Papercraft "Collar" Custom Extension for Inkscape 1.1 by Obzerving

Installation

1. DOWNLOAD THE EXTENSION FILES AT https://github.com/obzerving/Collarz
2. Left-click on "CODE" and download the zip.
3. **Copy** the collarz.py and collarz.inx files to your folder at (if C: is your main disk)
   C:\Users*YOUR_USERNAME*\AppData\Roaming\inkscape\extensions
4. (close and) Restart Inkscape
5. Access the extension through Extensions->Papercraft

The Collar extension can be used by papercrafters to design a truncated regular polygon.

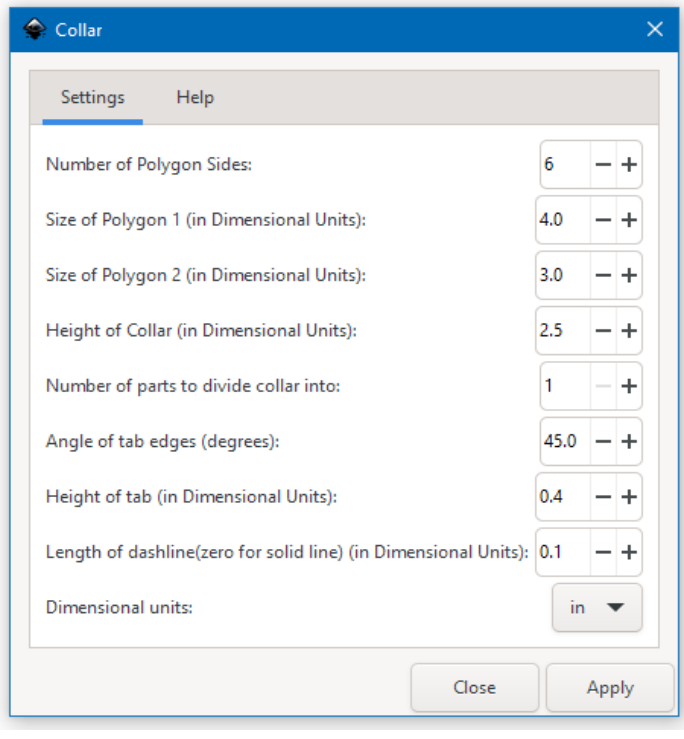
The user inputs the number of sides for the overall polygon shape, the width of the "collar" at the top and at the bottom, and also the height of the collar.

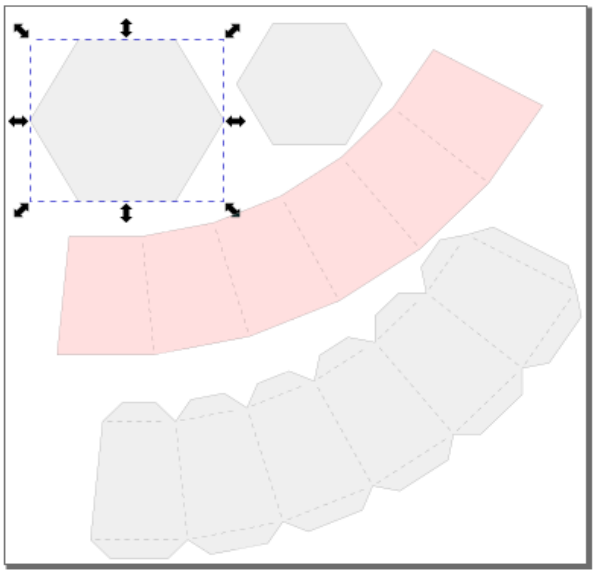
For instance, this "cookie jar" was designed using the collar extension. One collar forms the top, one the main body, and one collar forms the base:

The output of the program provides the side, top and bottom pieces—with gluing tabs where needed—as well as untabbed pieces that are used for cutting the decorative/wrapper paper to cover the outside of the object.

Below is an example of how the it would look in use (note: the pieces are on top of each other when the extension finishes. I moved them apart so you could see all of them)

Parameters:





1. **Number of sides:** How many sides does the polygon have. (limit: 30)

2. **Size of Polygon 1** (in dimensional units): Width* of the top polygon.

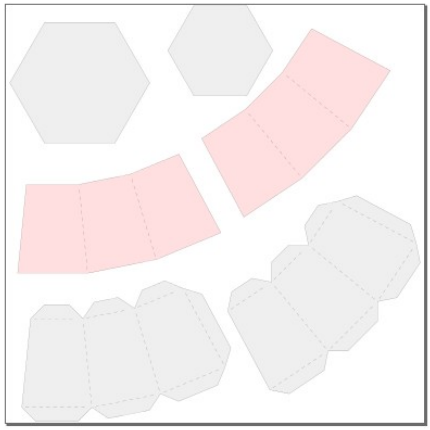
3. **Size of Polygon 2** (in dimensional units): Width* of the bottom polygon.

4. **Height of the collar** (in dimensional units): When built, how tall will the collar be?

5. **Number of parts to divide collar into**: Some larger collar objects may be too large to cut on a single sheet of paper.

   If so, you can choose to divide the pieces into smaller ones that can be glued end to end to construct the sides of the object.

   If you use 2, for example the output from the above example would look like this:



6. **Angle of tab edges**: Adjust if you want the edges of your tabs to be at a more or less acute angle.

7. **Height of tab**: how high you want your tabs to be. If you want more gluing area, increase this. If your design has cutouts and tabs need to be shorter, decrease.

8. **Length of dashline** (in dimensional units): If you want your output to have cut scorelines—a series of short "dash-like" segments, set this parameter to the length you want for each. Note that longer dashes may result in missing dashes. 0.1 inch (2.5mm) works well for most objects. Dashed score lines are part of the single path that defines the piece.

   If you use a **zero** here, then the score line will be **solid**.
   IMPORTANT: *Solid score lines and the corresponding shape will be separate paths*, and grouped together. In your objects panel, the object labels will help you identify the pieces (model, score, group, etc). Please see note 7 below for Design Space regarding groups.

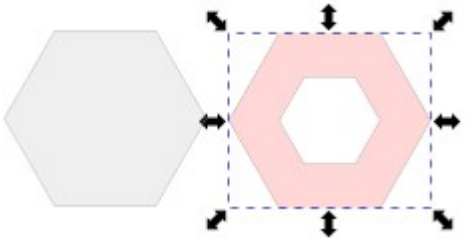
9. **Dimensional units:** select the unit that matches your document setup.

Suggestions and notes on construction.

1. The decorative wrapper of your pieces will have a different fill from the model/structure pieces.

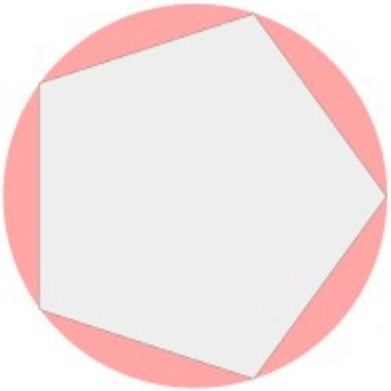
2. There are NOT separate polygons for decorative pieces for the top and bottom Duplicate the polygons as needed for this.

3. Sometimes you may find it easier to work with a "doughnut" or ring shape for gluing tabs instead of —or in addition to— a solid polygon. If so, simply duplicate the solid polygon, and proportionally resize the duplicate to make it smaller. Then center the polygons, then use path->difference to make the ring-shaped polygon. Be sure that you make the cutout small enough that the ring perimeter is wide enough to accommodate the tabs.



4. You can use the collar program to make a **column** if both the top and bottom polygons are the same width.

5. The width of the polygon is based on the "circumradius" of the polygon -the line from the center of the polygon to one of its points. If you have an even number of sides, the width of the bounding rectangle will be the same as the width you specified. Odd numbers of sides will result in the bounding rectangle being smaller, but the diameter of the circle on which all of the nodes lie will be the width you specified.



6. Although your specified tab angle and height will be respected most of the time, there may be settings where they will be adjustedby the extension. For instance if your smallest polygon is smaller than twice the width of the tab, it will adjust to keep your tabs from overlapping.

7. **Cricut Design Space** (DS) has some big issues when dealing with sizing uploaded svg documents. One thing that can cause problems is when groups are moved on the document. If you are using groups (for instance to hold solid score lines with their corresponding shapes,) then just before saving, ungroup and re-group each. This will remove some of the problem code that DS may not handle correctly. Note that this is NOT specific to this extension, but worth mentioning here, in any case. If you are using solid score lines you will need to attach them to their shapes in DS and set them to a line type of "score" before cutting.

8. The smallest polygon than can be accommodated is 0.2 dimensional units.