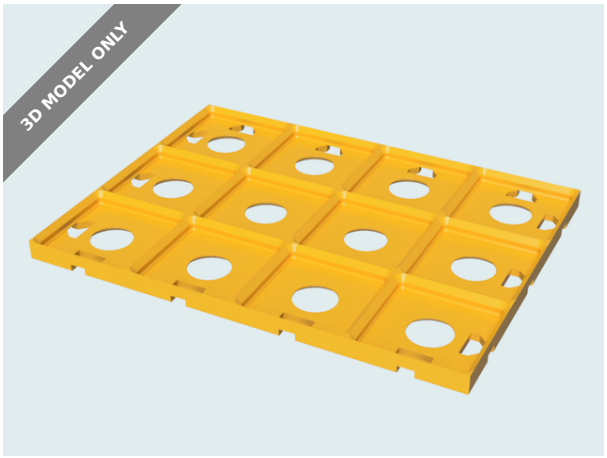


Gridfinity Refined

grizzie17

VIEW IN BROWSER

updated 12. 6. 2023 | published 12. 6. 2023

Summary

Rethinking the implementation of Gridfinity

Hobby & Makers > Organizers

Tags: gridfinity gridfinitybaseplate gridfinityreworked

Gridfinity refined (at least in my humble opinion) ...

Gridfinity Specification

Gridfinity is a set of guidelines and standards, created by Zack Freedman. The general guideline is that everything is a multiple of 7. Baseplate grids are made up of squares that are 42x42 mm. The heights of the bins/ widgets that go into the grids are a multiple of 7 (in theory). I have a more complete Gridfinity Specification available.

Refinements

This implementation of gridfinity honors all of the standards and builds upon them to provide some refinements as well as some alternative options for securing the bins into the baseplate. This implementation also includes a simple method to expand the baseplates beyond the size that you can print on your 3D printer.

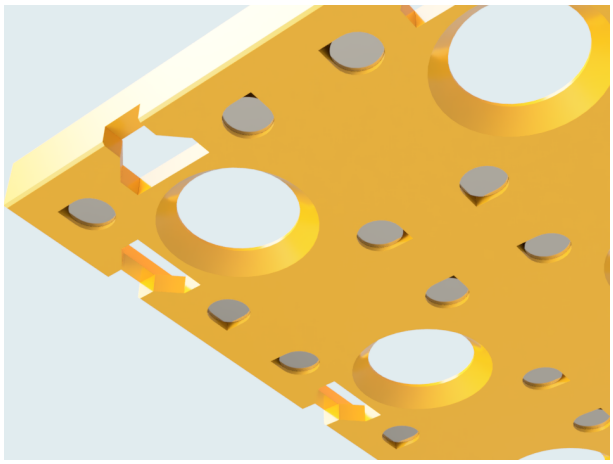
Nothing here is really earth shattering or even completely unique, but it does “refine” the implementation of Gridfinity.

Bin/Widget Implementations

Gridfinity Refined (Printer Tools)
Gridfinity Refined (Valet)

Magnets

We start out by providing press-fit holes for the 6x2mm magnets on the **bottom** of the baseplate. If you do need any glue, it won't interfere with the normal usage.



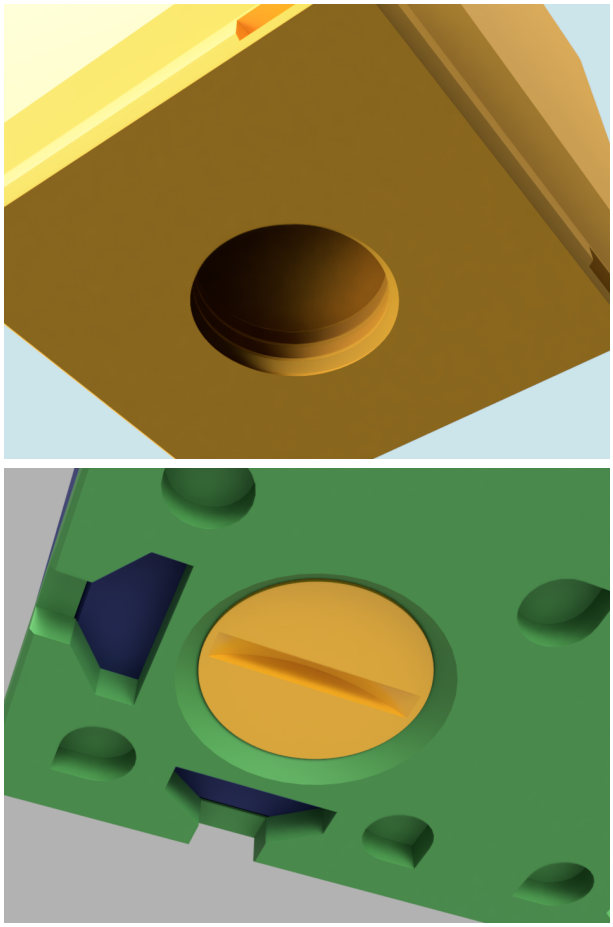
> Experimenting with 6x2mm washers in the baseplate. Will let you know how it goes.

The magnets for the bottom of the bins/profiles are inserted into the side of the widgets. No glue needed.

These slots line up with the “standard” positioning of magnets for the gridfinity baseplate. So, these bins/profiles can be used with any of your already existing baseplates. Again, no glue needed.

Non-magnetic Securing

If you need to secure your bins to the baseplate so they don't come loose at all, a special screw hole and corresponding thumbscrew have been provided.

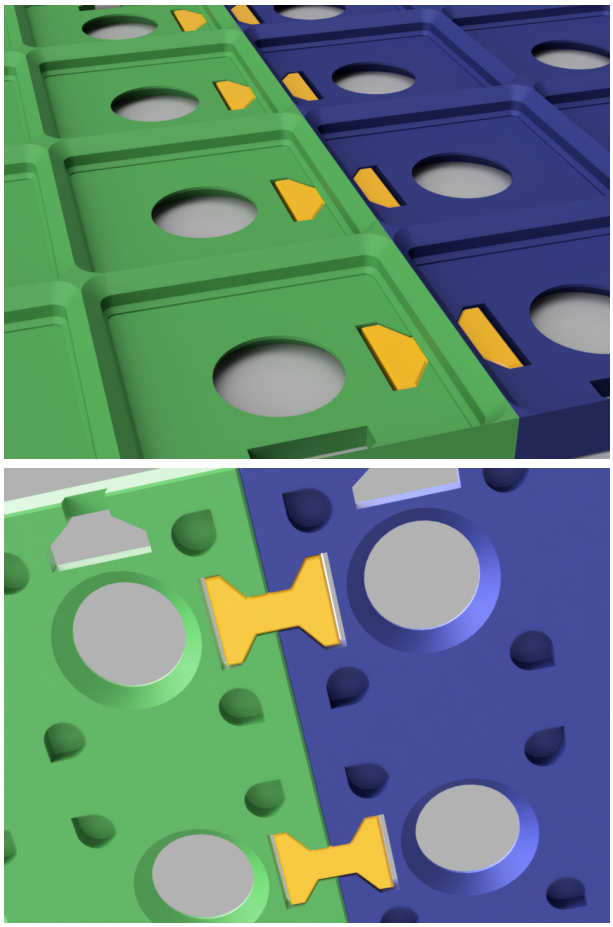


The screw hole will not interfere with other baseplates, but the bin cannot be secured to the other baseplates using the thumbscrew.

There is a provided “Bin Screw Hole” STL that can be used with a boolean operator in your 3D design package to create a threaded hole in other bins.

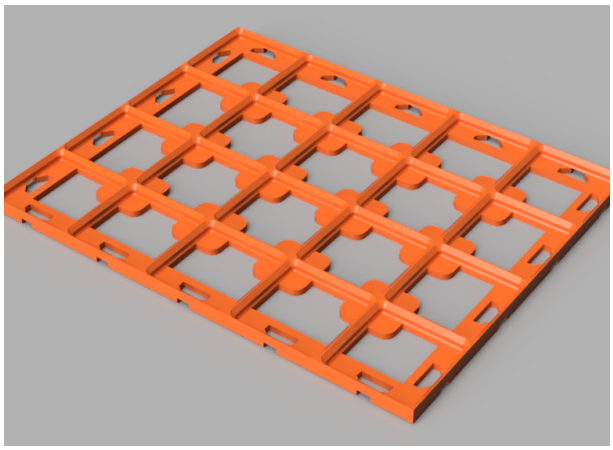
Larger baseplates

A simple butterfly wedge lock is provided for fastening multiple baseplates together.



Minimal Baseplates

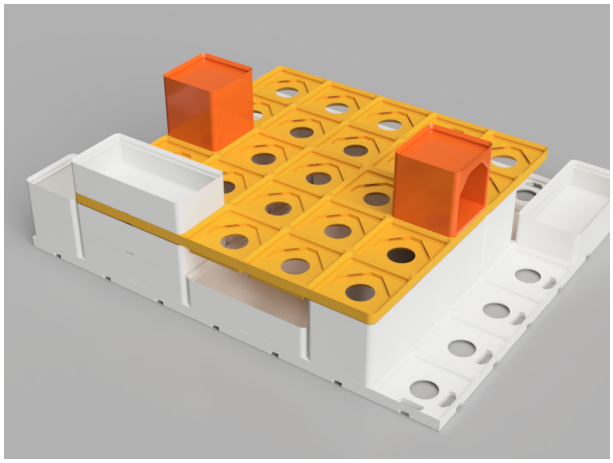
For those not interested in the “screw hole” but still want the “wedge” fasteners and press-fit magnets. EricD created a remix, which inspired a new “minimal/lite” version that uses less filament. Look in the “Baseplates-Minimal” folder.



Stackable Grids

Think about stackable grids as a stable level playing field that is built on top of other stackable bins. There are even special “bins” that can be

secured into the grid (with thumbscrews) that operate as handles (orange in the picture below).



The stackable grid also has slots for magnets.

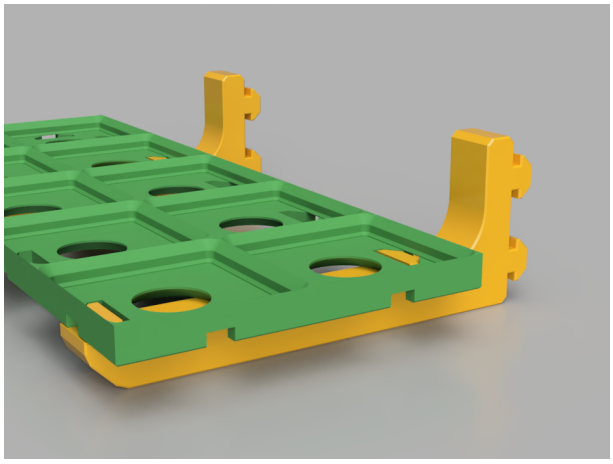
Fusion 360 Files

The Fusion 360 files have been provided so you can import them into Fusion 360 to make your own widgets very easily. Simply open the project and the select “Modify→Change Parameters”, then enter the number of gridfinity columns and rows and the number of gridfinity layers (7mm units).

If you don't have Fusion 360, you can start with the “Bin Base” in the “Core” folder. Place it in your favorite 3D modeling program and then replicate it based on 42mm. Then build a box with rounded corners on top and customize to your liking.

Mounting Options

The Mounting for 4040 extrusions is currently being reworked and tested. And of course, nothing in the 3D printing world happens really fast.



Other mounting options are coming soon. Think: wall-mounted, pegboard, and several others.

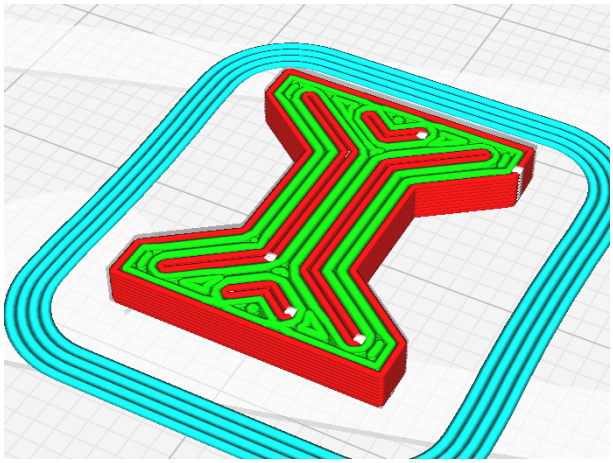
Printing

Surprisingly enough, I have had great success with printing with only 3 walls, top, and bottom layers, and using lightning infill (I have also had very good success with only 2 walls, top and bottom). No supports should be necessary.

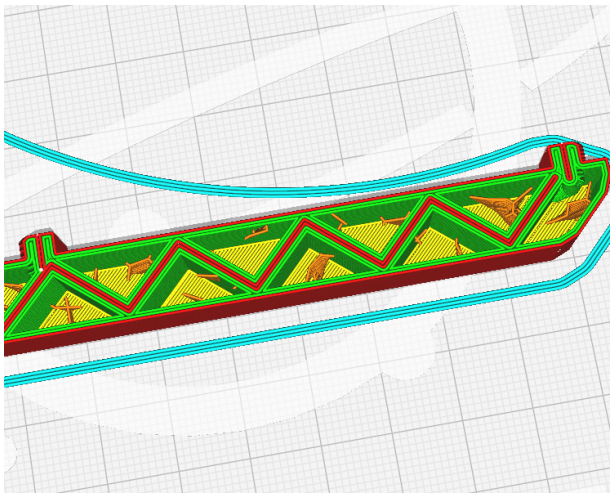
For baseplates you will want to print with 3-5 walls to make the gridfinity walls stronger.

The mounts should be printed on their sides.

Most of the parts that require more substantial internal support have been designed with that support integrated into the model. As a very simple example the wedge-locks used to secure baseplates together.



Or the 4040 mounts.



All models have been tuned for 0.4mm or 0.6mm nozzles.

PLA or PLA+ have been thoroughly tested and tuned.

For those having fitment problems with the butterfly wedge locks. I have tried making them tighter and looser. I suggest printing out a few; if they don't fit then, please scale them in your slicer.

Change History

2023-05-19: slightly larger (read that as tighter fit) Plate-to-Plate file.

2023-05-18: Inspired by a remix by EricD, added a “lite” version of the grid that is absent the Thumbscrew hole to reduce the amount of filament needed for those not interested in the Thumbscrew.

2023-05-09: tweak some of “hidden” slicer walls for better strength and better compatibility with 0.6mm nozzles.

2023-05-09: add new folder of “Blanks” that are bins that can built upon for your custom usage.

2023-03-25: retune to smoothly support 0.6mm nozzles.

2023-03-13: Add stackable grids

2023-03-09: tweak the settings to make the “pressure-fitted” magnets fit better. Allow for printing with only 2 walls, tops, and bottoms. Rename to be consistent with the “standard” regarding “XxYxZ” (previously I was using Z as the first number.

Model files

Core 10 files

bin-handle-w-lip.stl

bin-thumbscrew.stl

bin-thumbscrew-stackable.stl

bin-screw-hole.stl

bin-master.f3z

bin-master-w-lip.f3z

bin-base.stl

stackable-grid-template.f3d

grid-master-mk2.f3d

plate-to-plate.stl

Baseplates 28 files

grid-1x1.stl

grid-2x1.stl

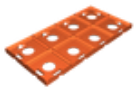
grid-2x2.stl

grid-3x1.stl

grid-3x2.stl

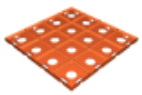
grid-3x3.stl

grid-4x1.stl



grid-4x2.stl

grid-4x3.stl



grid-4x4.stl

grid-5x1.stl

grid-5x2.stl

grid-5x3.stl

grid-5x4.stl

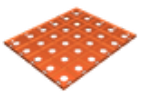
grid-5x5.stl

grid-6x1.stl

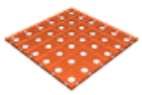
grid-6x2.stl

grid-6x3.stl

grid-6x4.stl



grid-6x5.stl



grid-6x6.stl

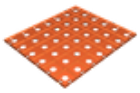
grid-7x1.stl

grid-7x2.stl

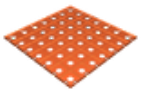
grid-7x3.stl

grid-7x4.stl

grid-7x5.stl



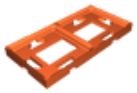
grid-7x6.stl



grid-7x7.stl

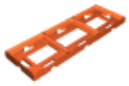
Baseplates Minimal 28 files

gridlite-1x1.stl

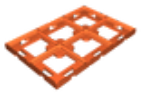


gridlite-2x1.stl

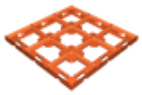
gridlite-2x2.stl



gridlite-3x1.stl

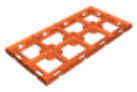


gridlite-3x2.stl

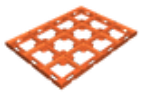


gridlite-3x3.stl

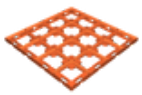
gridlite-4x1.stl



gridlite-4x2.stl

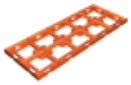


gridlite-4x3.stl

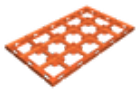


gridlite-4x4.stl

gridlite-5x1.stl



gridlite-5x2.stl



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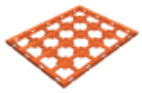

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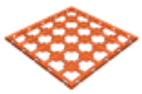
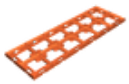


gridlite-5x5.stl

gridlite-6x1.stl



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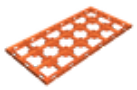

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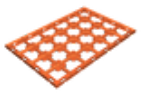

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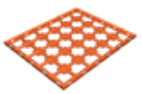
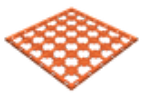
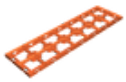


gridlite-6x5.stl

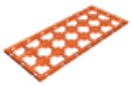


gridlite-6x6.stl

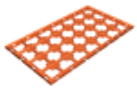
gridlite-7x1.stl



gridlite-7x2.stl



gridlite-7x3.stl



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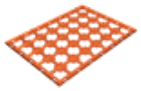

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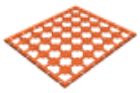

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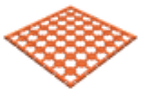


gridlite-7x7.stl

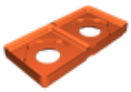
Mounts 2 files

4040-mount-x1.stl

4040-mount-x2.stl

Stackable Grids 28 files

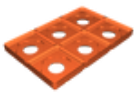
stk-1x1.stl



stk-2x1.stl

stk-2x2.stl

stk-3x1.stl



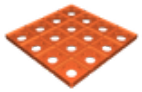
stk-3x2.stl

stk-3x3.stl

stk-4x1.stl

stk-4x2.stl

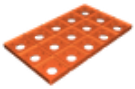
stk-4x3.stl



stk-4x4.stl

stk-5x1.stl

stk-5x2.stl



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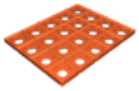

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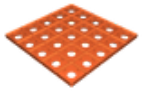

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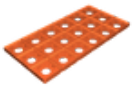
stk-6x1.stl

stk-6x2.stl



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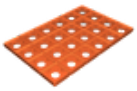

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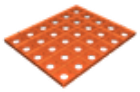

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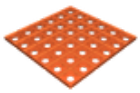
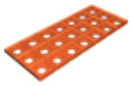


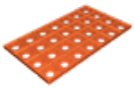
stk-6x6.stl

stk-7x2.stl

stk-7x1.stl



stk-7x3.stl



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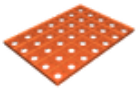

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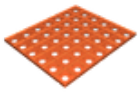

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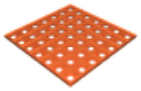
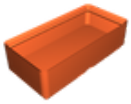


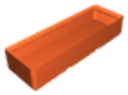
stk-7x7.stl

Sample Widgets 4 files

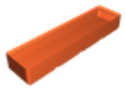
tray-1x1x3.stl



tray-2x1x3.stl



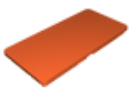
tray-3x1x3.stl



tray-4x1x3.stl

Blank Bins 20 files

blank-1x1.stl



blank-2x1.stl

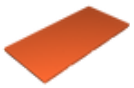
blank-2x2.stl

blank-3x1.stl

blank-3x2.stl

blank-3x3.stl

blank-4x1.stl



blank-4x2.stl

blank-4x3.stl

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blank-5x1.stl

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blank-6x1.stl

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