ALGEBRA 2 CONNECTIONS

CPM Educational Program

Table of Contents

General Tools

![CPM logo] CPM Educational Program

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.
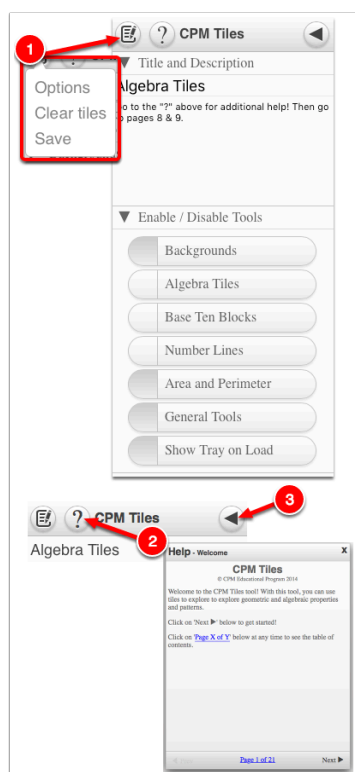
1. Select the Pen & Paper Icon to:

    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.
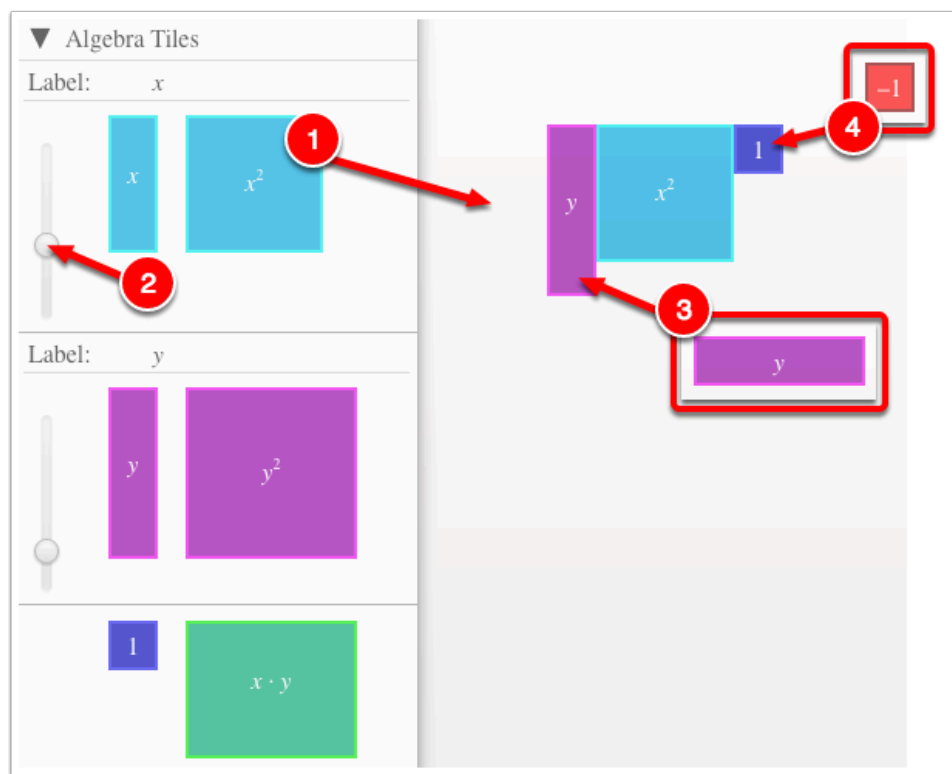
2. Select the '?' icon for directions.

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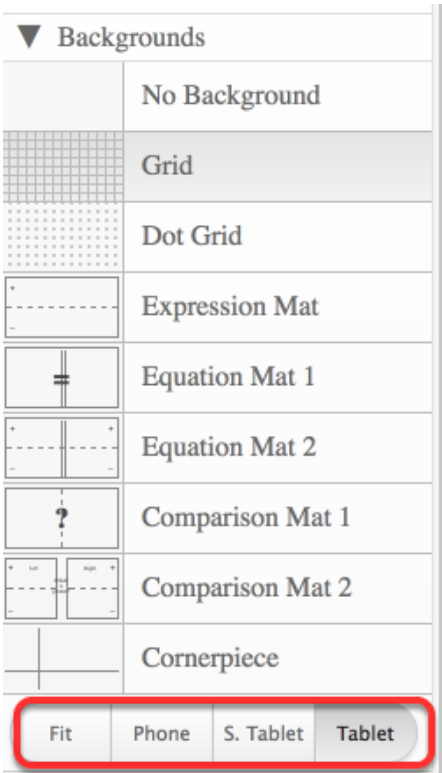

2. Drag tiles from the tray at the left to the display area at the right.

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 (+ –).
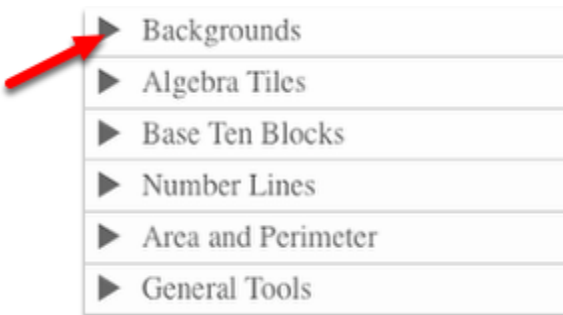   Note: The color of the tile will turn to red for negative sign.

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

▼	Backgrounds
	No Background
	Grid
	Dot Grid
	Expression Mat
	Equation Mat 1
	Equation Mat 2
	Comparison Mat 1
	Comparison Mat 2
	Cornerpiece

Fit	Phone	S. Tablet	Tablet

4. Choose from a variety of different tiles:

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

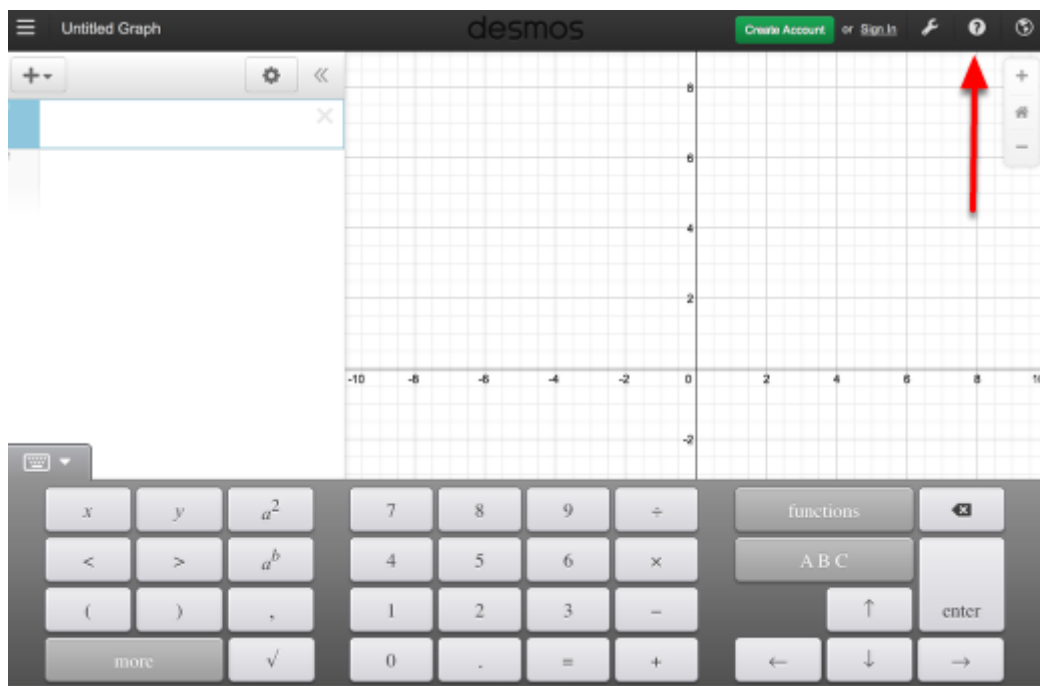| ▶	Backgrounds
▶	Algebra Tiles
▶	Base Ten Blocks
▶	Number Lines
▶	Area and Perimeter
▶	General Tools

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](#)
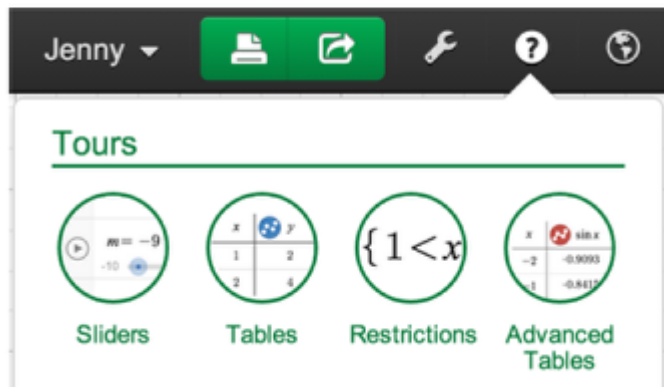[Advanced Tables](#)
[Restrictions](#)

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:

Jenny ▾

Tours

Sliders   Tables   Restrictions   Advanced Tables

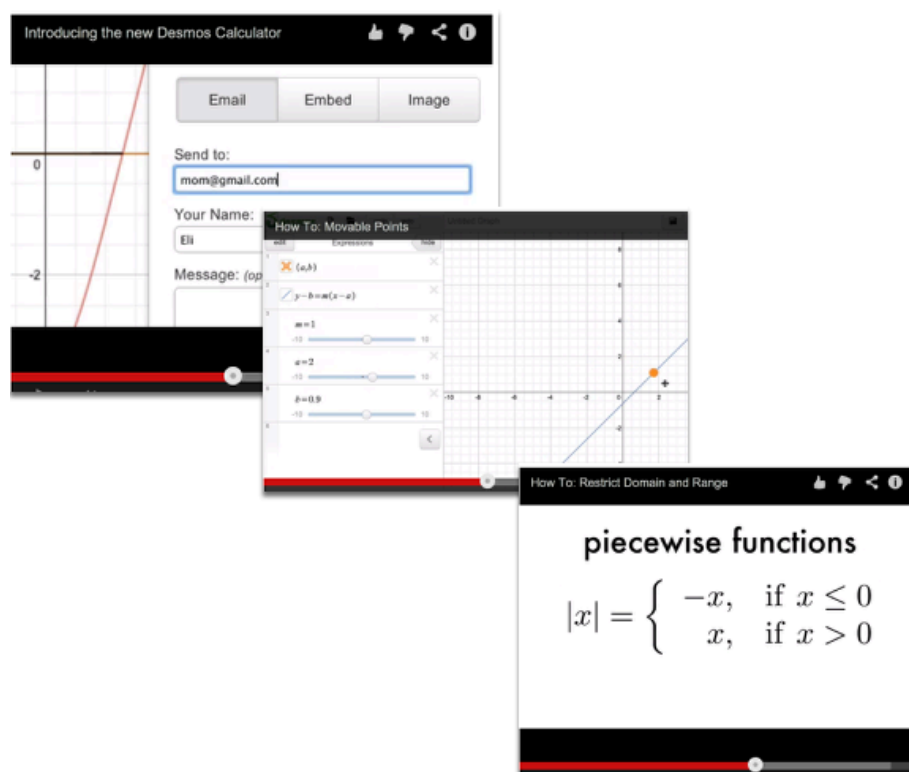## 4. Need additional help? Watch these very short excellent videos!

[Desmos Introduction](#)
[Moveable Points](#)
[Graph Inequalities](#)
[Piece-Wise Function](#)

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

$$|x| = \begin{cases} -x, & \text{if } x \leq 0 \\ x, & \text{if } x > 0 \end{cases}$$

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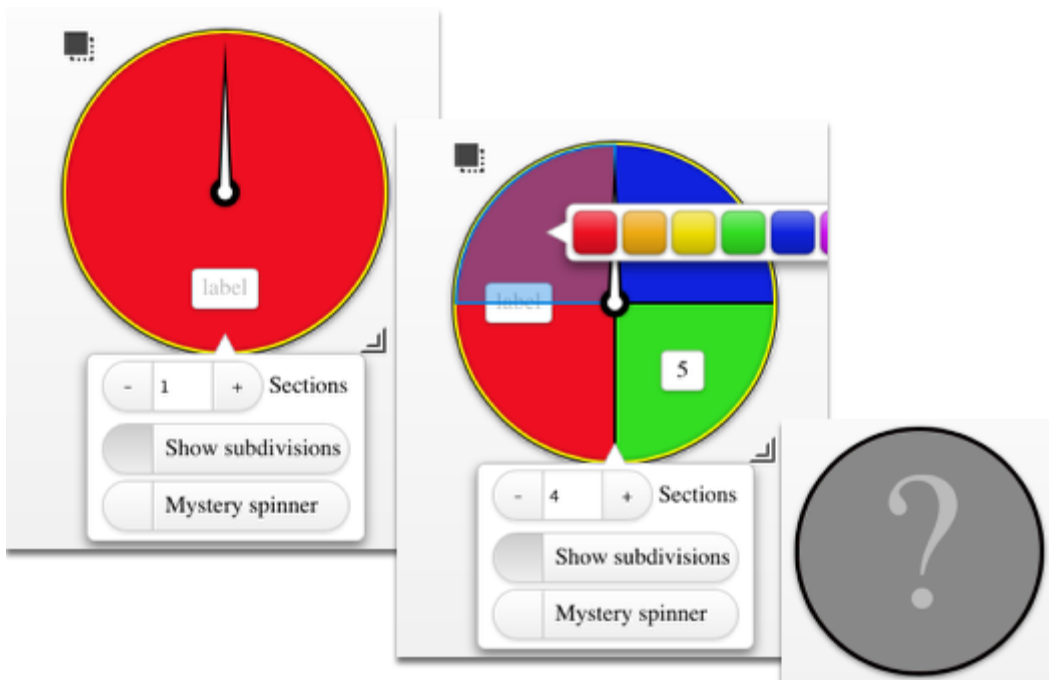
Desmos Knowledge Base

CPM Educational Program

Probability Tools (CPM)
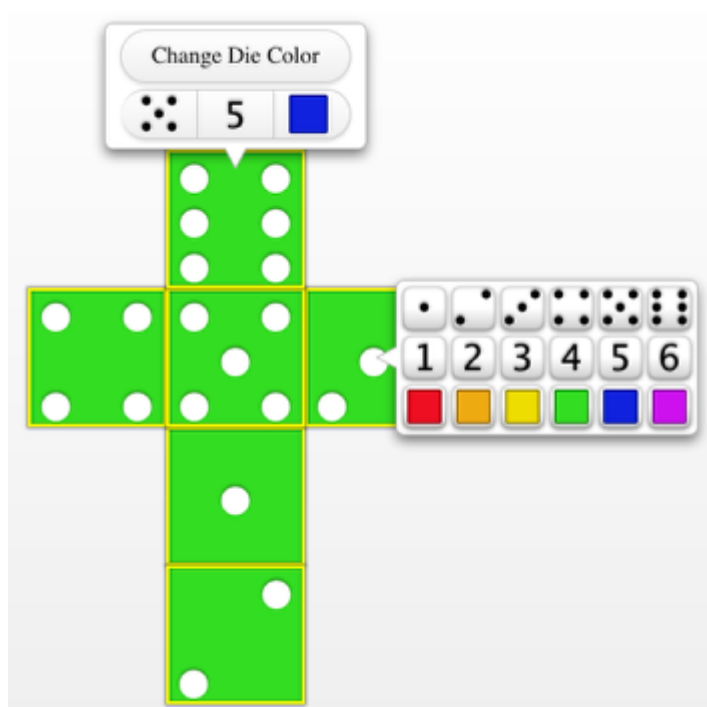
Click on the link below.

Probability Tools (CPM)

1. Spinners:

- Drag one or more spinners to the board.
- Resize the spinners.
- Choose color, number of sections, and labels.
- Hide subdivisions.
- Create Mystery Spinners.
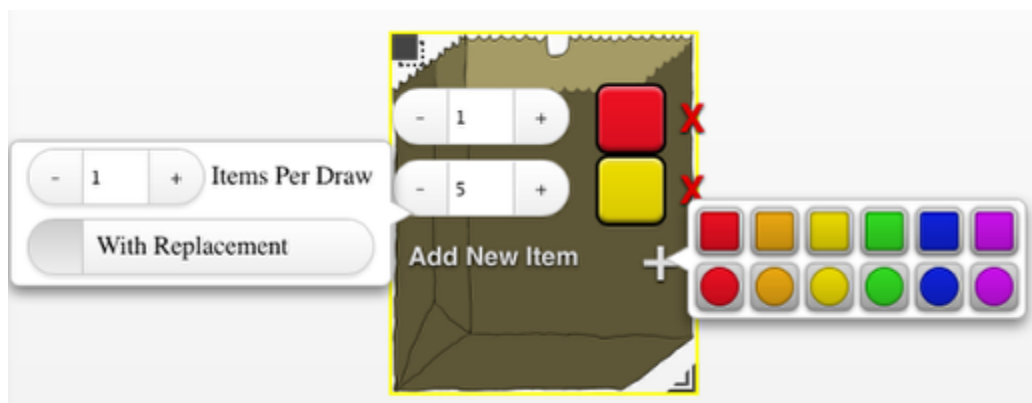- Click the spinners to spin.

2. Dice:

- Drag one or more dice to the board.
- Choose dice color.
- Redesign the die with a variety of color, dot numbers, or Arabic numbers.
- Click each die to spin.

3. Bag:

- Drag one or more bags to the board.
- Choose the number, shape, and color of bag contents.
- Choose with or without replacement.
- Choose the number of items to draw.
- When finished, click the bad to shake and draw.

4. Coins:

- Coins are labelled "H" for Heads and "T" for Tails.
- Choose the color.
- Drag one or more coins to the board.
- Click each of them to spin.

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5. Standard Deck of Cards:

- Drag one or more decks to the board.
- Choose with or without replacement and the number of cards draw at once.
- Modify the deck by eliminating specific cards or entire suits or number.
- Click the deck to draw the cards.

6. Random Number Generator:

- Drag the random number generator to the board.
- Indicate the number of integers to generate.
- Indicate the range for each random number.
- Click to randomize.

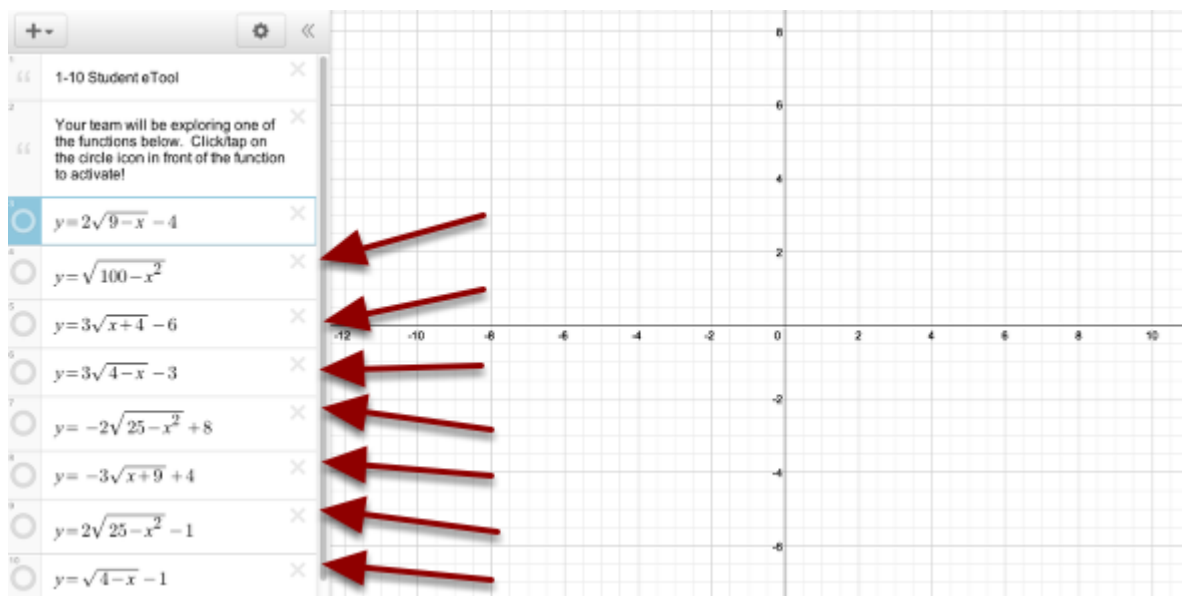| Generate | − | 3 | + | Integers |
| From | − | 1 | + | |
| To | − | 15 | + | |

1	1	1

Chapter 1

A2C 1.1.2: 1-10 Student eTools (Desmos)

Click on the link below.

1-10 Student eTool (Desmos)

1. Each team receives one of the functions below. Customize your graph by:

- Deleting all of the other graphs by clicking on the "x" to the right of the function.
- Adding a text and your own explanations.
- Adding images with labels on the graph
- Saving your project to your own Desmos account where you can retrieve it later.

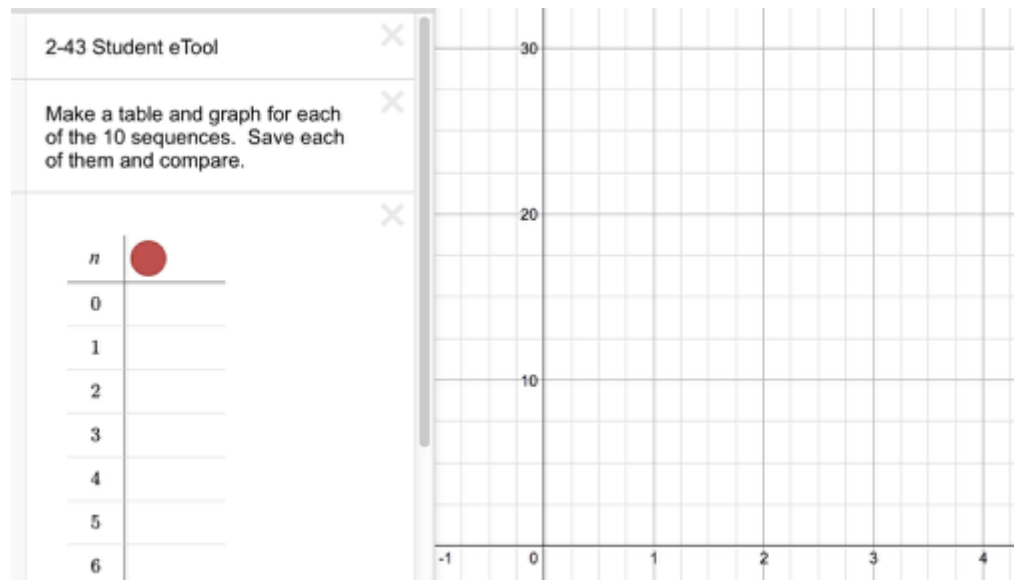## 2. Go to the "+" and select the text or image to customize your project.

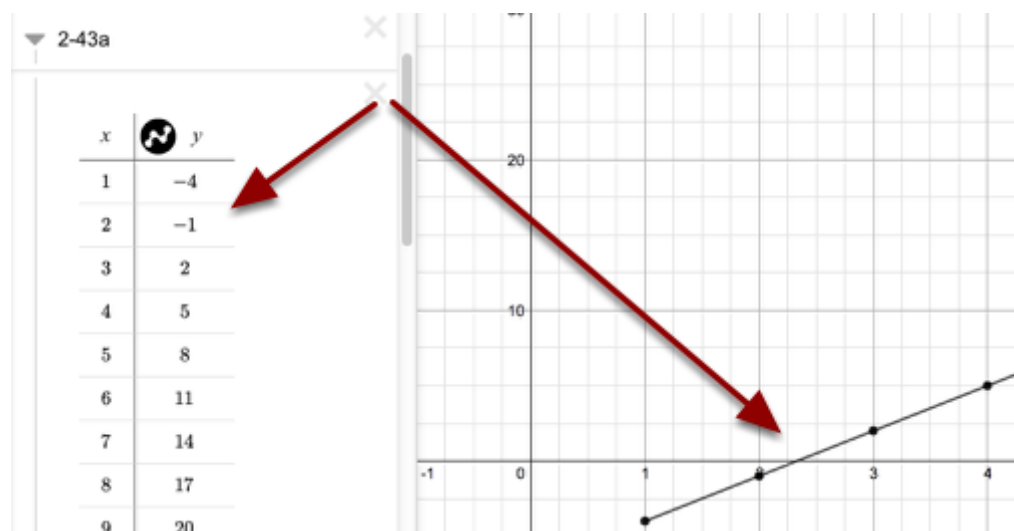# Chapter 2

A2C 2.1.4: 2-43 Student eTool (Desmos)

Click on the link below.

2-43 Student eTool (Desmos)

1. A2C 2-43 Student eTool:

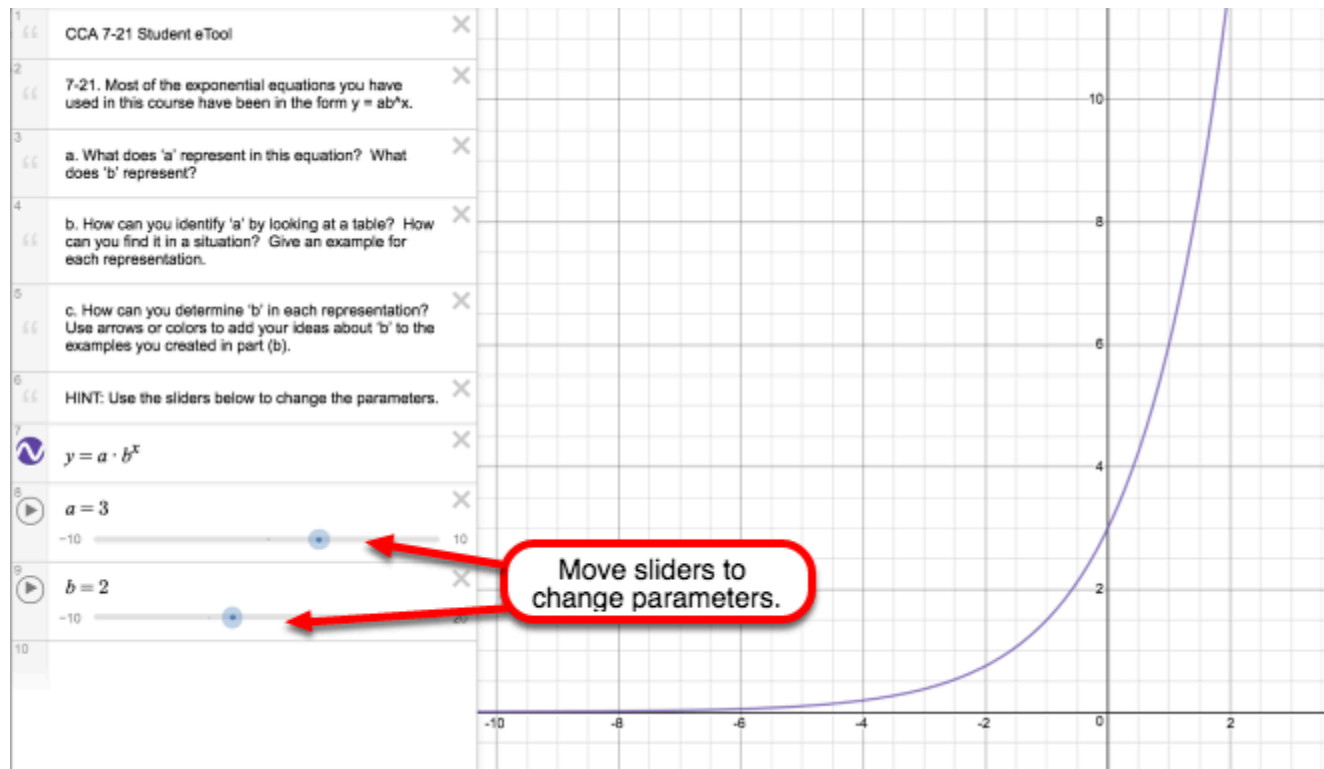## 2. For each of the 10 parts, complete the table. The graph will be on the right.

Chapter 3

CCA 7.1.2: 7-21 Student eTool (Desmos)

Click on the link below to access eTool.

[7-21 Student eTool (Desmos)](link)

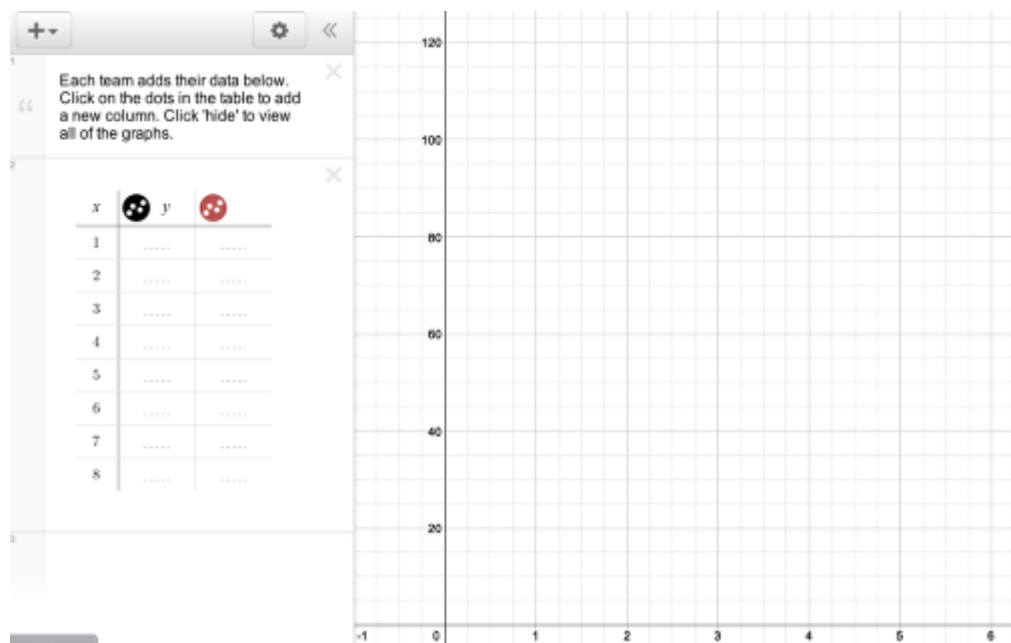## Use the sliders to investigate the exponential function.

A2C 3.1.4: 3-48 & 3-49 eTool (Desmos)
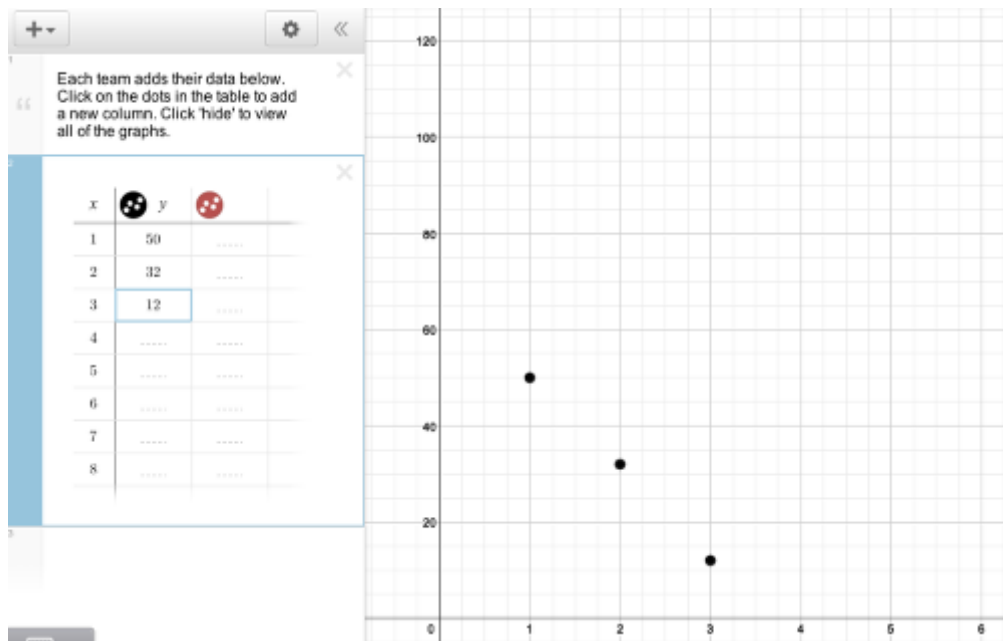
Click on the link below.

[3-48 & 3-49 eTool (Desmos)](#)

1. 3-48 &3-49 Student eTool:

2. 3-48 & 3-49 Student eTool:

- Add points to the table.
- The points will appear in the graph
- Rescale the graph if necessary.

Each team adds their data below. Click on the dots in the table to add a new column. Click 'hide' to view all of the graphs.

x	y	
1	50	.....
2	32	.....
3	12	.....
4	.....	.....
5	.....	.....
6	.....	.....
7	.....	.....
8	.....	.....

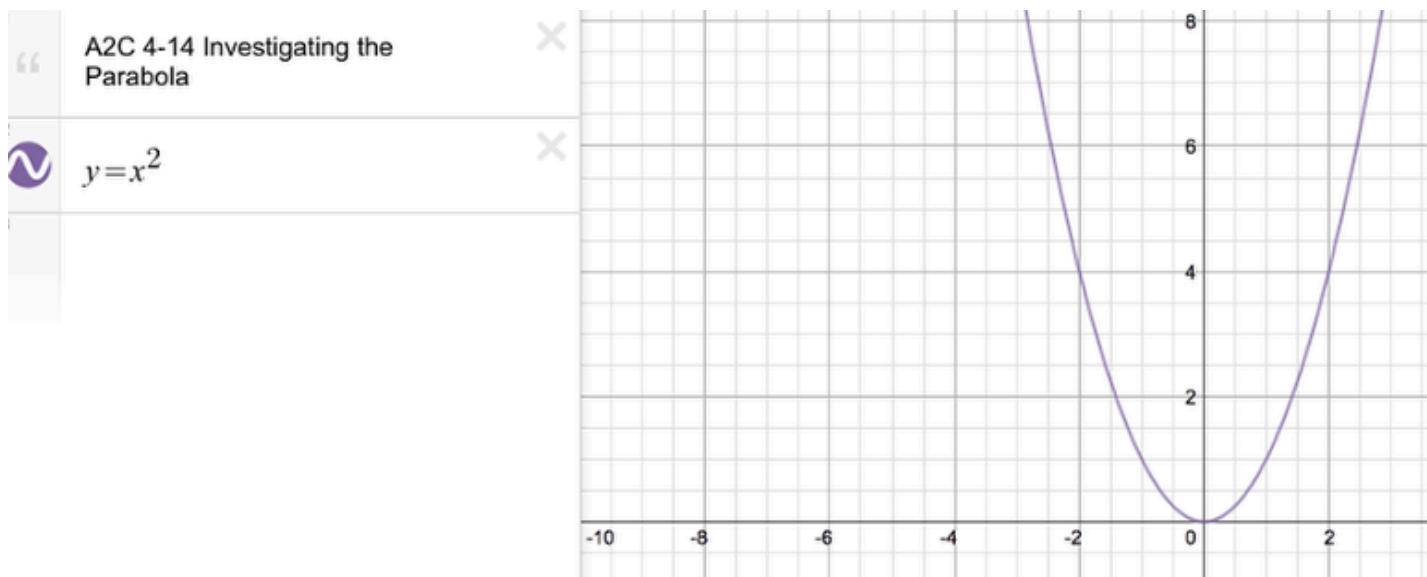# Chapter 4

A2C 4.1.2: 4-14 Student eTool (Desmos)

Click on the link below.

4-14 Student eTool (Desmos)

4-14 Student eTool:

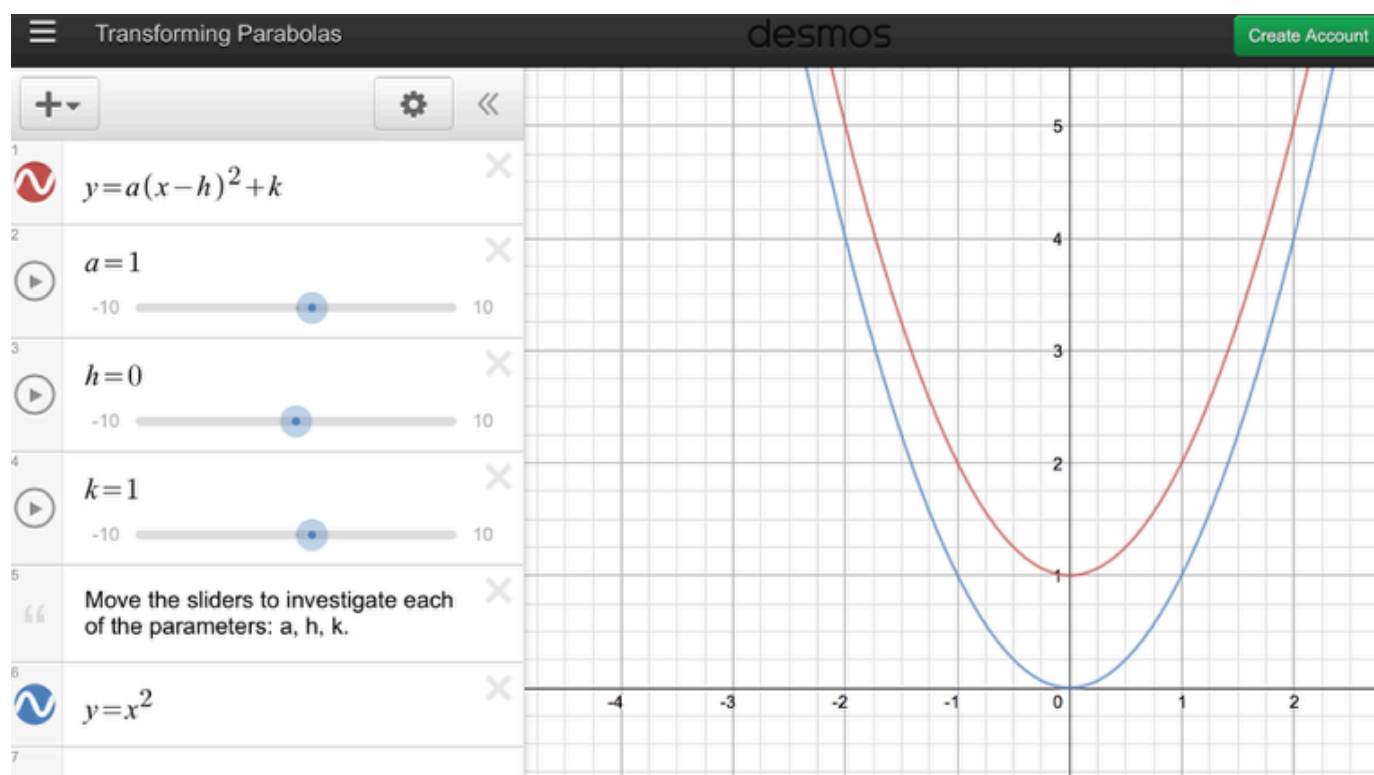A2C 4-14 Investigating the Parabola

$y = x^2$

A2C 4.1.3: Transforming Parabolas (Desmos)

Click on the link below:

[Transforming Parabolas](#) (Desmos)

Transforming Parabolas:

- Move the "a" slider to change the steepness of the graph.
- Move the "h" slider to shift the graph horizontally.
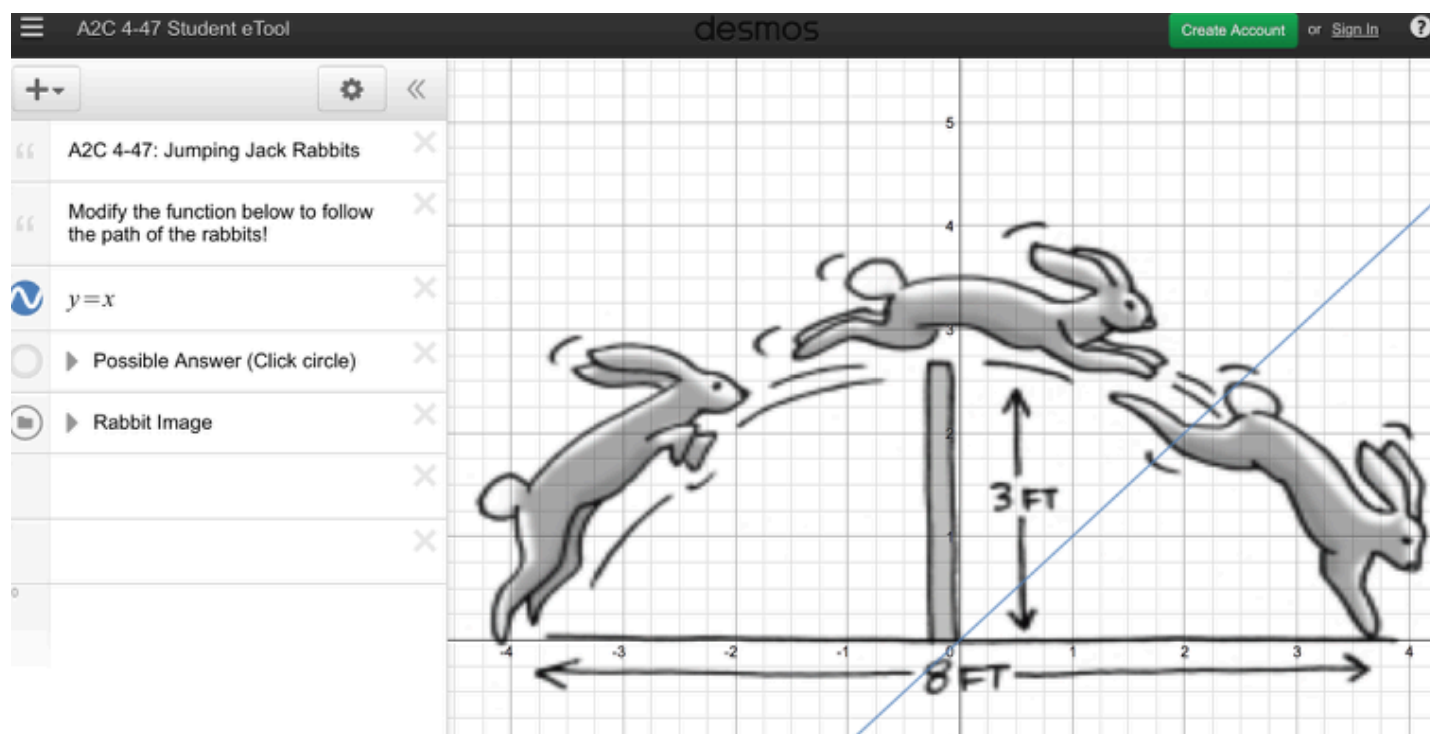- Move the "k" slider to shift the graph vertically.

A2C 4.1.4: 4-47 Student eTool (Desmos)

Click the link below.

4-47 Student eTool (Desmos)
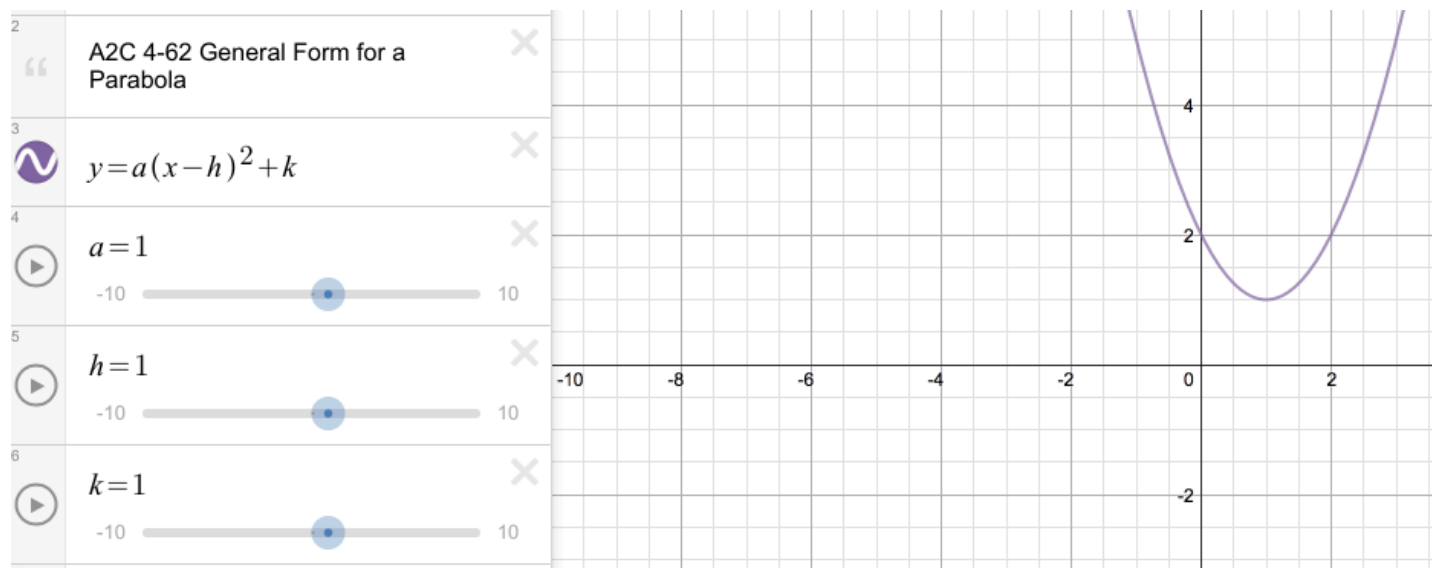
4-47 Student eTool:

A2C 4.2.1: 4-62 Student eTool (Desmos)
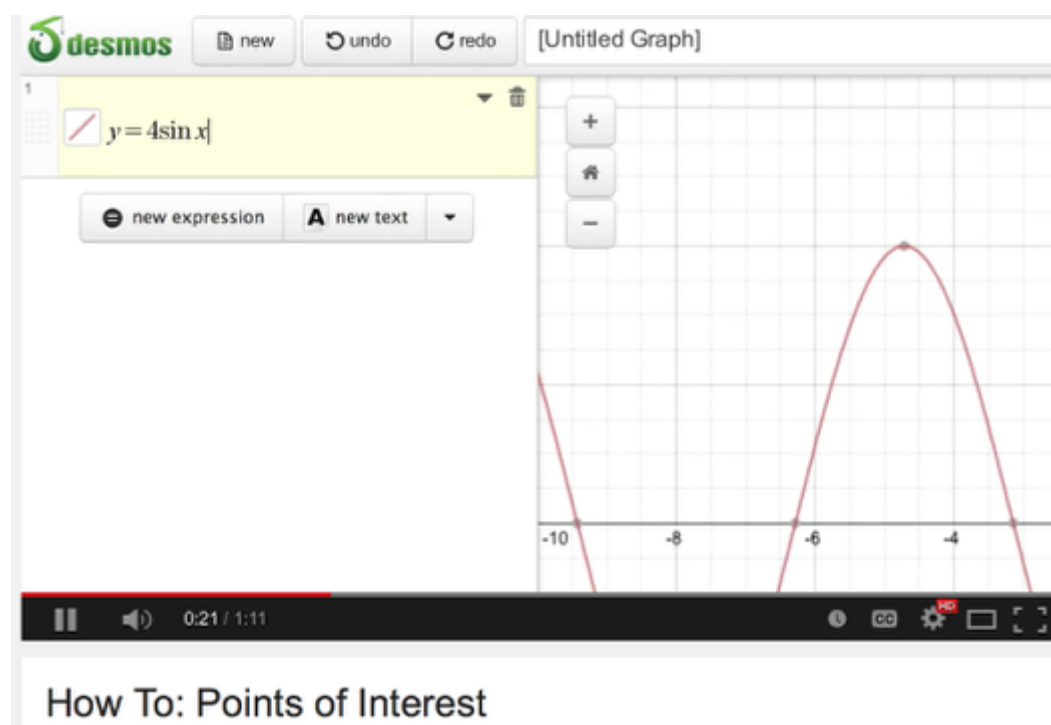
Click on the link below.

4-62 Student eTool (Desmos)

1. 4-62 Student eTool (Desmos):

A2C 4-62 General Form for a Parabola

$$y = a(x-h)^2 + k$$

$a = 1$ -10 ———•——— 10

$h = 1$ -10 ———•——— 10

$k = 1$ -10 ———•——— 10

2. Desmos Video describing Points of Interest

- Click on graph to find Points of Interest
- Add sliders to your graphs

desmos   new   undo   redo   [Untitled Graph]

$y = 4\sin x$

new expression   A new text

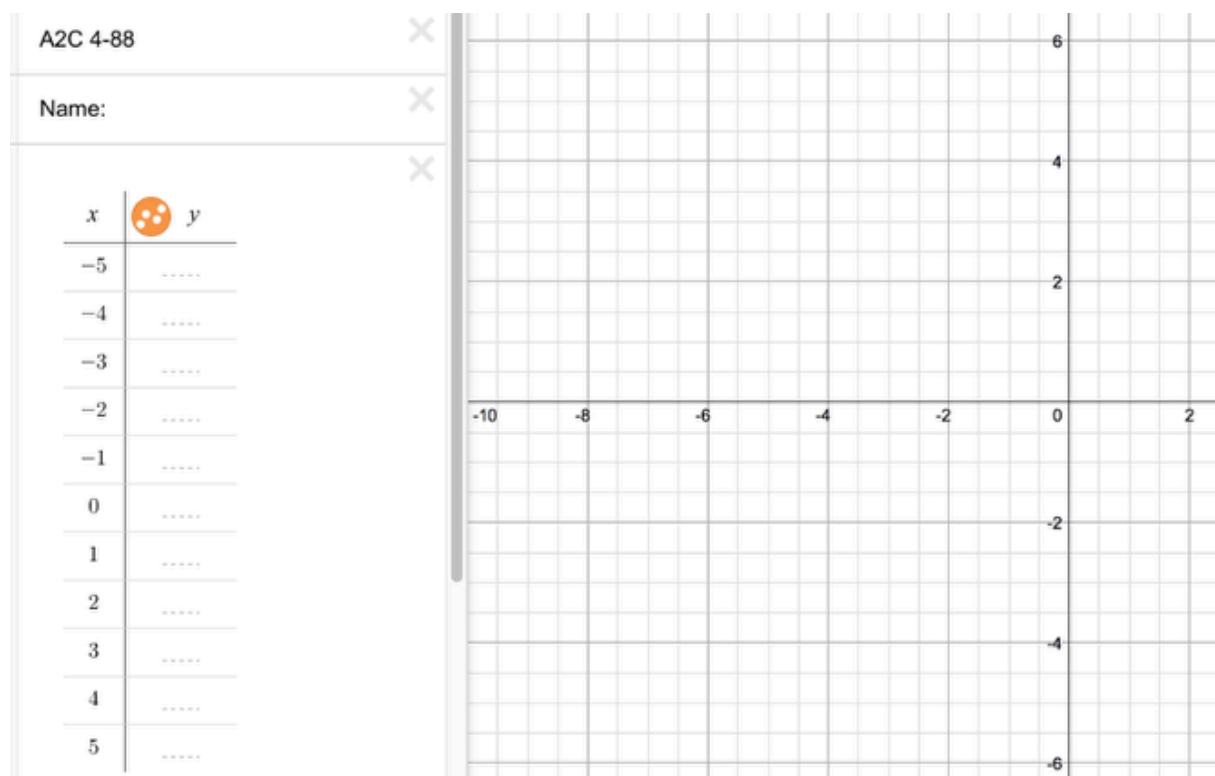0:21 / 1:11

How To: Points of Interest

A2C 4.2.2: 4-88 Student eTool (Desmos)

Click on the link below.

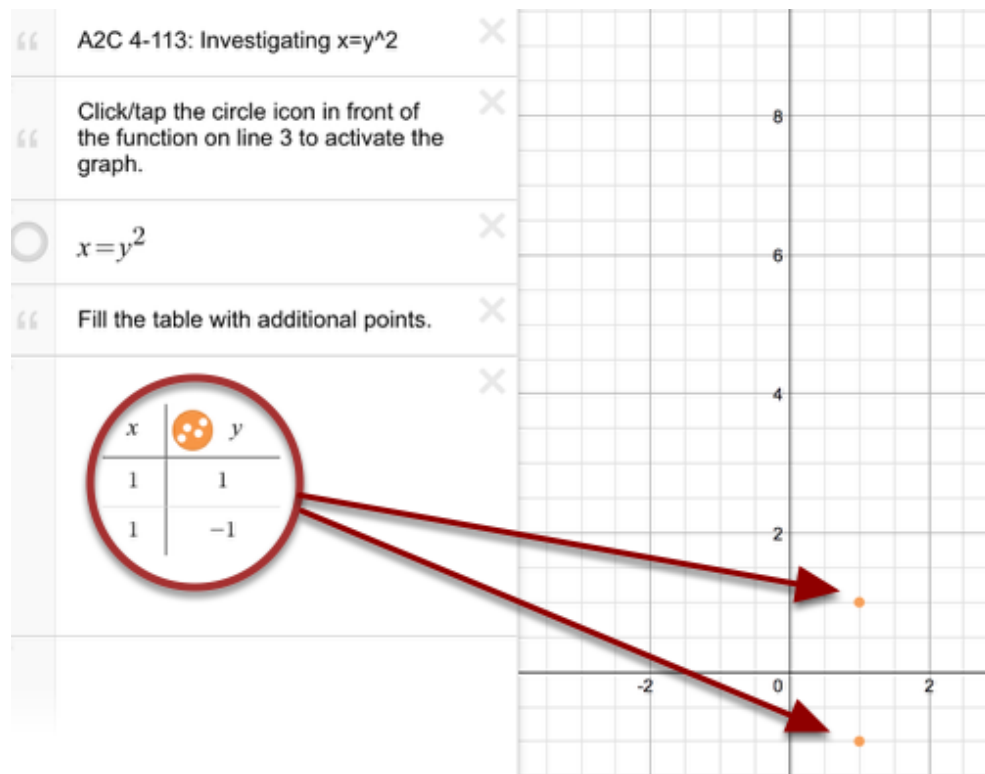[4-88 Student eTool](link) (Desmos)

4-88 Student eTool (Desmos):

A2C 4.2.4: 4-113 Parabola eTool & 4-113 Circle eTool (Desmos)

Click on the links below.

4-113 Parabola eTool (Desmos)
4-113 Circle eTool (Desmos)

1. 4-113 Parabola eTool:

2. 4-113 Circle eTool:

A2C 4-113: Investigating a Circle

Click/tap the circle icon in front of the function on line 3 to activate the graph.

$$x^2 + y^2 = 25$$

Fill the table with additional points.

x	y
0	5
5	0