Making Connections 2 - T

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General Tools

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)

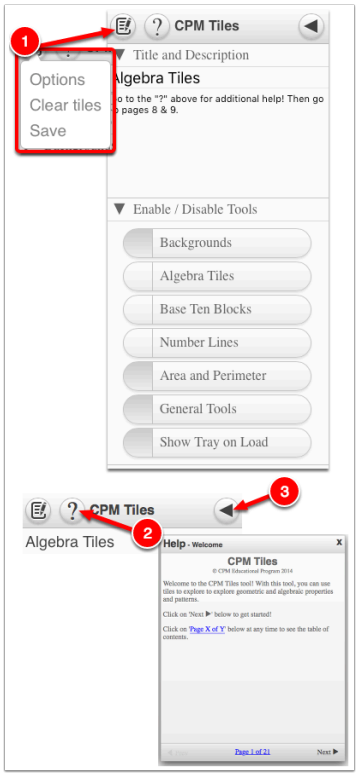
1. The top bar has three main parts: Pen & Paper Icon, '?' Icon, and the Arrow Icon.

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.



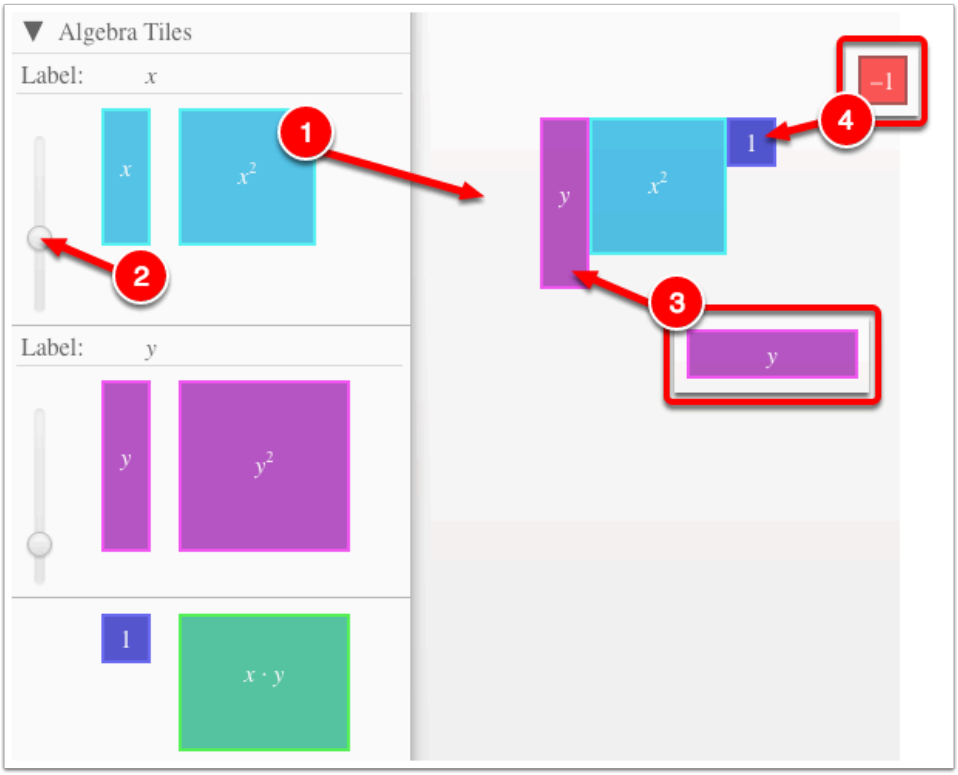
2. Drag tiles from the tray at the left to the display area at the right.

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

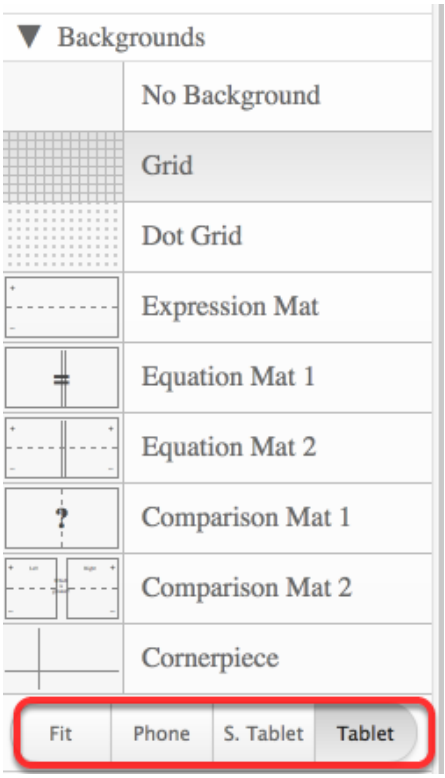
2. Use the sliders in the tray to change the size of the tiles.

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.

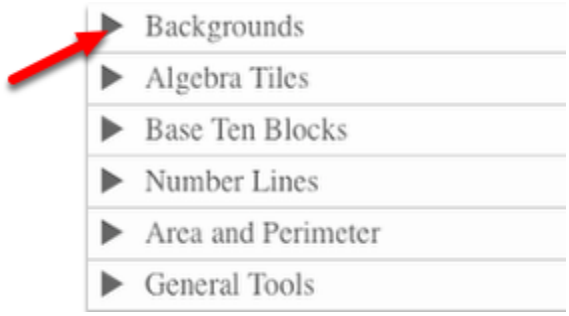


3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.



4. Choose from a variety of different tiles:

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



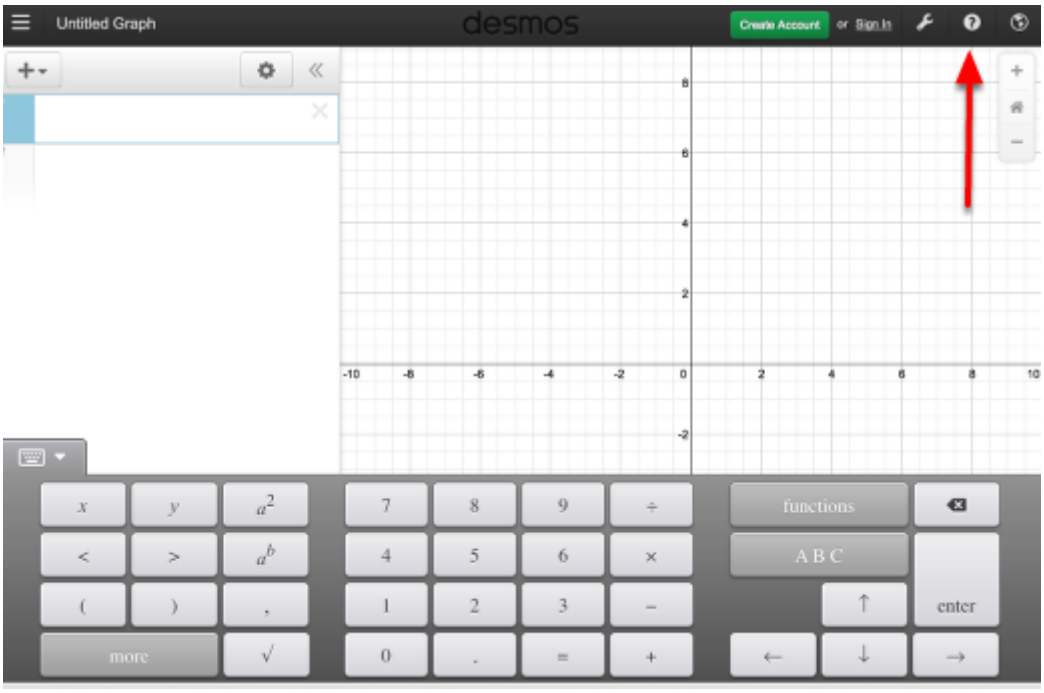
Desmos Graphing Calculator

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

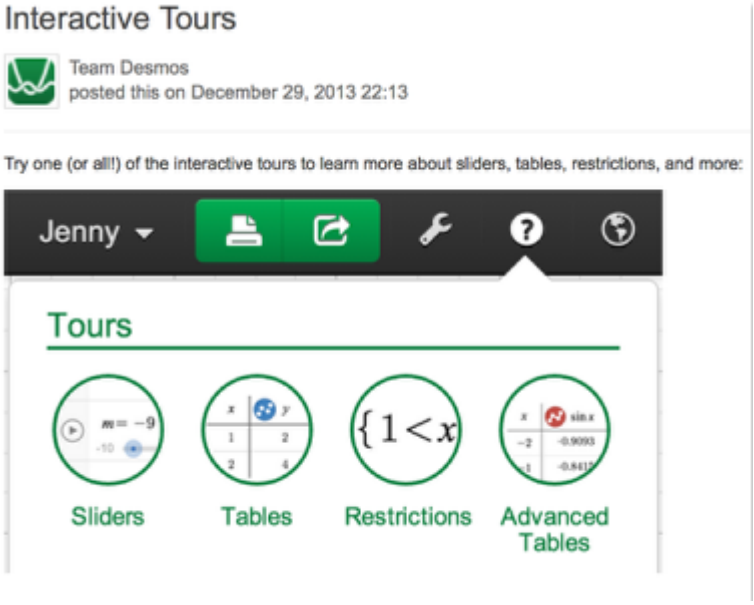
1. Click on all of the buttons. Try it out! For extra help, click the "?".



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

Sliders
Tables
Advanced Tables
Restrictions

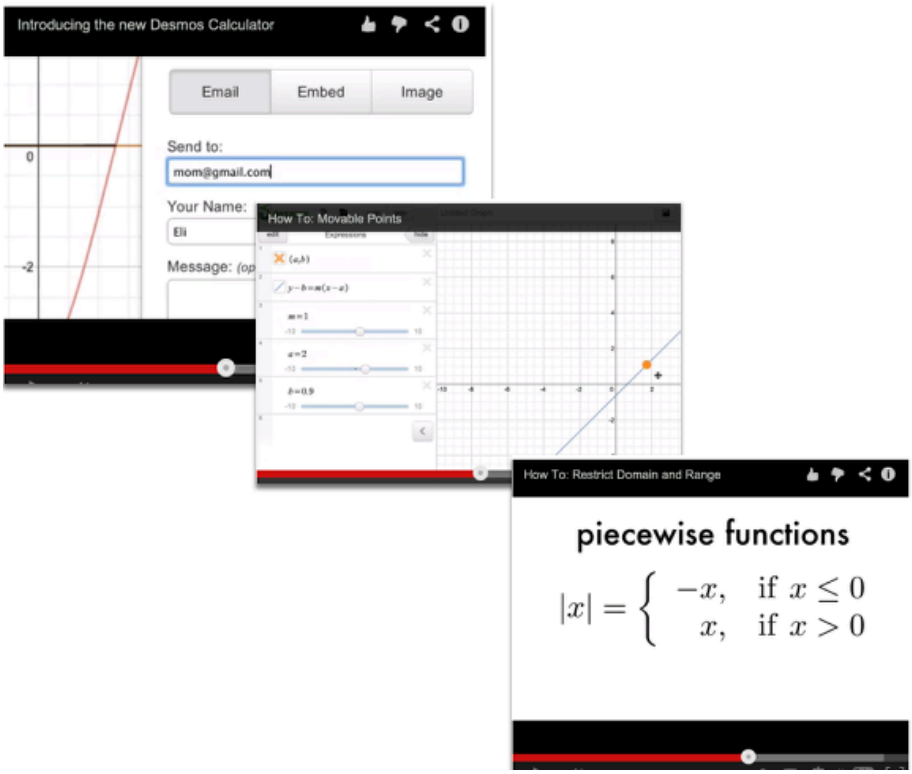
3. The interactive tours will NOT let you make a mistake! Try the links above!



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

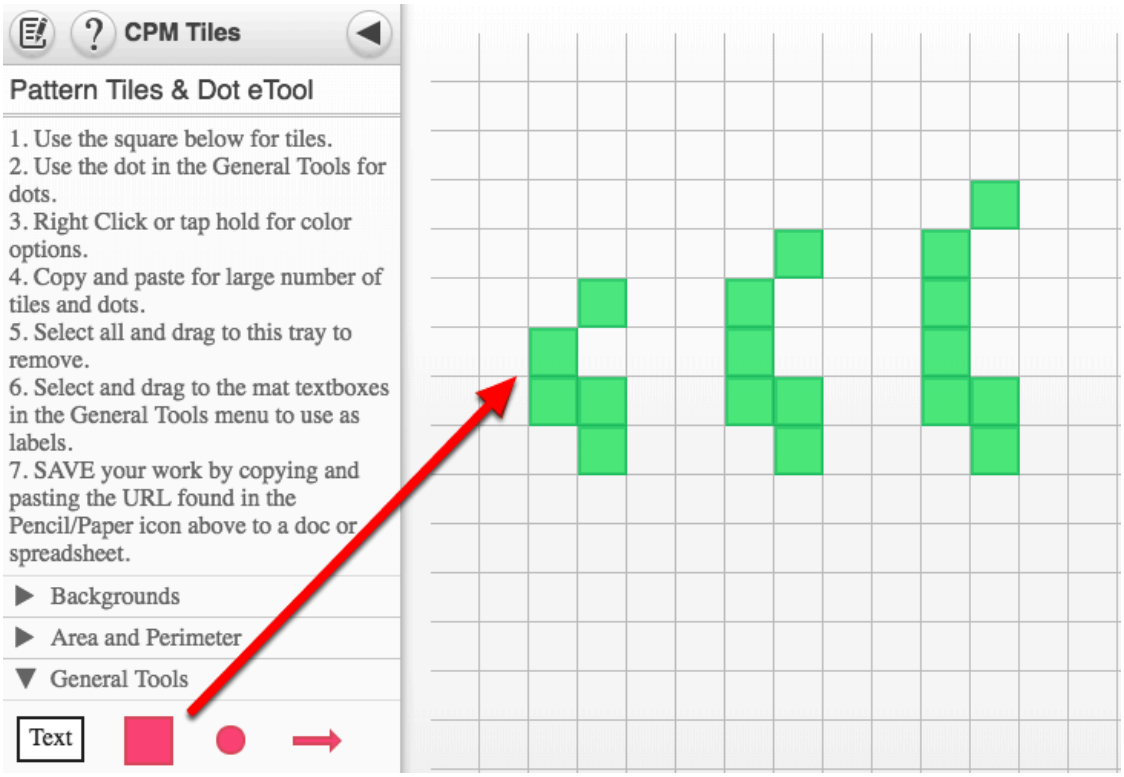
Pattern Tile & Dot Tool (CPM)

Click on the link below.

Pattern Tile & Dot Tool

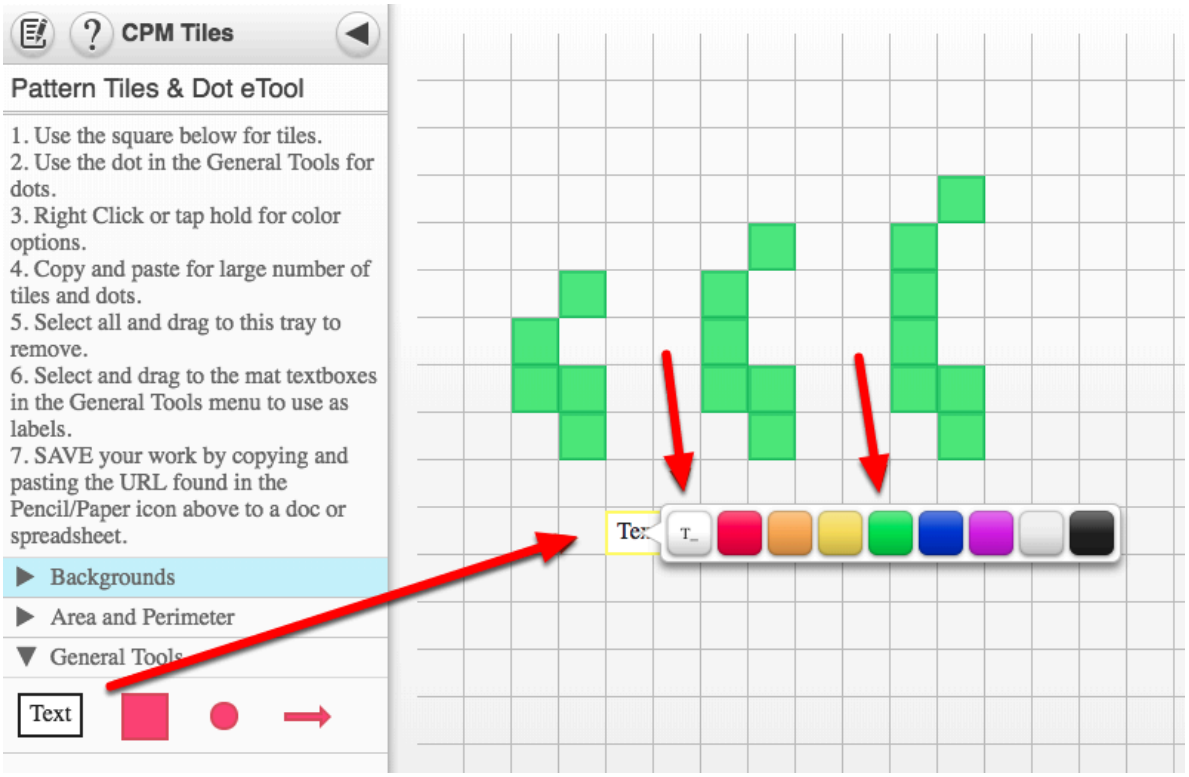
1. Drag tiles from the tray to the Display area.

- 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.

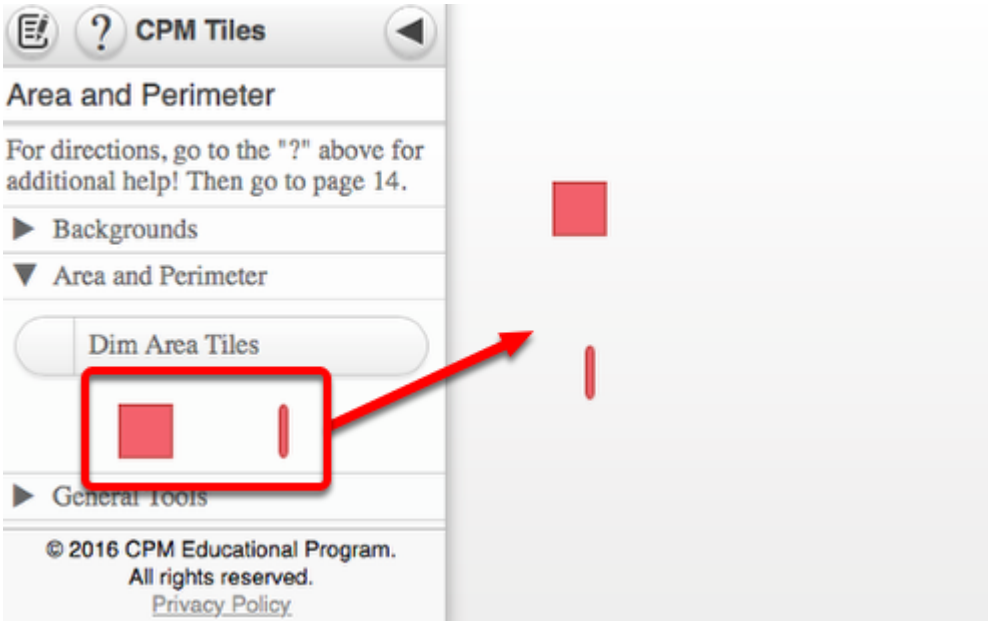

CPM Tiles
Pattern Tiles & Dot eTool
1. Use the square below for tiles.
2. Use the dot in the General Tools for dots.
3. Right Click or tap hold for color options.
4. Copy and paste for large number of tiles and dots.
5. Select all and drag to this tray to remove.
6. Select and drag to the mat textboxes 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.

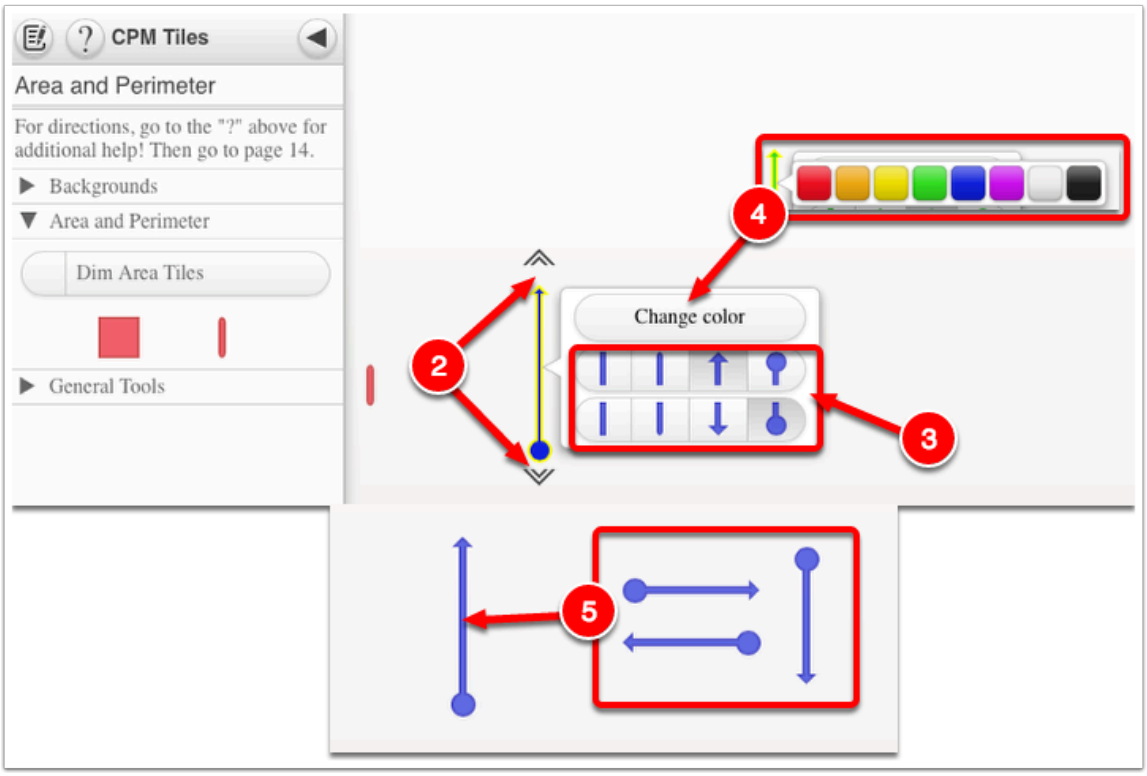
Area and Perimeter (CPM)

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

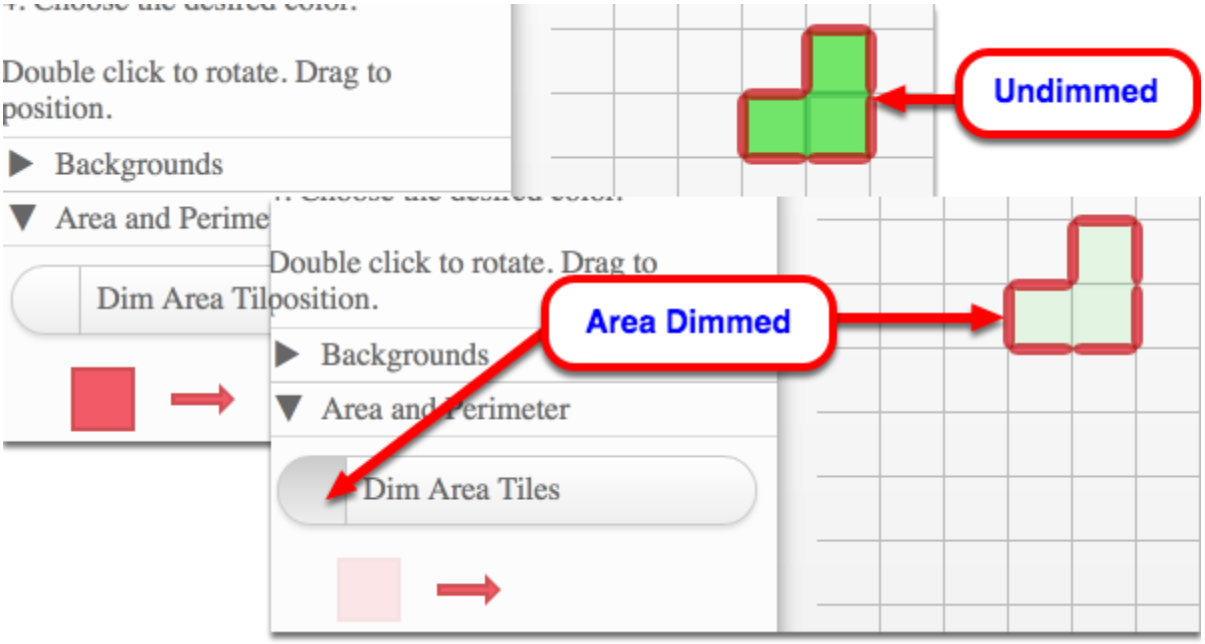


2. Toothpicks Settings

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.



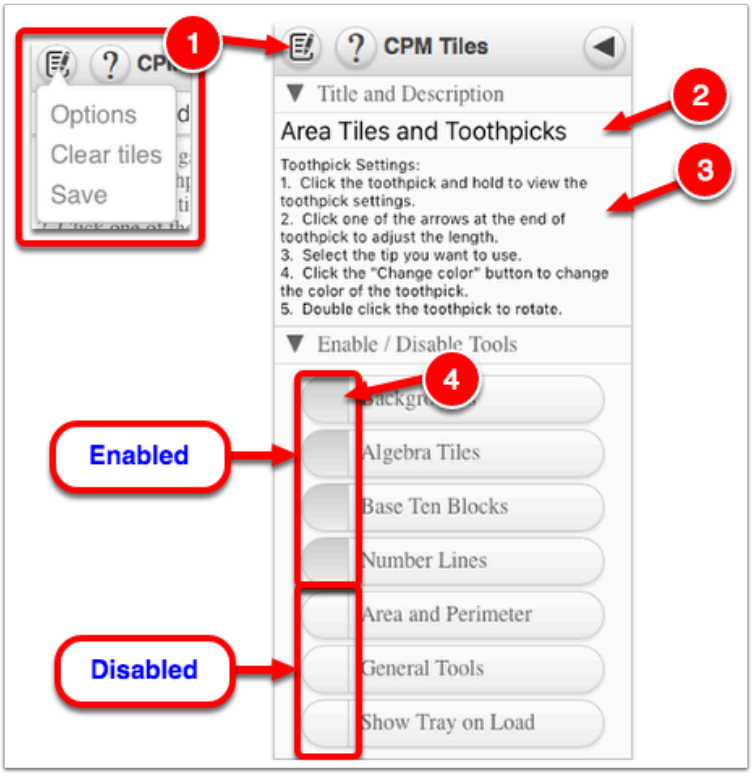
3. Dim Area showing the perimeter more sharply.



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.

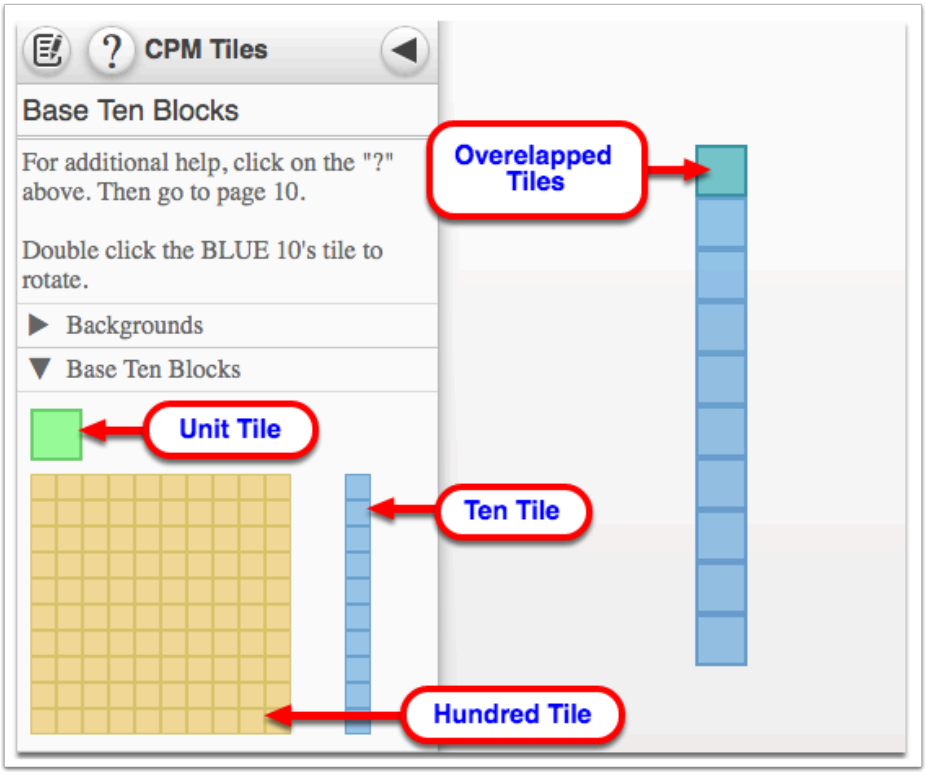
Click on the link below to access the eTool.

Base Ten Blocks (CPM)

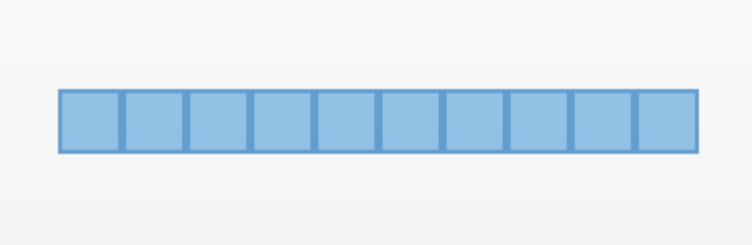
1. Drag Base Ten Blocks from the tray to the display area.

- Unit Tile
- Ten Tile
- Hundred Tile

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



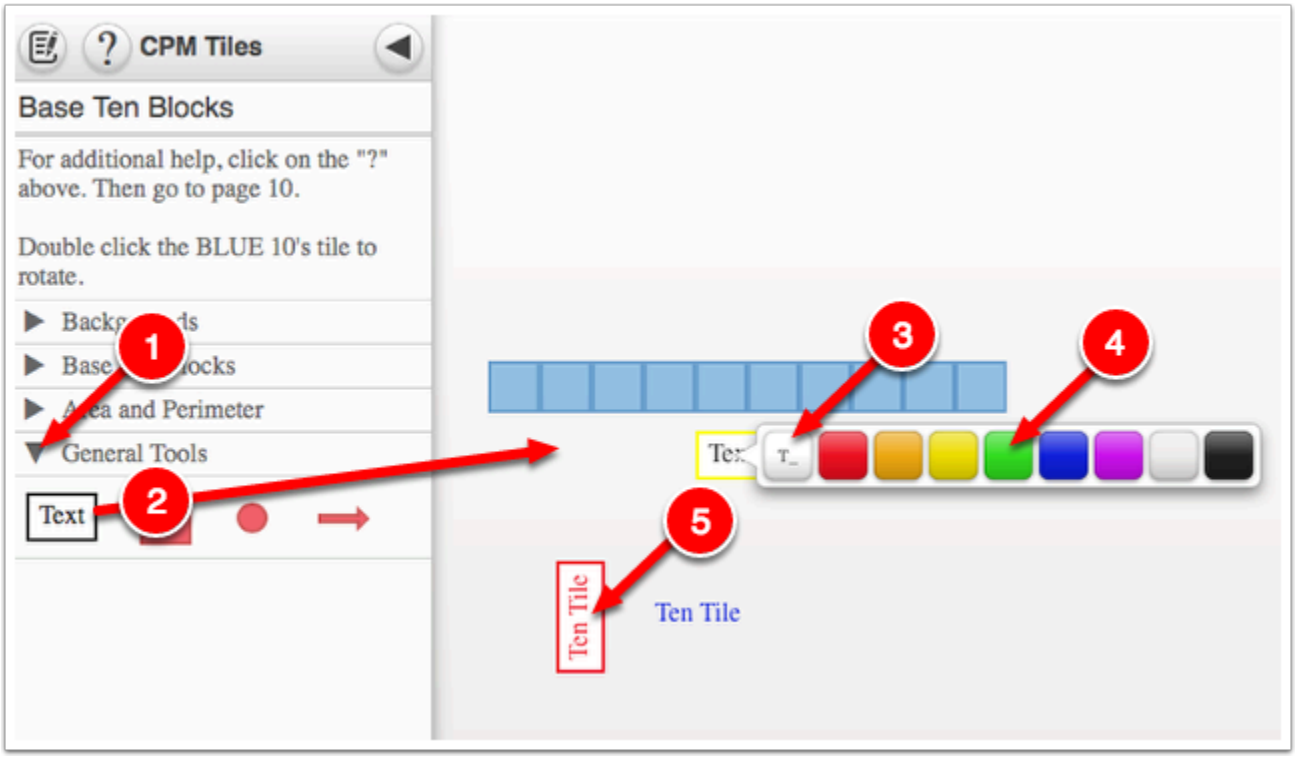
2. Double click to rotate.



3. Add text.

1. Click the arrow before the 'General Tools' to view.
2. Click the Text Box and drag it to the display are.
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 wan to use.
5. Double click the Text Box to rotate.



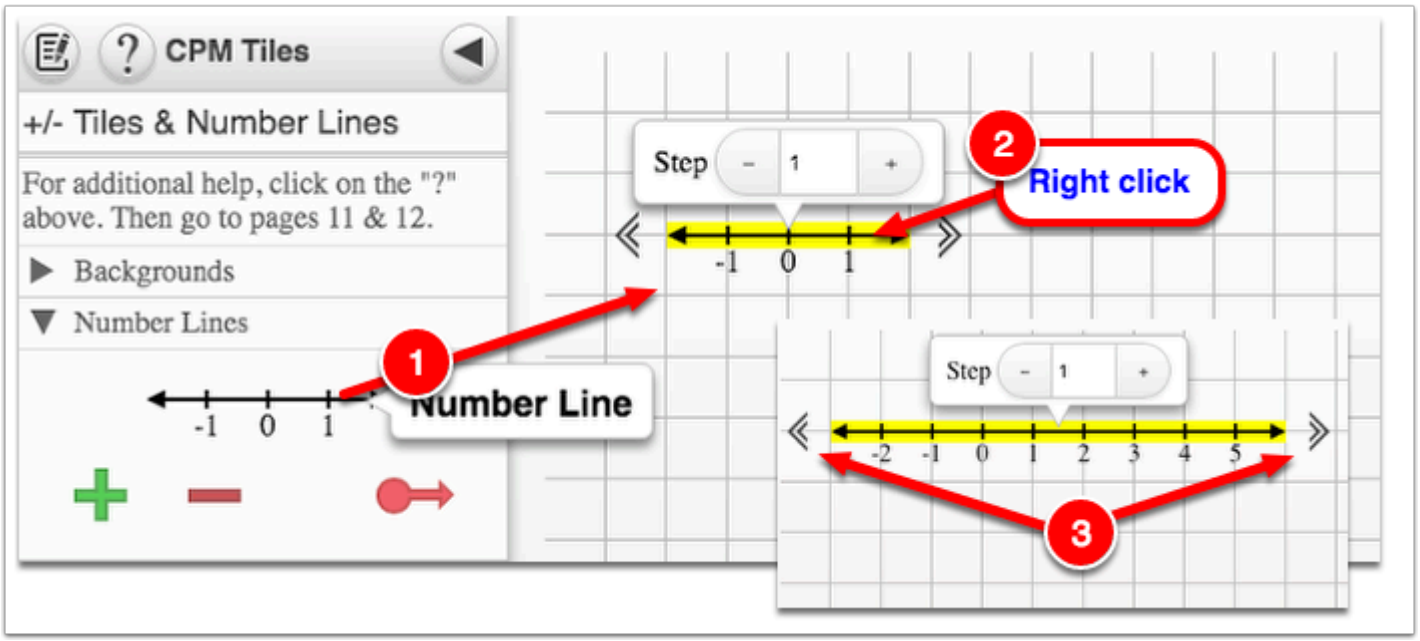
+/- Tiles & Number Lines (CPM)

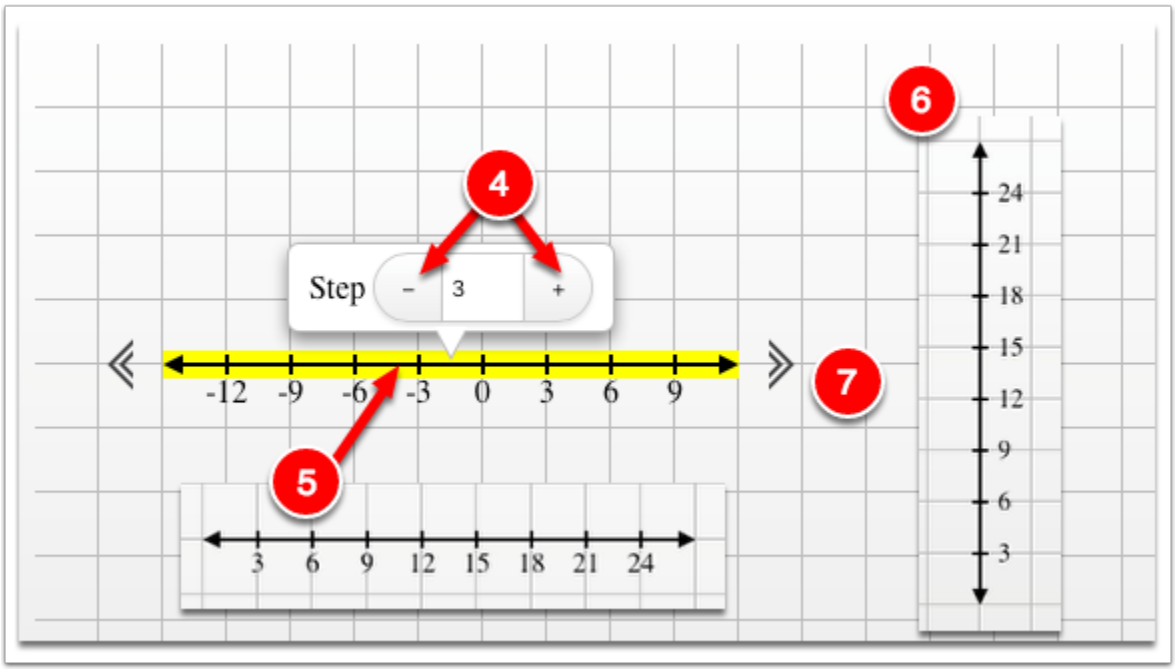
Click on the link below to access the eTool.

+/- Tiles & Number Lines (CPM)

Number Line:

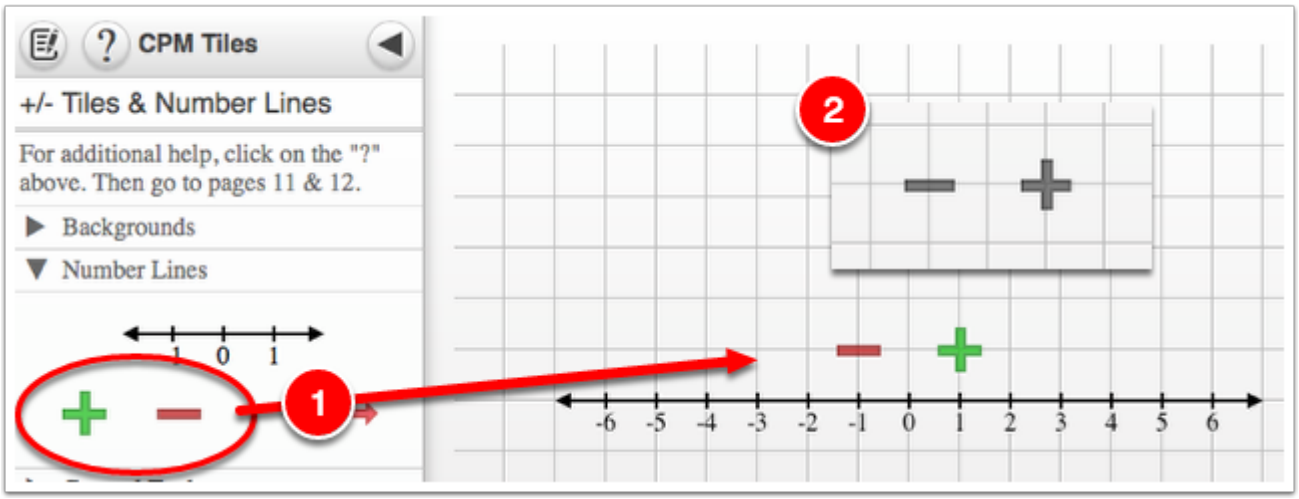
1. Click the Number Line icon and drag it to the display are.
2. Right click on the Number Line to display and adjust the settings.
3. Click one of the arrows at the end of the Number Line to adjust the length.
4. Click the '**+**' or '**–**' to adjust the step.
5. Drag the number line to change the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





+/- Tiles:

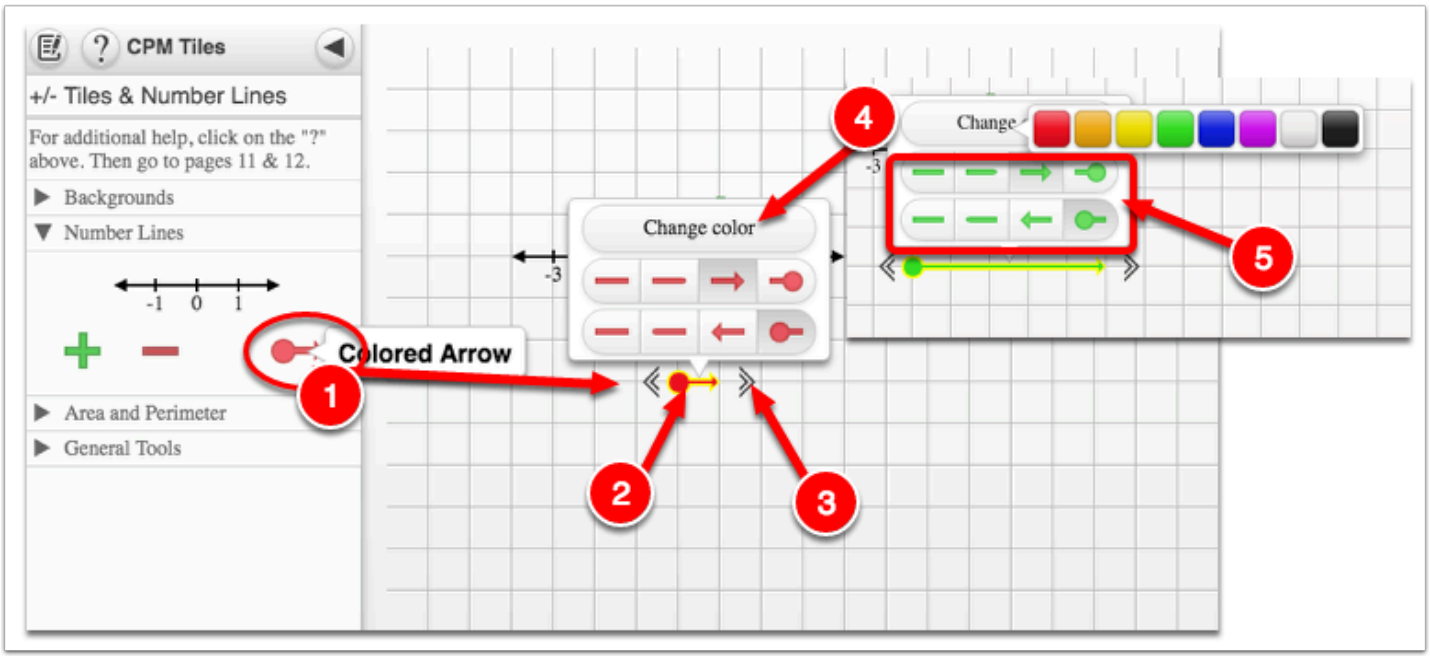
1. Click the '**+**' or '**–**' tiles and drag it to the display area.
2. Click the '**+**' or '**–**' to change its color to gray.



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.



Rigid Transformations eTool (CPM)

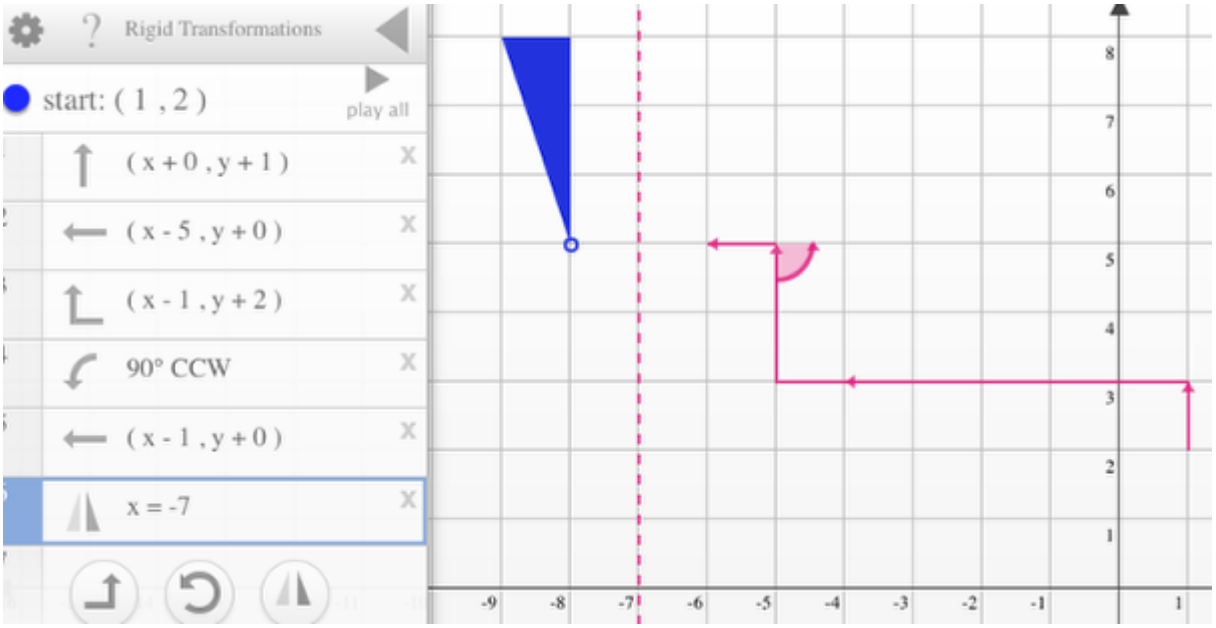
This eTool will record the steps you create showing translation, rotation, and reflection.

Click on the first link for the eTool. Click on the video links to view the use of the eTool.

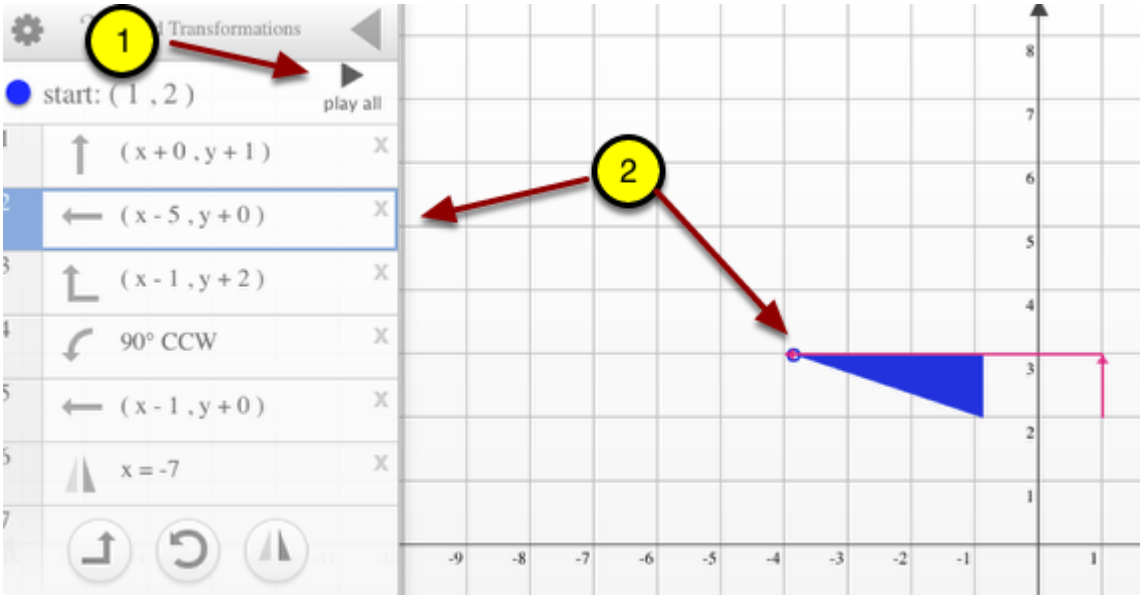
- Twelve games using the key lock are also available.
- This tool is designed so that teachers/students can create many more games.

Rigid Transformations
Using RT Tool
Creating an RT Puzzle

1. Steps are shown in the Tray at the left while the action occurs in the Display Area at the right.

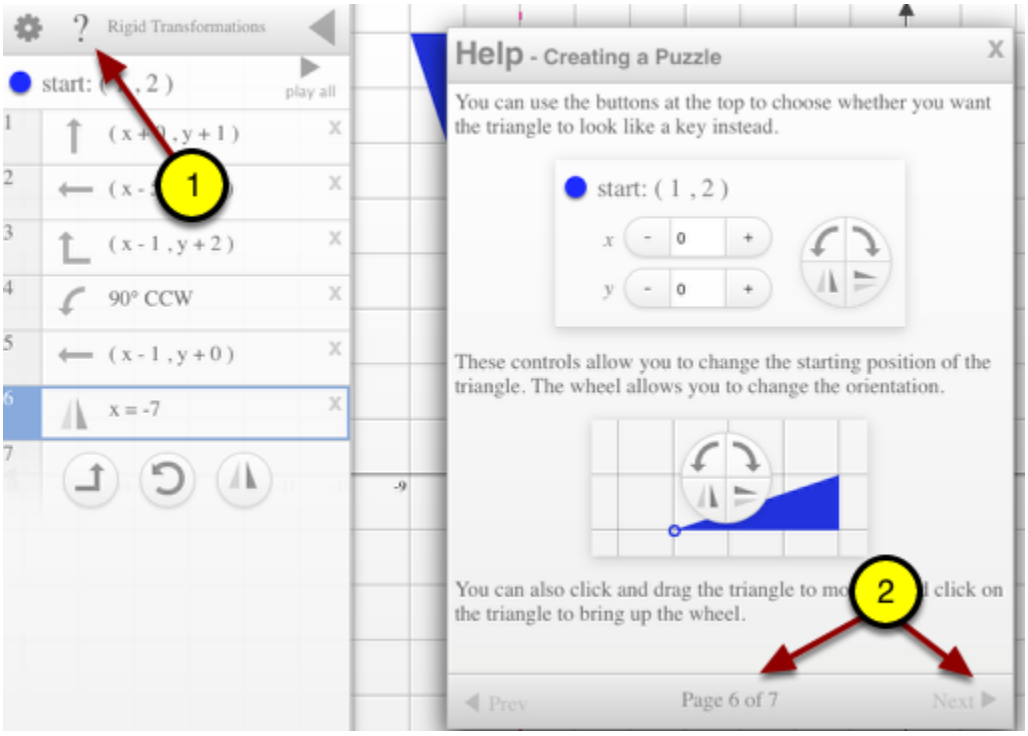


2. When playing, active steps are highlighted.



3. In the gear menu, you can create puzzles, clear, or save your projects.

4. Check the "?" for more help or watch the videos above.



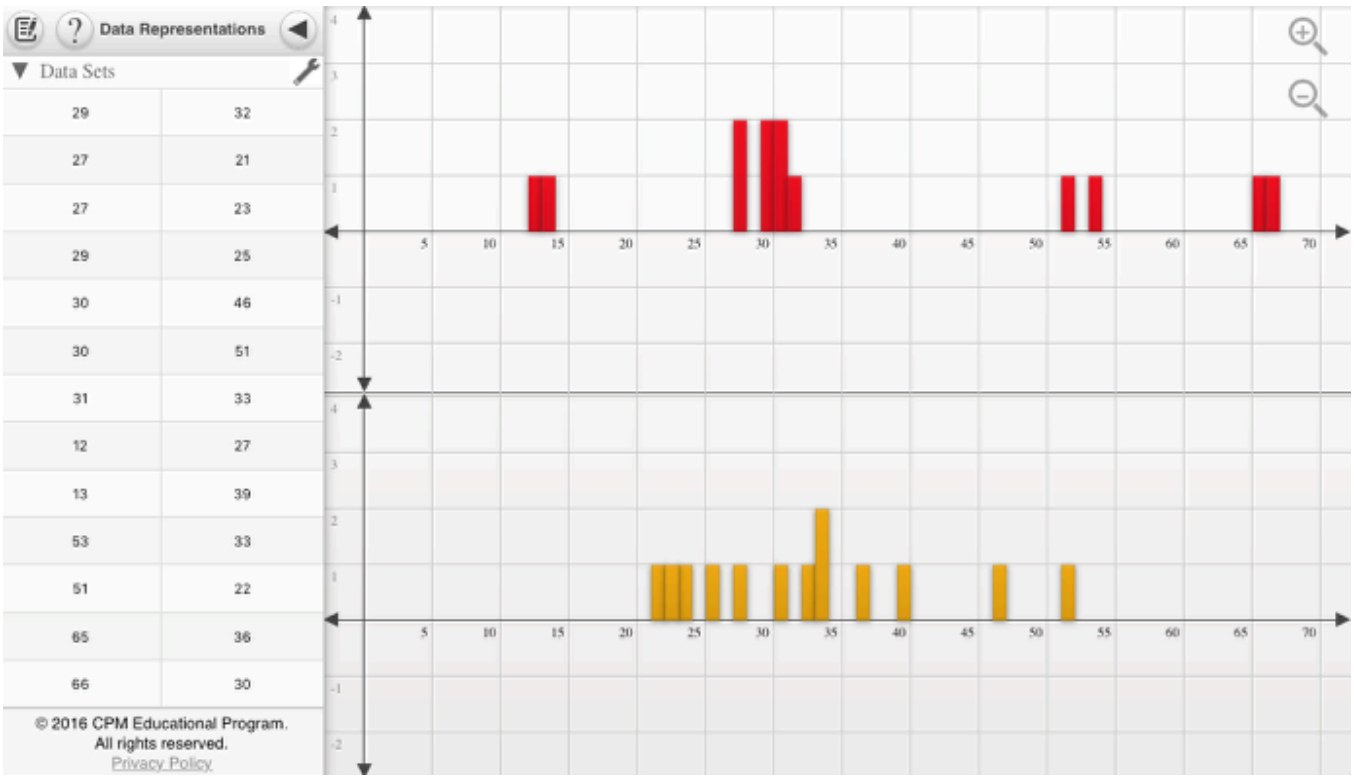
Data Representations (CPM)

Click the link below for “CPM Data Representations"

CPM Data Representations

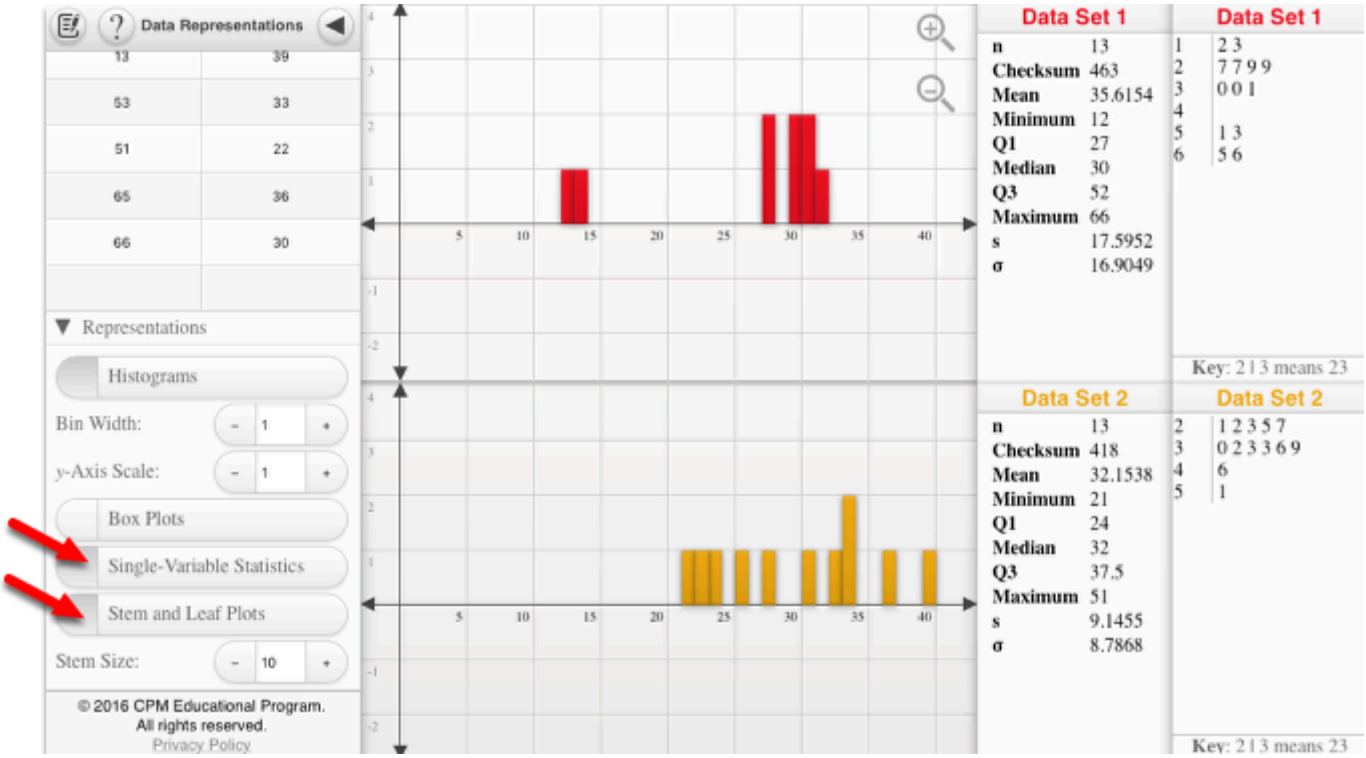
1. CPM Data Representations:

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.



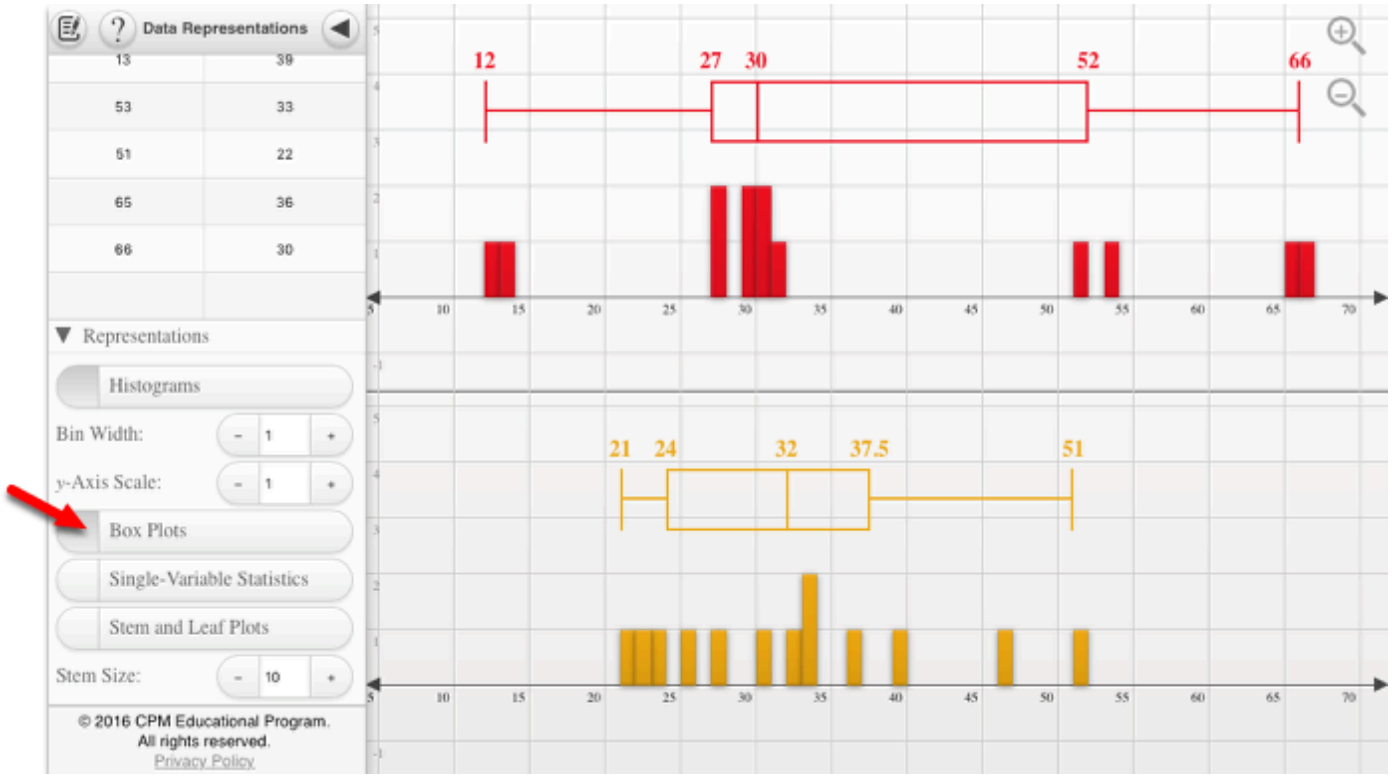
2. Single-Variable Statistics or the Stem and leaf Plots:

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.



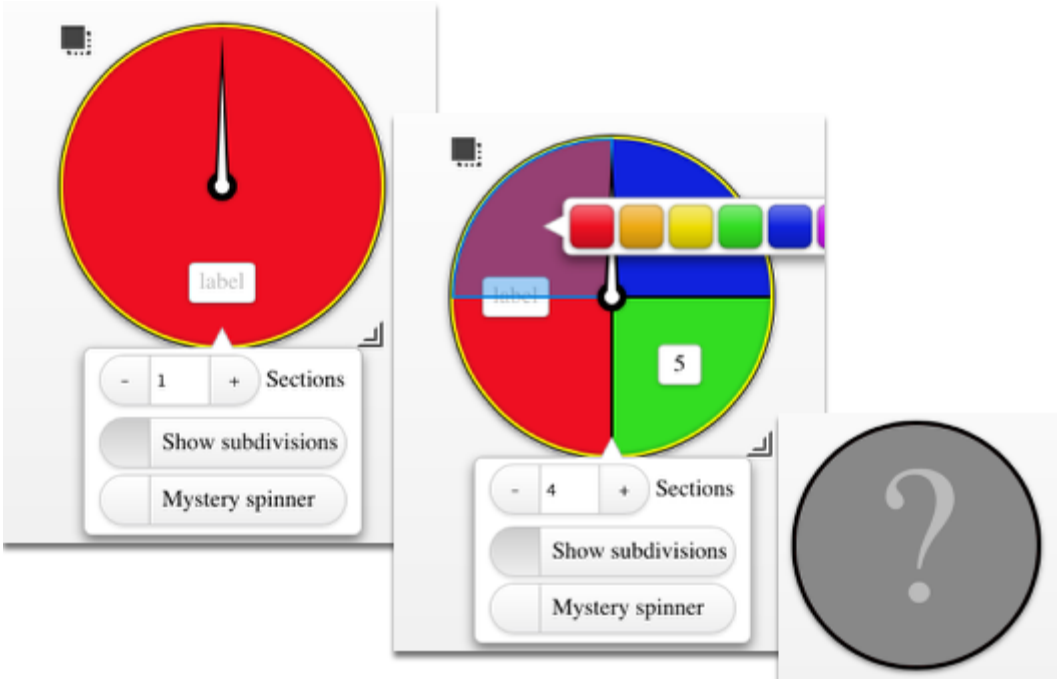
Probability Tools (CPM)

Click on the link below.

Probability Tools (CPM)

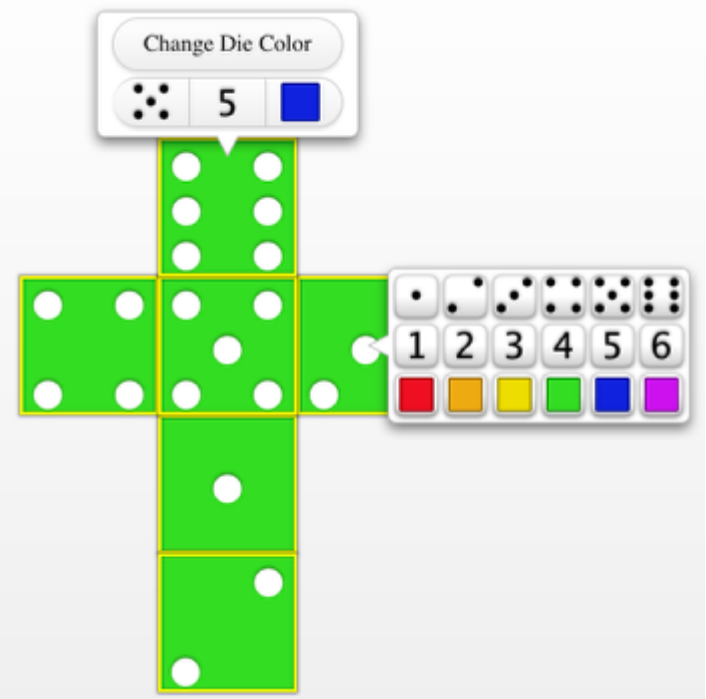
1. Spinners:

- 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.



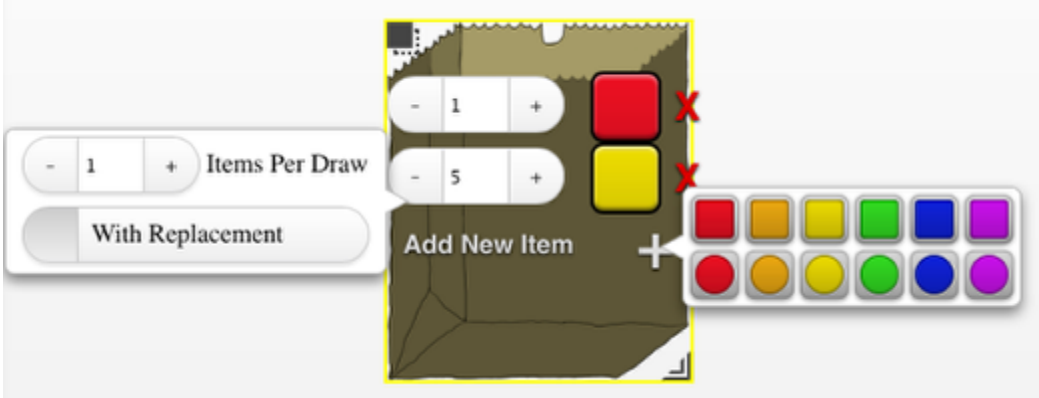
2. Dice:

- 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:

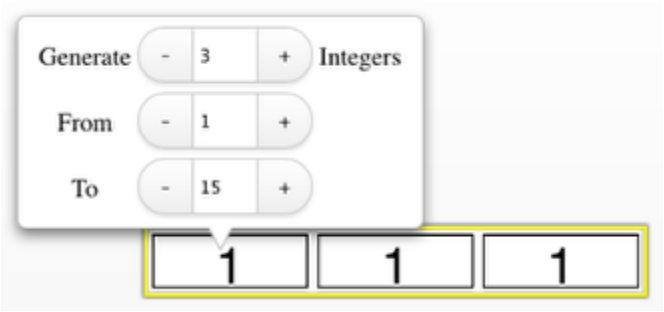
- Coins are labelled "H" for Heads and "T" for Tails.
- Choose the color.
- Drag one or more coins to the board.
- Click each of them to spin.

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

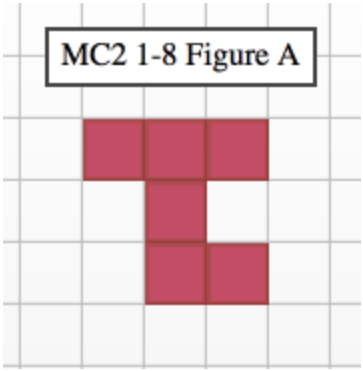
Chapter 1

MC2 1.1.2: 1-8 Figure A-E Student eTools (CPM)

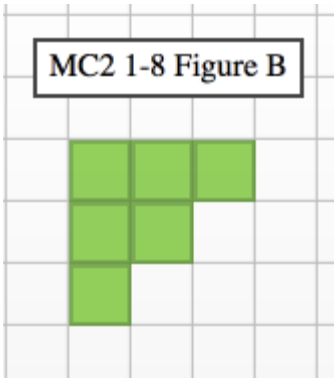
Click on the links below.

MC2 1-8 Figure A (CPM)
MC2 1-8 Figure B (CPM)
MC2 1-8 Figure C (CPM)
MC2 1-8 Figure D (CPM)
MC2 1-8 Figure E (CPM)

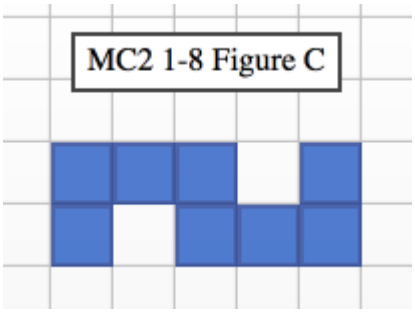
1. MC2 1-8 Figure A:



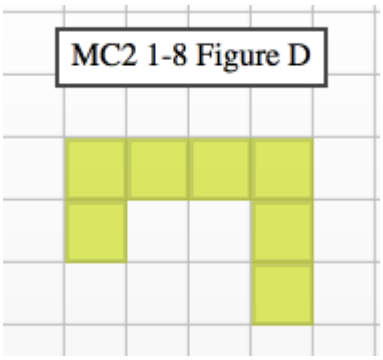
2. MC2 1-8 Figure B:



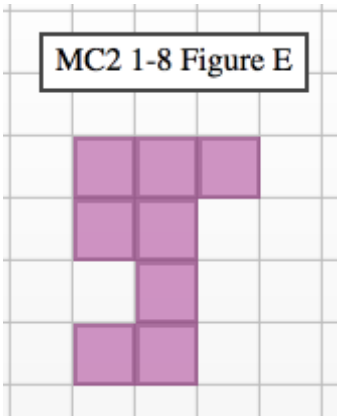
3. MC2 1-8 Figure C:



4. MC2 1-8 Figure D:



5. MC2 1-8 Figure E:



MC2 1.1.4: Frog Jumping Contest Video

Click on the Video link below to view the Frog Jumping Contest.

Frog Jumping at Calaveras County

1. Frogs are given three jumps. The frog with the longest distance wins!

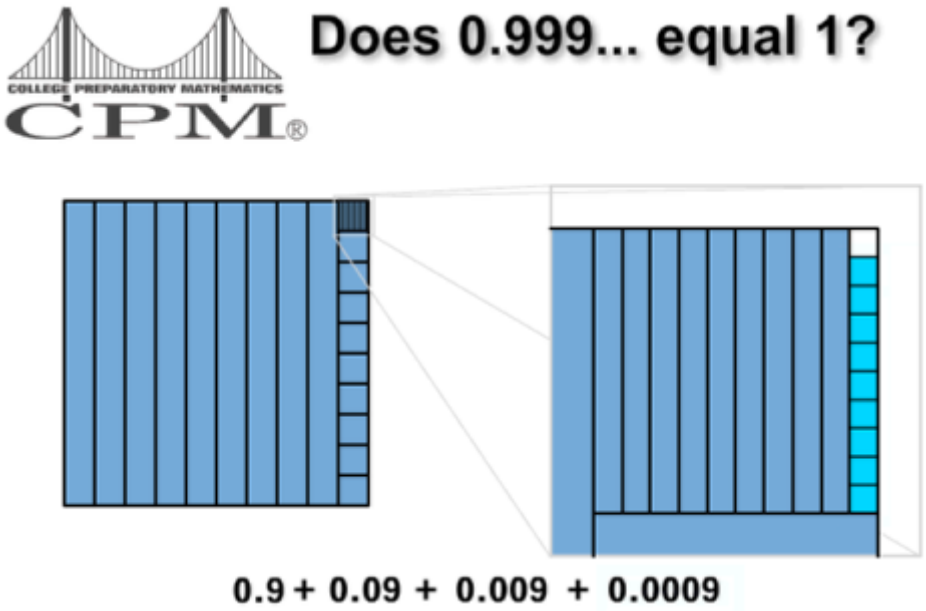
MC2 1.1.5: .999... Video (Vimeo)

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

Click the link below to watch the 42 second video.

Does .999... Equal 1? (Vimeo)

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



2. Teacher Notes:

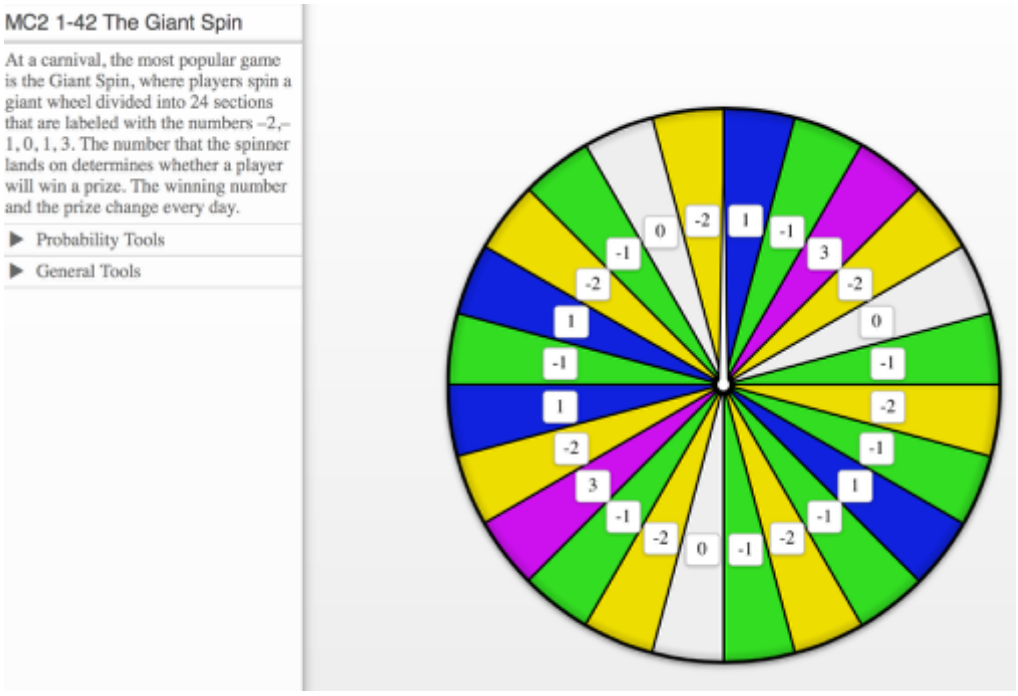
- Project this animation at the specified point in problem 1-42 to provoke discussion about using geometric representations of numbers to help make sense of their size.Â
- Test the technology setup before students arrive to be sure that it is working properly.Â
- The animation is less than a minute long and moves quickly.Â You might want to have the students first watch the animation at full speed.Â 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.Â
- Pausing periodically also provides an opportunity to check studentsâ€™ understanding of the divisions that have been made to that point.

MC2 1.2.1: 1-42 & 1-44 Student eTools (CPM)

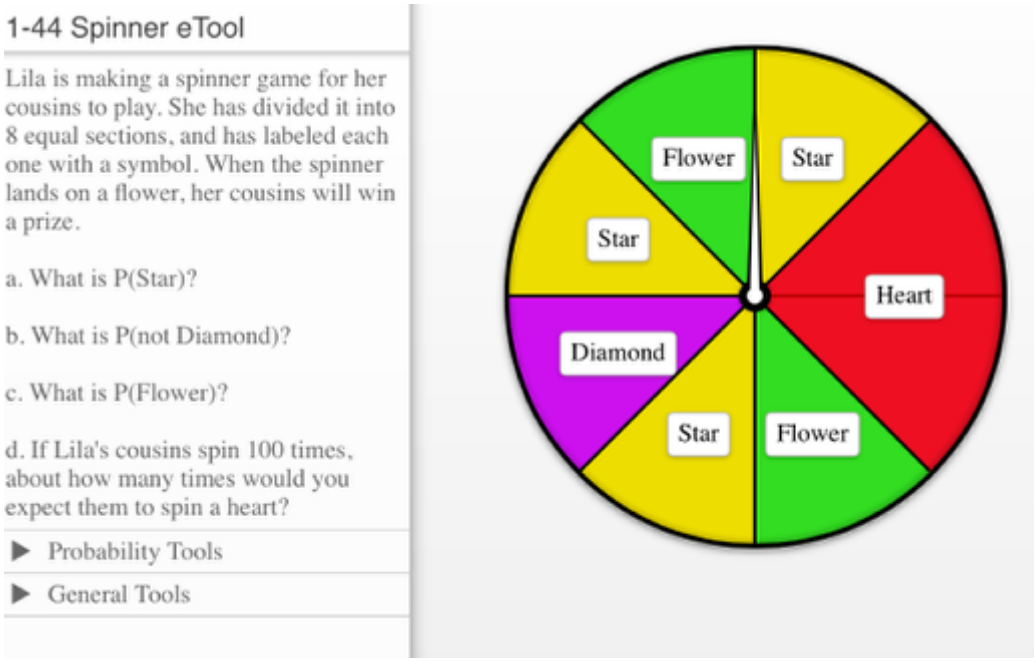
Click on the links below.

MC2 1-42 The Giant Spin eTool (CPM)
MC2 1-44 Student eTool (CPM)

1. MC2 1-42 Student eTool: The Giant Spin



2. MC2 1-44 Student eTool

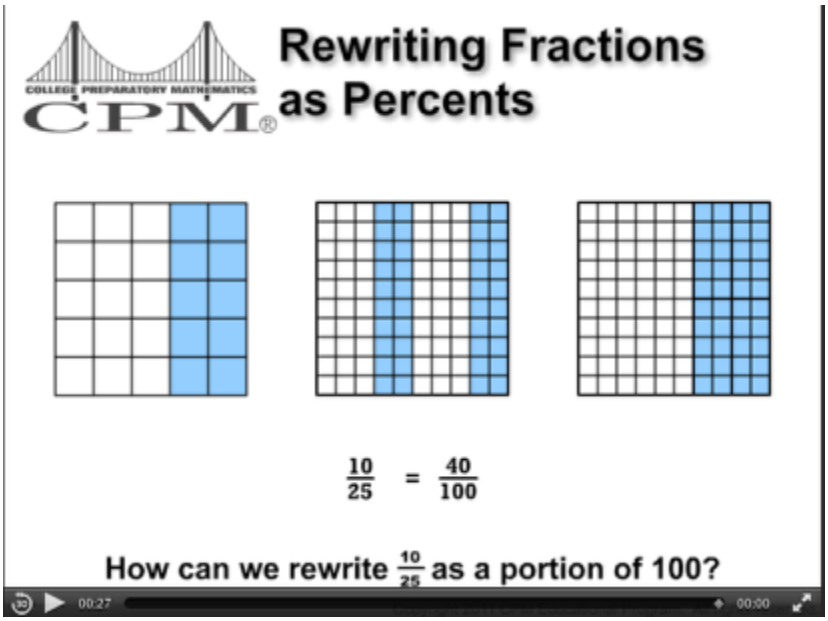


MC2 1.2.3: Rewriting Fractions as Percents (Vimeo)

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 1â€‘95.



2. Teacher Notes:

- Project this animation as part of a class discussion for 1-95.Â
- Test the technology setup before students arrive to be sure that it is working properly.Â
- 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.Â
- 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.Â
- After students have made sense of the animation by examining each piece, play the animation through at full speed.

MC2 1.2.4: 1-81 Student eTool (CPM)

Click on the link below.

MC2 1-81 Student eTool (CPM)

1. MC2 1-81 Student eTool:

1-81 Student eTool

1-81. Thomas helps around the house by doing one chore after school. Each day Thomas and his aunt use the spinner below to decide which chore he will do. Here is what Thomas knows:
-The sections on the spinner for "rake leaves" and "do laundry" are the same size.

-The sections for "clean bathroom" and "vacuum" are equal in size and together make up half the spinner.

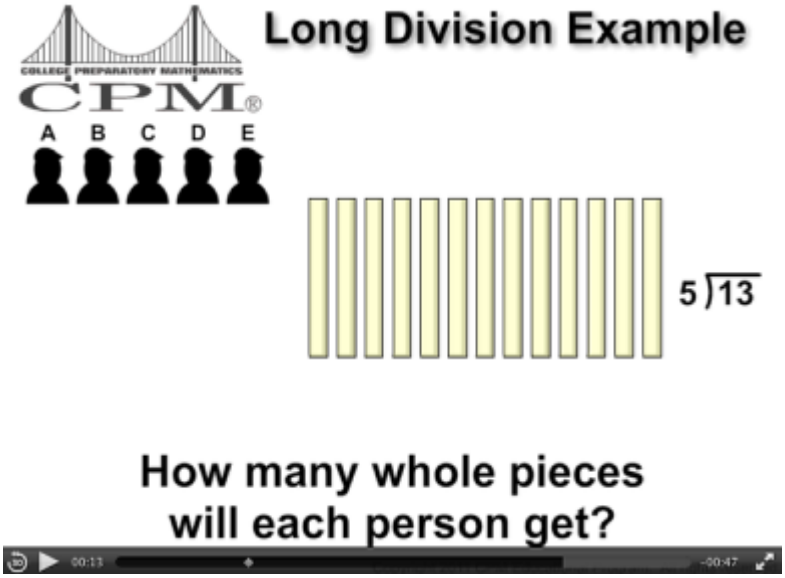
a. What is the probability that Thomas will spin "do laundry"?

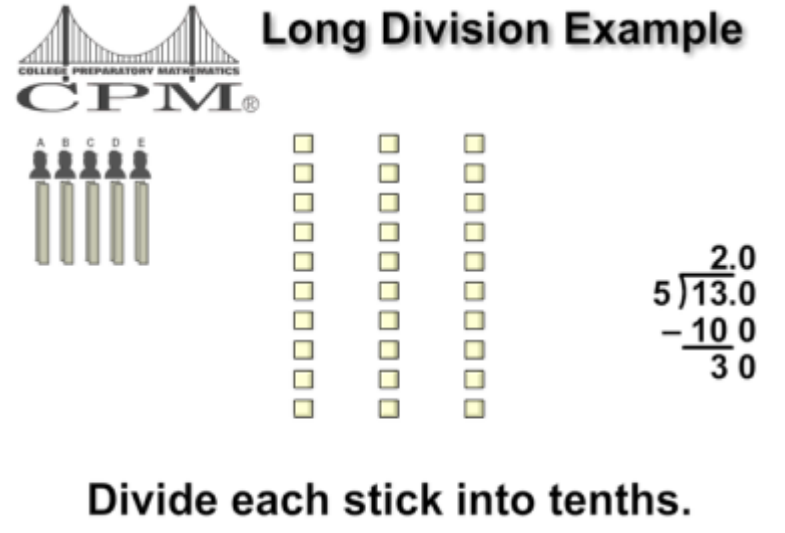
b. Thomas hates to clean the bathroom. When he spins the spinner, what is the probability that it will not point to "clean bathroom"? Explain how you found this answer.

MC2 1.3.1: Long Division Video (Vimeo)

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

Long Division Animation (Vimeo)





Long Division Example

$$5\overline{)13.0}\quad 2.6$$
$$-10\,0$$
$$3\,0$$

Now distribute the remaining tenths among the five groups.

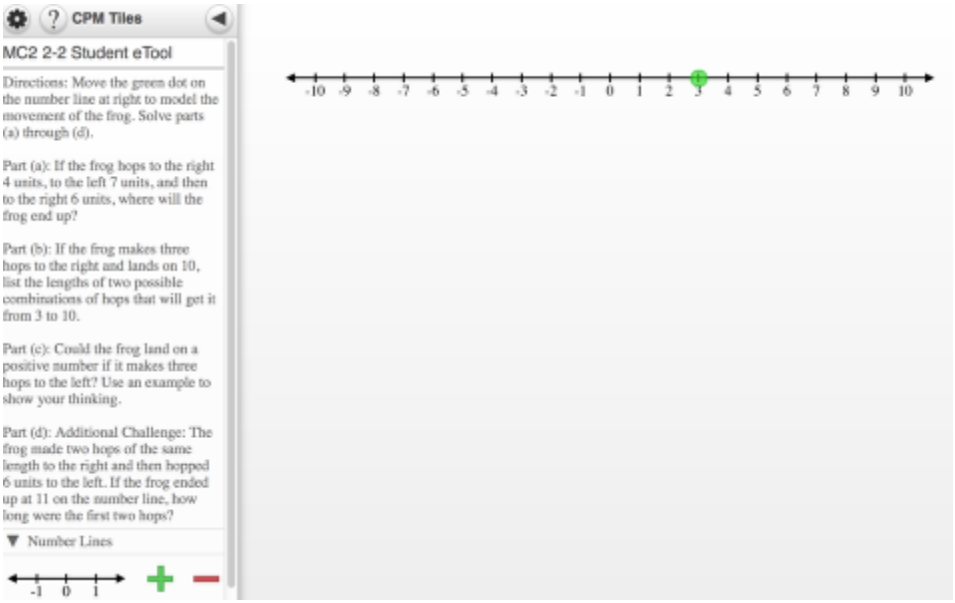
Chapter 2

MC2 2.1.1: 2-2 Student eTool (CPM)

Click the link on below for the â€œ2-2 Student eTool (CPM)."

MC2 2-2 Student eTool (CPM)

1. Using the colored arrows, record the frog's movements.

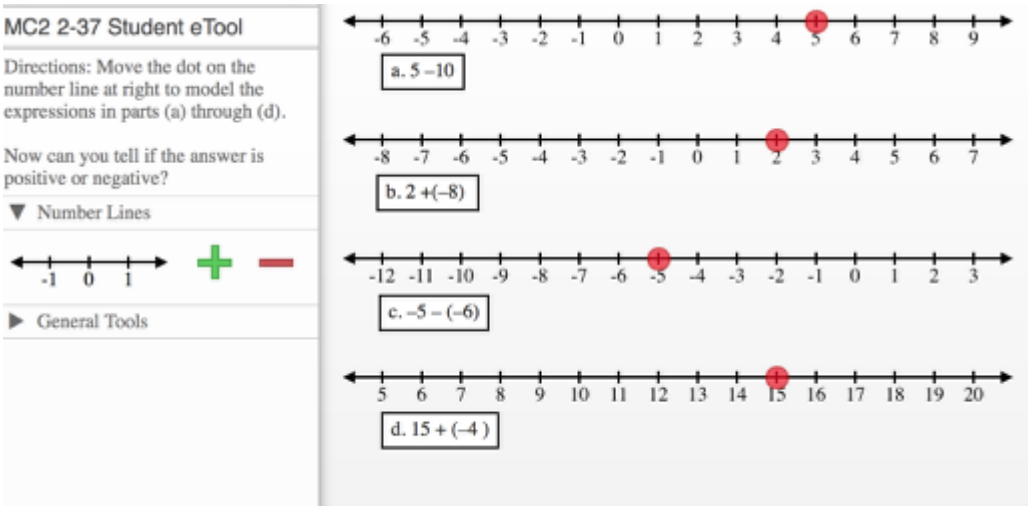


MC2 2.1.3: 2-37 Student eTool (CPM)

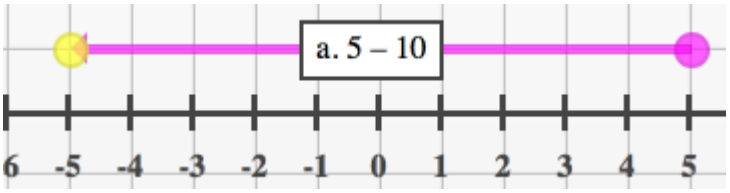
Click the link on below.

2-37 Student eTool (CPM)

1. Use the colored dots and arrows to help you keep track of your ideas.



2. Your work may look like the example below.

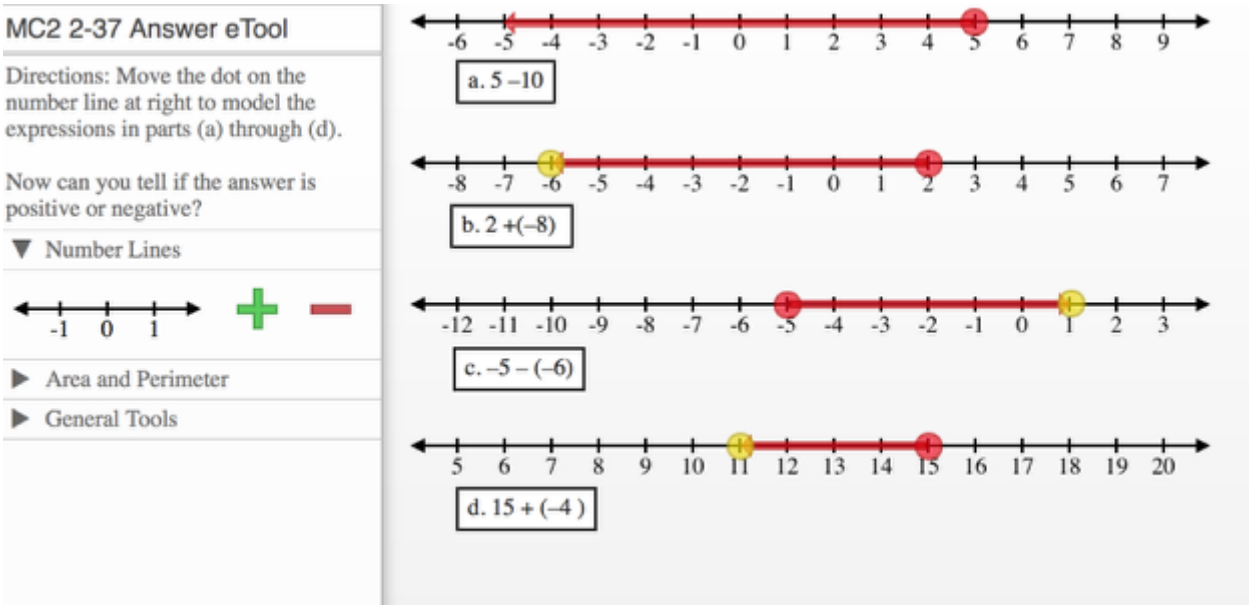


MC2 2.1.3: 2-37Answer eTool (CPM)

Click the link on below for the â€œ2-37 Answer eTool (CPM)."

2-37 Answer eTool (CPM)

1. Possible set of illustrations. Students may approach the problems differently!



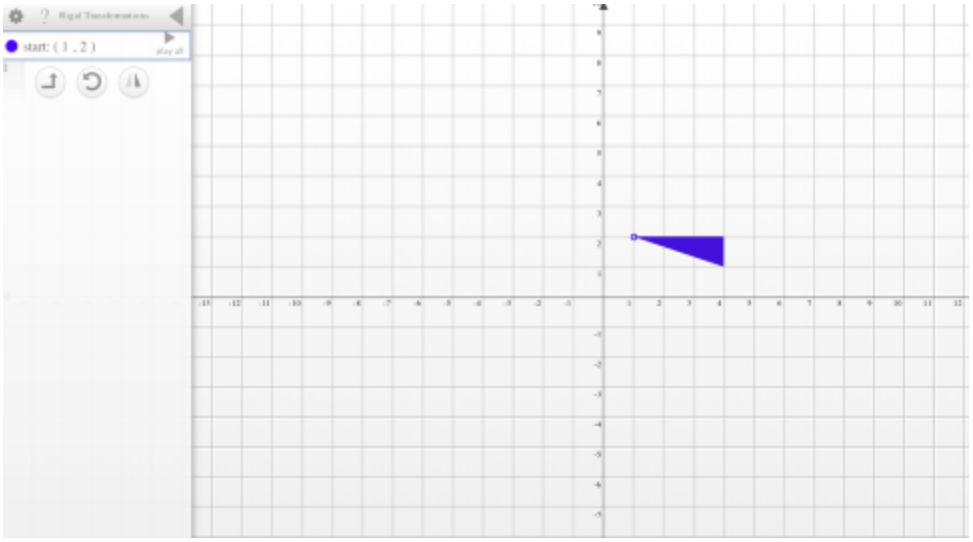
MC2 2.2.1: 2-45 Key-Lock Puzzle (CPM & Videos)

Click on the links.

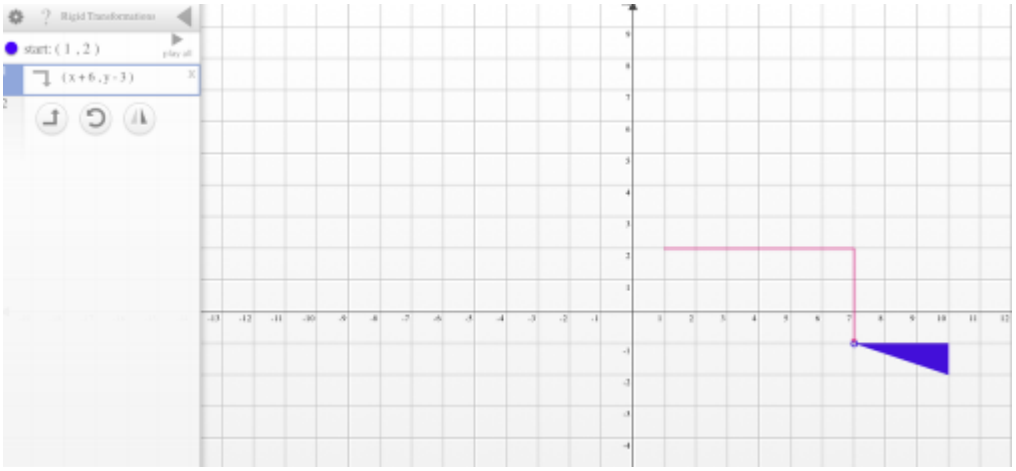
Key-Lock Puzzle (CPM)
Intro1; Intro2; Intro3; Intro4
Wall1; Wall2; Wall3; Wall4
Star1; Star2; Star3; Star4
Challenge 1
Challenge 2
Using RT Tool
Creating an RT Puzzle

1. Key-Lock eTool:

- Choose between triangle and key.
- Click the Gear to create puzzles and save.

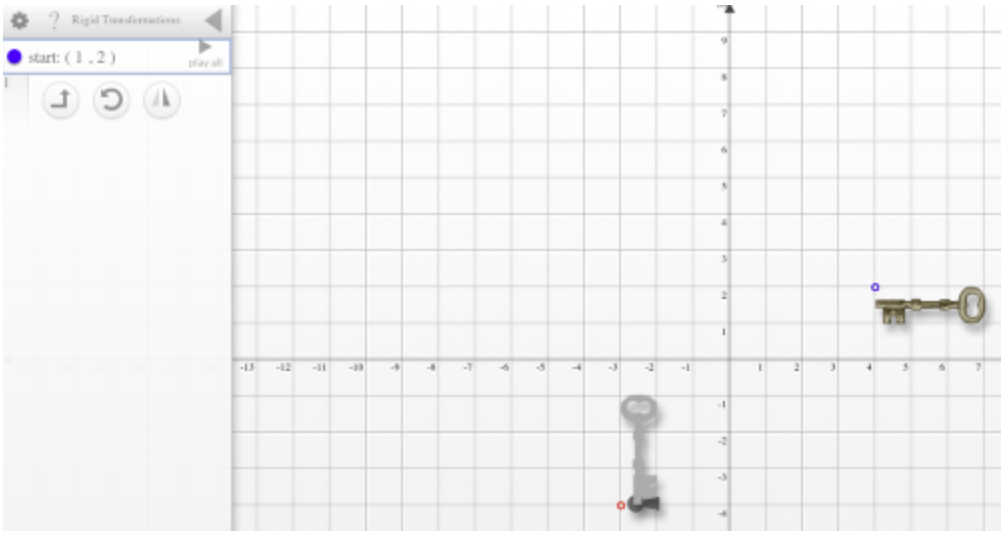


2. The left tray records all rigid transformation steps!

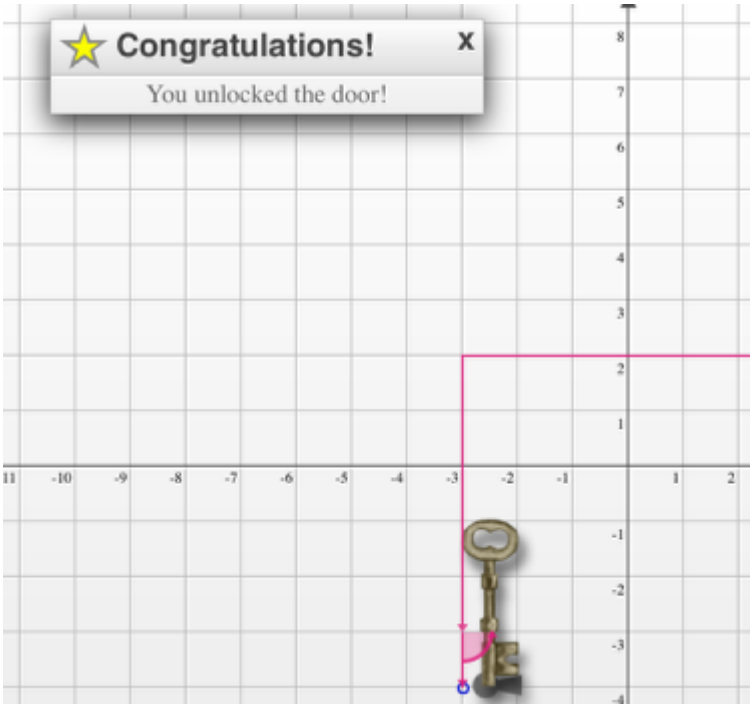


3. Intro Problems:

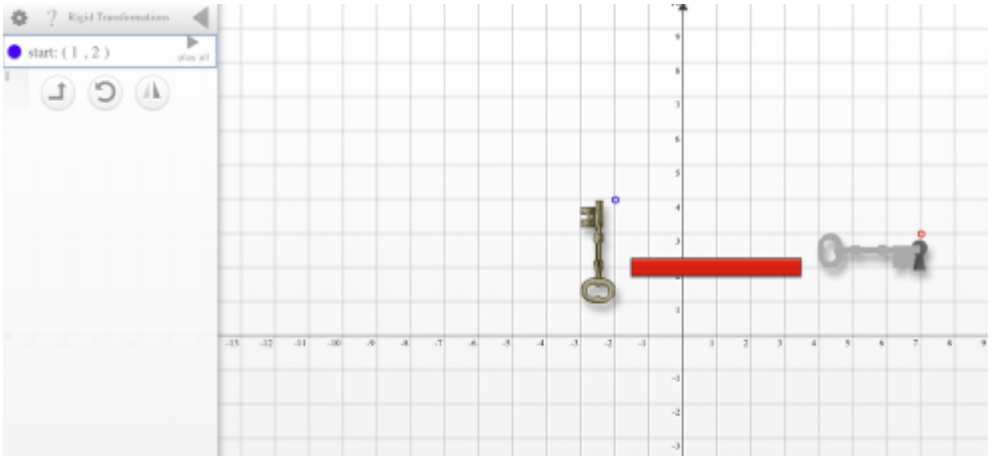
- Drag to translate (or)
- Click on the translate button in the tray. Â Choose the desired translation.
- Click the "?" for complete instructions.



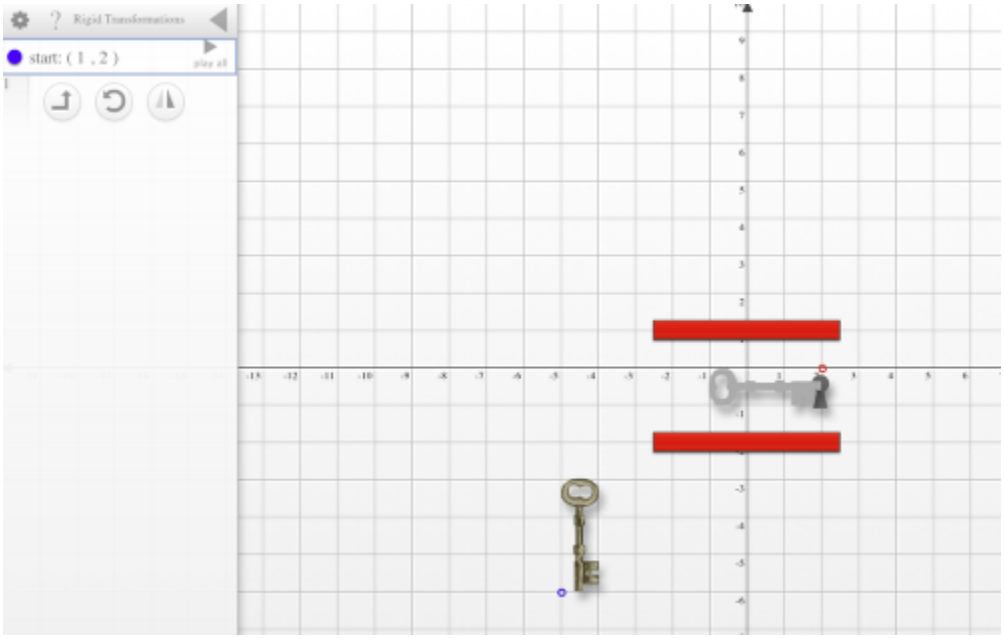
4. When the key is placed in the key hole correctly, the student is congratulated!



5. Wall problems: Each of these have at least one wall which cannot be bumped or crossed.



6. Star Problems: These are the most challenging.

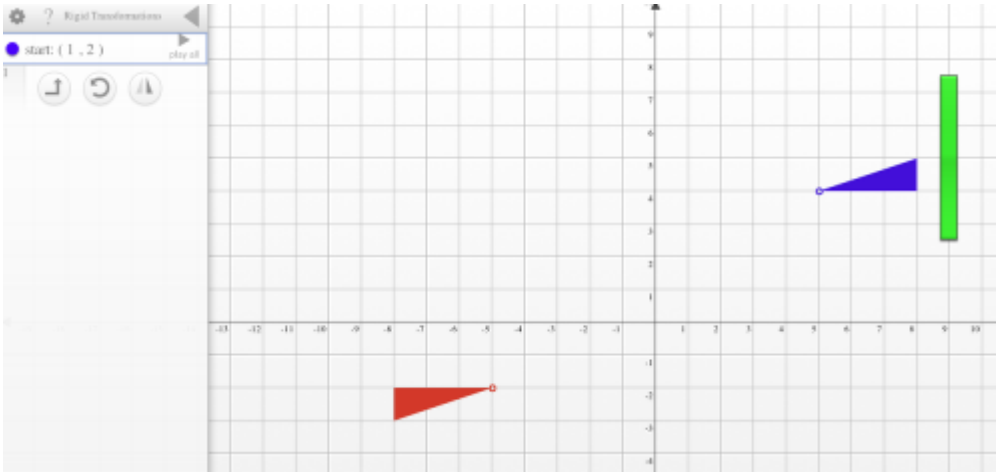


MC2 2.2.2: Transformation Challenge 1 & 2 (CPM)

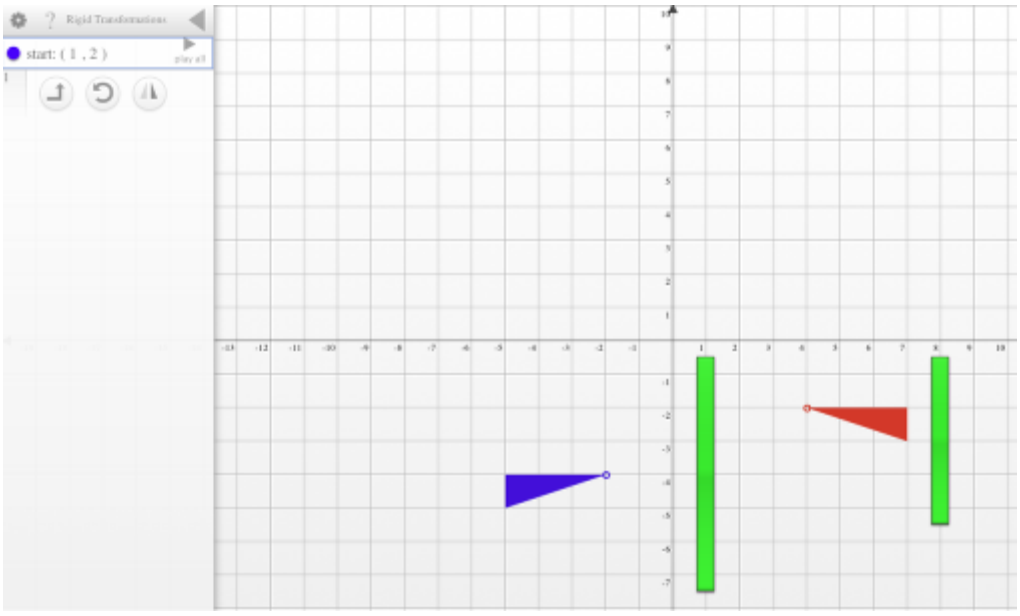
Click on the links below.

Challenge1 (CPM)
Challenge2 (CPM)

1. Challenge 1:



2. Challenge 2:

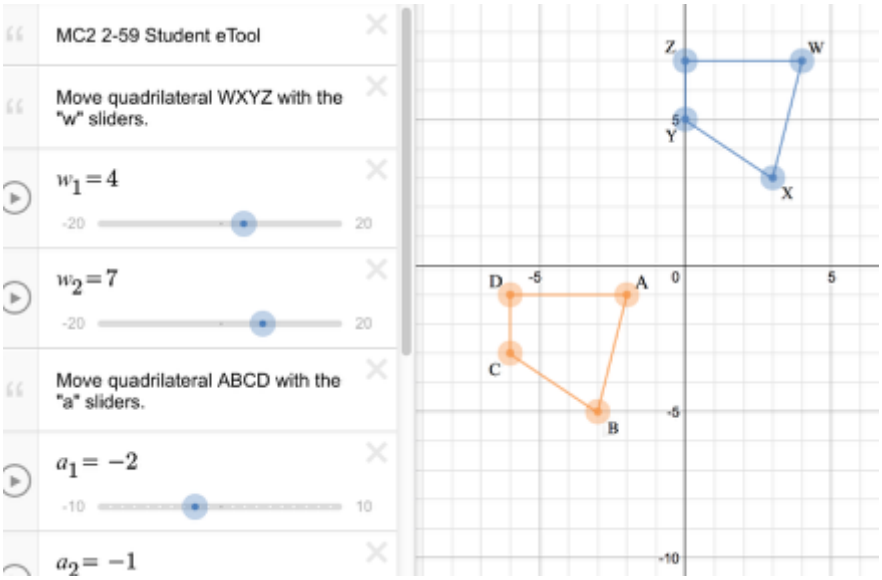


MC2 2.2.3: 2-59 Student eTool (Desmos)

Click on the link below for the â€œ2-59 Student eTool (Desmos)."

2-59 Student eTool (Desmos)

1. Move the sliders to translate.

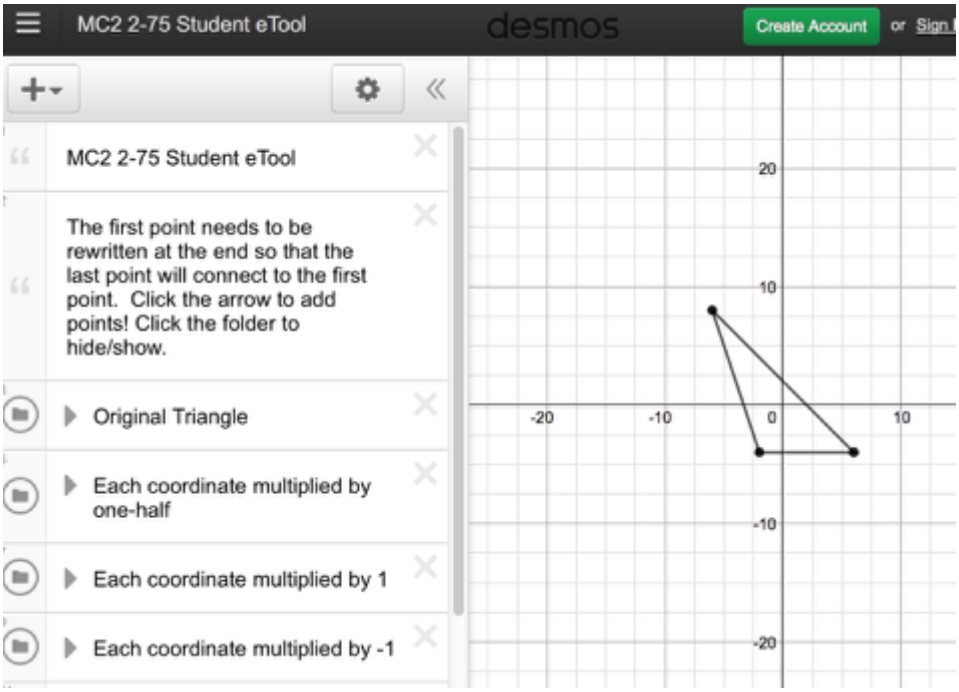


MC2 2.2.4: 2-75 Student eTool (Desmos)

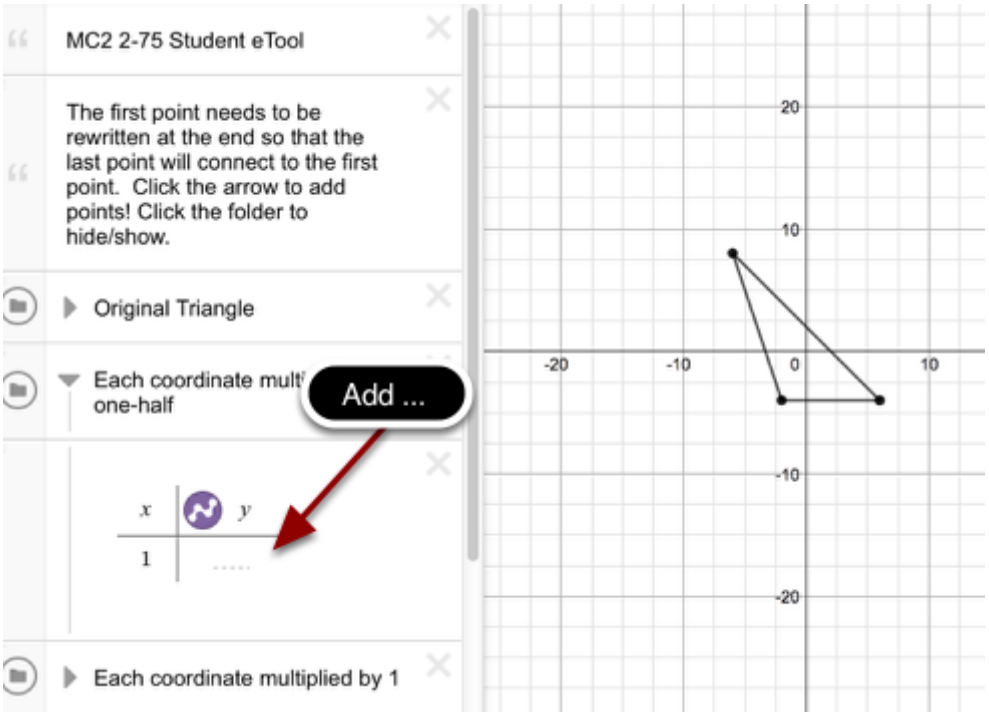
Click on the link below:

2-75 Student eTool (Desmos)

1. 2-75 Student eTool: Click each arrow below to access the table.



2. Add points in the table. Click below to continue to add points.

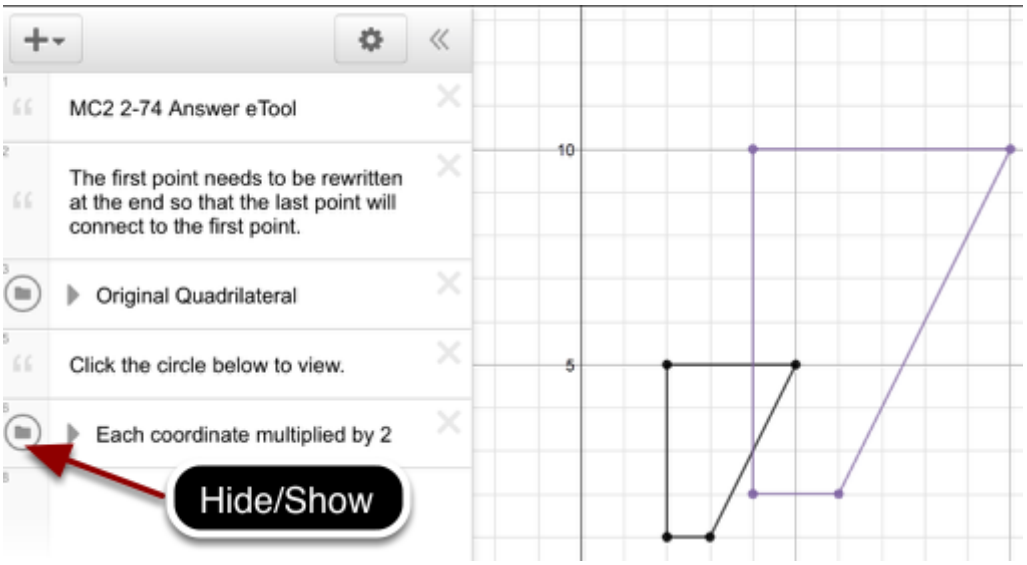


MC2 2.2.4: 2-74 & 2-75 Answer eTool (Desmos)

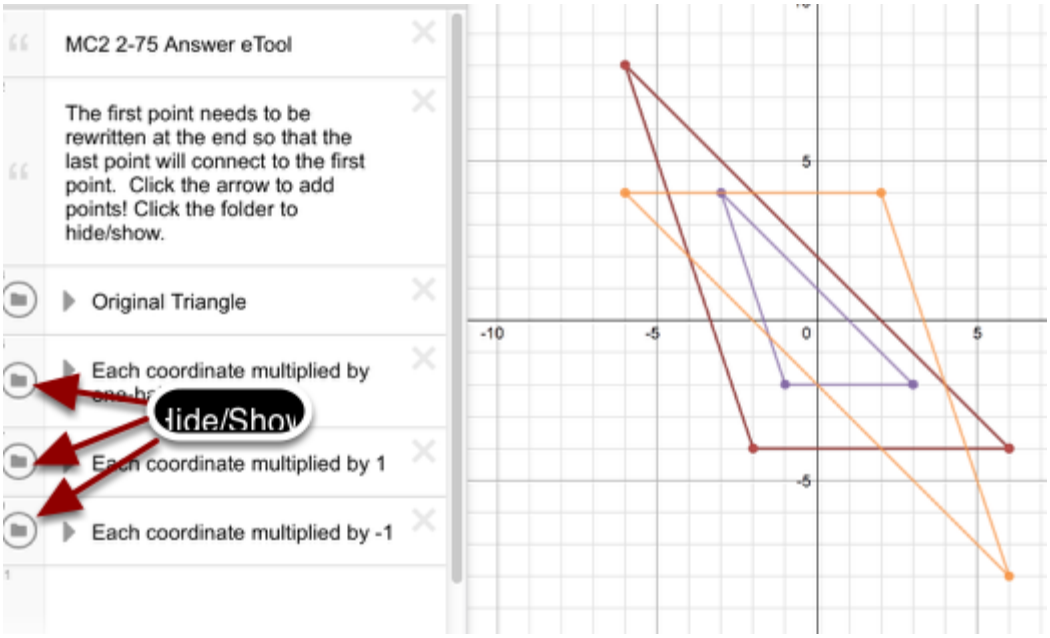
Click on the links below.

2-74 Answer eTool (Desmos)
2-75 Answer eTool (Desmos)

1. 2-74 Answer eTool



2. 2-75 Answer eTool

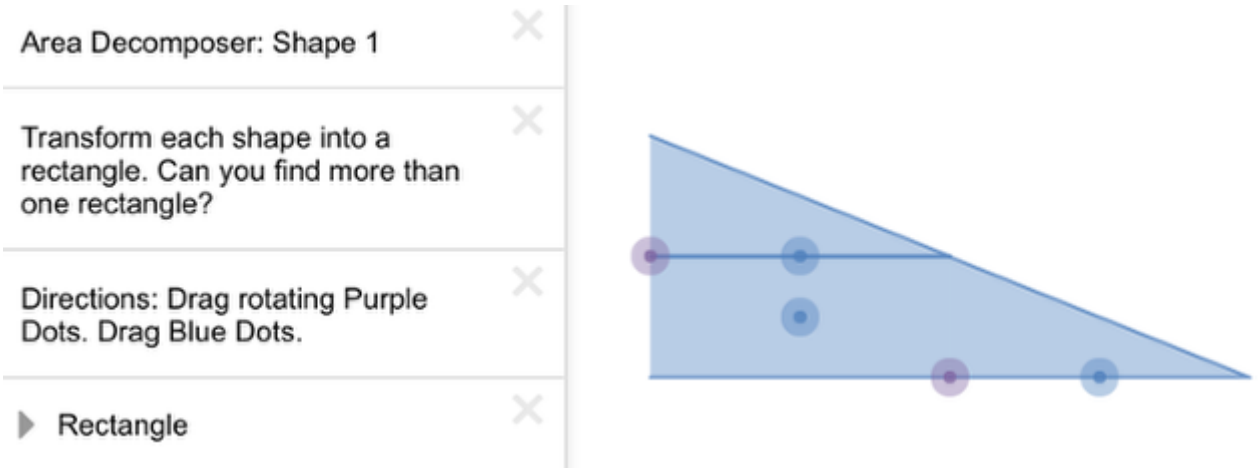


MC2 2.3.3 & 2.3.4 & 2.3.5: Area Decomposer (Desmos)

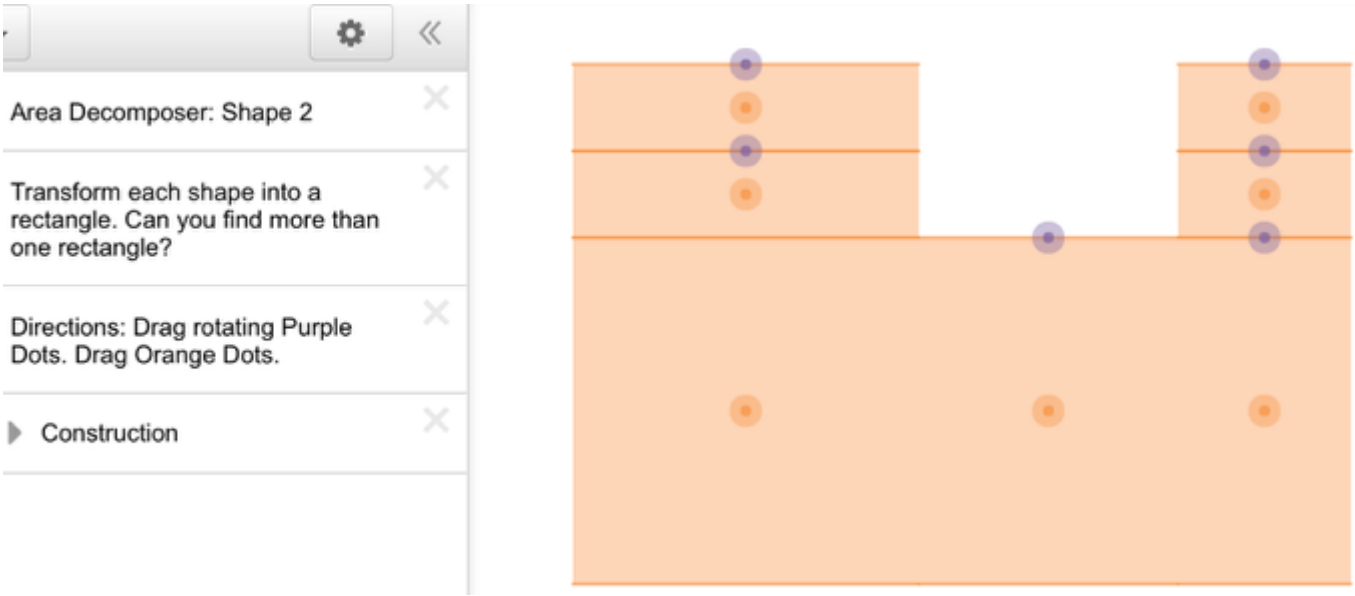
Click the links on below.

Area Decomposer: Shape 1 (Desmos)
Area Decomposer: Shape 2 (Desmos)
Area Decomposer: Shape 3 (Desmos)
Area Decomposer: Shape 4 (Desmos)
Area Decomposer: Shape 5 (Desmos)
Area Decomposer: Shape 6 (Desmos)
Area Decomposer: Shape 7 (Desmos)
Area Decomposer: Shape 8 (Desmos)

1. Area Decomposer: Shape 1



2. Area Decomposer: Shape 2



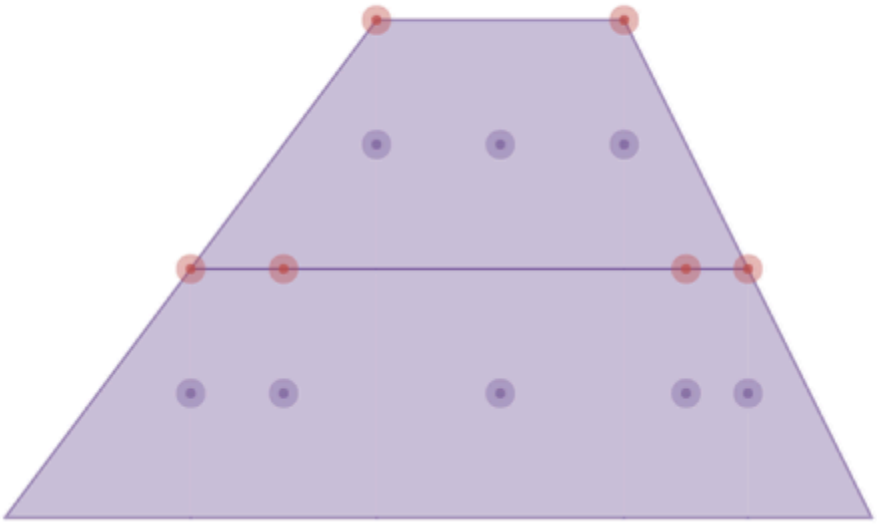
3. Area Decomposer: Shape 3

Area Decomposer: Shape 3

Transform each shape into a rectangle. Can you find more than one rectangle?

Directions: Drag rotating Red Dots. Drag Purple Dots.

Construction



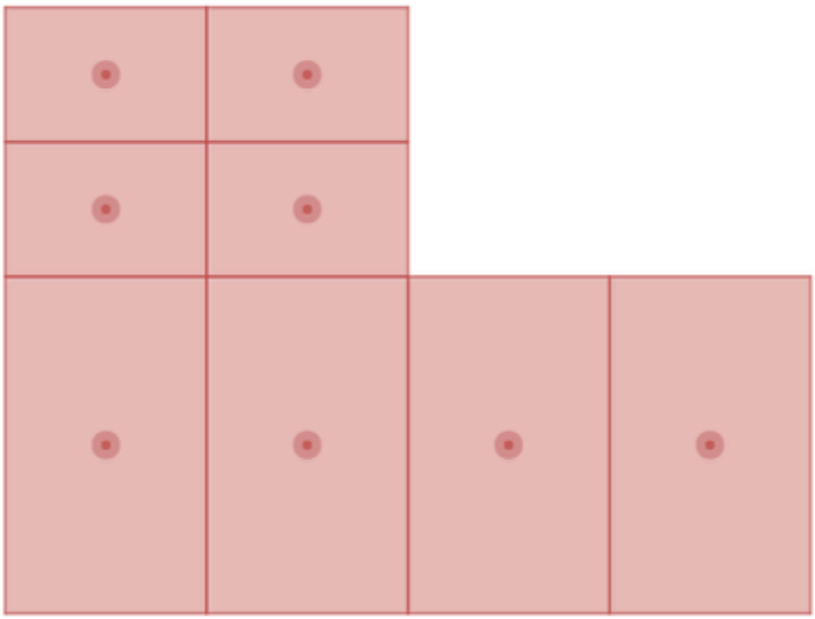
4. Area Decomposer: Shape 4

Area Decomposer: Shape 4

Transform each shape into a rectangle. Can you find more than one rectangle?

Directions: Drag Red Dots.

Construction



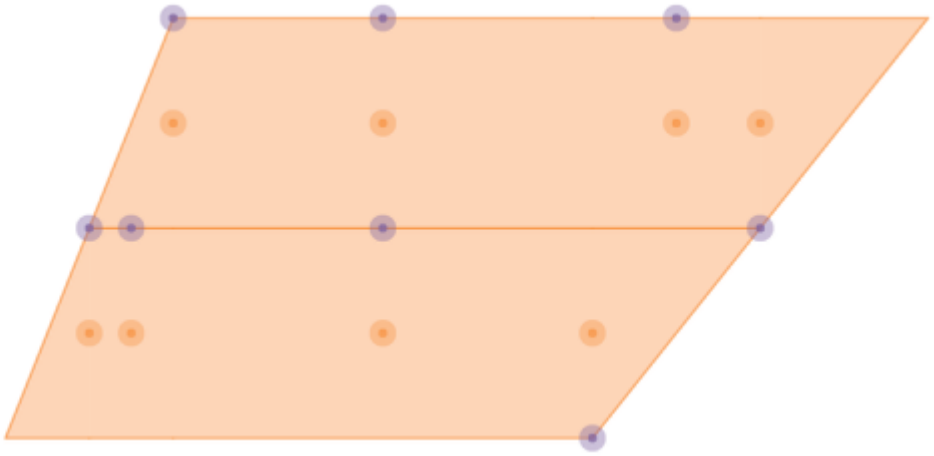
5. Area Decomposer: Shape 5

Area Decomposer: Shape 5

Transform each shape into a rectangle. Can you find more than one rectangle?

Directions: Drag rotating Purple Dots. Drag Orange Dots.

Construction



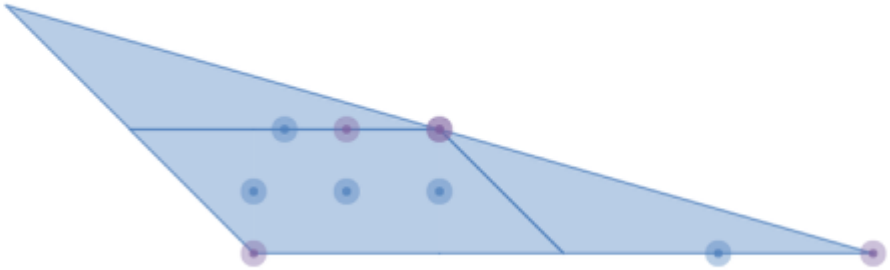
6. Area Decomposer: Shape 6

Area Decomposer: Shape 6

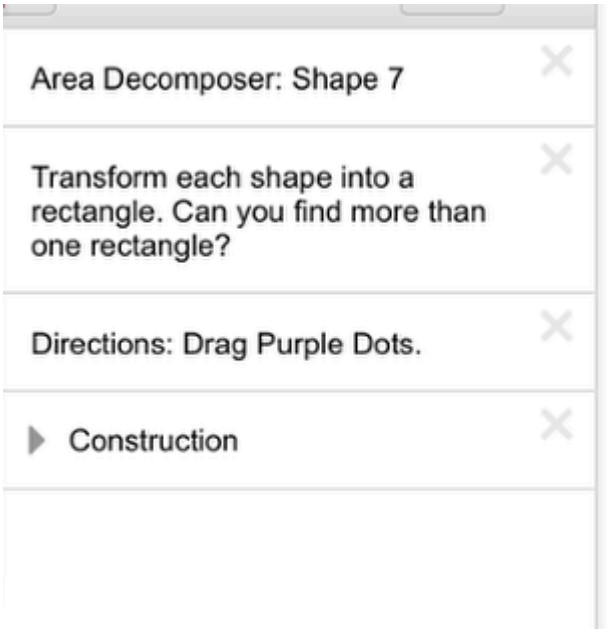
Transform each shape into a rectangle. Can you find more than one rectangle?

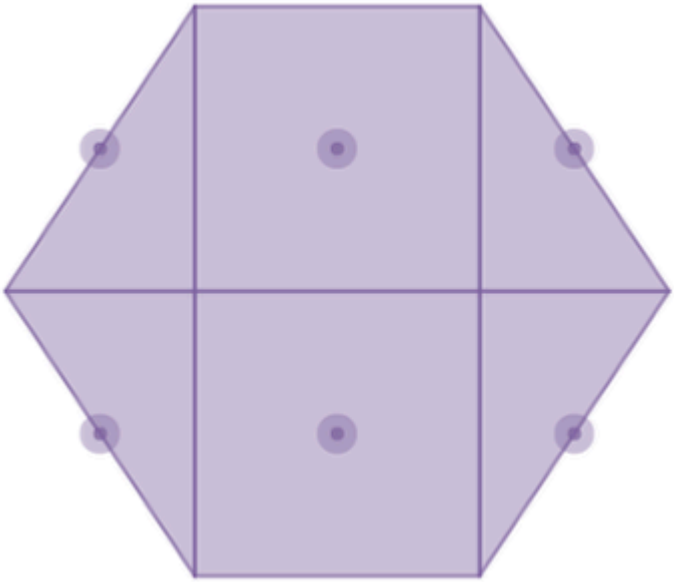
Directions: Drag rotating Purple Dots. Drag Blue Dots.

Construction

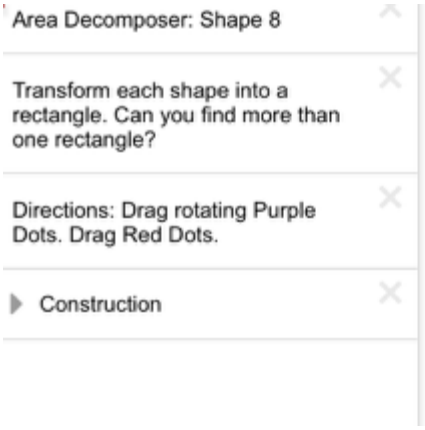


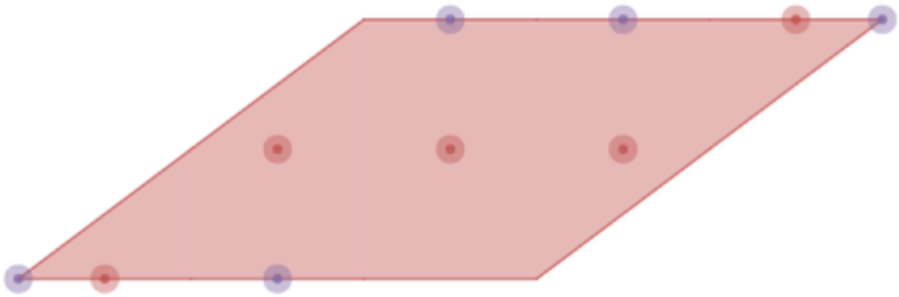
7. Area Decomposer: Shape 7





8. Area Decomposer: Shape 8



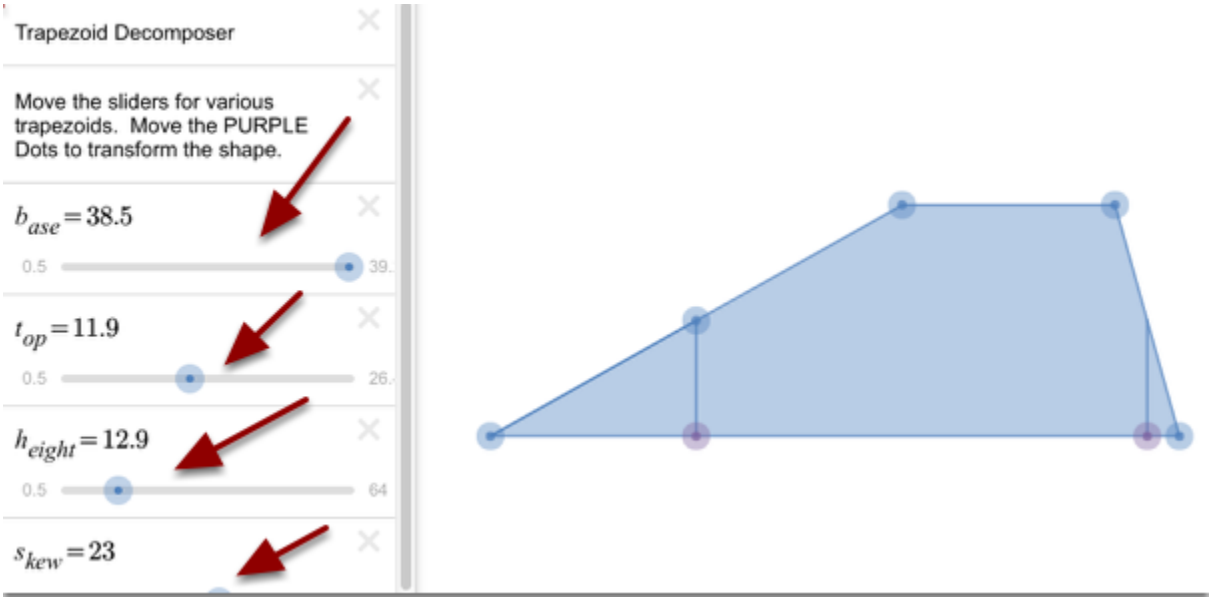


MC2 2.3.5: Trapezoid Decomposer (Desmos)

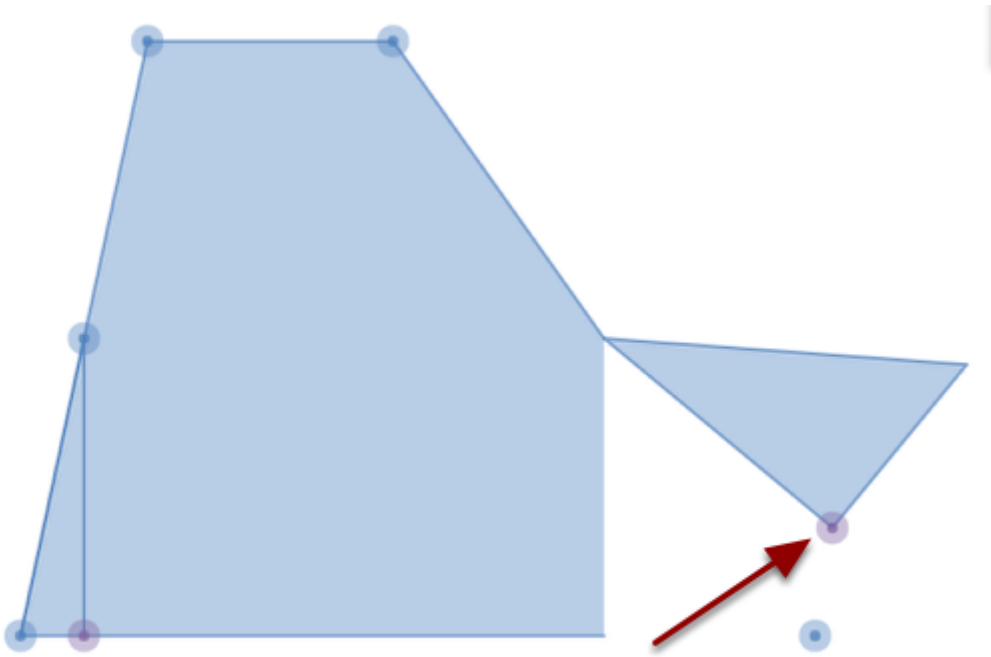
Click the link below for the â€œTrapezoid Decomposer (Desmos)."

Trapezoid Decomposer (Desmos)

1. Modify the trapezoids with the sliders below.



2. Drag the PURPLE handles to rotate a figure piece.



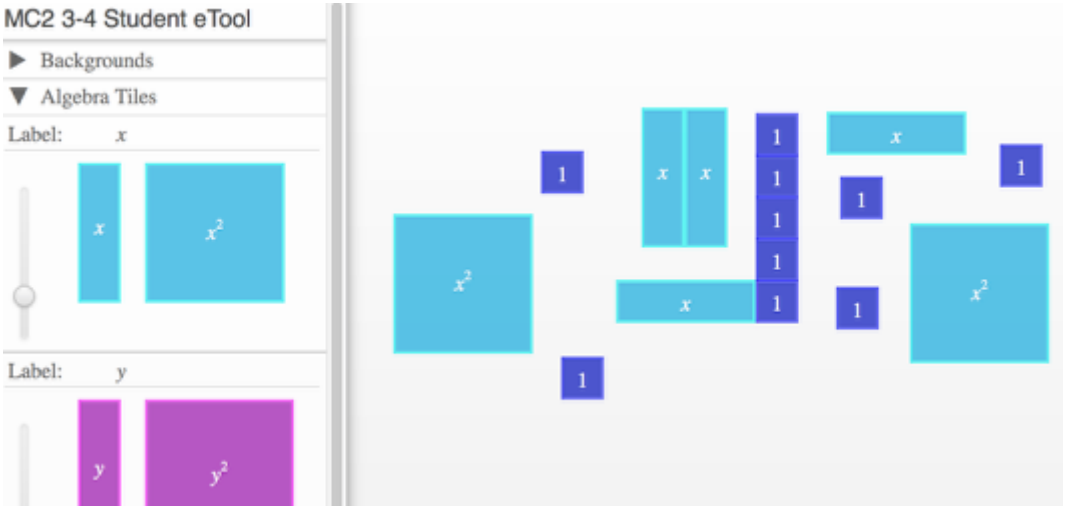
Chapter 3

MC2 3.1.1: 3-4 & 3-5a,b,c Student eTools (CPM)

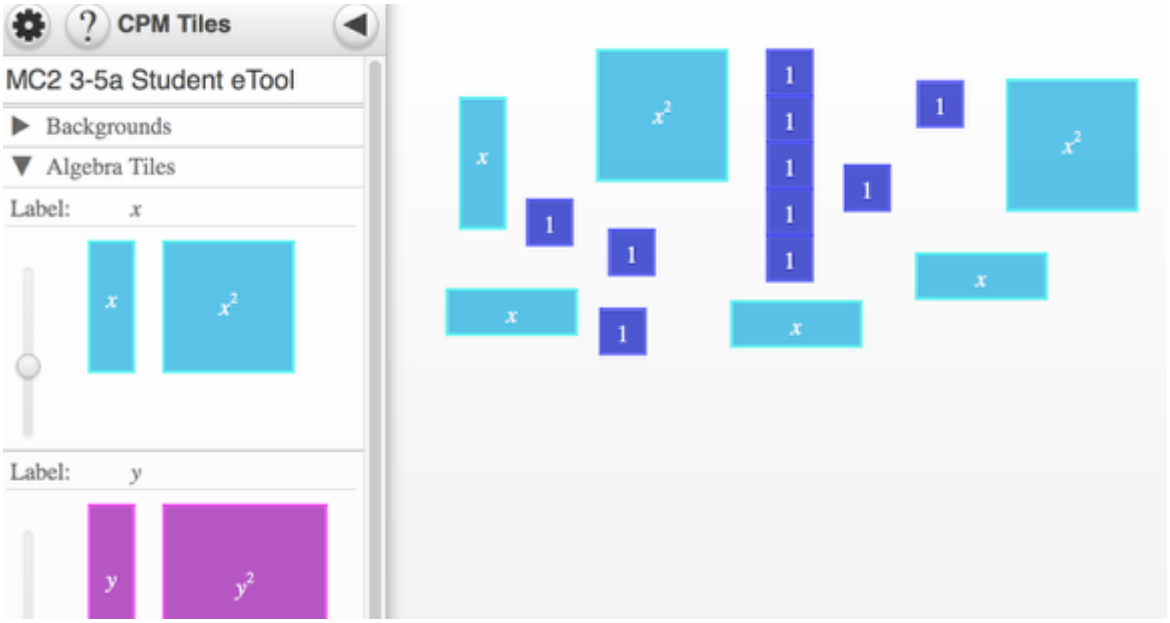
Click on the links below.

[3-4 Student eTool (CPM)]
[3-5a Student eTool (CPM)]
[3-5b Student eTool (CPM)]
[3-5c Student eTool (CPM)]

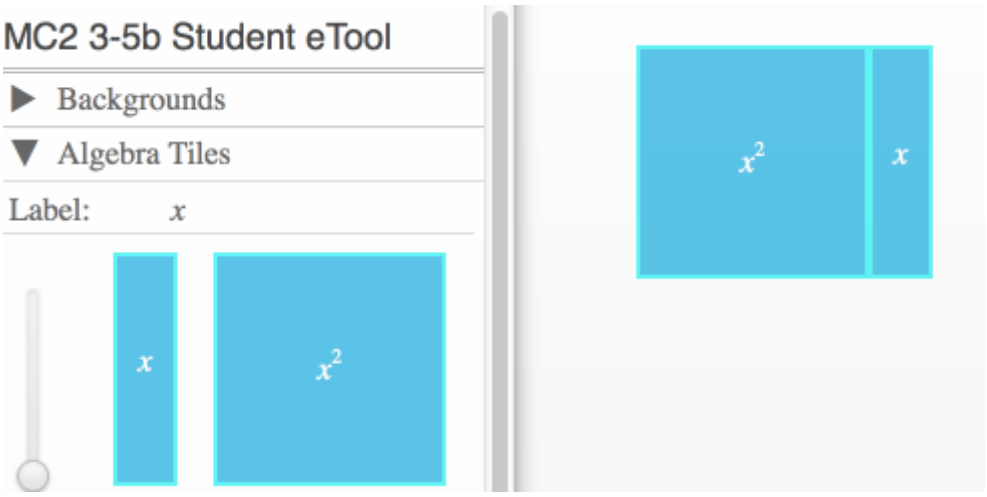
1. MC2 3-4:



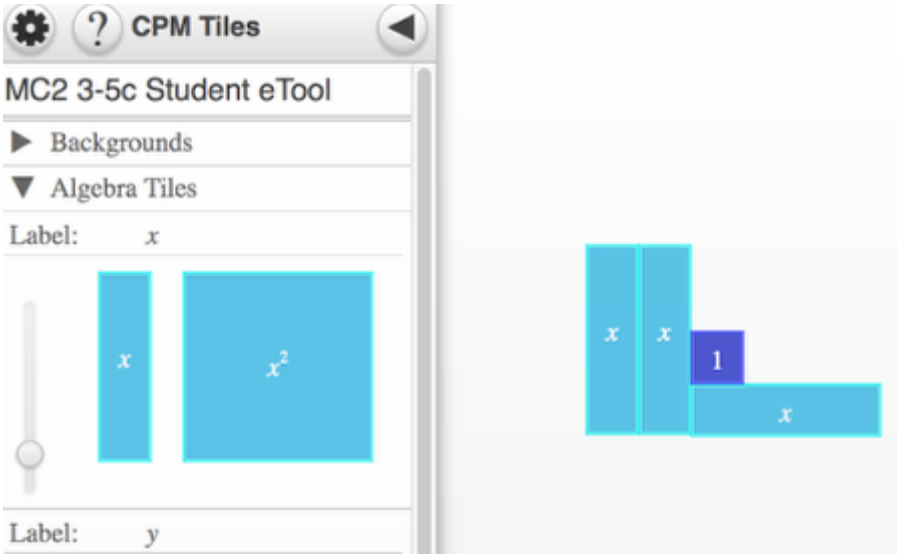
2. MC2 3-5a:



3. MC2 3-5b:



4. MC2 3-5c:

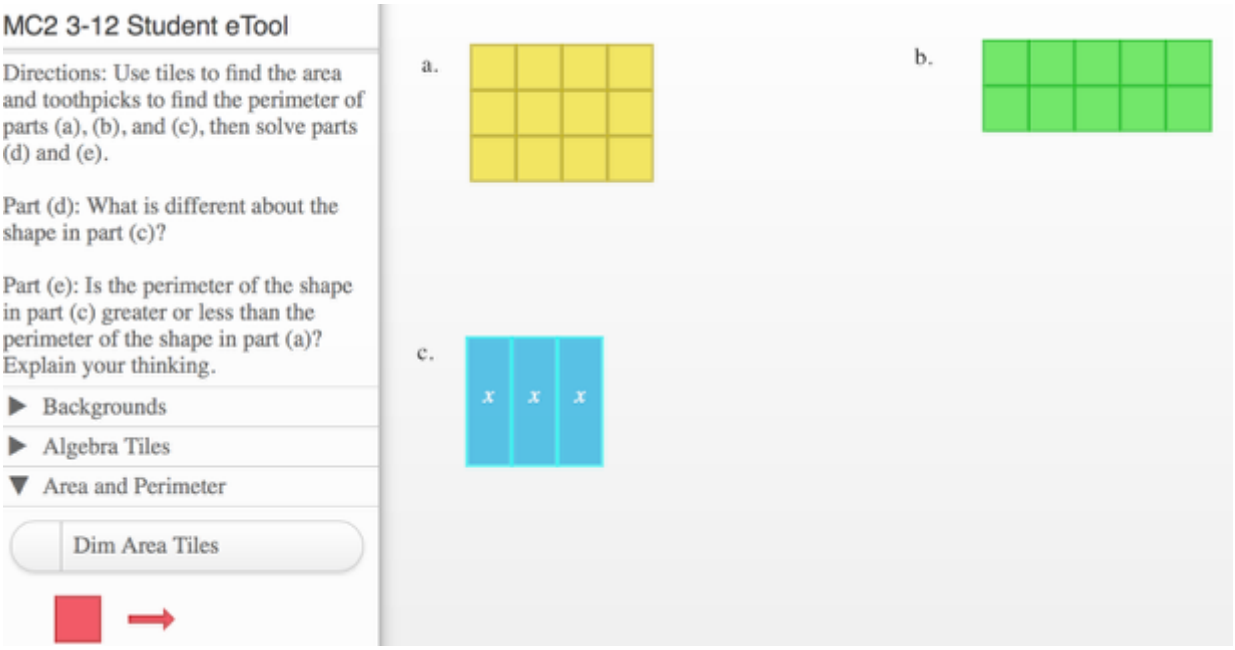


MC2 3.1.2: 3-12 & 3-15 Student eTools (CPM)

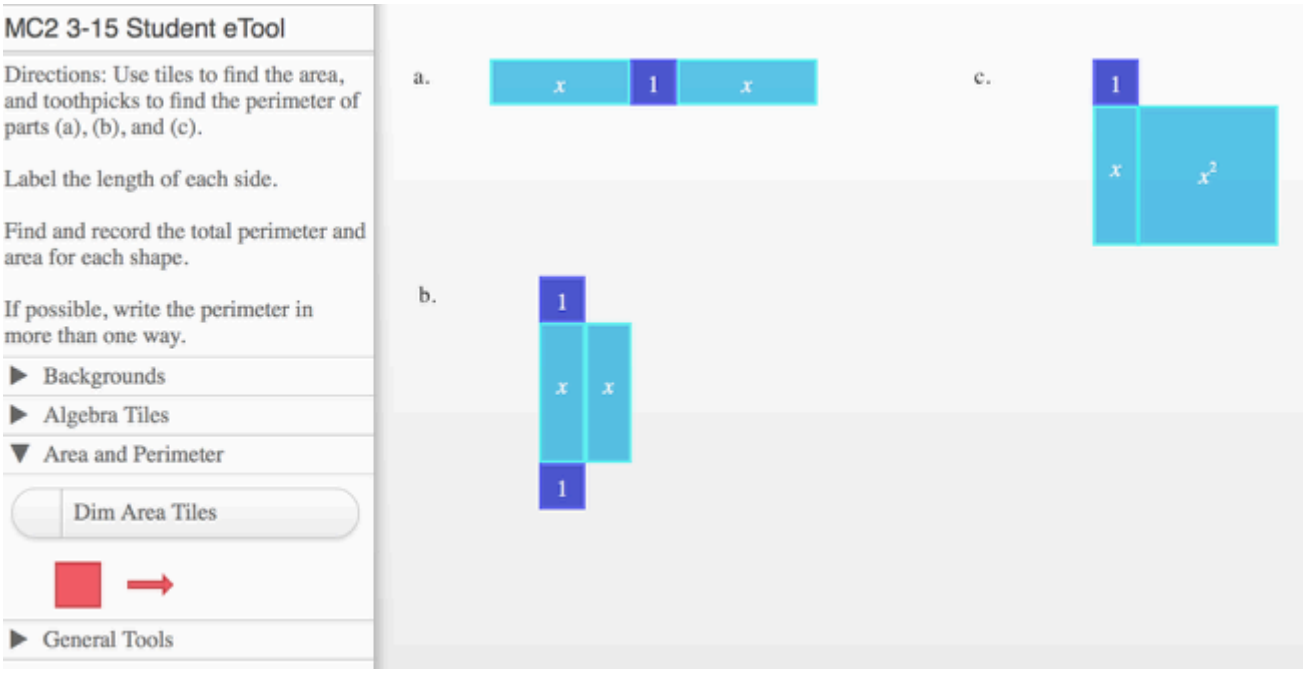
Click on the links below.

[3-12 Student eTool (CPM)]
[3-15 Student eTool (CPM)]

1. MC2 3-12 Student eTool:



2. MC2 3-15 Student eTool:

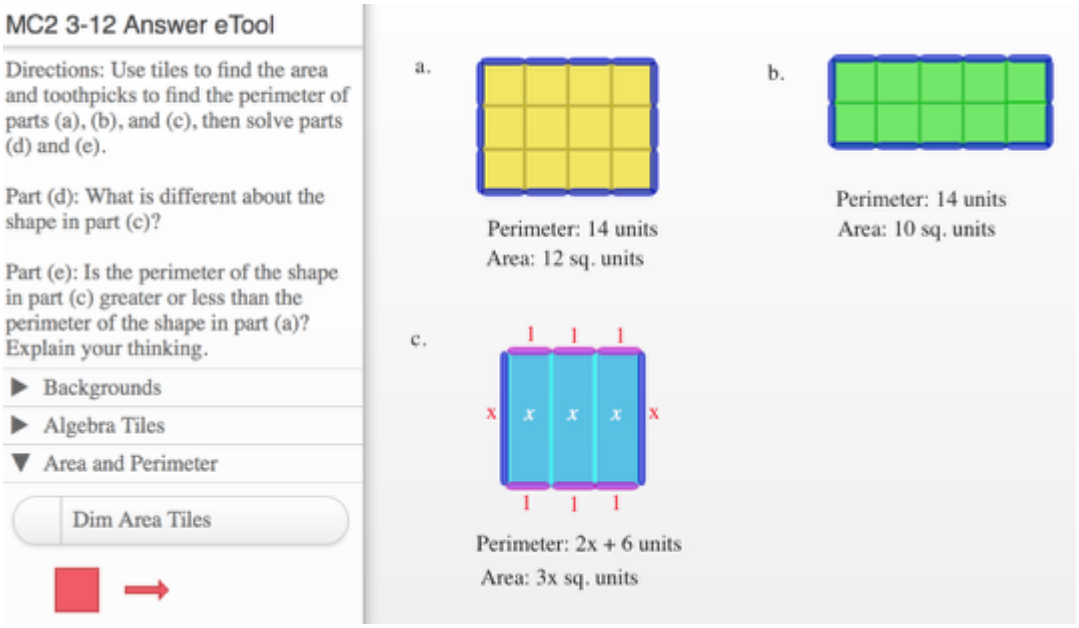


MC2 3.1.2: 3-12 & 3-15 Answer eTool (CPM)

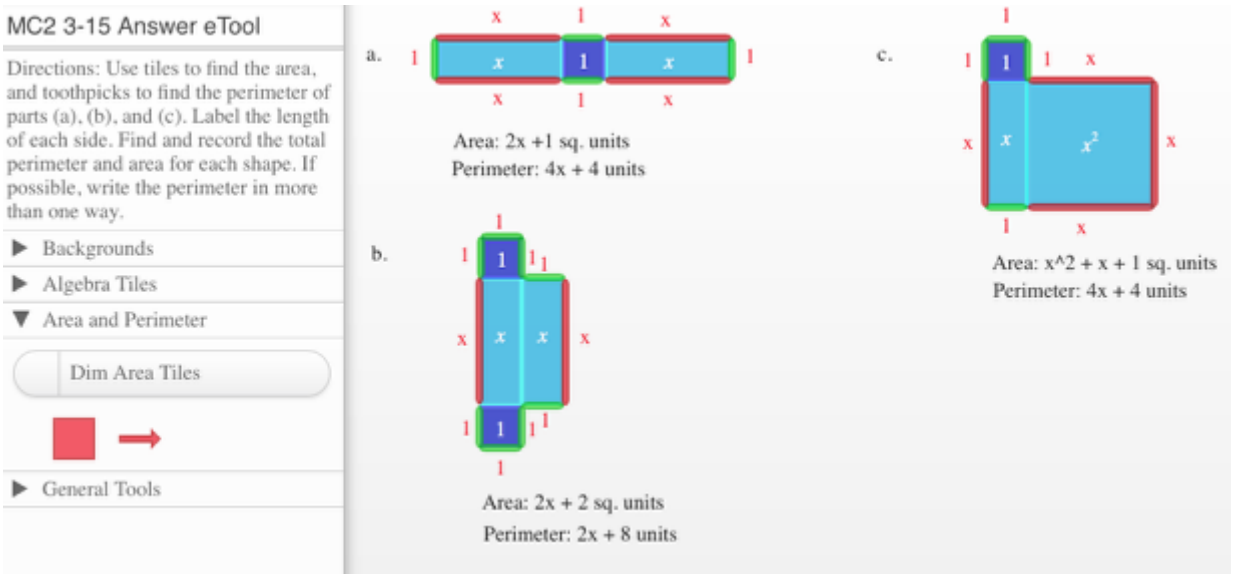
Click on the links below.

3-12 Answer eTool (CPM)
3-15 Answer eTool (CPM)

1. MC2 3-12 Answers:



2. MC2 3-15 Answers:

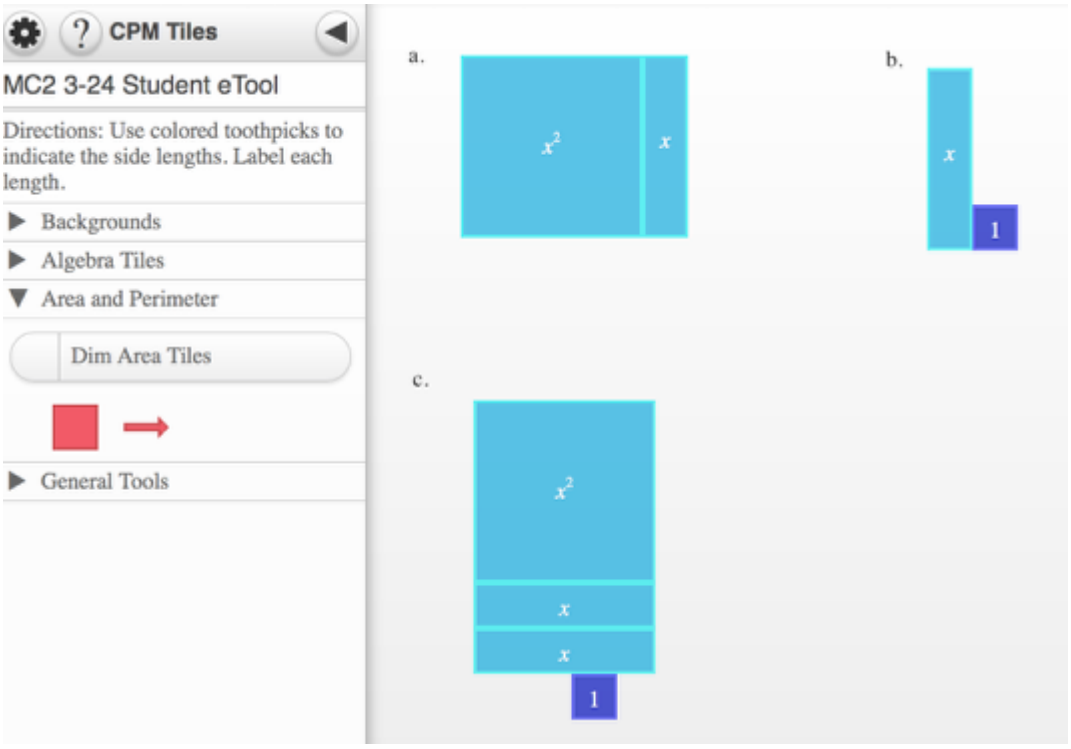


MC2 3.1.3: 3-24 Student eTool (CPM)

Click on the link below.

3-24 Student eTool (CPM)

MC2 3-24 Student eTool:

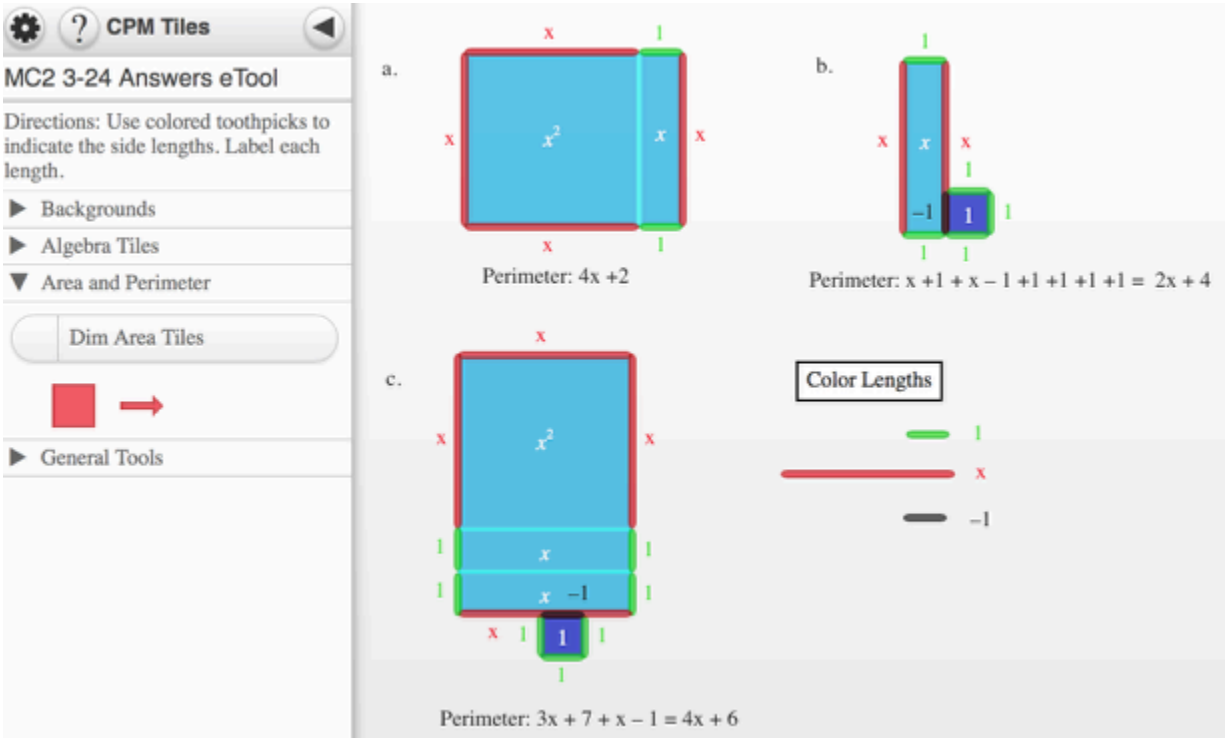


MC2 3.1.3: 3-24 Answer eTool (CPM)

Click on the link below.

[3-24 Answer eTool (CPM)]

MC2 3-24 Answer eTool:

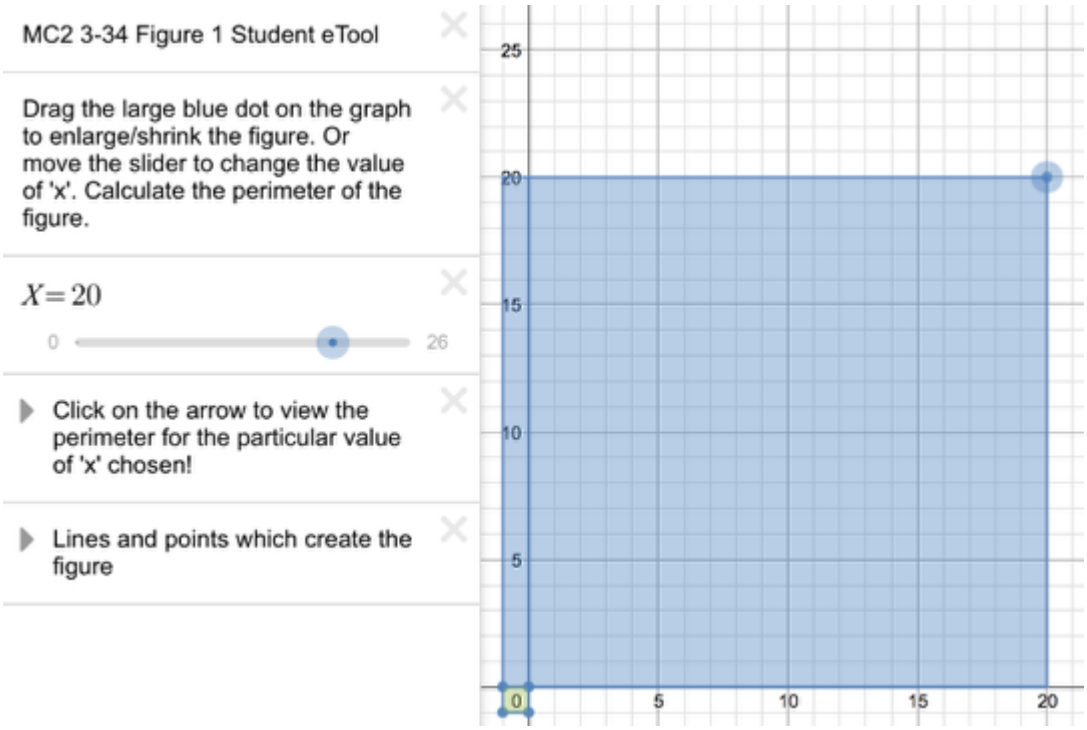


MC2 3.1.4: 3-34 Figures 1-3 Student eTools (Desmos)

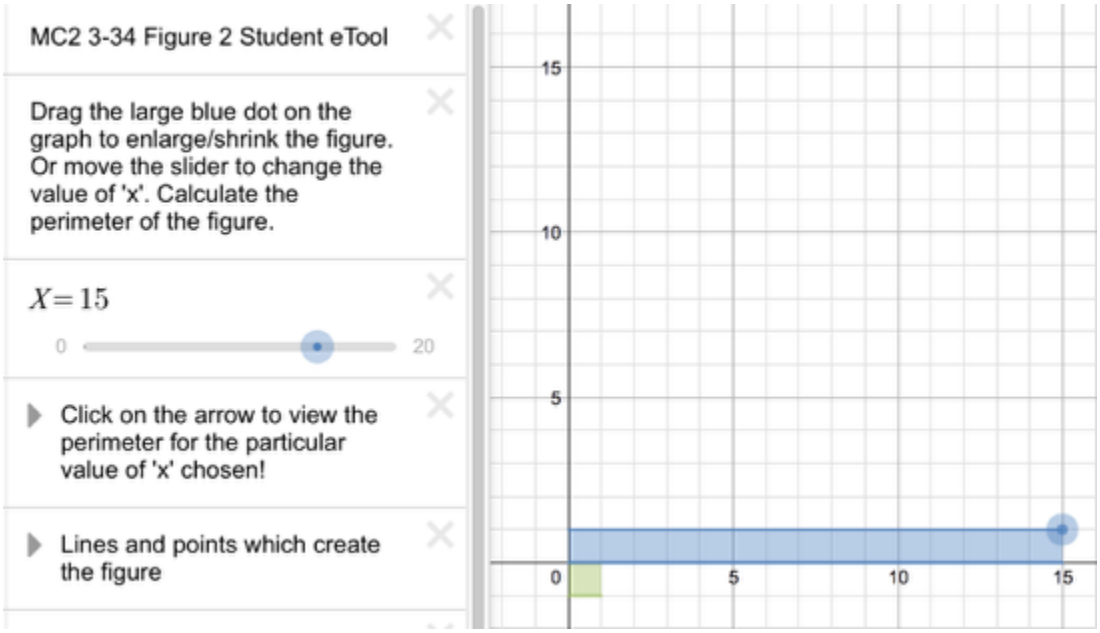
Click on the links below.

3-34 Figure 1 Student eTool (Desmos)
3-34 Figure 2 Student eTool (Desmos)
3-34 Figure 3 Student eTool (Desmos)

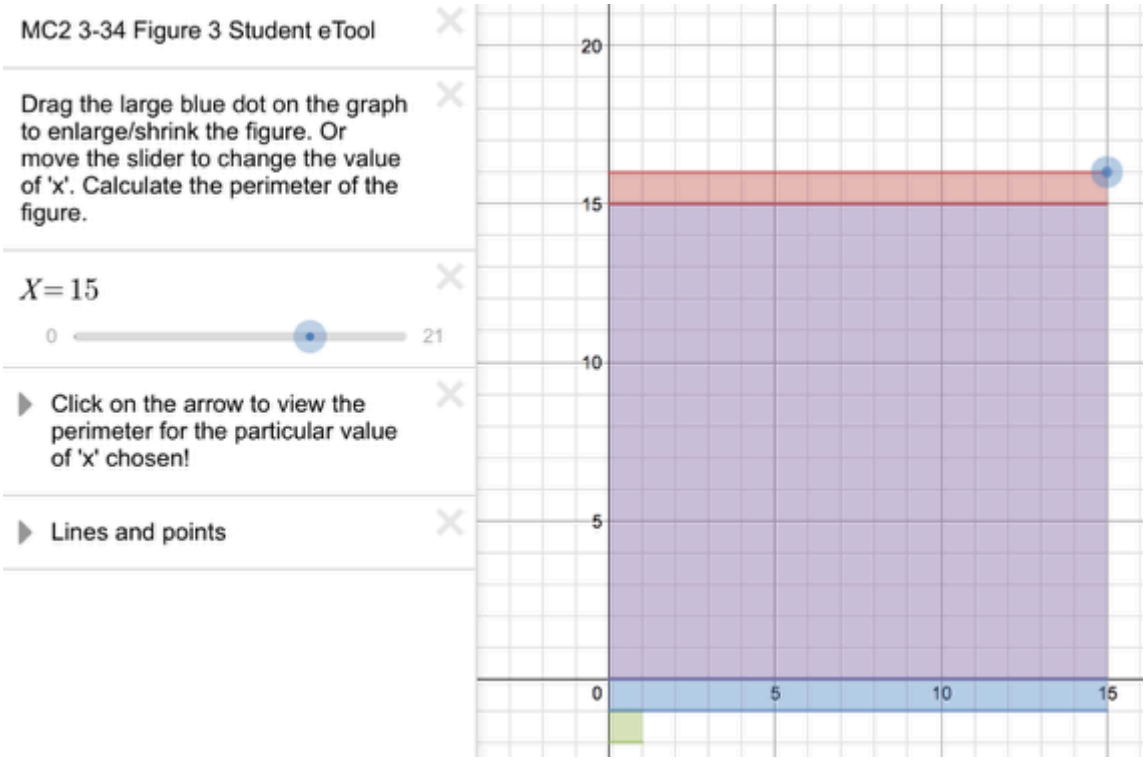
MC2 3-34 Figure 1 Student eTool:



MC2 3-34 Figure 1 Student eTool:



MC2 3-34 Figure 1 Student eTool:



Chapter 4

MC2 4.2.2: Climate Data Internet Link

Click the link below to view the Old Farmer's Almanac.

Old Farmer's Almanac

Chapter 10

MC2 10.1.6: How big is a ...? Video

Click the link below to view the How Big is a ...? Video.

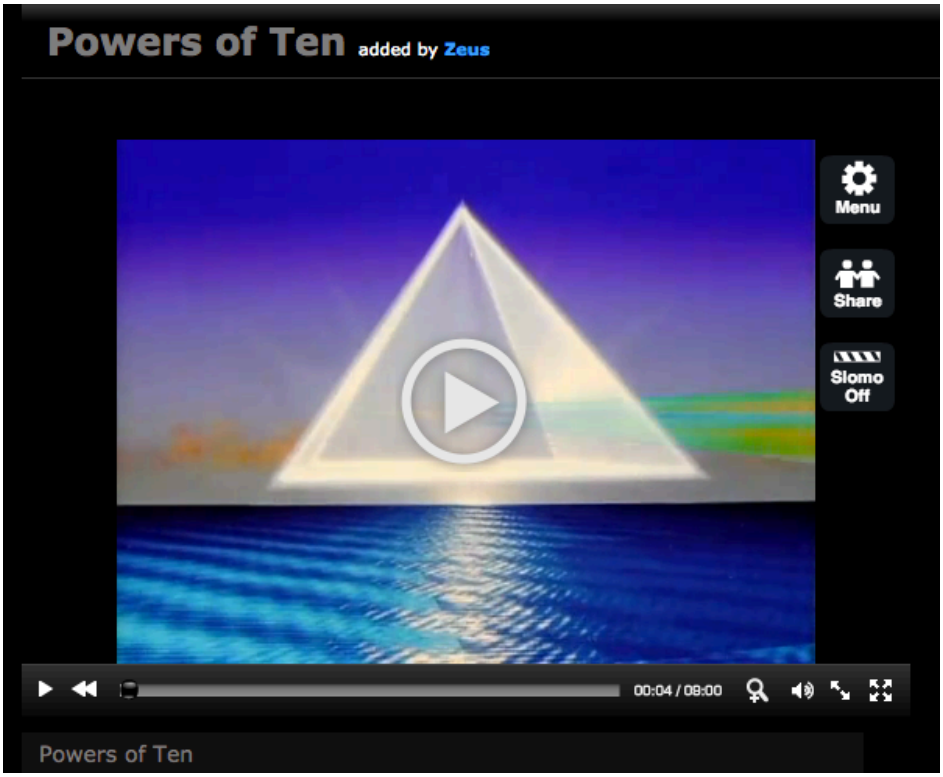
How big is a ...? Video

Click "Start the Animation...".

MC2 10.1.6: All Things Science - Powers of Ten video

Click the link below to view "All Things Science - Powers of Ten" video.

All Things Science - Powers of Ten video

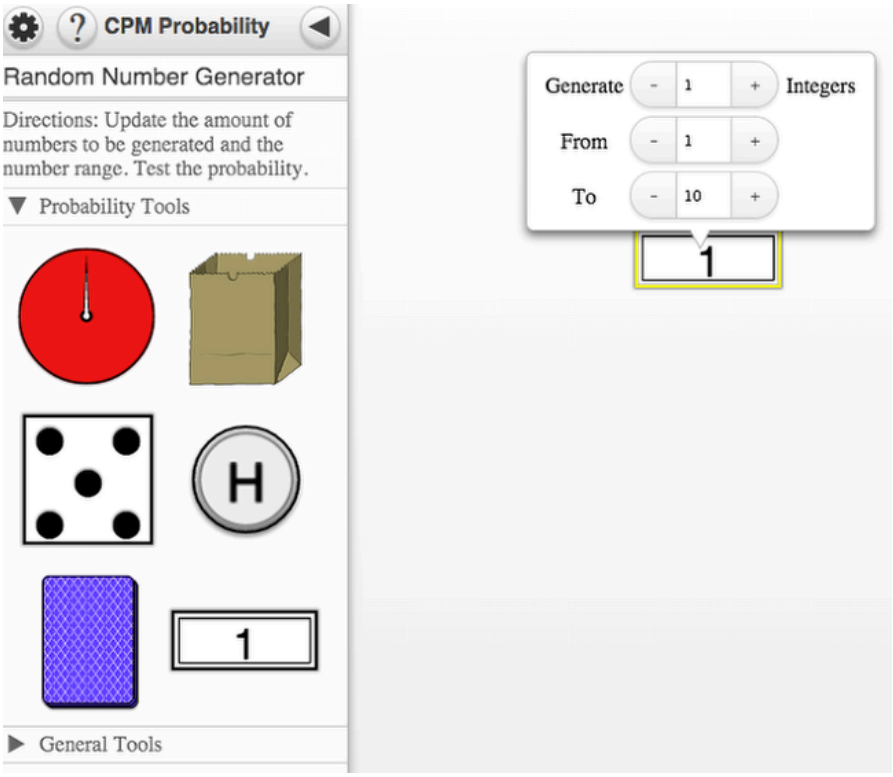


Chapter 11

MC2 11.2.2: Random Number Generator eTool (CPM)

Click the link below.

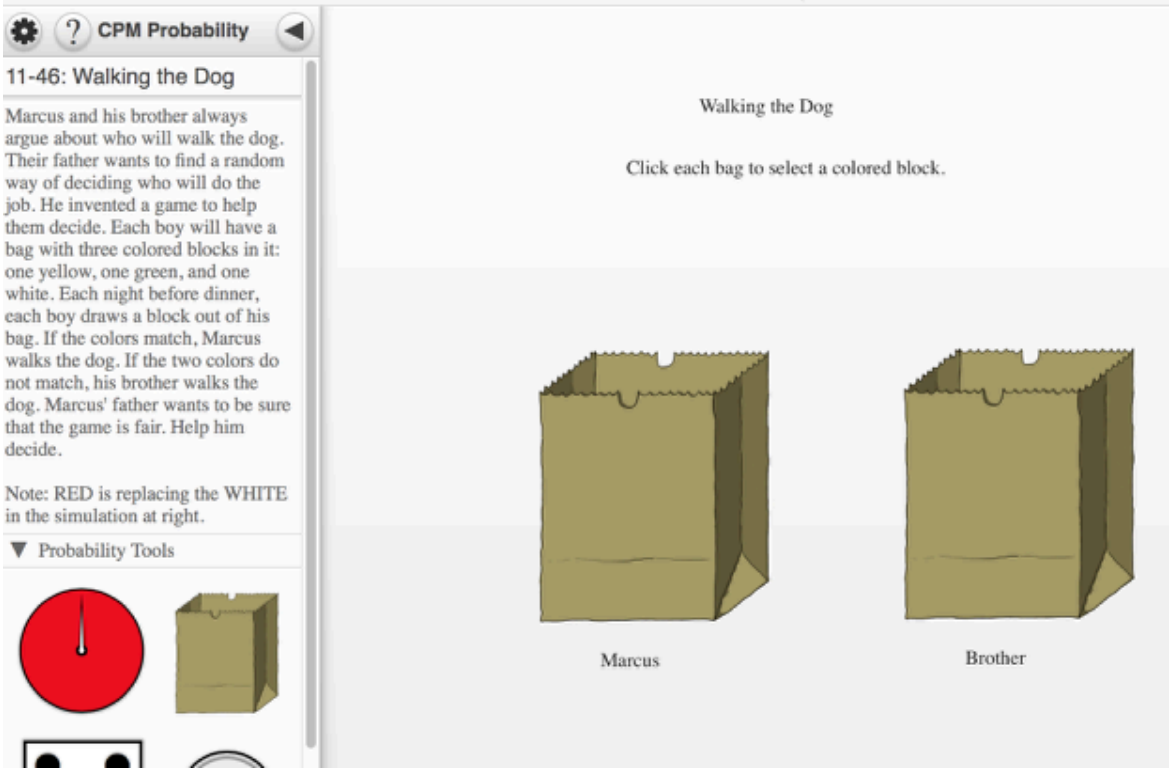
Random Number Generator eTool (CPM)



MC2 11.2.3: 11-46 Student eTool (CPM)

Click the link below.

[11-46 Student eTool (CPM)]



Smart Board Chapter Files

Smartboard Chapter Files (copied)

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Click on the links below.

MC2: Chapter 1
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MC2: Chapter 4
MC2: Chapter 5
MC2: Chapter 6
MC2: Chapter 7
MC2: Chapter 8
MC2: Chapter 9
MC2: Chapter 10
MC2: Chapter 11