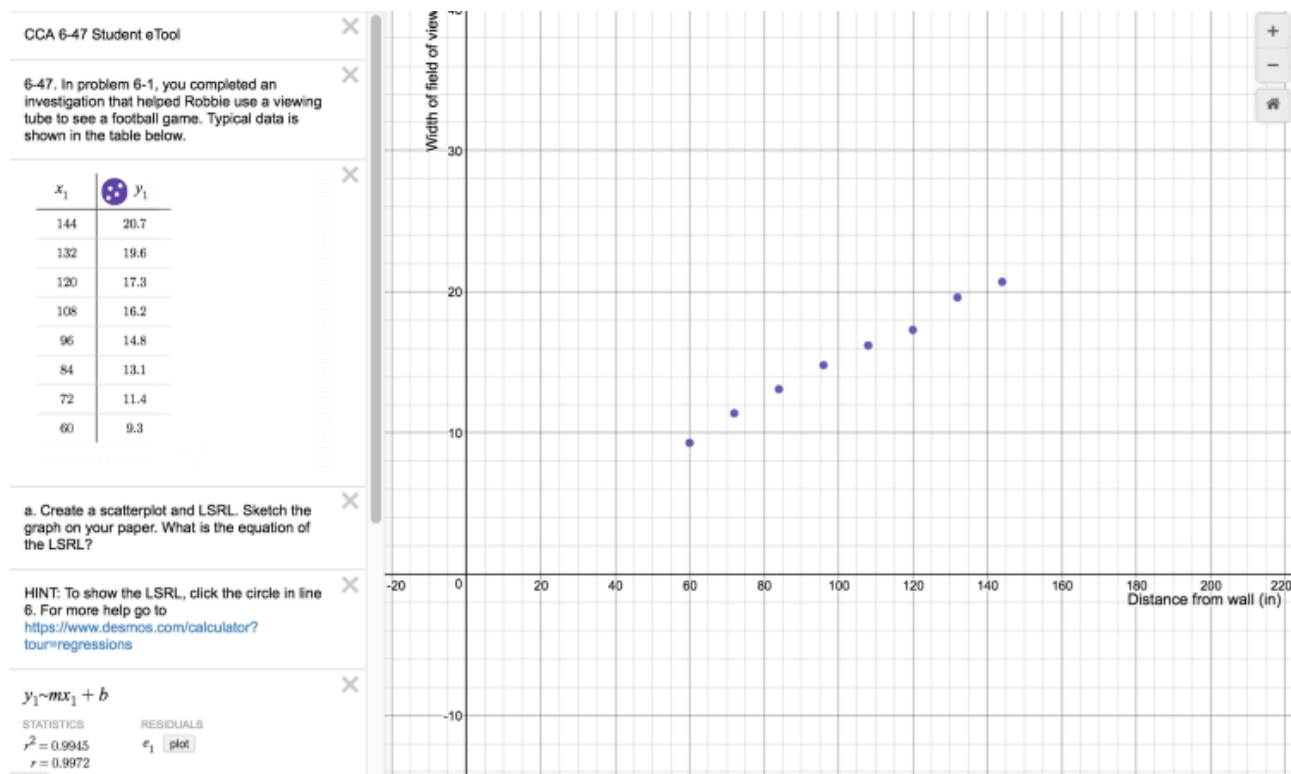


## CCA 6.2.1: 6-47 Student eTool (Desmos)

Click on the link below for the 6-47 Student eTool (Desmos).

[6-47 Student eTool \(Desmos\)](#)

### 1. 6-47 Student eTool:

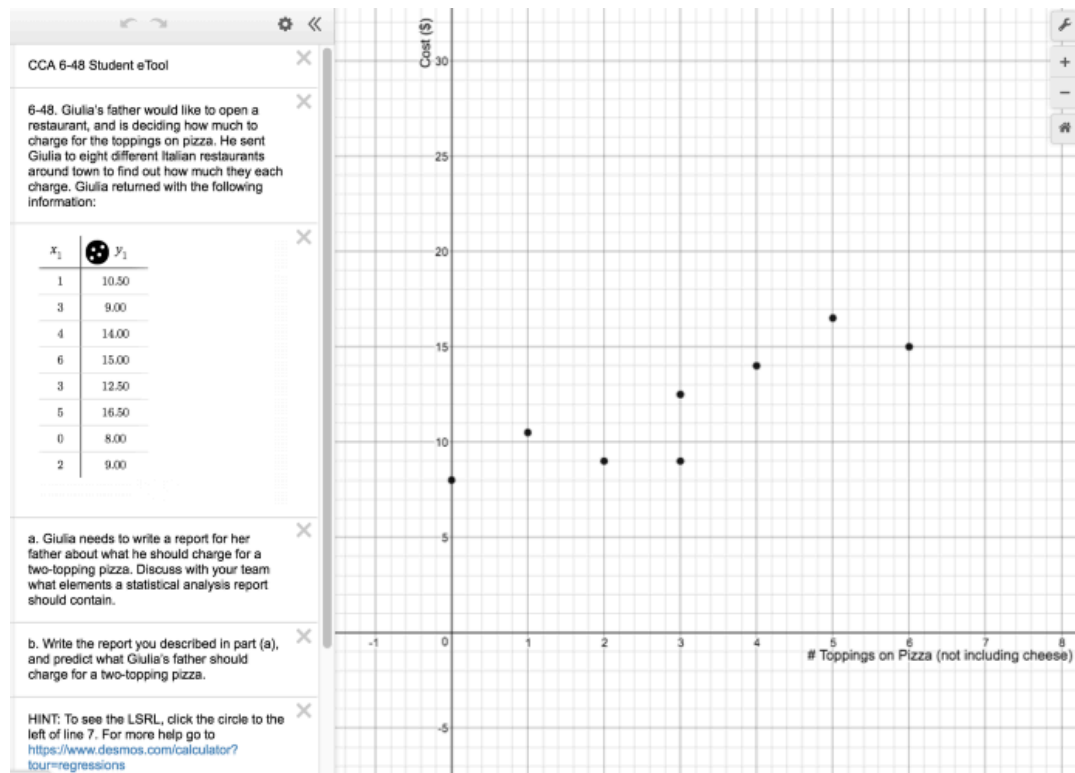


## CCA 6.2.1: 6-48 Student eTool (Desmos)

Click on the link below for the 6-48 Student eTool (Desmos).

[6-48 Student eTool \(Desmos\)](#)

### 1. 6-48 Student eTool:



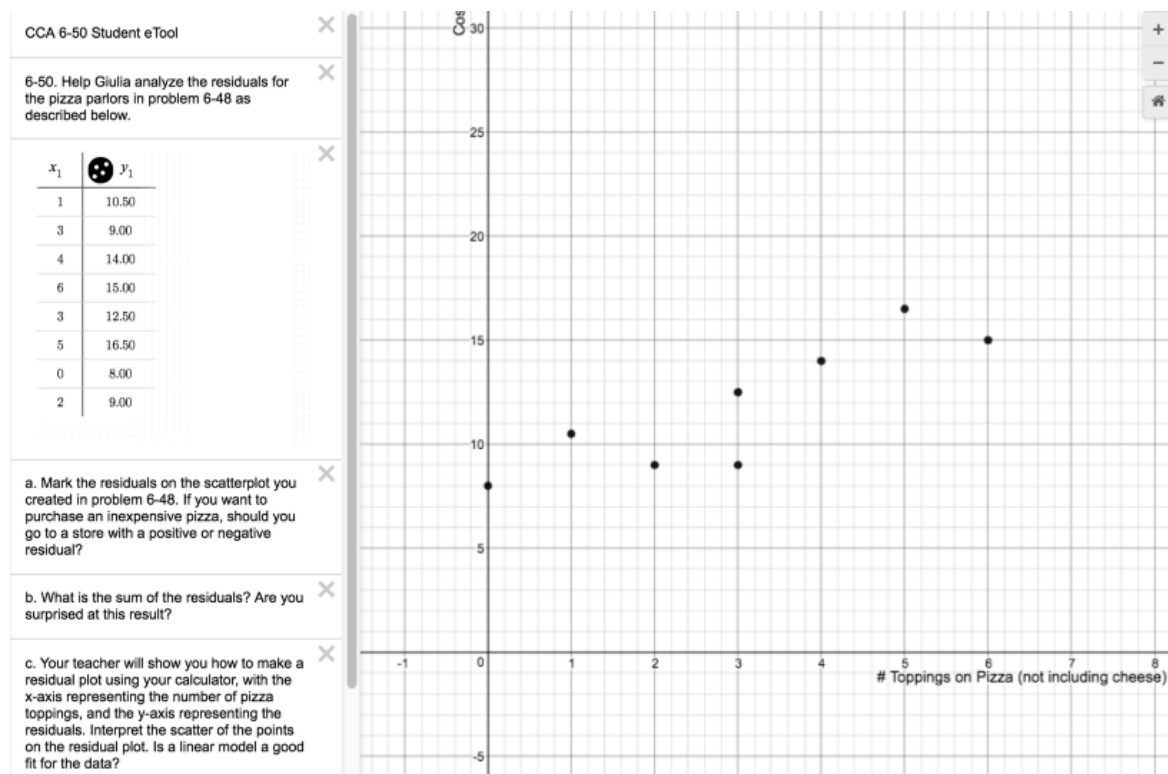


## CCA 6.2.1: 6-50 Student eTool (Desmos)

Click on the link below for the 6-50 Student eTool (Desmos).

[6-50 Student eTool \(Desmos\)](#)

### 1. 6-50 Student eTool:

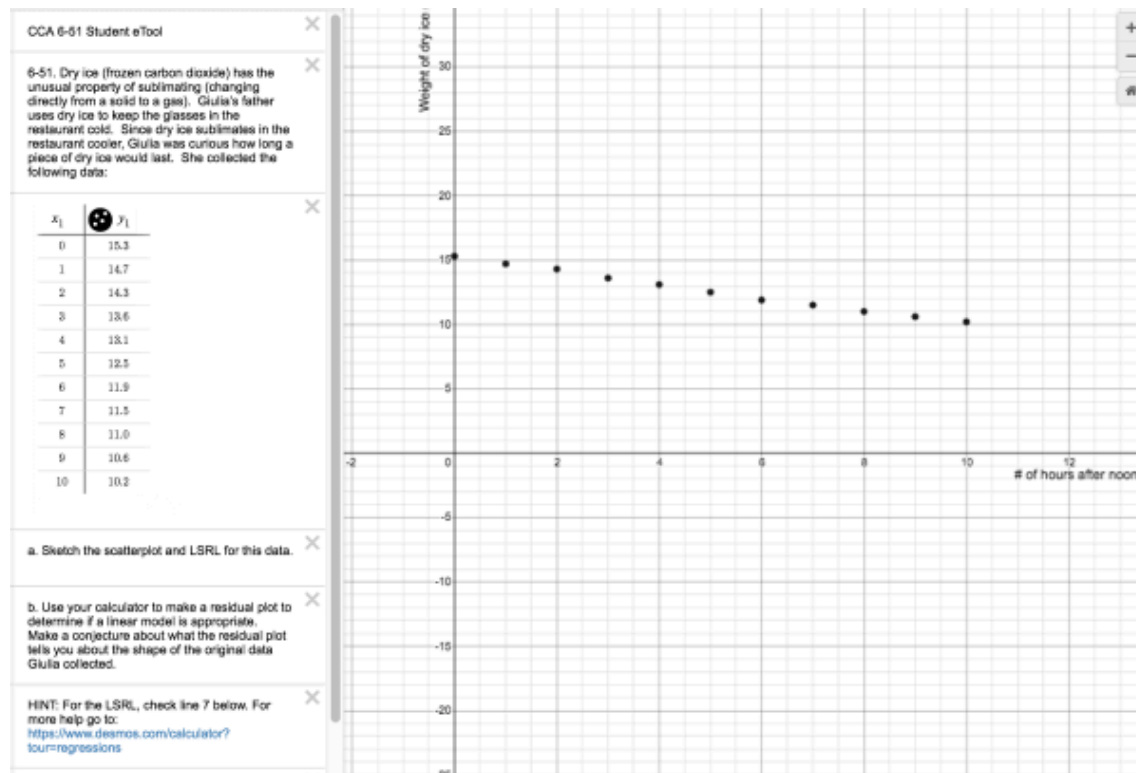


## CCA 6.2.1: 6-51 Student eTool (Desmos)

Click on the link below for the 6-51 Student eTool (Desmos).

[6-51 Student eTool \(Desmos\)](#)

### 1. 6-51 Student eTool:





## CCA 6.2.1: 6-53 Student eTool (Desmos)

Click on the link below for the 6-53 Student eTool (Desmos).

[6-53 Student eTool \(Desmos\)](#)

### 1. 6-53 Student eTool:

CCA 6-53 Student eTool

6-53. Sophie and Lindsey were discussing what it meant for a residual plot to have random scatter. Sophie said that the points need to be evenly scattered over the whole plot. Lindsey heard her dad say that stars in the night sky can be considered to be randomly distributed even though the stars sometimes appear in clusters and sometimes there are large expanses of nothing in the sky.

HINT: At the link below, select column A and B and copy the two columns of data. Paste them on line 6.  
[https://docs.google.com/spreadsheets/d/10\\_CLC0gF8HMaG2PmBx3L9BA1dnDvmbloqCgLoM3NyBI/edit#gid=0](https://docs.google.com/spreadsheets/d/10_CLC0gF8HMaG2PmBx3L9BA1dnDvmbloqCgLoM3NyBI/edit#gid=0)

Your teacher will show you how to make a scatterplot with random points on it. Share your random plot with your teammates. Then make another random scatterplot or two so that you observe several different random scatterplots.

Write a note to Sophie and Lindsey telling them what you discovered about random scatter plots.

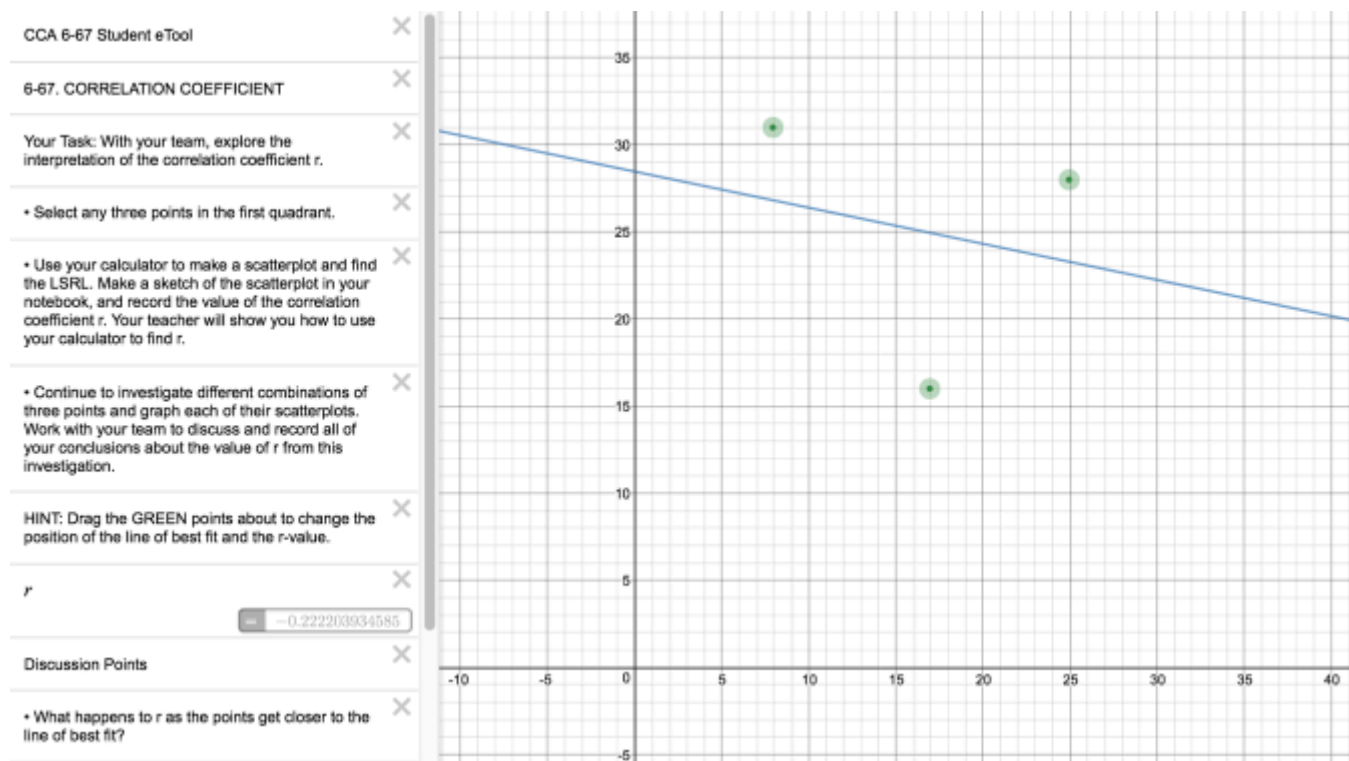
HINT: For the LSRL, check line 8 below. If necessary, change the variable names to match the variable names in the table. For more help go to:  
<https://www.desmos.com/calculator?tour=regressions>

## CCA 6.2.1: 6-67 Student eTool (Desmos)

Click on the link below for the 6-67 Student eTool (Desmos).

[6-67 Student eTool \(Desmos\)](#)

### 1. 6-67 Student eTool (Desmos):

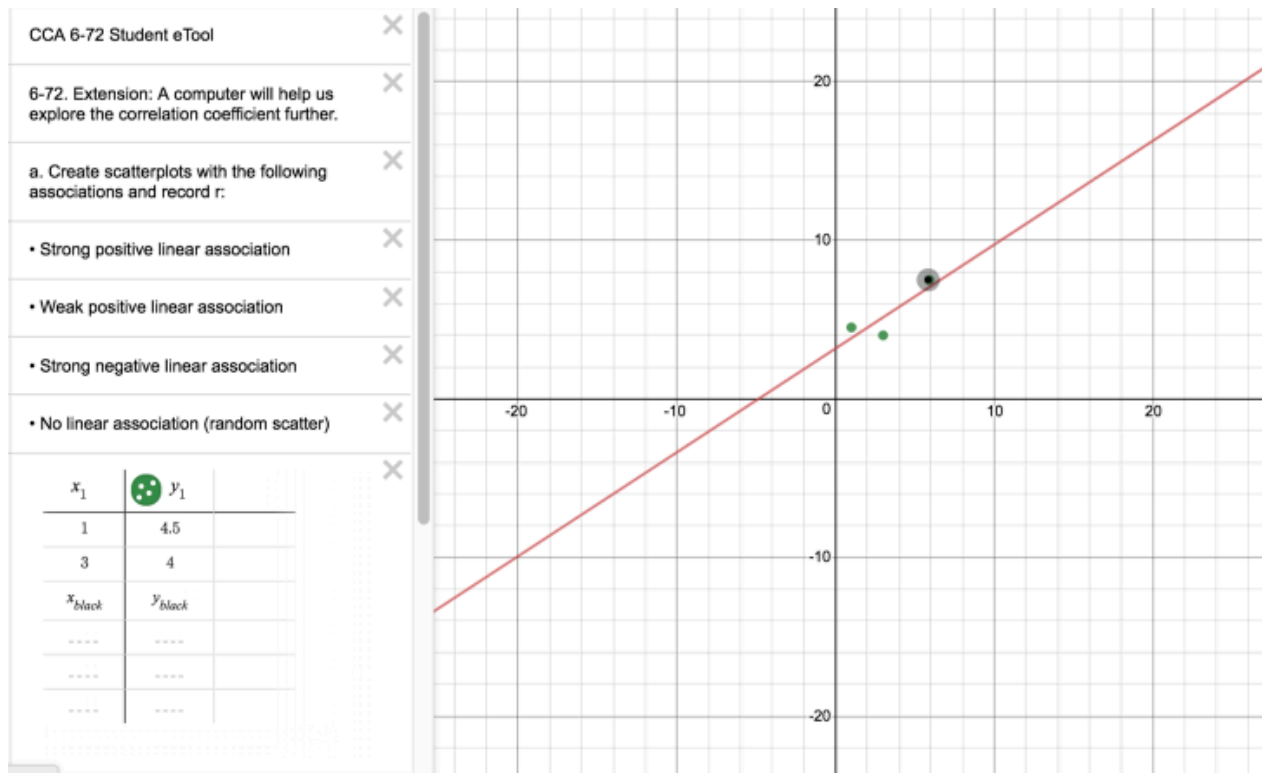


## CCA 6.2.2: 6-72 Student eTool (Desmos)

Click on the link below for the 6-72 Student eTool (Desmos).

[6-72 Student eTool \(Desmos\)](#)

### 1. 6-72 Student eTool (Desmos):

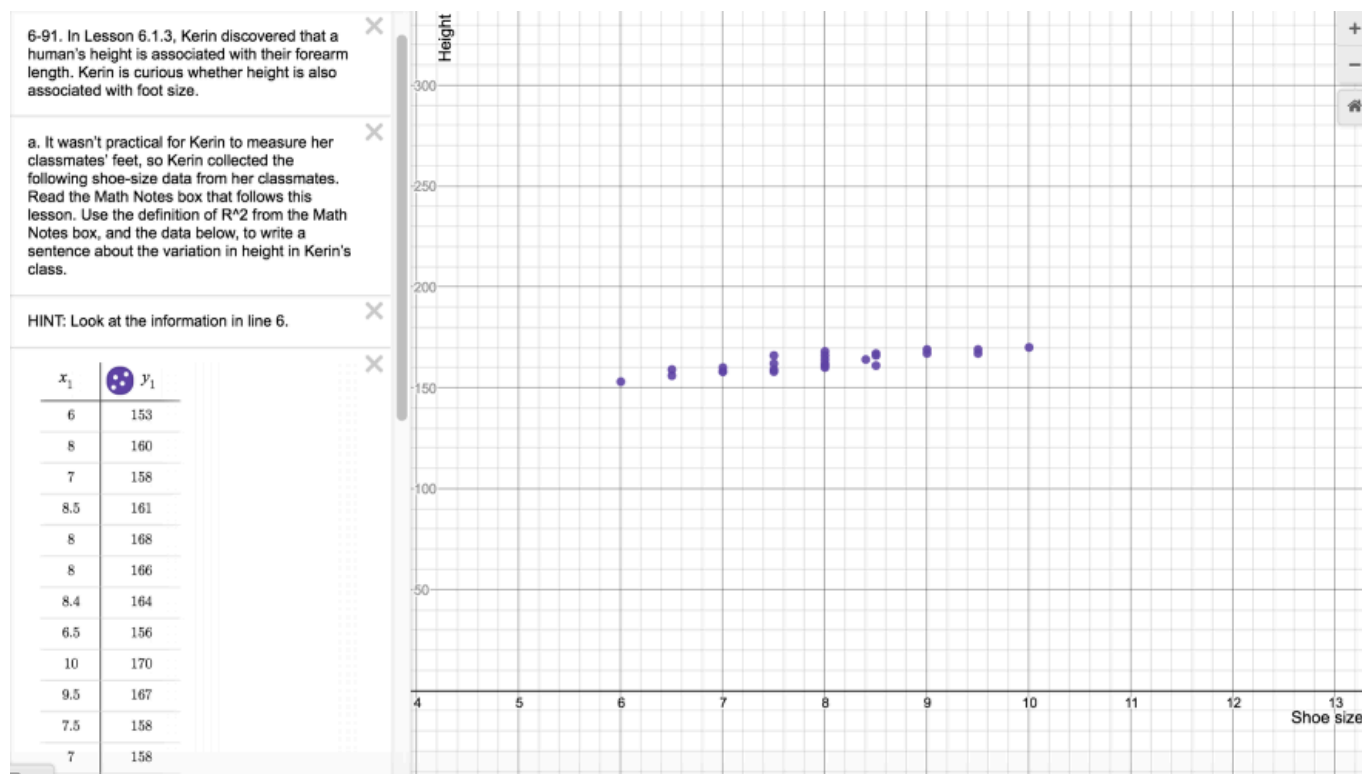


## CCA 6.2.4: 6-91 Student eTool (Desmos)

Click on the link below for the 6-91 Student eTool (Desmos).

[6-91 Student eTool \(Desmos\)](#)

### 1. 6-91 Student eTool (Desmos):

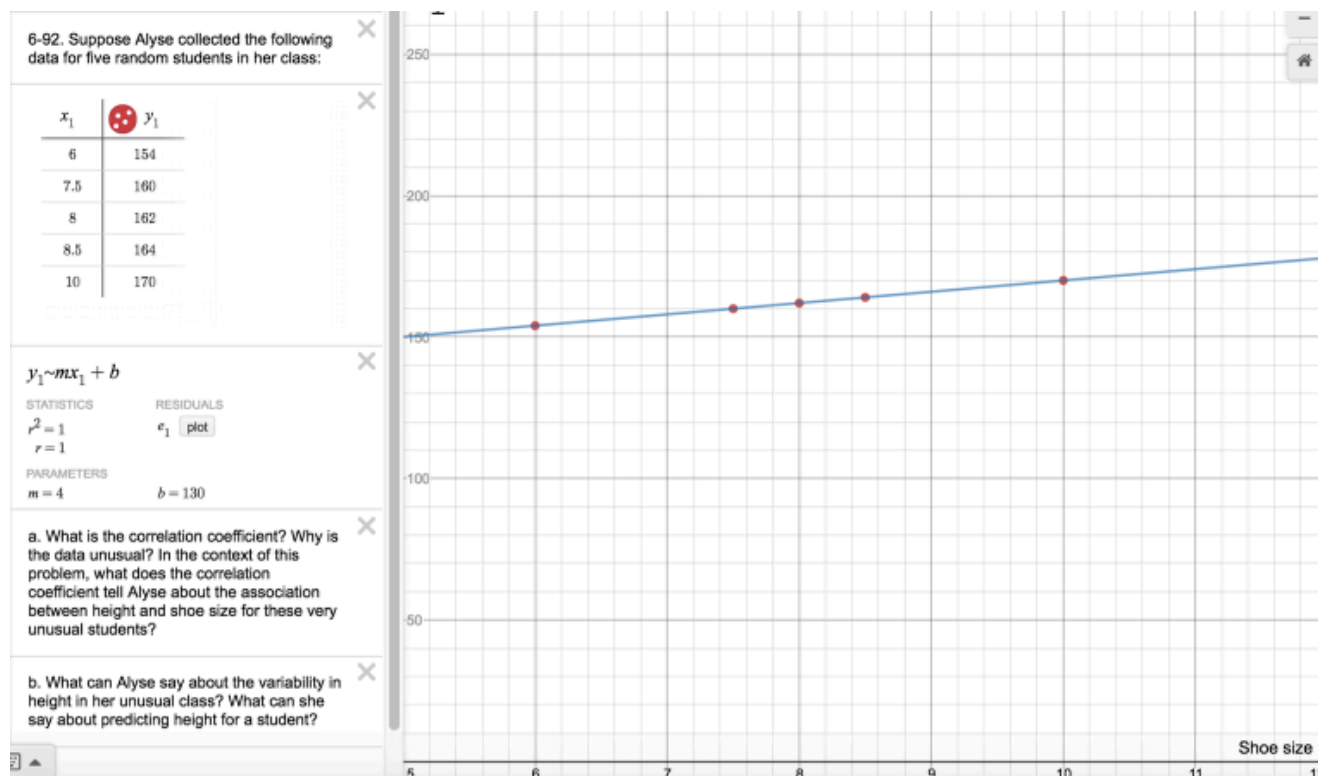


## CCA 6.2.4: 6-92 Student eTool (Desmos)

Click on the link below for the 6-92 Student eTool (Desmos).

[6-92 Student eTool \(Desmos\)](#)

### 1. 6-92 Student eTool (Desmos):

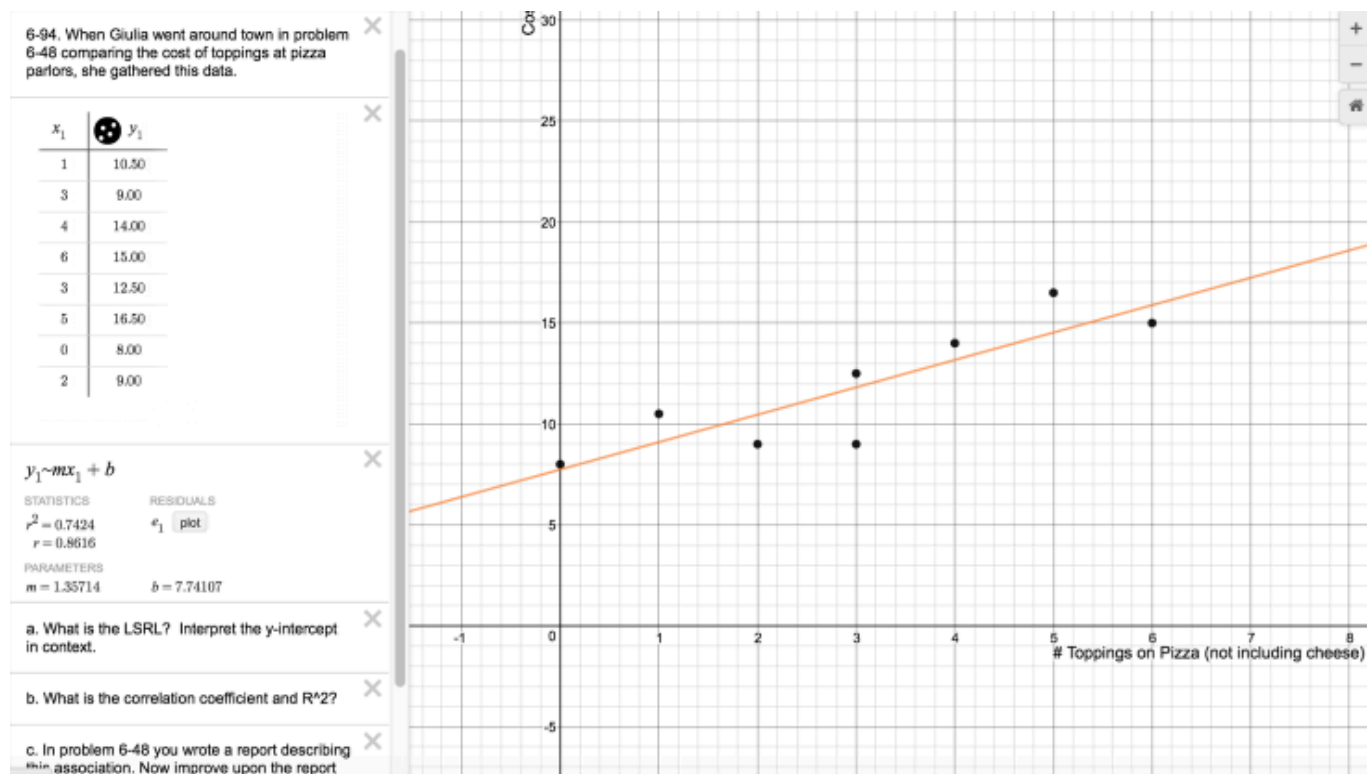


## CCA 6.2.4: 6-94 Student eTool (Desmos)

Click on the link below for the 6-94 Student eTool (Desmos).

[6-94 Student eTool \(Desmos\)](#)

### 1. 6-94 Student eTool (Desmos):



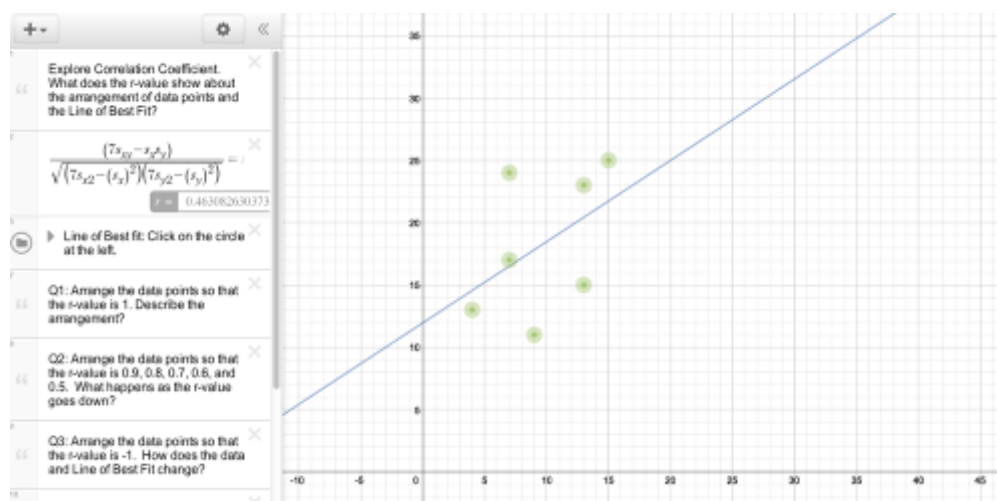


## CCA 6.2.2: Correlation Coefficient Student eTool (Desmos)

Click on the link below for the "Coorelation Coefficient Student eTool (Desmos)."

[Correlation Coefficient Student eTool \(Desmos\)](#)

1. Explore Correlation Coefficient by following the instructions on the tool at left.

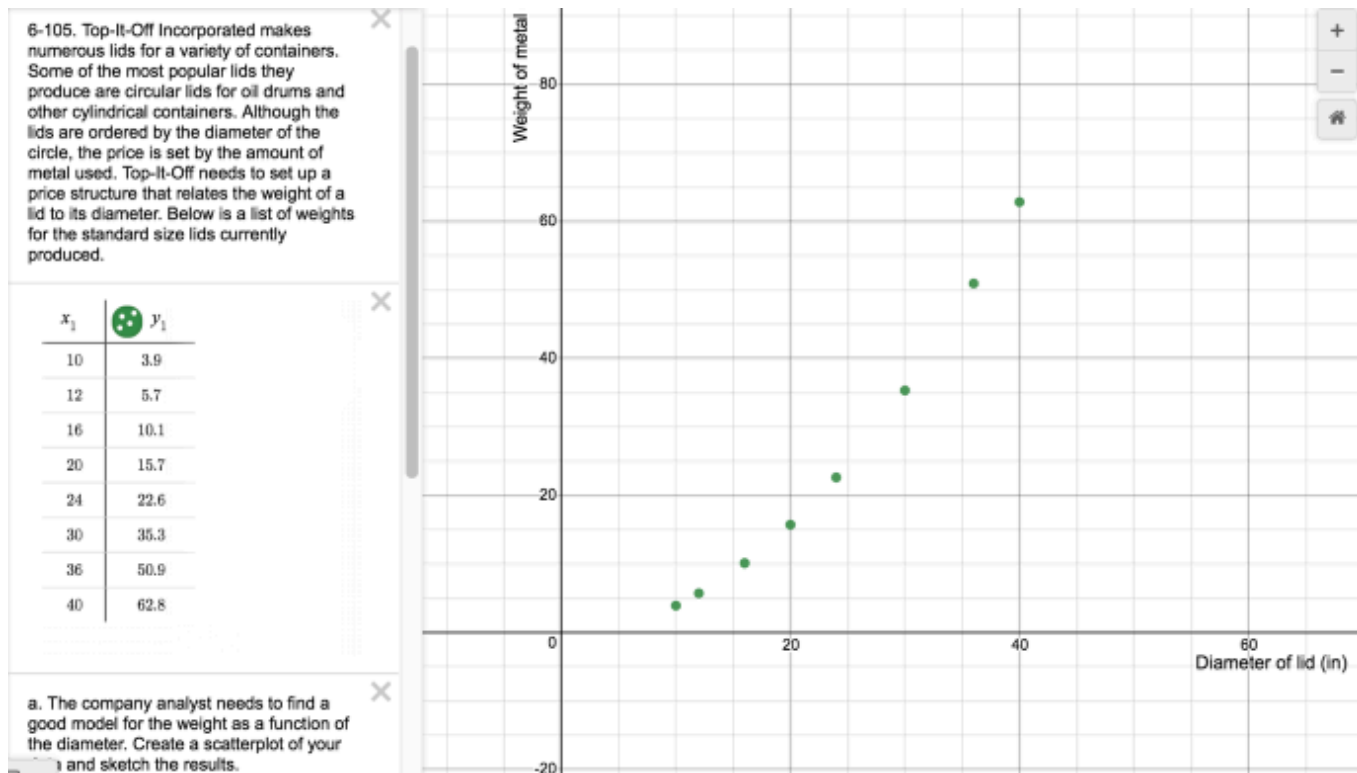


## CCA 6.2.5: 6-105 Student eTool (Desmos)

Click on the link below for the 6-105 Student eTool (Desmos).

[6-105 Student eTool \(Desmos\)](#)

### 1. 6-105 Student eTool (Desmos):

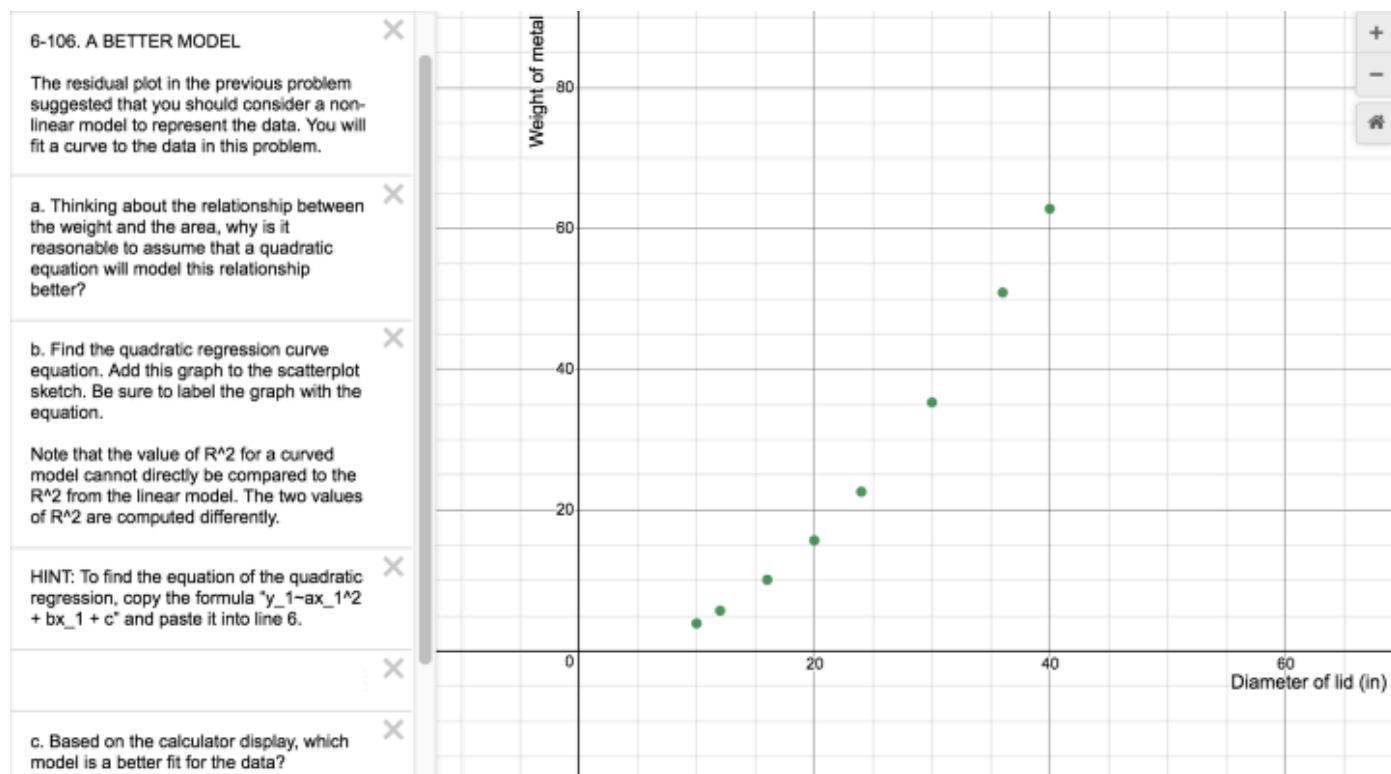


## CCA 6.2.5: 6-106 Student eTool (Desmos)

Click on the link below for the 6-106 Student eTool (Desmos).

[6-106 Student eTool \(Desmos\)](#)

### 1. 6-106 Student eTool (Desmos):

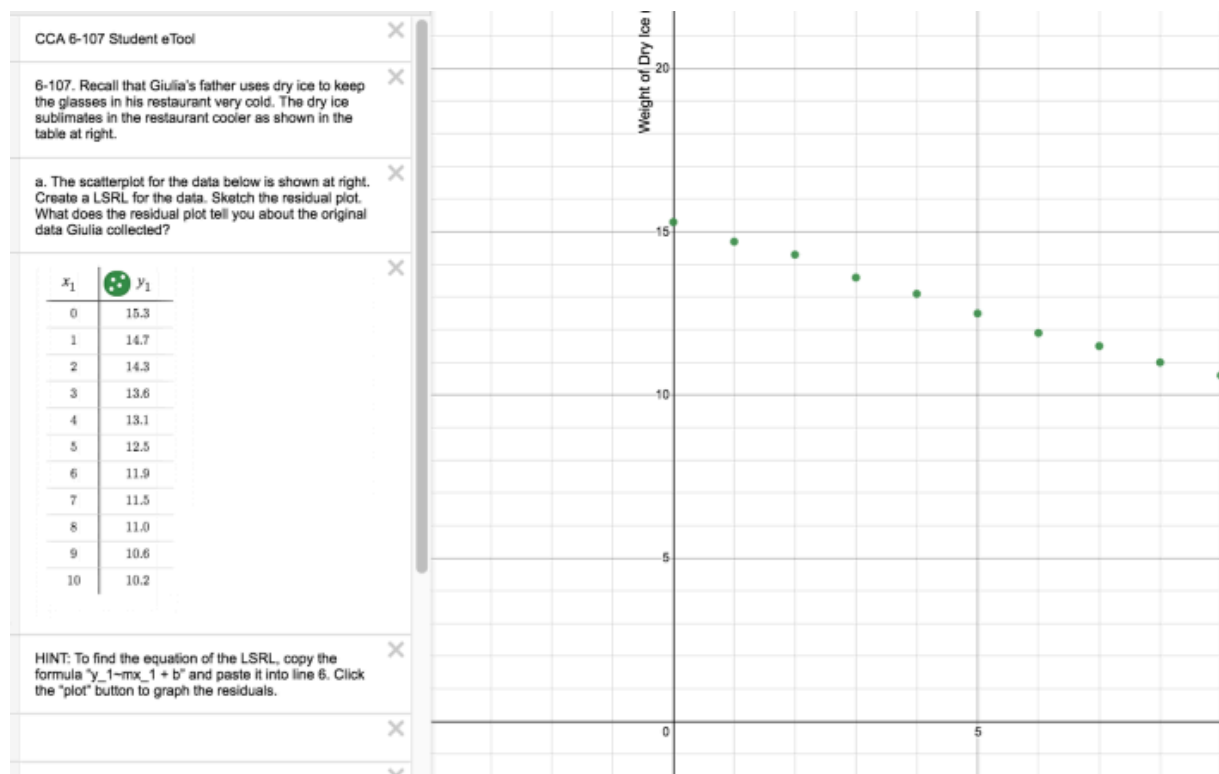


## CCA 6.2.5: 6-107 Student eTool (Desmos)

Click on the link below for the 6-107 Student eTool (Desmos).

[6-107 Student eTool \(Desmos\)](#)

### 1. 6-107 Student eTool (Desmos):

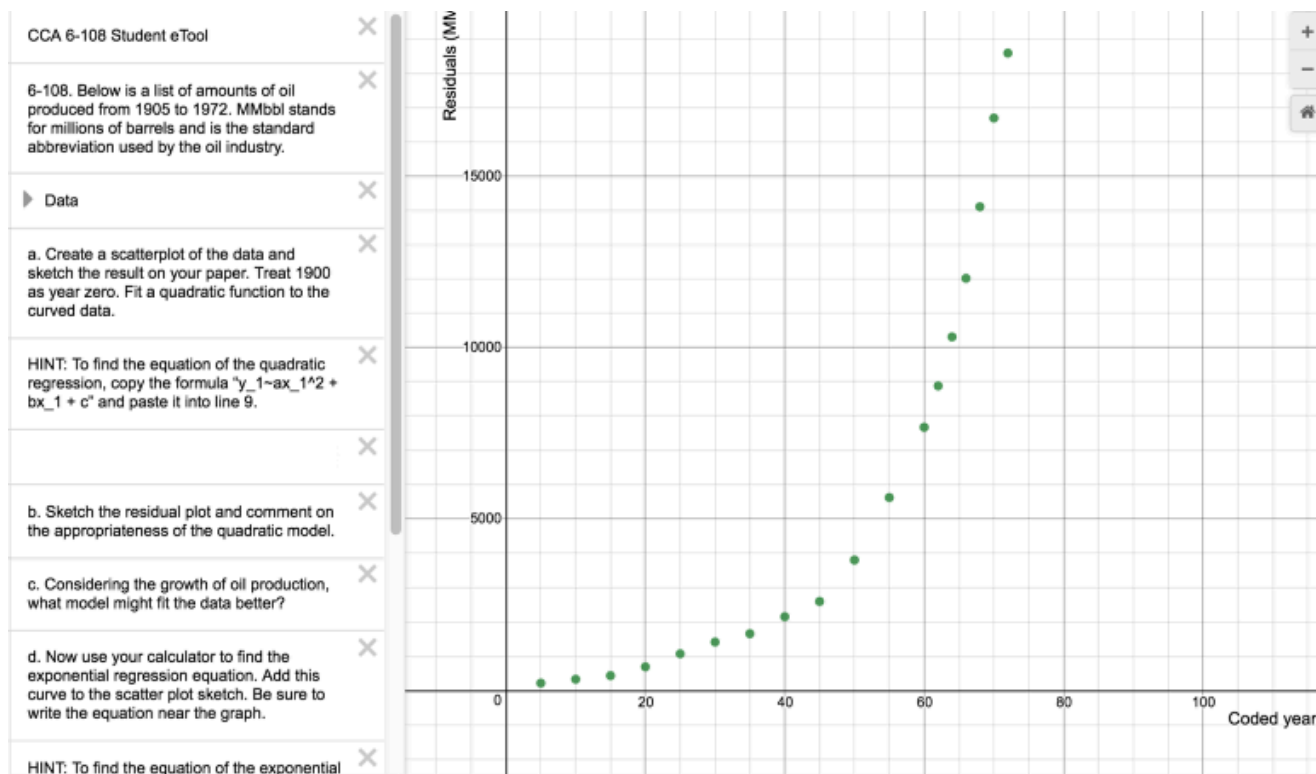


## CCA 6.2.5: 6-108 Student eTool (Desmos)

Click on the link below for the 6-108 Student eTool (Desmos).

[6-108 Student eTool \(Desmos\)](#)

### 1. 6-108 Student eTool (Desmos):

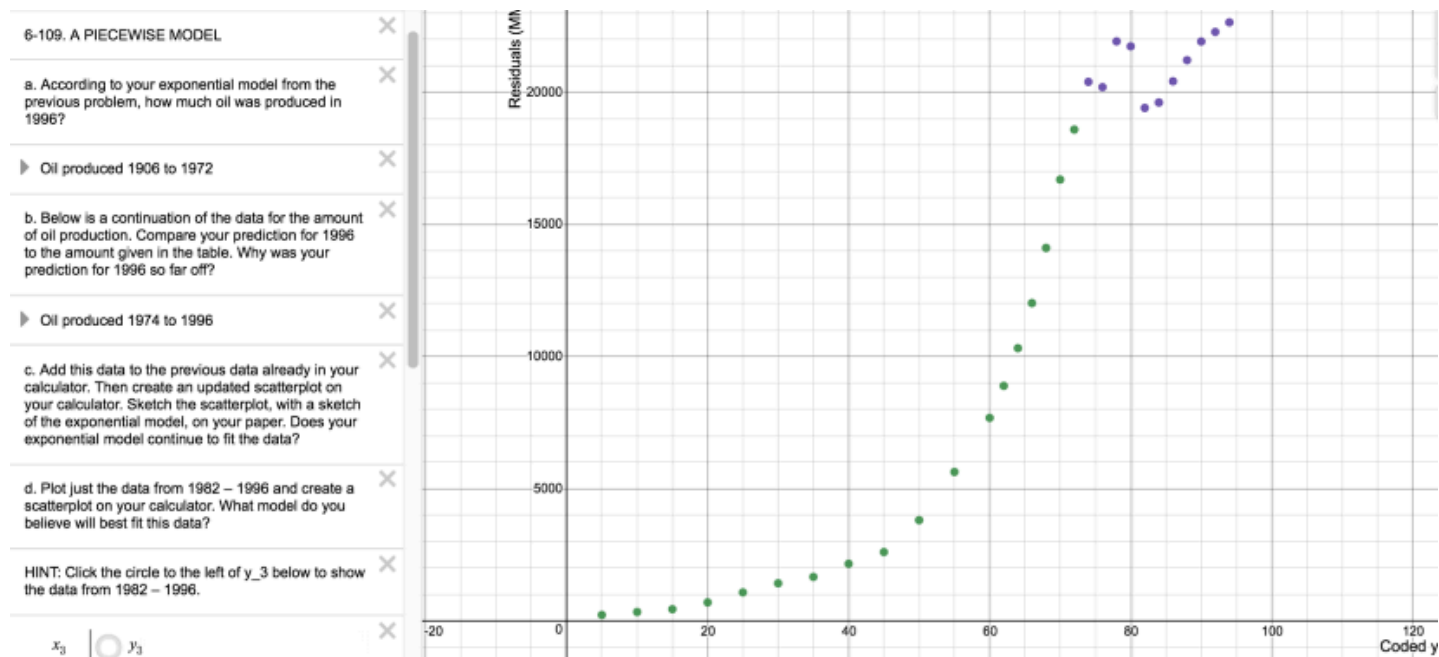


## CCA 6.2.5: 6-109 Student eTool (Desmos)

Click on the link below for the 6-109 Student eTool (Desmos).

[6-109 Student eTool \(Desmos\)](#)

### 1. 6-109 Student eTool (Desmos):

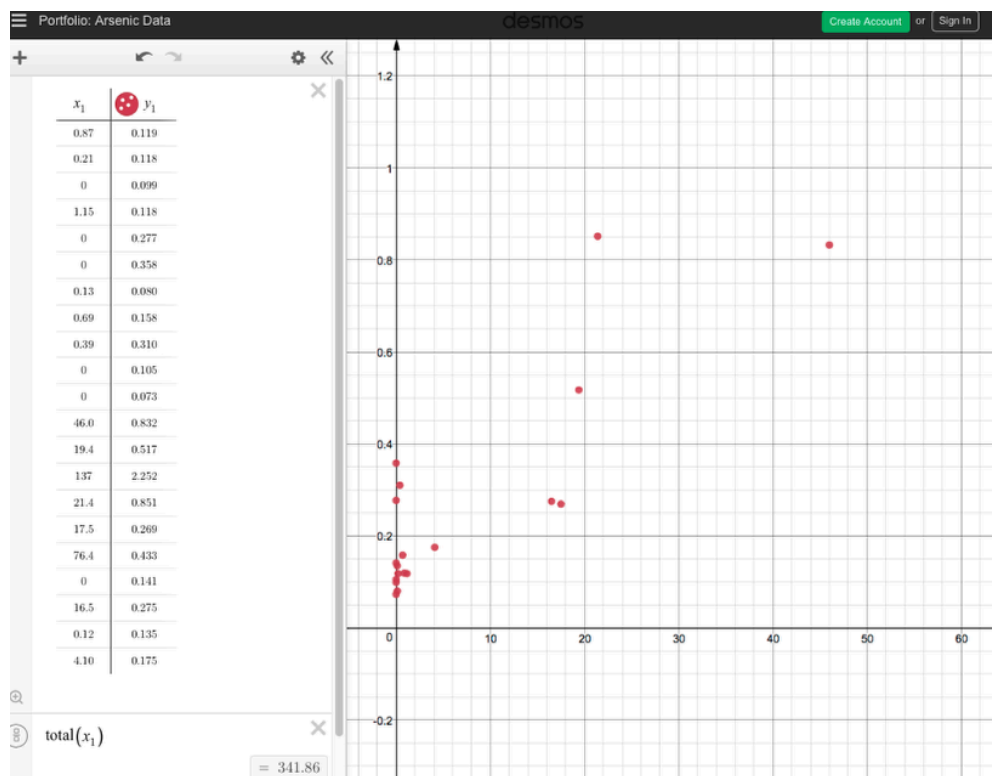


# CCA Chapter 6 Closure: Arsenic Portfolio eTool (Desmos)

Click on the link below to access eTool.

[Arsenic Portfolio eTool \(Desmos\)](#)

**Portfolio: Arsenic Data below:**



# Chapter 7

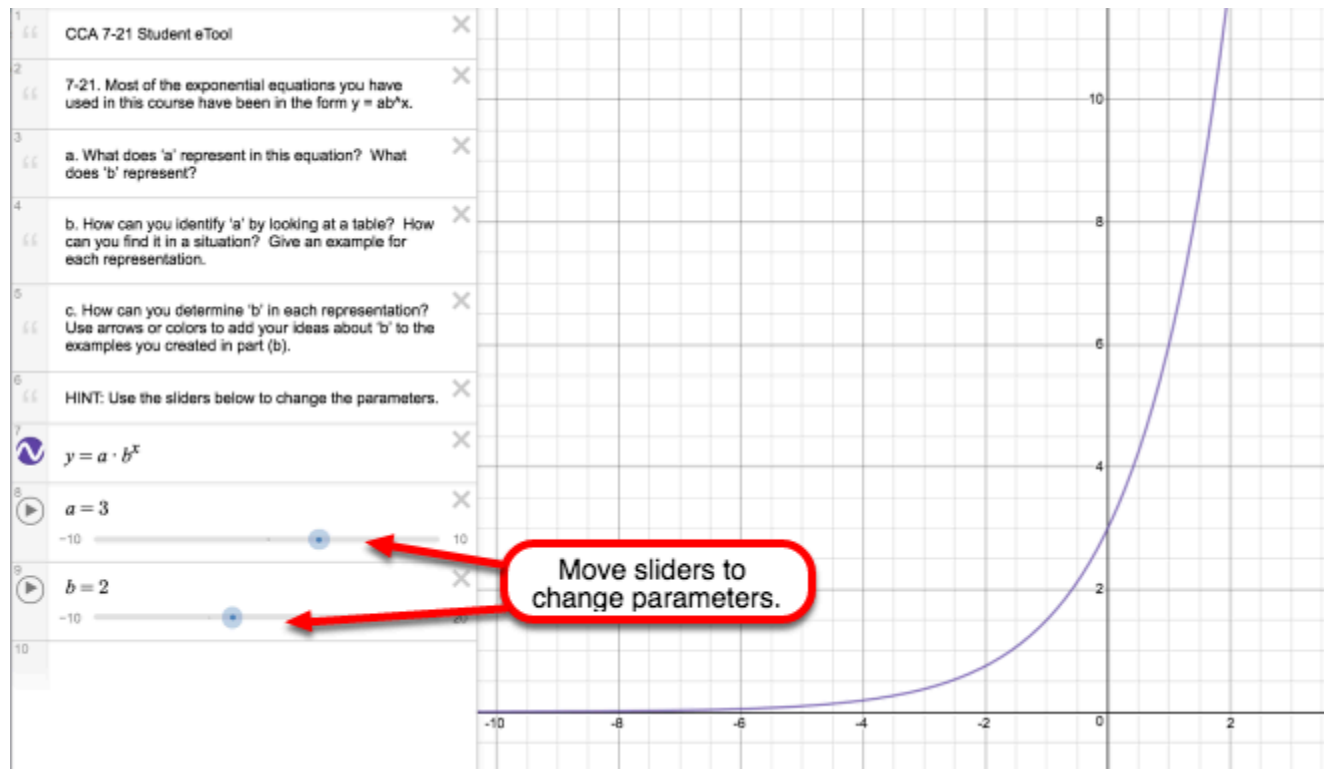


## CCA 7.1.2: 7-21 Student eTool (Desmos)

Click on the link below to access eTool.

[7-21 Student eTool \(Desmos\)](#)

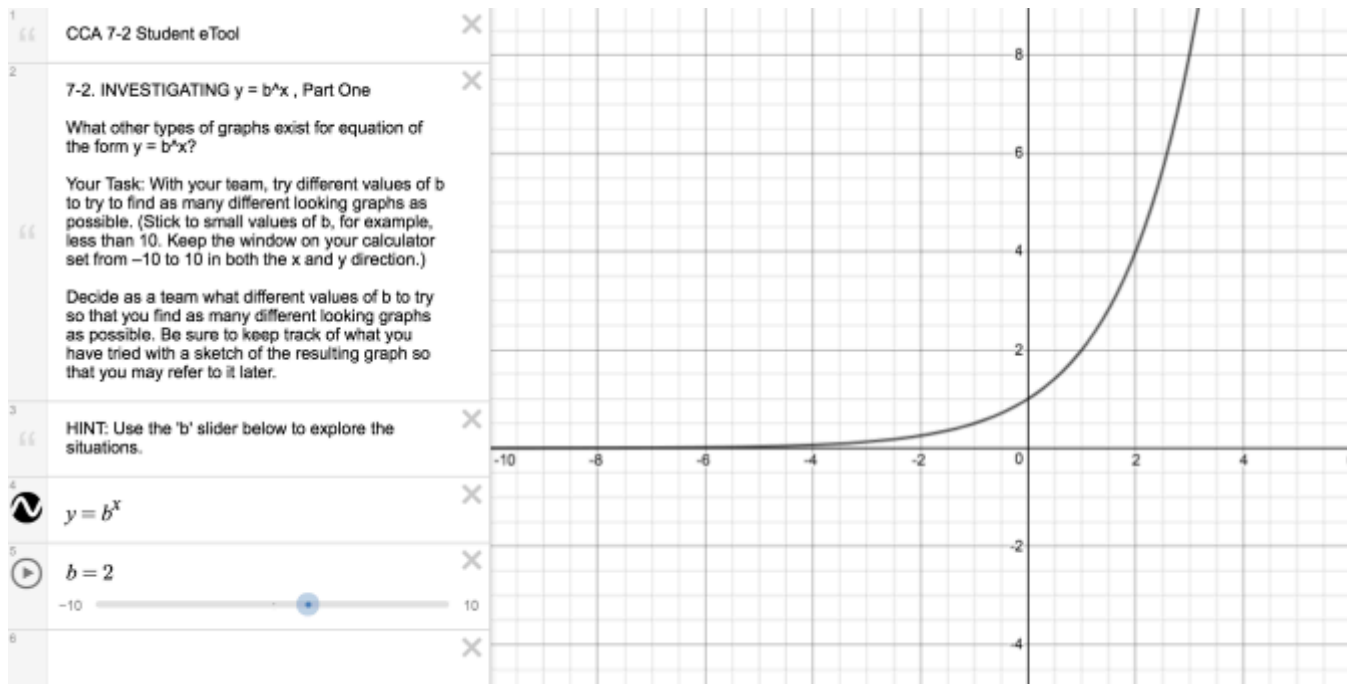
Use the sliders to investigate the exponential function.



## CCA 7.1.1: 7-2 Student eTool (Desmos)

Click on the link below for the "7-2 eTool (Desmos)."

[7-2 Student eTool \(Desmos\)](#)

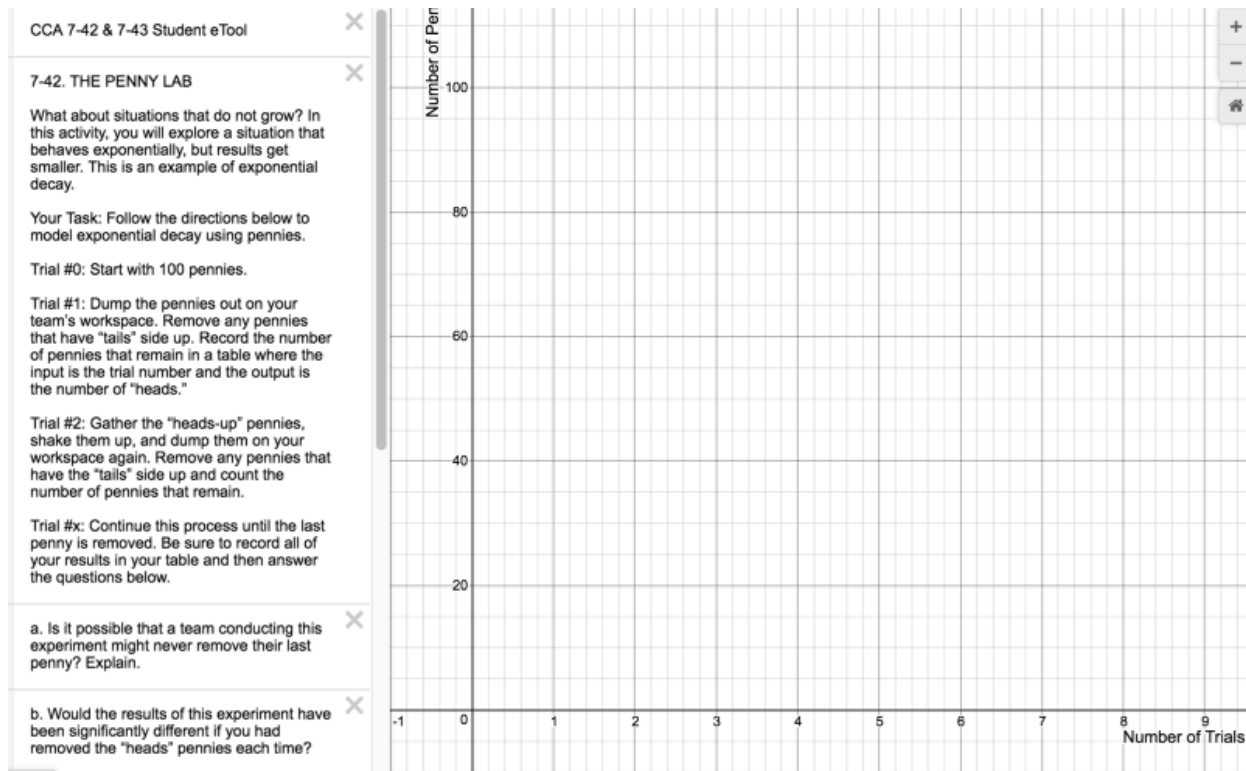


## CCA 7.1.4: 7-42 & 7-43 eTool (Desmos)

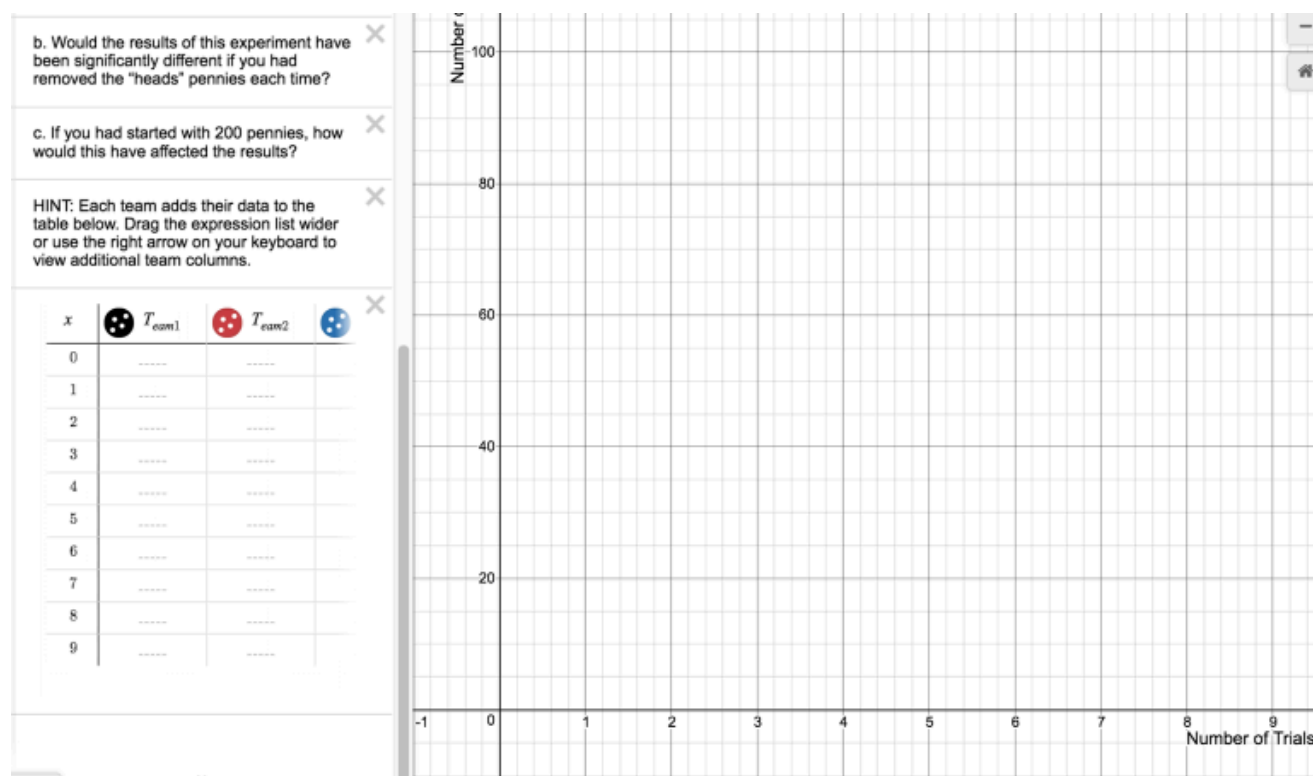
Click on the link below for the "7-42 & 7-43 eTool (Desmos)."

[7-42 & 7-43 eTool \(Desmos\)](#)

1.



2.



# Chapter 8

## CCA 8.1.2: Factoring Trinomials (Educreations)

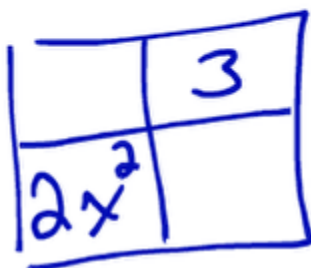
Click on the link below for the "Factoring Trinomials" video.

[Factoring Trinomials](#) 

### 1. Setup:

Factoring Quadratics - Part 1

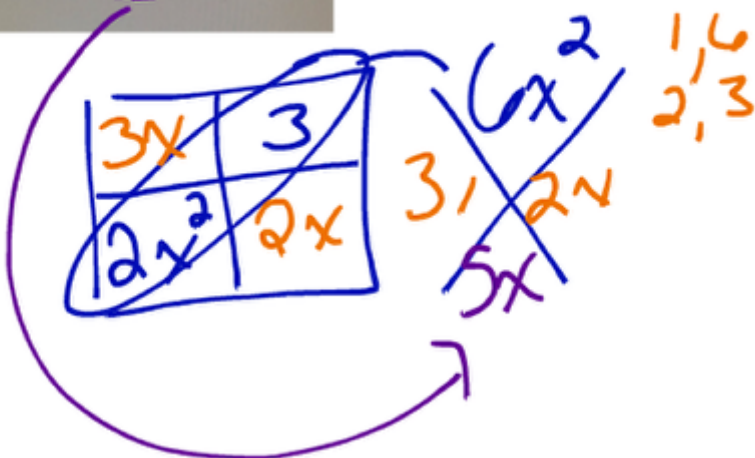
$$2x^2 + 5x + 3$$



### 2. Record information.

Factoring Quadratics - Part 1

$$2x^2 + 5x + 3$$



### 3. Use the information for factoring.

Factoring Quadratics - Part 1

$$2x^2 + 5x + 3$$

Handwritten diagram showing the factoring process for  $2x^2 + 5x + 3$  using the AC method. A 2x2 grid contains terms  $3x$ ,  $3$ ,  $2x^2$ , and  $2x$ . A purple arrow points from the  $2x^2$  term to the  $2x$  term, and another purple arrow points from the  $3$  term to the  $3x$  term. To the right, the terms  $6x^2$ ,  $3x$ ,  $2x$ , and  $5x$  are crossed out with blue lines. To the right of the grid, the factors  $(2x+3)$  and  $(x+1)$  are written in green. Above the grid, the factors  $1, 6$  and  $2, 3$  are written in orange.

## CCA 8.1.2: 8-14(a) Student eTool (CPM)

Click on the link below to access eTool.

[8-14\(a\) Student eTool \(CPM\)](#)

Use this eTool to develop a method of factoring for part (a) of problem 8-14.

8-14a Student eTool

a. Using algebra tiles, factor  $2x^2 + 5x + 3$ ; that is, use the tiles to build a rectangle, and then write its area as a product.

Algebra Tiles

Label:  $x$

$x$

$x^2$

Label:  $y$

$y$

$y^2$

$1$

$x \cdot y$

General Tools

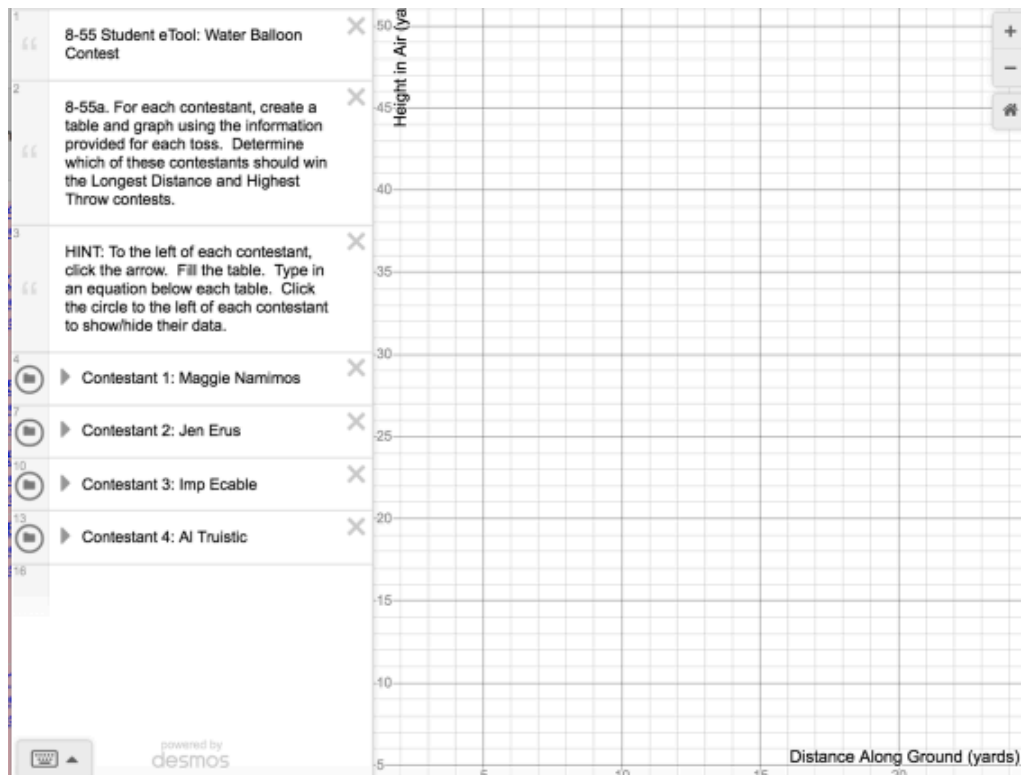


## CCA 8.2.1: 8-55 Student eTool (Desmos)

Click on the link below for the "8-55 Student eTool (Desmos)."

[8-55 Student eTool \(Desmos\)](#)

### 1. Compare the graphs of each of the contestants!



### 2. Open each folder and input equations and data.

1. Click the arrow to open the folder
2. Click "white circles" to view changing the circle to a colored icon. Click it again to hide contents.
3. Input data in the table. The points show on the graph.
4. Change the function to the correct one.

8-55a. For each contestant, create a table and graph using the information provided for each toss. Determine which of these contestants should win the Longest Distance and Highest Throw contests.

HINT: To the left of each contestant, click the arrow. Fill the table. Type in an equation below each table. Click the circle to the left of each contestant to show/hide their data.

Contestant 1: Maggie Namimos

Contestant 2: Jen Erus

Height in Air (ya)

$y = x$

1

2

3

4

5

6

7

8

9

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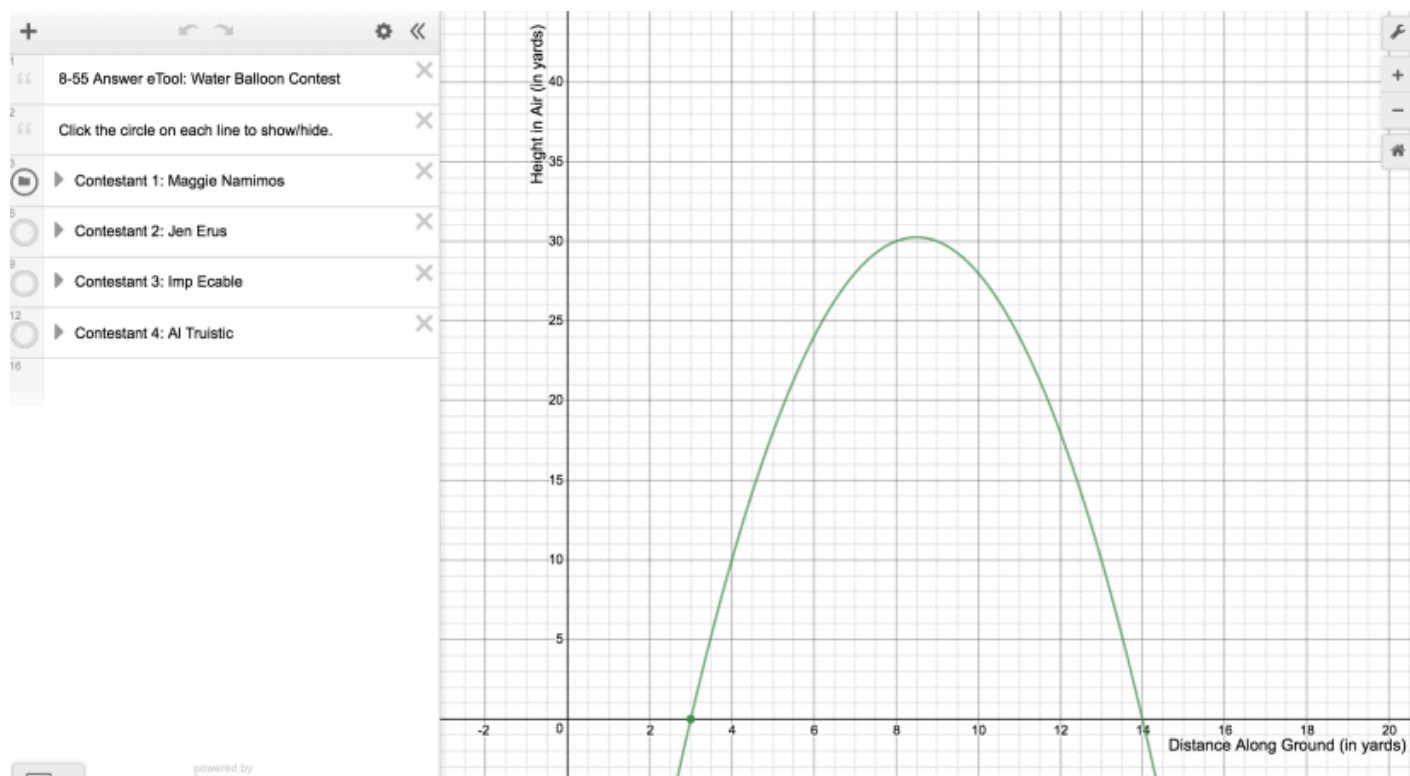
100

## CCA 8.2.1: 8-55 Answer eTool (Desmos)

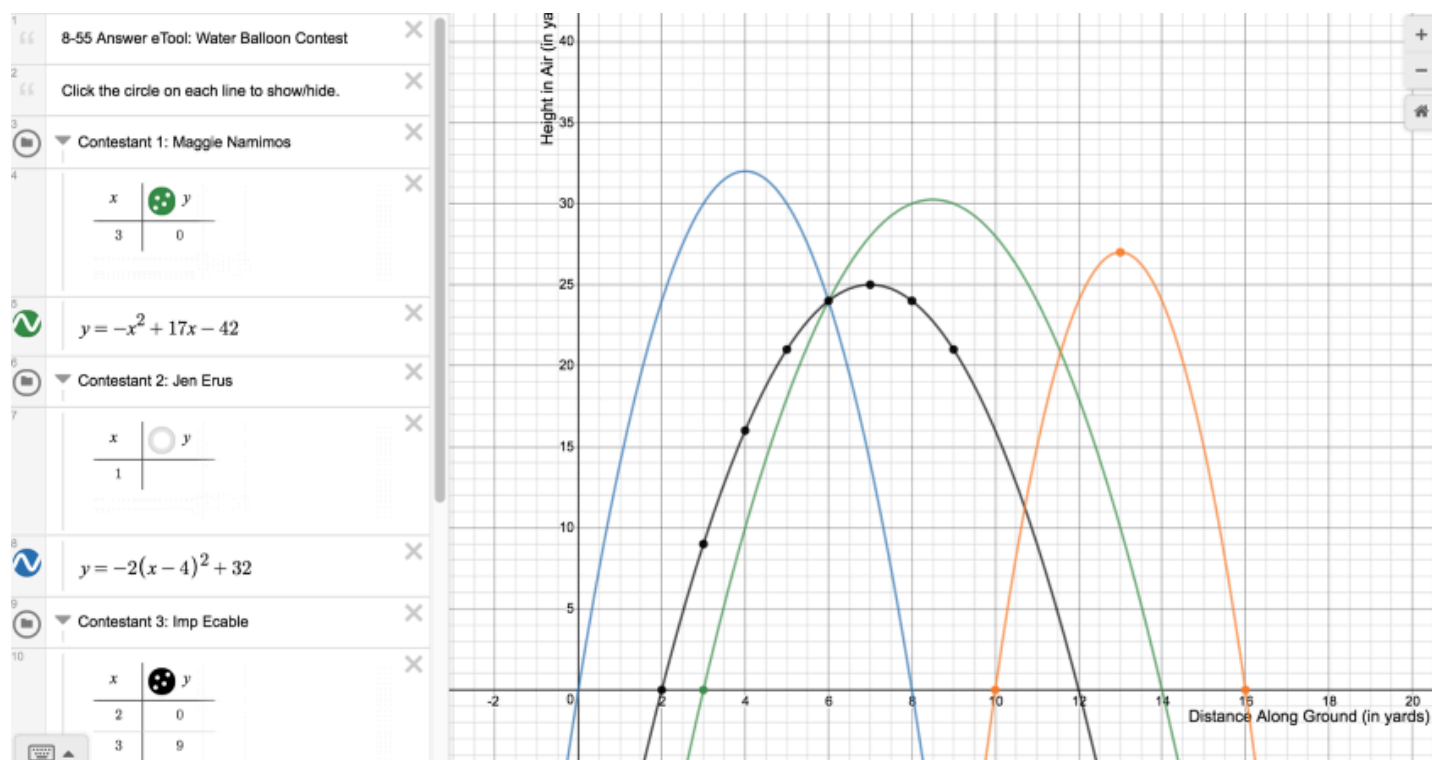
Click on the link below for the "8-55 Answer eTool (Desmos)."

[8-55 Answer eTool \(Desmos\)](#)

1. Click on the folder arrows. Then click on the white circles to view.



## 2. View graphs and tables for the four contestants.



## CCA 8.2.5: 8-100 Student eTool (CPM)

Click on the link below for the "8-100 Student eTool (CPM)."

[8-100 Student eTool \(CPM\)](#)

**Completing the square:**

CCA 8-100 Student eTool

COMPLETING THE SQUARE

Use the tiles at right plus any other additional tiles you may want to add to complete the square. Be sure you can explain what you are doing!

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

$1$   $x \cdot y$

► General Tools

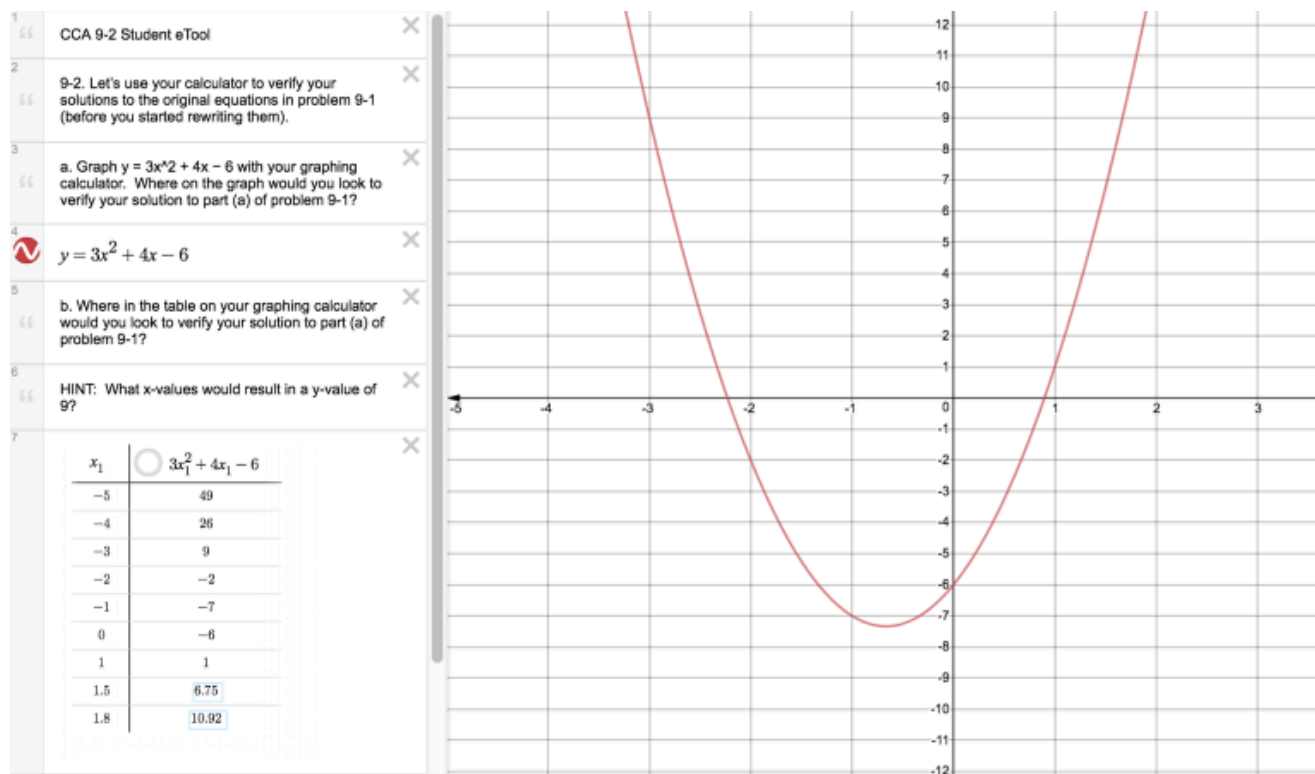
# Chapter 9

## CCA 9.1.1: 9-2 Student eTool (Desmos)

Click on the link below to access eTool.

[9-2 Student eTool \(Desmos\)](#)

Use the eTool to verify your solutions to the original equation in problem 9-1.



## CCA 9.3.2: 9-78 Student eTool (Desmos)

Click on the link below to access eTool.

[9-78 Student eTool \(Desmos\)](#)

Write your inequality in the eTool below to graph the constraints on receiving foreign aid. Then identify the countries that should receive foreign aid.



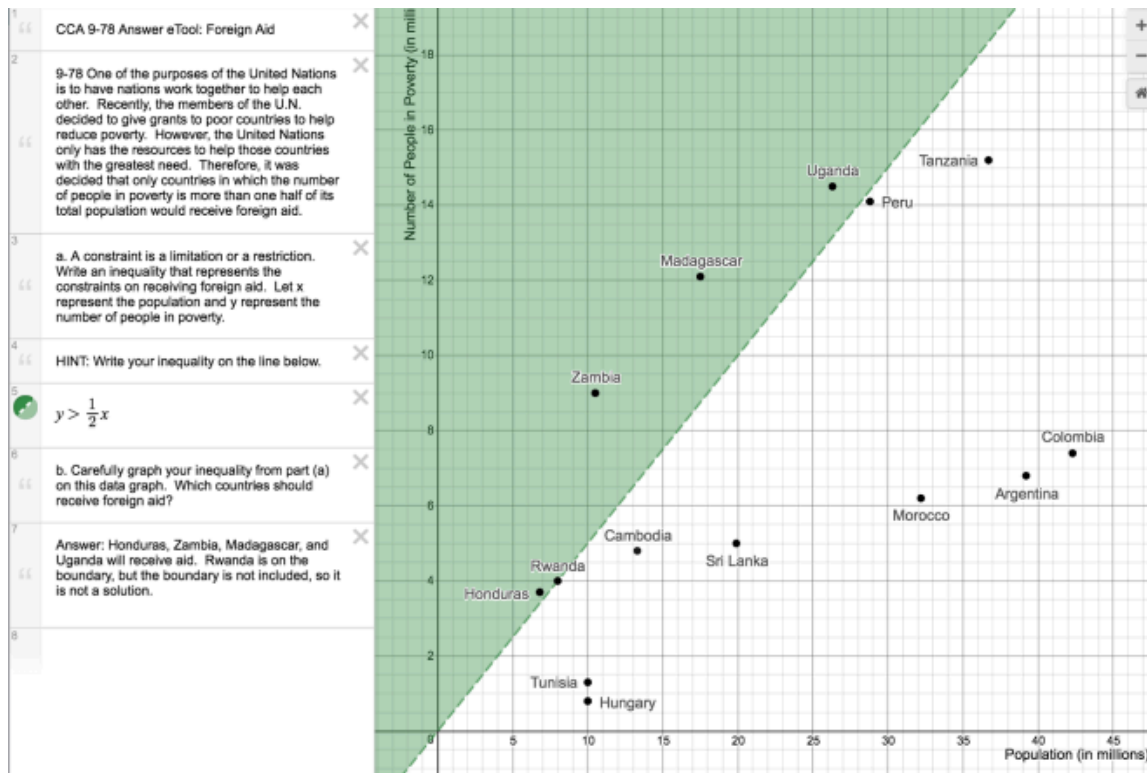


## CCA 9.3.2: 9-78 Answer eTool (Desmos)

Click on the link below to access eTool.

[9-78 Answer eTool \(Desmos\)](#)

### 1. 9-78 Answer eTool below:



## CCA 9.4.1: 9-89 Student eTool (Desmos)

Click on the link below to access the eTool.

[9-89 Student eTool \(Desmos\)](#)

**1. 9-89 Graphs: Click the circles to turn on and off the individual graphs.**

CCA 9-89 Student eTool

9-89. Find your graphs for problem 9-84.

HINT: Check the homework help for problem 9-84.

a. Compare your solution graphs for  $y \leq -x + 5$  and  $y > \frac{2}{3}x - 1$  with those of your teammates. Correct any errors. Be sure to focus on whether the boundary line should be included in each graph.

b. What would the graph of a system of inequalities look like? Consider the system of inequalities below. Which points are solutions to this system (that is, which points make both inequalities true)?

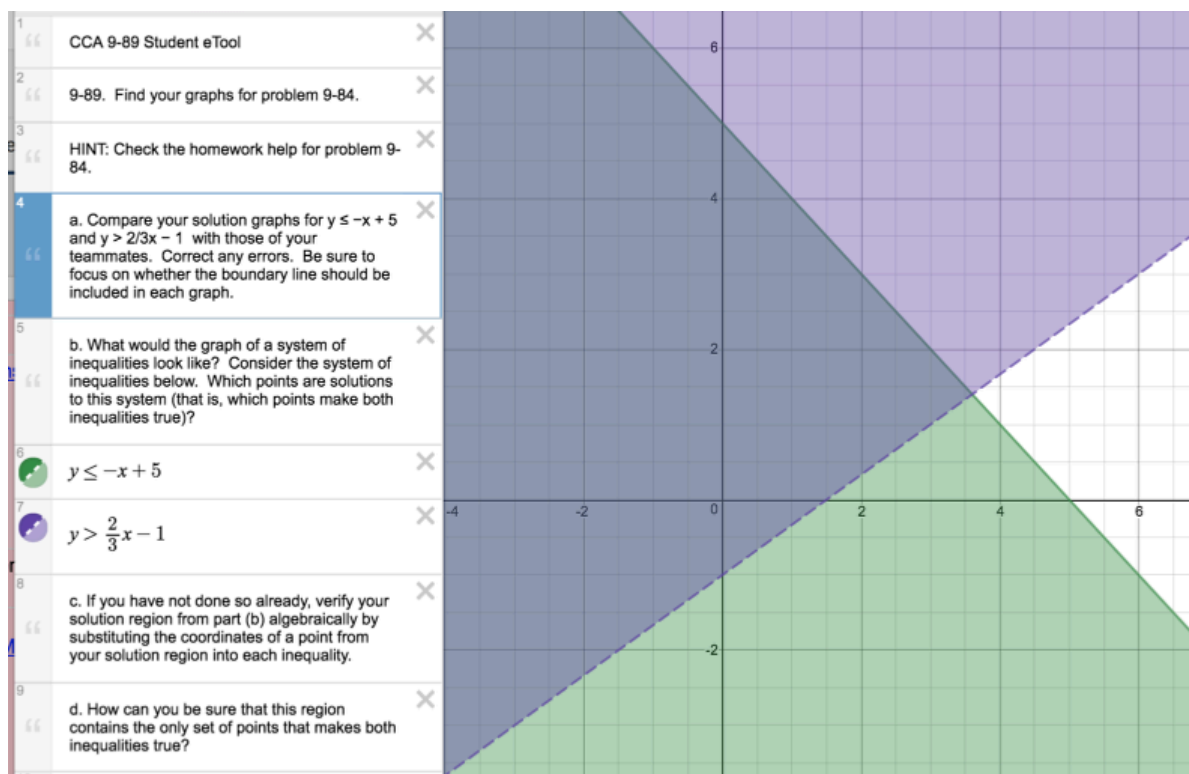
$y \leq -x + 5$

$y > \frac{2}{3}x - 1$

c. If you have not done so already, verify your solution region from part (b) algebraically by substituting the coordinates of a point from your solution region into each inequality.

d. How can you be sure that this region contains the only set of points that makes both inequalities true?

Click the circles to turn on/off the individual graphs.

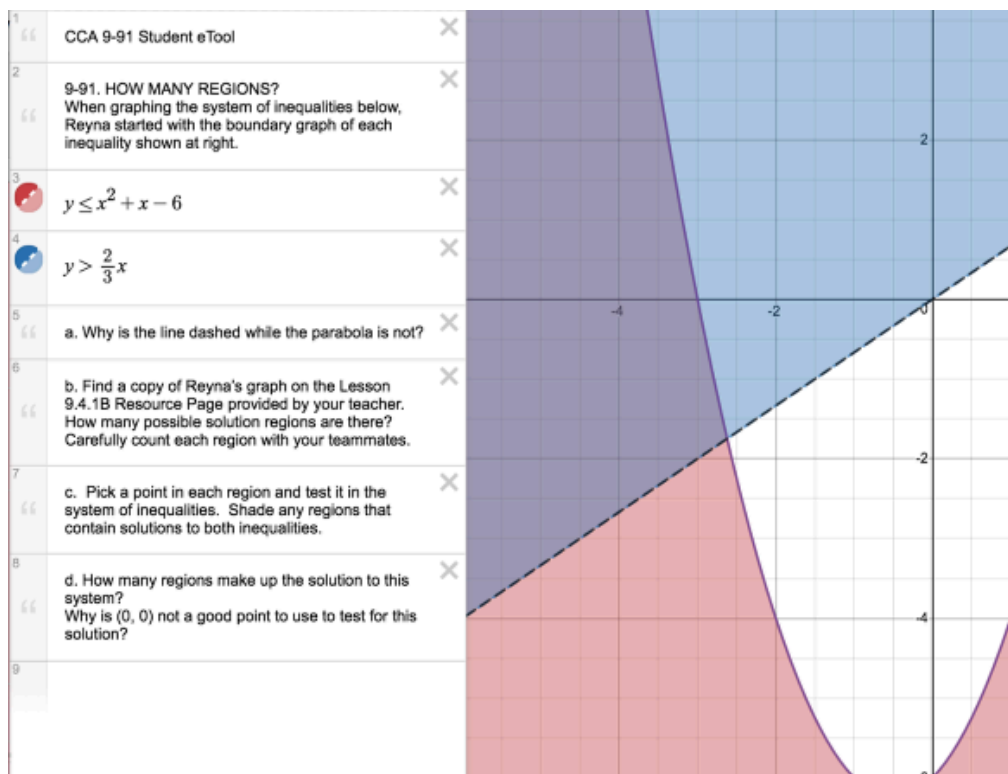
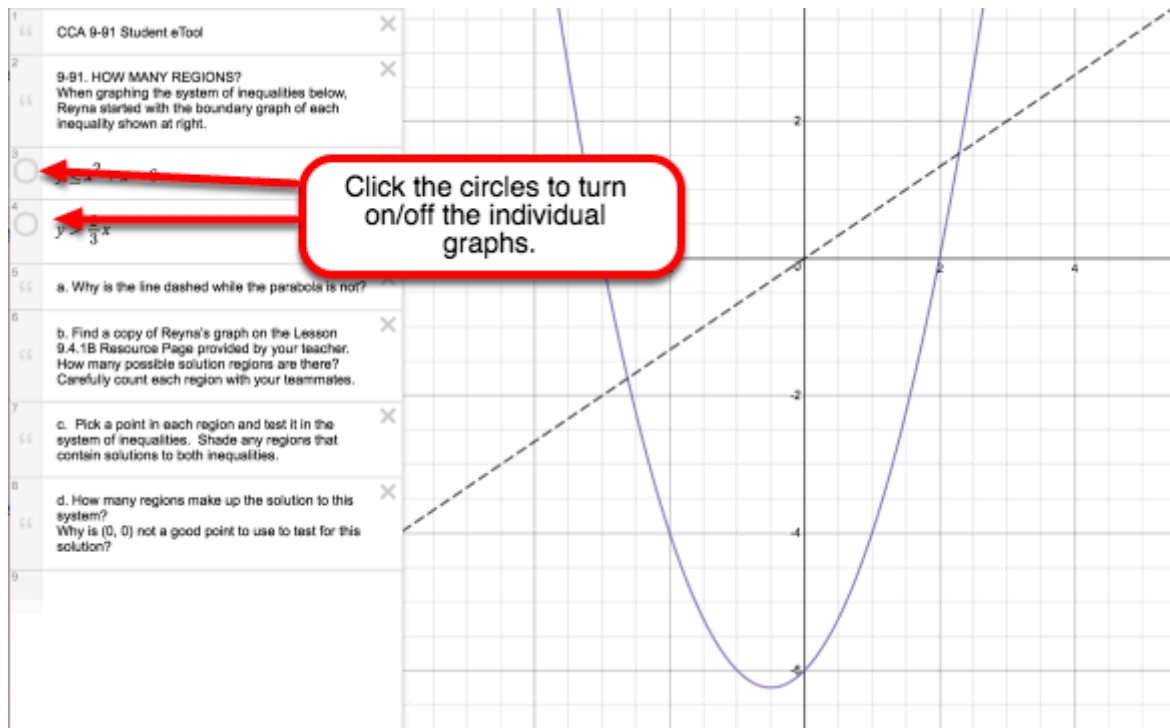


## CCA 9.4.1: 9-91 Student eTool (Desmos)

Click on the link below to access the eTool.

[9-91 Student eTool \(Desmos\)](#)

1. 9-91 Graphs: Click the circles to turn on and off the individual graphs.

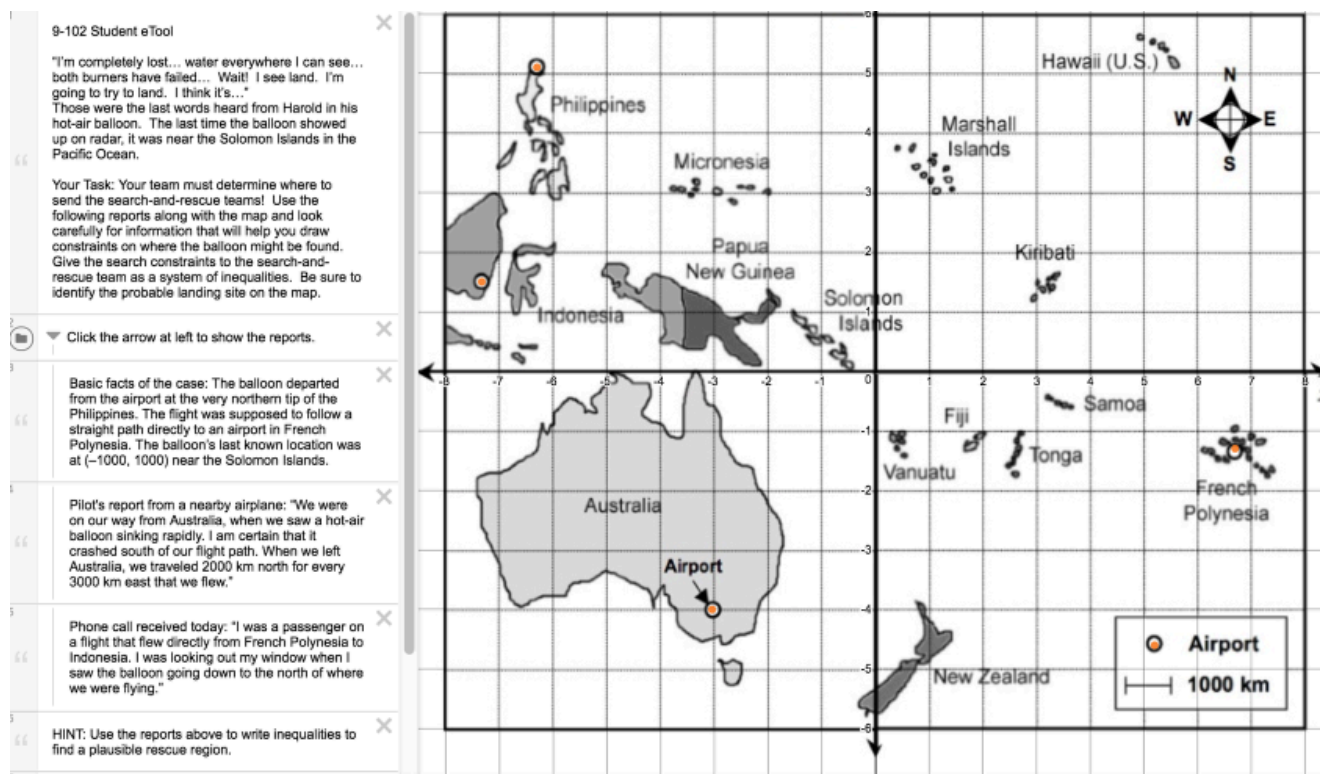


## CCA 9.4.2: 9-102 Student eTool (Desmos)

Click the "9-102 Student eTool (Desmos)" link below.

[9-102 Student eTool \(Desmos\)](#)

### 1. 9-102 Student eTool:

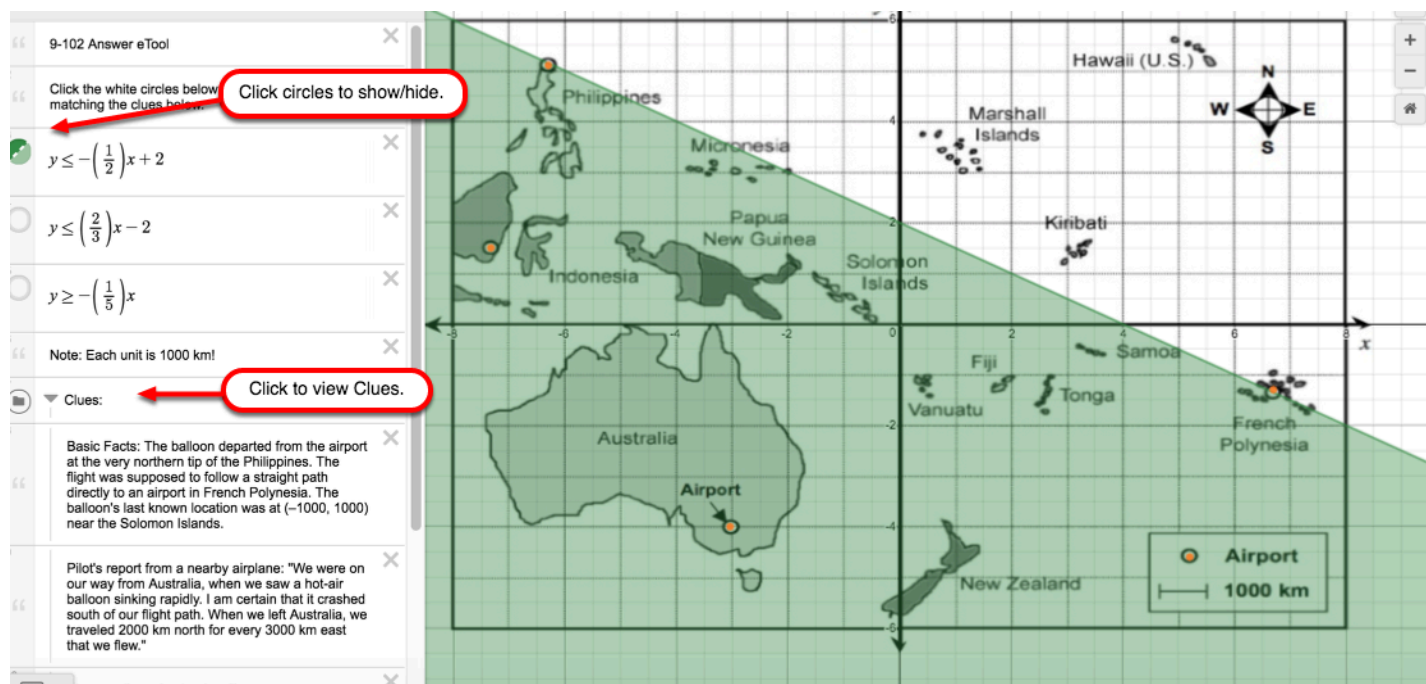


## CCA 9.4.2: 9-102 Answer eTool (Desmos)

Click the "9-102 Answer eTool (Desmos)" link below.

[9-102 Answer eTool \(Desmos\)](#)

**9-102 Answer eTool: Click/unclick the circles in front of the inequalities to show/hide them.**



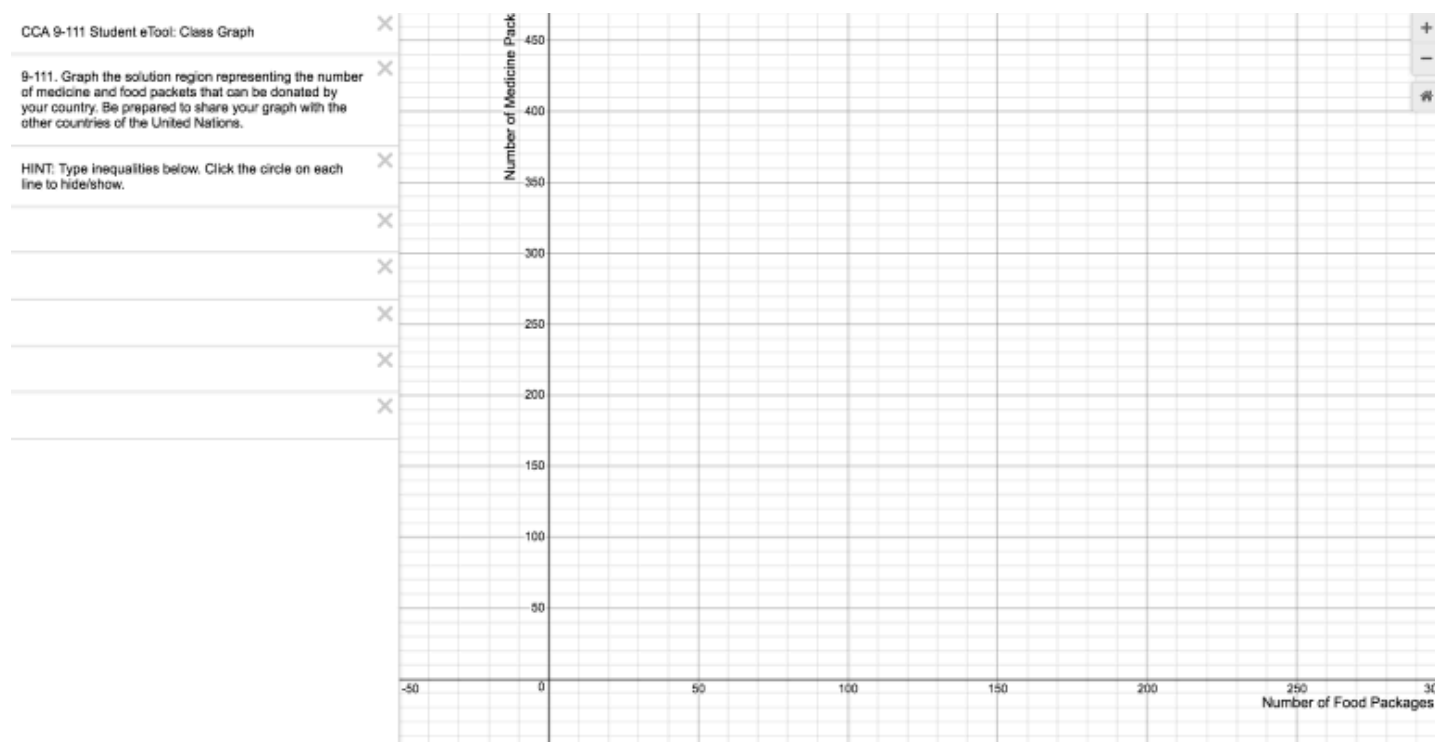


## CCA 9.4.3: 9-111 Student eTool (Desmos)

Click on the link below to access eTool.

[9-111 Student eTool \(Desmos\)](#)

**1. For each country's budget constraints, write and record an inequality below.**

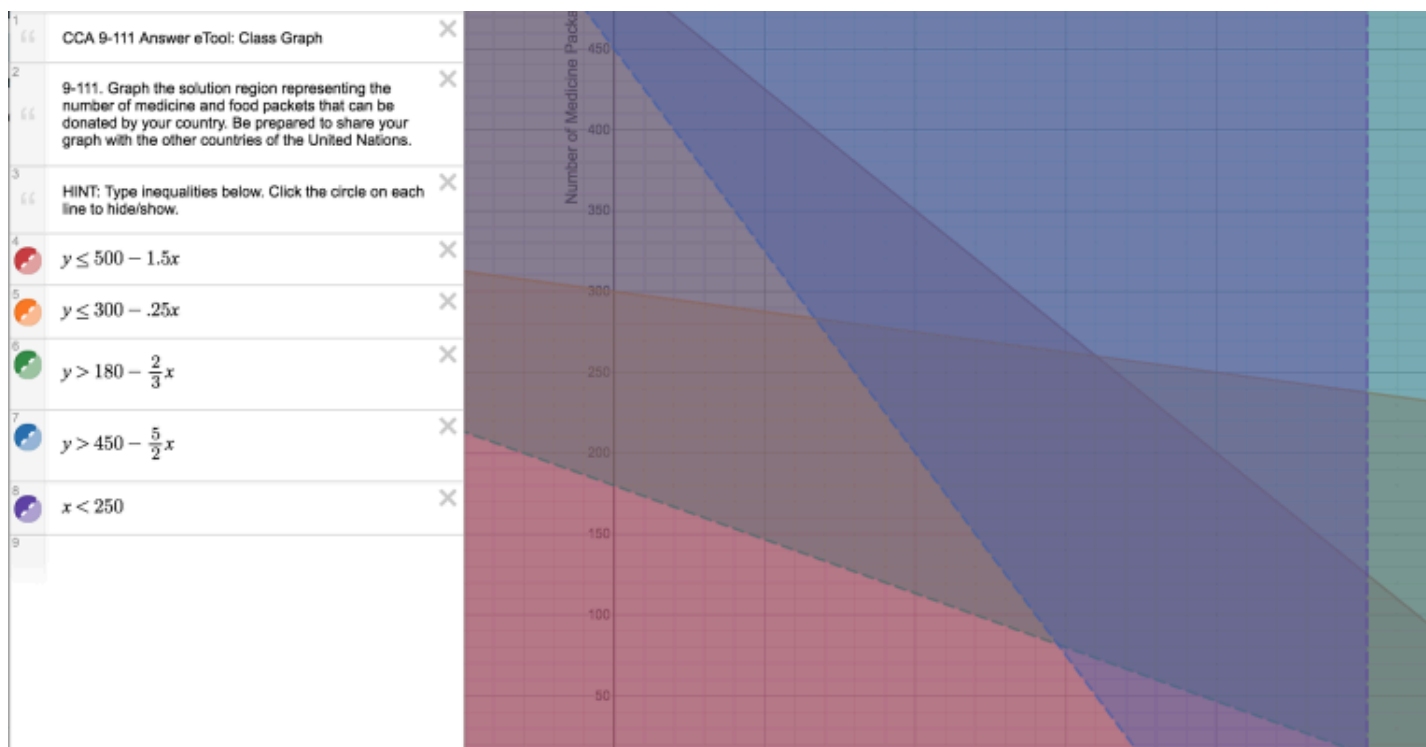


## CCA 9.4.3: 9-111 Answer eTool (Desmos)

Click on the link below to access eTool.

[Answers to 9-111\(Desmos\)](#)

**1. 9-111 Answer eTool: Click the circles at the left to show/hide the inequalities.**





## CCA 9.3.2: 9-78 Student eTool (Desmos)

Click on the link below to access eTool.

[9-78 Student eTool \(Desmos\)](#)

Write your inequality in the eTool below to graph the constraints on receiving foreign aid. Then identify the countries that should receive foreign aid.



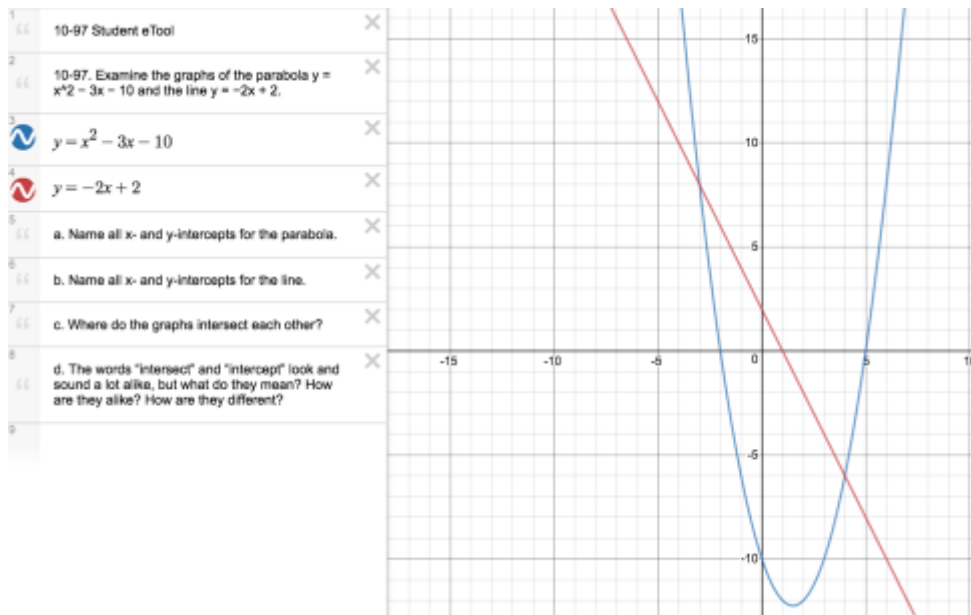
# Chapter 10

## CCA 10.3.1: 10-97 Student eTool (Desmos)

Click on the link below to access eTool.

[10-97 eTool \(Desmos\)](#)

1. Click on circle on the graphs to view critical points.



# Chapter 11

## CCA 11.3.1: Burning Candle Video

Click on the link below for the "Burning Candle Video"

[Burning Candle Video](#) 

1. Can you predict when the candle will burn out?



## CCA 11.3.4: 11-104 Student eTool (CPM)

Click on the link below to access eTool.

[11-104 Student eTool \(CPM\)](#)

**1. Help Lucy build a pen for her cows with as much area to roam as possible. Use the eTool to find largest pen. Provide dimensions (width and height) and its area.**

**CCA 11-104 Student eTool**

11-104. FENCING LESSONS

Lucy wants to be a farmer, just like her dad. Her father says he will give her some cows to raise if she can build them a good pen. Lucy saves her money and buys 30 meters of fencing material. She will use it to build a rectangular pen against one wall of her family's barn, as shown in the picture at right.

Lucy has come to you for help. She wants to build a pen for her cows that gives them the most possible area to roam. How long should each side of the fence be to give the cows as much roaming area as possible? How can you convince Lucy that the pen you suggest has the largest roaming area?

Your Task:

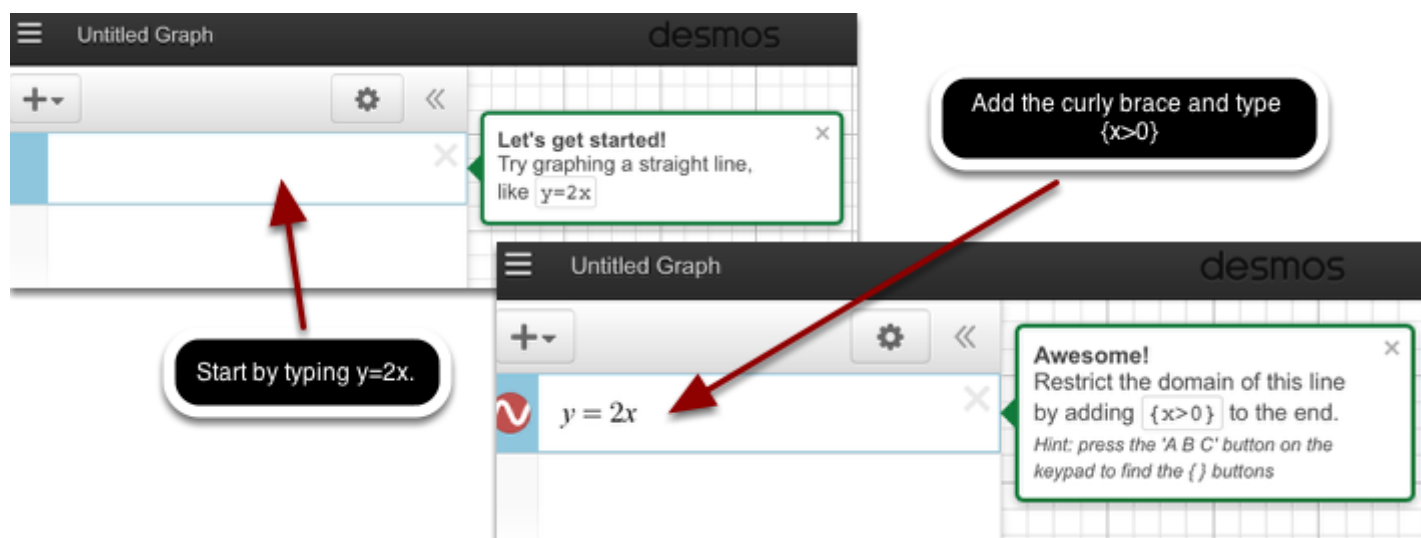
- Create a poster showing all four representations of this situation.
- On your poster, include a drawing of the pen with the largest possible area. State its dimensions (width

## CCA 11.3.5: Create Desmos Inequalities (Desmos)

Click on the link below for the "Create Desmos Inequalities (Desmos)."

[Create Desmos Inequalities \(Desmos\)](#)

Learn how to write inequalities with Desmos Graphing Calculator.

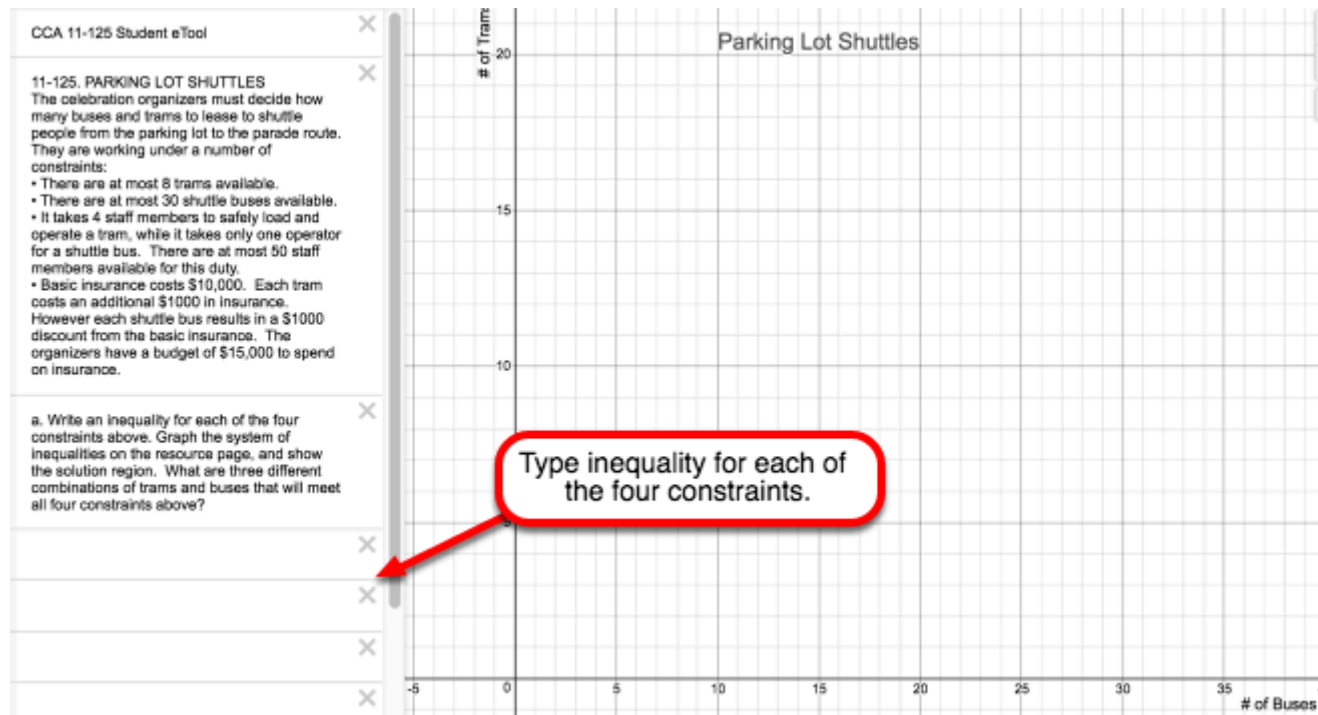


## CCA 11.3.5: 11-125 Student eTool (Desmos)

Click on the link below to access the eTool.

[11-125 Student eTool \(Desmos\)](#)

### 1. Type in inequalities for each constraint.



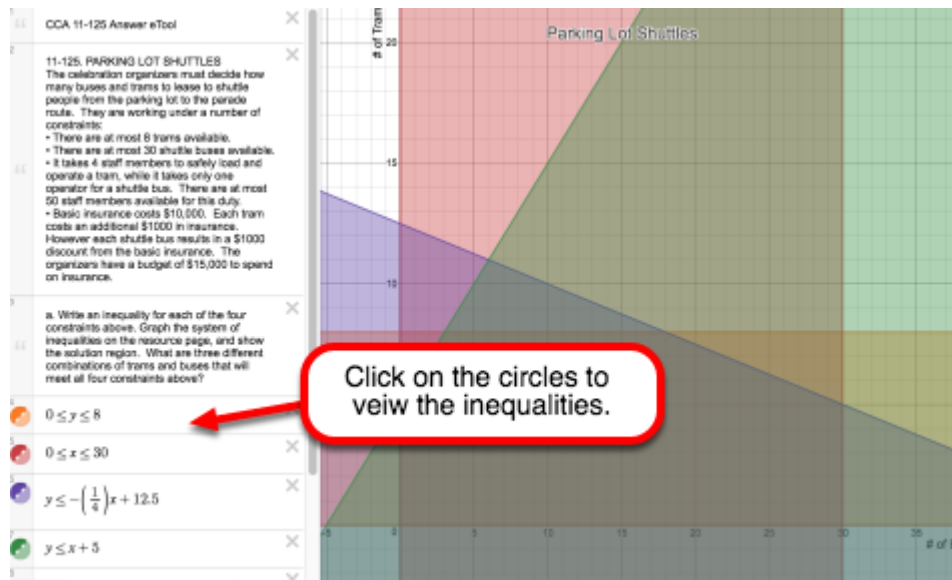


## CCA 11.3.5: 11-125 Answer eTool (Desmos)

Click on the link below to access eTool.

[11-125 Answer eTool \(Desmos\)](#)

1. Click on the circles one by one to view the inequalities.



# Appendix A

## CCA A.1.3: A-27a, A-27b, A-27c & A-27d Student eTools

Click on the link below to access eTools.

[A-27a Student eTool \(CPM\)](#)

[A-27b Student eTool \(CPM\)](#)

[A-27c Student eTool \(CPM\)](#)

[A-27d Student eTool \(CPM\)](#)

In problem A-26, you represented algebraic expressions with algebra tiles. In this problem, you will need to reverse your thinking to write an expression from a diagram of algebra tiles. Working with a partner, write algebraic expressions for each representation below.

### A-27a Student eTool

The screenshot shows the "CPM Tiles" eTool interface. The main workspace contains a diagram of algebra tiles representing the expression  $x^2 - x - 1$ . The tiles are arranged in a rectangular area with a dashed horizontal line below them. The tiles include a large blue square labeled  $x^2$ , a horizontal blue rectangle labeled  $x$ , and three small red squares labeled  $-1$ . A plus sign is in the top left corner, and a minus sign is in the bottom left corner.

The sidebar on the left contains the following text:

CCA A-27a Student eTool

A-27. In problem A-26, you represented algebraic expressions with algebra tiles. In this problem, you will need to reverse your thinking to write an expression from a diagram of algebra tiles.

Working with a partner, write algebraic expressions for A-27a.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## A-27b Student eTool

CPM Tiles

CCA A-27b Student eTool

A-27. In problem A-26, you represented algebraic expressions with algebra tiles. In this problem, you will need to reverse your thinking to write an expression from a diagram of algebra tiles.

Working with a partner, write algebraic expressions for A-27b.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## A-27c Student eTool

CPM Tiles

CCA A-27c Student eTool

A-27. In problem A-26, you represented algebraic expressions with algebra tiles. In this problem, you will need to reverse your thinking to write an expression from a diagram of algebra tiles.

Working with a partner, write algebraic expressions for A-27c.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## A-28d Student eTool

CPM Tiles

CCA A-27d Student eTool

A-27. In problem A-26, you represented algebraic expressions with algebra tiles. In this problem, you will need to reverse your thinking to write an expression from a diagram of algebra tiles.

Working with a partner, write algebraic expressions for A-27d.

Algebra Tiles

Label:  $x$

$x$

$x^2$

Label:  $y$

$y$

$y^2$

## CCA A.1.8: A-79a tiles (CPM)

Click on the link below for the "A-79a tiles (CPM)."

[A-79a tiles \(CPM\)](#)

### 1. A-79 tiles

