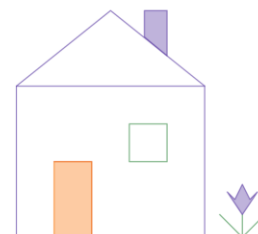


## Creating Maths Art in Desmos (using polygons and straight lines)

These instructions show you how to add some finishing touches to the picture you created with polygons. Work through them to make sure you understand how to use straight lines in your own creation.



### Drawing the bottom of the roof

1. Enter:  $y = 4 \{0 < x < 5\}$  This will draw the line  $y = 4$  for  $x$  values between 0 and 5.
2. Change the colour of the line to purple: long hold the coloured circle on the left to get the format menu.

### Drawing the flower stem and leaves

3. Enter:  $x = 6 \{0 < y < 0.6\}$  This will draw the line  $x = 6$  for  $y$  values between 0 and 0.6.
4. Enter  $y = -x + 6 \{5.4 < x < 6\}$  This will draw the line  $y = -x + 6$  for  $x$  values between 5.4 and 6.
5. Enter  $y = x - 6 \{6 < x < 6.6\}$  This will draw the line  $y = x - 6$  for  $x$  values between 6 and 6.6.
6. Change the colour of the lines to green: long hold the coloured circle on the left to get the format menu.

### Drawing the flower

7. Repeat the method for the door.  
 Use this table of values for your polygon:

$x_4$	$y_4$
6	0.6
5.6	1.2
5.8	1
6	1.4
6.2	1
6.4	1.2

8. Enter: **polygon(x4,y4)**  
 (This table has  $x_4$  and  $y_4$  as column headings).
9. Change the colour of the lines to purple: long hold the coloured circle on the left to get the format menu.

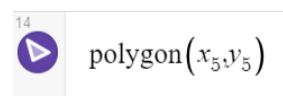


### Drawing the chimney

- Repeat the method for the door.  
 Use this table of values for your polygon.

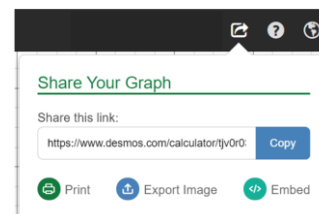
$x_5$	$y_5$
4	4.8
4	6
3.4	6
3.4	5.3

- Enter: **polygon(x5,y5)**  
 (This table has x5 and y5 as column headings).
- Change the colour of the lines to purple: long hold the coloured circle on the left to get the format menu.



### Saving and sharing your file

- Create an account or sign-in.
- Click **Untitled Graph** (top-left) to name and save your art.
- Click on the **Share Graph** icon (top-right) to get a link.



- To view a completed version of this online see: [www.desmos.com/calculator/llzaxwjd1q](https://www.desmos.com/calculator/llzaxwjd1q)
- Video instructions can be seen at: [youtu.be/kxghw4jvRBs](https://youtu.be/kxghw4jvRBs)
- Desmos art can be seen at: [www.desmos.com/art](https://www.desmos.com/art)

## MEI Desmos Maths Art Competition 2020 Rules

Maths Week England will run from 9<sup>th</sup>-14<sup>th</sup> November 2020. As part of Maths Week England MEI is running a Desmos Maths Art competition. For more details see: [mei.org.uk/competitions](https://mei.org.uk/competitions).

### Theme and judging criteria

The theme of the MEI Desmos Art Competition is “*The Environment*”.

Entries will be judged on the following criteria:

- Quality of the art.
- Use of Mathematics.
- Interpretation of the theme: “*The Environment*”.

### Prizes

There will be two prizes in each of three age categories:

- School years 7-9.
- School years 10-11.
- School years 12-13.

Our kind friends at Desmos are providing the following prizes for each of the six winners:

- Desmos swag-bag including a T-shirt for the student
- Desmos T-shirt and socks for the teacher

### Competition details:

- Entries are open to all schools/colleges in England.
- Students will be judged in one of three age categories: years 7-9, years 10-11 and years 12-13.
- The judging panel will consist of staff from MEI.
- By submitting an entry to the competition students are giving permission for the art to be published on the MEI website.
- MEI will contact schools/colleges prior to publishing art online to ask how the student should be credited. No student or school/college names will appear online without permission. Our full privacy notice can be viewed at: [mei.org.uk/privacy-notice](https://mei.org.uk/privacy-notice).
- Teachers are expected to ensure that each entry is the student’s own work.
- We cannot accept images that are **similar to copyrighted material**. For example, the art should not depict cartoon characters whose image is copyrighted.

### How to enter:

- The list of entries from a school/college must be submitted from a **school/college email address**.
- Entries must be submitted by teachers listing each student’s name, year group, the name of the school/college and a link to the student’s art on the Desmos website.
- A maximum of one entry per student is permitted.
- Entries should be emailed to [competitions@mei.org.uk](mailto:competitions@mei.org.uk) with the subject line: *MEI Desmos Maths Art Competition*.
- Closing date for submissions is 4pm on **Friday 20<sup>th</sup> November 2020**.