



**STEAMCODED.ORG**

## Coding Dashed Circles in SVG on a 600 by 600 grid

To get started copy the code of this image into your editor:

<http://steamcoded.org/lessons/grid600x600.svg.txt> and save the file as dashedcircles.svg and open the file in a browser.

- 1: Append the following attributes to the <g> element with style="opacity:0.5;"  
Add style: "stroke:red;"  
Add attribute: transform=translate(300,300)
- 2: Create a <circle> element centered at (0,0) with radius: 290  
Add attribute: style="fill:#333;stroke:none;"
- 3: Create a group element <g> with id="i1"
- 4: Create a <circle> element with id="c1" centered at (0,0) with radius: 280  
Add attribute: style="fill:none;stroke-width:20px;stroke-dasharray:158.337,17.593;"

$Circumference = 2 * \pi * r = 2 * \pi * 280 = 1759.3$

Creating 10 segments requires each to be 175.93

Dividing each segment with a dash to gap ratio of 9 to 1 yields dash of 158.337 and gap of 17.593

- 5: Add a <use> element with attributes:  
xlink:href="#c1"  
transform="scale(0.9)"  
style="stroke:orange"
- 6: Create additional <use> elements like step 5  
scaling each 0.8, 0.7, 0.6, 0.5, 0.4, and  
stroke each yellow, lime, blue, indigo, violet
- 7: Add a <use> element outside group with id="i1" with attributes:  
xlink:href="#i1"  
transform="scale(0.333)"
- 8: Add another <use> element attributes:  
xlink:href="#i1"  
transform="scale(0.111)"
- 9: Add a rotate transformation after the translate(300,300) to rotate the image 1.8 degrees  
transform="translate(300,300) rotate(1.8)

This will rotate the entire image by 1.8 degrees. Since 17.593 is 1/100 of the circumference,  $360/100 = 3.6$ . Rotating 1/2 of the 3.6 = 1.8 degrees centers the image for a clean look.

When complete, change the style attribute of the first element from "display:initial" to "display:none" which hides the grid. Then change the style attribute of the second element from "opacity:0.5" to "opacity:1"