



## Functionally generated plot of $\sin(r)/r$



Ambrosia

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## Summary

A recreation of the cover image of "Graphics on the BBC Microcomputer"

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Tags: [bbc](#) [curve](#) [function](#) [graphics](#) [pixel](#) [plot](#) [sin](#)  
[sine](#) [mathematics](#) [maths](#)

I previously tweeted about this here:

<https://twitter.com/rwhb2/status/1331992852532957188>

but now I've implemented it in OpenSCAD so it is printable and tweakable!

The height is a function of the sine of the radius from the centre of the plot, divided by the size of the radius, i.e.  $\sin(r)/r$ .

There are two different versions here, both "coarse" and "smooth", along with the code to generate them.

The "coarse" version (the yellow one in my pics) is arbitrarily highly pixelated. The version I've uploaded has a "step" of 20 which makes for a nice little "pixel-art" desk ornament when scaled to around 6 or 7 centimetres on a side.

The “smooth” version (the turquoise one) is much higher resolution and has a different implementation, using the super-helpful [OpenSCAD Function Plotting Library by Ryan Colyer](#). As Ryan has kindly released the library under the CC0 license, I have included a copy in the downloads section here.

## Model files



**graphics\_somewhat\_coarse\_20.stl**



**graphics\_step\_20.scad**



**graphics\_smooth.scad**



**graphics\_smooth.stl**



**plot\_function.scad**

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