# CC GEOMETRY ETOOLS

# Table of Contents

# 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)

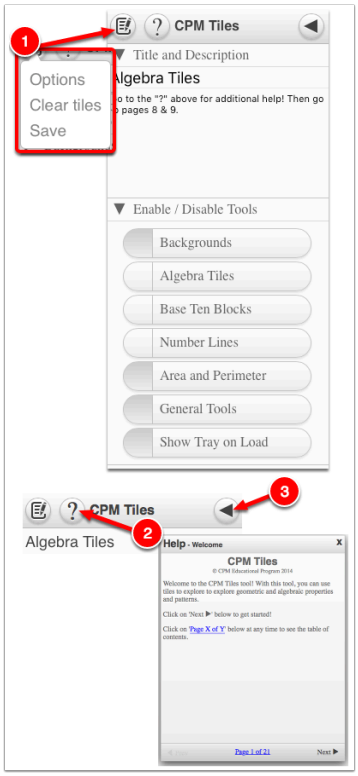
## 1. The top bar has three main parts: Pen & Paper Icon, '?' Icon, and the Arrow Icon.

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.

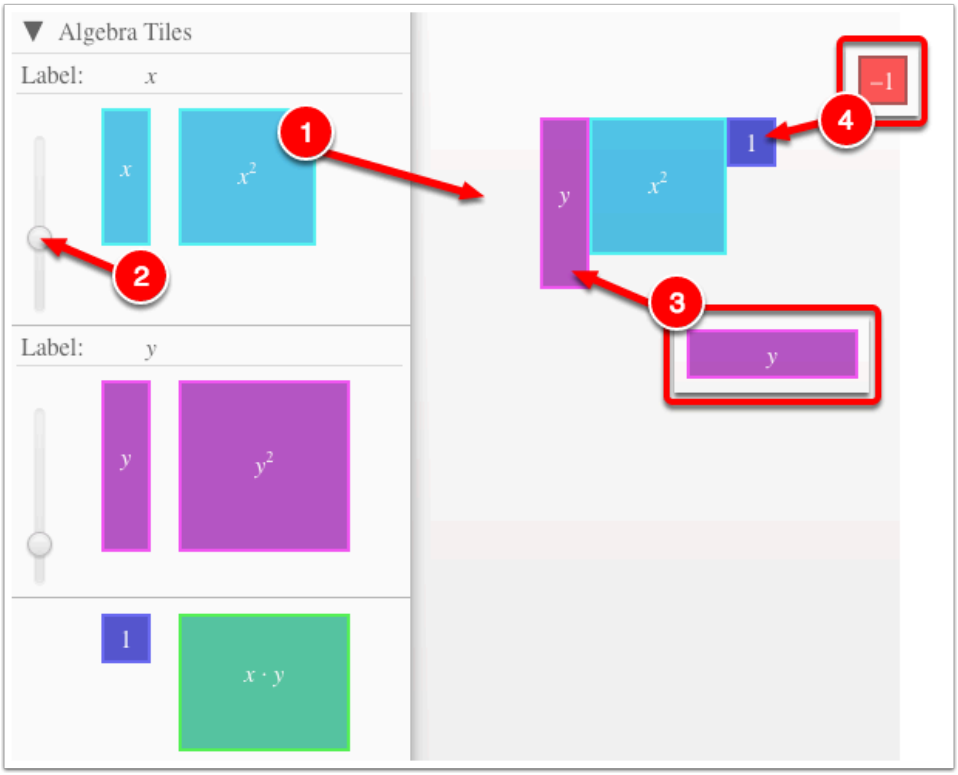
   Save - This will save all the changes made.
2. Select the '?' icon for directions.
3. Select the Arrow Icon at the right to open and close the tray.



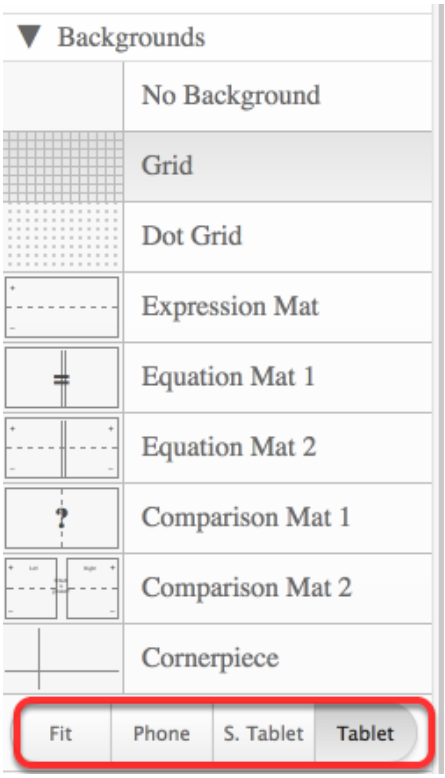

## 2. Drag tiles from the tray at the left to the display area at the right.

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.

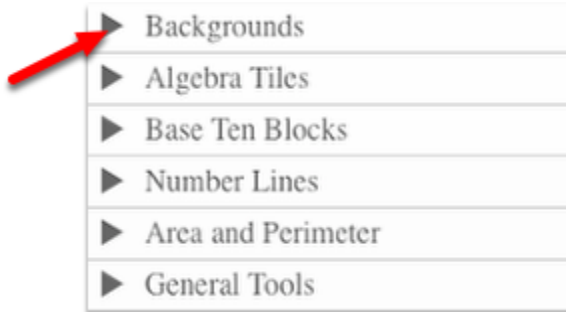


### 3. Choose from a variety of different mats. Also choose from a variety of sizes to fit on various devices.




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

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



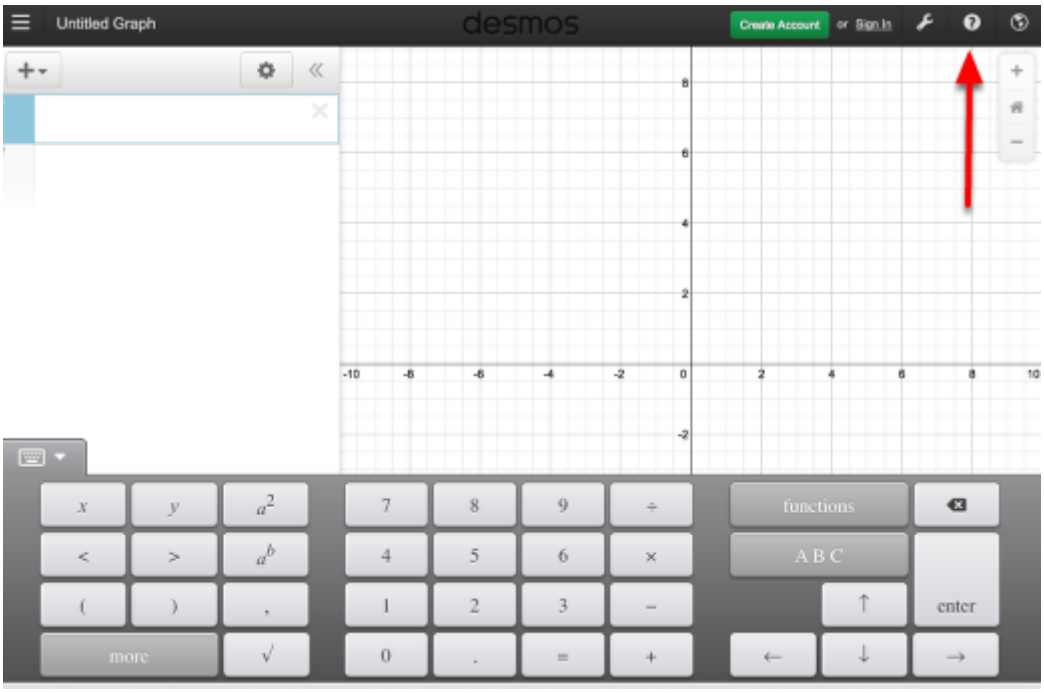
# Desmos Graphing Calculator

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

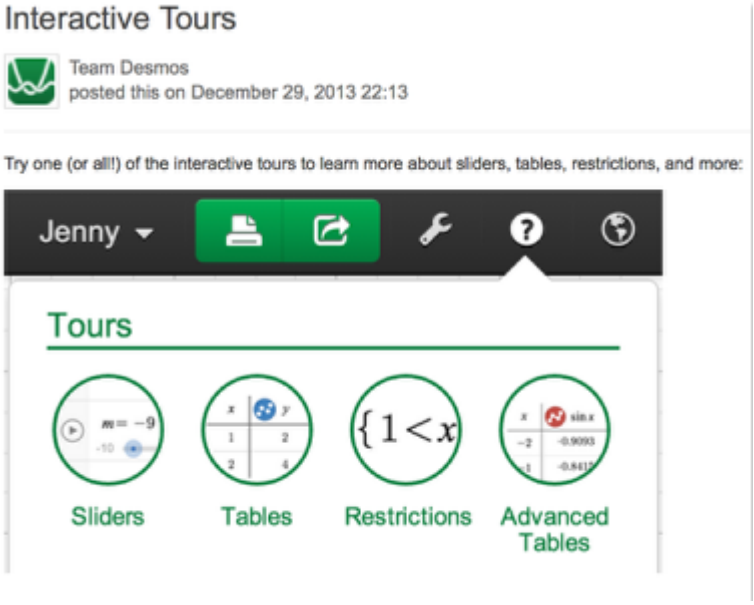
## 1. Click on all of the buttons. Try it out! For extra help, click the "?".




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

Sliders
Tables
Advanced Tables
Restrictions

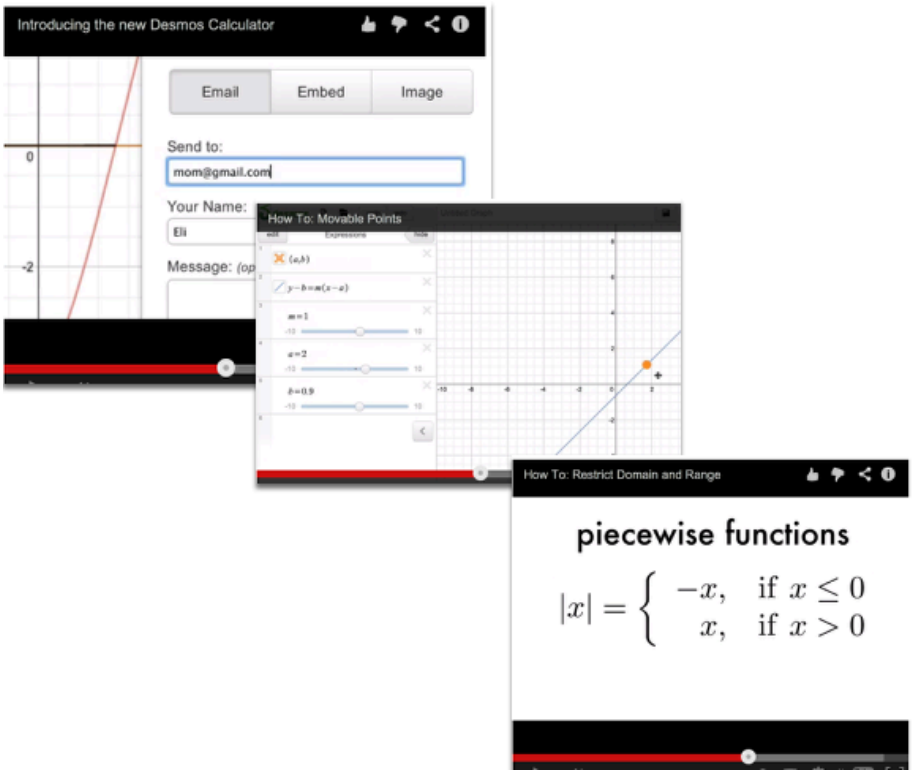
**3. The interactive tours will NOT let you make a mistake! Try the links above!**




**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

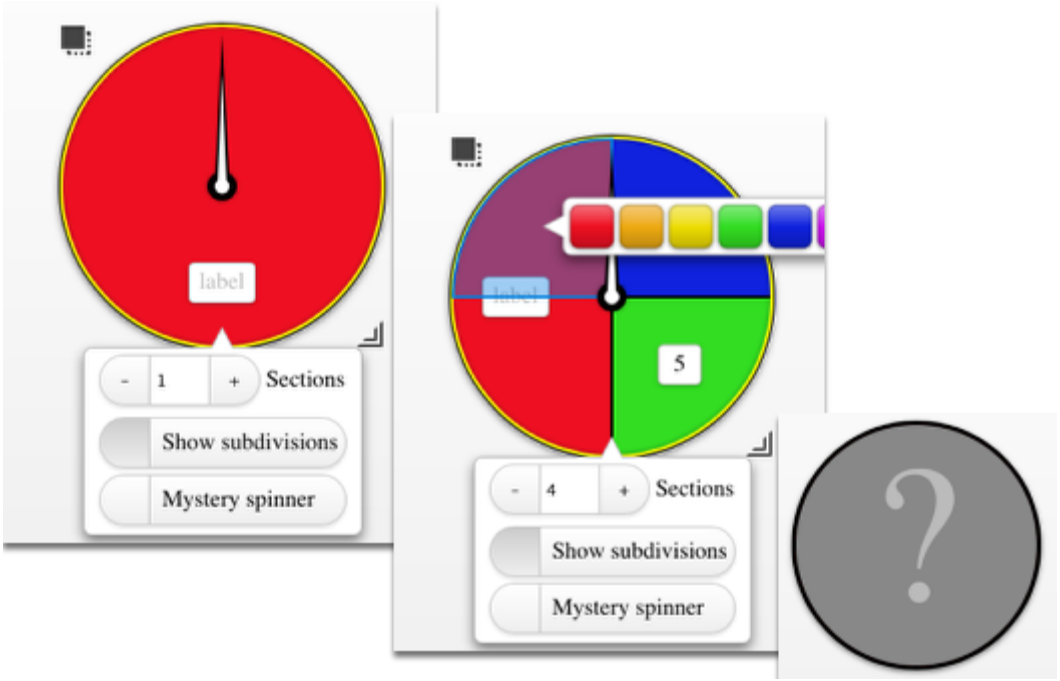
# Probability Tools (CPM)

## Click on the link below.

Probability Tools (CPM)

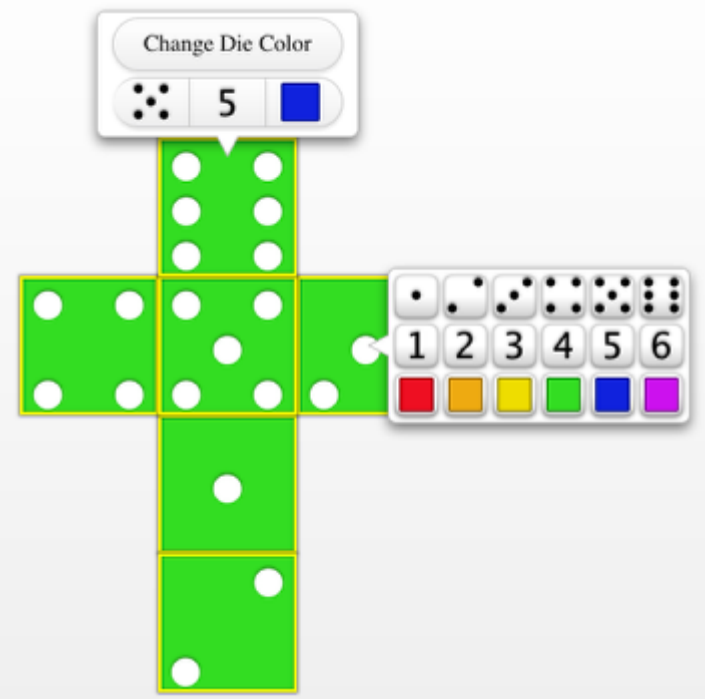
## 1. Spinners:

- 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.



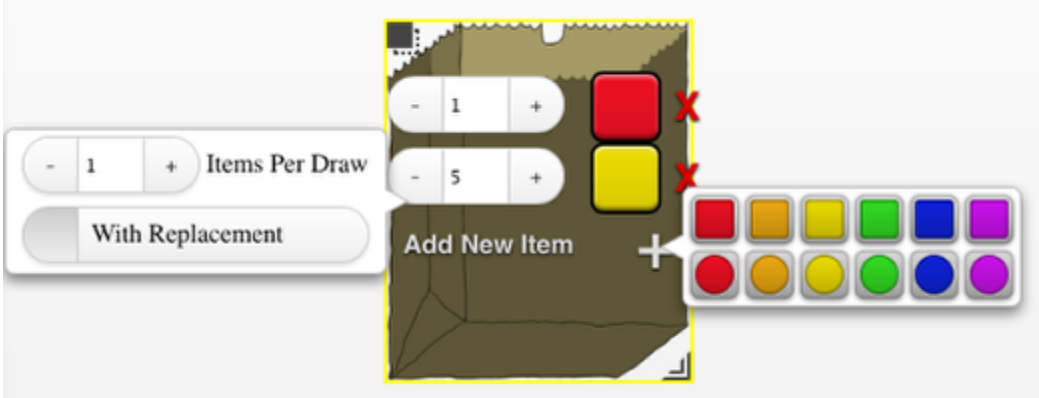

## 2. Dice:

- 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:

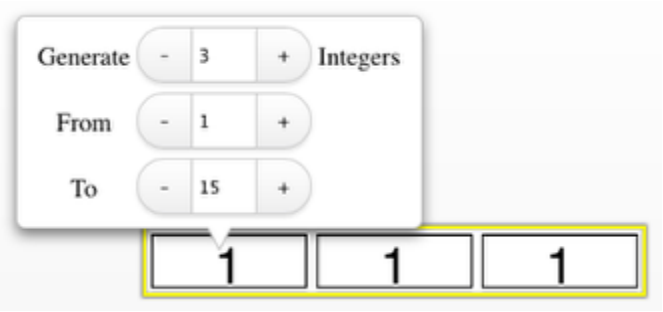
- Coins are labelled "H" for Heads and "T" for Tails.
- Choose the color.
- Drag one or more coins to the board.
- Click each of them to spin.


## 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

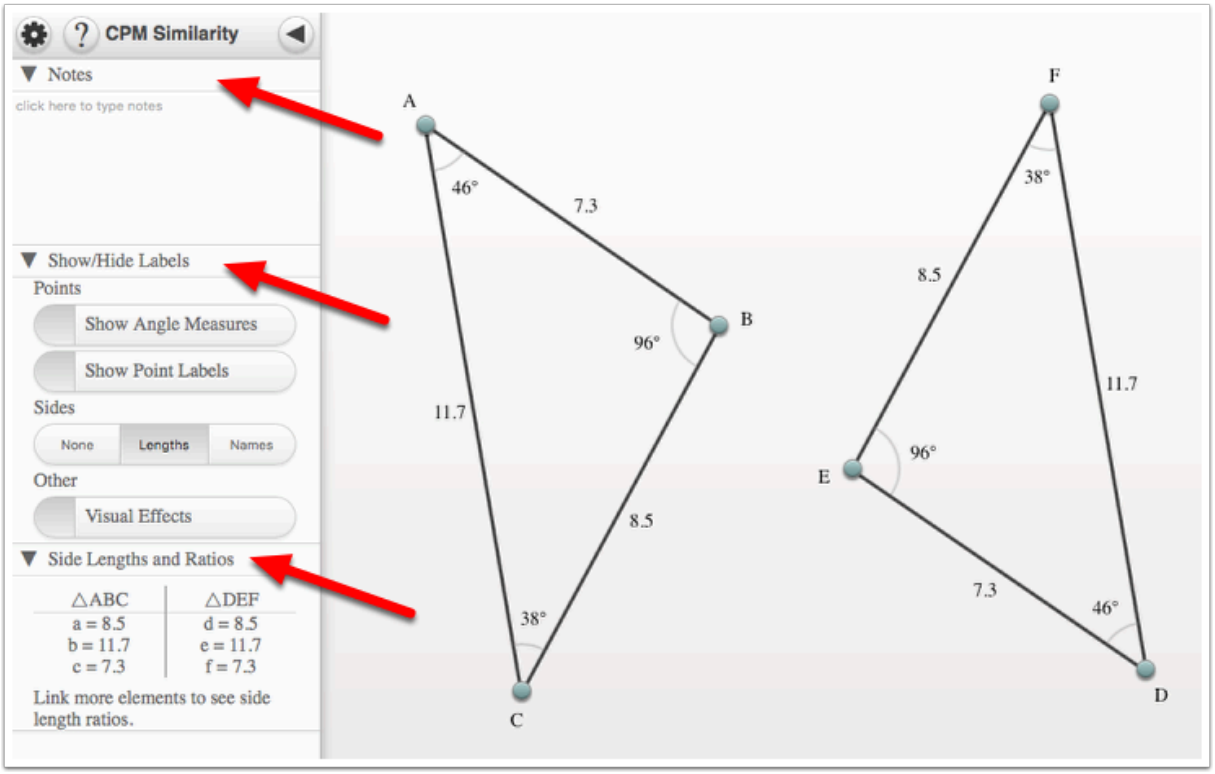
# Similarity Toolkit (CPM)

The similarity toolkit allows students to explore two triangles to determine congruency or similarity given SSS, SSA, SAS, AAA, etc.. Students show how two triangles are similar or congruent using rigid transformations (translation, rotation, and reflexion).

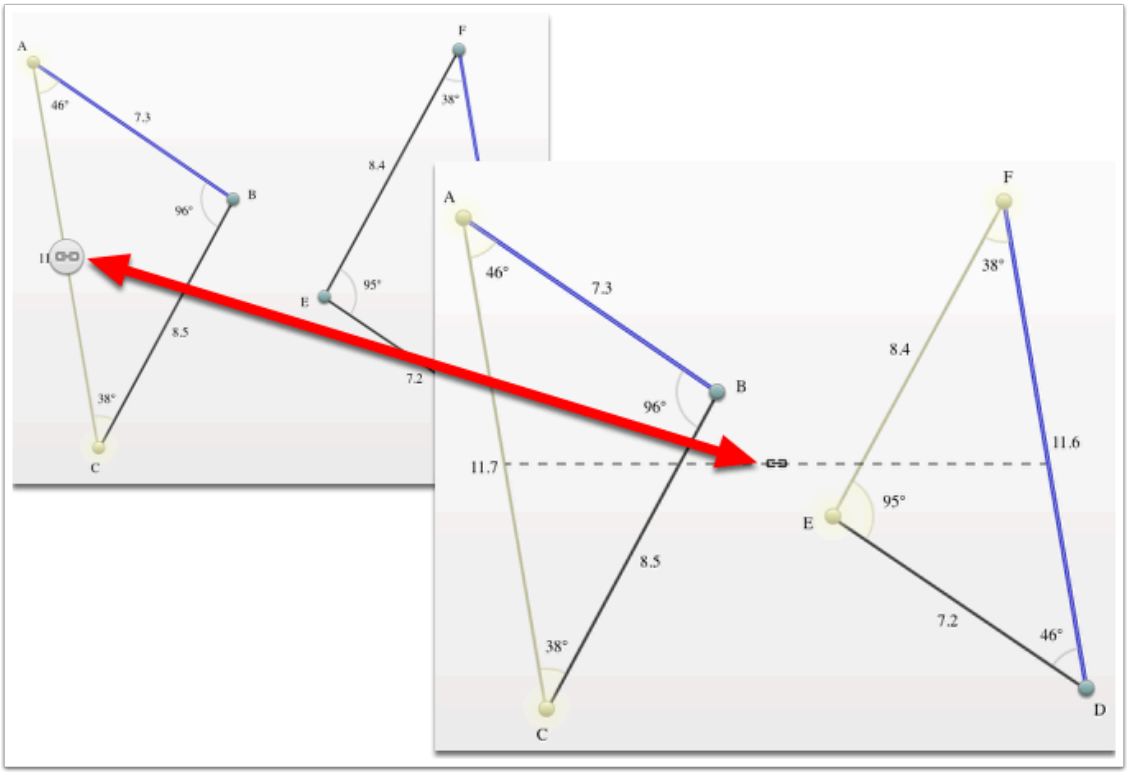
## 1. Click on the "Similarity Toolkit" link below. For additional help, click on the "Similarity Toolkit Video".

Similarity Toolkit Video
Similarity Toolkit (CPM)

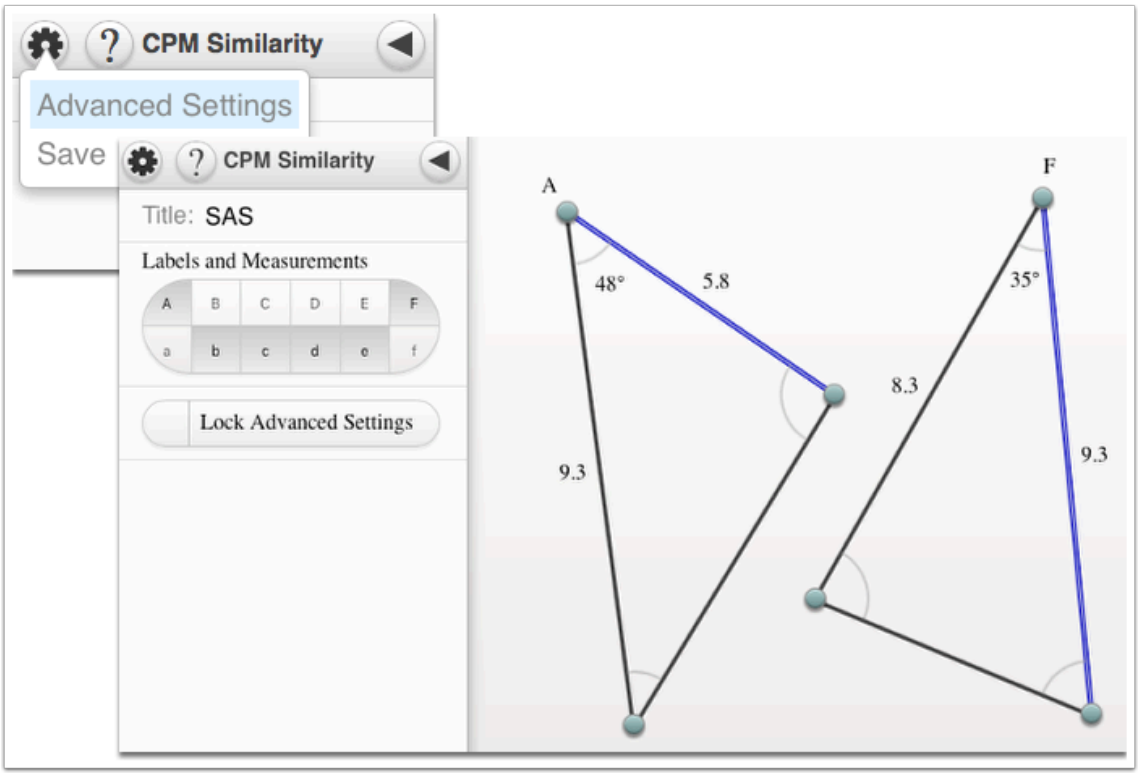
## 2. Similarity Toolkit Basic Controls:



## 3. Indicate what sides/angles are similar/congruent.




## 4. By going to the Advanced Settings, indicate what angles and sides you want shown!



# Rigid Transformations eTool (CPM)

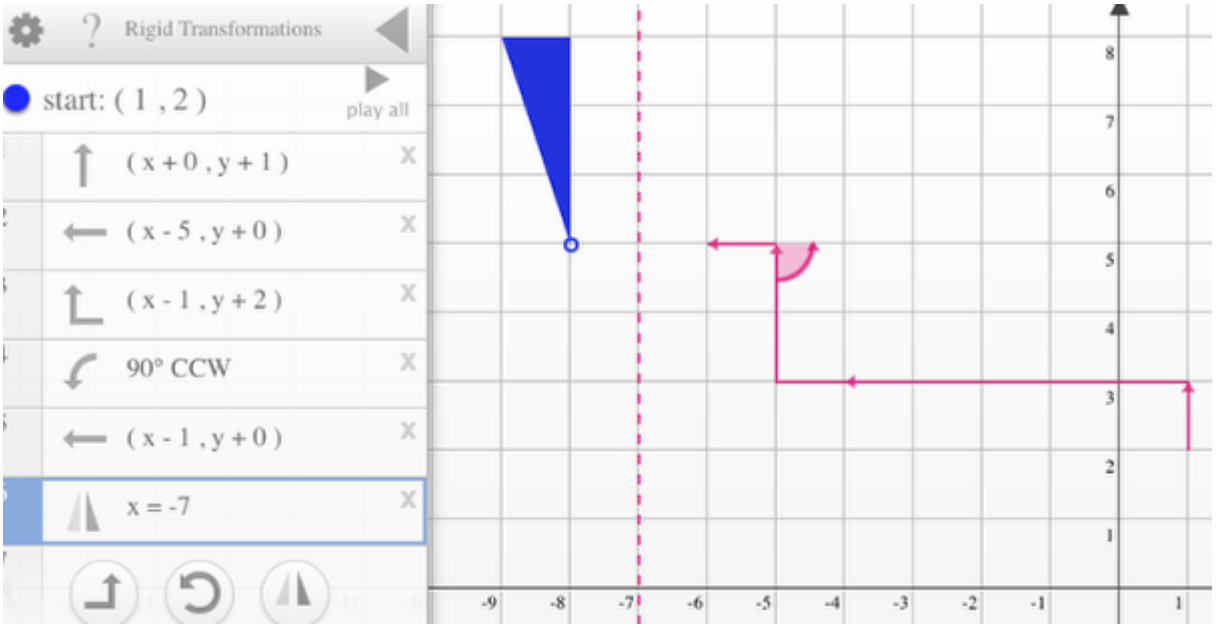
This eTool will record the steps you create showing translation, rotation, and reflection.

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

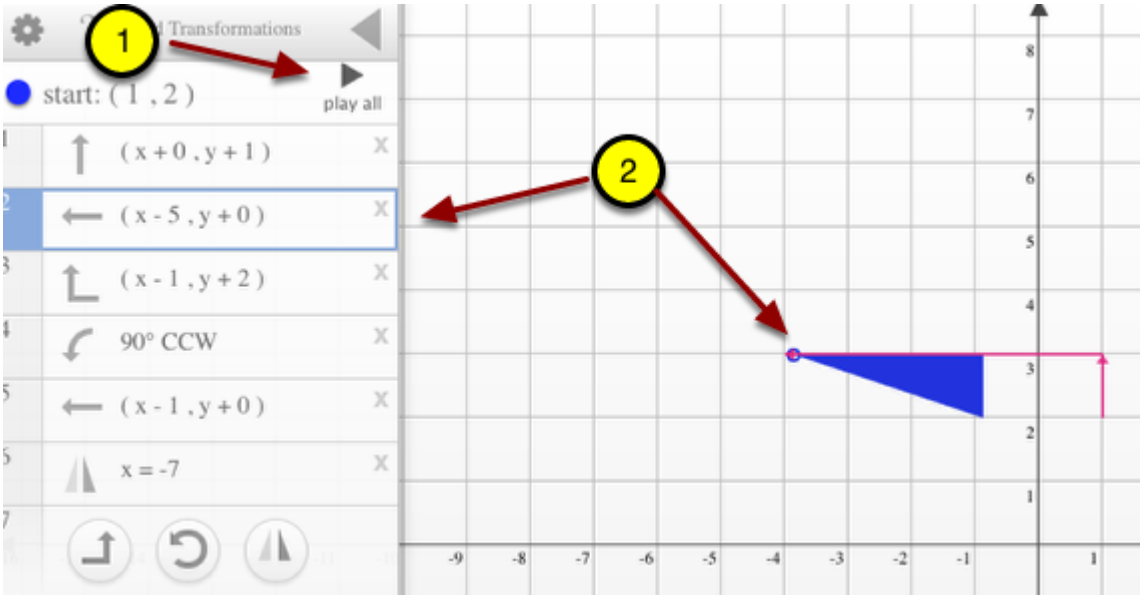
- Twelve games using the key lock are also available.
- This tool is designed so that teachers/students can create many more games.

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.

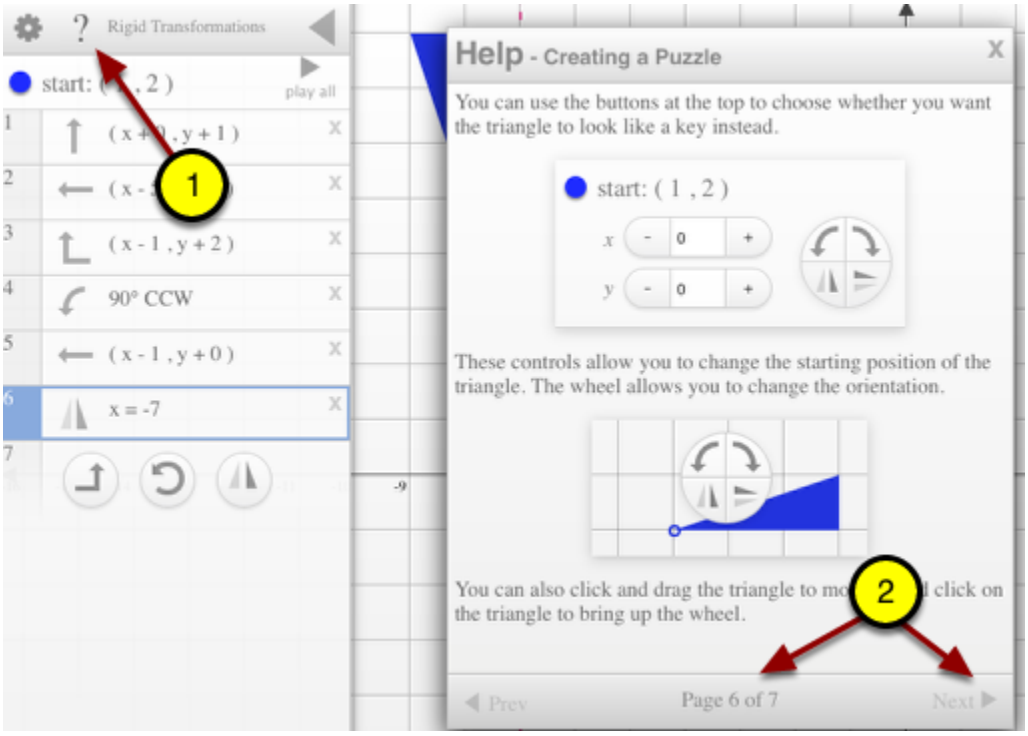


**2. When playing, active steps are highlighted.**




**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.



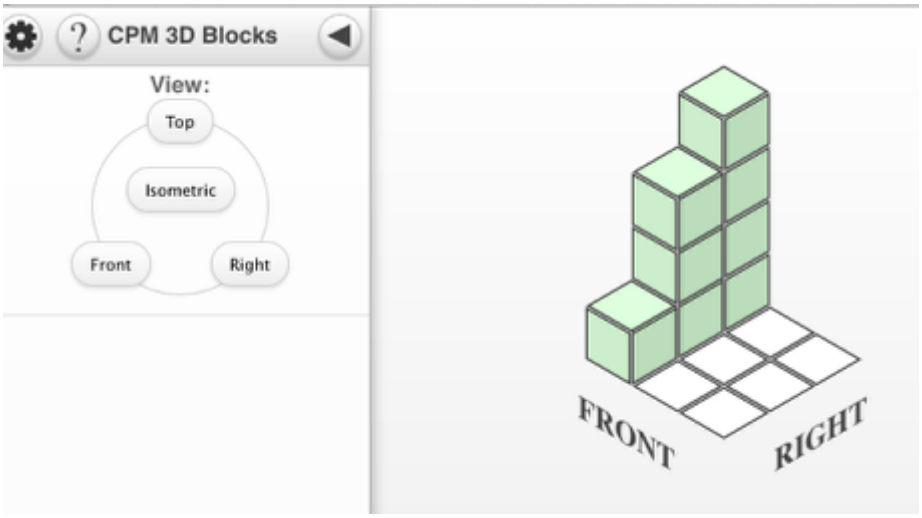
# 3D Blocks (CPM)

## Click on the link below.

3D Blocks (CPM)

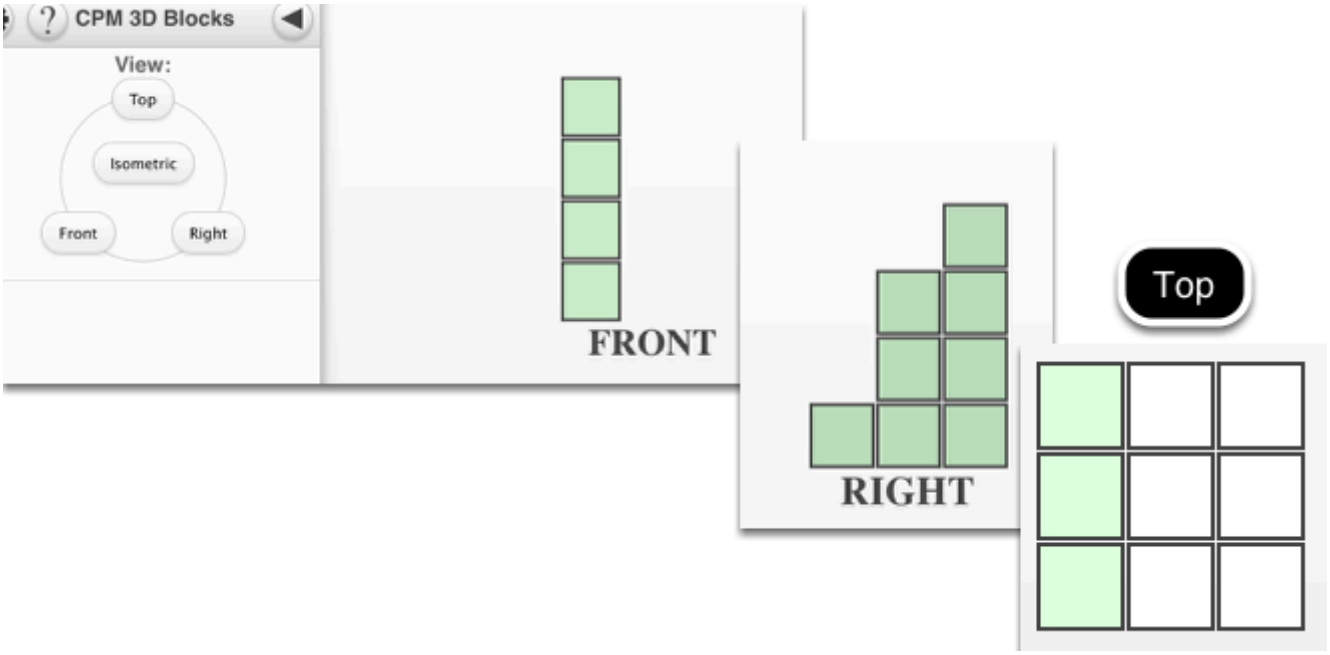
## 1. 3D Blocks (CPM)

- Build by clicking the top of blocks or the pad.
- Remove by clicking the side of blocks.



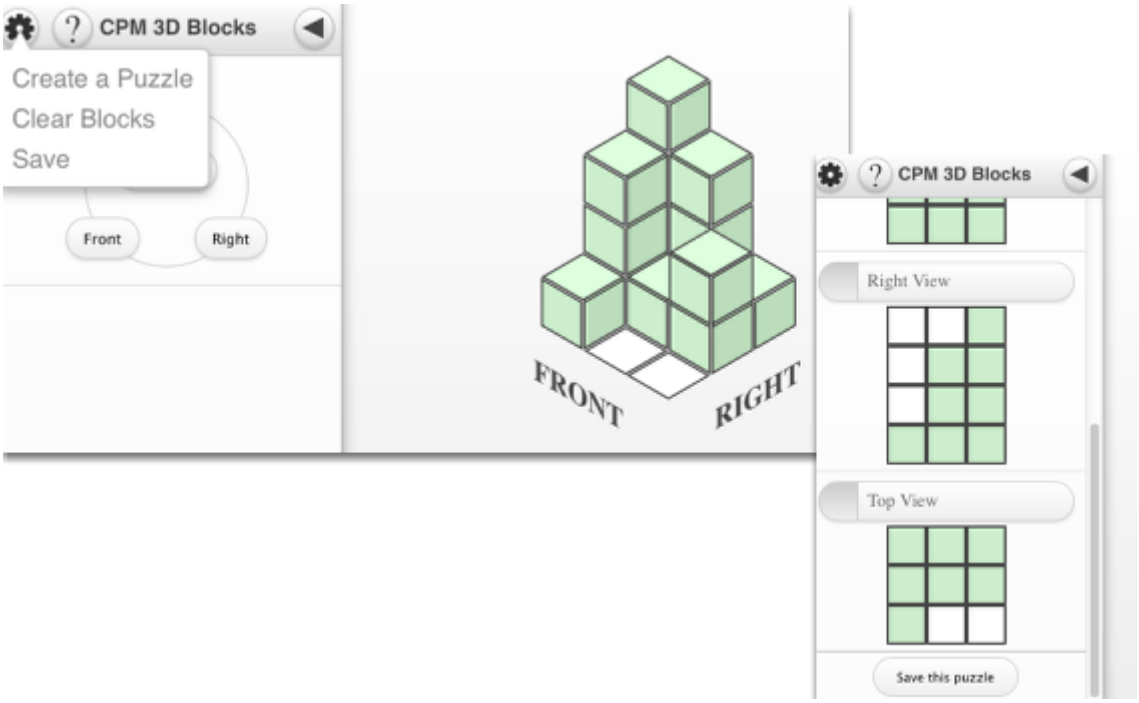

## 2. Choose the view:

- Isometric view is in step 1 above.
- Also, choose Front, Right, or Top views.



## 3. Create a Puzzle:

- Design your own puzzle by showing only the views you choose.
- Other students attempt to build your structure from the given views.

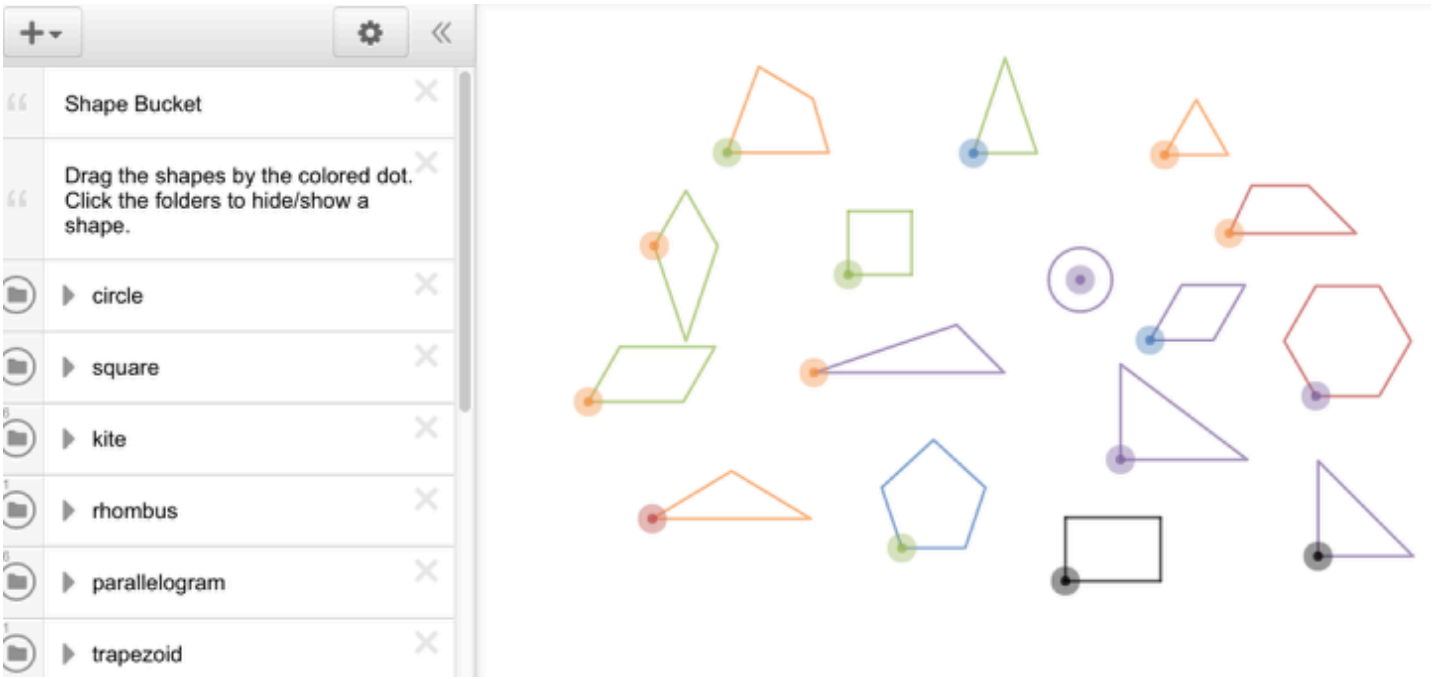


# Shape Bucket (Desmos)

## Click on the link below for the "Shape Bucket"

Shape Bucket(Desmos)

## 1. Use the "Shape Bucket" to explore geometric concepts.

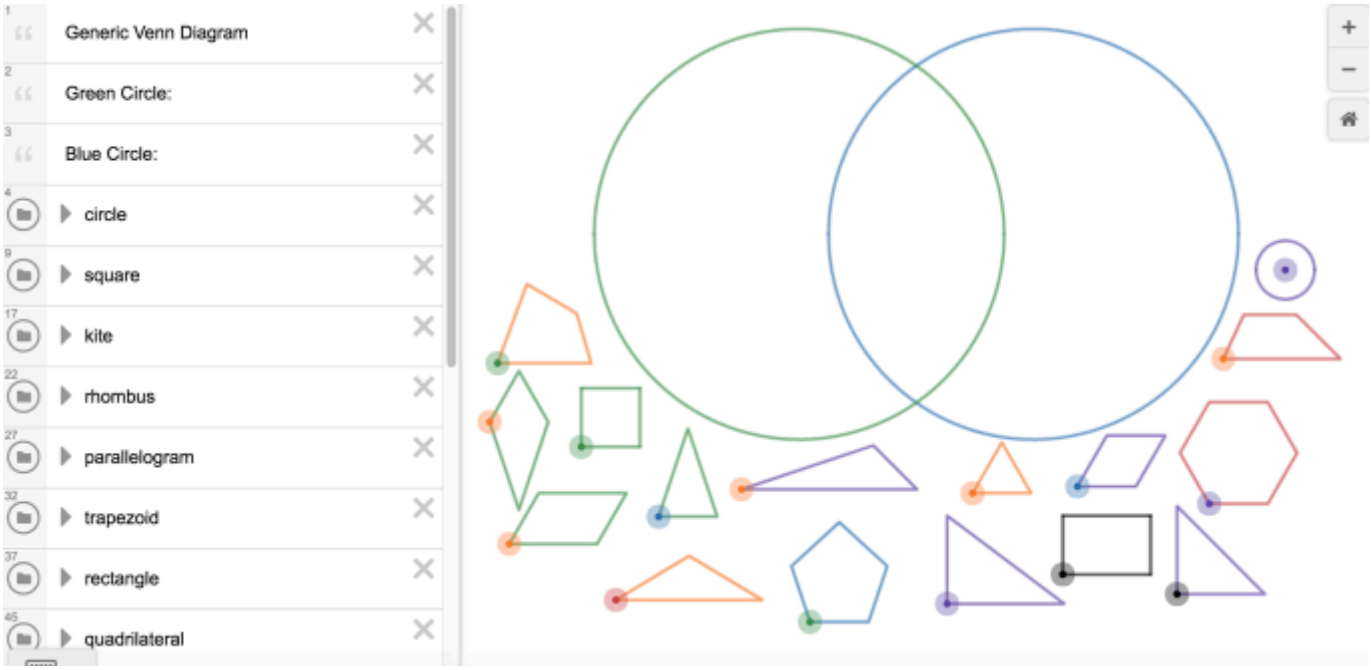


# Generic Venn Diagram (Desmos)

## Click on the link below.

Generic Venn Diagrams (Desmos)

## 1. Create your own Venn Diagrams.



# Chapter 1

# CCG 1.1.1: Quilt Pictures and PowerPoint (.pps & .doc)

## Click on the links below for the "Quilt Pictures and PowerPoint Presentation"

Quilt PowerPoint Presentation
Quilt Pictures

## 1. Examples:

# CCG 1.1.5: The Power of X Videos

### Click on the link below for the "Power of X Video and Beyond the Power of X Video"

The Power of X
Behind the Power of X

### 1. Human kaleidoscope


TEDxSummit intro: The power of x

## 2. The making of the film:

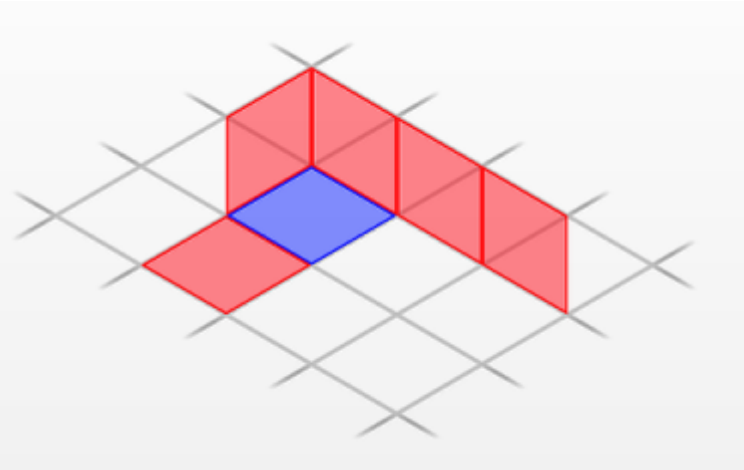
# CCG 1.2.1: 1-47 3D Nets (CPM)

These nets are interactive. Click on the sides to raise or lower them. Drag in a circular motion outside of the net to rotate in space. Go the the "?" for more help!

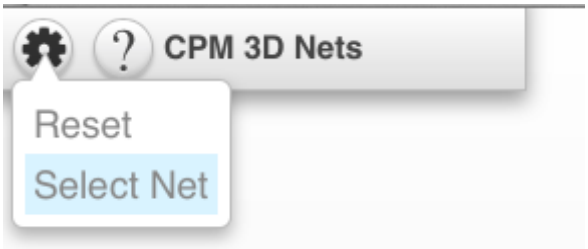
### Click on the link below.

1-47 3D Nets (CPM)

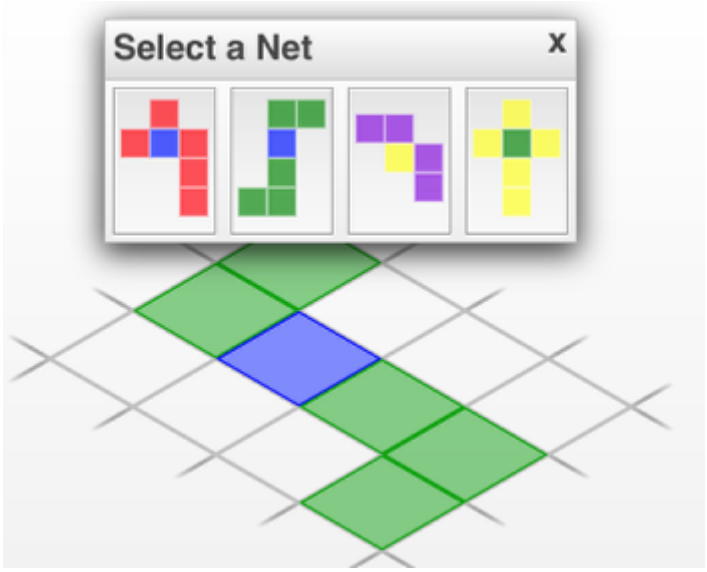
### 1. 47a:



### 2. Get the other nets by going to the Gear menu!



### 3. 47b:




### 4. 47c:

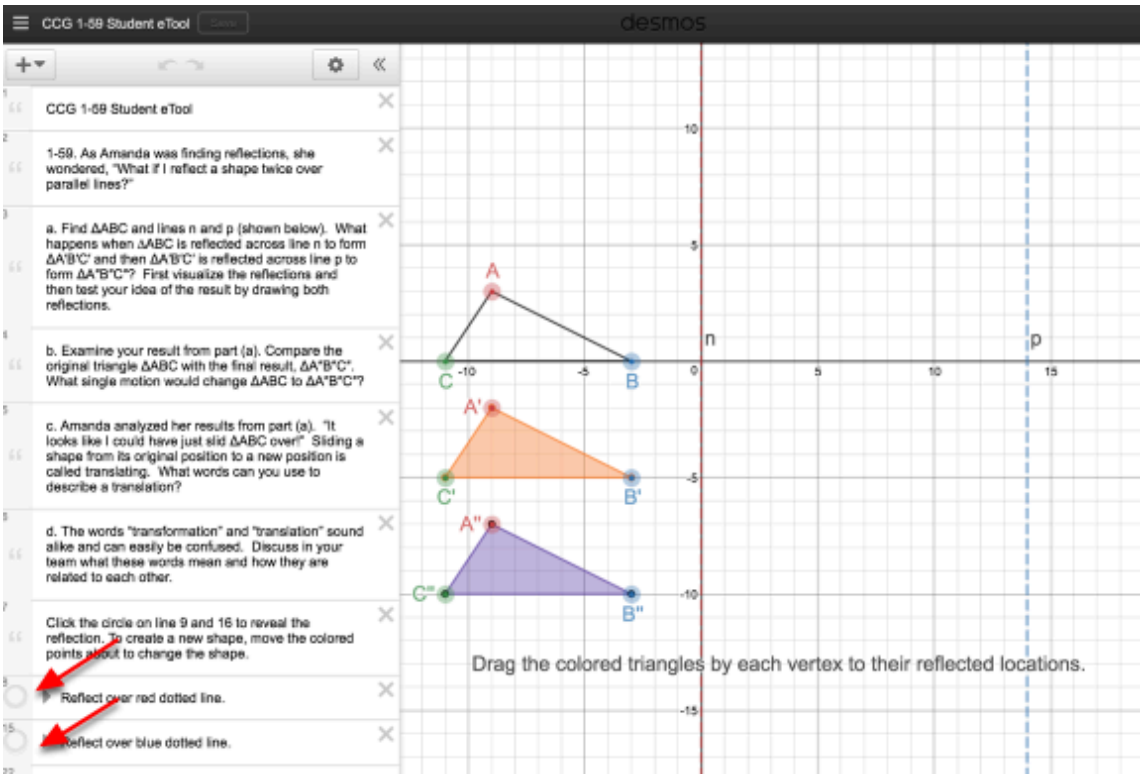
**5. 47d:**

# CCG 1.2.2: Transformations with 1-59 & 1-60a, c (Desmos)

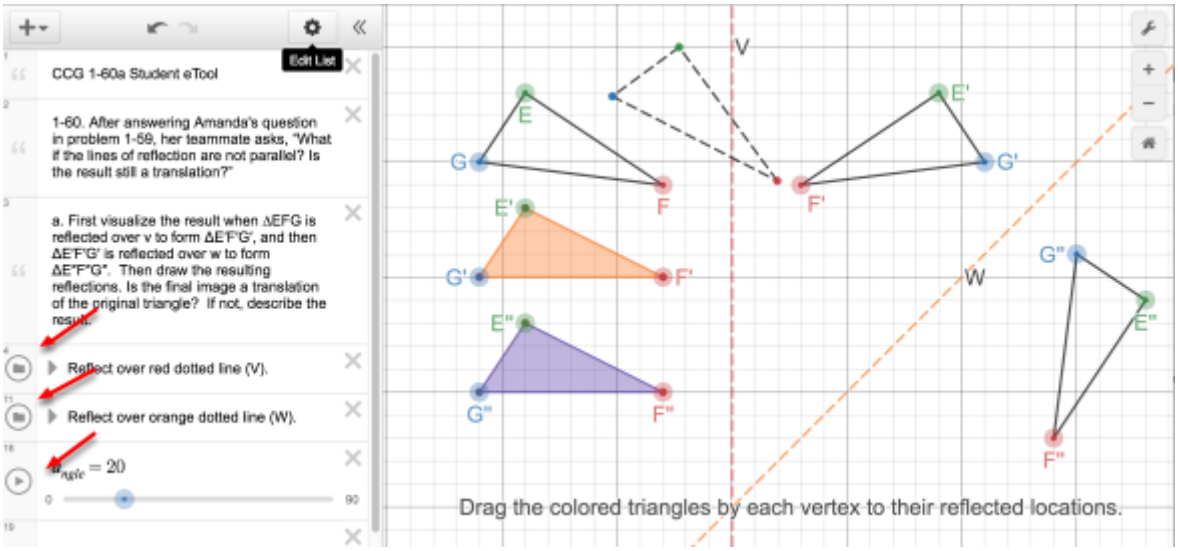
## Click on the links below.

1-59 Student eTool
1-60a Student eTool
1-60c Student eTool

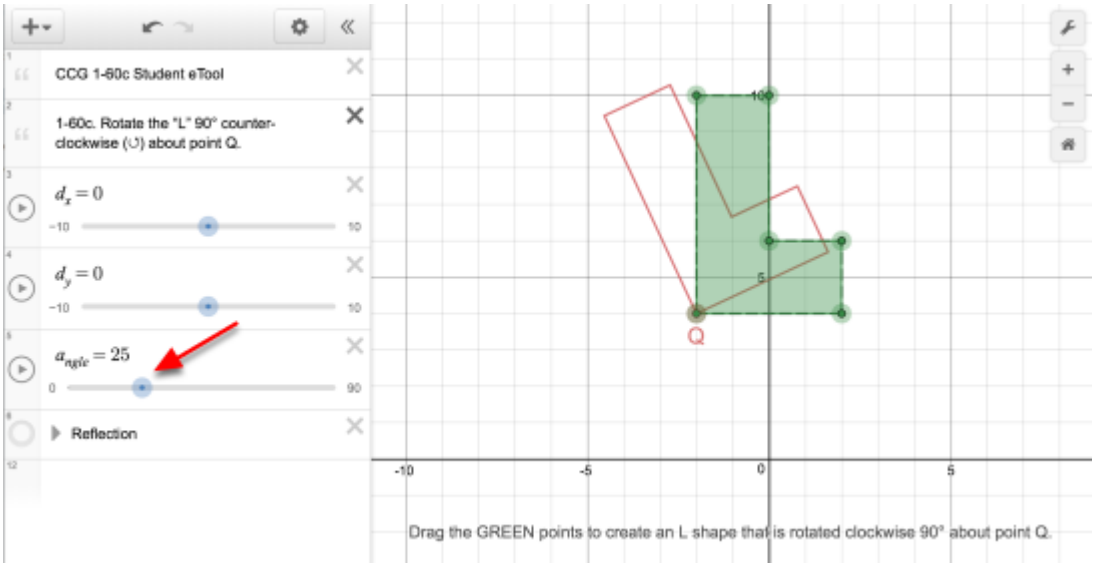
## 1. 1-59: Click the folder buttons to view.



## 2. 1-60a: Click the folder buttons to view the reflections. Drag the slider to view the rotation.




## 3. 1-60c: Drag the Angle Slider to view the rotation.

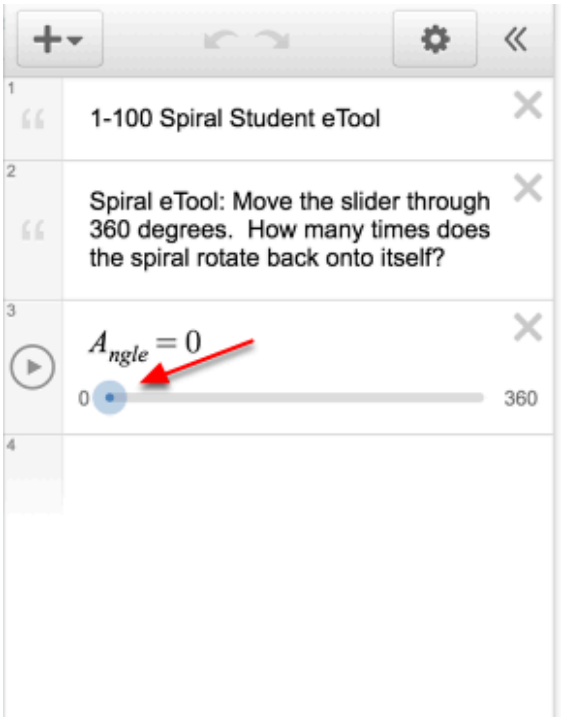


# CCG 1.2.6: 1-100 Spiral Student eTool (Desmos)

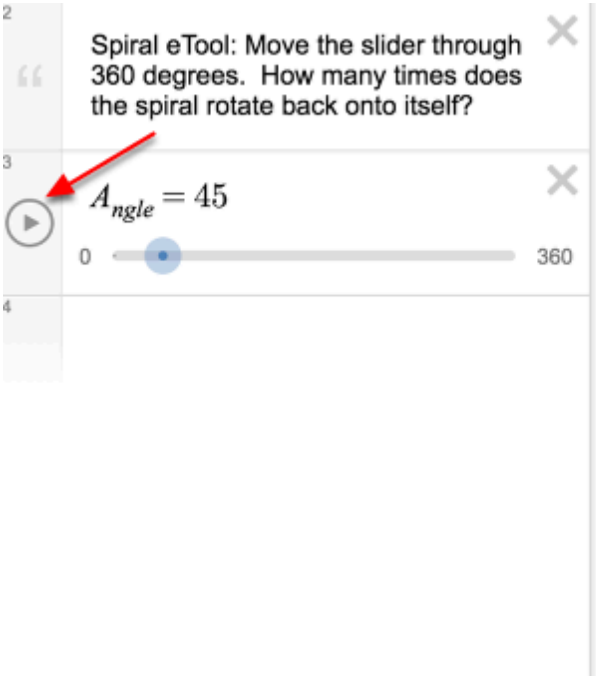
## Click on the link below for the "1-100 Spiral Student eTool"

1-100 Spiral Student eTool (Desmos)

## 1. Move the slider. In how many degrees does the figure rotate back to itself?




**2. To toggle between continuous play and stop, click the play/pause button.**



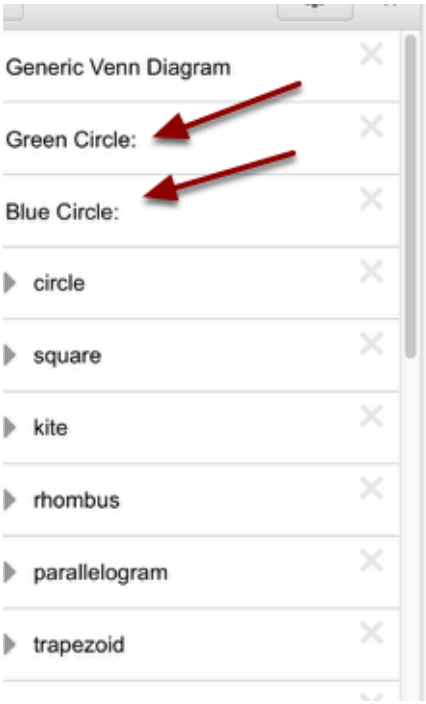

# CCG 1.3.1: 1-111 Venn Diagrams Shape A, B & C eTools (Desmos)

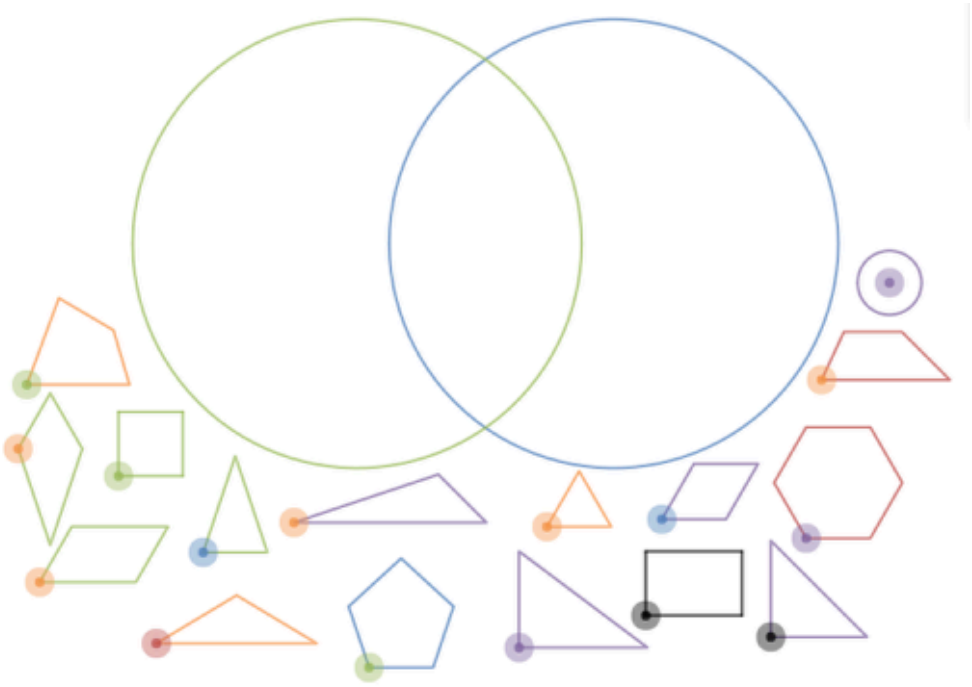
## Click on the link below.

Shape Bucket(Desmos)
Generic Venn Diagram(Desmos)
1-111 Venn Diagram A: Student eTool(Desmos)
1-111 Venn Diagram B: Student eTool(Desmos)
1-111 Venn Diagram C: Student eTool(Desmos)

## 1. Generic Venn Diagram

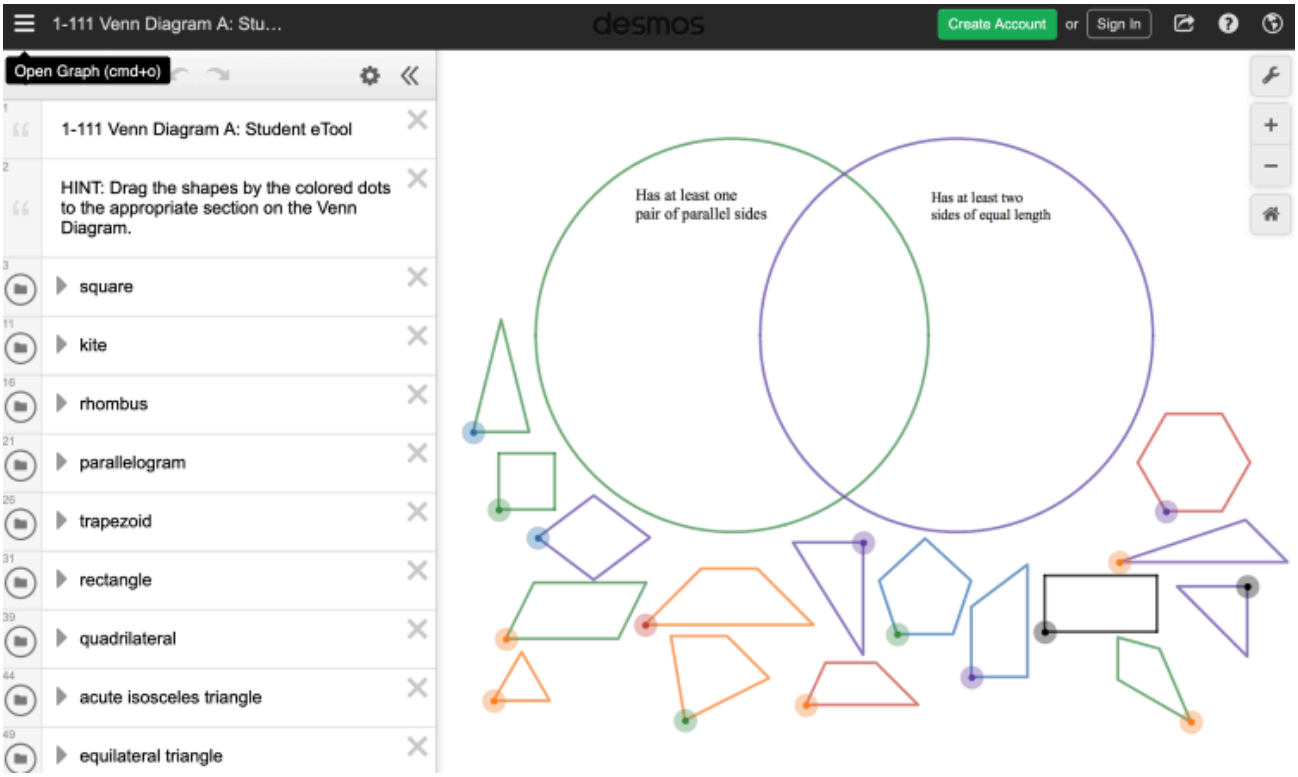
- Type the attributes for each circle at the left
- Fill the circles appropriately.



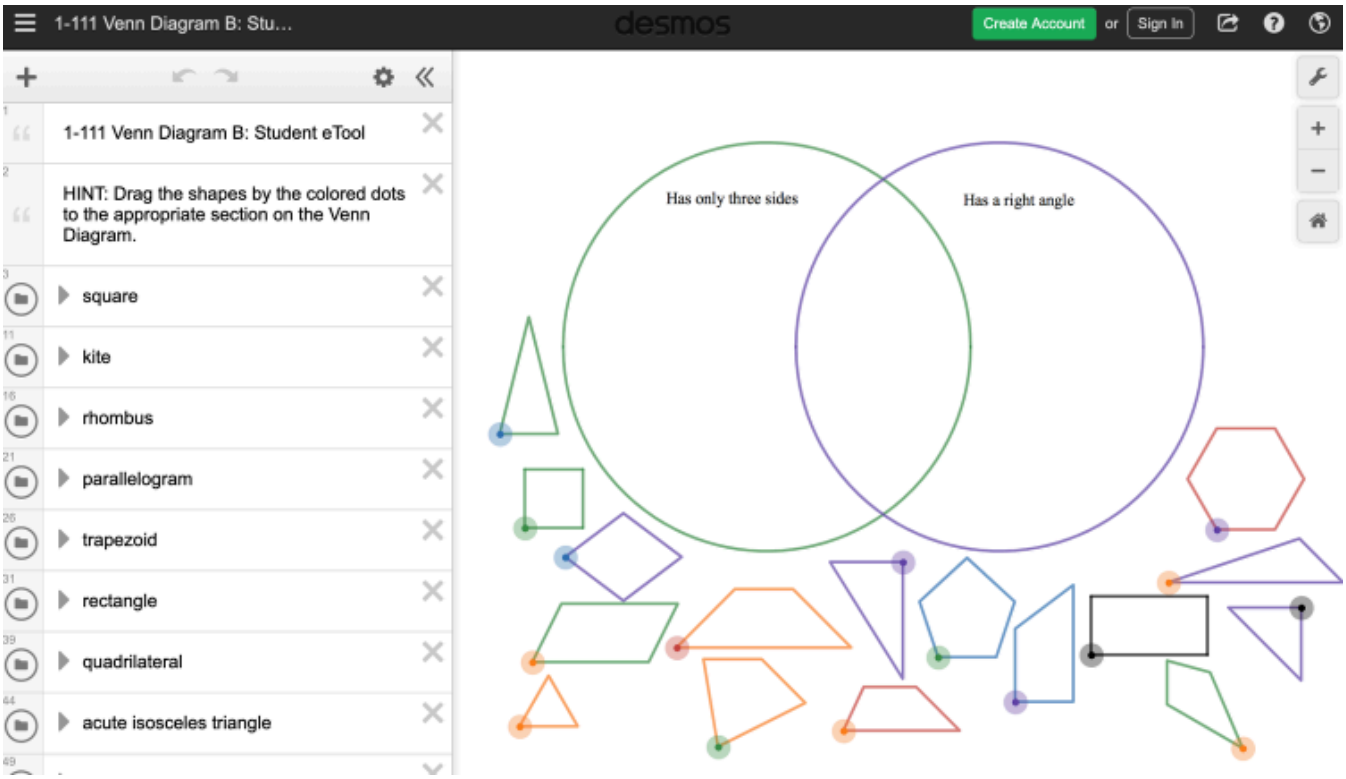
## 2. Venn Diagram A:

- Hide the tray for more room to move the shapes.
- Enlarge/shrink the shapes by using the mouse or pinching on a tablet.



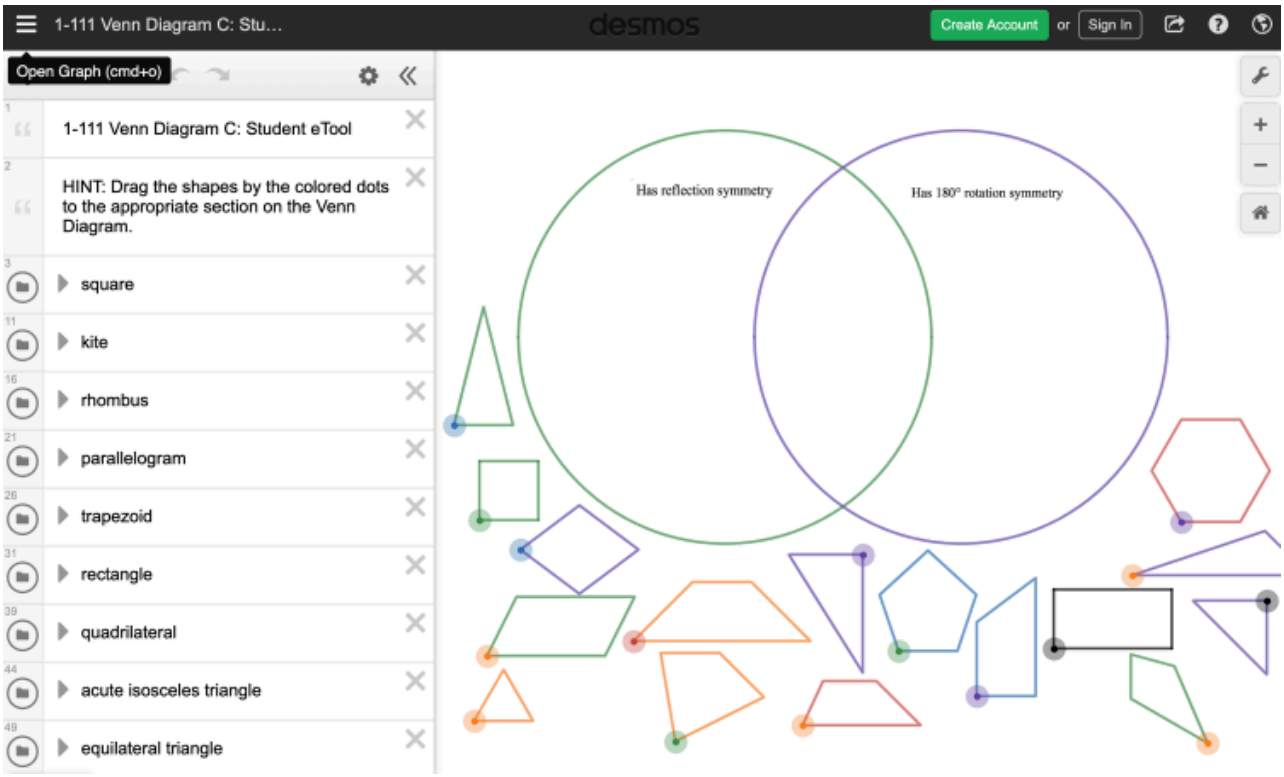

## 3. Venn Diagram B:

- Hide the tray for more room to move the shapes.
- Enlarge/shrink the shapes by using the mouse or pinching on a tablet.

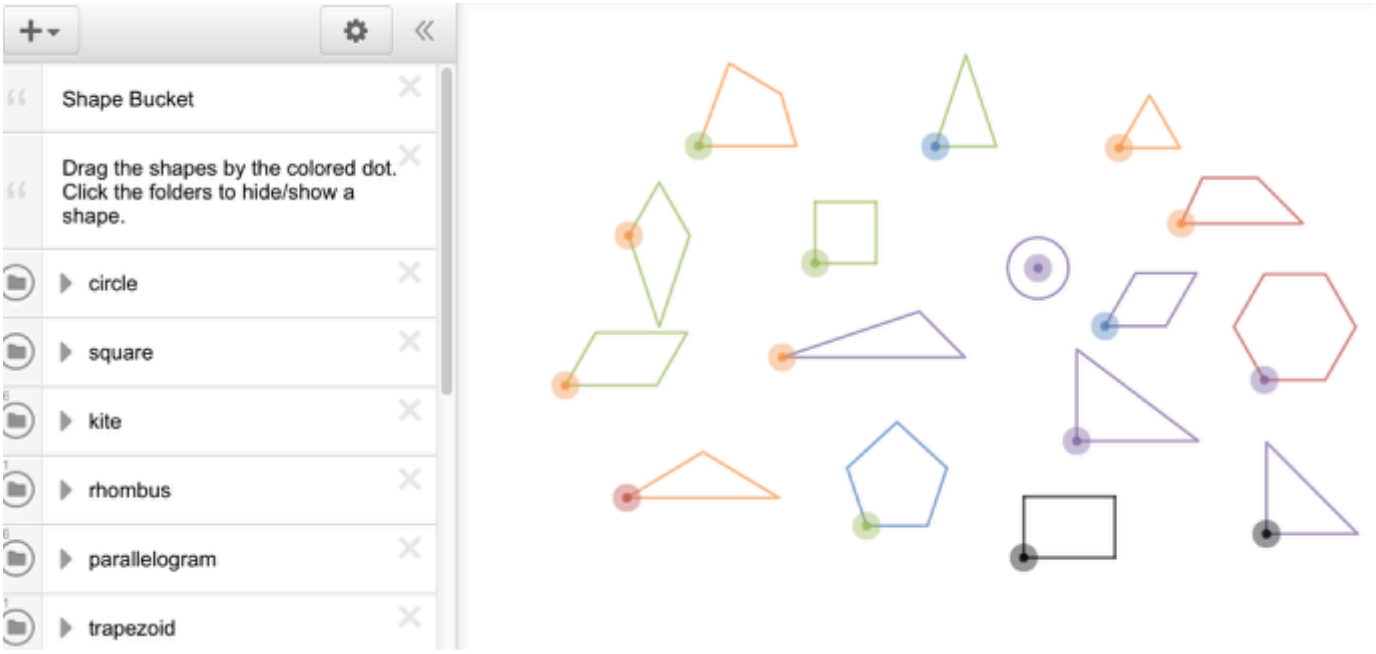


## 4. Venn Diagram C:

- Hide the tray for more room to move the shapes.
- Enlarge/shrink the shapes by using the mouse or pinching on a tablet.




## 5. Shape Bucket



# CCG: 1.3.2 1-117 Student eTool (Desmos)

## Click on the link below to access eTool.

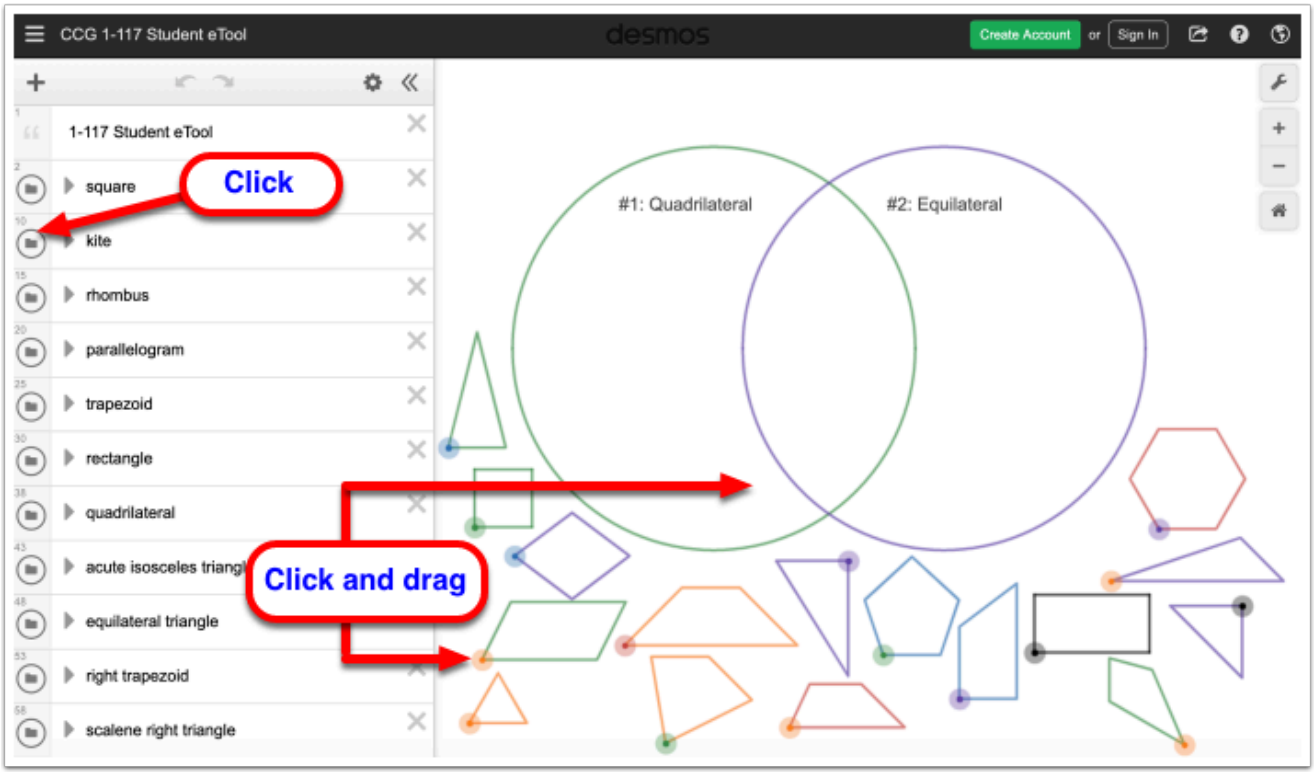
1-10 Student eTool (Desmos)

## Use this eTool to learn more about different Polygons and Venn Diagram.

### 1. Move a shape to the appropriate section on the Venn Diagram.

- Click the colored dot and drag it to the appropriate section on the Venn Diagram

### 2. Click the folder icon before the name of the shape to view or hide a shape.



# Chapter 2

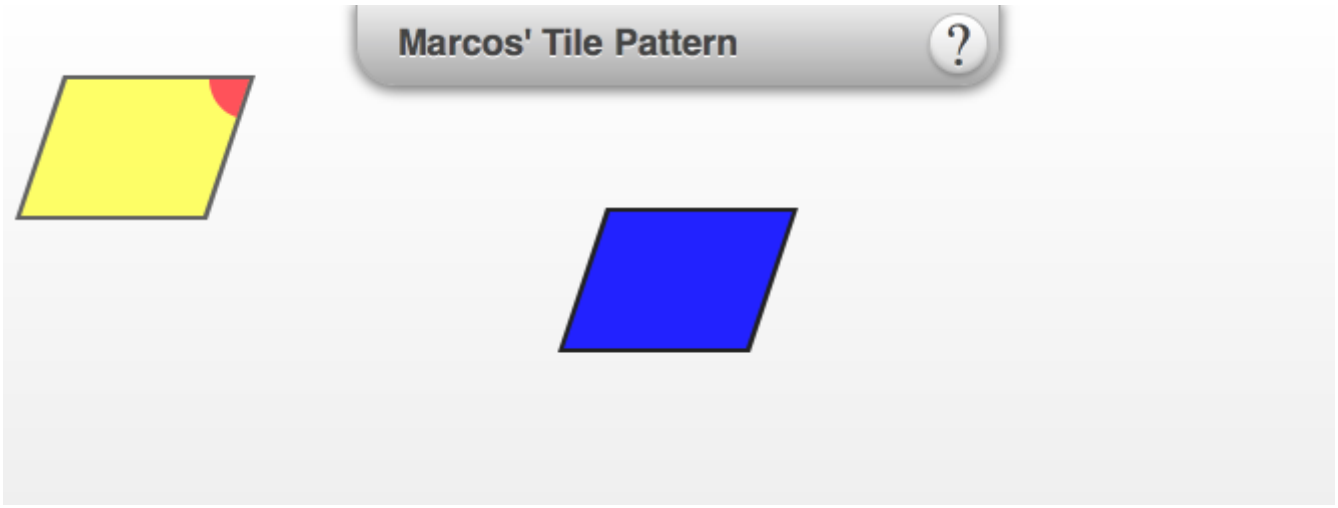
# CCG 2.1.2: Marcos' Tile Pattern (CPM)

Tessellate the parallelograms by sliding them up, down, or sideways. Double click the yellow parallelogram to rotate.

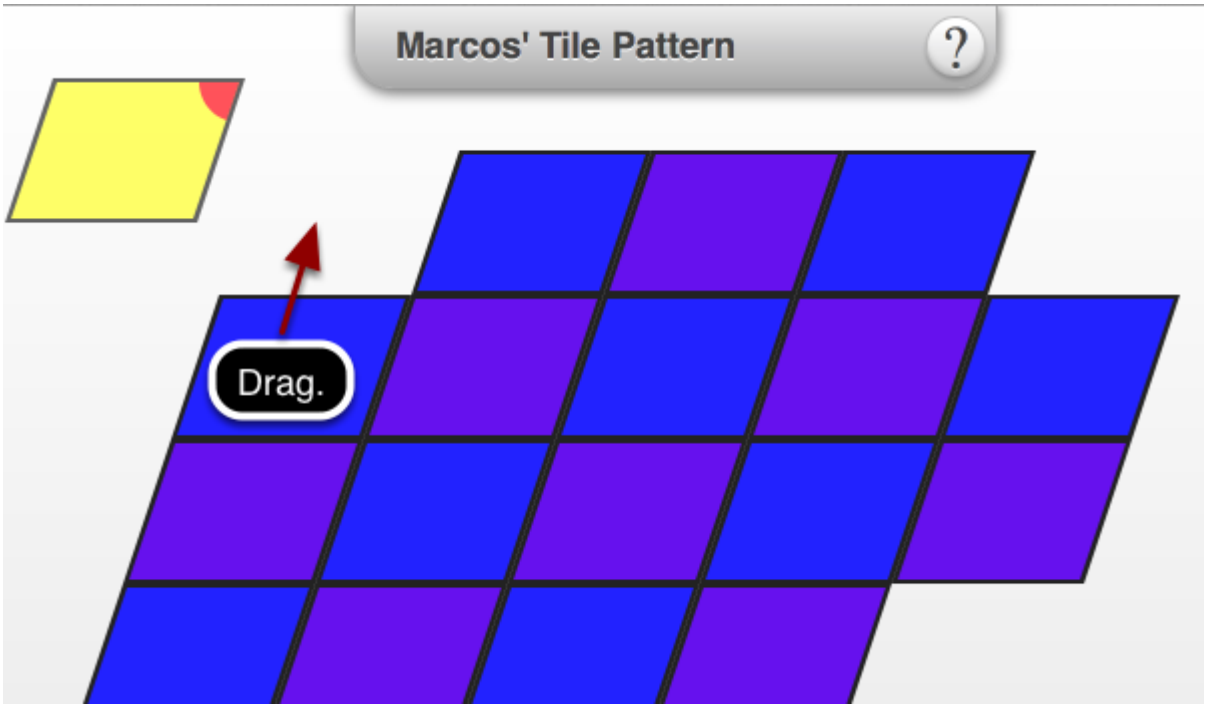
## Click the link below.

*Marcos' Tile Pattern (CPM)*

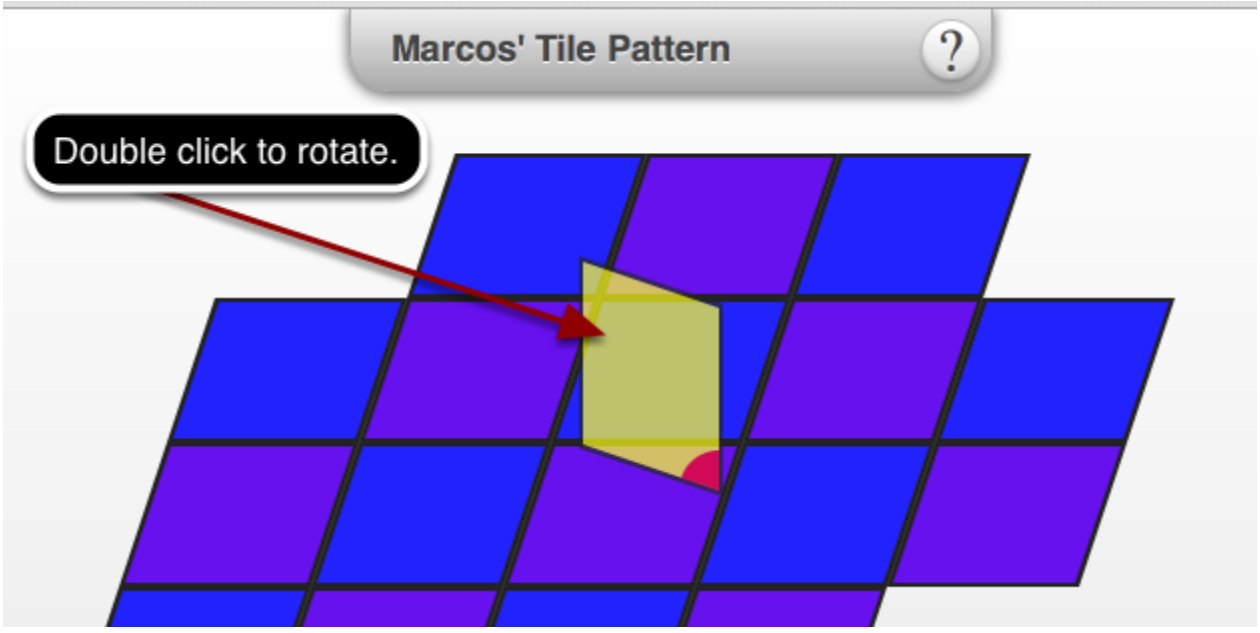
## 1. This interactive eTool starts with the following parallelograms. Drag the blue tile to tessellate.



**2. Drag until the entire space is covered.**




**3. Continue to double click to rotate at 90 degree intervals.**

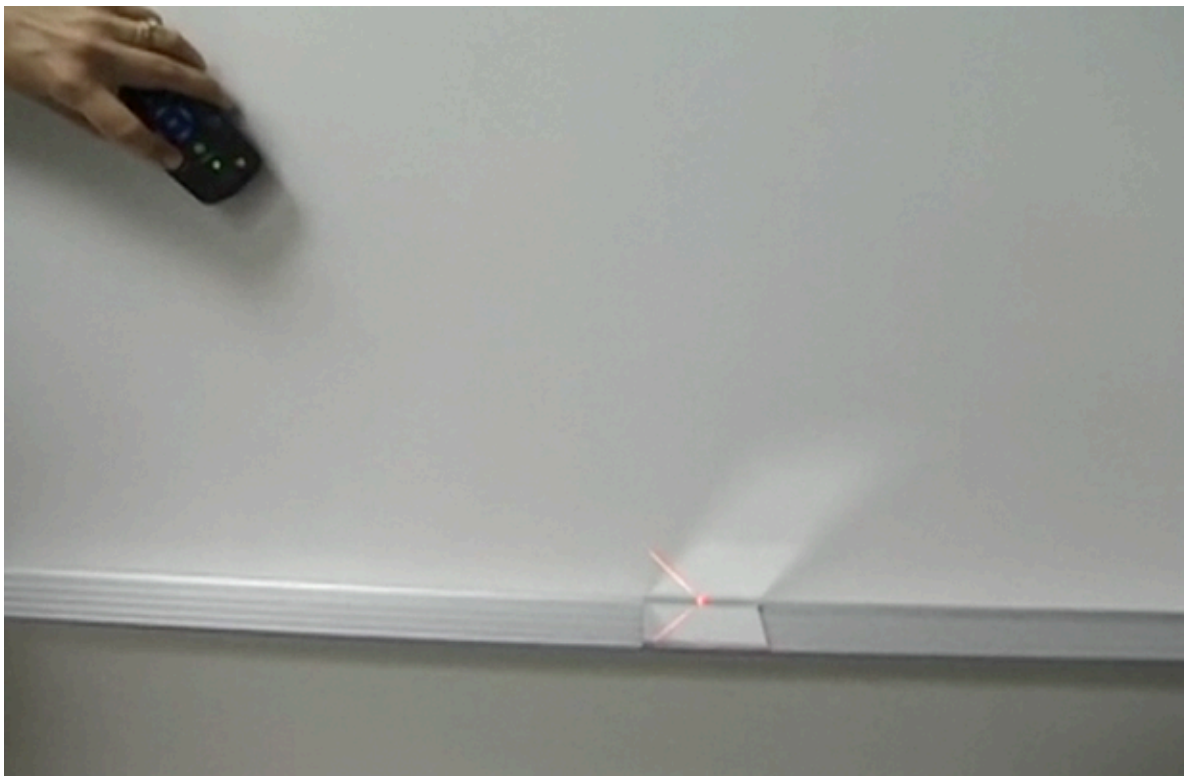


# CCG 2.1.3: Reflection of Light Teacher Demonstration (CPM)

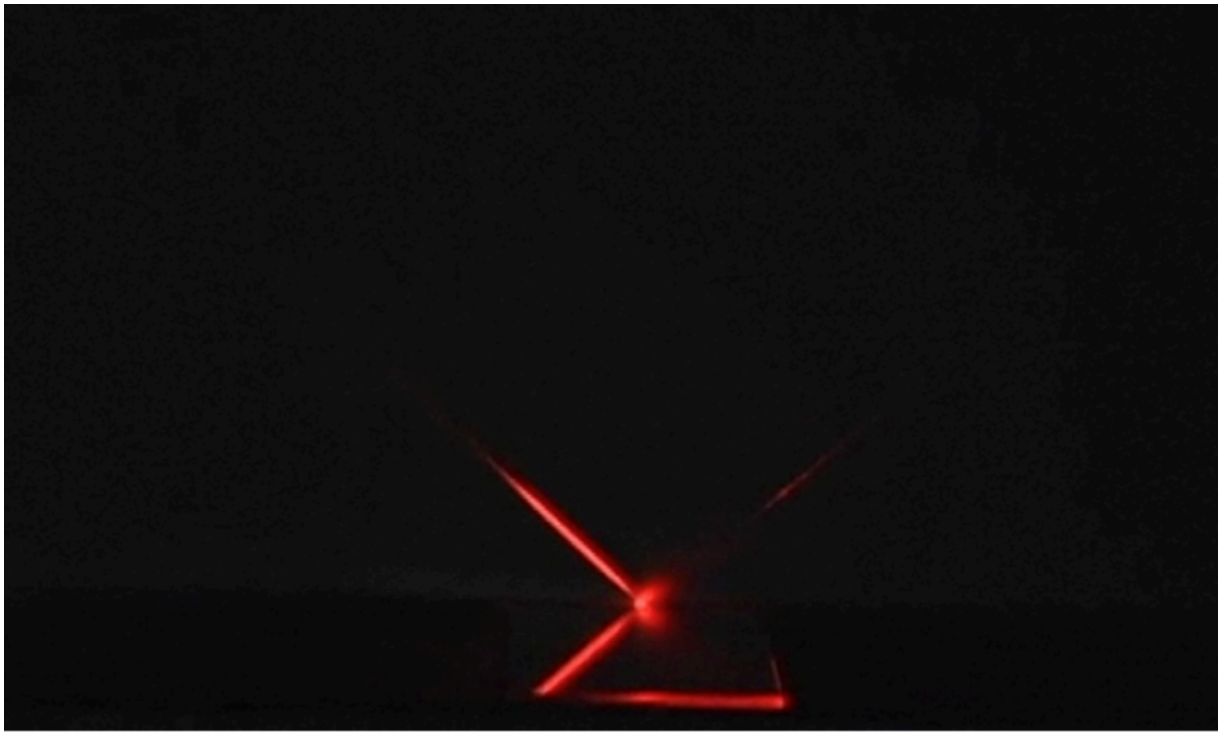
### Click on the link below for the “Reflection of Light Demonstration"

Reflection of Light Demonstration

### 1. Reflect off a mirror.



## 2. Use chalk dust.

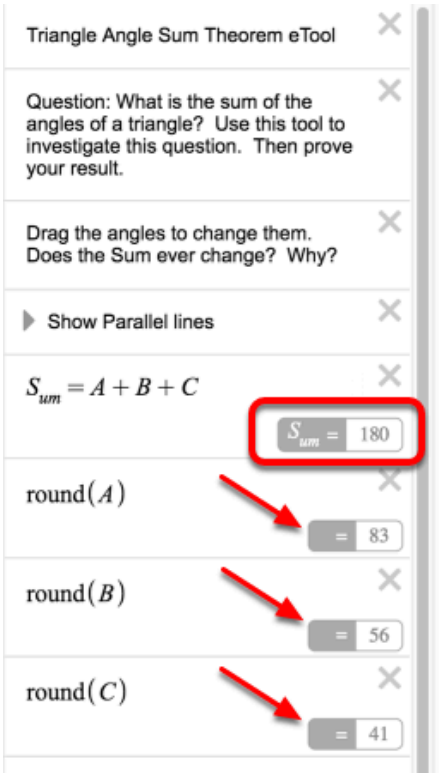


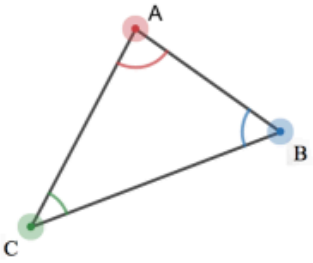
# CCG 2.1.4: Triangle Sum Theorem (Desmos)

## Click on the link below for the “Angles in a Triangle."

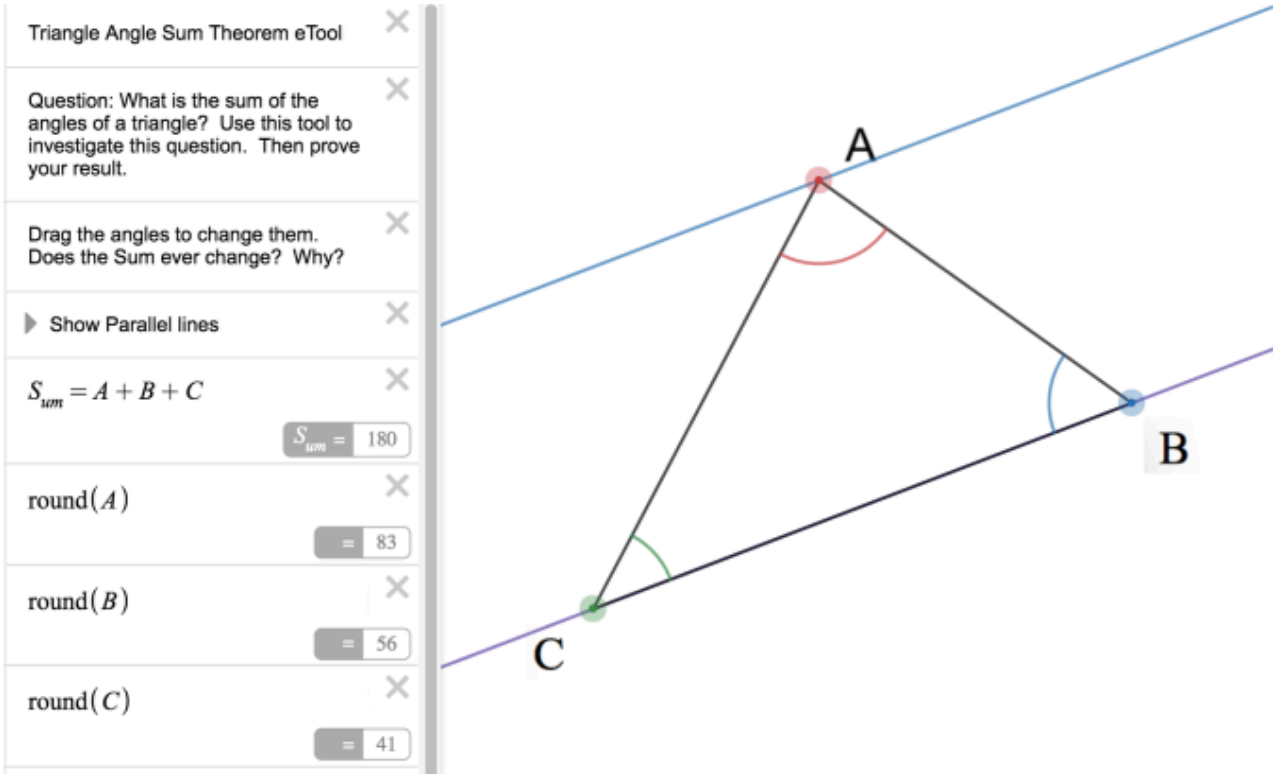
Triangle Sum Theorem (Desmos)

## 1. Triangle Sum Theorem:



## 2. How does "Show Parallel Lines" help when determining the sum of the interior angles of a triangle?

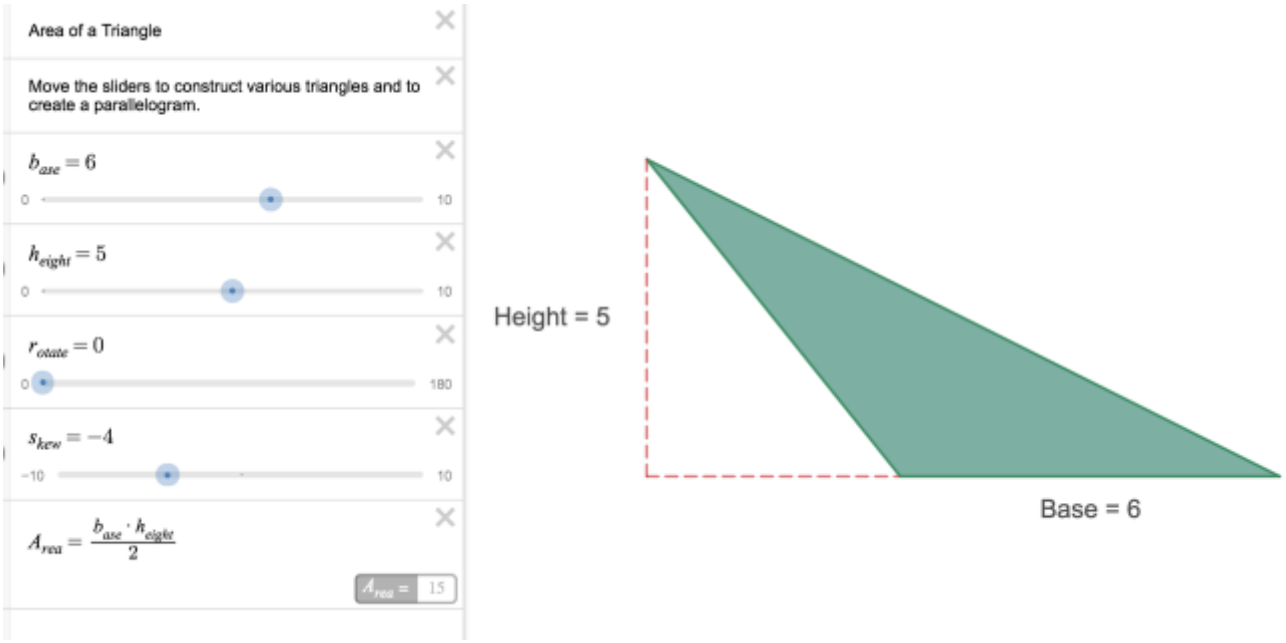


# CCG 2.2.2: Area of a Triangle (Desmos)

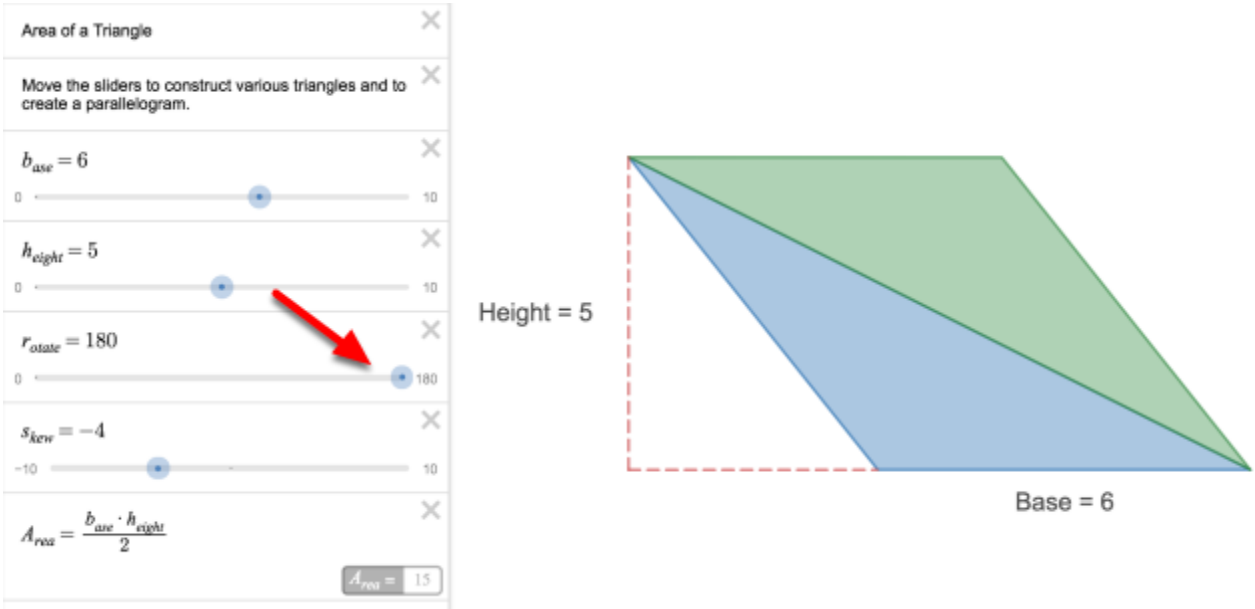
## Click on the link below for the “Area of a Triangle."

Area of a Triangle (Desmos)

## 1. Move sliders to change the shape of the triangle.




## 2. Rotate a second copy of the triangle on itself to form a parallelogram.

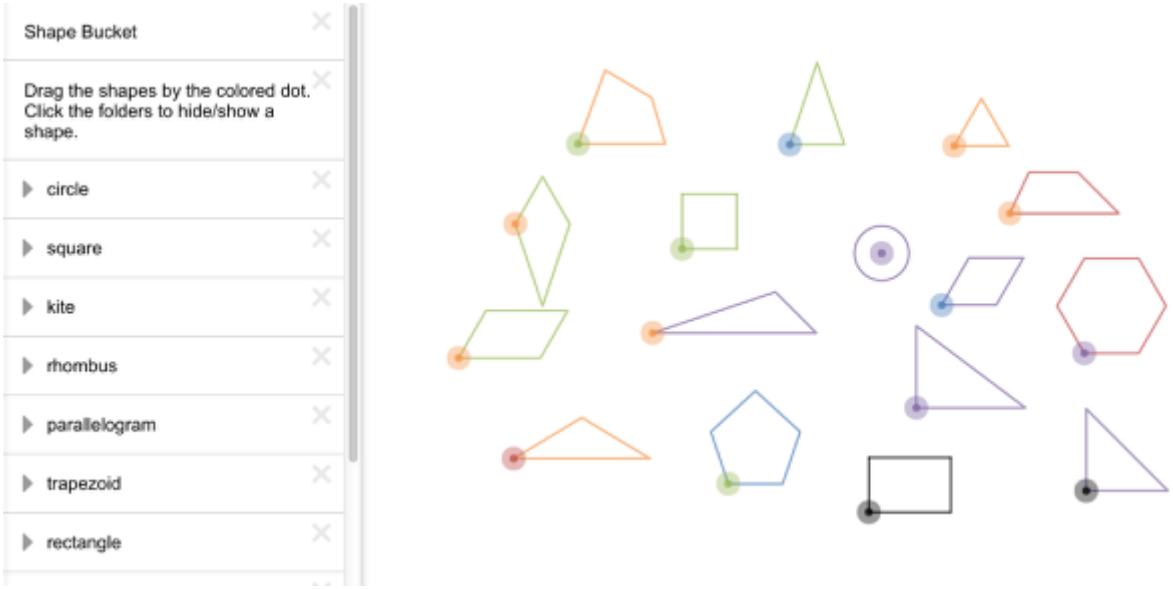


# CCG 2.2.3: Shape Bucket (Desmos)

## Click on the link below for the “Shape Bucket."

Shape Bucket (Desmos)

## 1. Shape Bucket:

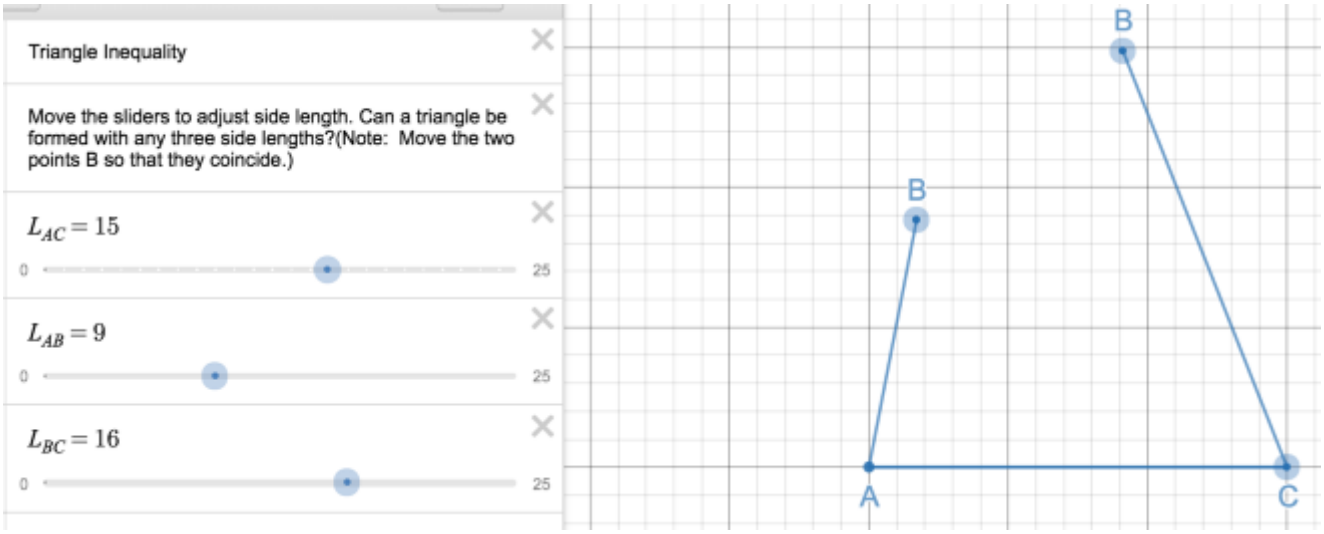


# CCG 2.3.1: Triangle Inequality (Desmos)

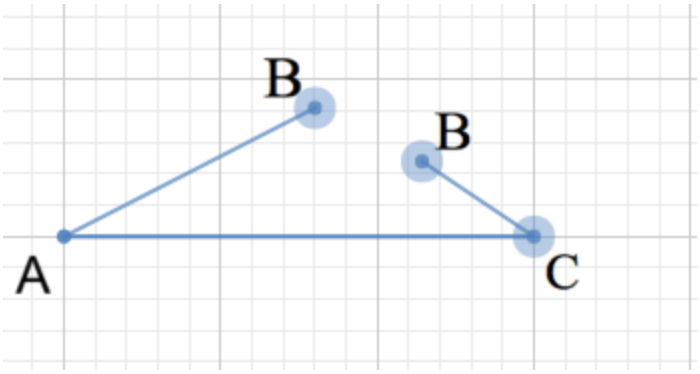
## Click on the link below for the “Triangle Inequality."

Triangle Inequality (Desmos)

## 1. Using the sliders, adjust the side lengths.




## 2. Drag the B handles until they form a vertex of a triangle if possible.

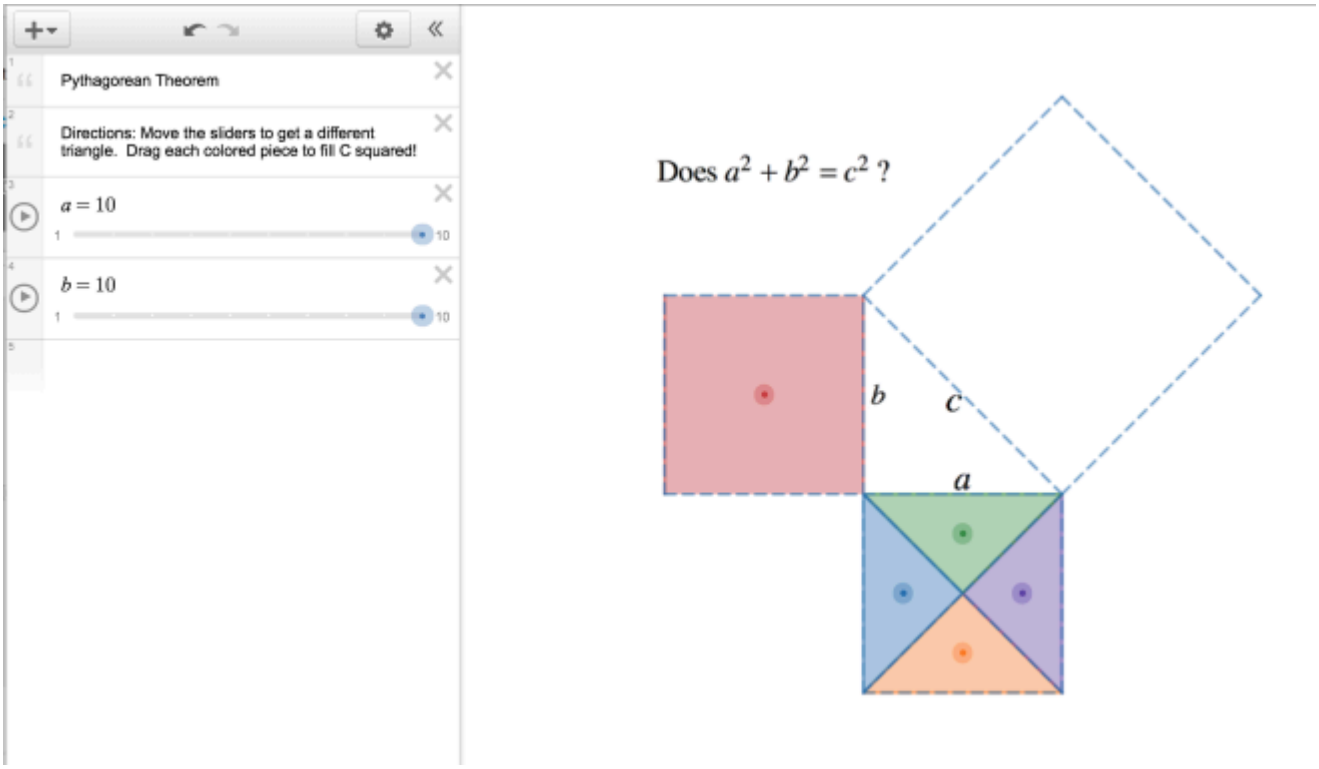


# CCG 2.3.2: The Pythagorean Theorem (Desmos)

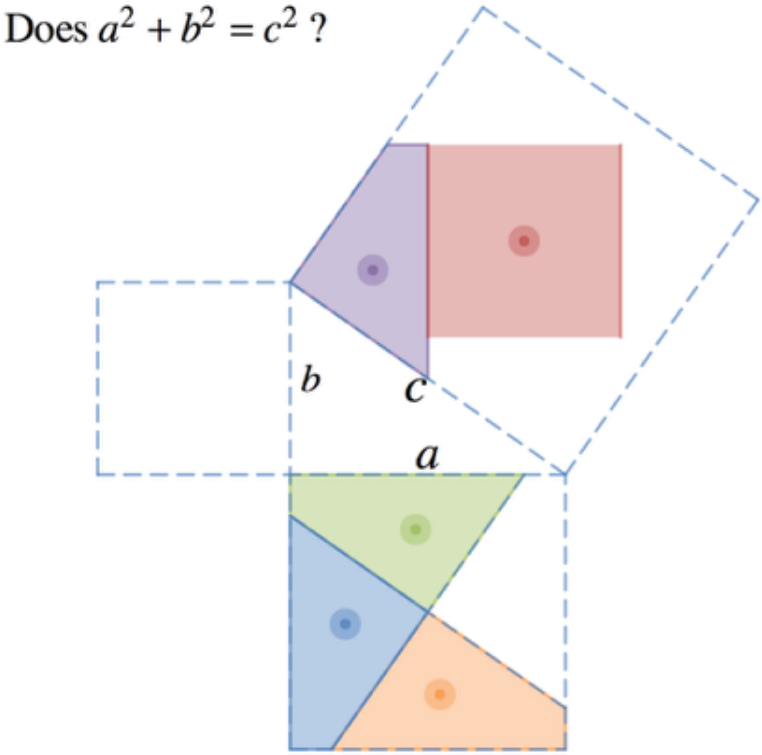
## Click on the link below for the “The Pythagorean Theorem."

[The Pythagorean Theorem (Desmos)]

## 1. Pythagorean Theorem:



**2. Drag the colored shapes to fill c^2. Do they fit?**



# Chapter 3

# CCG 3.1.2: Similarity Stretching Word Document (Doc)

**Click on the link below for the "Similarity Stretching Word Document".**

Similarity Stretching Word Document

## 1. Original:

Lesson 3.2.1

STRETCHING EXERCISE

**Original**

## 2. Horizontal Stretch:

Lesson 3.2.1

STRETCHING EXERCISE

**Original**

## 3. Vertical Stretch:

Lesson 3.2.1

STRETCHING EXERCISE

**Original**

# CCG 3.1.4: Mt. Rushmore Unveiling Video

**Click on the link below for the “Mt. Rushmore Unveiling Video"**

Mt. Rushmore Unveiling

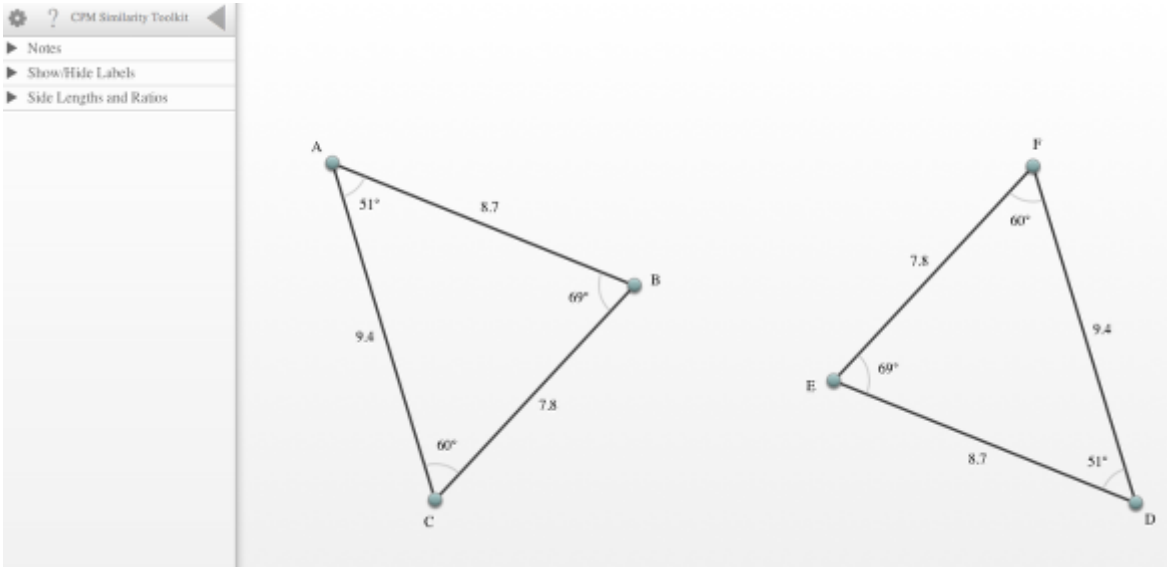
**This video shows historical footage.**

# CCG 3.2.1 Similarity Toolkit (CPM) and Video

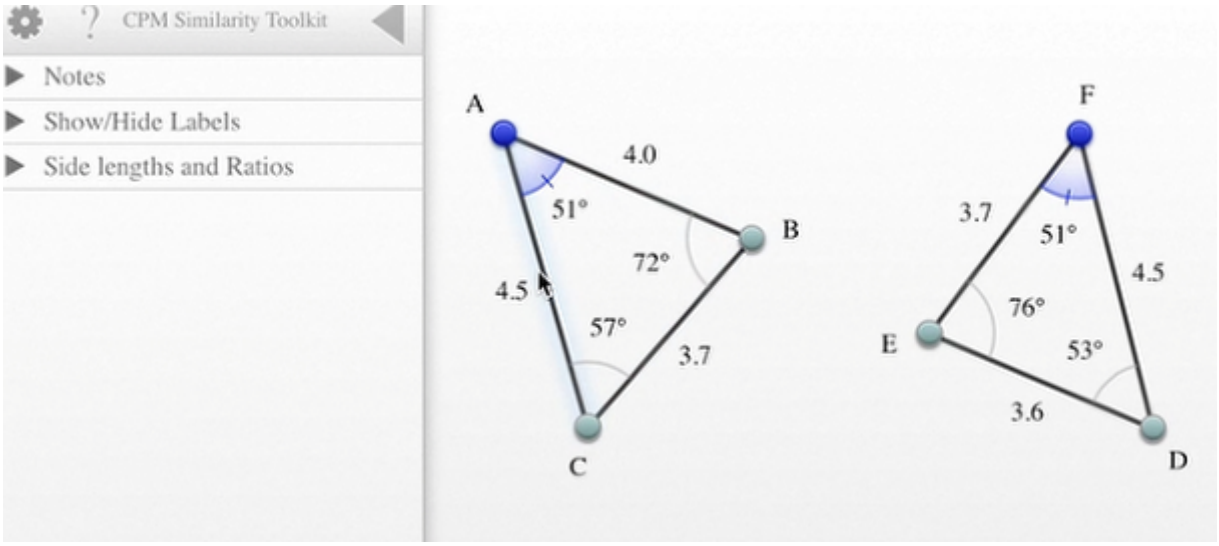
## Click on the link below for the “Similarity Toolkit and Video"

Similarity Toolkit (CPM)
Similarity Toolkit Video (CPM)

## 1. Go to "?" for HELP.

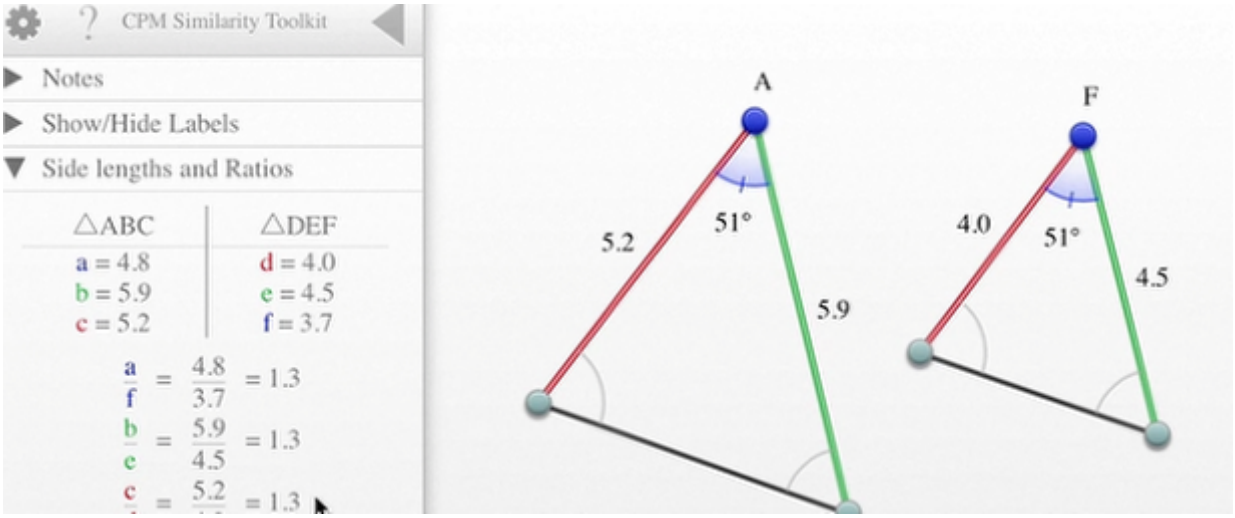



## 2. Link Two Angles:



## 3. Saved Link:


## 4. Side Lengths and Ratios:

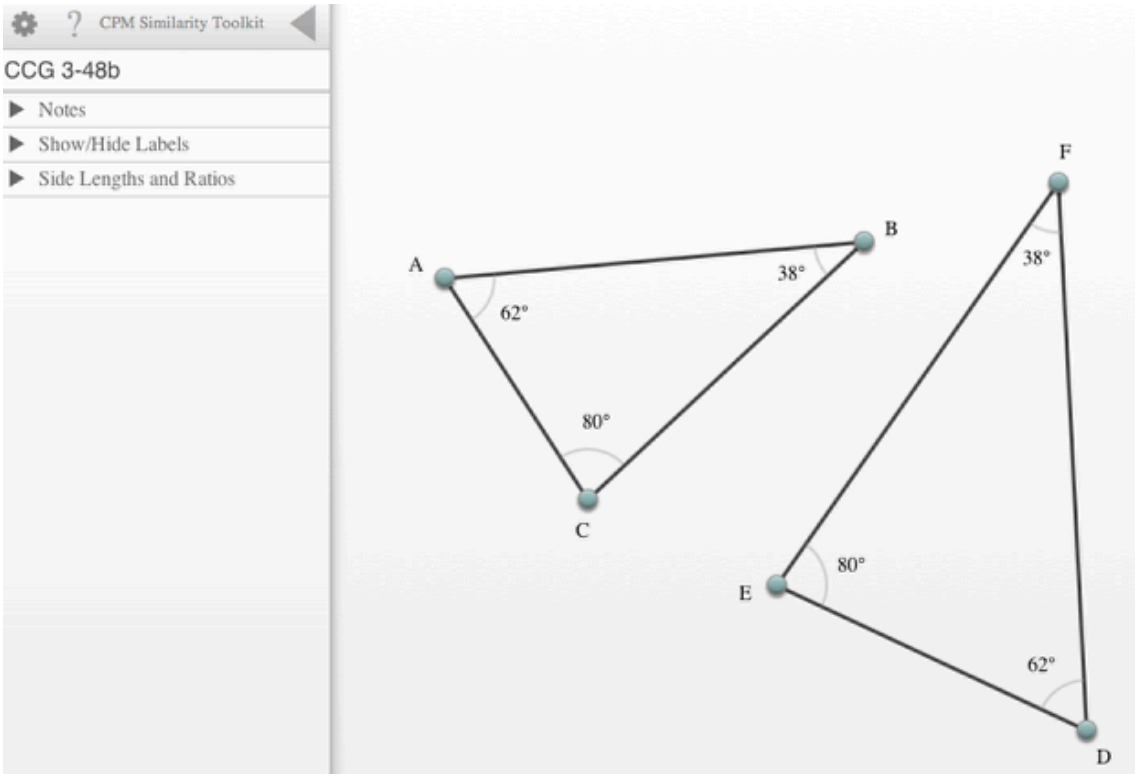


# CCG 3.2.1: 3-48b & 3-48c Student eTool (CPM)

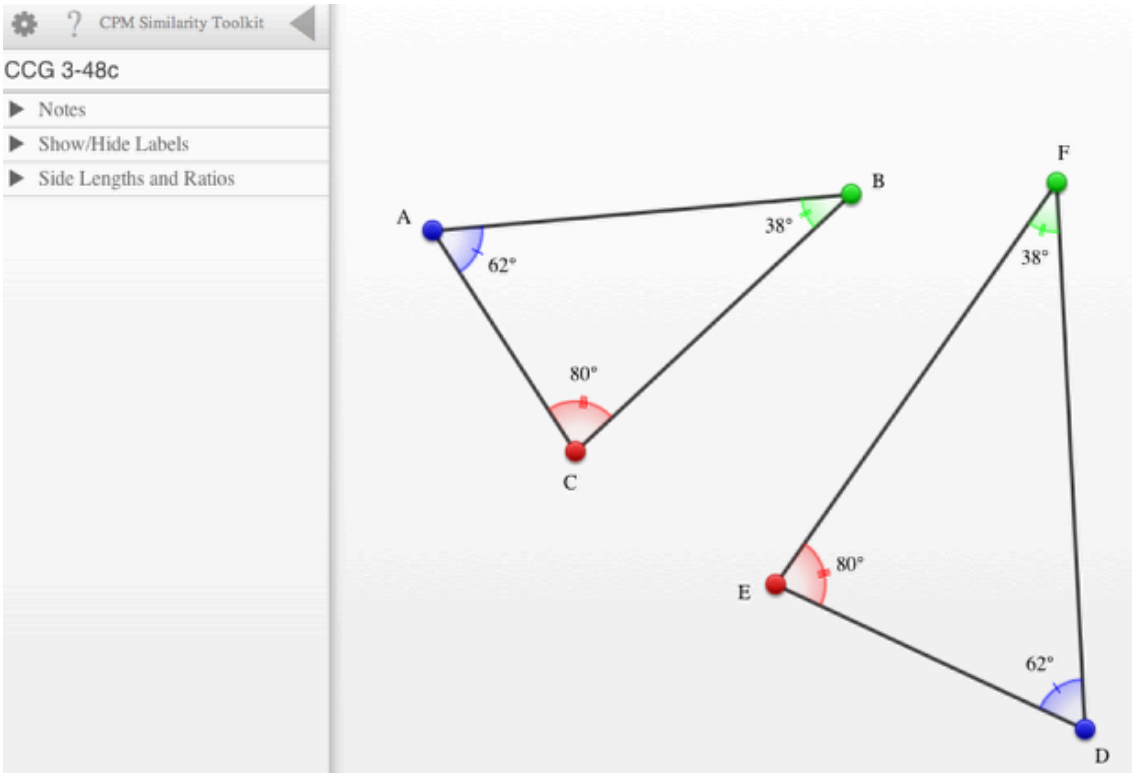
## Click on the link below for the “3-48b & 3-48c Student eTool (CPM)."

3-48b Student eTool (CPM)
3-48c Student eTool (CPM)

## 1. 3-48b Student eTool:



## 2. 3-48c Student eTool:

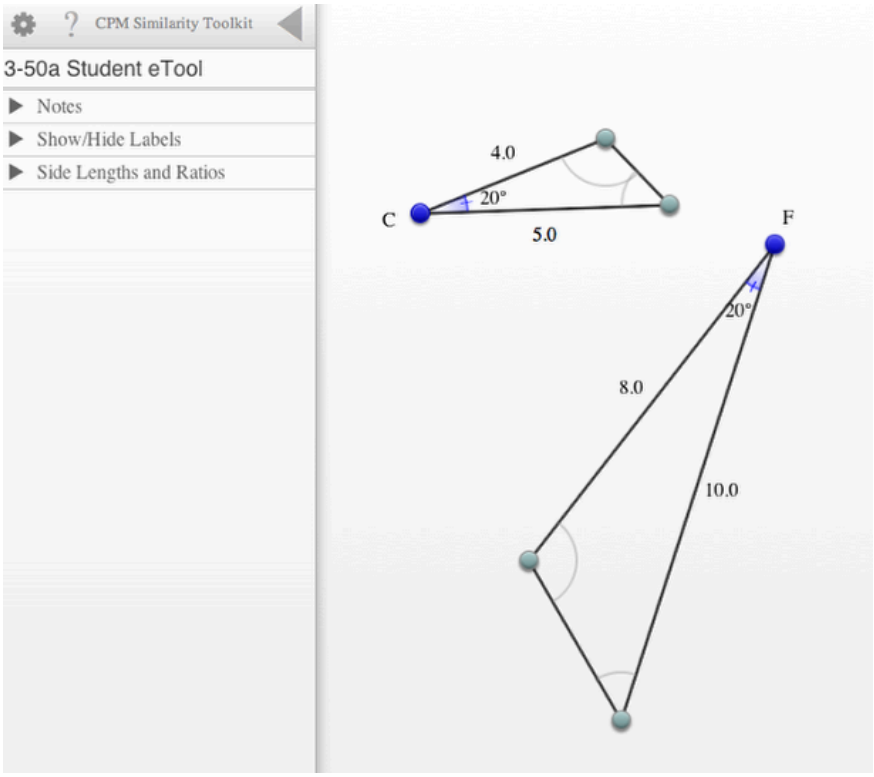


# CCG 3.2.1: 3-50a, 3-50b #1 & #2 Student eTool (CPM)

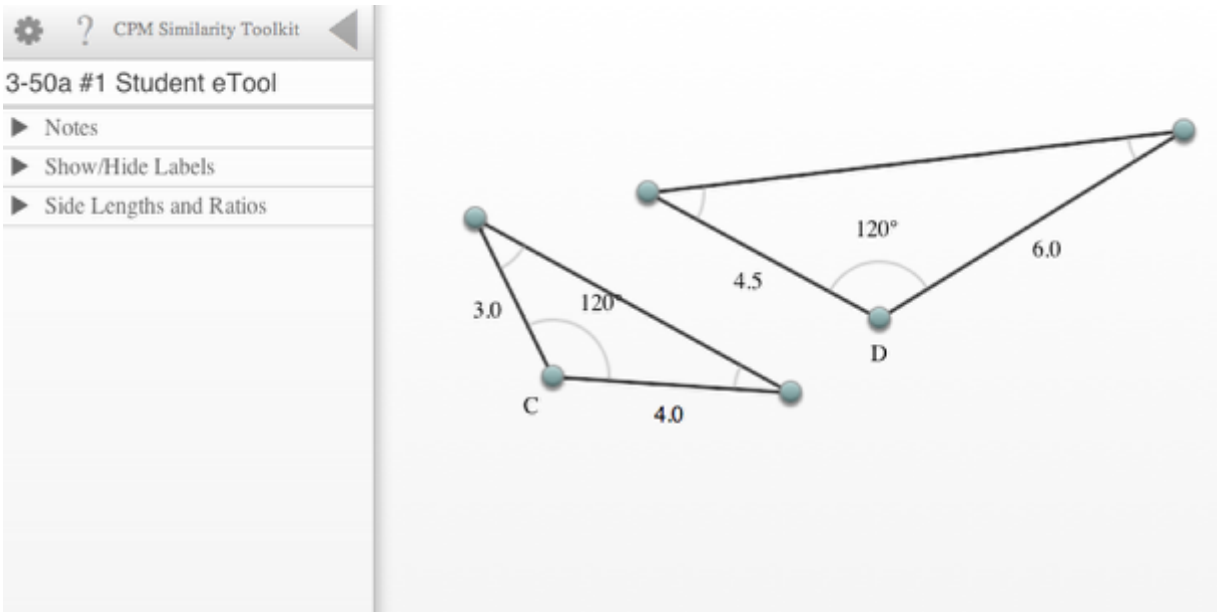
## Click on the link below for the “3-50a, 3-50b #1 & #2 Student eTool (CPM)."

3-50a Student eTool (CPM)
3-50b #1 Student eTool (CPM)
3-50b #2 Student eTool (CPM)

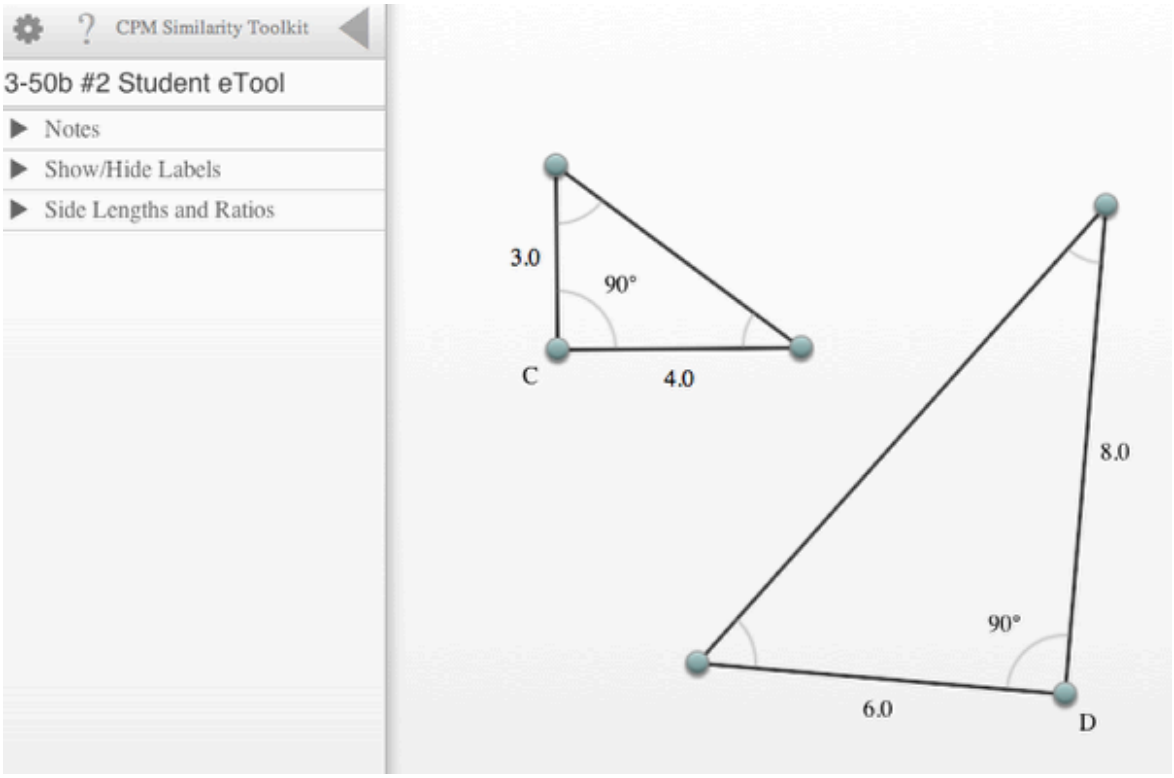
## 1. 3-50a Student eTool:



## 2. 3-50a #1 Student eTool:




## 3. 3-50b #2 Student eTool:

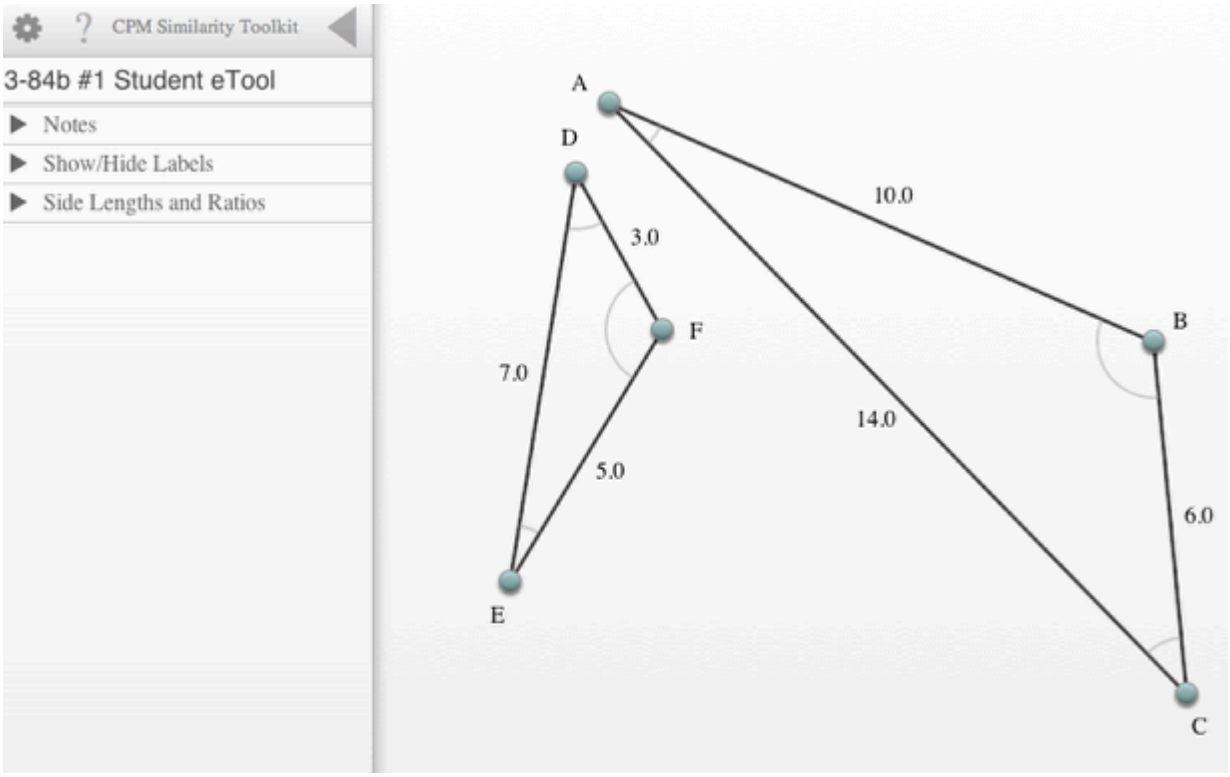


# CCG 3.2.4: 3-84b #1 & #2, 3-85b & 3-86 (CPM)

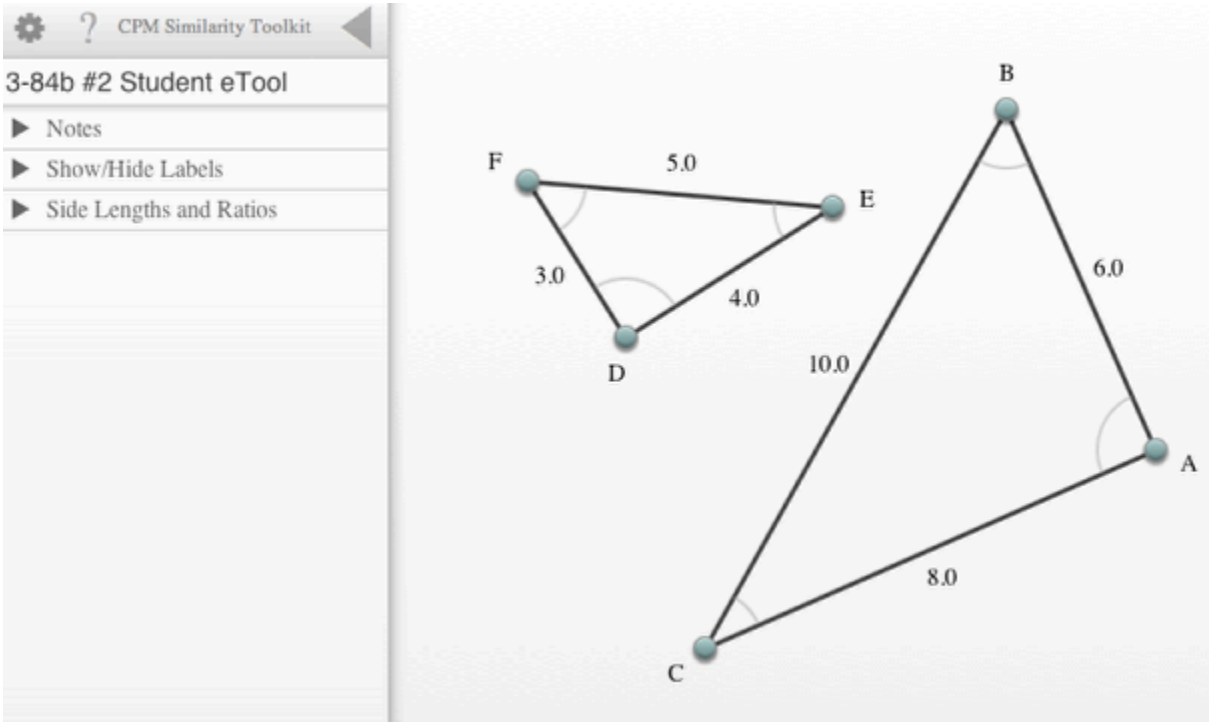
## Click on the links below.

3-84b #1 Student eTool (CPM)
3-84b #2 Student eTool (CPM)
3-85b Student eTool (CPM)
3-86 Student eTool (CPM)

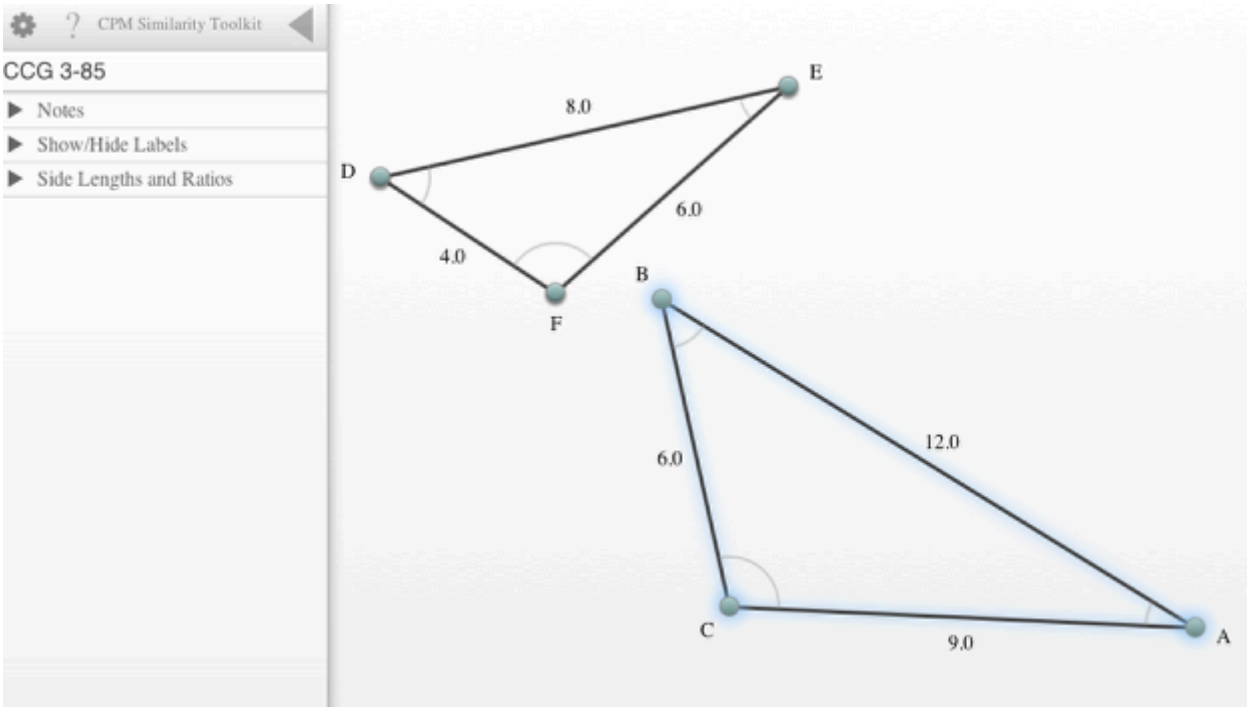
## 1. 3-84b #1 Student eTool:



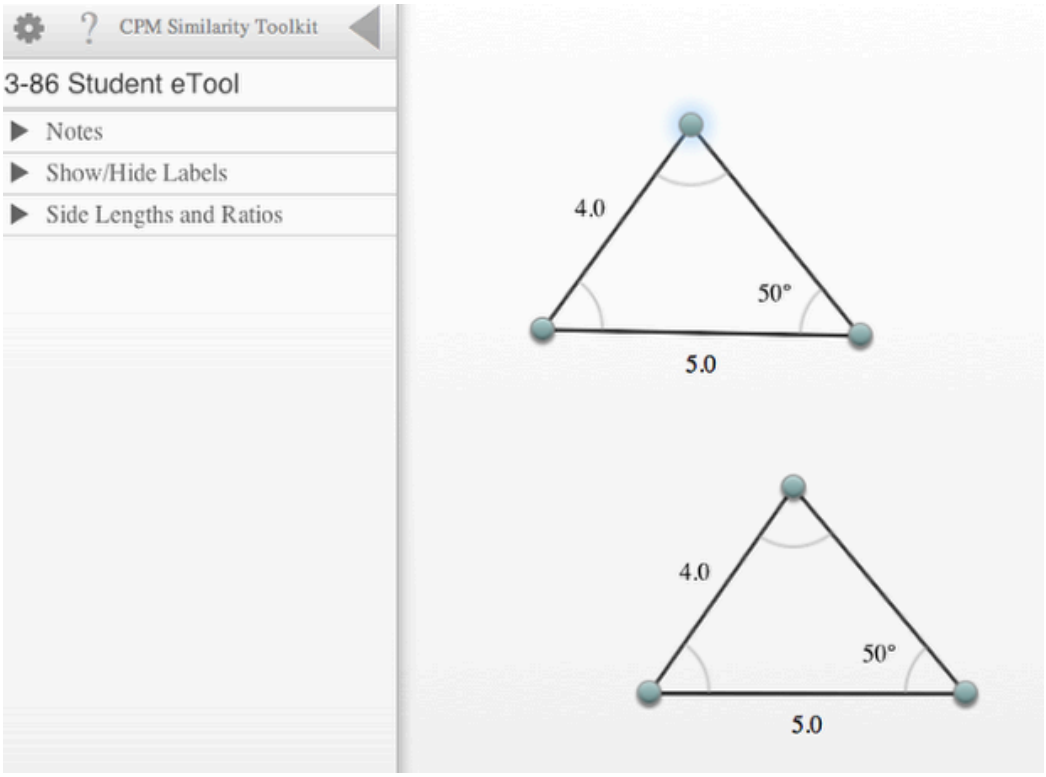
## 2. 3-84b #2 Student eTool:




## 3. 3-85 Student eTool:



## 4. 3-86 Student eTool:



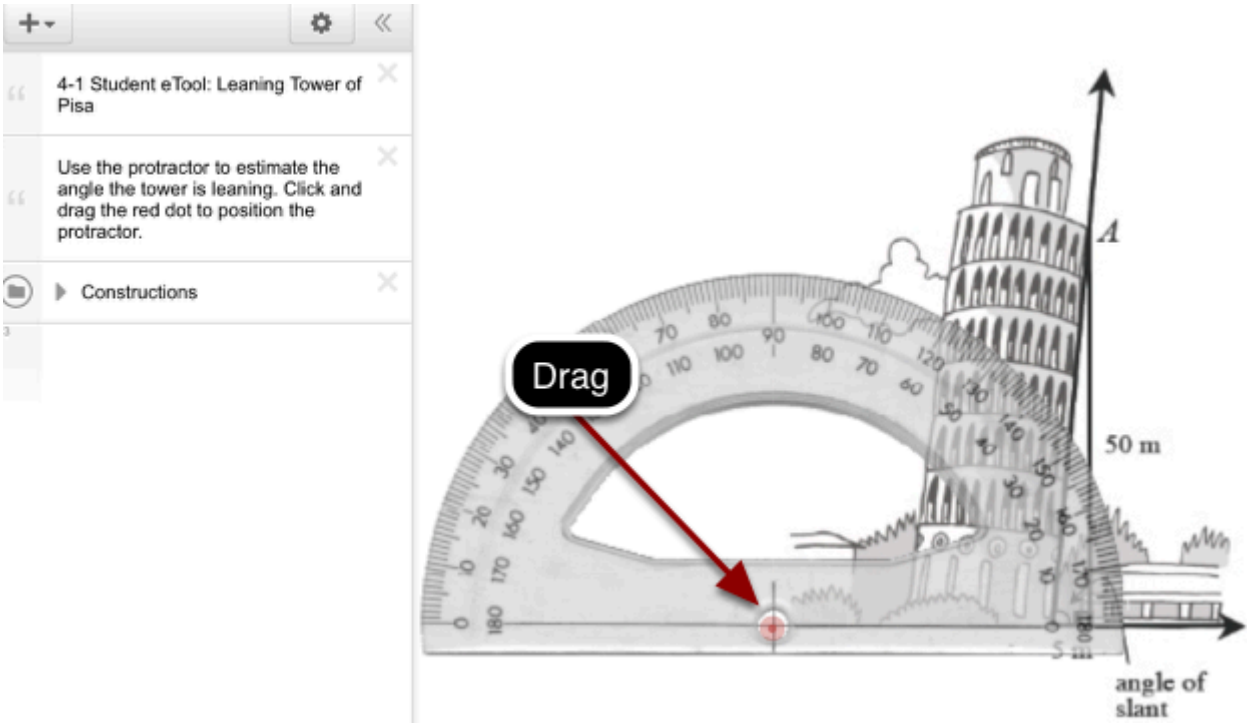
# Chapter 4

# CCG 4.1.1: Leaning Tower of Pisa (Desmos) and Information Video

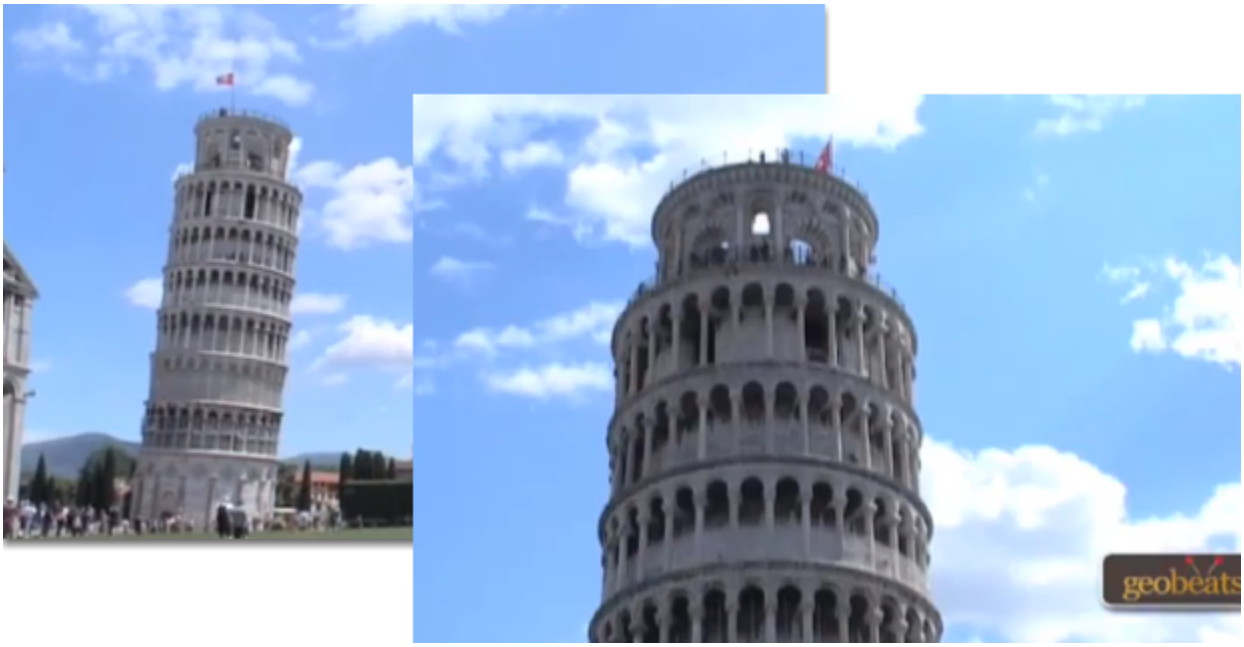
## Click on the link below for the “Leaning Tower of Pisa (Desmos) and Information Video"

4-1 Student eTool (Desmos)
Leaning Tower of Pisa Information Video

## 1. Estimate the angle the tower is leaning using the protractor.



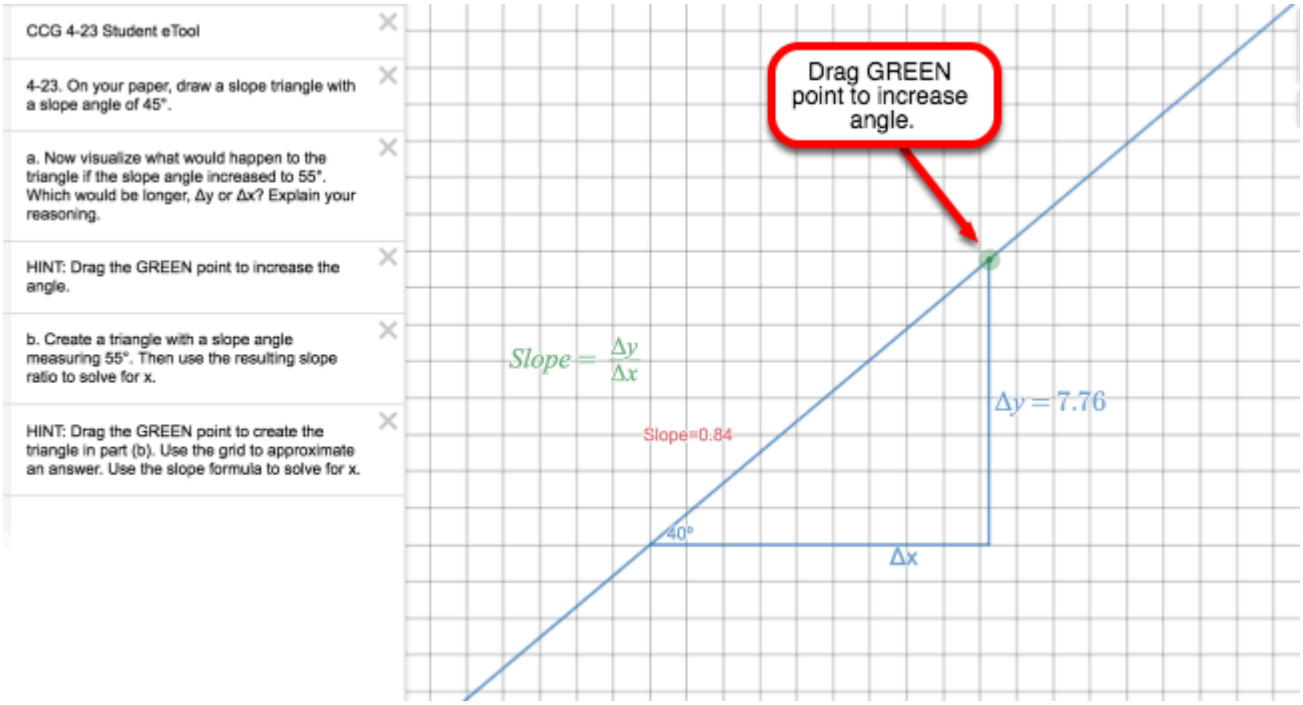
**2. This video shows the architecture of the Leaning Tower of Pisa.**



# CCG 4.1.3: 4-23 Student eTool (Desmos)

## Click on the link below for the 4-23 Student eTool.

Slope Ratios (Desmos)



# CCG 4.1.5: History of the Statue of Liberty Video

### Click on the link below for the “History of the Statue of Liberty."

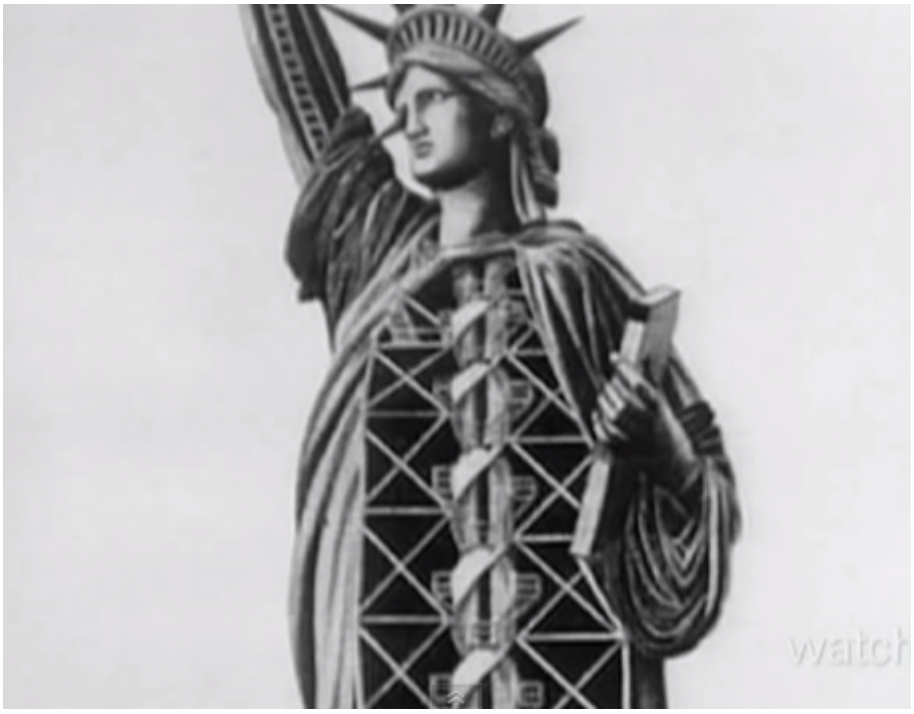
History of the Statue of Liberty

**1.**


**2.**

**3.**


**4.**



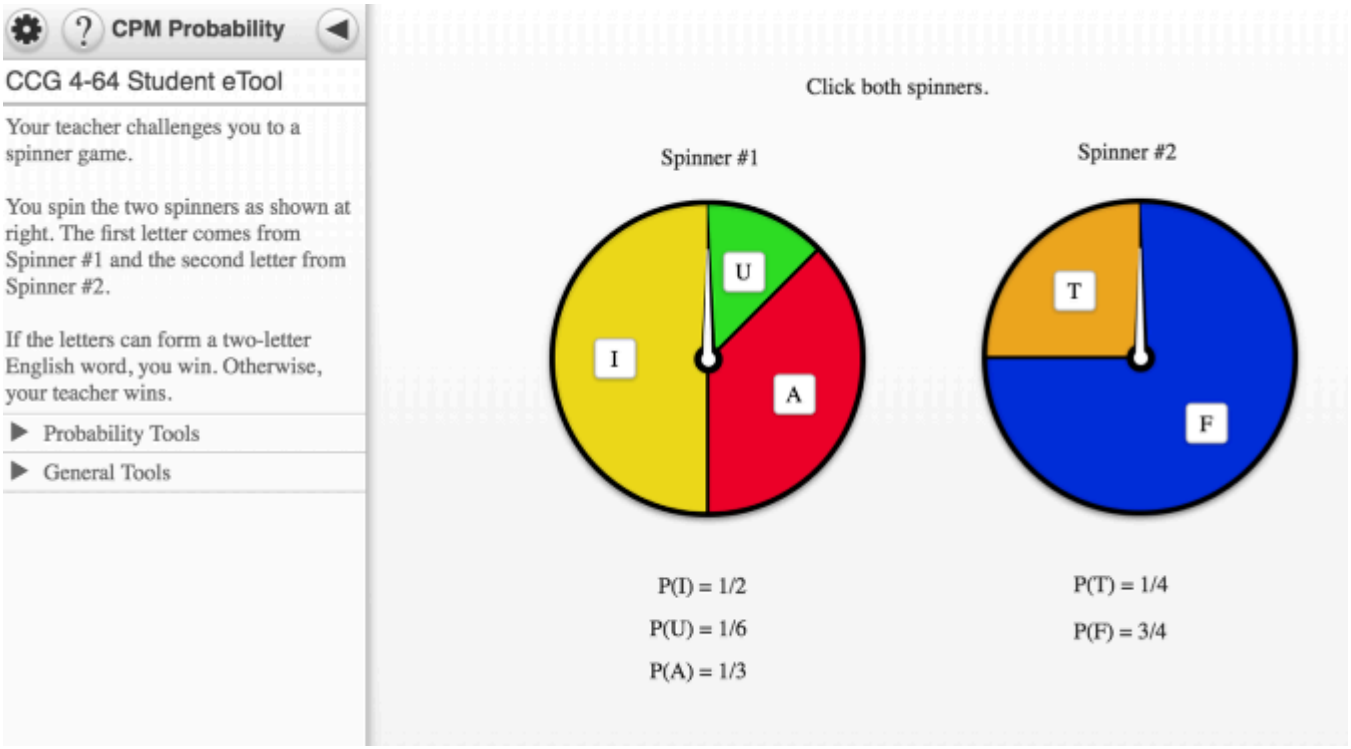
**5.**

# CCG 4.2.2: 4-64 Student eTool (CPM)

## Click on the link below for the “4-64 Student eTool (CPM)."

4-64 Student eTool (CPM)

## CCG 4-64 Student eTool (CPM):



# CCG 4.2.3: 4-76 Student eTool (CPM)

## Click on the link below for the “4-76 Student eTool (CPM)."

4-76 Student eTool (CPM)

## CCG 4-76 Student eTool (CPM):

CCG 4-76 Student eTool

4-76. There is a new game at the school fair called “Pick a Tile,” in which the player reaches into two bags and chooses one square tile and one circular tile. The bag with squares contains three yellow, one blue, and two red squares. The bag with circles has one yellow and two red circles. In order to win the game (and a large stuffed animal), a player must choose one blue square and one red circle.

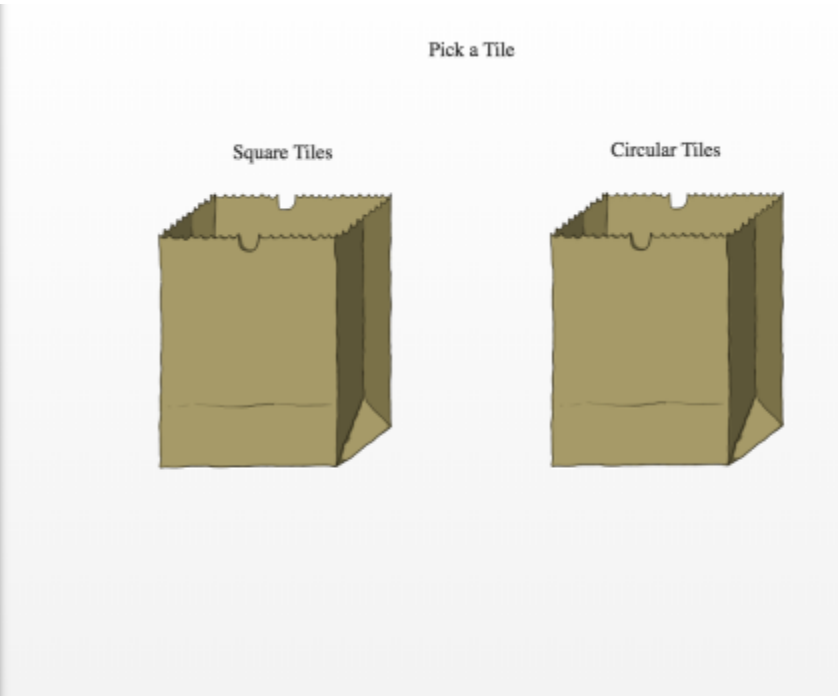
Choose one blue square and one red circle to win.

It costs $2 to play.

a. Make a tree diagram for this situation. Remember to take into account the duplicate tiles in the bags.

b. Find the probability of a player choosing the winning blue square-red circle combination.

c. Should Gerri and Marty play this game? Would you? Why or why not?

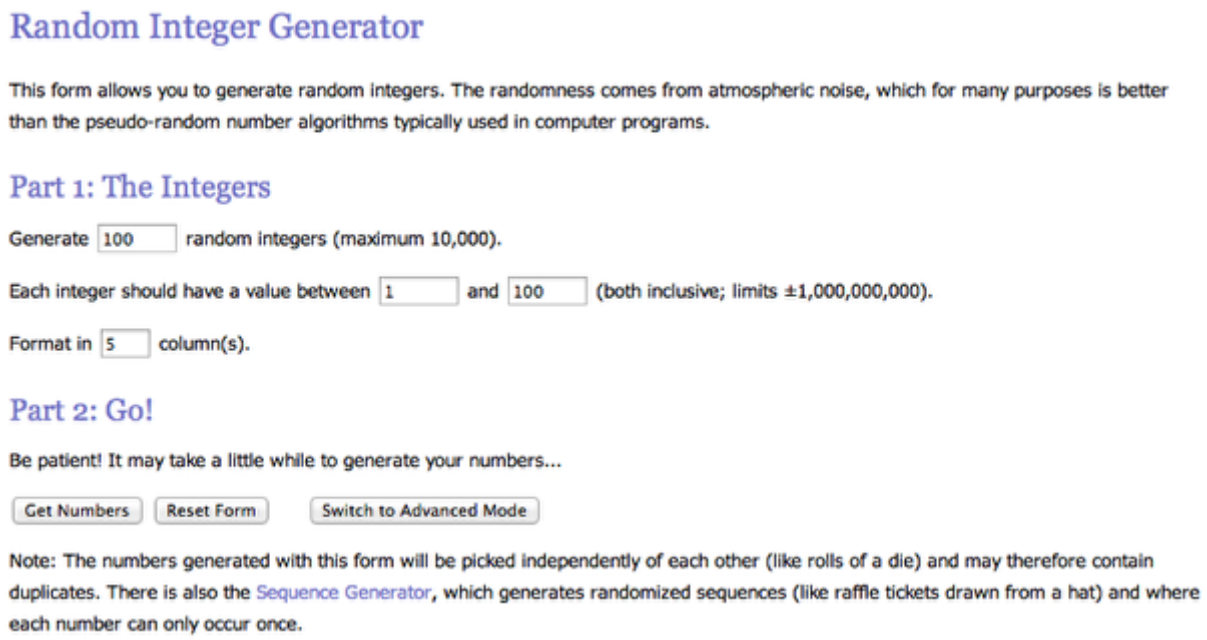


# CCG 4.2.4: Random Number Generator (random.org)

## Click on the link below for the “Random Number Generator."

Random Number Generator online

## 1.



Random Integer Generator

This form allows you to generate random integers. The randomness comes from atmospheric noise, which for many purposes is better than the pseudo-random number algorithms typically used in computer programs.

Part 1: The Integers

Generate 100 random integers (maximum 10,000).

Each integer should have a value between 1 and 100 (both inclusive; limits ±1,000,000,000).

Format in 5 column(s).

Part 2: Go!

Be patient! It may take a little while to generate your numbers...

Get Numbers | Reset Form | Switch to Advanced Mode

Note: The numbers generated with this form will be picked independently of each other (like rolls of a die) and may therefore contain duplicates. There is also the Sequence Generator, which generates randomized sequences (like raffle tickets drawn from a hat) and where each number can only occur once.

**2.**

## Random Integer Generator

Here are your random numbers:

| | | | | |
|---|---|---|---|---|
| 68 | 94 | 43 | 46 | 94 |
| 57 | 35 | 39 | 76 | 72 |
| 99 | 11 | 4 | 43 | 46 |
| 70 | 30 | 12 | 40 | 32 |
| 50 | 87 | 74 | 80 | 7 |
| 29 | 47 | 18 | 52 | 17 |
| 50 | 7 | 26 | 42 | 57 |
| 86 | 74 | 98 | 65 | 82 |
| 29 | 24 | 35 | 26 | 85 |
| 36 | 4 | 50 | 19 | 74 |
| 99 | 61 | 21 | 73 | 79 |
| 67 | 34 | 96 | 4 | 90 |
| 69 | 52 | 58 | 28 | 4 |
| 14 | 18 | 56 | 98 | 51 |
| 89 | 85 | 43 | 37 | 86 |
| 81 | 14 | 60 | 7 | 7 |
| 90 | 22 | 44 | 18 | 4 |
| 29 | 50 | 85 | 77 | 16 |
| 68 | 12 | 77 | 93 | 99 |
| 30 | 45 | 95 | 98 | 97 |

Timestamp: 2014-02-12 23:41:36 UTC

Again! Go Back

Note: The numbers are generated left to right, i.e., across columns.

**3.**

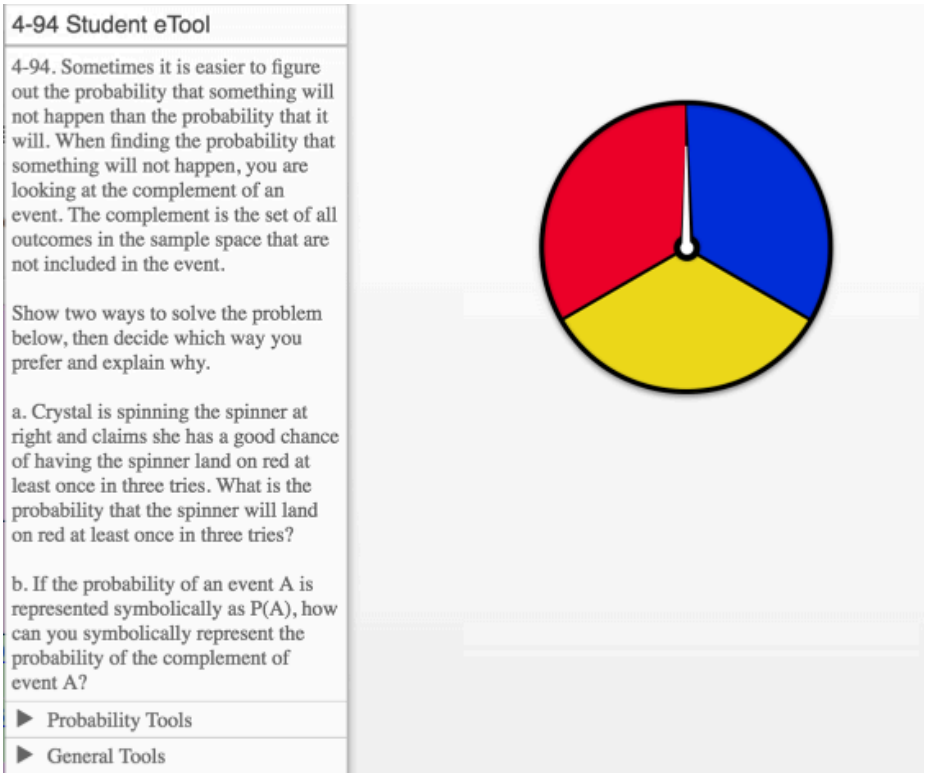
**4.**

# CCG 4.2.4: 4-94 Student eTool (CPM)

## Click on the link below for the “4-94 Student eTool (CPM)."

4-94 Student eTool (CPM)

## CCG 4-94 Student eTool (CPM):



# CCG 4.2.5: 4-101, 4-102 & 4-103 Spinner (CPM)

### Click on the link below for the “4-101, 4-102 & 4-103 Spinner (CPM)."

4-101 Spinner (CPM)
4-102 Spinner (CPM)
4-103 Spinner (CPM)

### Take A Spin Games

4-101: Take A Spin

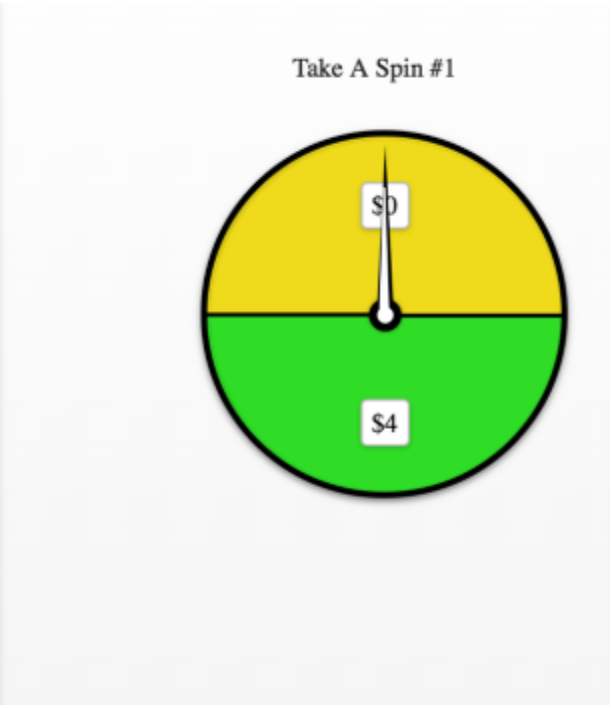
4-101. TAKE A SPIN

Consider the following game: After clicking the wheel at right, you win the amount spun.

a. If you play the game 10 times, how much money would you expect to win? What if you played the game 30 times? 100 times? Explain your process.

b. What if you played the game n times? Write an equation for how much money someone can expect to win after playing the game n times.

c. If you were to play only once, what would you expect to earn according to your equation in part (b)? Is it actually possible to win that amount? Explain why or why not.



## 4-102: Take A Spin

**CCG 4-102 Student eTool**

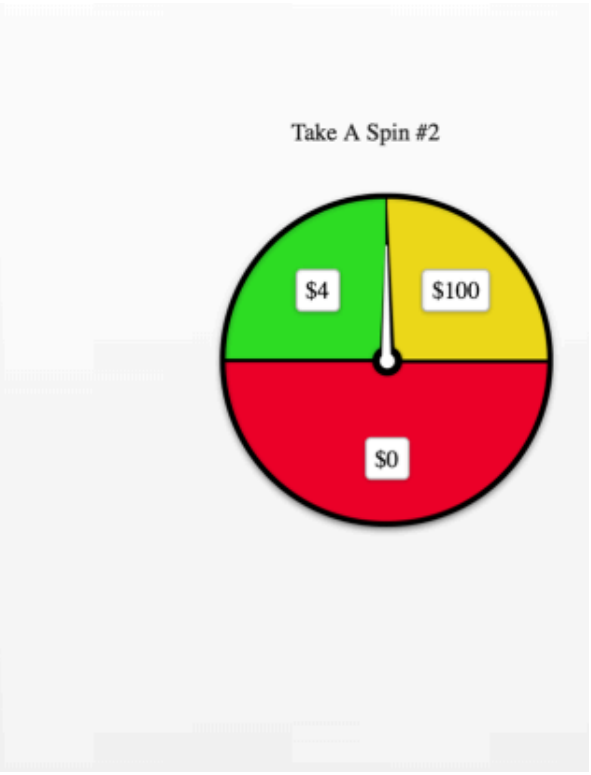
4-102. What if the spinner looks like the one at right instead?

Click the wheel to spin. Total your winnings from each spin.

a. If you win the amount that comes up on each spin, how much would you expect to win after 4 spins? What about after 100 spins?

b. Find this spinner's expected value. That is, what is the expected amount you will win for each spin? Be ready to justify your answer.

c. Gustavo describes his thinking this way: "Half the time, I'll earn nothing. One-fourth the time, I'll earn $4, and the other one-fourth of the time I'll earn $100. So, for one spin, I can expect to win (1/2)(0) + (1/4)($4) + (1/4)($100)." Calculate Gustavo's expression. Does his result match your result from part (b)?




## 4-103: Take A Spin

**CCG 4-103 Student eTool**

4-103. Jesse has created the spinner at right. This time, if you land on a positive number, you win that amount of money. However, if you land on a negative number, you lose that amount of money! Want to try it?

a. Before analyzing the spinner, predict whether a person would win money or lose money after many spins.

b. Now calculate the actual expected value. How does the result compare to your estimate from part (a)?

c. What would the expected value be if this spinner were fair? Discuss this with your team. What does it mean for a spinner to be fair?

d. How could you change the spinner to make it fair? Draw your new spinner and show why it is fair.

# Chapter 5

# CCG 5.1.4: El Capitan Climber Video

### Click on the link below for the “El Capitan Climber Video"

El Capitan Climber

**1.**

**2.**

**3.**

**4.**

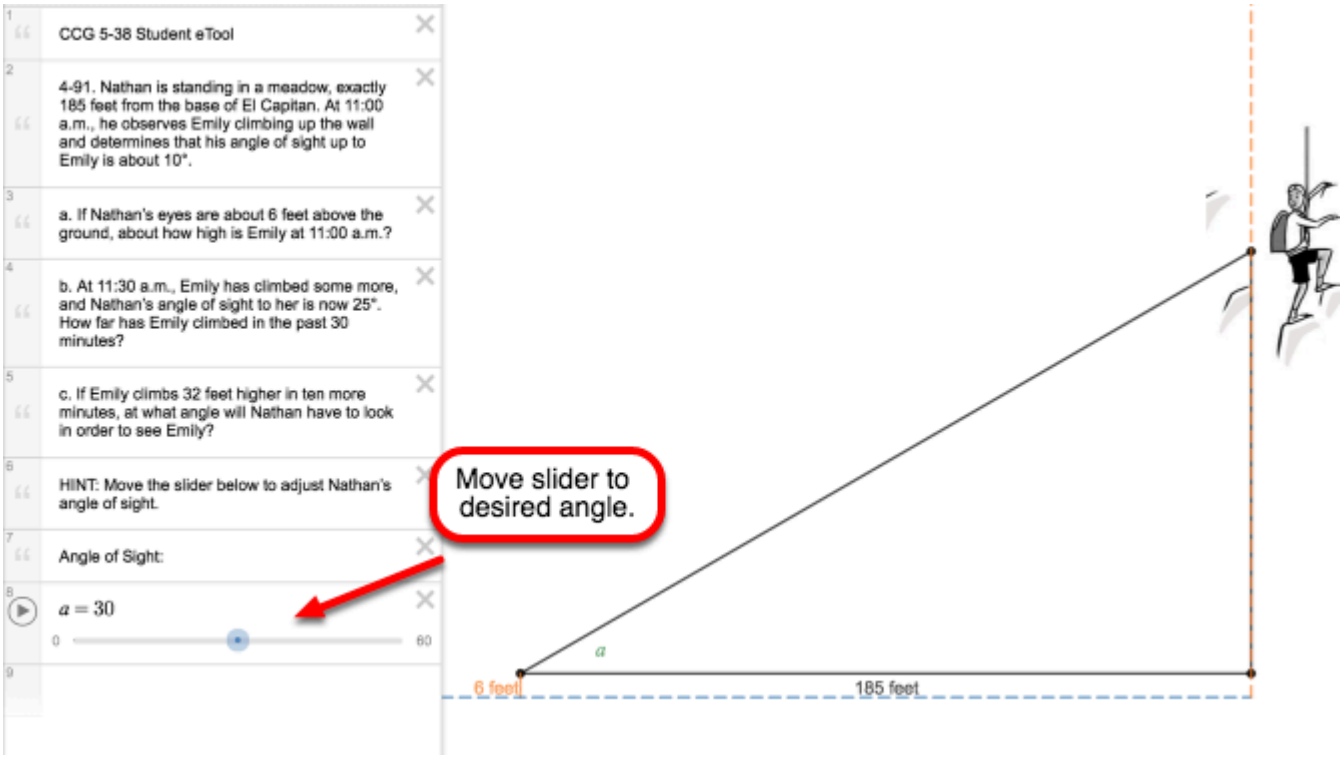
**5.**

# CCG 5.1.4: 5-38 Student eTool (Desmos)

## Click on the link below for the “5-38 Student eTool (Desmos)."

5-38 Student eTool (Desmos)

## 1. Move the slider to the desired angle. Use the diagram and your knowledge of trigonometry to solve the parts in problem 5-38.

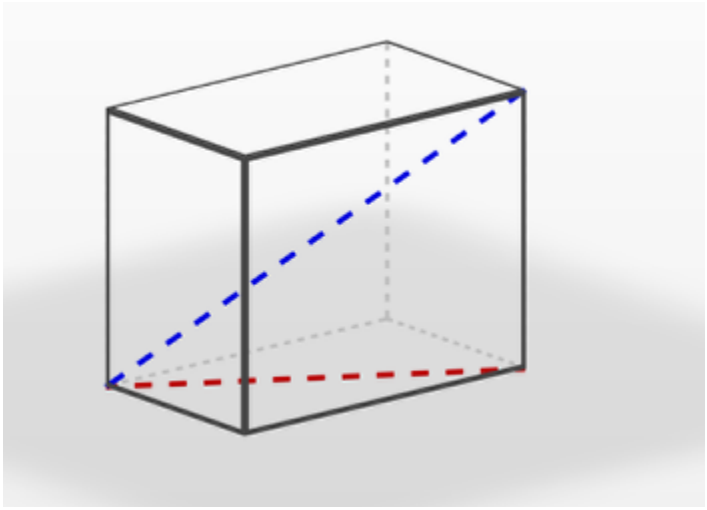


# CCG 5.3.5: 3D Model Box (CPM)

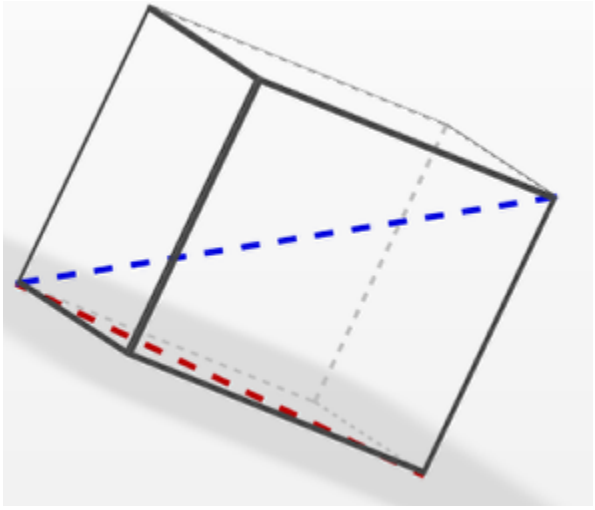
## Click on the "3D Model Box (CPM)" link below.

3D Model Box (CPM)

## Click on the box and drag.



## Drag the box until you have viewed all sides including the views from the top and bottom.

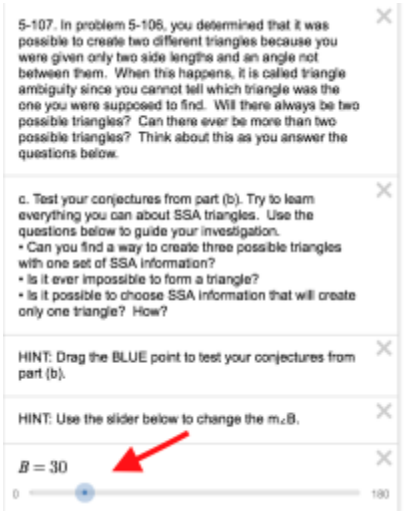


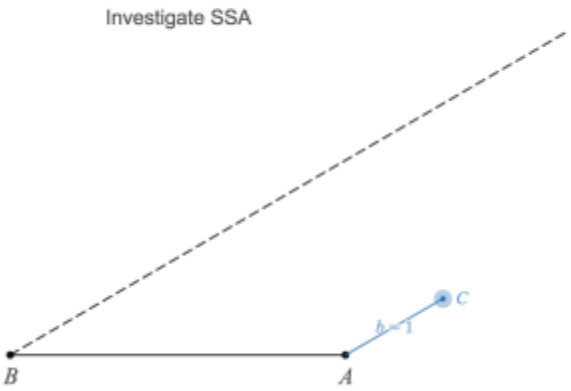
# CCG 5.3.4: 5-107c Student eTool (Desmos)

## Click on the link below for the “5-107c Student eTool (Desmos)."

5-107c Student eTool (Desmos)

Use slider to change m∠B.



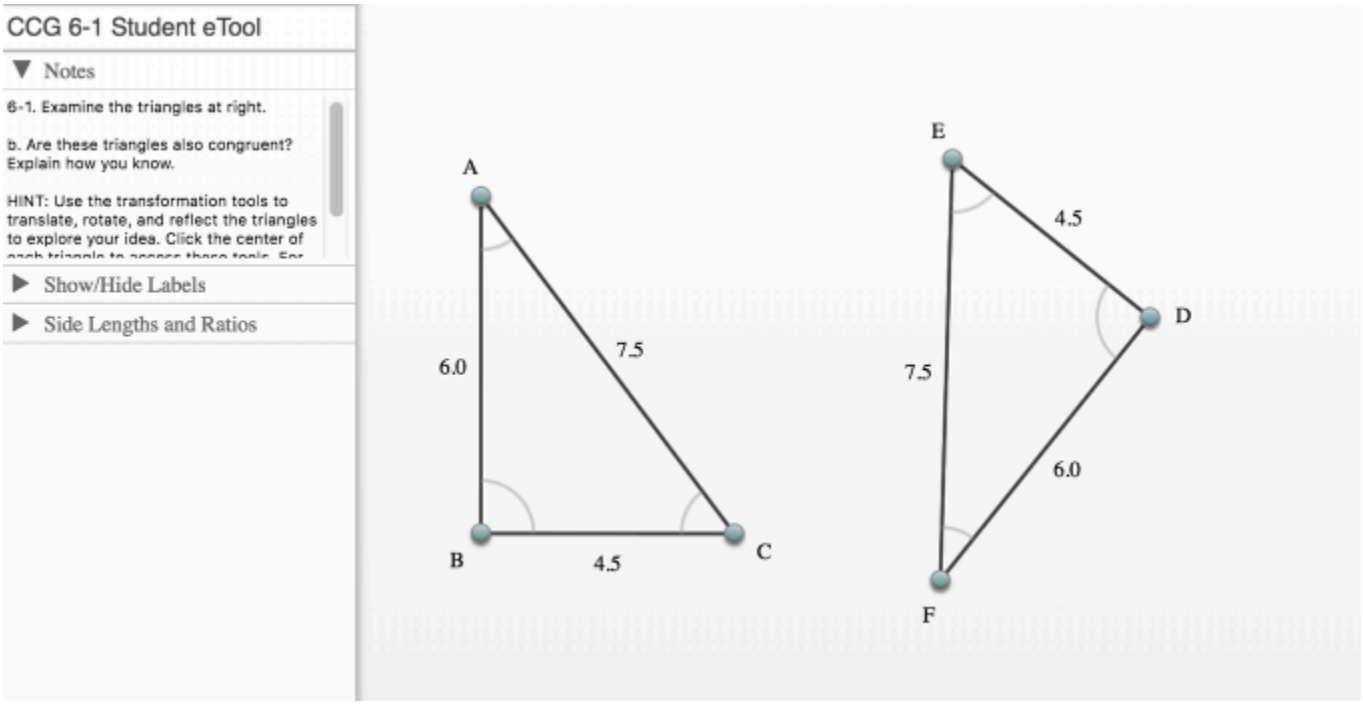
# Chapter 6

# CCG 6.1.1: 6-1 Student eTool (CPM)

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

6-1 Student eTool (CPM)

HINT: Use the transformation tools to translate, rotate, and reflect the triangles to explore your idea. Click the center of each triangle to access these tools. For more directions, click the "?" icon above.

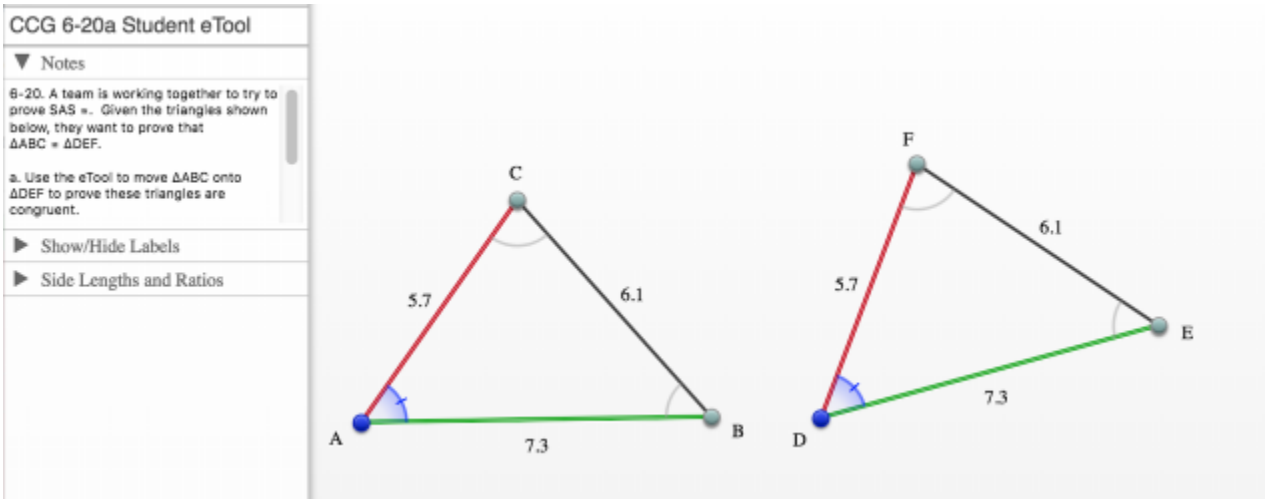


# CCG 6.1.3: 6-20a, 6-20b & 6-21 (CPM)

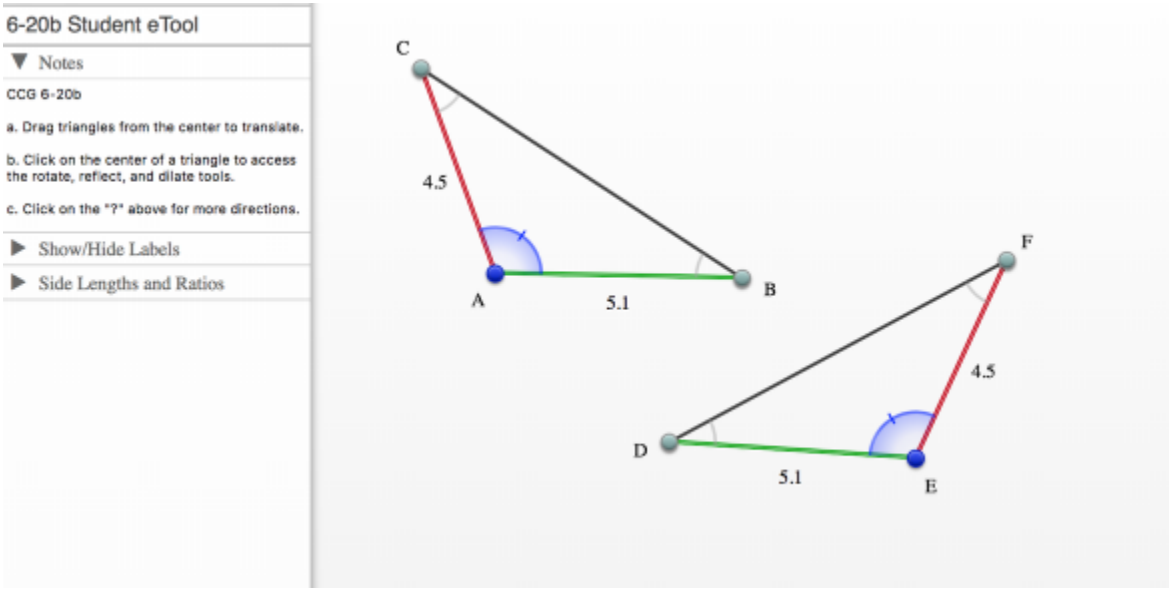
## Click on the links below to access eTools.

6-20a (CPM)
6-20b (CPM)
6-21 (CPM)

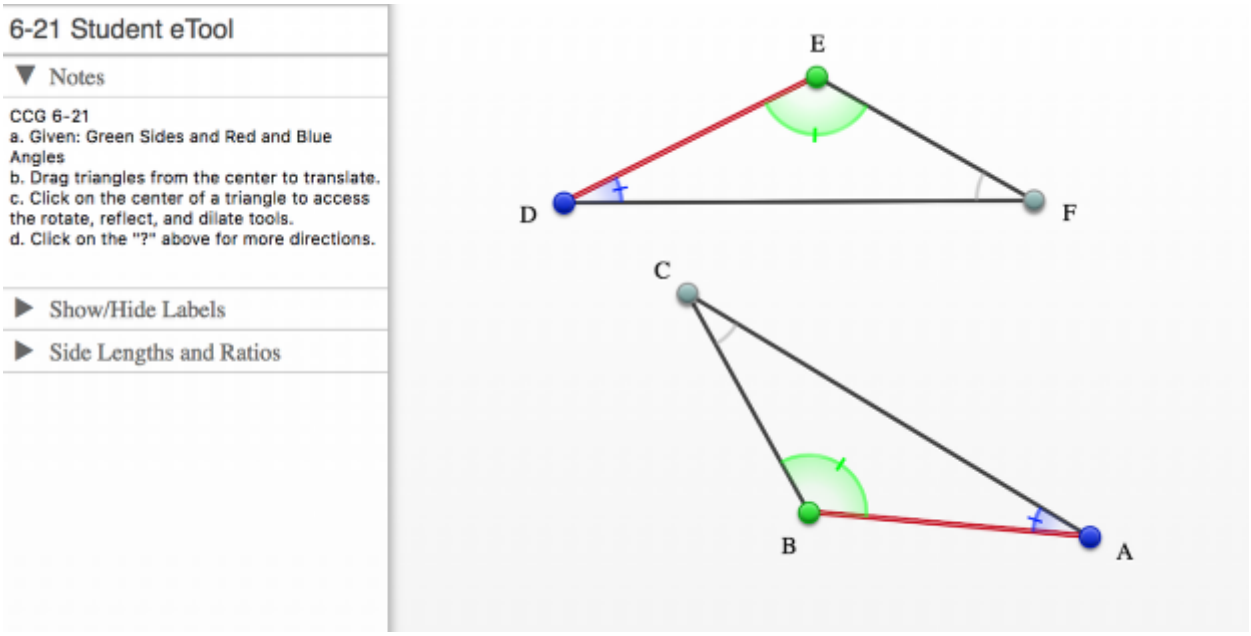
## Use the eTools to prove triangle congruence. Move triangle ABC onto triangle DEF to prove the triangles are congruent.




## Drag the triangles from the center to translate. Click on the center of the triangle to access rotation tools.



**Drag the triangles from the center to translate.  Click on the center o the triangle to access rotation tools.**

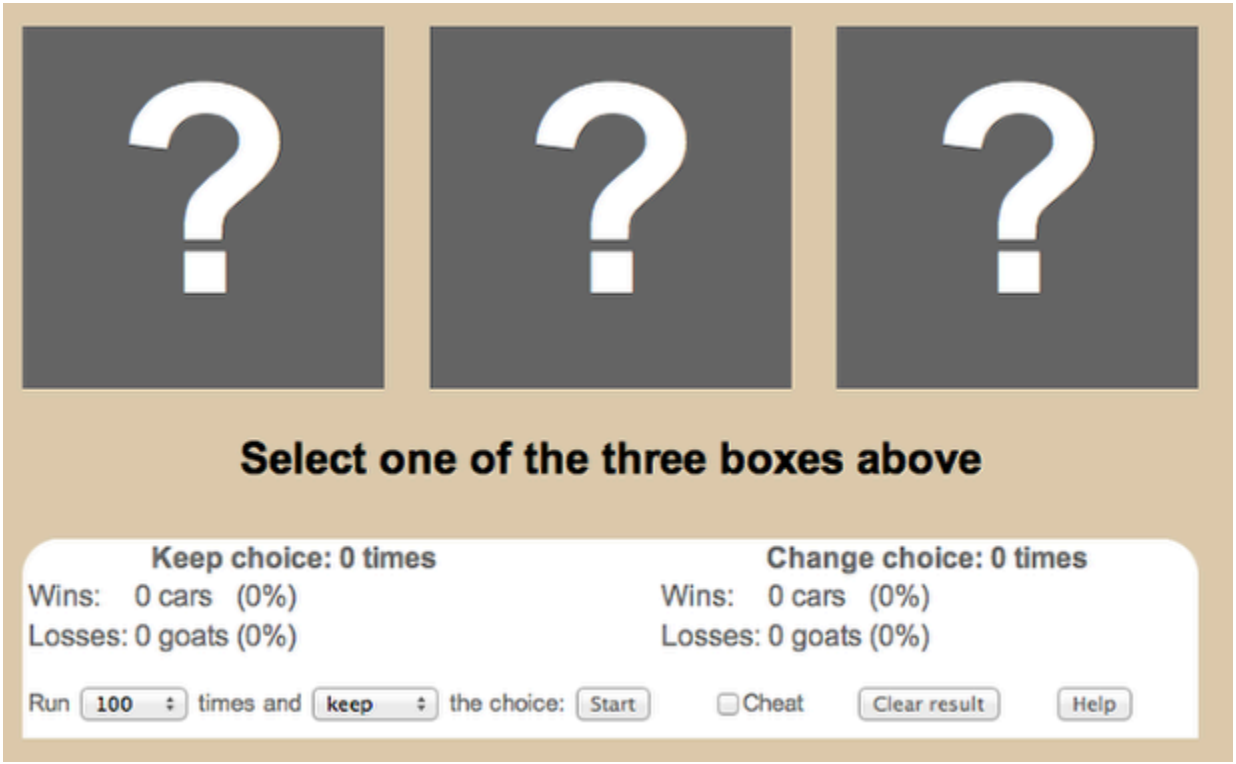


# CCG 6.2.4: Monty Hall Technology Tool

### Click on the link below for the “Monty Hall Technology Tool"

Monty Hall Technology Tool

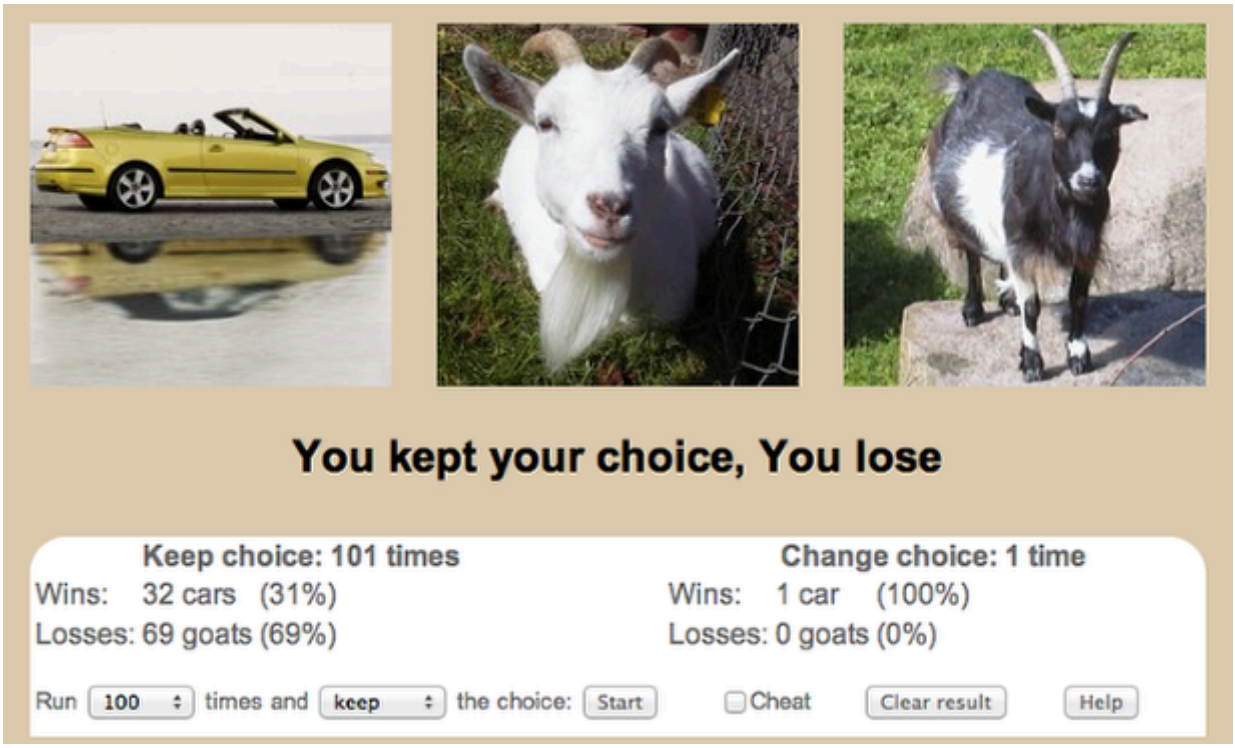
**1.**



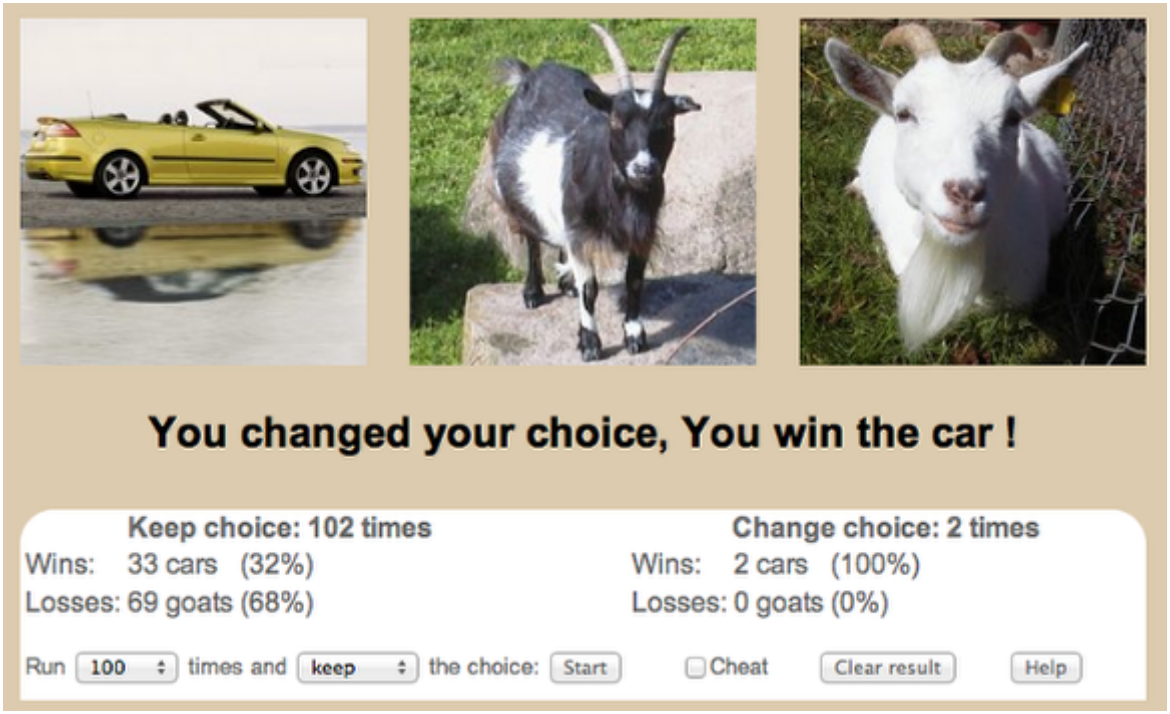
**2.**


!
?
Click '!' to keep your first choice or '?' to change it
Keep choice: 100 times
Wins: 32 cars (32%)
Losses: 68 goats (68%)
Change choice: 0 times
Wins: 0 cars (0%)
Losses: 0 goats (0%)
Run 100 times and keep the choice: Start
Cheat
Clear result
Help

**3.**


You kept your choice, You lose
Keep choice: 101 times
Wins: 32 cars (31%)
Losses: 69 goats (69%)
Change choice: 1 time
Wins: 1 car (100%)
Losses: 0 goats (0%)
Run 100 times and keep the choice: Start
Cheat
Clear result
Help

**4.**


You changed your choice, You win the car !
Keep choice: 102 times
Wins: 33 cars (32%)
Losses: 69 goats (68%)
Change choice: 2 times
Wins: 2 cars (100%)
Losses: 0 goats (0%)
Run 100 times and keep the choice: Start
Cheat
Clear result
Help

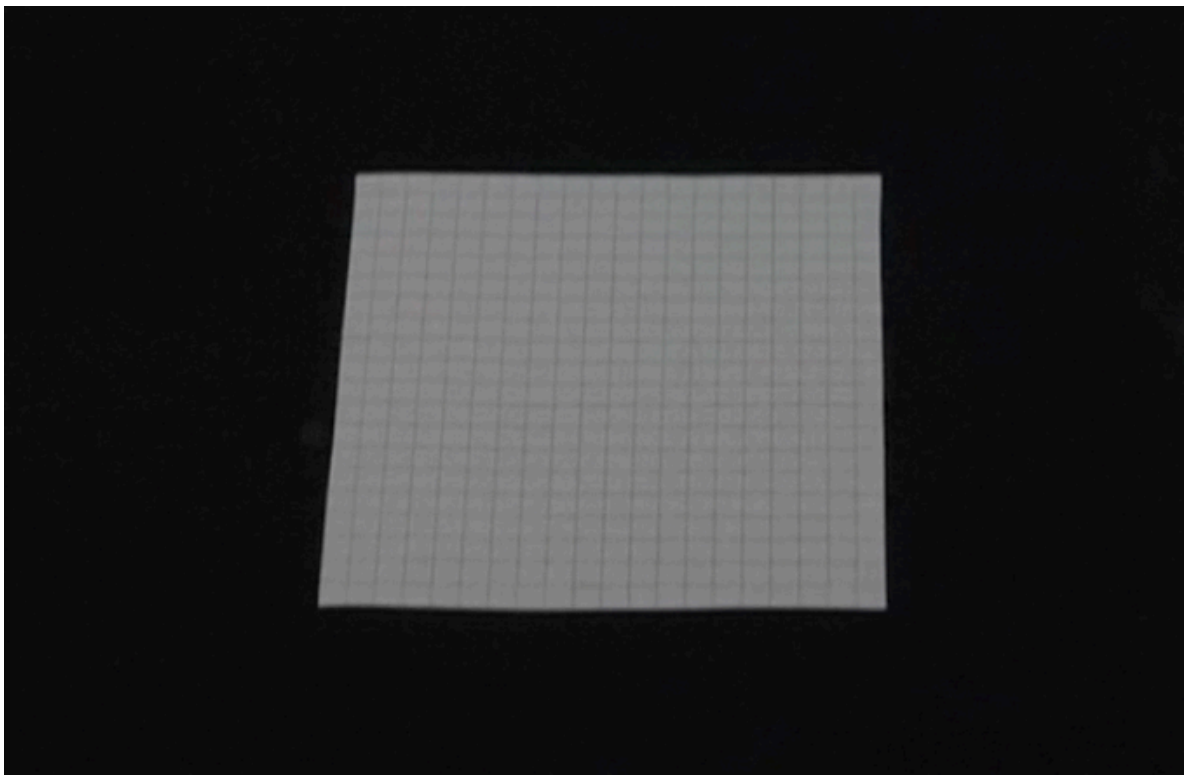
**5.**

# CCG 6.2.5: Snowflake Videos

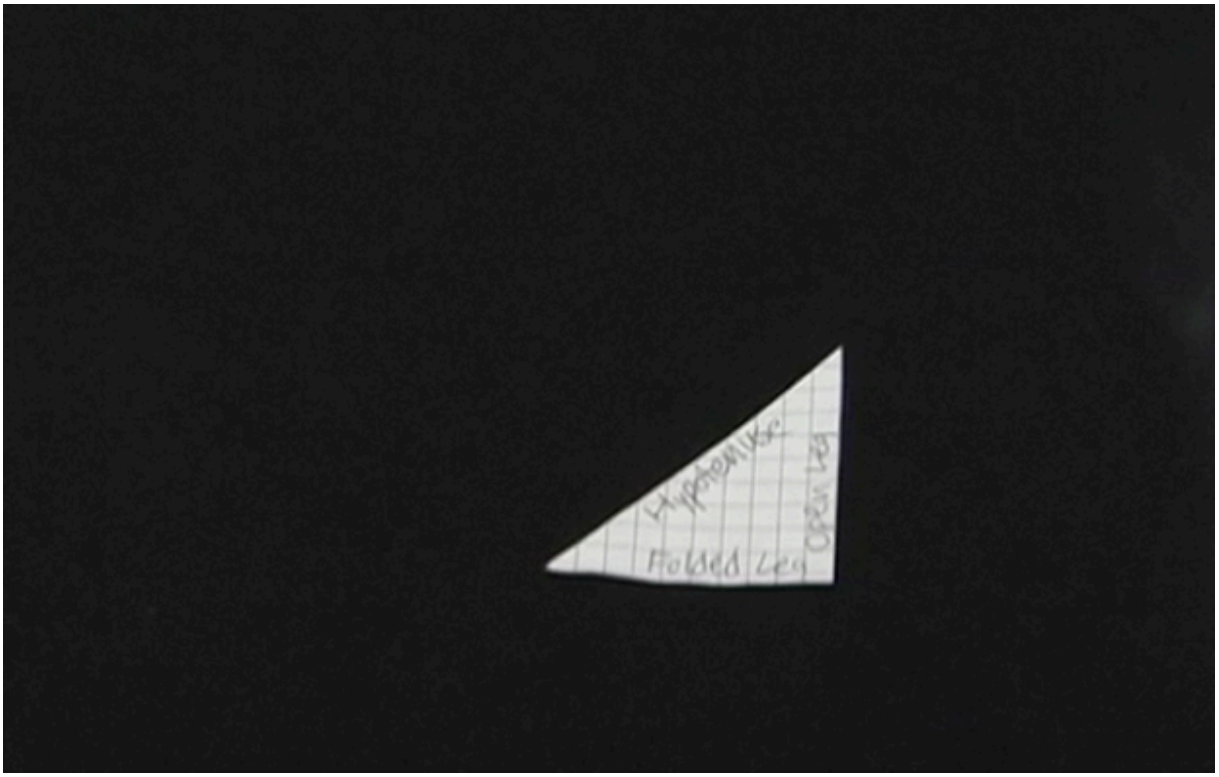
## Click on the links below for the “Snowflake Videos (Vimeo)"

Snowflake Materials Preparation (Vimeo)
Using Transformations & Symmetry to Create a Snowflake (Vimeo)

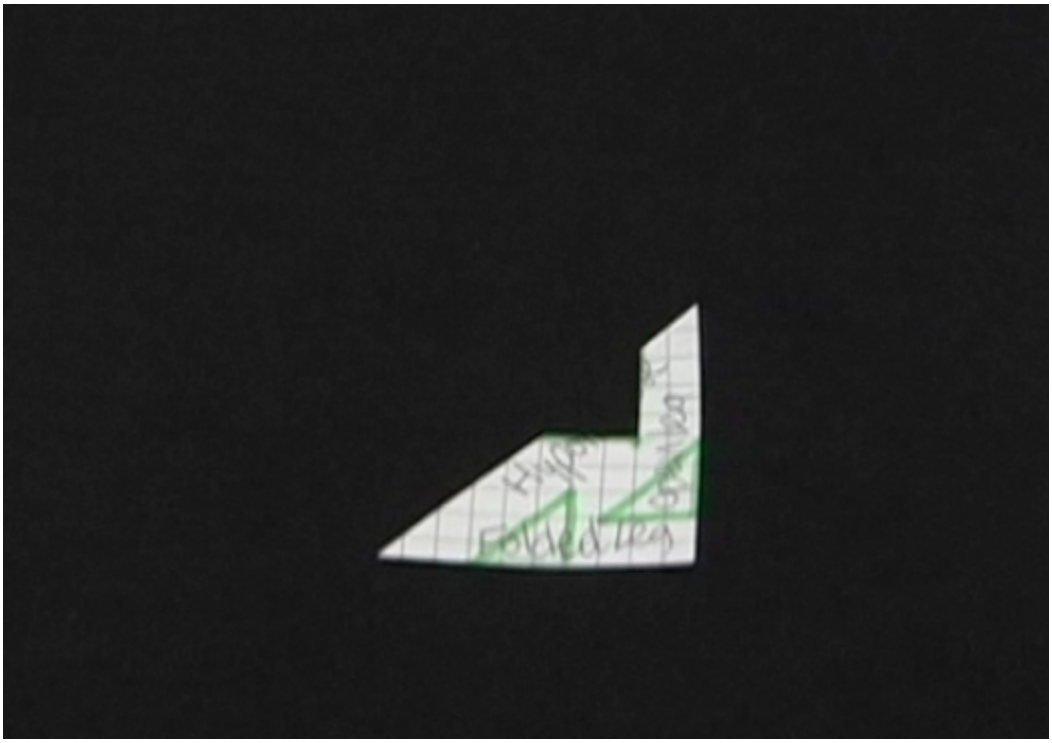
**1.**



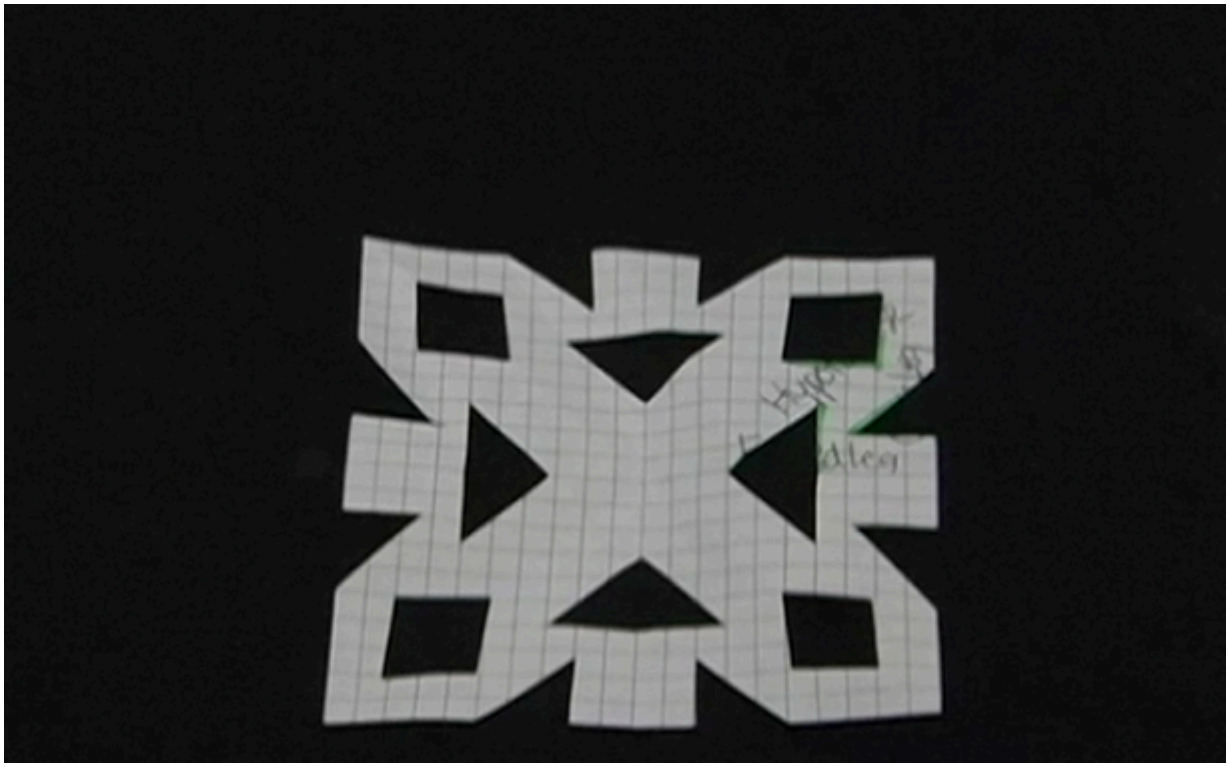
**2.**




**3.**

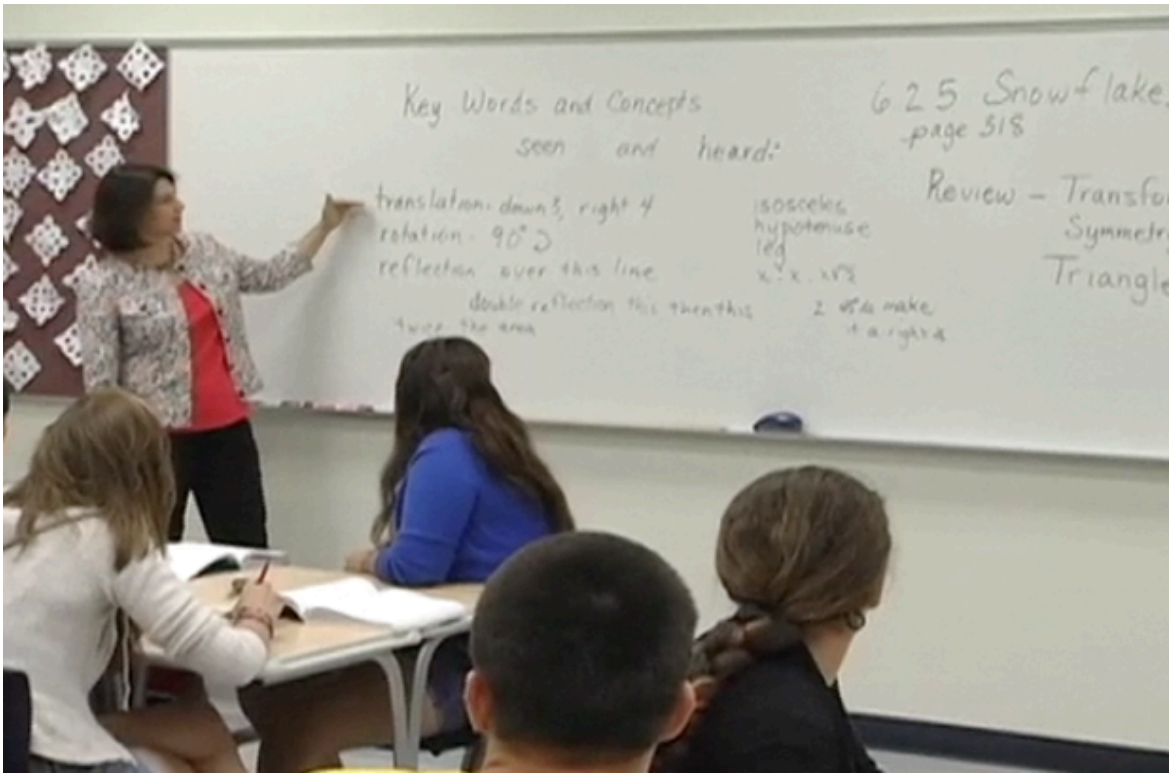


**4.**



**5.**

**6.**


Key Words and Concepts
seen and heard:
translation: down 3, right 4
rotation: 90° ↻
reflection over this line
isosceles
hypotenuse
leg
625 Snowflake
page 518
Review – Transfo
Symmetr
Triangle

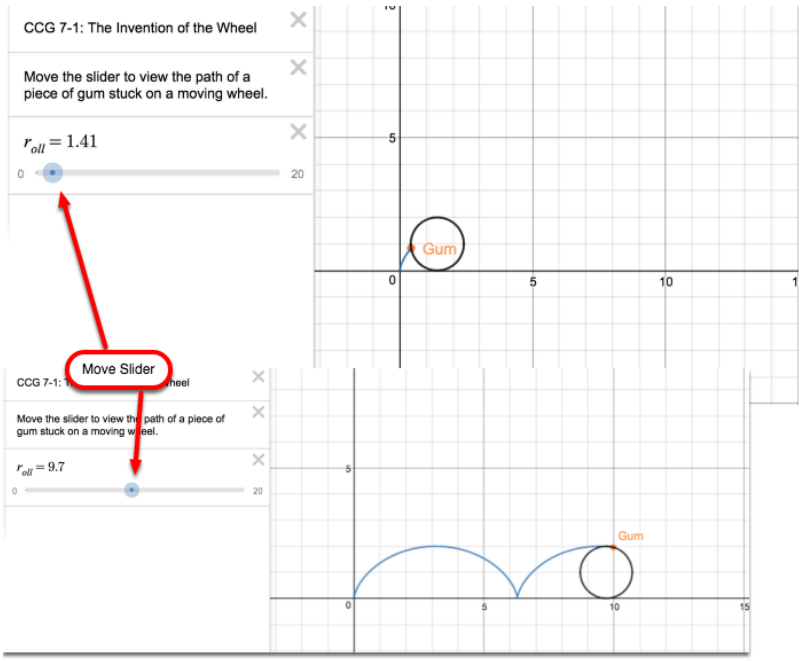
# Chapter 7

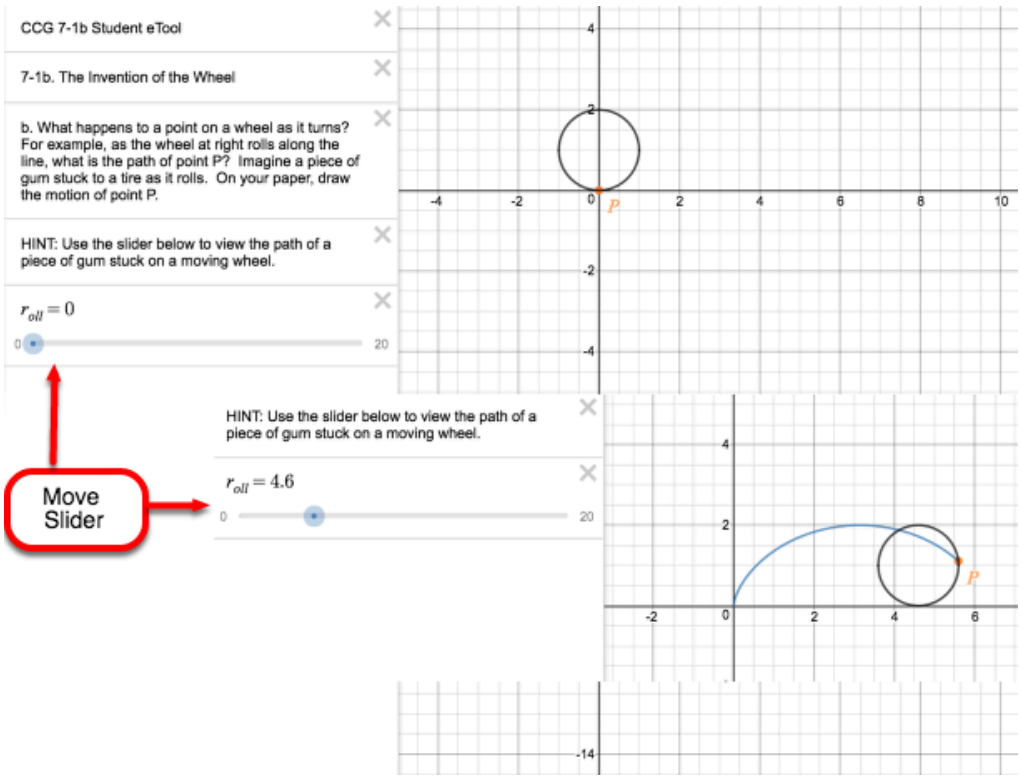
# CCG 7.1.1: 7-1b Student eTool (Desmos)

## Click on the links below to access eTool.

[7-1b Student eTool](#) (Desmos)

## Use the eTool for problem 7-1 to see what happens to a point on a wheel as it turns.



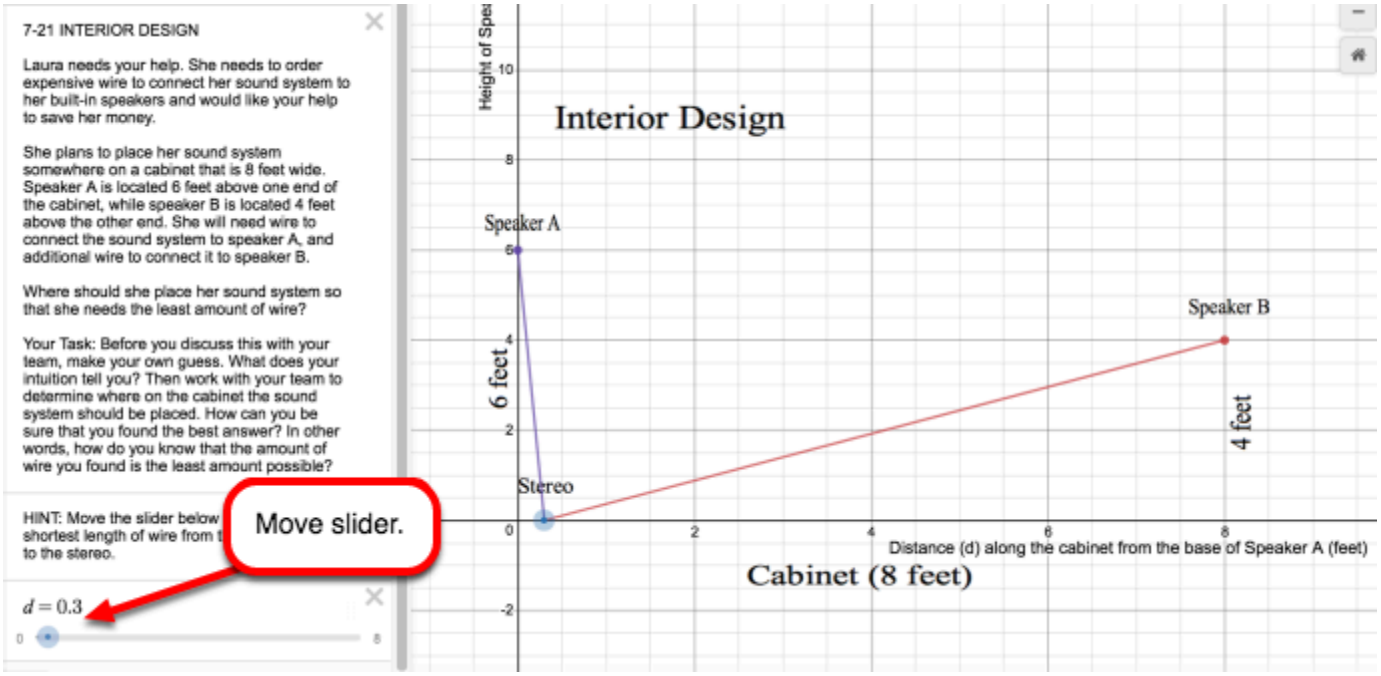

CCG 7-1b Student eTool
7-1b. The Invention of the Wheel
b. What happens to a point on a wheel as it turns? For example, as the wheel at right rolls along the line, what is the path of point P? Imagine a piece of gum stuck to a tire as it rolls. On your paper, draw the motion of point P.
HINT: Use the slider below to view the path of a piece of gum stuck on a moving wheel.
$r_{oll} = 0$
0
20
HINT: Use the slider below to view the path of a piece of gum stuck on a moving wheel.
$r_{oll} = 4.6$
0
20
Move Slider
P
P

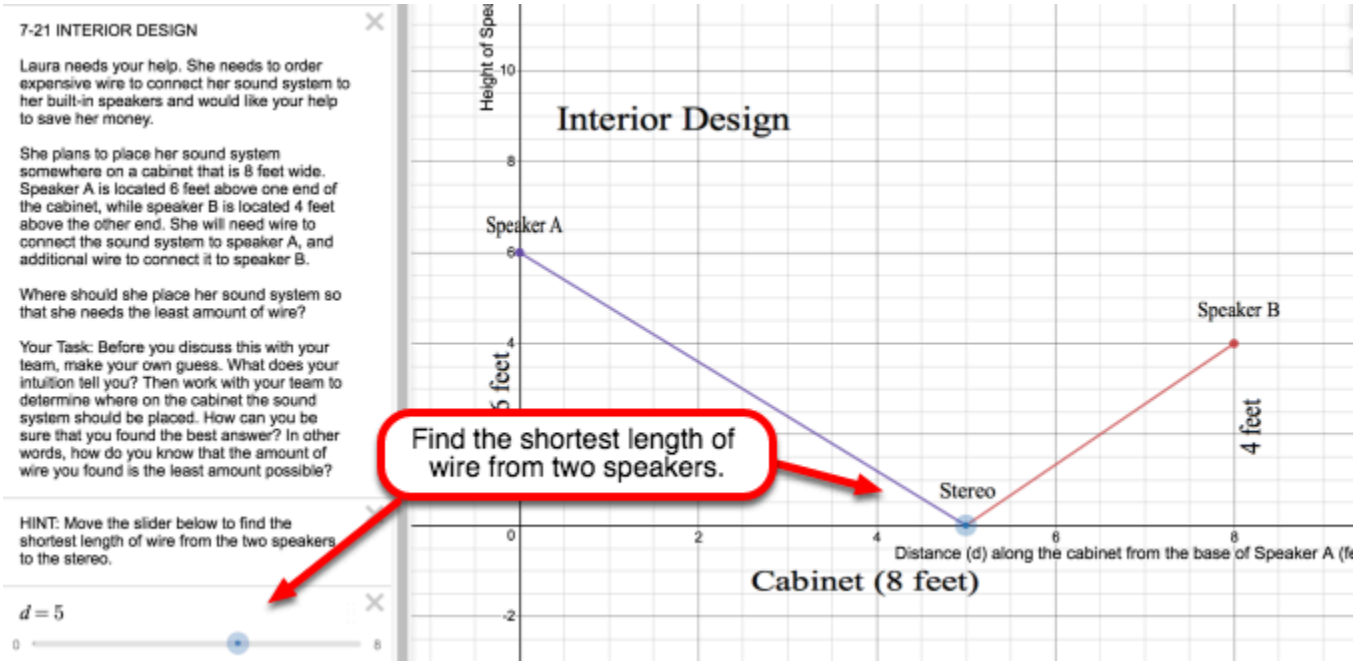
# CCG 7.1.3: 7-21 Student eTool (Desmos)

## Click on the link below to access eTool.

7-21 Student eTool (Desmos)

## Move the slider or the stereo along the cabinet to determine where the sound system should be placed.



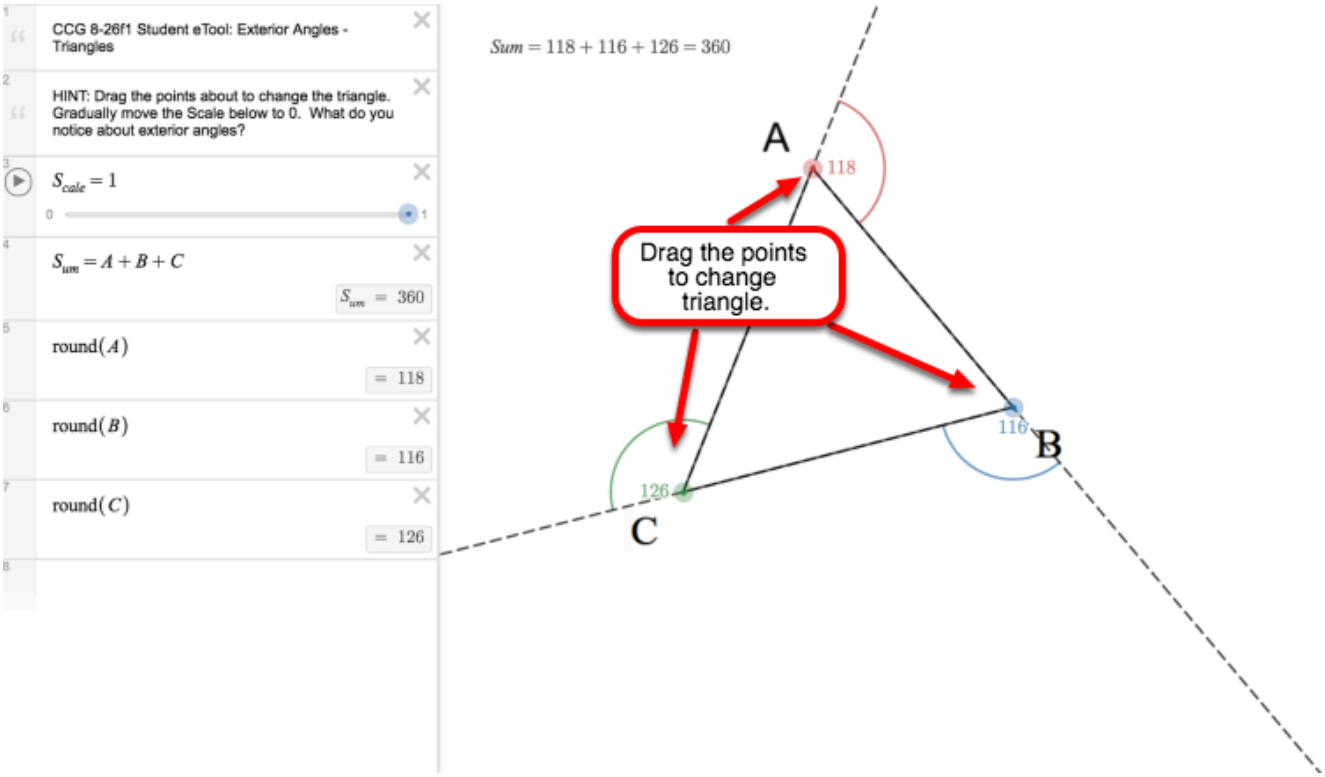
# Chapter 8

# CCG 8.1.3: Exterior Angles (Desmos)

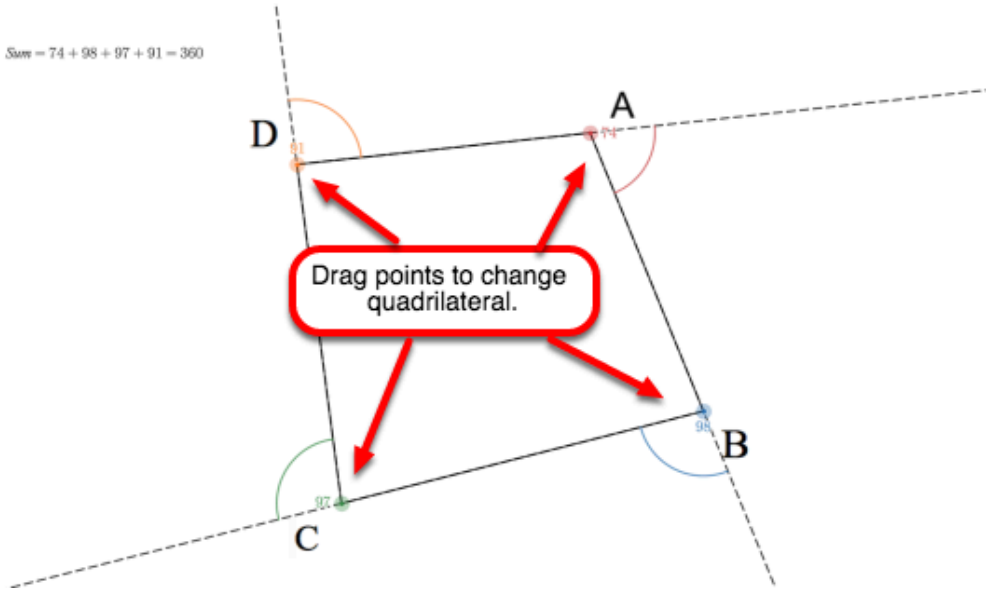
## Click on the links below to access eTools.

CCG 8-26f1 Student eTool: Exterior Angles: Triangles (Desmos)
CCG 8-26f2 Student eTool: Quadrilaterals (Desmos)
CCG 8-26f3 Student eTool: Pentagons (Desmos)
CCG 8-26f4 Student eTool: Hexagons (Desmos)

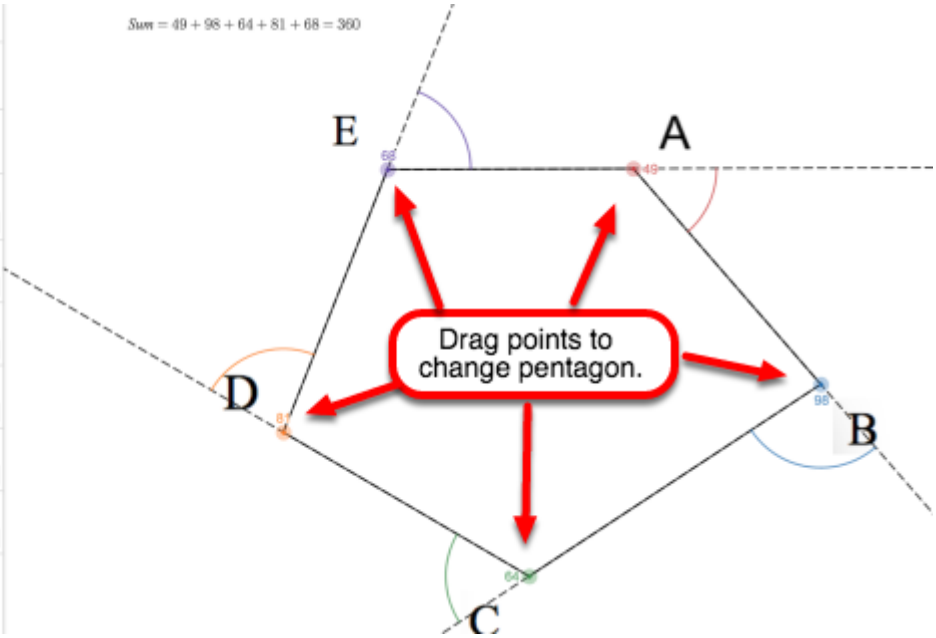
## 1. Triangles:



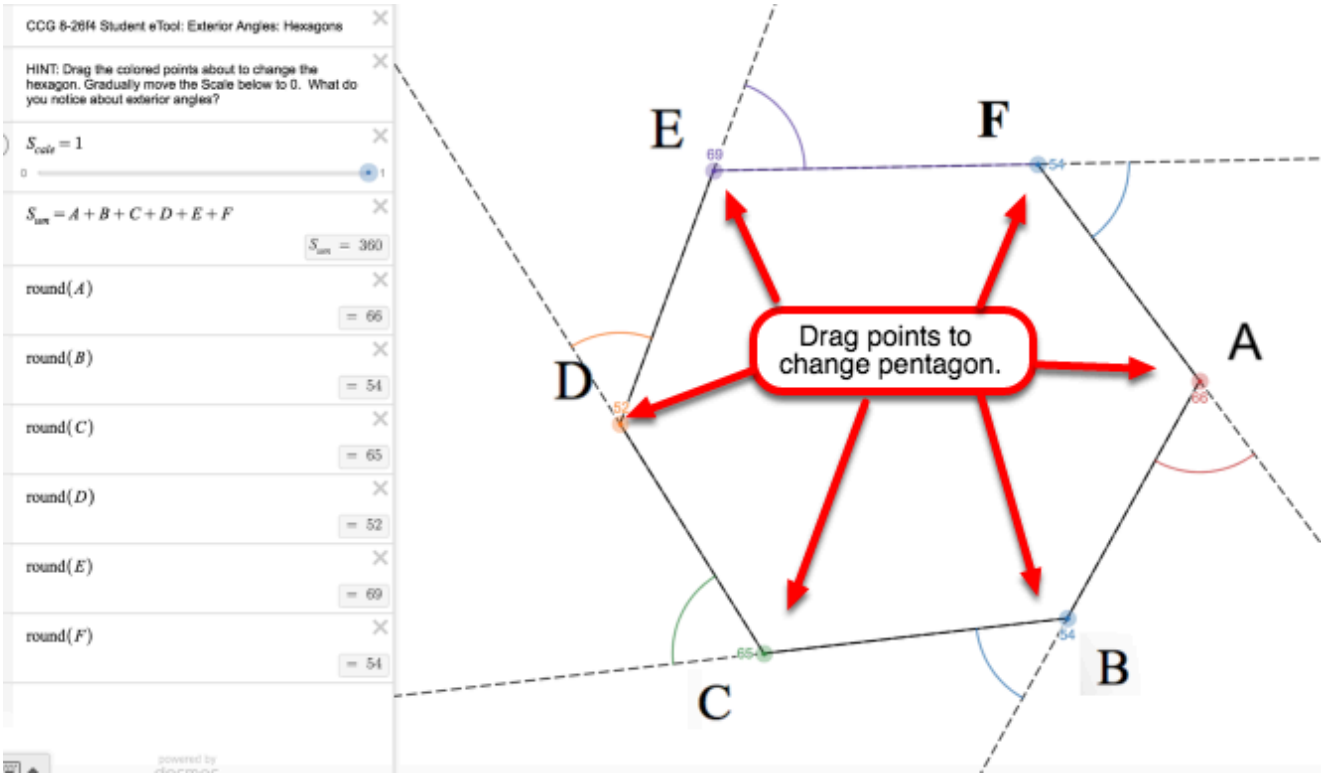
## 2. Quadrilaterals:


## 3. Pentagons:

## 4. Hexagons:

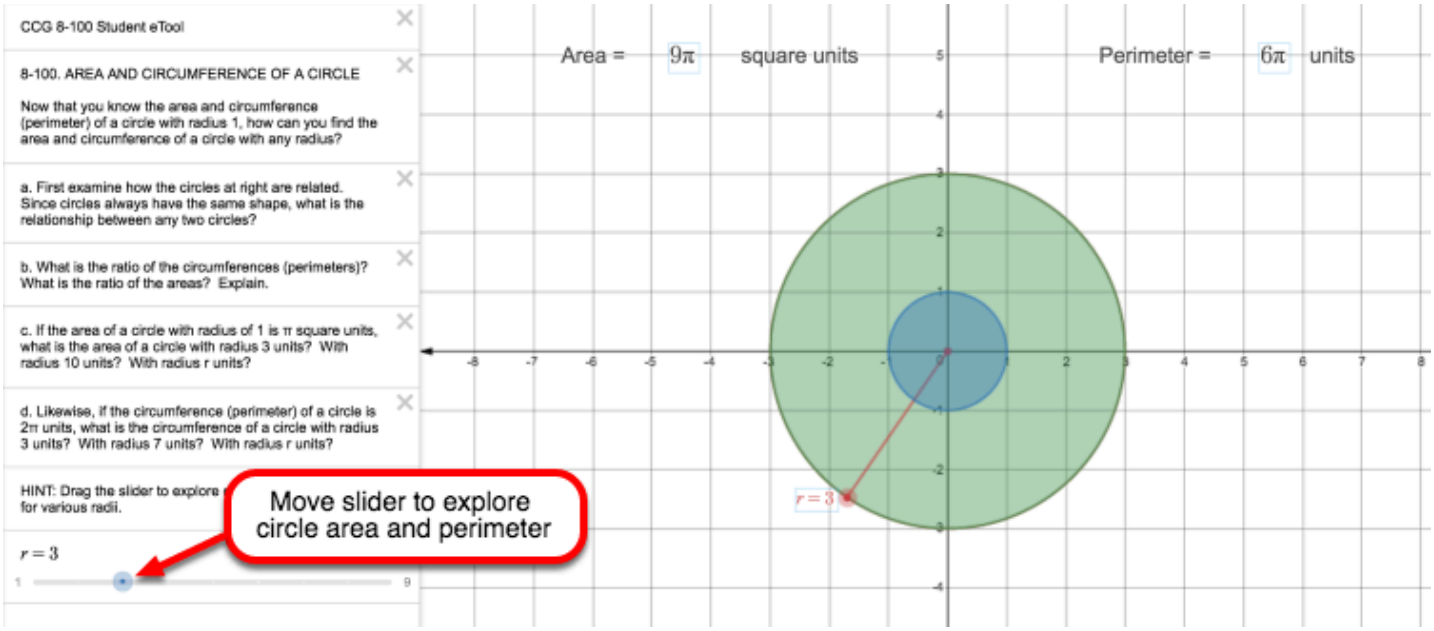

CCG 8-26f4 Student eTool: Exterior Angles: Hexagons
HINT: Drag the colored points about to change the hexagon. Gradually move the Scale below to 0. What do you notice about exterior angles?
$S_{calc} = 1$
$S_{sum} = A + B + C + D + E + F$
$S_{sum} = 360$
round(A) = 66
round(B) = 54
round(C) = 65
round(D) = 52
round(E) = 69
round(F) = 54
E
F
A
D
B
C
Drag points to change pentagon.

# CCG 8.3.2: 8-100 Student eTool (Desmos)

## Click on the link below to access eTool.

8-100 Student eTool (Desmos)

## Move the slider to explore circle area and perimeter.



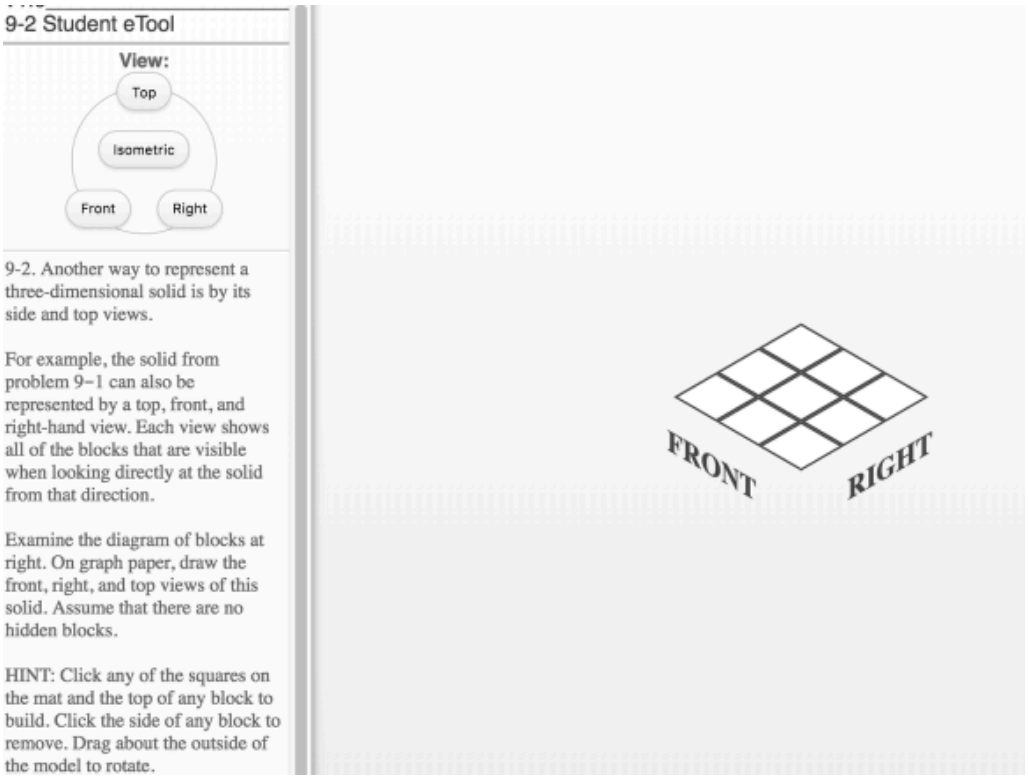
# Chapter 9

# CCG 9.1.1: 9-2 Student eTool (CPM)

## Click on the links below to access eTool.

9-2 Student eTool (CPM)
See 3D Bocks eTool for instruction on how to use the blocks.

## Use eTool to create solids in problem 9-2.

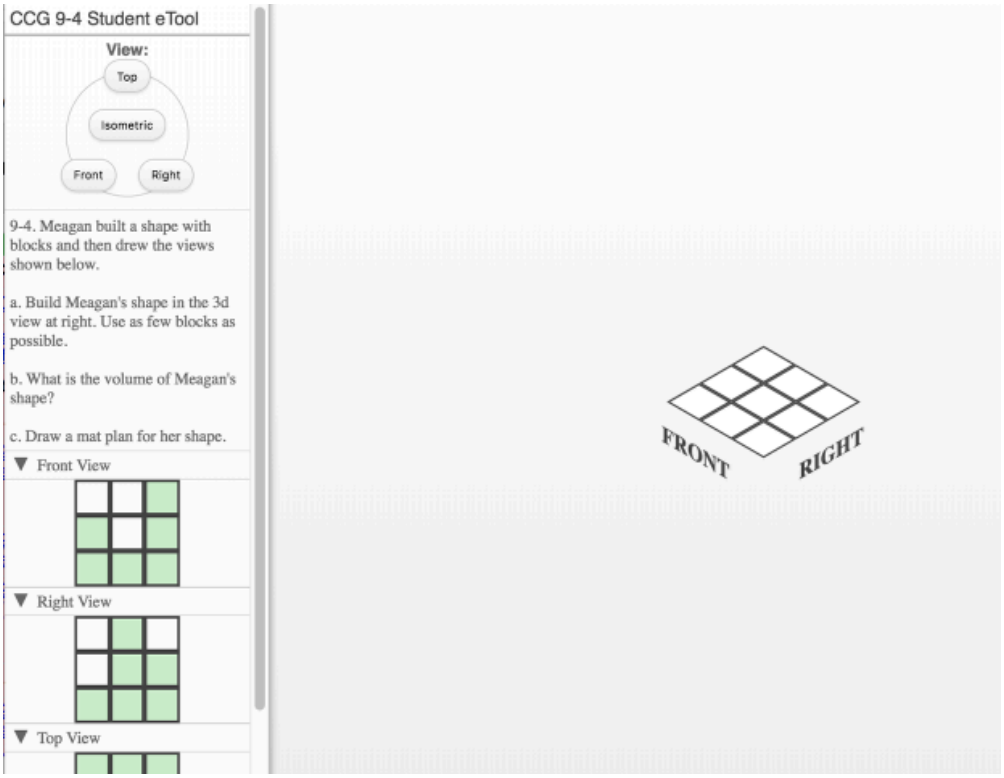


# CCG 9.1.1: 9-4 Student eTool (CPM)

## Click on the links below to access eTool.

9-4 Student eTool (CPM)
See 3D Bocks eTool for instruction on how to use the blocks.

## Build Meagan's shape in problem 9-4 with the eTool.

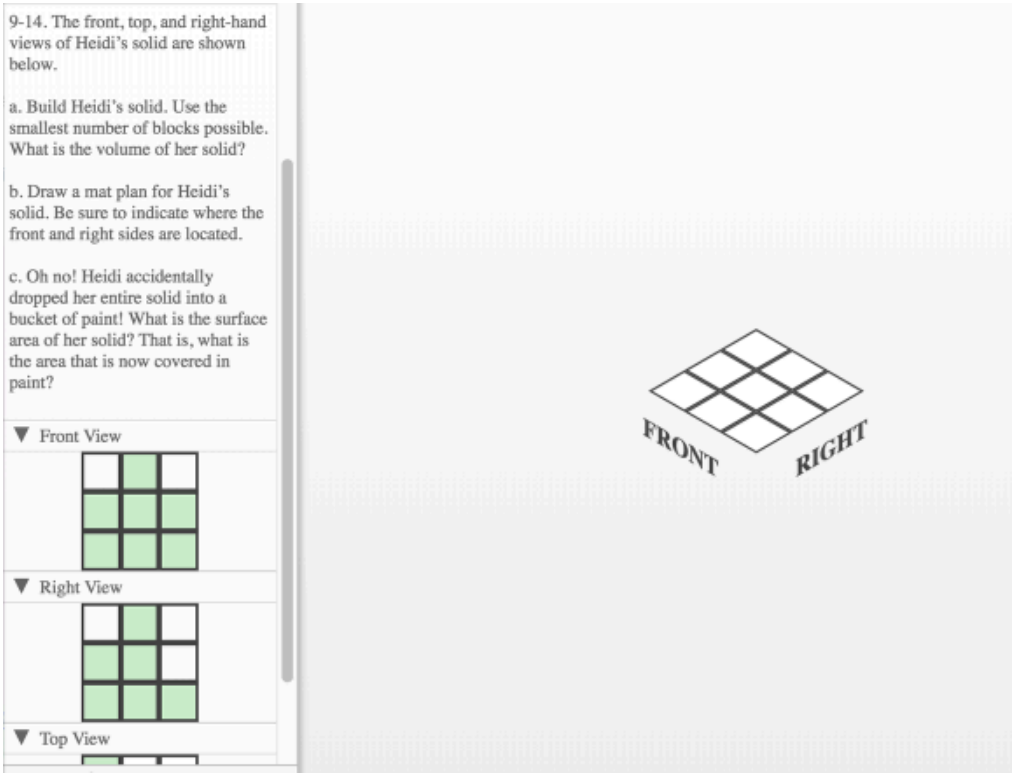


# CCG 9.1.2: 9-14 Student eTool (CPM)

## Click on the links below to access eTool.

9-14 Student eTool (CPM)
See 3D Bocks eTool for instruction on how to use the blocks.

## Build Heidi's solid using the eTool.



# Chapter 11

# CCG 11.2.2: 11-92 Student eTool (Desmos)

## Click on the link below to access eTool.

11-92 Student eTool (Desmos)

## Drag the red 'Satellite' point to each Satellite (A, B and C). The angle measurements for D, E and F will display.