

CC COURSE 2 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:

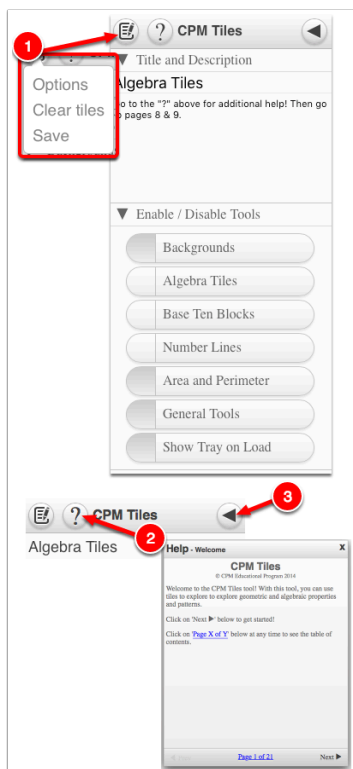
Options - Add Title and Description and Enable/Disable Tools.

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.

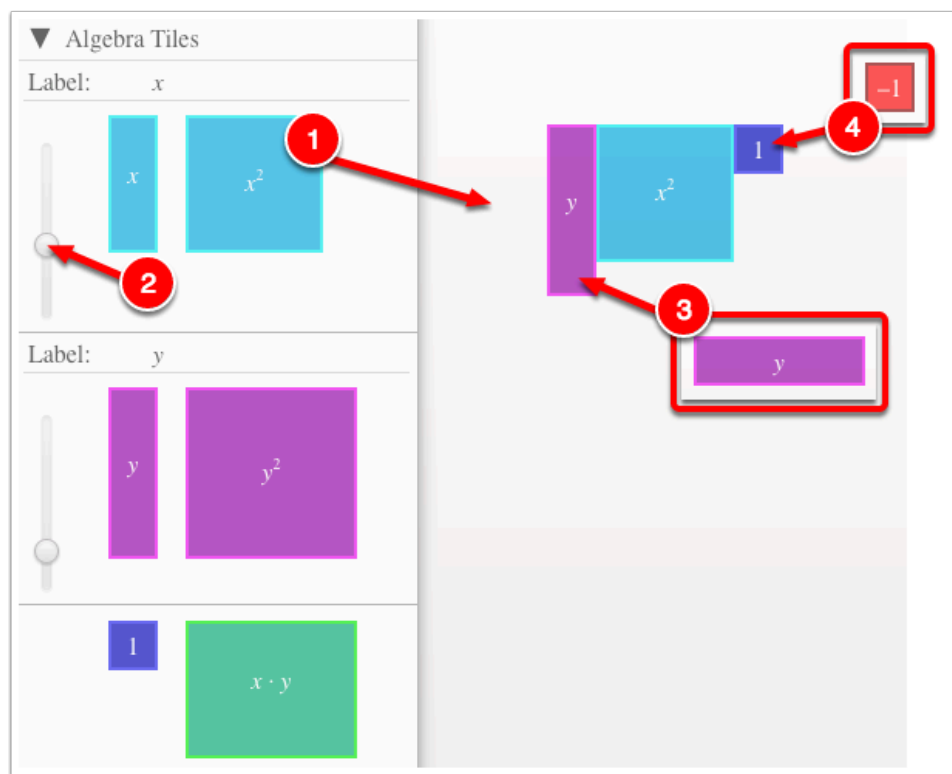
3. Select the Arrow Icon at the right to open and close the tray.



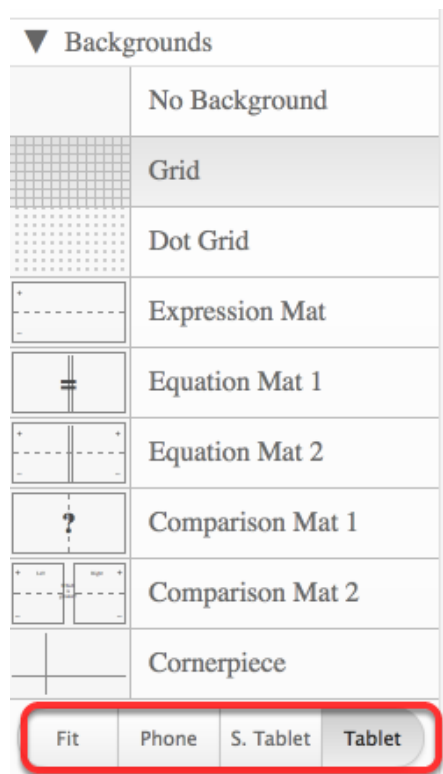
## 2. Drag tiles from the tray at the left to the display area at the right.

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.

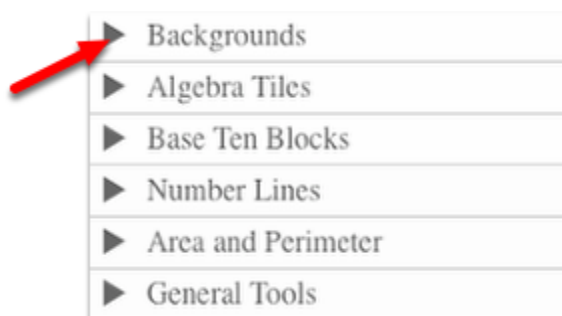


**3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.**



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

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



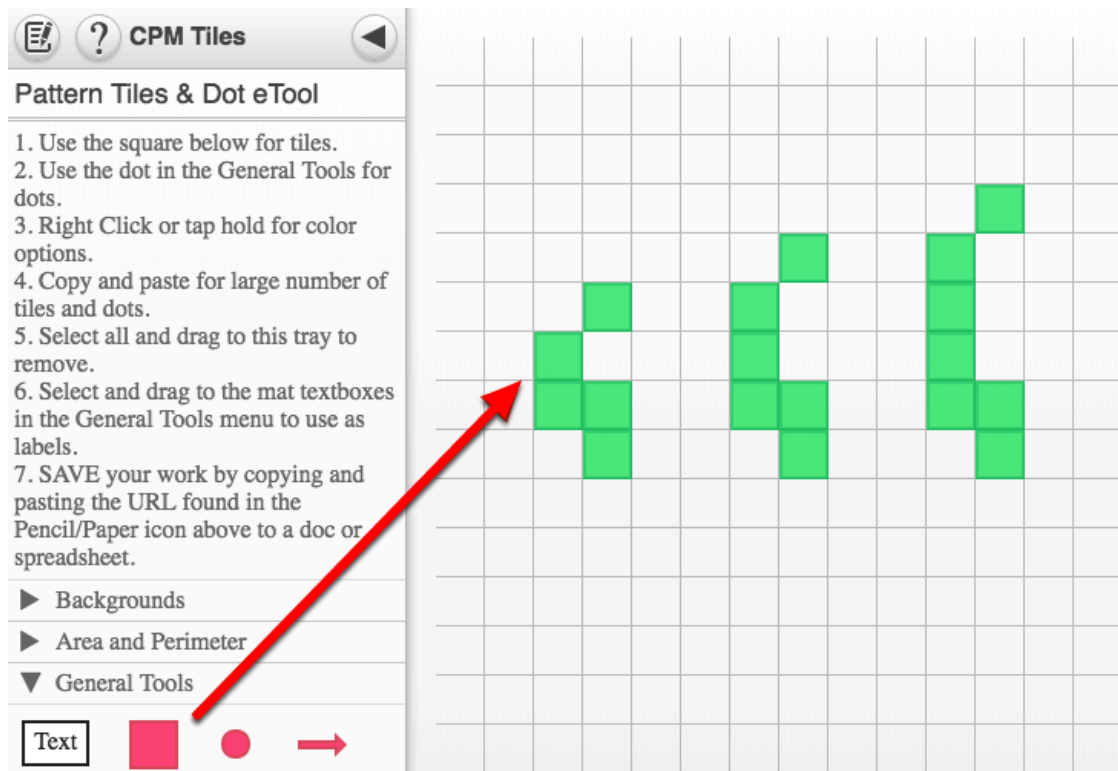
# Pattern Tile & Dot Tool (CPM)

Click on the link below.

[Pattern Tile & Dot Tool](#)

## 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.



## 2. Textboxes and Dots

- 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

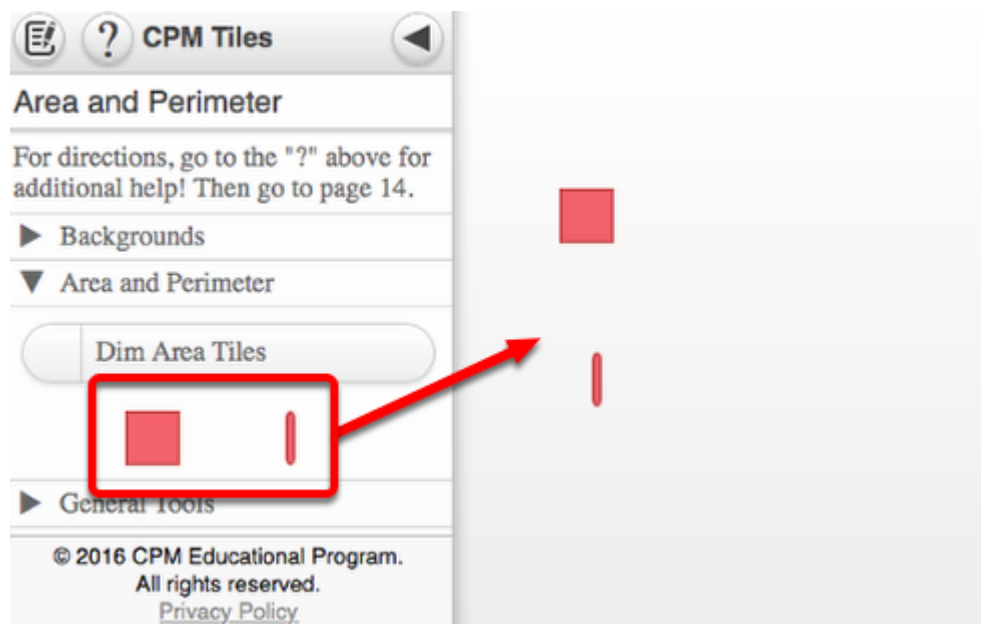
Text

## Area and Perimeter (CPM)

Click on the link below to access the eTool.

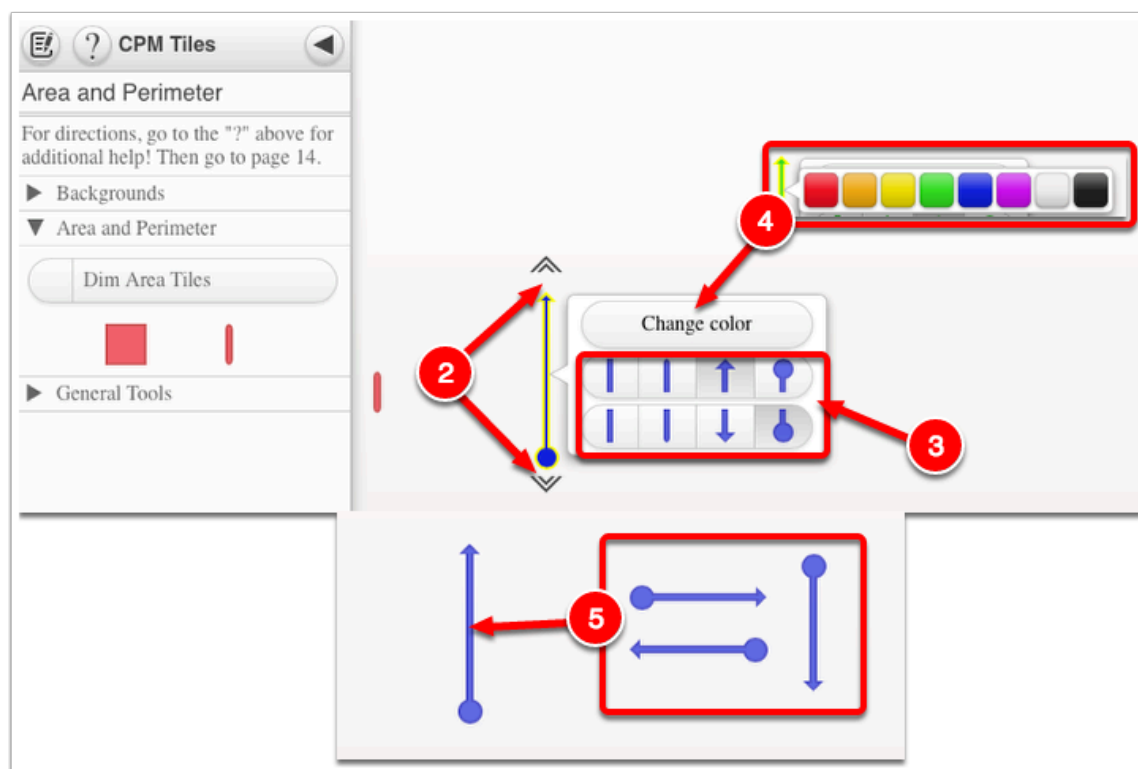
[Area and Perimeter \(CPM\)](#)

**1. Drag the tiles and toothpicks to the display area. Double click toothpicks to rotate.**

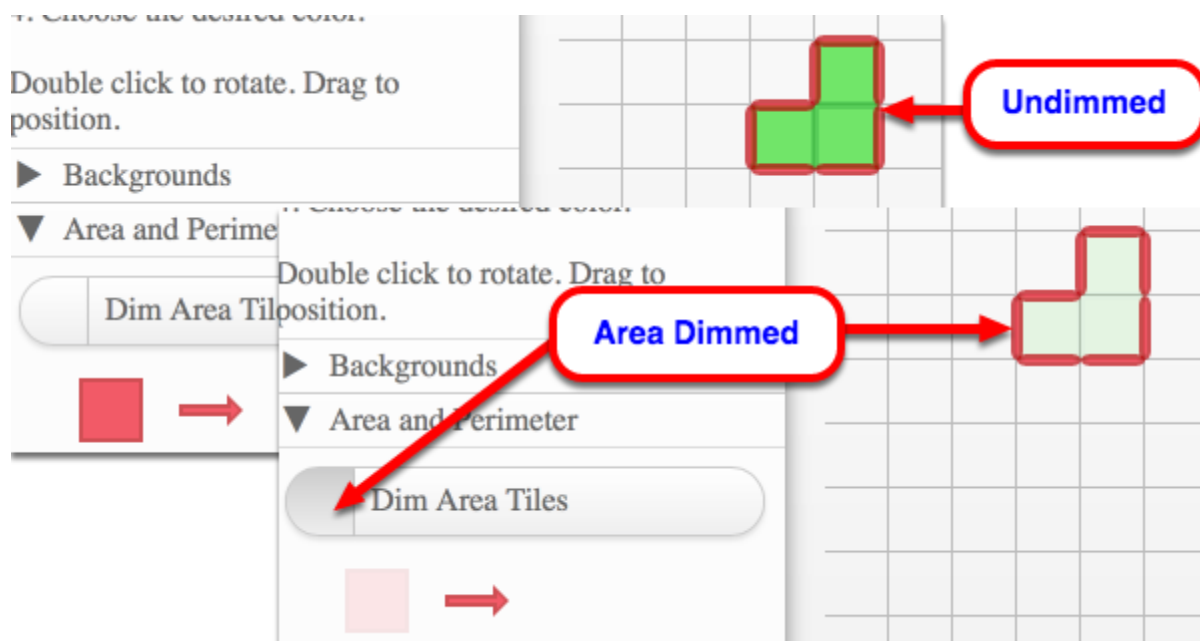


## 2. Toothpicks Settings

1. Click the toothpick and hold to view the toothpick settings.
2. Click one of the arrows at the end of toothpick to adjust the length.
3. Select the tip you want to use.
4. Click the "Change color" button to change the color of the toothpick.
5. Double click the toothpick to rotate.
6. Click and drag to move the toothpick.



### 3. Dim Area showing the perimeter more sharply.

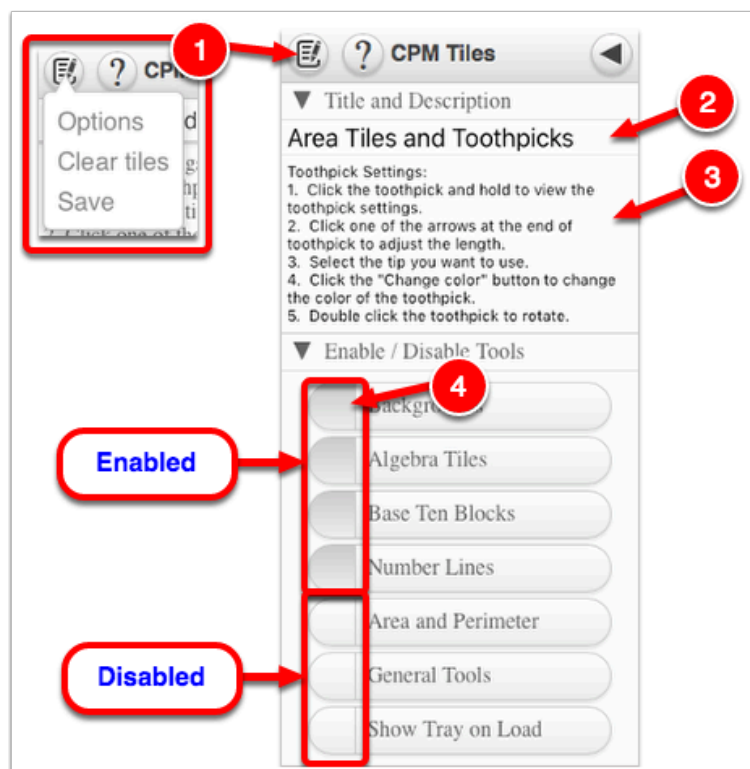


### 4. Explore the Options Menu:

1. Click the Paper & Pen Icon and select 'Options'.
2. Add a title.
3. Add description.



4. Click the button on the left of each tool name to enable/disable.



## Base Ten Blocks (CPM)

Use this tool for percents and counting out of one hundred.

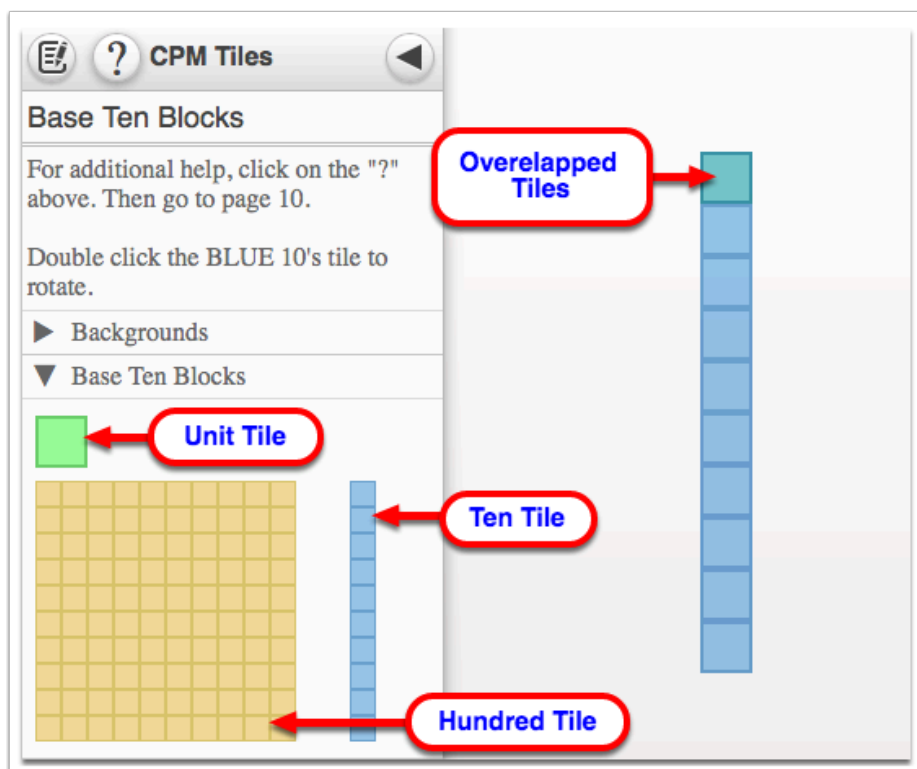
Click on the link below to access the eTool.

[Base Ten Blocks \(CPM\)](#)

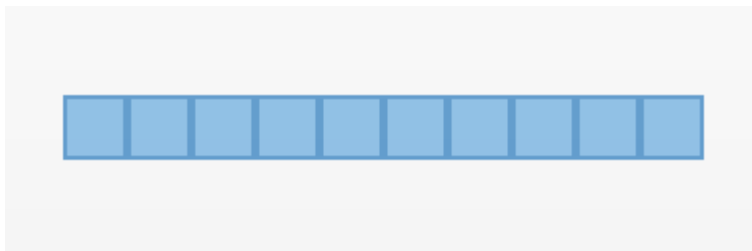
### 1. Drag Base Ten Blocks from the tray to the display area.

- Unit Tile
- Ten Tile
- Hundred Tile

Notes: Tiles can be overlapped.  
Tiles will snap to the grid.



## 2. Double click to rotate.

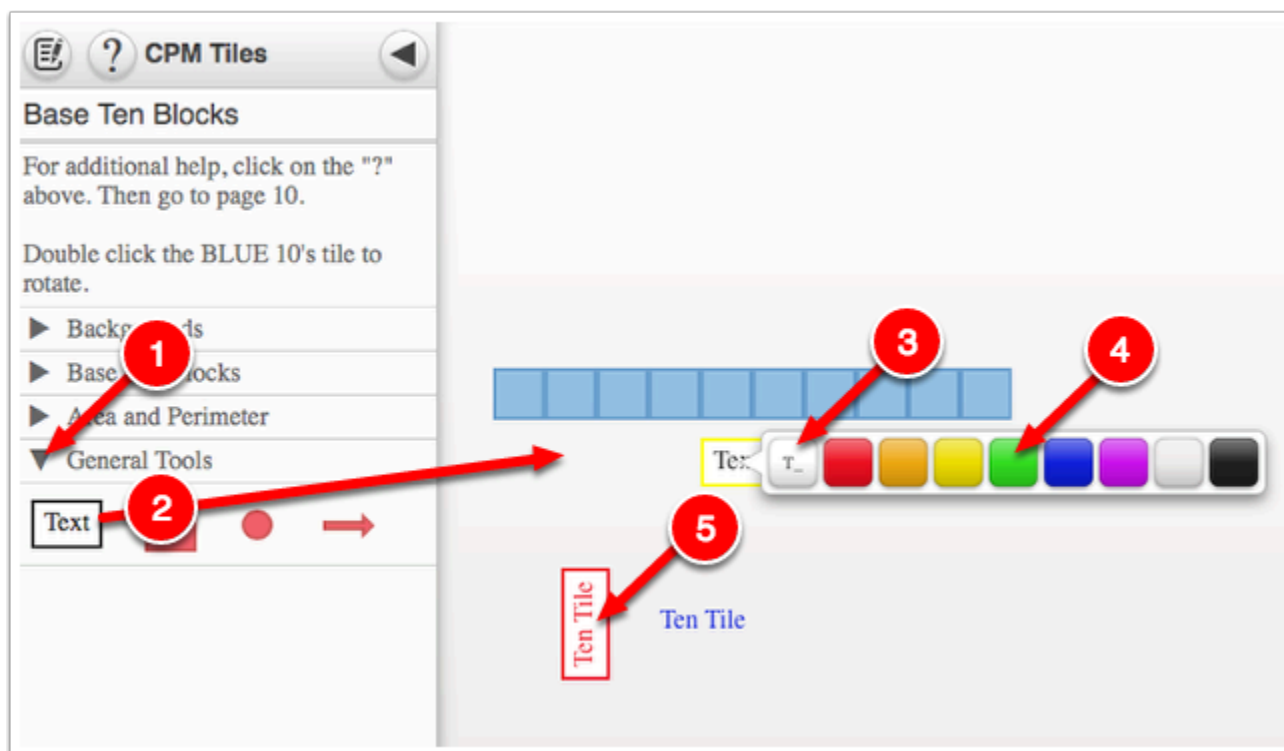


## 3. Add text.

1. Click the arrow before the 'General Tools' to view.
2. Click the Text Box and drag it to the display area.
3. Click the 'T\_' icon to add/remove text border.

Note: If the Text Box settings do not display automatically, right click on the Text box.

4. Choose the font color you want to use.
5. Double click the Text Box to rotate.



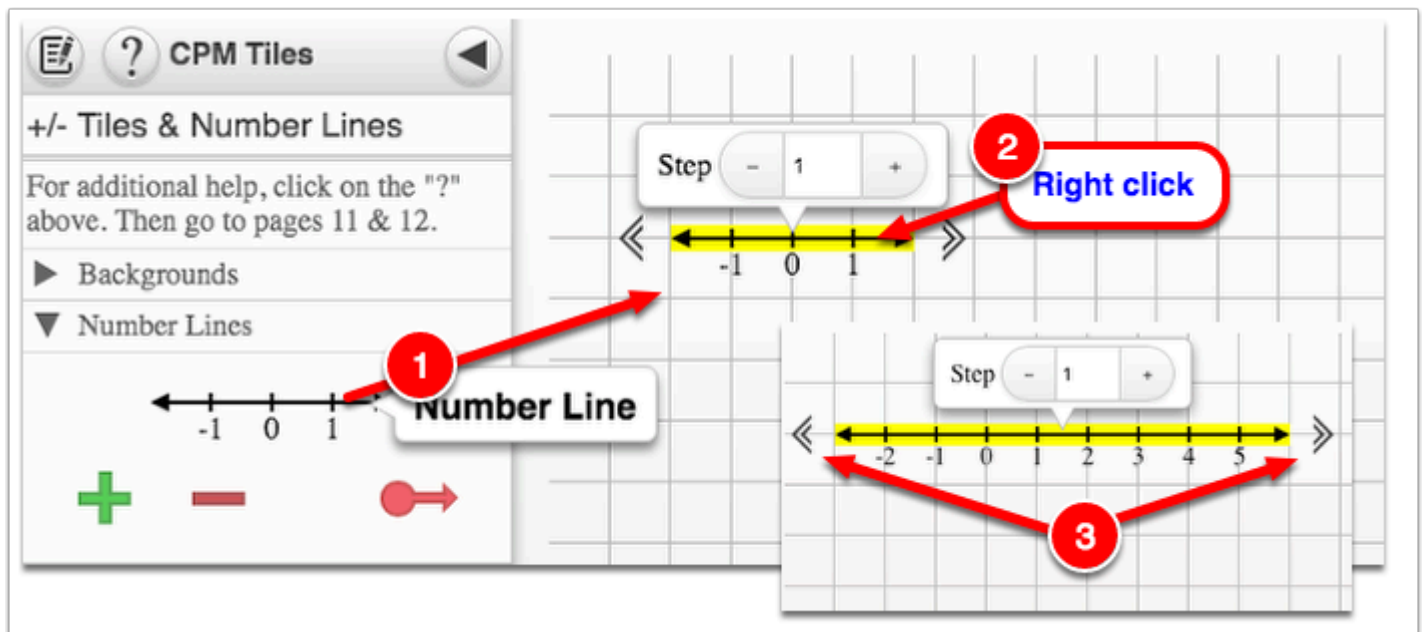
## +/- Tiles & Number Lines (CPM)

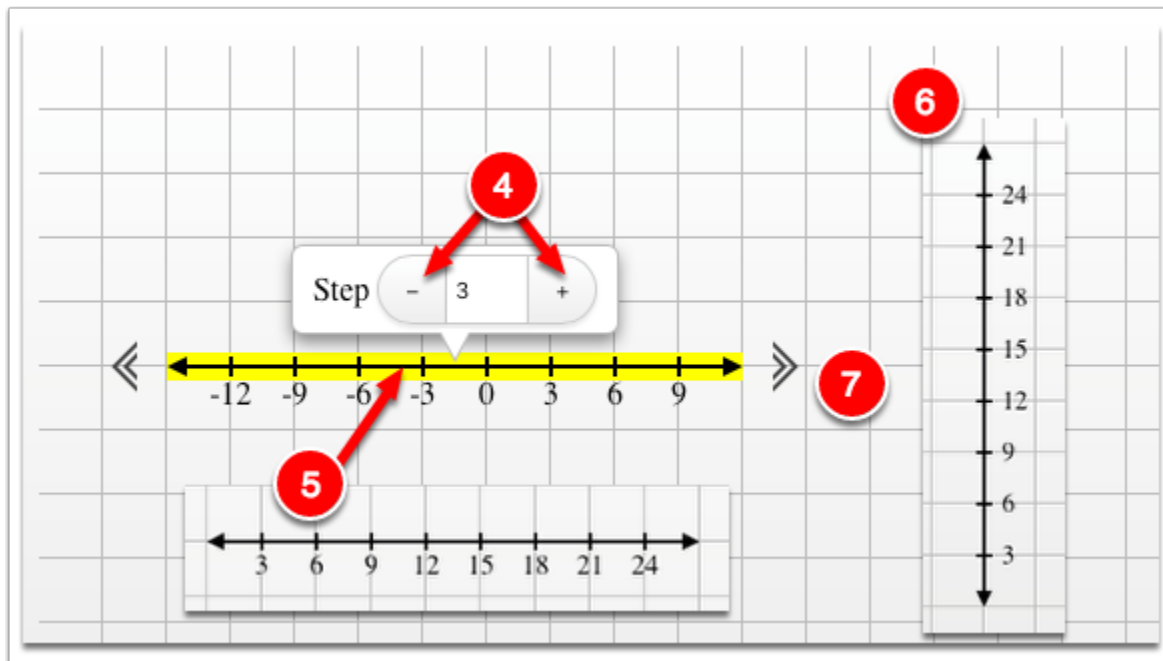
Click on the link below to access the eTool.

[+/- Tiles & Number Lines \(CPM\)](#)

### Number Line:

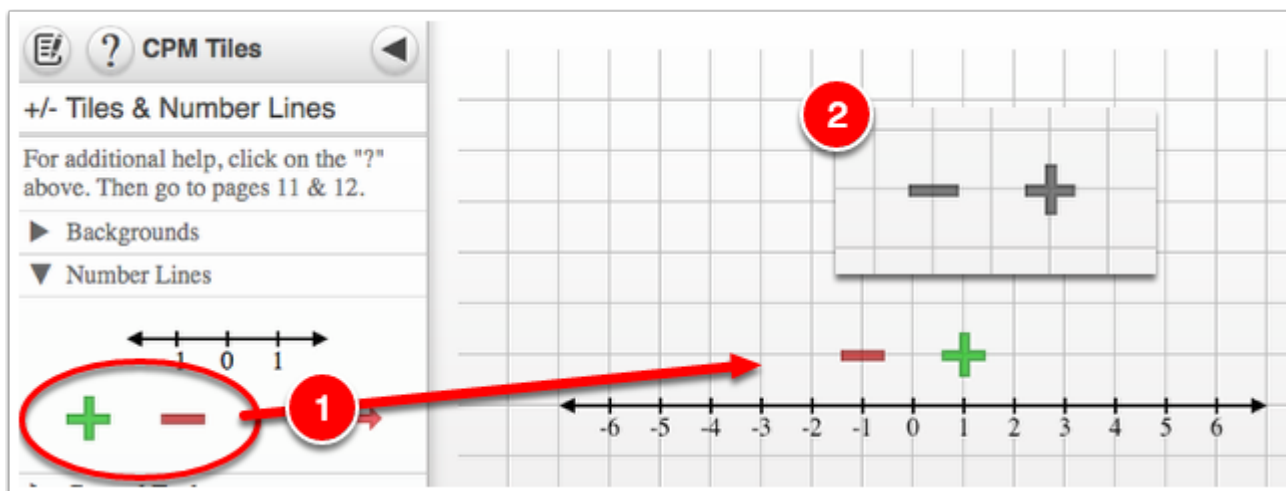
1. Click the Number Line icon and drag it to the display are.
2. Right click on the Number Line to display and adjust the settings.
3. Click one of the arrows at the end of the Number Line to adjust the length.
4. Click the '+' or '-' to adjust the step.
5. Drag the number line to change the position of the numbers.
6. Double click the Number Line to rotate.





## +/- Tiles:

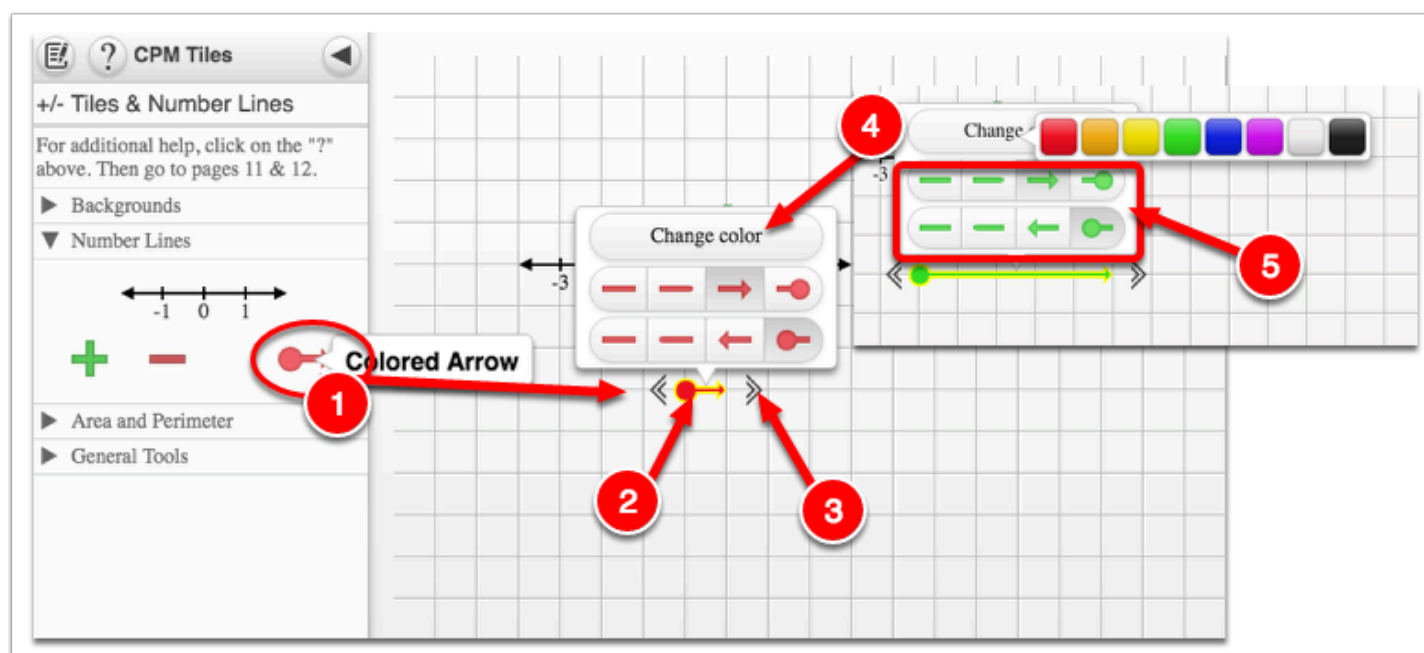
1. Click the '+' or '-' tiles and drag it to the display area.
2. Click the '+' or '-' to change its color to gray.



## Colored Arrow:

1. Click the 'Colored Arrow' icon and drag it to the display area.
2. Click on the 'Colored Arrow' and hold -OR- right click to view the settings.
3. Click one of the arrows at the end of the icon to adjust the length.
4. Click the 'Change color' button to change the color of the toothpick.
5. Select the tip you want to use.

6. Double click the 'Colored Arrow' icon to rotate.
7. Click and drag the 'Colored Arrow' icon to move.



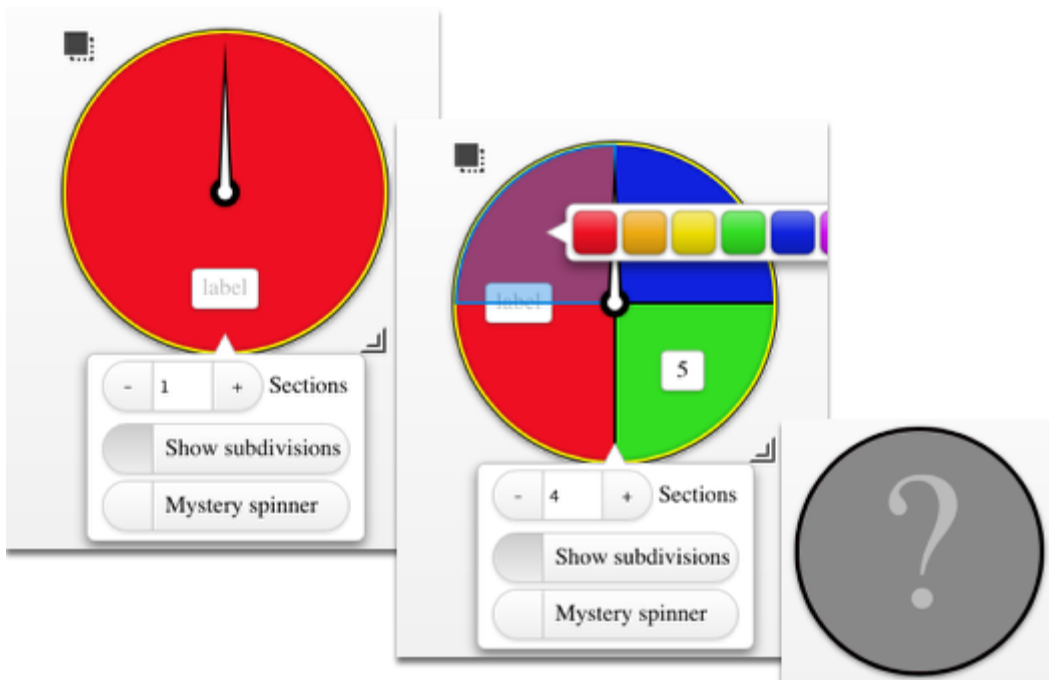
# Probability Tools (CPM)

Click on the link below.

[Probability Tools \(CPM\)](#)

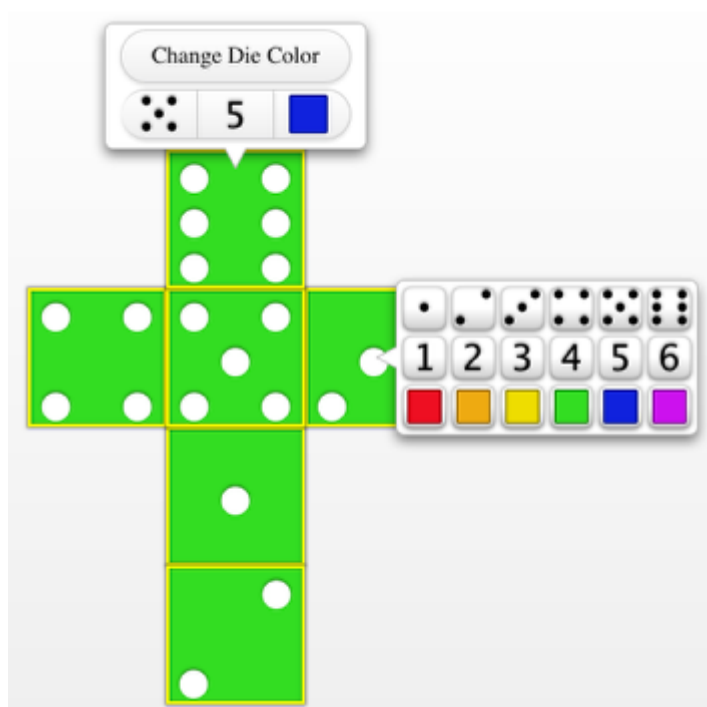
## 1. Spinners:

- 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.



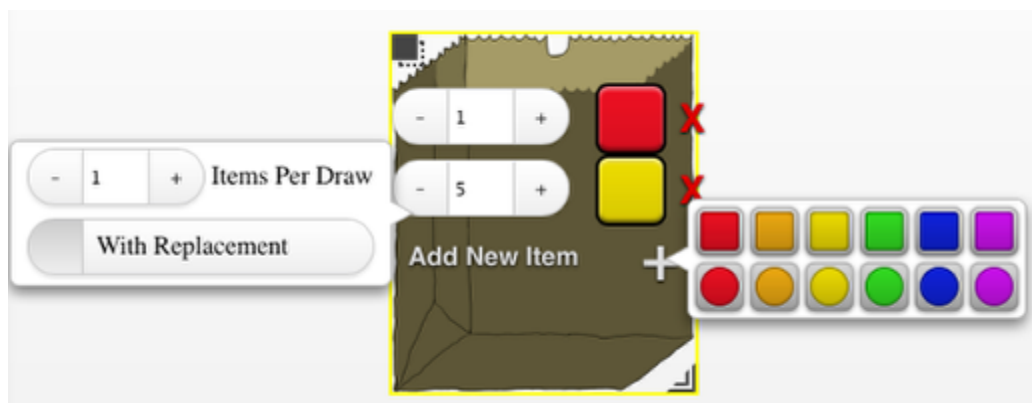
## 2. Dice:

- 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 bag 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.





## 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    Integers

From

To

# Table Tool (CPM)

Click on the link below to access the eTool.

[CPM Table eTool](#)

## 1. CPM Table eTool

- Find patterns
- Highlight cells
- Highlight rows

Table © 2016 CPM Educational Program. All rights reserved.												Directions	Reset	Save	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225

## 2. Highlight

- Click on a row or column and highlight.
- Click on a cell and choose the color.

Highlight column

Clear cell

Clear column

**Table**  
© 2016 CPM Educational Program. All rights reserved.

	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63

3	4	5	6	7	8	9
3	4	5				
6	8	10				
9	12	15				
12	16	20				
15	20	25	30	35	40	45
18	24	30	36	42	48	54
21	28	35	42	49	56	63

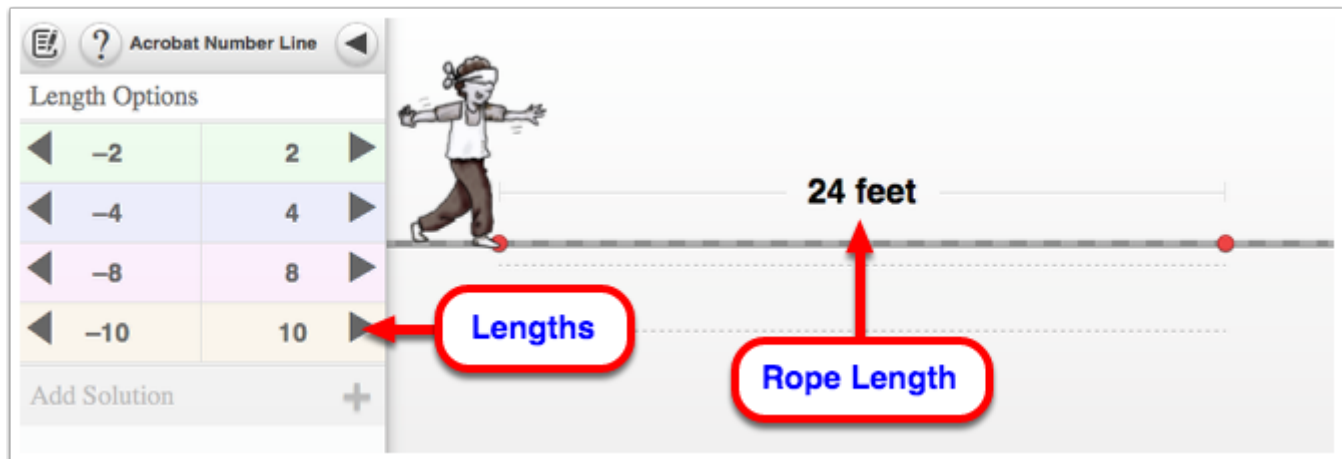
Clear

# Acrobat Number Line (CPM)

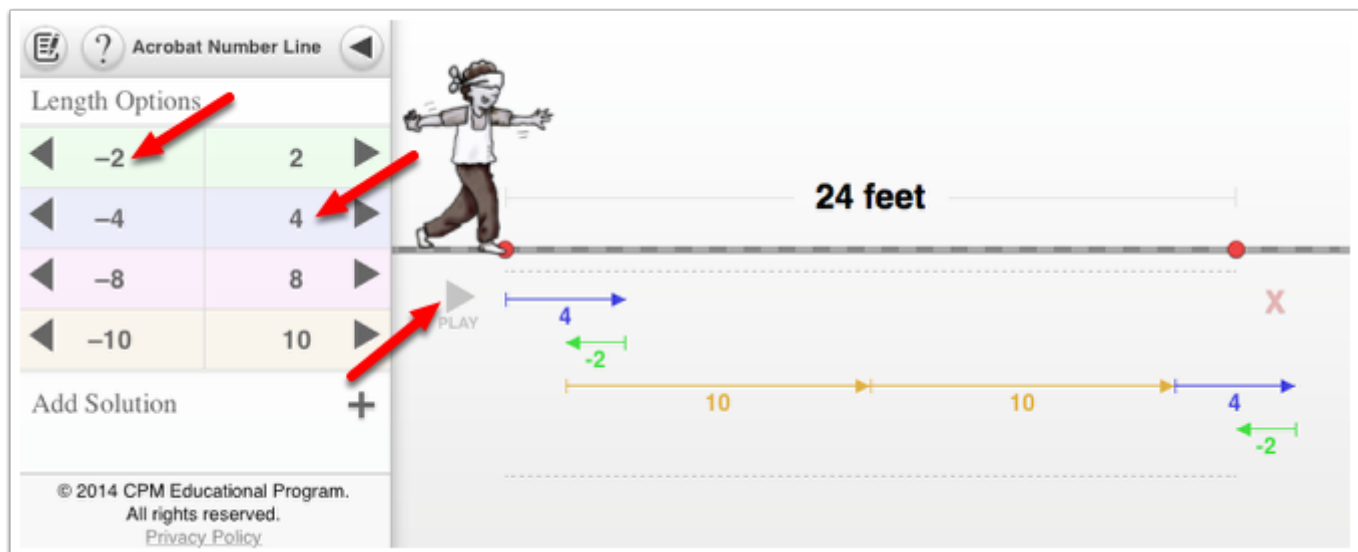
Click on the link below to access the eTool.

[Acrobat Number Line](#)

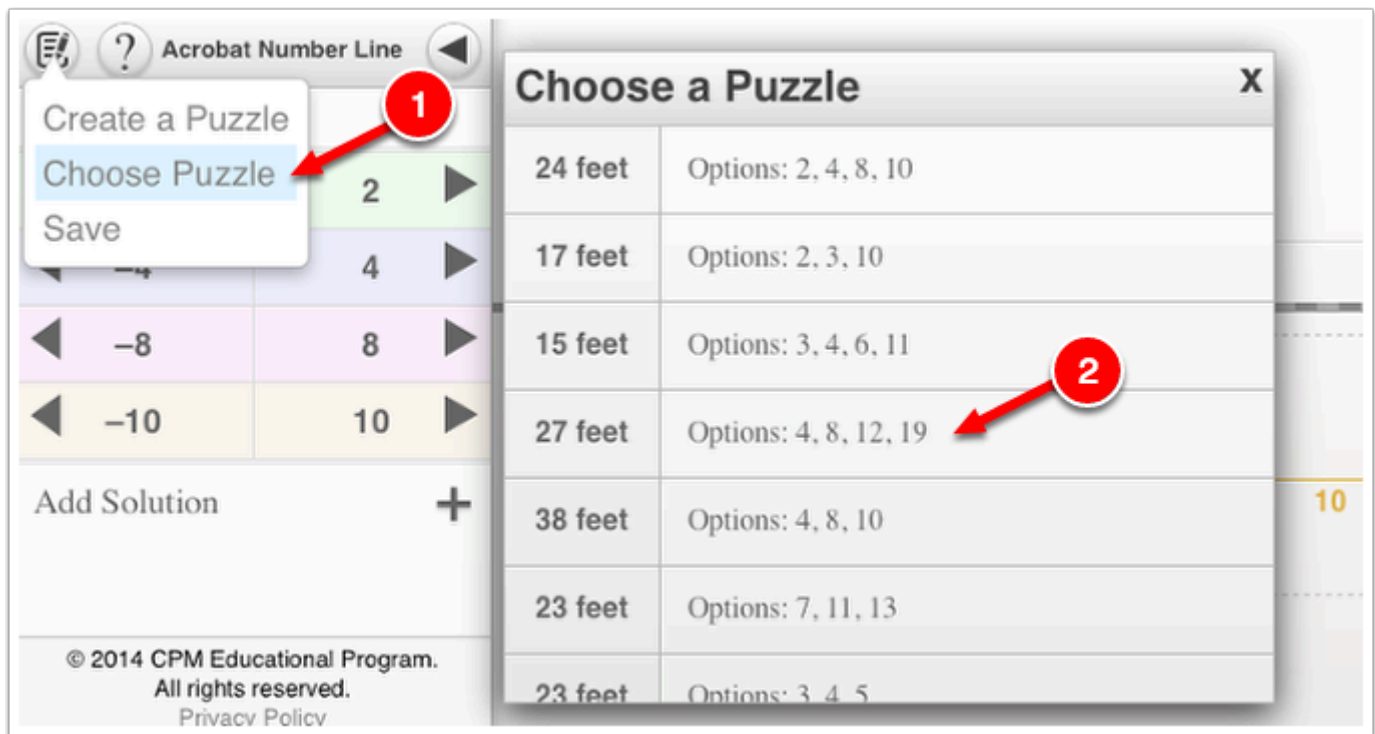
## 1. Opening Puzzle:



## 2. Choose lengths and play.

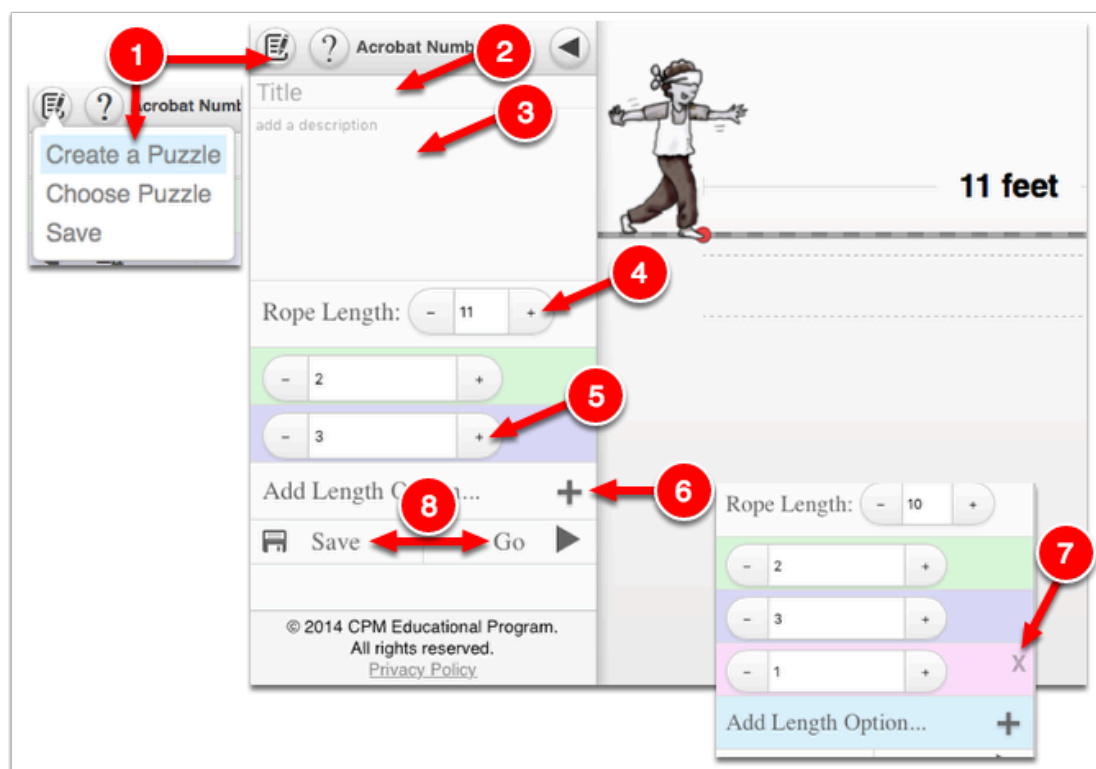


### 3. Choose from numerous puzzles available. Puzzles from 2-31 and Closure are included.

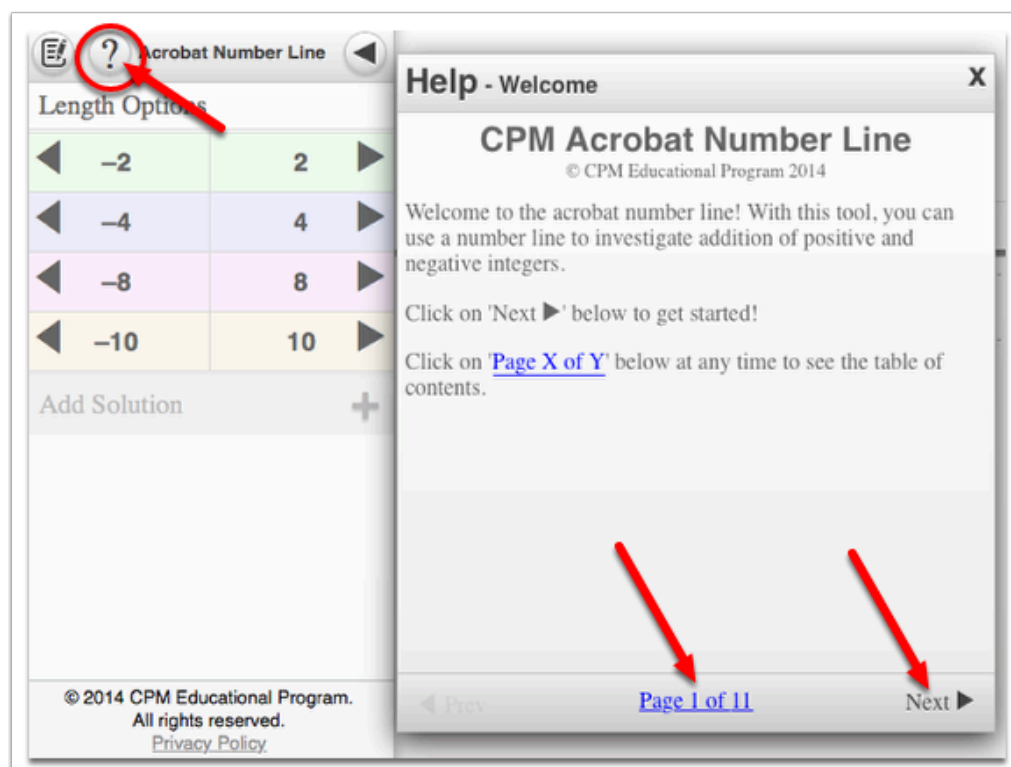


### 4. Create your own puzzles

1. Click the paper & pencil icon and select 'Create a Puzzle'.
2. Add a title for your puzzle.
3. Add a description.
4. Set rope length.
5. Change numbers on available ropes
6. Add a length
7. Delete a length
8. Save or Go (play)



## 5. Get additional help!



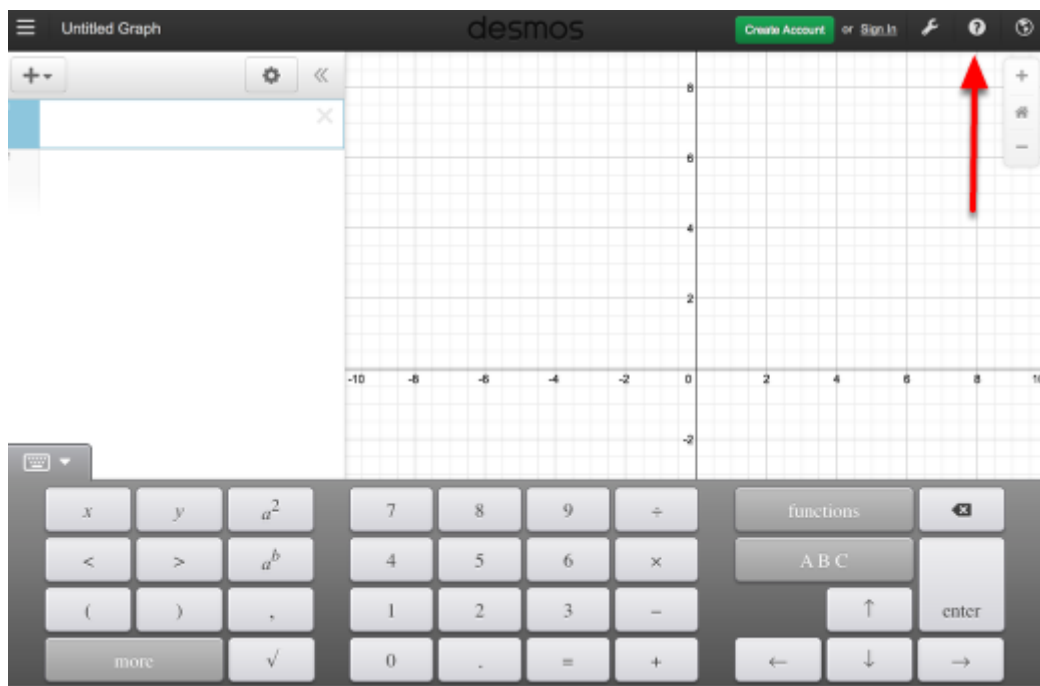
# Desmos Graphing Calculator

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](#)



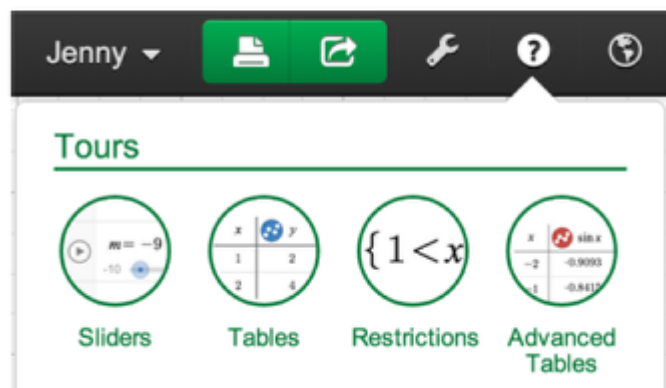
### 3. The interactive tours will NOT let you make a mistake! Try the links above!

#### 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!

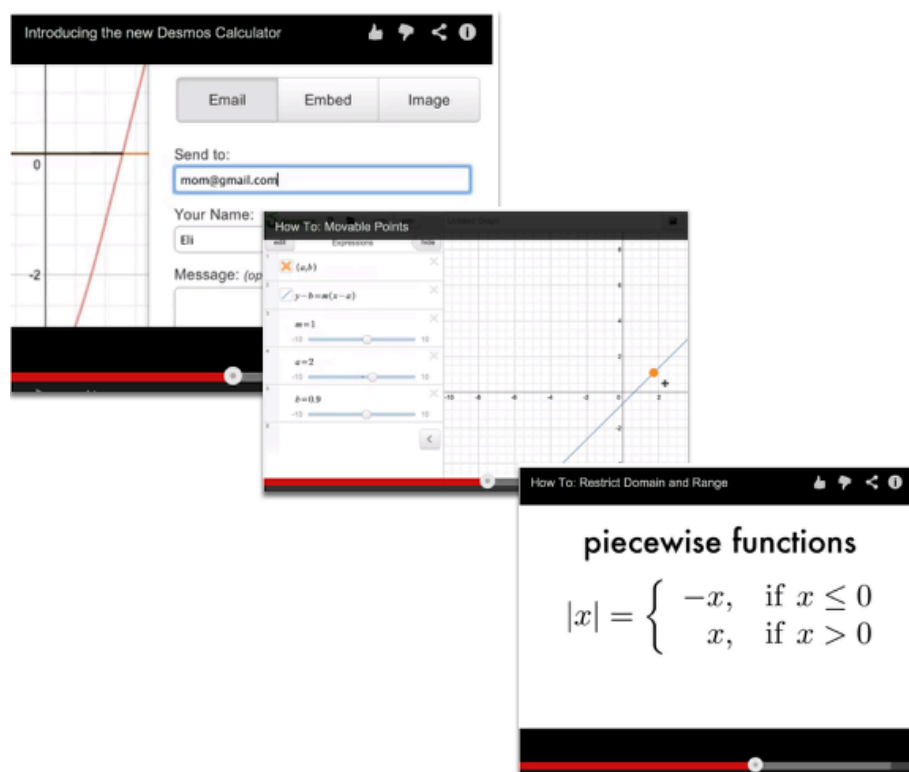
[Desmos Introduction](#)

[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](#)



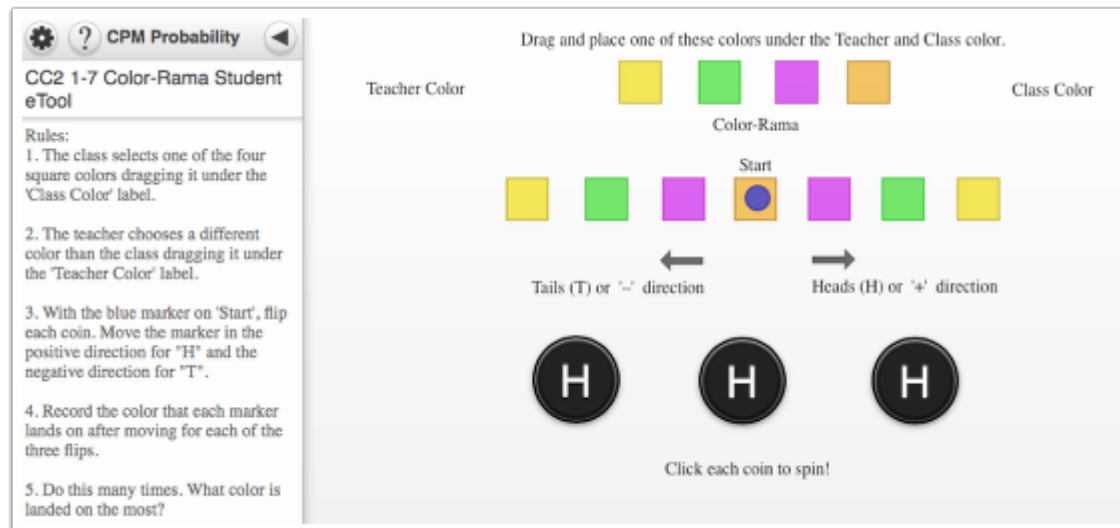
# Chapter 1

## CC2 1.1.2: 1-7 Color-Rama Student eTool (CPM)

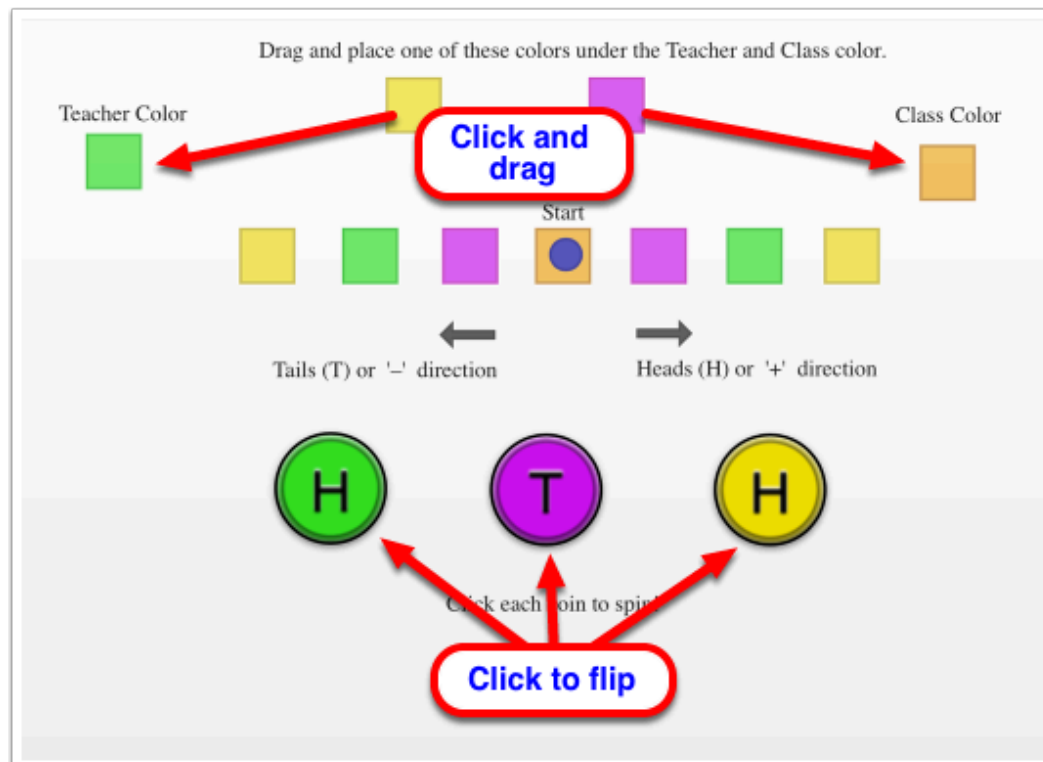
Click on the link below.

[1-7 Color-Rama Student eTool \(CPM\)](#)

### 1. Setup:

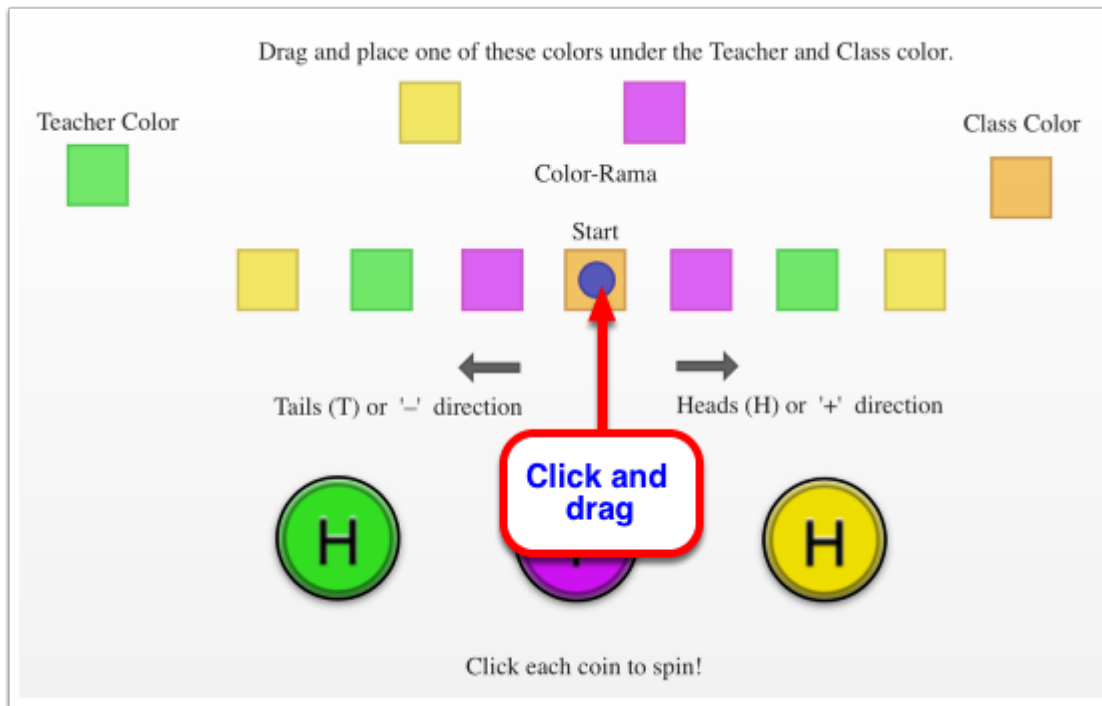


### 2. Move the 'Class' & 'Teacher' labels to a square. Flip the coins!



### 3. Move the marker in the positive direction for "H" and the negative

direction for "T".



## CC2 1.1.5: Does 0.999... Equal 1 Video

This lesson includes a video animation to demonstrate how 0.999... can geometrically be represented as a sum of fractions that converge to 1.

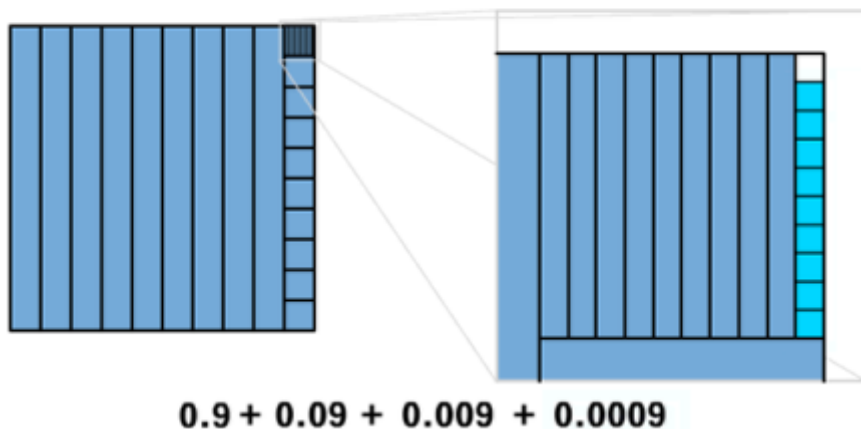
Click the link below to watch the 42 second video.

[Does .999... Equal 1?](#) 

### 1. What happens when you add all of the parts?



## Does 0.999... equal 1?



### 2. Teacher Notes:

- Project this animation at the specified point in problem 1-42 to provoke discussion about using geometric representations of numbers to help make sense of their size.
- Test the technology setup before students arrive to be sure that it is working properly.
- The animation is less than a minute long and moves quickly. You might want to have the students first watch the animation at full speed. Then, replay the animation, pushing the pause button each time the shape is further divided to give students a chance to look more closely at the graphics.
- Pausing periodically also provides an opportunity to check students' understanding of the divisions that have been made to that point.

## CC2 1.2.1: 1-51 & 1-54 Student eTools (CPM)




Click on the links below.

[1-51 Student eTool \(CPM\)](#)

[1-54 Student eTool \(CPM\)](#)

### 1. CC2 1-51 Student eTool:

#### 1.1. Click the bag to choose a colored fish.

  CPM Probability 

CC2 1-51 Student eTool




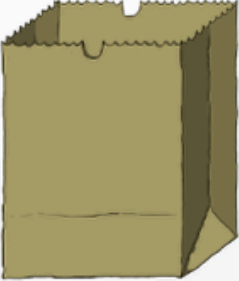
1-51. Mike wants to win a giant stuffed animal at the carnival. He decided to play the “Go Fish” game, which has three prizes: a giant stuffed animal, a smaller stuffed animal, and a plastic kazoo.

To win the giant stuffed animal, Mike needs to catch a green fish.

a. If all of the fish in the tank are green, how would you describe the probability of Mike's winning a giant stuffed animal?

b. The way the tank is set up (with 1 green, 3 blue, and 6 yellow fish), what are the chances that Mike will catch a black fish?

c. Given the information in the problem, what percent of the time would you expect Mike to catch a green fish and win the giant stuffed animal? Be ready to explain your thinking.






Add 1 green fish, 3 blue fish and 6 yellow fish.

► Probability Tools

► General Tools

## 2. CC2 1-54 Student eTool:




**CPM Probability**


**CC2 1-54 Student eTool**

Create a spinner that is:

40% RED  
1/10 YELLOW  
30% BLUE  
GREEN for the rest

1. To create a spinner, tap and hold a blank spinner for a moment.
2. Under "Sections", tap the "+" until you have your desired number of subdivisions.
3. Tap one subdivision, select a color. Drag across 2 or more subdivisions and select a different color.
4. Add a label, if desired, for each section. Deselect "Show Subdivisions". Tap outside of the circle to set the spinner.
5. Tap the spinner to rotate the dial. Tap the "?" above for specific directions.



label

- 1 +

Sections

Show subdivisions

Mystery spinner

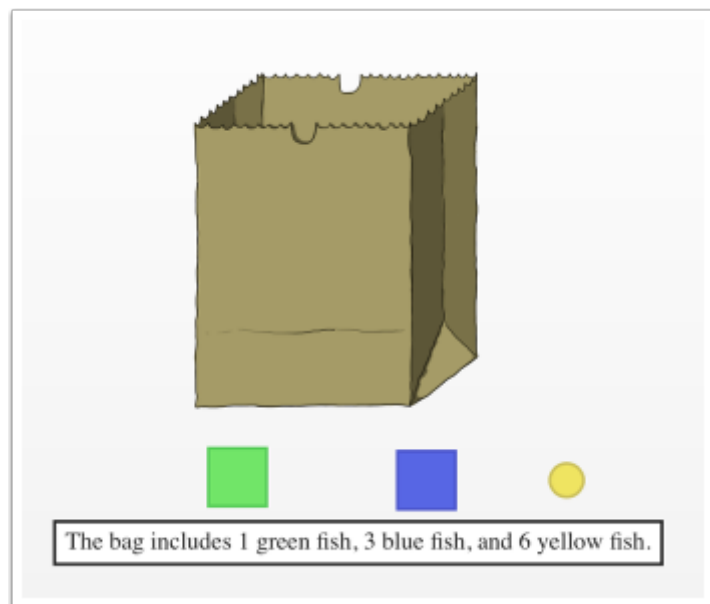


## CC2 1.2.1: 1-51 & 1-54 Answer eTool (CPM)

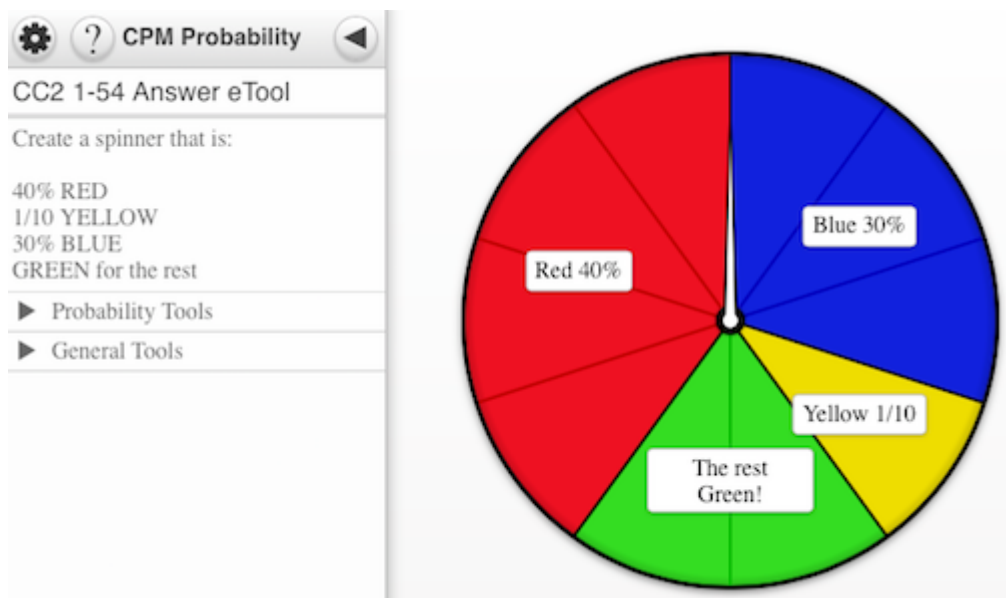
Click on the links below.

[CC2 1-51 Answer eTool \(CPM\)](#) [CC2 1-54 Answer eTool \(CPM\)](#)

### CC2 1-51 Answer eTool:



### CC2 1-54 Answer eTool:



## CC2 1.2.2: 1-63 Teacher eTool (CPM)

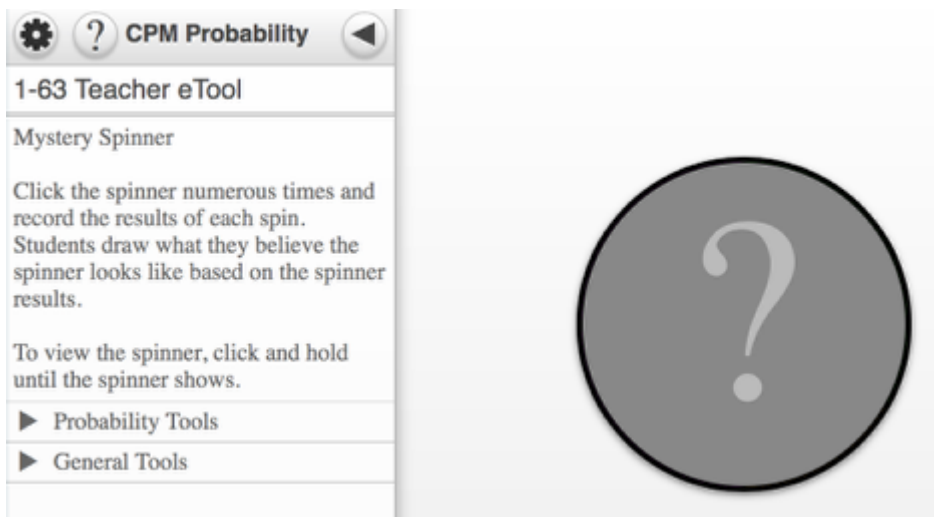
Teacher Tool: Use the 1-63 Mystery eSpinner for students to estimate how the spinner may look knowing only the outcomes of the spins.

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

[CC2 1-63 Teacher eTool \(CPM\)](#)

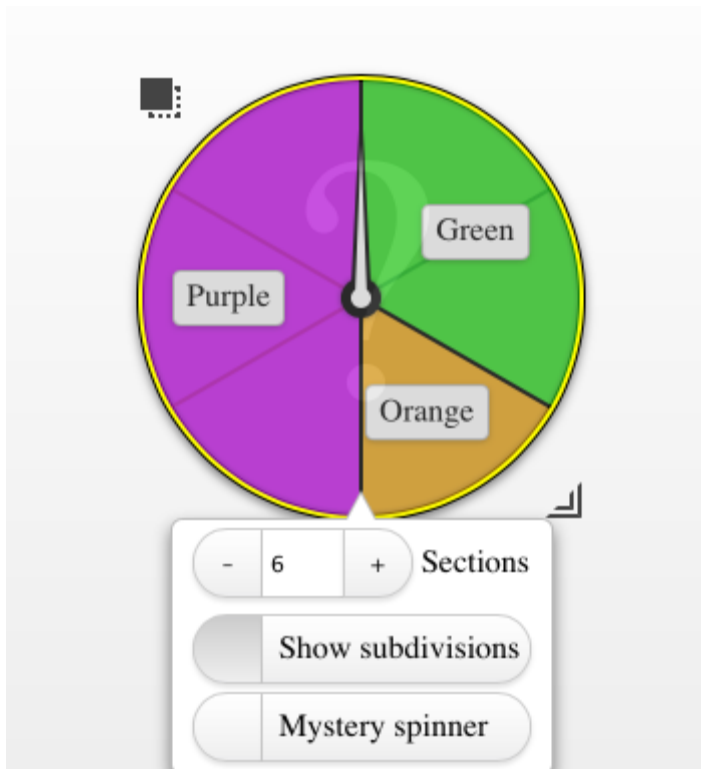
### 1. CC2 1-63: Mystery Spinner

- Click the spinner numerous times recording each outcome of a spin.
- Draw what you think the Spinner looks like.



### 2. CC2 1-63: Mystery Spinner Answer

- Click and hold until the following view comes up.
- Students should be drawing a similar spinner if enough spins were recorded.



## CC2 1.2.3: 1-75, 1-77, & 1-79 Student eTools (CPM)

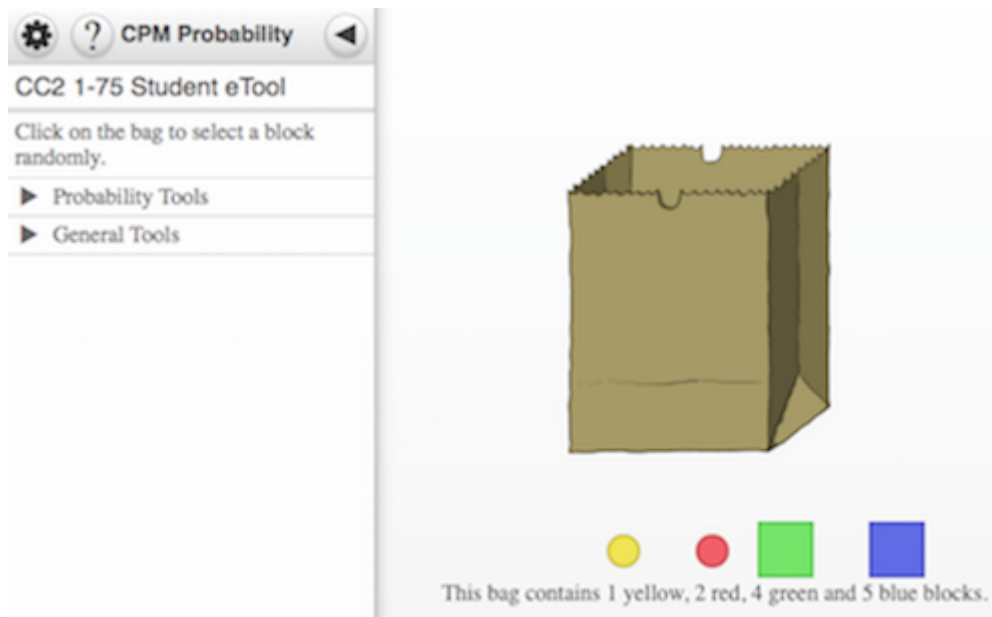
Click the links below.

[CC2 1-75 Student eTool \(CPM\)](#)

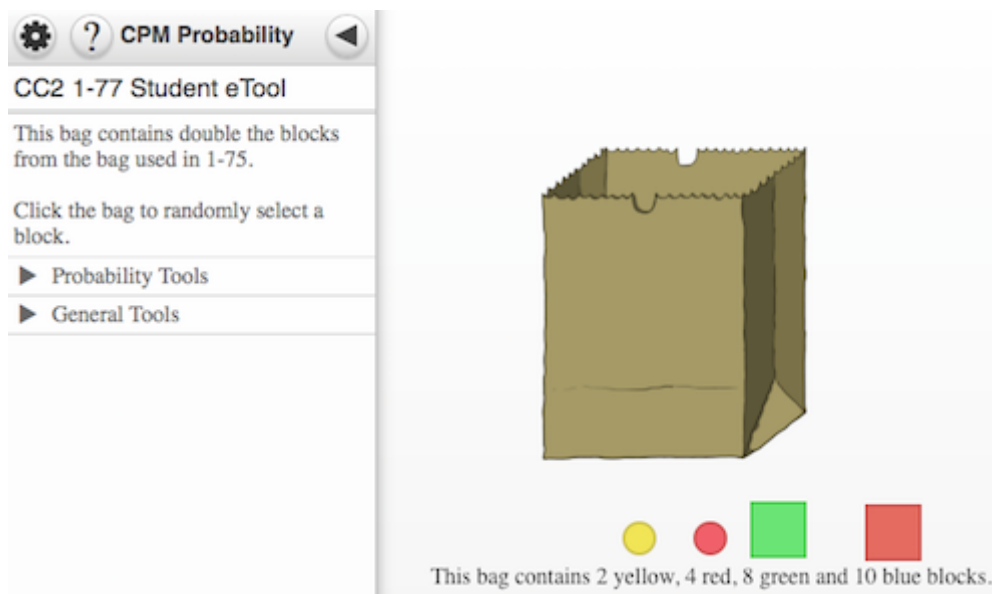
[CC2 1-77 Student eTool \(CPM\)](#)

[CC2 1-79 Student eTool \(CPM\)](#)

### 1. CC2 1-75:



### 2. CC2 1-77:



3. CC2 1-79:

 CPM Probability 

CC2 1-79 Student eTool

Play a game with the spinner while keeping score as follows:

1. Every time you spin purple, you lose two points.

2. Every time you spin green, you get one point.

3. Every time you spin orange, you get three points.

► Probability Tools

► General Tools



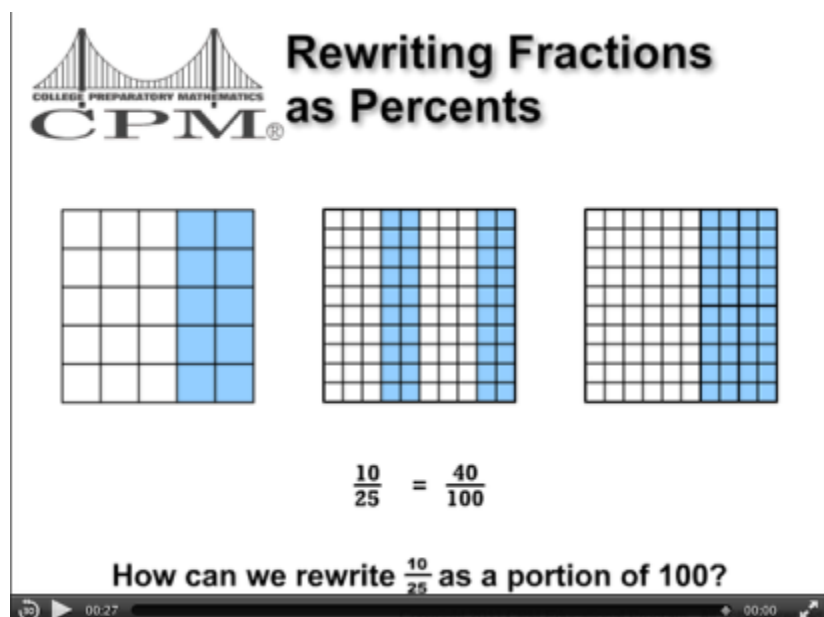
Click the spinner to spin!

## CC2 1.2.5: Rewriting Fractions as Percents (Video)

Click the link below for the 27 second "Rewriting Fractions as Percents" Quicktime Animation.

[Rewriting Fractions as Percents QuickTime Animation](#) 

1. This lesson includes a QuickTime animation demonstration of how a fraction to percent conversion can be geometrically represented. The diagrams in the animation match those in problem 1-95.



### 2. Teacher Notes:

- Project this animation as part of a class discussion for 1-95.
- Test the technology setup before students arrive to be sure that it is working properly.
- Start the animation, and use the pause button to stop it after each major change to the diagram so that students have time to make sense of what is happening on the screen.
- Consider asking questions about what has changed or giving students time in teams or with a partner to summarize what has happened before continuing the animation.
- After students have made sense of the animation by examining each piece, play the animation through at full speed.

## CC2 1.2.6: Multiplication Table (CPM)

Click on the link below for the Multiplication Table eTool.

[Multiplication Table eTool](#)

1. This eTool could be used in place of the Lesson 1.2.6 Resource Page.

Table © 2016 CPM Educational Program. All rights reserved.												Directions	Reset	Save	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
2	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30
3	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45
4	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
5	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75
6	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90
7	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105
8	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120
9	9	18	27	36	45	54	63	72	81	90	99	108	117	126	135
10	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
11	11	22	33	44	55	66	77	88	99	110	121	132	143	154	165
12	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180
13	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195
14	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210
15	15	30	45	60	75	90	105	120	135	150	165	180	195	210	225

## 2. Directions:

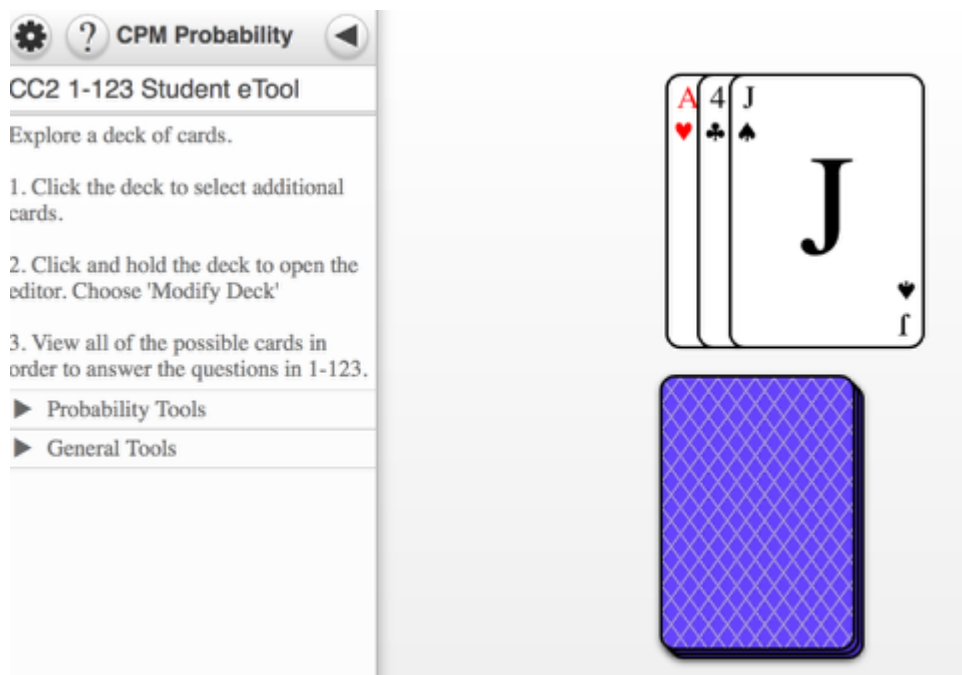
- Click on rows and columns to highlight.
- Click on the cells to change color.
- Double click to clear a cell and/or rename a cell!
- Save your own table by clicking the Save button upper right corner.
- Bookmark the link, email the link to a friend, or post at your website.

## CC2 1.2.7: 1-123 Student eTool (CPM)

Simulate the problem by clicking the link below.

[CC2 1-123 Student eTool \(CPM\)](#)

### CC2 1-123:







## Chapter 2

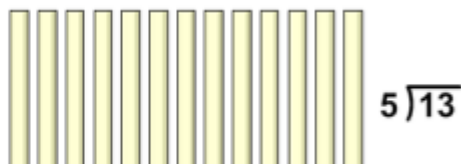
## CC2 2.1.1: Dividing Cheese Sticks (Video)

Click on the link below to view the "Long Division" Quicktime Animation.

[Long Division QuickTime Animation](#) 



### Long Division Example



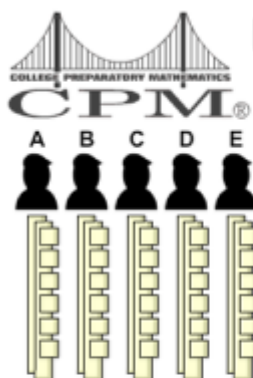
How many whole pieces  
will each person get?



### Long Division Example



Divide each stick into tenths.



## Long Division Example

$$\begin{array}{r} 2.6 \\ 5 \overline{)13.0} \\ \underline{-10\ 0} \\ 3\ 0 \end{array}$$

**Now distribute the remaining tenths among the five groups.**

## CC2 2.2.3: 2-57 Win-A-Row (CPM)

Click on the link below to play "Win-A-Row" (CPM).

[2-57 Win-A-Row \(CPM\)](#)

### 1. Drag the yellow and green numbers to the Win-A-Row grid.

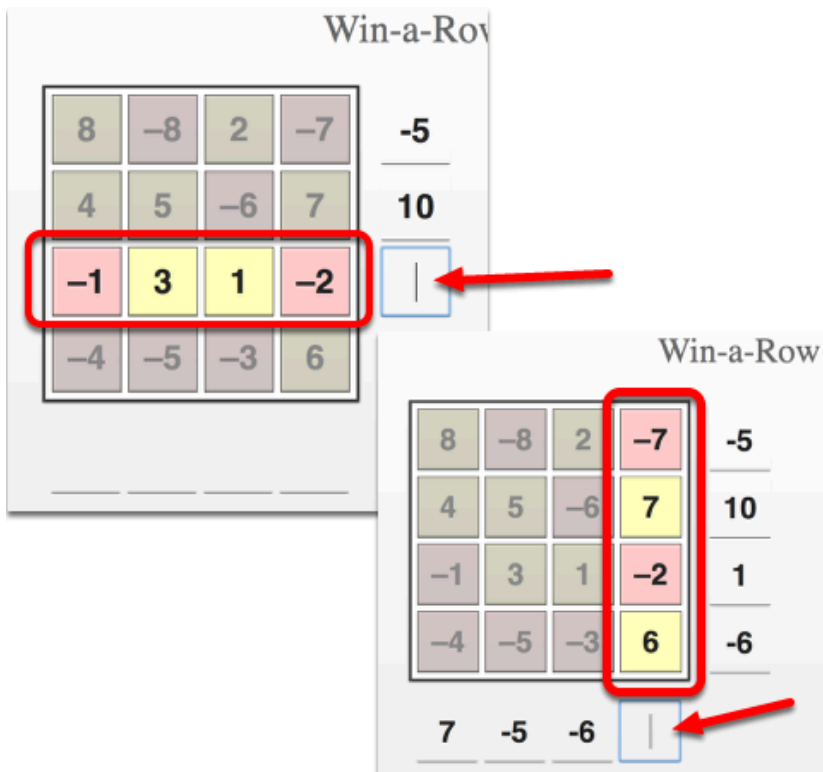
- Play one round of rock-paper-scissors to determine who plays first.
- Player 1 places one of the numbers 1, 2, 3, 4, 5, 6, 7, or 8 in the square he or she chooses and then crosses that number from the list.
- Player 2 places one of the numbers -1, -2, -3, -4, -5, -6, -7, or -8 in another square and then crosses that number from the list.
- Alternate play until all squares are full and all of the numbers have been crossed off the list.
- Add the numbers in each row and write each row's sum on the appropriate blank in the "Sum" column. Give the winner of each row one point.
- Add the numbers in each column and write each column's sum on the appropriate blank in the "Sum" row. Give the winner of each column one point.
- If the two players tie after adding the rows and columns, find the sum of the diagonal (from top to bottom and left to right) to decide the final winner.
- If the two players' sums are still tied, find the sum of the other diagonal (from bottom to top and left to right) to decide the final winner.
- If the game is still tied at this point, both players win!

Win-a-Row

					1	2	3	4
					5	6	7	8
					-1	-2	-3	-4
					-5	-6	-7	-8

\_\_\_\_\_

**2. To sum a row or column, click on the line in front of a row or column typing in the appropriate number.**



### 3. Teacher Notes:

- Play a game against the class to demonstrate the game
- Or ask two volunteers to play a round for the class and record their game on the board.
- Then students should then play the game in pairs.
- Students should come up with their own methods for calculating the total of each row.

## CC2 2.2.3: 2-58 Student eTool (CPM)

Click on the link below for the "2-58 Student eTool" (CPM).

[2-58 Student eTool \(CPM\)](#)

### 1. The user can:

- Drag tiles from the tray to the Display area.
- Click tiles to change color to black.
- Drag a textbox to the display area to label or explain.

**CPM Tiles**

**CC2 2-58 Student eTool**

Directions: Drag integer tiles from the tray to the work space to build and simplify each part.

Hint: To show a pair of "+" and "-" tiles has been removed, click the tile pair and change the color to black. Therefore, any black tile indicates it has been removed. Or simply drag removed pairs to the tray.

▼ Number Lines

← -1 0 1 →

+

-

→

► General Tools

a.  $-8 + 2$

b.  $-5 + (-3)$

c.  $2 + (-4)$

d.  $-7 + (-7)$

e.  $-4 + 3$

f.  $-4 + 8 + (-2)$

g.  $-3 + 5 + 3$

h.  $-6 + 6$

### 2. Build the expressions by:

- Displaying the correct number of positive and negative tiles.
- Double clicking tiles which result in a value of 0 turning them black.
- Using a textbox to write the answer.

The diagram illustrates the steps to solve the equation  $a. -8 + 2$  using a grid.

**Step 1:** The equation  $a. -8 + 2$  is shown in a box. Below it, a grid shows 8 red dashed lines and 2 green plus signs. A red circle with the number 1 is next to the grid.

**Step 2:** The equation  $a. -8 + 2$  is shown in a box. Below it, a grid shows 8 red dashed lines and 2 black plus signs. A red circle with the number 2 is next to the grid.

**Step 3:** A red circle with the number 3 is next to a box containing the text "Answer: -6".

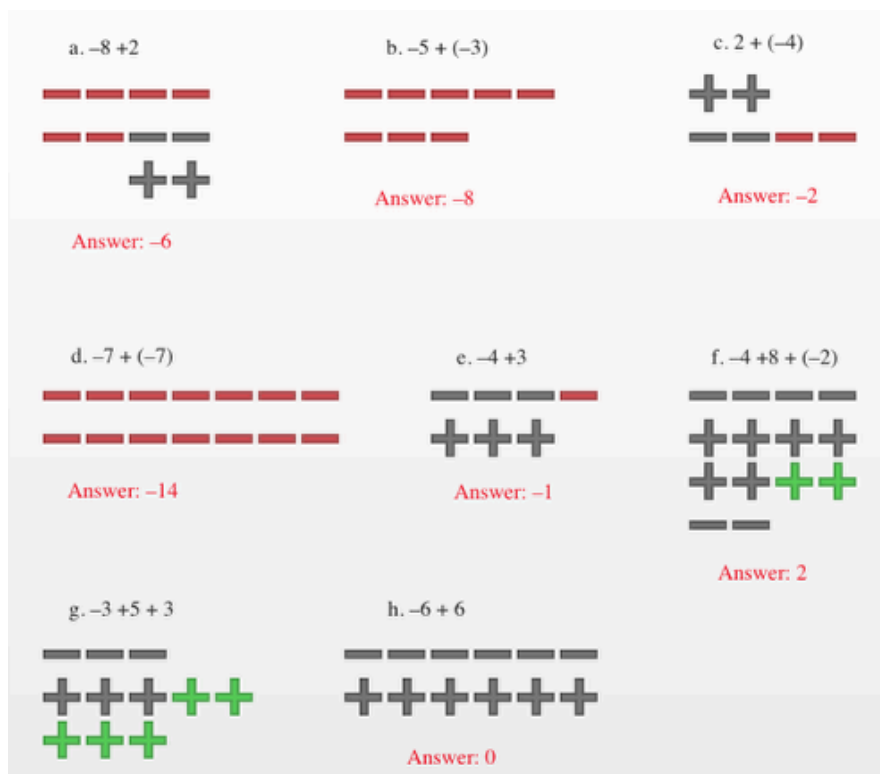
## CC2 2.2.3: 2-58 Answer eTool (CPM)

This tool depicts one possible distribution of tiles to represent the algebraic expressions given.

Click on the link below to view "2-58 Answer eTool (CPM)."

[2-58 Answer eTool \(CPM\)](#)

### 2-58 Answer eTool:





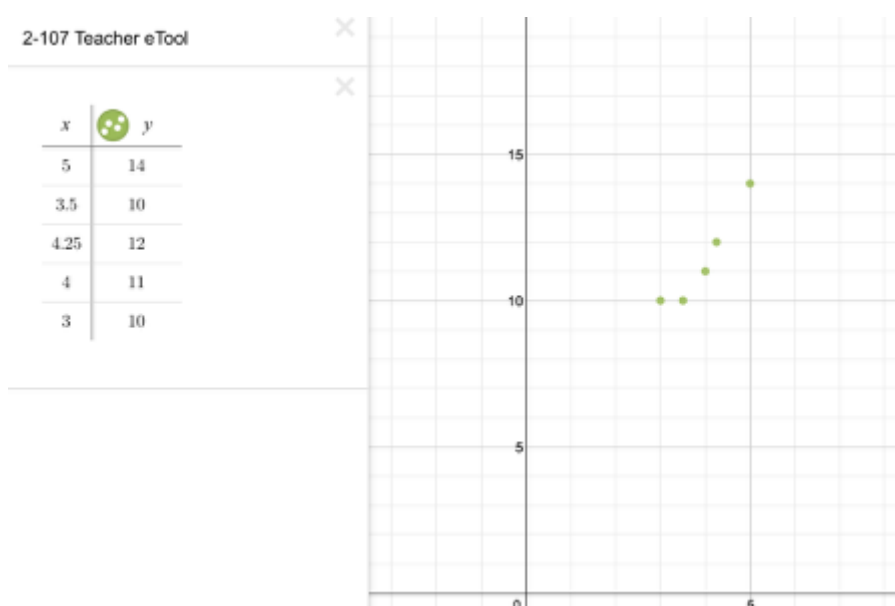
## CC2 2.3.1: 2-107 Teacher eTool (Desmos)

Demonstrate with this tool how data can be spread so that it is more useful in making predictions.

Click on the link below for the "2-107 Teacher eTool (Desmos)."

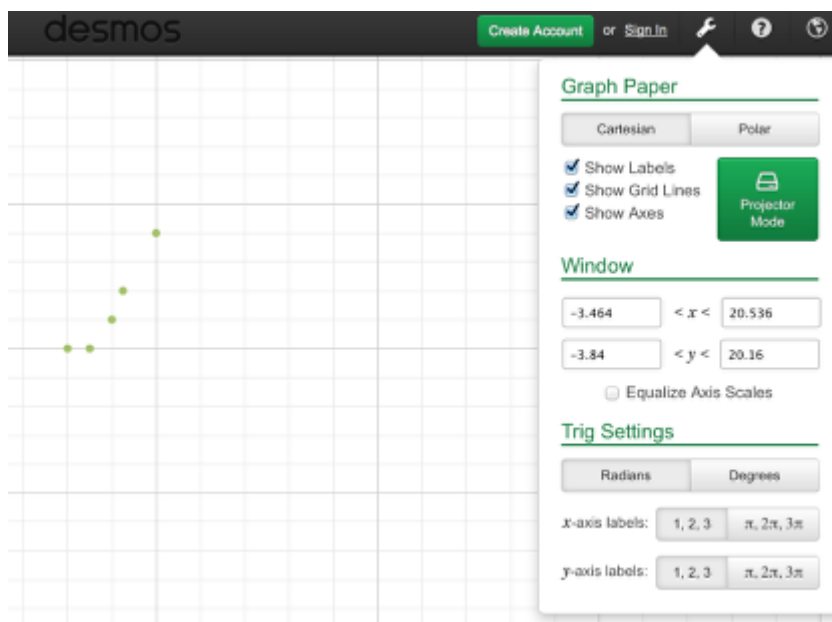
[2-107 Teacher eTool \(Desmos\)](#)

**1. The data is crowded toward the vertical axis, so it is not particularly useful for making predictions.**

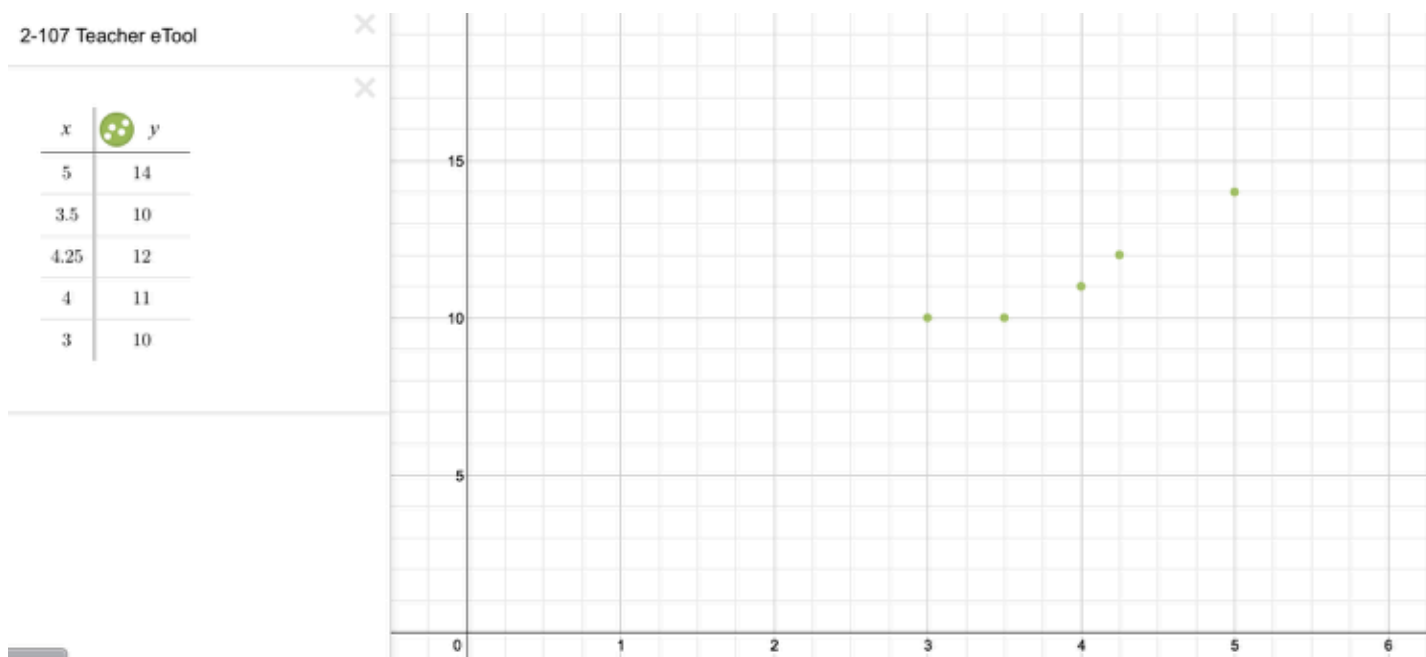


**2. Scale the x-axis so that it covers the horizontal space better. Using this tool:**

- Click the wrench at the top.
- Change the scale for the x-axis.
- Click the wrench to close.



### 3. The new window is easier to view.





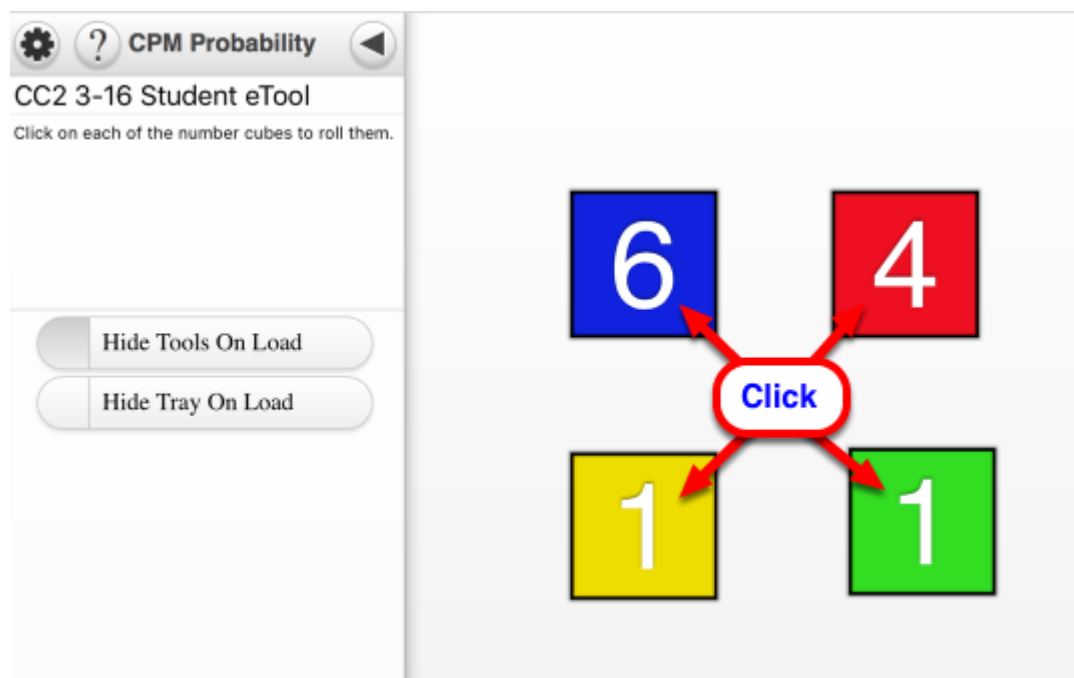
# Chapter 3

## CC2 3.1.2: 3-16 Student eTool (CPM)

Click on the link below.

[3-16 Student eTool \(CPM\)](#)

**Number Cubes:**



**Click each number cube to roll!**



## CC2 3.2.1: 3-24 Student eTool (CPM)

Click on the link below.

[3-24 Student eTool \(CPM\)](#)

### 1. CC2 3-24 Student eTool:

CPM Tiles

CC2 3-24 Student eTool

Directions: Use the assortment of positive and negative tiles at right to determine which assortment it represents. Refresh your browser to reset the tiles back to the original position and state.

Click/tap on a tile to show it "removed."

Part (a): What happens if three + tiles are removed? How can you use numbers and symbols to represent this action and the resulting value?

Part (b): What happens if three – tiles are removed from the original set of tiles? Again, how can you represent this action and the result using numbers and symbols?

► Backgrounds

▼ Number Lines

← -1 0 1 →

+

–

→

## CC2 3.2.4: 3-64 Student eTool (CPM)

Click on the link below.

[3-64 Student eTool \(CPM\)](#)

### Base Ten Blocks

CPM Tiles

CC2 3-64 Student eTool

3-64. Howard went to the mall and saw a banner announcing, "ALL SPORTING GOODS: ONE TENTH OFF!" He saw a pair of roller-blade laces for \$0.40 and wanted to find out how much he would save. With your team, follow the steps below to help Howard determine his savings.

a. What is the perimeter of each hundredths grid? What is the area?

b. What do each of the small squares in the grid represent? Write your answer in three forms (fraction, decimal, and percent).

c. Why do you think these are called "hundredths grids?"

d. Forty cents (the cost of Howard's laces) can also be written as 0.40, or simply 0.4. Shade and label 0.4 by layering blue tiles on top of the hundredths grid.

e. Next, in the other direction, lightly shade and label 0.1 of the grid. What is the fraction of the grid that is darkly shaded? (See book) What is the decimal equivalent of the part of the grid that is darkly shaded? (See book)

f. Write two equations that represent this process, one using fractions and one using decimals.

g. How much money will Howard save with the laces on sale?

For additional help, click on the "?" above. Then go to page 10.

For more tiles, drag tiles from the tray to the work space. To remove, drag tiles to the tray.

Place colored tiles on the top of other tiles to show shading.

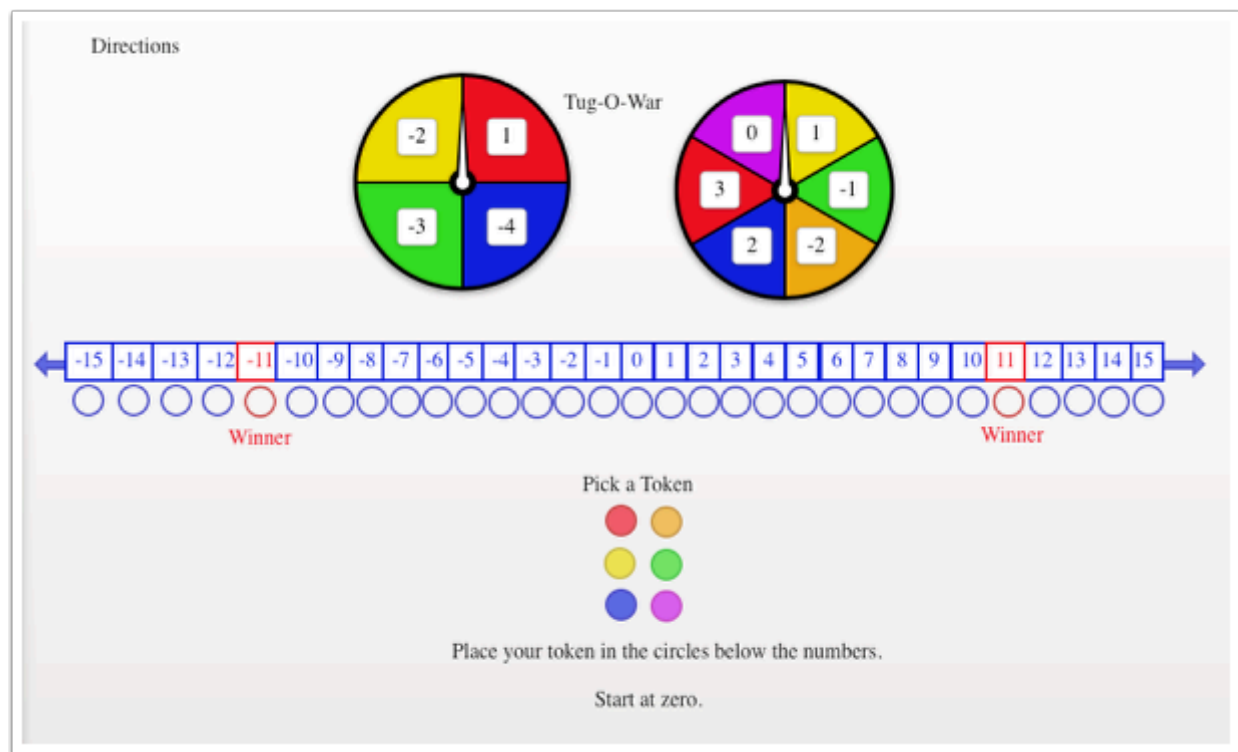
Double click tiles or text to rotate.

## CC2 3.2.5: 3-78 Tug-O-War Student eTool (CPM)

Click on the link below to access eTool.

[3-78 Tug-O-War Student eTool \(CPM\)](#)

1. Click the "Directions" checkbox. Check and uncheck the "Spin" checkboxes. Drag the markers into position.



### 2. Directions:

- Place a Token at zero.
- Click both spinners. Add, subtract, multiply, or divide the results.
- Goal: Land on one of the "Winner" spots.

**CPM Probability**

**3-78 Tug-O-War Student eTool**


Game Rules:

1. Place a marker at zero.
2. Click both spinners. Add, subtract, multiply, or divide them. The result determines the number of steps and direction you will take: positive to the right and negative to the left. You must land on an integer space.
3. For each move, record the starting position, the expression, the result for your move, and your ending position on your paper.
4. If your move causes your marker to go off the board on any play, you lose your turn.


► Probability Tools


► General Tools

Directions



Tug-O-War





Pick a Token

●
●
●
●
●
●

Place your token in the circles below the numbers.

Start at zero.





# Chapter 4

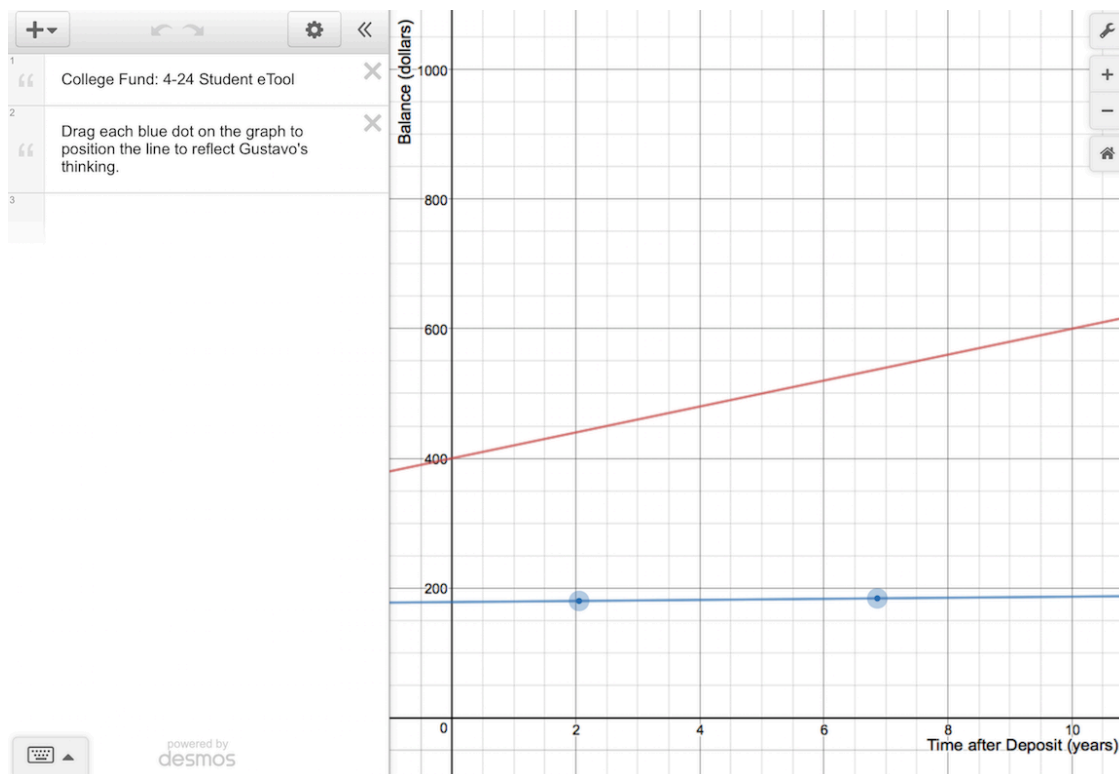
## CC2 4.2.1: 4-24 Student eTool (Desmos)

Click on the "4-24 Student eTool (Desmos)" link below.

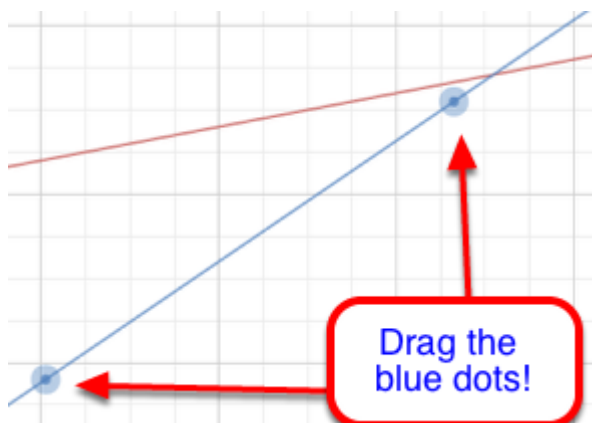
[4-24 Student eTool \(Desmos\)](#)

### 1. Explore 4-24 using this tool:

- Explore by moving the blue line to verify and test your ideas.
- Add "Text" (left side tray) to explain your ideas.
- Go to the Gear and "Save" your work by copying and bookmarking your link.
- Note: you can sign up for a free Desmos account to save your work.



2. Drag the blue dots on the blue line to show what the graph would look like if Gustavo's money doubled in 10 years.

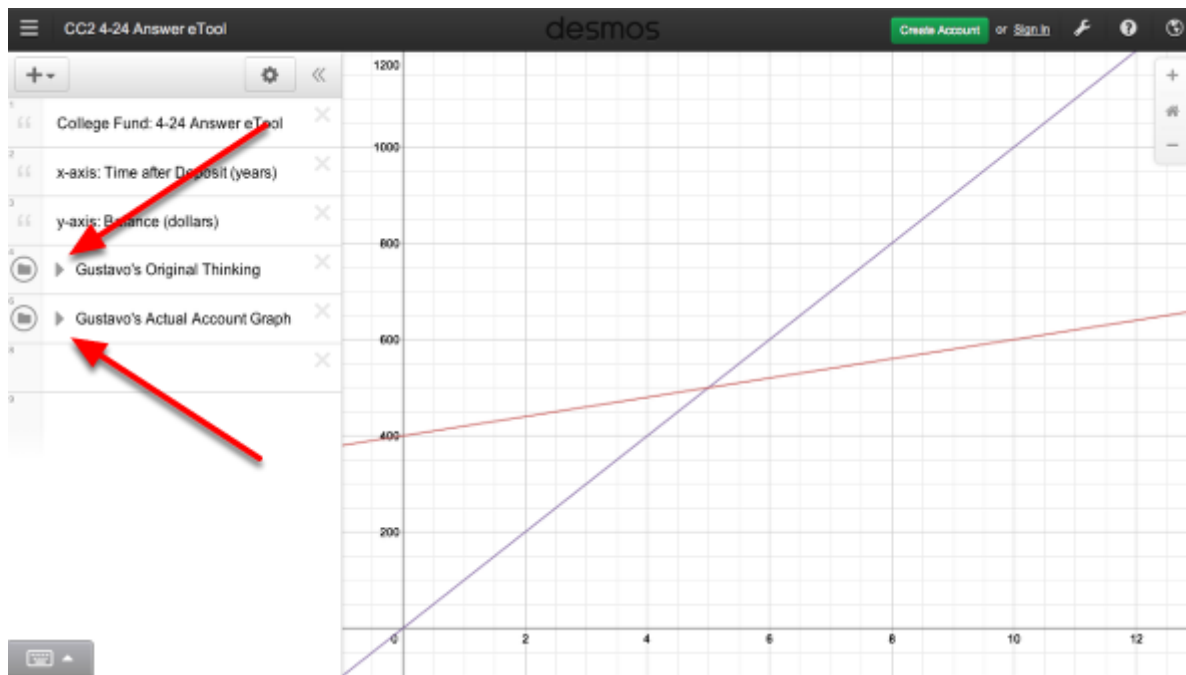


## CC2 4.2.1: 4-24 Answer eTool (Desmos)

Click the "4-24 Answer eTool (Desmos)" link below.

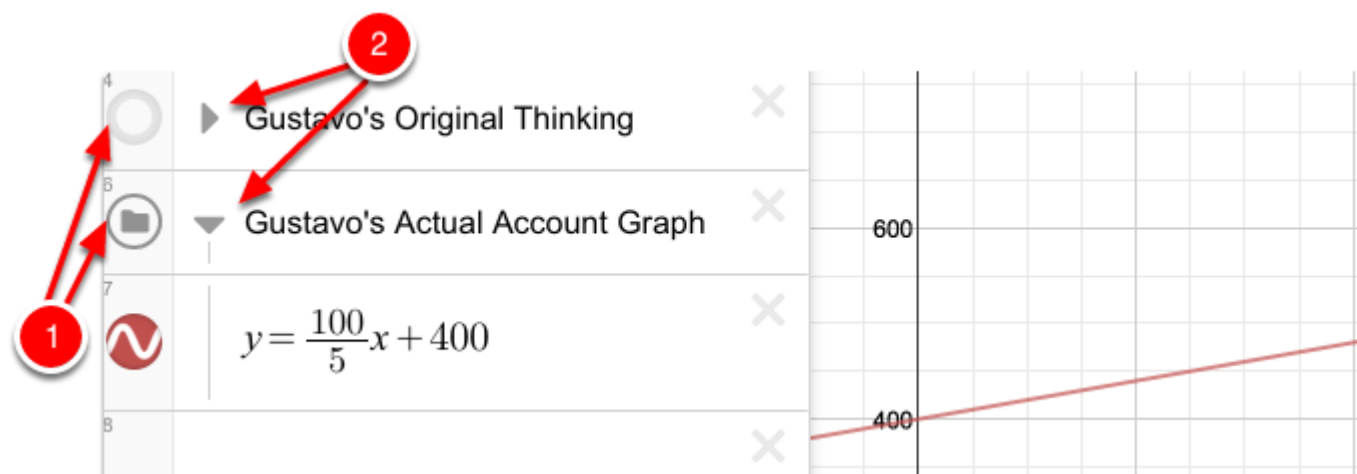
[4-24 Answer eTool \(Desmos\)](#)

1. Click the arrows to show the equations!



2. See numbered notes below:

1. Open circle hides the graph. Click to show.
2. Arrows hide/show the contents of the folder.



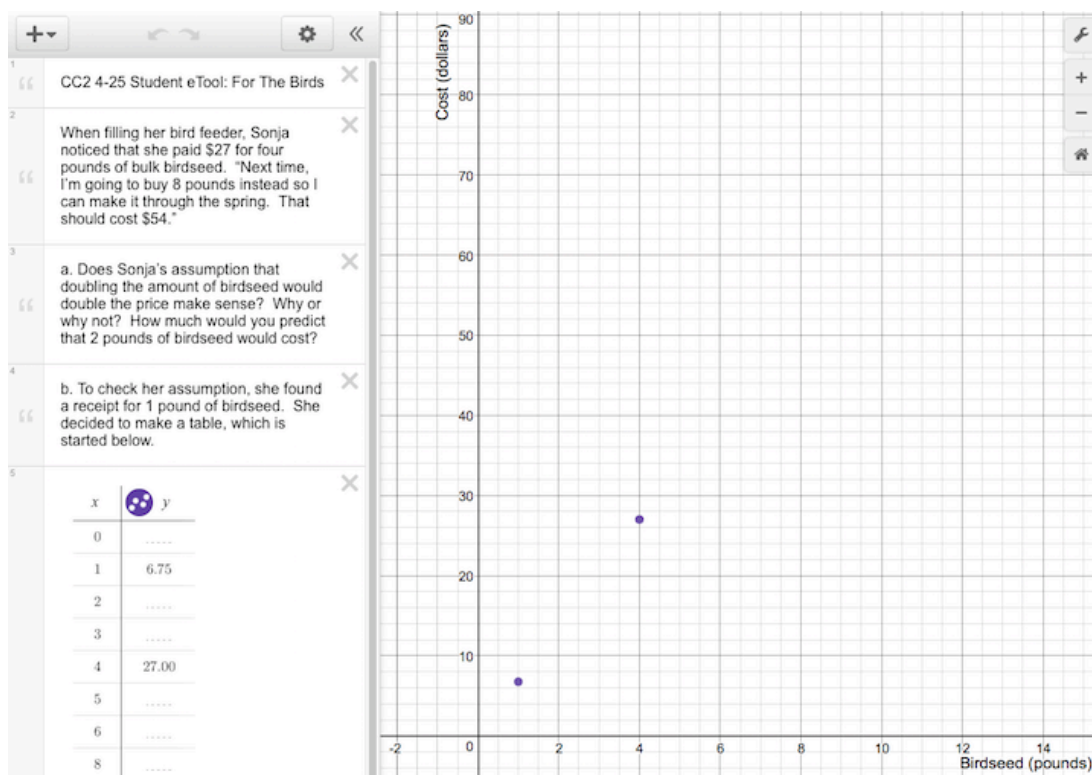
## CC2 4.2.1: 4-25 Student eTool (Desmos)

Click the "4-25 Student eTool (Desmos)" link below.

[4-25 Student eTool \(Desmos\)](#)

### 1. Complete the table and answer the questions below.

- Does Sonja's assumption that doubling the amount of birdseed would double the price make sense? Why or why not?
- How much would you predict that 2 pounds of birdseed would cost?
- How do the amounts in the table grow?
- Does the table confirm Sonja's doubling relationship?
- Give two examples from the table that show how doubling the pounds will double the cost.



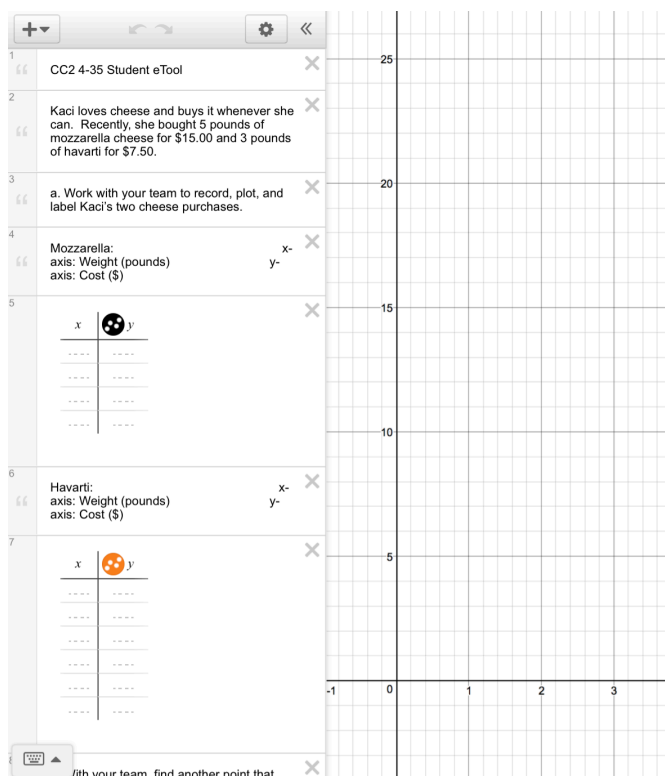
## CC2 4.2.2: 4-35 Student eTool (Desmos)

Click the "4-35 Student eTool (Desmos)" link below.

[4-35 Student eTool \(Desmos\)](#)

**1. Kaci loves cheese and buys it whenever she can. Recently, she bought 5 pounds of mozzarella cheese for \$15.00 and 3 pounds of havarti for \$7.50.**

- Explore the answers to the questions in 4-35 using this tool.
- If desired, all answers including your thoughts can be recorded and saved with this tool.
- Note: You need a Desmos free account to save your work.

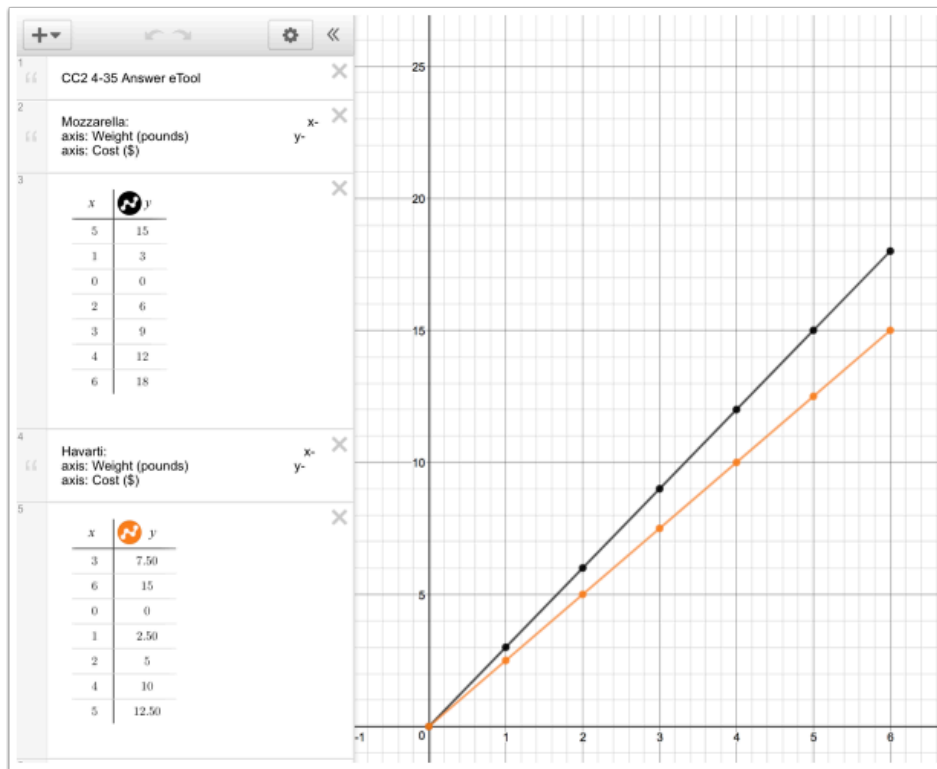


## CC2 4.2.2: 4-35 Answer eTool (Desmos)

Click the "4-35 Answer eTool (Desmos)" link below.

[4-35 Answer eTool \(Desmos\)](#)

### 1. 4-35 Answer Graphs:



**Click on the links below.**

4-72a Student eTool (CPM)

## 4-72b Student eTool (CPM)

[4-72c Student eTool \(CPM\)](#)

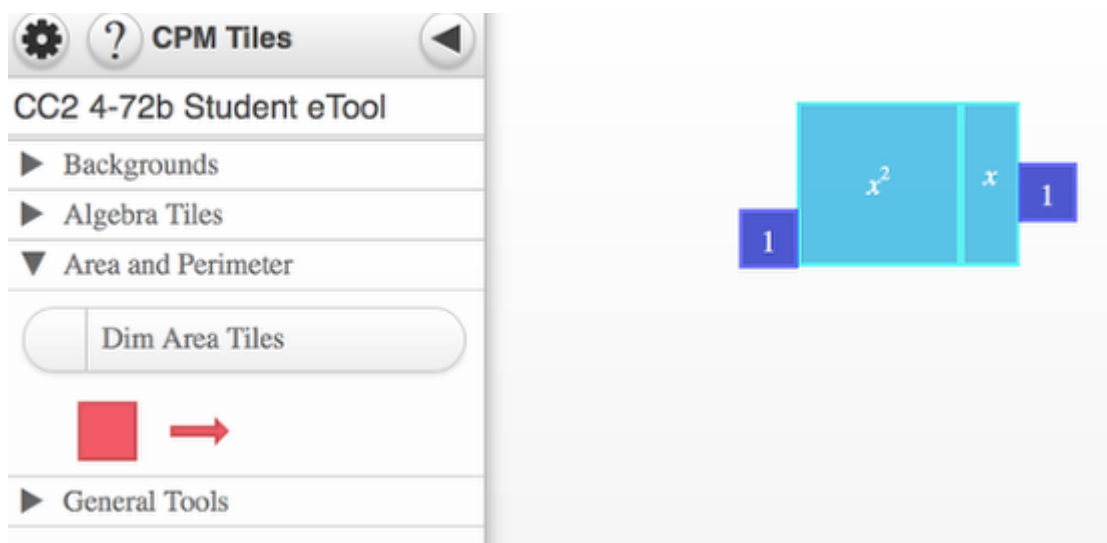
- Use mathematical symbols (numbers, variables, and operations) to record the area of this collection of tiles.
- Write at least three different algebraic expressions that represent the area of this tile collection.

## 2. CC2 4-72a Student eTool:

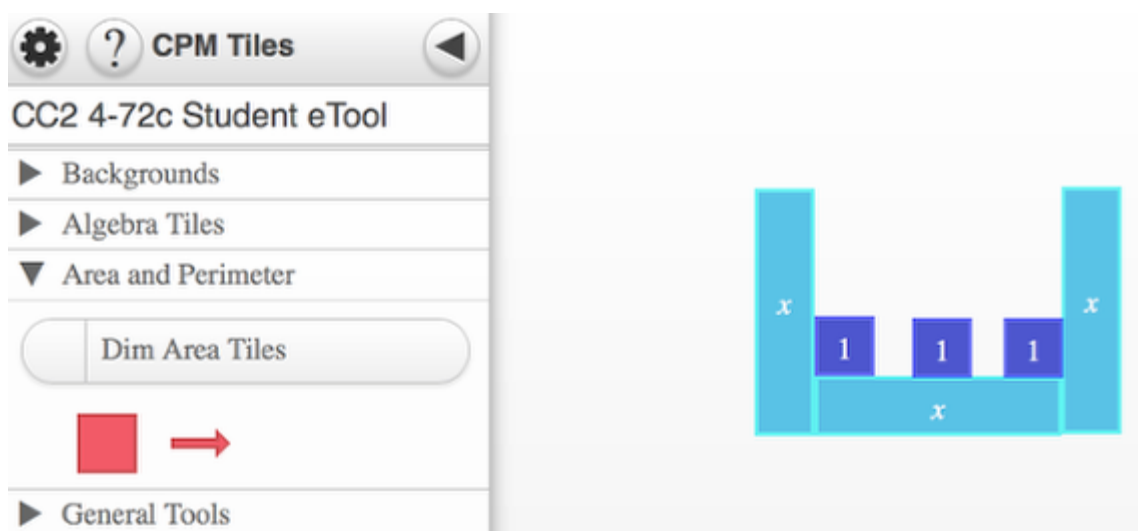
CC Course 2 eTools - T



### 3. CC2 4-72b Student eTool:



### 4. CC2 4-72c Student eTool:



## CC2 4.3.2: 4-85 Student eTool (CPM)

Click on the link below to access the eTool.

[4-85 Student eTool \(CPM\)](#)

**On your paper, draw the shapes shown at right. Label the length of each side on your drawing. With your team, find and record the total perimeter and area for each shape. If possible, write the perimeter in more than one way.**

The screenshot shows the CPM Tiles eTool interface. On the left is a sidebar with controls:
 

- CPM Tiles** header with a question mark icon.
- CC2 4-85 Student eTool** title.
- Instructions: "On your paper, draw the shapes shown at right. Label the length of each side on your drawing. With your team, find and record the total perimeter and area for each shape. If possible, write the perimeter in more than one way."
- Backgrounds** section with a dropdown arrow.
- Algebra Tiles** section with a dropdown arrow.
- Label:**  $x$  with a slider and two blue tiles labeled  $x$  and  $x^2$ .
- Label:**  $y$  with a slider and two purple tiles labeled  $y$  and  $y^2$ .
- Label:**  $1$  with a slider and two green tiles labeled  $1$  and  $x \cdot y$ .
- General Tools** section with a dropdown arrow.

 The main workspace on the right contains three target shapes:
 

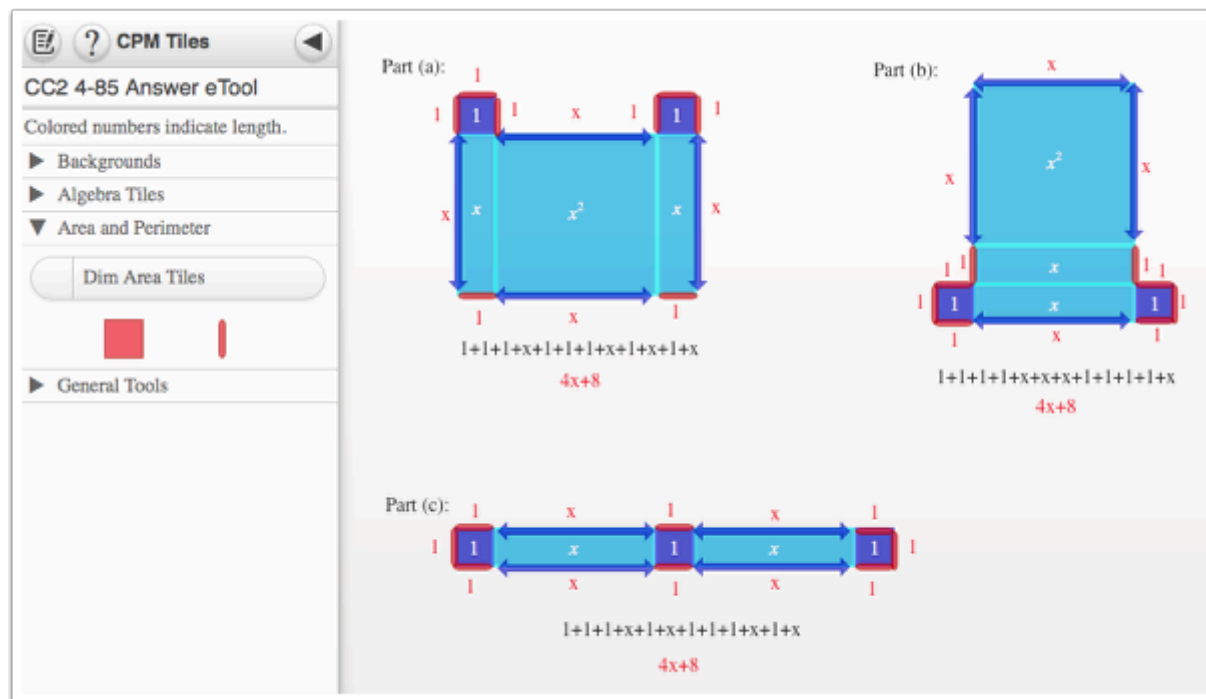
- 4-85a:** A shape composed of four blue tiles: one  $x^2$  tile in the center, and three  $x$  tiles (top, bottom-left, bottom-right) attached to it.
- 4-85b:** A shape composed of five blue tiles: one  $x^2$  tile at the top, two  $x$  tiles below it, and two  $1$  tiles at the bottom corners.
- 4-85c:** A horizontal row of five blue tiles: one  $1$  tile, followed by two  $x$  tiles, followed by another  $1$  tile.

## CC2 4.3.2: 4-85 Answer eTool (CPM)

Click the "4-85 Answer eTool (CPM)" link below.

[4-85 Answer eTool \(CPM\)](#)

1. The tool shows the perimeter of each figure.



## CC2 4.3.2: 4-87 Student eTool (CPM)

Click on the link below to access the eTool.

[4-87 Student eTool \(CPM\)](#)

### 1. 4-87 Student eTool

- Discuss with your team how to label the length of the right side of each figure. Label each length on your paper. Explain your reasoning.
- Find the perimeter of each figure. Write the perimeter in simplest form by combining the like terms.

**CC2 4-87 Student eTool**

Look carefully at the lengths of the right sides.

a. Discuss with your team how to label the length of the right side of each figure. Label each length on your paper. Explain your reasoning.


b. Find the perimeter of each figure. Write the perimeter in simplest form by combining the like terms.

▶ Algebra Tiles

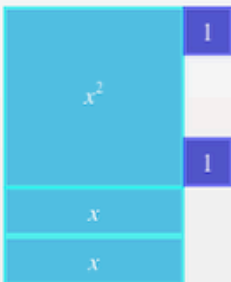
▶ Area and Perimeter

▶ General Tools

4-87i



4-87ii



## CC2 4.3.2: 4-88 Student eTool (CPM)

This article describes the CC2 4-88 student eTool and provides a link to access it.

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

[4-88 Student eTool \(CPM\)](#)

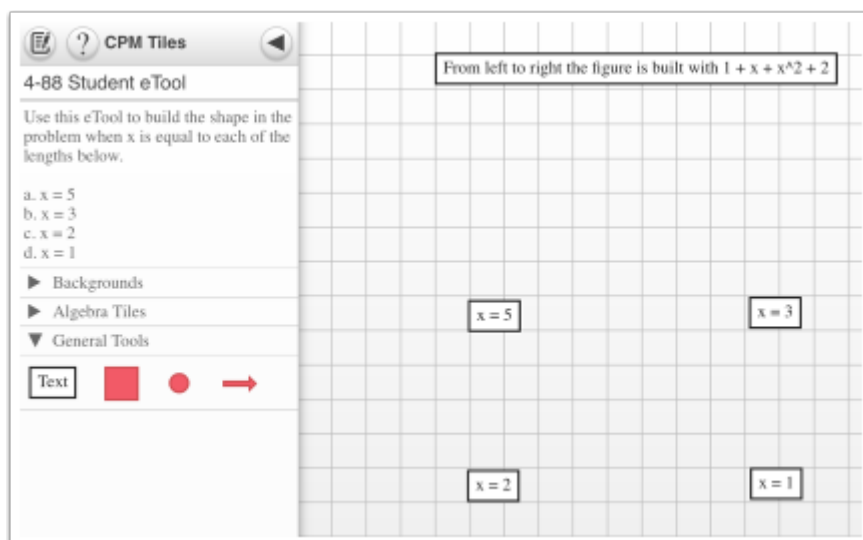
**1. Use this eTool to build the shape in the problem when  $x$  is equal to each of the lengths below.**

a.  $x = 5$

b.  $x = 3$

c.  $x = 2$

d.  $x = 1$



**2. To build, drag the red square to the grid.**

- Drag the double arrows for more than 1 block.
- Change the color if desired.

CPM Tiles

4-88 Student eTool

Use this eTool to build the shape in the problem when  $x$  is equal to each of the lengths below.

- $x = 5$
- $x = 3$
- $x = 2$
- $x = 1$

Backgrounds

Algebra Tiles

General Tools

Text

From left to right the figure is built with 1 +

Drag the double arrow for a different shape.

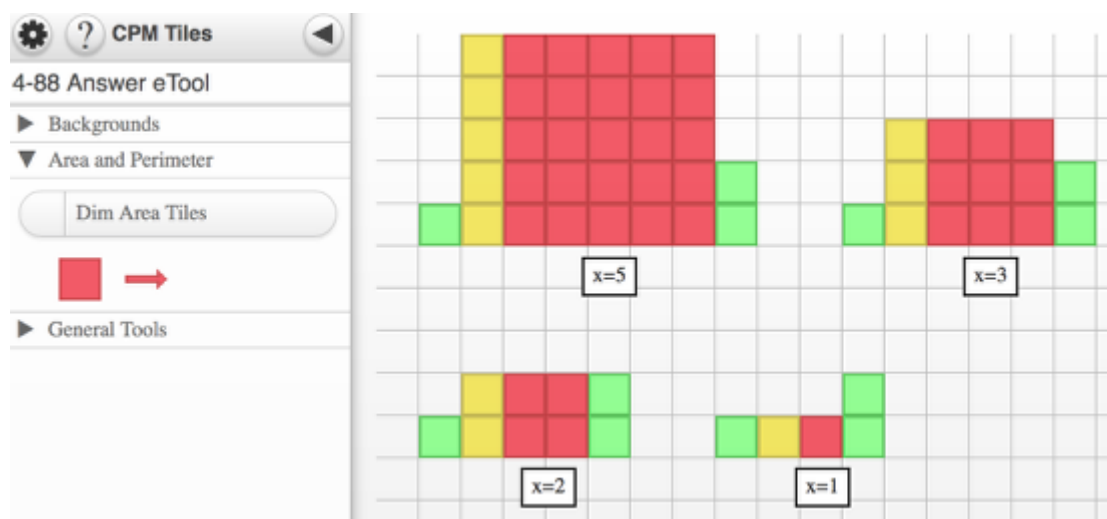
Change

## CC2 4.3.2: 4-88 Answer eTool (CPM)

Click on the "4-88 Answer eTool (CPM)" link below.

[4-88 Answer eTool \(CPM\)](#)

1. This tool shows the construction of each part a-d as the value of "x" varies.



## CC2 4.3.2: 4-89 Student eTool (CPM)

Click on the link below to access the eTool

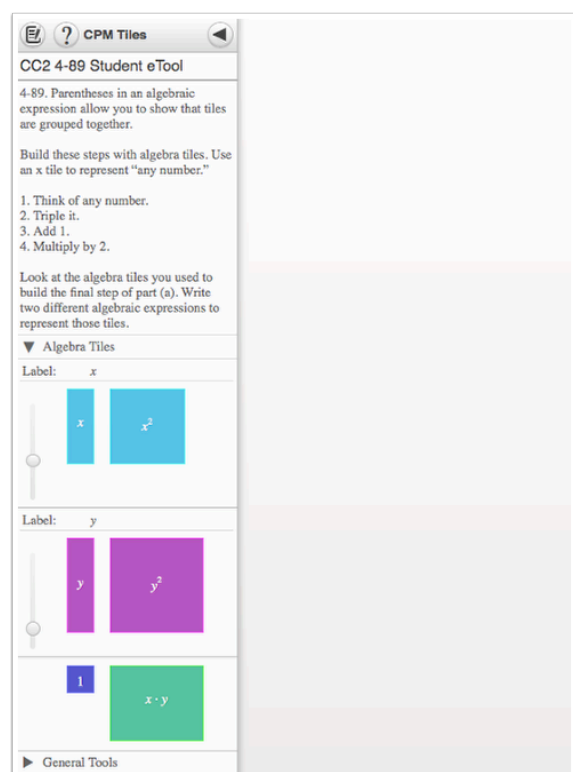
[CC2 4-89 Student eTool](#)

Use this eTool to build the following steps with algebra tiles.

Use an  $x$  tile to represent "any number".

1. Think of any number.
2. Triple it.
3. Add 1.
4. Multiply by 2.

Look at the algebra tiles you used to build the final step of part (a). Write two different algebraic expressions to represent those tiles.



CPM Tiles

CC2 4-89 Student eTool

4-89. Parentheses in an algebraic expression allow you to show that tiles are grouped together.

Build these steps with algebra tiles. Use an  $x$  tile to represent "any number."

1. Think of any number.
2. Triple it.
3. Add 1.
4. Multiply by 2.

Look at the algebra tiles you used to build the final step of part (a). Write two different algebraic expressions to represent those tiles.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

$1$   $x - y$

► General Tools



## CC2 4.3.2: 4-90 Student eTool (CPM)

Click the link below to access the eTool.

[4-90 Student eTool](#)

### Building expressions with Algebra Tiles.

Build the following expressions with algebra tiles. Then rewrite the expression a different way. Remember that parentheses in an algebraic expression allow you to show that tiles are grouped together.

a.  $4(2x + 3)$

b.  $12x + 18$

c.  $10 + 15x$

(Hint: Divide into as many equally-sized groups as possible)



## CC2 4.3.3: 4-106 Student eTool (CPM)

Click the link below to access the eTool.

[4-106 Student eTool](#)

### Equivalent expression

- Write the expression shown for each of the parts at right.
- Then write its simplified equivalent expression by making zeros (zero pairs) and combining like terms.

CPM Tiles

CC2 4-106 Student eTool

4-106. An equivalent expression refers to the same amount with a different name.

Write the expression shown for each of the parts at right. Then write its simplified equivalent expression by making zeros (zero pairs) and combining like terms.

Algebra Tiles

General Tools

Text

a.

$x$

$x$

$-x$

$-x$

$1$

$1$

$-1$

$-1$

$1$

$1$

$-1$

b.

$x^2$

$x$

$x$

$-x$

$-x$

$x^2$

$1$

$-1$

$-1$

$1$

$-1$



## CC2 4.3.3: 4-107 Student eTool (CPM)

Click the link below to access the eTool.

[4-107 Student eTool](#)

Use this eTool to build what is described below.

Write two different equivalent expressions to describe what is represented. One of the two representations should include parentheses.

- The area of a rectangle with a width of 3 units and a length of  $x + 5$ .
- Two equal groups of  $3x - 2$ .
- Four rows of  $2x + 1$ .
- A number increased by one, then tripled.

**CPM Tiles**

**CC2 4-107 Student eTool**

4-107 On your Expression Mat, build what is described below using algebra tiles. Then write two different equivalent expressions to describe what is represented. One of the two representations should include parentheses.

- The area of a rectangle with a width of 3 units and a length of  $x + 5$ .
- Two equal groups of  $3x - 2$ .
- Four rows of  $2x + 1$ .
- A number increased by one, then tripled.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

$1$   $x \cdot y$

► General Tools



# Chapter 5

## CC2 5.2.3: Random Number Generator

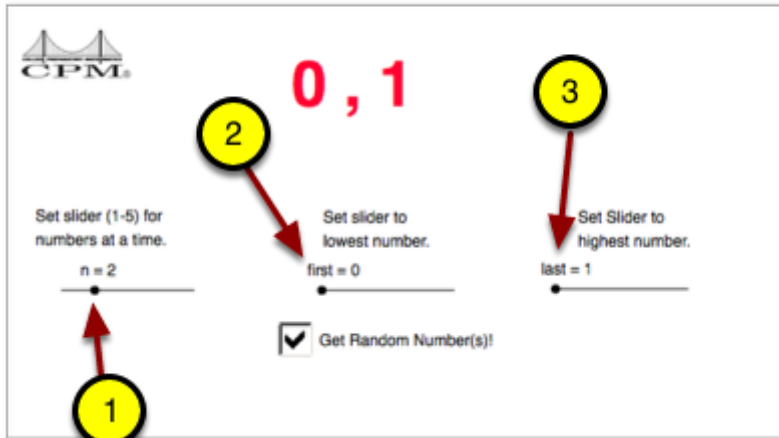
Click the link below.

[Random Number Generator](#)

1. For problem 5-43, "0" will be heads and "1" will be tails.

### Random Number Generator With Replacement

Uncheck and check the button to get a new random number.



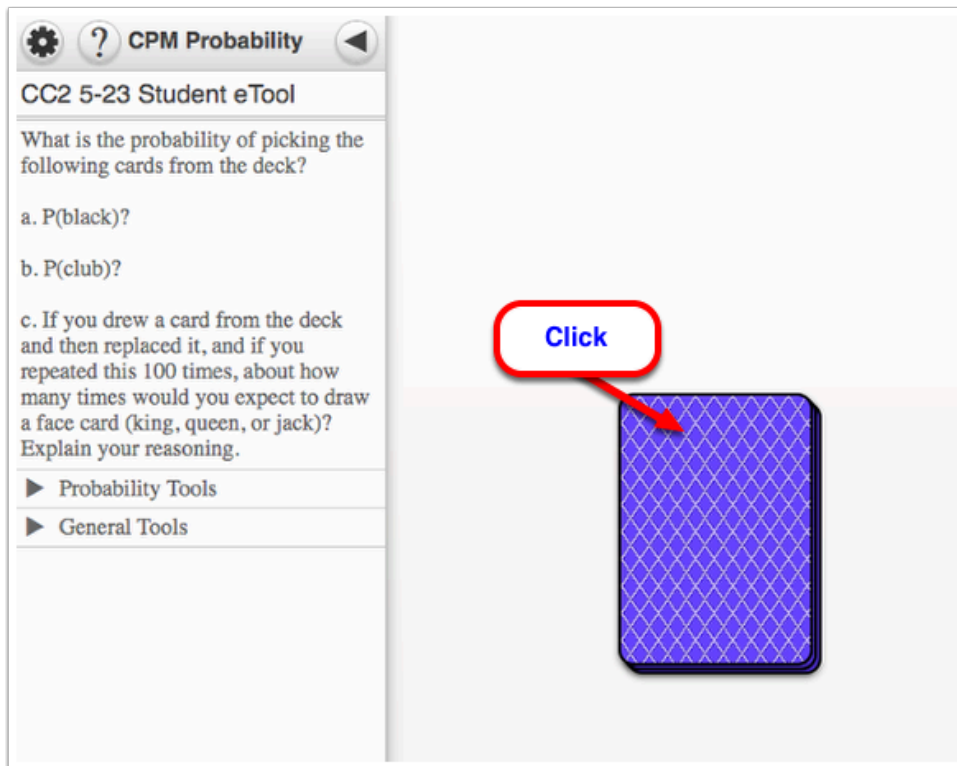
## CC2 5.2.1: 5-23 Student eTool (CPM)

Click the link below to access the eTool.

[5-23 Student eTool \(CPM\)](#)

Use this eTool to explore probability with cards.

Click on the deck of cards to randomly pick a card.



## CC2 5.2.2: 5-34 Student eTool (CPM)

Click the link below to access the eTool.

[5-34 Student eTool](#)

Use this eTool to randomly generate a number.

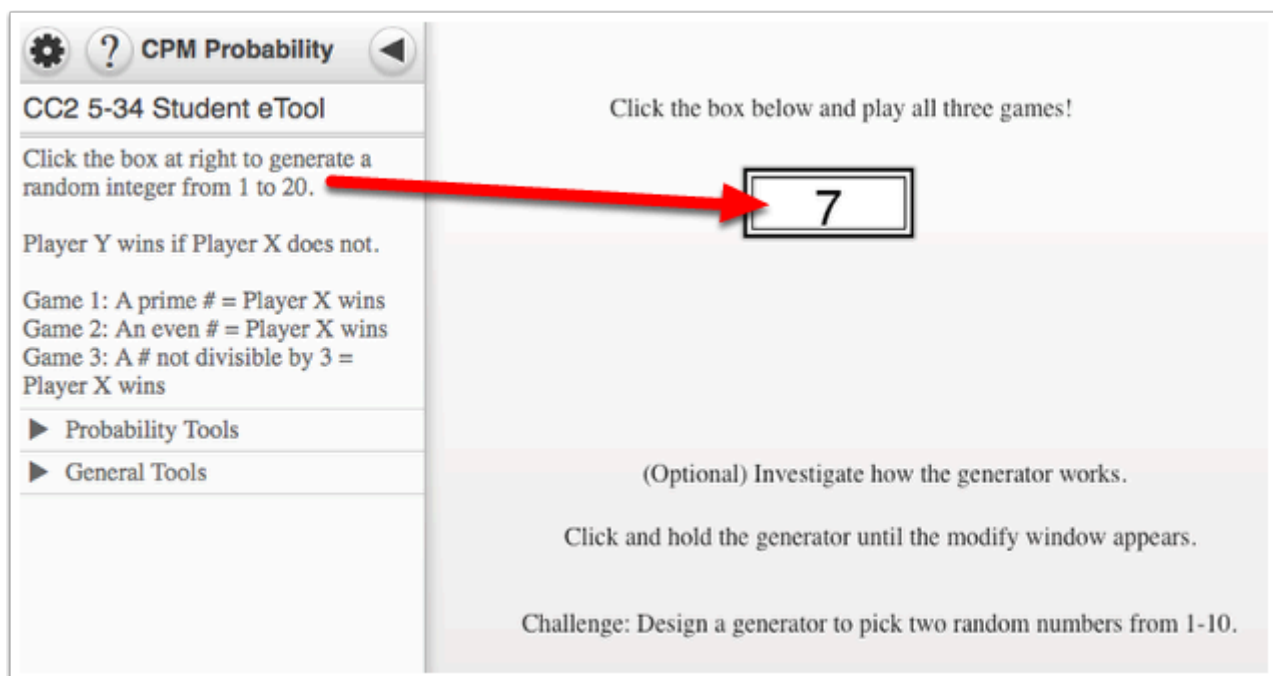
Click the box at right to generate a random integer from 1 to 20.

Player Y wins if Player X does not.

Game 1: A prime # = Player X wins

Game 2: An even # = Player X wins

Game 3: A # not divisible by 3 = Player X wins



Investigate how the generator works.

1. Click and hold the random number generator box until the modify window appears.
2. Enter the desired numbers in the modify window.

Challenge: Design a generator to pick two random numbers from 1-10.

Click the box below and play all three games!

Generate - 1 + Integers

From - 1 +

To - 20 +

(Optional) Investigate how the generator works.

Click and hold the generator until the modify window appears.

Challenge: Design a generator to pick two random numbers from 1-10.



## CC2 5.2.2: 5-35 Student eTool (CPM)

Click the link below to access the eTool.

[5-35 Student eTool](#)

Use this eTool to generate random numbers to simulate the problem below.

- You get action fig. #1 by drawing a 1.
- You get action fig. #2 by drawing a 2.
- You get action fig. #3 by drawing a 3.

If you go to McBurgers 5 times, would you get all three action figures?

CPM Probability

CC2 5-35 Student eTool

You get action fig. #1 by drawing a 1.  
You get action fig. #2 by drawing a 2.  
You get action fig. #3 by drawing a 3.

If you go to McBurgers 5 times, would you get all three action figures?

► Probability Tools

► General Tools

Click and hold the random generator to modify it modeling the situation in 5-35.

Generate - 1 Integers

From - 1

To - 3

Click and hold.

Enter the numbers

## CC2 5.2.2: 5-36 Student eTool (CPM)

Click the link below to access the eTool.

[5-36 Student eTool](#)

**Use this eTool to randomly generate numbers to indicate the number of girls and boys in a family with three children.**

Janelle's aunt and uncle have three children, two of whom are girls. Assuming that girl children and boy children are equally likely, Janelle thought that the chance of having two or more girls out of 3 children must be 50%. Janelle's brother thought the chance of having so many girls had to be less than 50%. Randomly generate numbers to indicate the number of girls and boys in a family with three children.

- What do you think? Make a conjecture about the probability of having two or three girls in a family of three siblings.
- Do a computer simulation with the random number generator to estimate the probability of having two or three girls in a family of three siblings. Use a 1 to represent a girl and a 0 to represent a boy and simulate a family of three children. Do enough trials to get a good estimate.

The screenshot shows the CPM Probability eTool interface. On the left is a sidebar with a gear icon, a question mark icon, and the title "CPM Probability". Below this is the "CC2 5-36 Student eTool" section, which contains the problem text and two parts: (a) asking for a conjecture and (b) asking for a computer simulation. The main area displays the "RANDOM NUMBER GENERATOR" settings. A red box highlights the "Generate" field, which is set to "1". A red arrow points from a text box saying "Click and hold the random generator to modify the numbers" to this field. Below the "Generate" field is a "From" field set to "1" and a "To" field set to "10". A yellow box highlights the "1" in the "To" field. Below these fields is another "RANDOM NUMBER GENERATOR" label. At the bottom, there are instructions: "Modify the random generator to model the situation." and "Click and hold the generator to modify it."

## CC2 5.2.2: 5-37 Student eTool (CPM)

Click the link below to access the eTool.

[5-37 Student eTool](#)

Use this eTool to simulate the problem below.

Sophia and her brother are trying to create a fair game in which you roll two number cubes. They cannot agree on the probability that the numbers on both number cubes will be even, so they decide to design a simulation.

- Make a conjecture. What is the probability both dice are even?
- Design a simulation with a random number generator. How many random numbers do you need? In what interval should the numbers be? How many times will you do the simulation?
- Set up and run the simulation that you designed with the random number generator and estimate the probability. How does it compare with your conjecture from part (a)?

Use the random generator tool to simulate the number cubes. Click and hold (1 or 2 seconds) the random number generator until options come up to modify it.

The screenshot shows the CPM Probability eTool interface. On the left is a sidebar with the problem text and instructions. The main area displays two dice, one red with the number 6 and one green with the number 2. A red circle with the word 'Click' and arrows points to both dice. Below the dice, text says 'Click both cubes to simulate rolling two number cubes.' At the bottom, there is a 'Generate' button with a dropdown menu showing 'Integers'. A red circle with the text 'Click and hold the random generator to modify the numbers' points to the 'Generate' button. Below the button, a dropdown menu is open, showing 'From' set to 1 and 'To' set to 10. A red box highlights the 'To' field with the number 10.

**CPM Probability**

**CC2 5-37 Student eTool**

5-37 Sophia and her brother are trying to create a fair game in which you roll two number cubes. They cannot agree on the probability that the numbers on both number cubes will be even, so they decide to design a simulation.

a. Make a conjecture. What is the probability both dice are even?

b. Design a simulation with a random number generator. How many random numbers do you need? In what interval should the numbers be? How many times will you do the simulation?

c. Set up and run the simulation that you designed with the random number generator and estimate the probability. How does it compare with your conjecture from part (a)?

Use the random generator tool to simulate the number cubes. Click and hold (1 or 2 seconds) the random number generator until options come up to modify it.

Click

Click both cubes to simulate rolling two number cubes.

Click and hold the random generator to modify the numbers

Generate - 1 + Integers

From - 1 +

To - 10 +

10

Now, modify the random generator

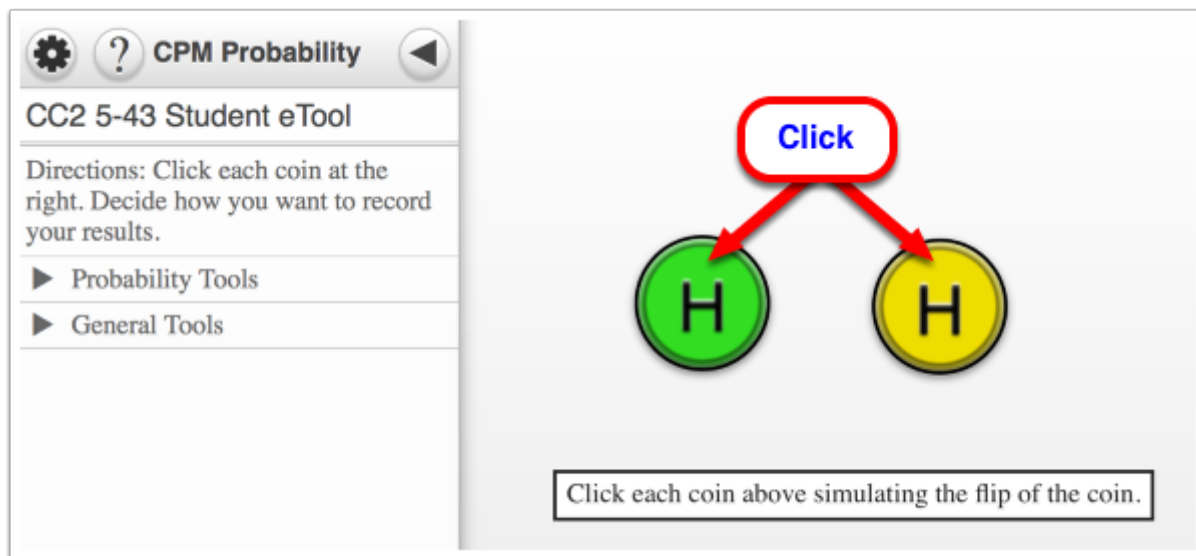
## CC2 5.2.3: 5-43 Student eTool (CPM)

Click the link below to access the eTool.

[5-43 Student eTool](#)

### Coin Flipper

- Click each coin.
- Decide how you want to record your results.



## CC2 5.2.4: 5-54 Student eTool (CPM)

Click on the link below to access the eTool.

[5-54 Student eTool](#)

**Each player chooses either the GREEN or BLUE tokens to place above the numbers 1-12.**

1. Players may place more than one token above a number.
2. Roll the number cubes adding the numbers.
3. Remove one of each player's tokens if placed above the sum.
4. The goal is to be the first to remove all tokens.

CPM Probability

CC2 5-54 Student eTool

Ten O's Game

Each player chooses either the GREEN or BLUE tokens to place above the numbers 1-12.

1. Players may place more than one token above a number.
2. Roll the number cubes adding the numbers.
3. Remove one of each player's tokens if placed above the sum.
4. The goal is to be the first to remove all tokens.

► Probability Tools

► General Tools

Player 1

Ten O's

Player 2

Click and drag the GREEN and BLUE tokens to the RED circles above the numbers.

3

1 2 3 4 5 6 7 8 9 10 11 12

5 5

Click and add the results

2



# CC2 5.2.4: 5-56 Student eTool

Click on the link below for the "5-56 Student eTool".

[5-56 Student eTool](#)

5-56. Gerald decided that this method was taking too long, that it was too confusing, and that he made too many mistakes. Even if he listed all of the combinations correctly, he still had to find the sums and then find the theoretical probabilities for each one. Inspired by multiplication tables, he decided to try to make sense of the problem by organizing the possibilities in a probability table like the one shown below right. How does Gerald's table represent the two events in this situation? What should go in each of the empty cells? Discuss this with your team and then complete Gerald's table on your own paper or explore using the 5-56 Student eTool (CPM).

Table							
© 2013 College Preparatory Mathematics, all rights reserved							
	1	2	3	4	5	6	
1	2	3					
2	3	4					
3	4						
4							
5							
6							




## CC2 5.2.5: 5-65 Student eTool (CPM)

Click on the link below to access the eTool.

[5-65 Student eTool](#)

Use this eTool as an investigative tool for problem 5-65.

- Click the spinner and record the result for each spin.



**CPM Probability**


**CC2 5-65 Student eTool**


A giant wheel is divided into 5 equal sections labeled  $-2$ ,  $-1$ ,  $0$ ,  $1$ , and  $3$ . At the Double Spin, players spin the wheel shown at right two times. The sum of their spins determines whether they win.

a. Make a list of the possible sums you could get.

b. Which sum do you think will be the most probable?

c. Create a probability table that shows all possible outcomes for the two spins.

d. If Tabitha could choose the winning sum for the Double Spin game, what sum would you advise her to choose? What is the probability of her getting that sum with two spins?



## CC2 5.2.6: 5-79 Teacher eTool (CPM)

Click on the link below to access eTool.

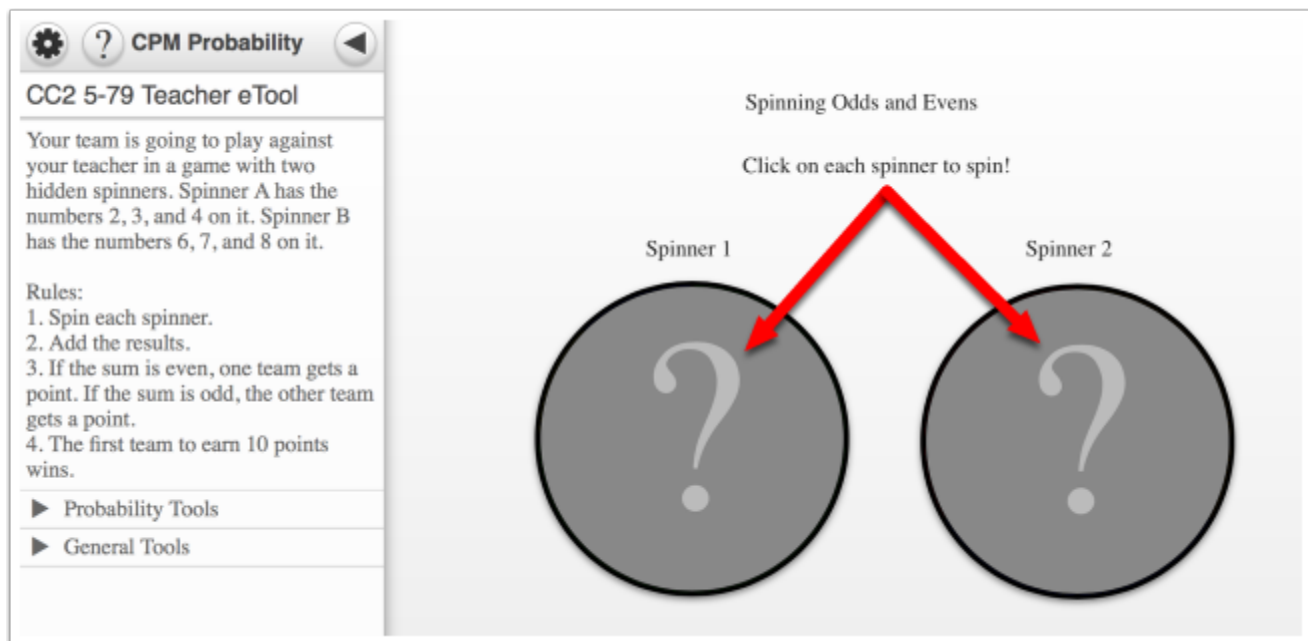
[5-79 Teacher eTool \(CPM\)](#)

### Use this eTool to play the Spinning odds and evens - Part 1.

Your team is going to play against your teacher in a game with two hidden spinners. Spinner A has the numbers 2, 3, and 4 on it. Spinner B has the numbers 6, 7, and 8 on it.

Rules:

1. Spin each spinner.
2. Add the results.
3. If the sum is even, one team gets a point. If the sum is odd, the other team gets a point.
4. The first team to earn 10 points wins.







# Chapter 6

## CC2 6.1.1: 6-1, 6-2, and 6-3 Student eTools (CPM)

Click on the link below for the "6-1, 6-2, and 6-3 Student eTools (CPM)"

[6-1 Student eTool \(CPM\)](#)

[6-2 Student eTool \(CPM\)](#)

[6-3 Student eTool \(CPM\)](#)

### 1. Screen shot of 6-1 Student eTool.

The screenshot displays the "CC2 6-1 Student eTool" interface. On the left, a sidebar contains a "CPM Tiles" header, a "Problem" statement, and a list of algebra tiles. The problem states: "Problem: Oliver put his tiles on Mat A and Ignacio put his tiles on Mat B. Find two different methods to simplify the two expressions so you can compare them. Which side of the mat is larger?" The algebra tiles are categorized into "Backgrounds" and "Algebra Tiles". The "Algebra Tiles" section shows two sets of tiles: one for  $x$  (blue) and one for  $y$  (purple). The main area shows two mats, Mat A and Mat B, separated by a dashed vertical line. Mat A contains five blue tiles labeled "1" and three red tiles labeled "-1". Mat B contains one blue tile labeled "1" and five red tiles labeled "-1". A large question mark is centered between the two mats.

CPM Tiles

CC2 6-1 Student eTool

Problem: Oliver put his tiles on Mat A and Ignacio put his tiles on Mat B.

Find two different methods to simplify the two expressions so you can compare them. Which side of the mat is larger?

Backgrounds

Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

Mat A: 5 blue tiles labeled "1", 3 red tiles labeled "-1"

Mat B: 1 blue tile labeled "1", 5 red tiles labeled "-1"

Question mark: ?

## 2. Screen shot of 6-2 Student eTool.

**CC2 6-2 Student eTool**

Problem: Find a way to determine which side is greater, if possible. Show your work by using the expression comparison mat shown at right.

Backgrounds

Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## 3. Screen shot of 6-3 Student eTool.

**CC2 6-3 Student eTool**

Directions: Simplify the expressions. Which expression is greater?

Backgrounds

Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## CC2 6.1.1: 6-5a, 6-5b, 6-5c, 6-5d Student eTools (CPM)

Click on the links below.

[6-5a Student eTool \(CPM\)](#)

[6-5b Student eTool \(CPM\)](#)

[6-5c Student eTool \(CPM\)](#)

[6-5d Student eTool \(CPM\)](#)

### 1. Screen shot of 6-5a Student eTool

The screenshot displays the "CC2 6-5a Student eTool" interface. On the left, a sidebar contains controls for "CPM Tiles", "Backgrounds", and "Algebra Tiles". The "Algebra Tiles" section is active, showing a palette with tiles labeled  $x$  (blue),  $x^2$  (blue),  $y$  (purple), and  $y^2$  (purple). The main workspace is a large rectangular area divided by a vertical dashed line, representing an expression comparison mat. A large question mark is centered on the dashed line. The left side of the mat contains several algebra tiles: four blue  $1$  tiles, two blue  $x$  tiles, two red  $-1$  tiles, and one red  $-x$  tile. The right side of the mat contains several algebra tiles: four blue  $1$  tiles, one blue  $x$  tile, and three red  $-1$  tiles.

## 2. Screen shot of 6-5b Student eTool

CPM Tiles

CC2 6-5b Student eTool

Problem: Write an expression for each side of the expression comparison mat.

Use legal moves to determine which mat is greater, if possible.

► Backgrounds

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## 3. Screen shot of 6-5c Student eTool

CPM Tiles

CC2 6-5c Student eTool

Problem: Write an expression for each side of the expression comparison mat.

Use legal moves to determine which mat is greater, if possible.

► Backgrounds

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

## 4. Screen shot of 6-5d Student eTool

CPM Tiles

CC2 6-5d Student eTool

Problem: Write an expression for each side of the expression comparison mat

Use legal moves to determine which mat is greater, if possible.

► Backgrounds

▼ Algebra Tiles

Label:  $x$

$x$

$x^2$

Label:  $y$

$y$

$y^2$

The expression comparison mat is divided by a vertical dashed line. On the left side, there are four blue squares labeled '1' and one red rectangle labeled '-x'. On the right side, there are three blue squares labeled '1', two red squares labeled '-1', and one red rectangle labeled '-x'. A large question mark is centered on the dashed line.

## CC2 6.1.2: 6-12a, 6-12b, 6-12c, and 6-12d Student eTools (CPM)

Click on the links below to access the eTools.

[6-12a Student eTool \(CPM\)](#)

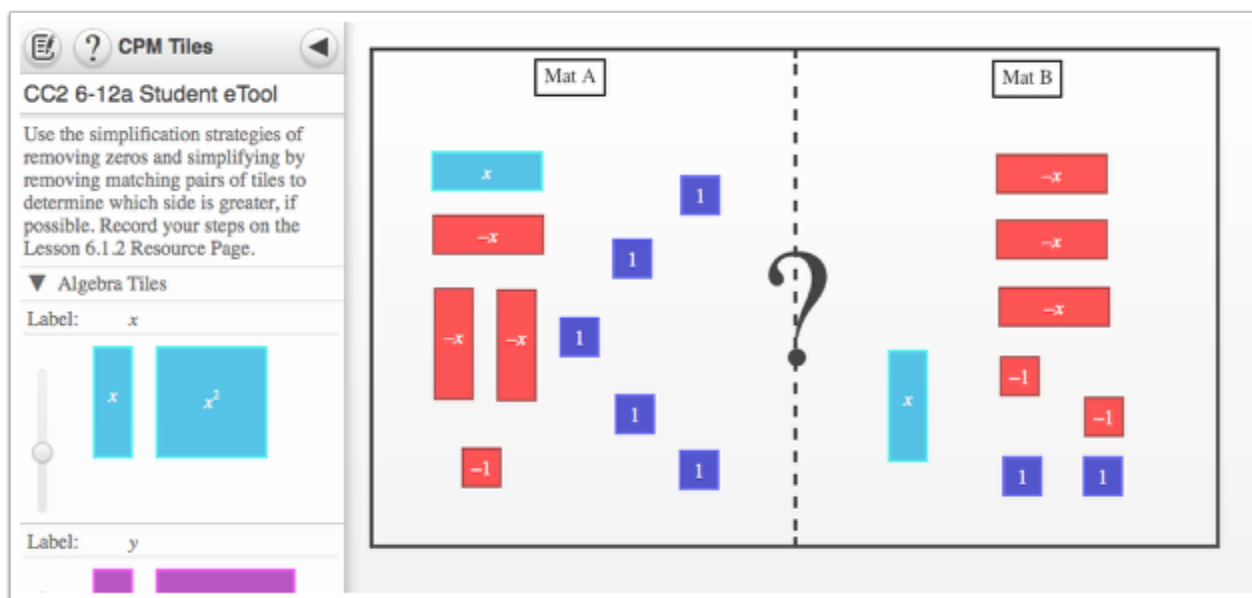
[6-12b Student eTool \(CPM\)](#)

[6-12c Student eTool \(CPM\)](#)

[6-12d Student eTool \(CPM\)](#)

Use the simplification strategies of removing zeros and simplifying by removing matching pairs of tiles to determine which side is greater, if possible. Record your steps on the Lesson 6.1.2 Resource Page.

### CC2 6-12a Student eTool



### CC2 6-12b Student eTool

Follow these steps to build the given expressions.

1. Drag the tiles onto the Comparison Mat.
2. Click on the tiles **once** to change the sign and **twice** to change the tile orientation.

**CC2 6-12b Student eTool**

Build the given expressions below.  
 Mat A:  $2(x + 3) - 4$   
 Mat B:  $3x + (-1) - x + 4$

Then use the simplification strategies of removing zeros and simplifying by removing matching pairs of tiles to determine which side is greater, if possible. Record your steps on the Lesson 6.1.2 Resource Page.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

Click and drag

### CC2 6-12c Student eTool

**CC2 6-12c Student eTool**

Use the simplification strategies of removing zeros and simplifying by removing matching pairs of tiles to determine which side is greater, if possible. Record your steps on the Lesson 6.1.2 Resource Page.

▼ Algebra Tiles

Label:  $x$

$x$   $x^2$

Label:  $y$

$y$   $y^2$

### CC2 6-12d Student eTool



CPM Tiles
◀

### CC2 6-12d Student eTool

Use the simplification strategies of removing zeros and simplifying by removing matching pairs of tiles to determine which side is greater, if possible. Record your steps on the Lesson 6.1.2 Resource Page.

▼ Algebra Tiles

Label:  $x$

Label:  $y$

Mat A

Mat B

?

1

1

1

-1

x

x

x

-1

x

x

1

1

1

1

1

1

1

## CC2 6.1.3: 6-25 Student eTool (CPM)

Click on the link below to access the eTool.

[6-25 Student eTool \(CPM\)](#)

Use this eTool to view the Expression Comparison for Mat A and Mat B.

CPM Tiles

6-25 Student eTool

Maria and Garth were playing a game with the algebra tiles. They each grabbed a handful of tiles and put them on the Expression Comparison Mat at right to see whose side had greater value. pic

Maria said, "I have Mat A and my side has more value." Garth, who had Mat B, disagreed with her.

a. Write expressions for Mat A and Mat B.

b. Work with your team to simplify the expressions on the Expression Comparison Mat while carefully recording your work for each step on your paper with symbols. Can you tell whose side is greater? Why or why not?

c. With your team, find at least four values for  $x$  that would make the expression on Maria's side (Mat A) greater than the expression on Garth's side (Mat B). Be prepared to share your values with the class.

d. Any value for  $x$  that makes Mat A greater than Mat B is a solution to the inequality  $2x + 3 + (-1) > x + 5$ . This is read, "Two  $x$  plus three plus negative one is greater than  $x$  plus five."

Share your solutions with another team and see if you have the same solutions as the other team does.

Mat A

Mat B

## CC2 6.2.1: 6-50 Student eTool (CPM)

Click on the link below to access the eTool.

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

Use this eTool to view the Equation Mat.

CPM Tiles

CC2 6-50 Student eTool

When the expressions on each side of the comparison mat are equal, they can be represented on a mat called an Equation Mat. Obtain a Lesson 6.2.1 Resource Page and algebra tiles from your teacher. Now the "=" symbol on the central line indicates that the expressions on each side of the mat are equal.

a. See the Mat at right.

b. On your paper, record the original equation represented on your Equation Mat.

c. Simplify the tiles on the mat as much as possible. Record what is on the mat after each legal move as you simplify each expression. What value of  $x$  will make the expressions equal?

Algebra Tiles



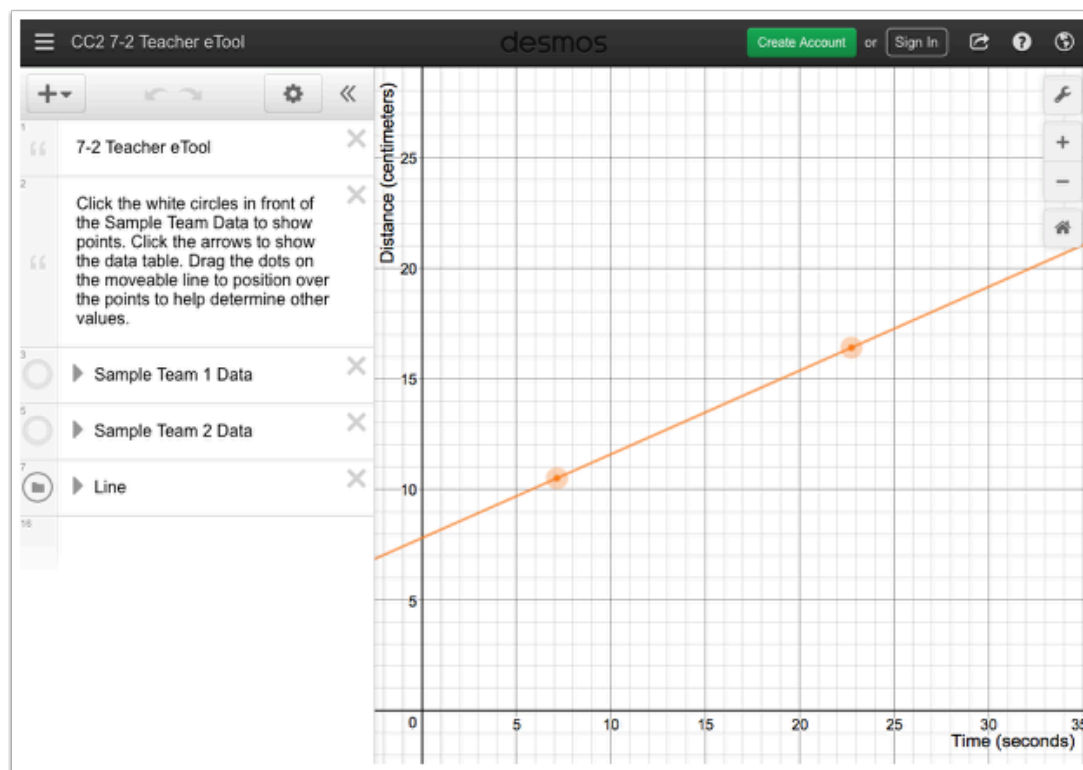
# Chapter 7

## CC2 7.1.1: 7-2 Teacher eTool (Desmos)

Click on the link below for the "7-2 Teacher eTool"

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

1. Separately click on the white circles below to show data. Move the moveable line over the data.





# Chapter 8

## CC2 8.2.2: 8-41 Student eTool (Desmos)

Click on the link below to access the eTool.

[8-41 Student eTool \(Desmos\)](#)

**Use this eTool to get the average weight of a robin.**

Each of the orange dots represents a robin. Take 10 random samples by dragging 10 of the orange dots above the line where the revealed number represents the weight of a robin.

The screenshot shows the Desmos interface for the CC2 8-41 Student eTool. On the left, there is a list of instructions:

- 1 CC2 8-41 Student eTool
- 2 The sighting of American robins in yards is considered a sign that spring has arrived. You would like to know the average weight of an American robin in your town.
- 3 Part (a): Think about how you can take a random sample from the population of robins shown by the orange dots at right. What things would be important to do? Discuss this with your team.
- 4 Part (b): Now take a random sample of 10 robins and drag them to the cage. Once in the cage, the weight of each robin will be shown. Each member of your team should do the same thing with their own random sample.
- 5 Part (c): Calculate the mean of your sample on the line below. Do you think that your mean is representative of the population? What inferences can you make about the population from your sample?
- 6 Part (d): Compare your estimate of the population mean to the means of the other students in your team. Is your mean the true average weight for all American robins in town? Are any of your teammates' numbers the true average? How can you explain any differences between the means?

On the right, the workspace shows a large cluster of orange dots representing a population of robins. A red arrow points to one of the dots with a callout box that says "Click and drag". The workspace also has a horizontal line and a label "Put all captured robins".

## CC2 8.3.1: Spin Videos

Click on the link below for the "Spin Videos"

[Spin Record](#)

[Dorothy Hamill Spin](#)

[Hurricane Spin](#)

### 1. World Record Spin:

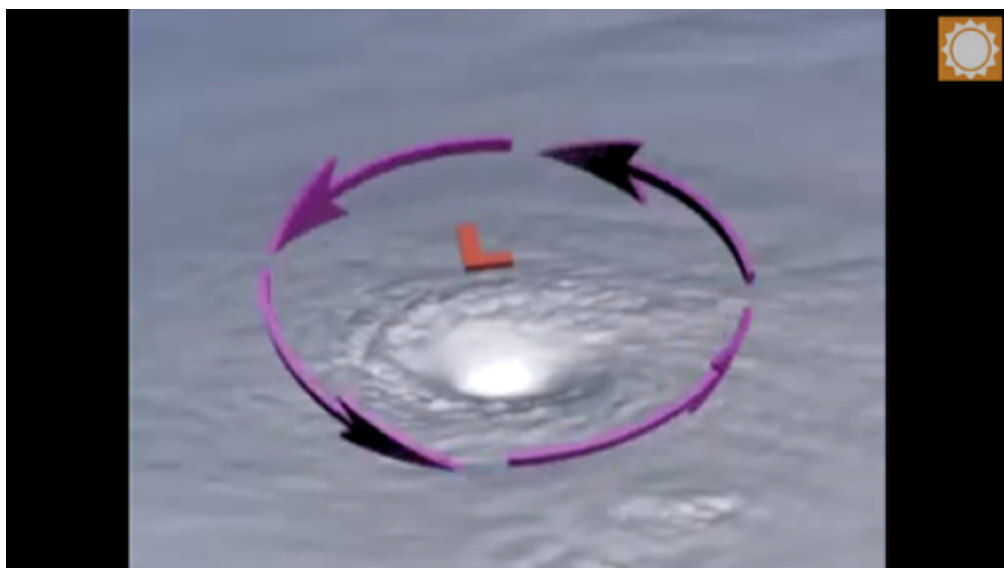


### 2. Dorothy Hamill Spin:





### 3. Hurricanes Spin:



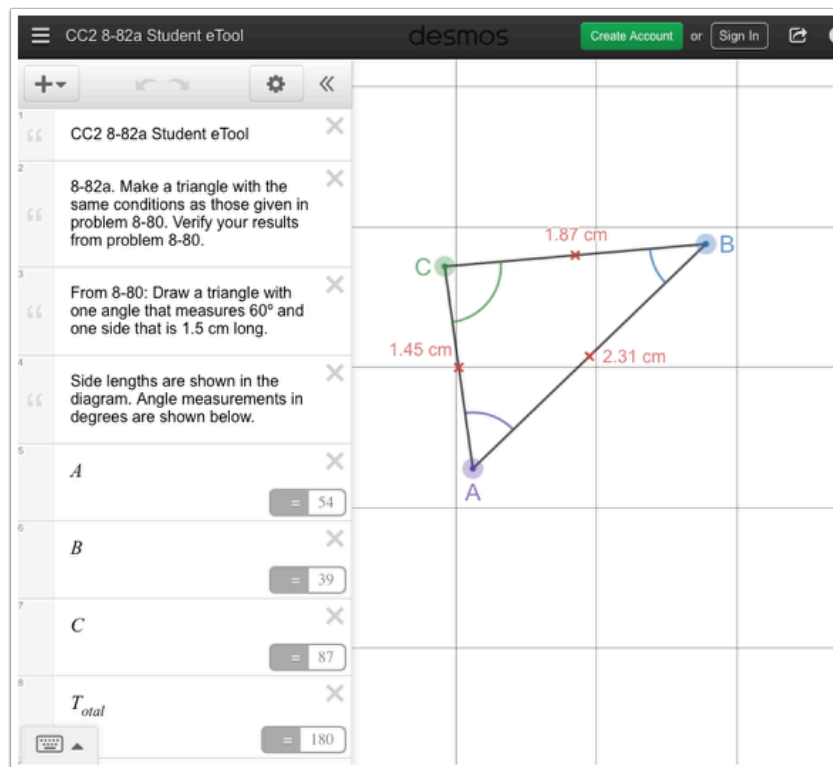
## CC2 8.3.3: 8-82a and 8-82b Student eTool

Click on the links below for the "8-82a" and "8-82b" Student eTools.

[8-82a Student eTool \(Desmos\)](#)

[8-82b Student eTool \(Desmos\)](#)

**1. CC2 8-82a Student eTool: Drag the vertices of the triangle to change the shape.**



## 2. CC2 8-82b Student eTool: Drag the vertices to change the shape of the quadrilateral.

CC2 8-82b Student eTool

desmos

Create Account or Sign In

CC2 8-82b Student eTool

8-82b. Create the quadrilaterals made in problem 8-81. Verify your results and that the sum of angles for each is the same.

From 8-81: Create a quadrilateral with one angle that measures  $30^\circ$ , one angle that measures  $60^\circ$ , and one side that is 5 cm long.

Side lengths are shown in the diagram. Angle measurements in degrees are shown below.

$E$  = 86.3  
 $F$  = 83.3  
 $J$  = 90.2  
 $H$  = 100.1  
 $T_{total}$  = 360

## CC2 8.3.4: 8-92 Triangle Creation Student eTool

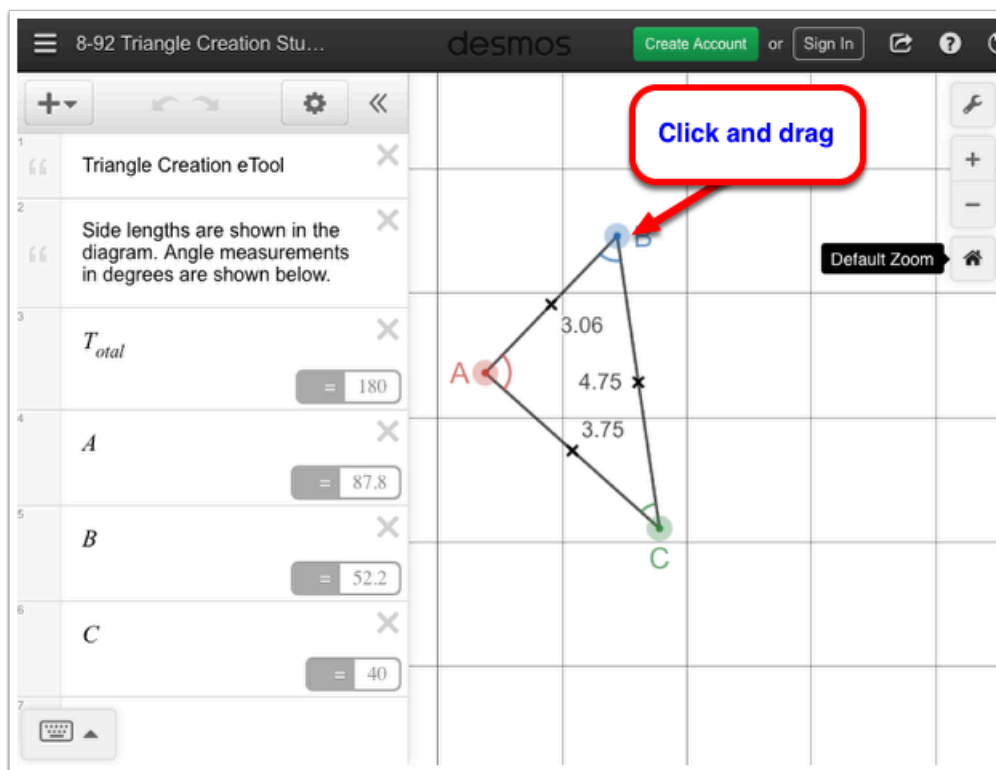
Click on the link below to access eTool.

[8-92 Triangle Creation Student eTool \(Desmos\)](#)

**8-92.** How many different triangles do you think that you can make specifying only two measures to use for the triangle's parts, such as one angle and one side, two angles, or two sides? Work with a partner to investigate this question.

1. One side length 4.5 cm and one angle  $135^\circ$
2. Two angles:  $90^\circ$  and  $60^\circ$
3. Two side lengths: 4.5 cm and 7 cm

Drag the vertices of the triangle to change the lengths and angles.



## CC2 8.3.4: 8-94 Triangle Inequality and Triangle Creation Student eTools (Desmos)

Click on the links below to access the eTools.

[8-94 Triangle Inequality Student eTool \(Desmos\)](#)

[8-94 Triangle Creation Student eTool \(Desmos\)](#)

**8-94.** Imagine now that three possible measures for a triangle's six parts (3 angles or 3 side lengths) are given. Do you think that everyone will make the same triangle in that case?

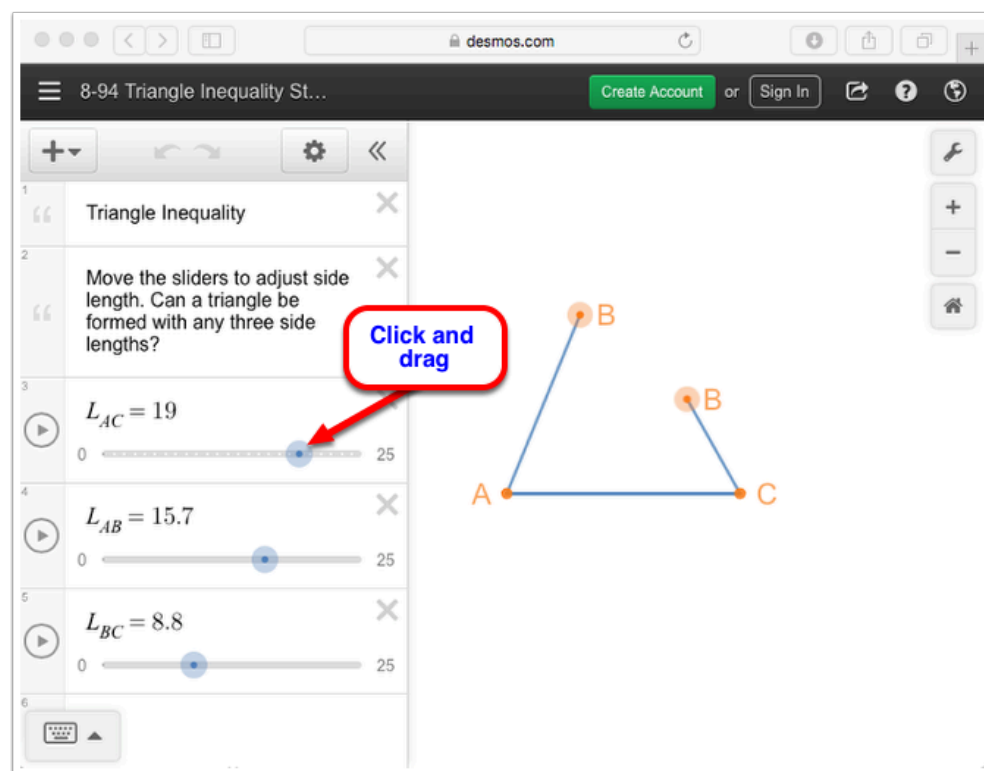
Investigate this question for three possible side lengths given.

1. 1.5 cm, 5 cm, and 4.5 cm.
2. 4.5 cm, 5 cm, and 7 cm.
3. 1.5 cm, 4.5 cm, and 7 cm.

Use either one of the two technology tools below.

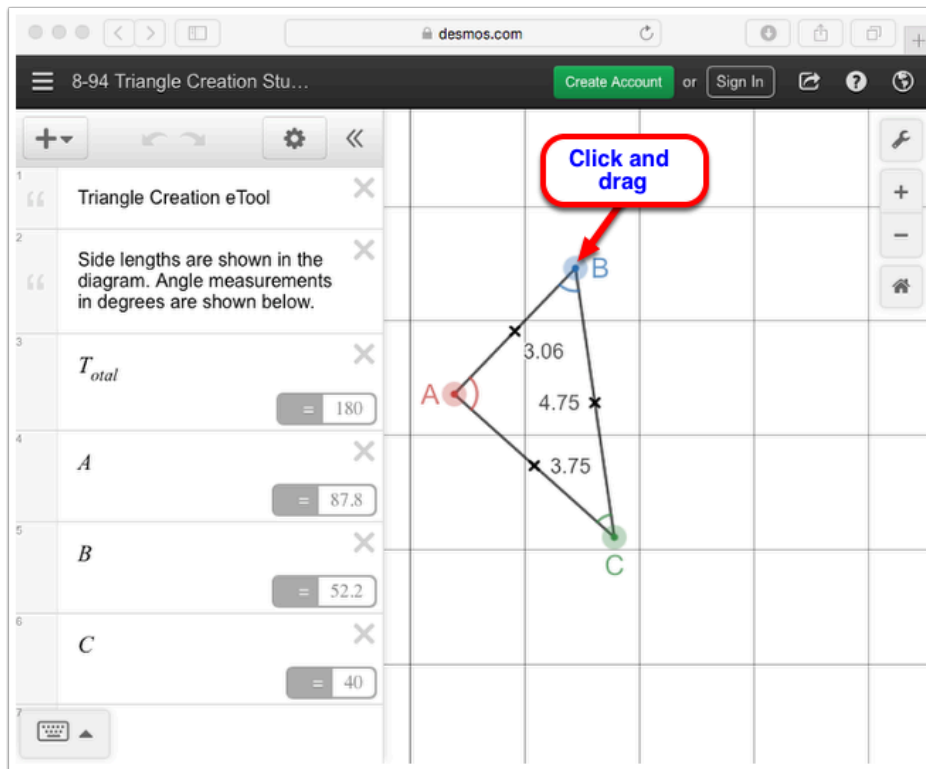
### 1. Triangle Inequality Student eTool

Move the sliders to adjust side length.



### 2. Triangle Creation Student eTool

Drag the vertices of the triangle to change the lengths and angles.



## CC2 8.3.4: 8-95 Triangle Creation Student eTool

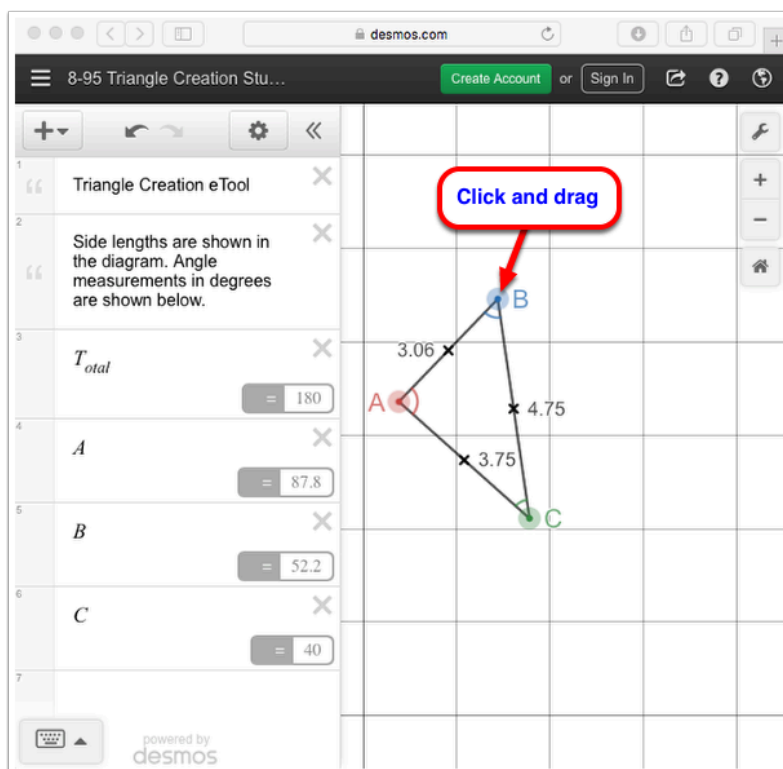
Click on the link below to access eTool.

[8-95 Triangle Creation Student eTool \(Desmos\)](#)

**8-95.** Now investigate this same question for angles. That is, do you think that everyone will make the same triangle when given 3 angle measurements?

1.  $90^\circ$ ,  $60^\circ$ , and  $30^\circ$
2. Two angles:  $90^\circ$  and  $60^\circ$
3.  $135^\circ$ ,  $45^\circ$ , and  $60^\circ$

Drag the vertices of the triangle to change the lengths and angles.





# Chapter 9

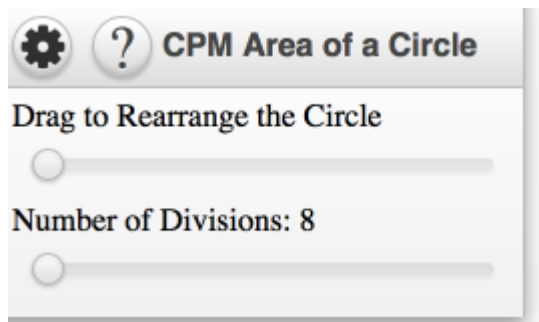


## CC2 9.1.2: 9-26 Area of a Circle Student eTool (CPM)

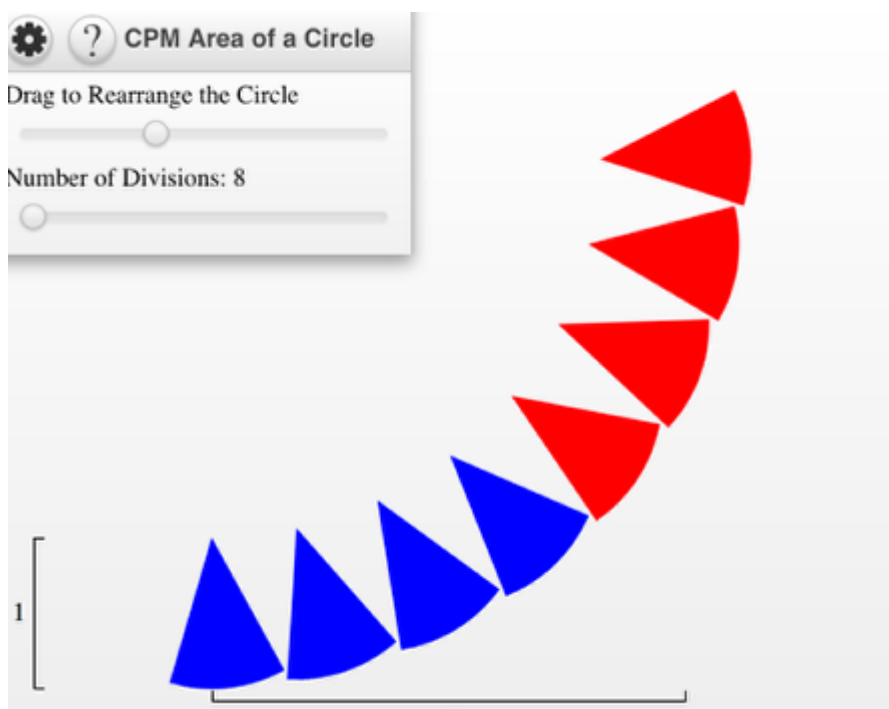
Click on the link below for the "Circle Tool and Area Demo"

[9-26 Area of a Circle Student eTool \(CPM\)](#)

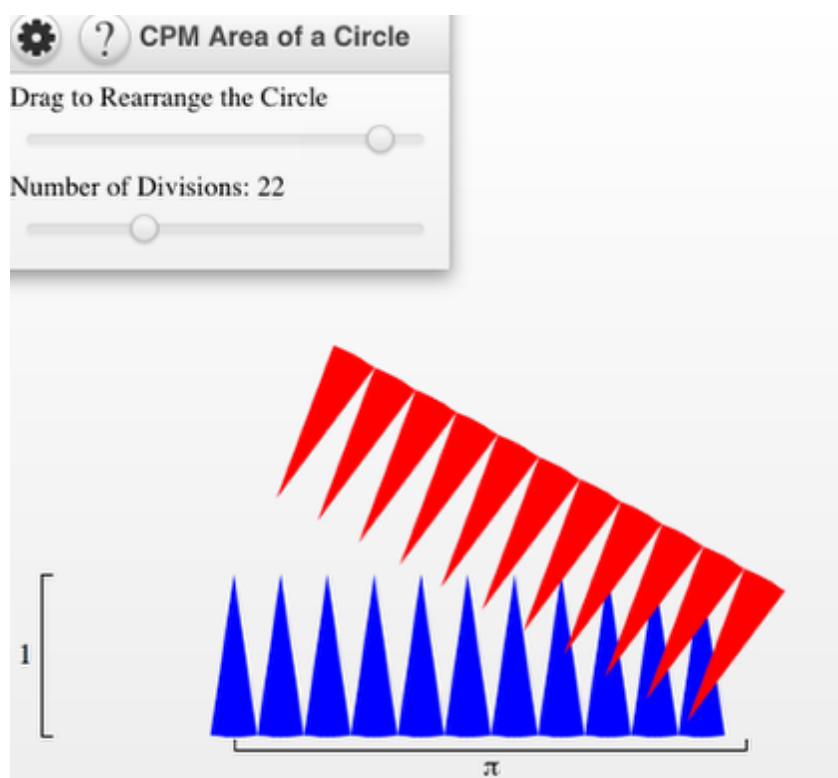
### 1. Area of Circles: Drag sliders.



### 2. Divide the circle into several divisions.




### 3. Rearrange.

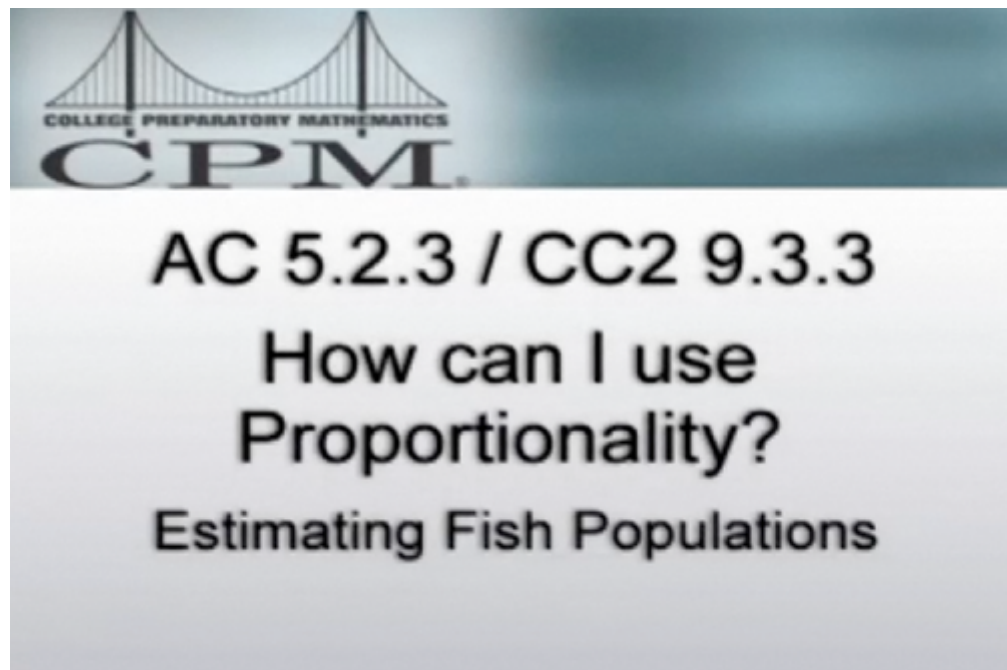


## CC2 9.3.3: Estimating Fish Video

Click on the link below for the “Estimating Fish Video”

[Estimating Fish](#) 

### 1. Estimating Fish Populations:



### 2. Screen shot:

