

# MFtG - Minecraft Fill-tool Generator (v1.0)

This program is designed to help generate ‘simple’ geometric shapes in Minecraft. The output of the program will be the ‘/fill’ commands needed to render the specified shapes, and can be manually entered in the chat window in game or bulk pasted into the server’s console.

**Simply put: This is a 3D printer for minecraft.**

The tool supports both commandline passing of fields for shapes or it can be executed without fields to run in an interactive, Q&A mode.

ActuallyFro - April 2015

## Commandline Flags

The following are all of the supported commandline flags that can be used when executing MFG from a shell:

### Coordinates

- -x <integer>: This sets the X-value starting point for the shape.
- -y <integer>: This sets the Y-value starting point for the shape.
- -z <integer>: This sets the Z-value starting point for the shape.

These values can be found by pressing F3 while running Minecraft.

### Dimensions

The inputs for the shape’s dimensions vary per shape, but ultimately these settings allow for custom skewing of the many of the shapes.

- -depth (-d) <integer>: The North/South or ‘into the screen’ (z-axis)
- -width (-w) <integer>: This sets the width going West/East (x-axis)
- -height (-h) <integer>: This will set how tall the shape is (y-axis)

### Shapes

As of v1.0 there are eight basic shapes that can be selected. These are referred to by their respective 1 through 8 value as defined in the list below. Also, the shapes have a ‘Start’ orientation from where they are measured/placed.

- -shape (-s) <1-8>: Select a shape from the shape ID’s.

### Current Shape List

1. Square (Dimensions: Width; Start: Bottom, SW Corner)
2. Rectangle (Dimensions: Height, Width, Depth; Start: Bottom, SW Corner)
3. Triangular Prism\* (Dimensions: Width, Depth; Start: Bottom, SW Corner)
4. Pyramid (Dimensions: Width; Start: Bottom, SW Corner)
5. Sphere (Dimensions: Width; Start: Bottom, Center)
6. Cylinder (Dimensions: Height, Width; Start: Center)
7. Diamond (Dimension: Width; Start: Bottom, SW Corner)
8. Cone (Dimensions: Height, Width; Start: Center)

### X/Z Centering Math

1. Square (Find SW Corner)
2. Rectangle (Find SW Corner)
3. Tri-Prism\* (Find SW Corner, Subtract Width/2 from X, Add Depth/2 to Z)
4. Tri-Prism Rotated (Find NW Corner, Subtract Width/2 from Z, Subtract Depth/2 from X)
5. Pyramid (Find Center: Subtract Width/2 from X, Add Width/2 to Z)
6. Sphere (Not Needed)
7. Cylinder (Not Needed)
8. Diamond (Find Center: Subtract Width/2 from X, Add Width/2 to Z)
9. Cone (Not Needed)

### Y Centering Math

1. Square (Find Center: Subtract Height/2 from y)
2. Rectangle (Find Center: Subtract Height/2 from y)
3. Triangular Prism\* (Find Center: Subtract Height/2 from y)
4. Pyramid (Find Center: Subtract Width/2 from y)
5. Sphere (Find Center: Subtract Width/2 from y)
6. Cylinder (Find Center: Subtract Height/2 from y)
7. Diamond (Find Center: Subtract Width/2 from Y)
8. Cone (Find Center: Subtract Height/2 from y)

### Material

The material can be ANY minecraft ID that is in vanilla minecraft. (or ID's that are added in mods). Ensure you place any needed colons!

- -material(-m) <minecraft name id>: any block ID.

## Random ID Listing Website

Use at your own risk: [Cheatsheet](#)

## Files

The ability to output the fill commands to a file has been added due to the complexity of the shapes (from poorly optimized area calculations). This allows for the file to be accessed for a simple copy/paste of the fill commands.

**By default the tool appends a file and DOES NOT overwrite the file**

- `-no-file (-nf)`: Triggers that no file is desired and the commands will be printed to the screen.
- `-output-default (-O)`: Output's the commands to 'MFG\_output.txt'
- `-output-true`: Signals the desire to use an output file, but manual entry of the file's name will be needed.
- `-output-name (-o) <string>`: This allows for a renaming of the file's name.

## Hollowed Shapes

This command has been added since its conceivable that shapes would be desired to be hollowed out to help with the creation of structures/buildings. MFG will 'shrink' the given inputs by the desired wall width, and automatically render the commands to fill the shape with air blocks.

- `-nothollow (-nhw)`: Leaves the shape as solid-filled with the original material.
- `-hollow (-hw)`: Signals the desire to automatically generate air blocks, which will hollow out the shape.
- `-width-hollow (-wh)`: Specifies the width/thickness of the shape's walls.

## Target Command Window

Given the complexity of some of the shapes it was determined that a server, console window would be the only realistic means to enter all of the fill commands. The option allows the leading forward slash to be present, or not, on the generated commands.

- `-console`: Prints commands without the leading '/'.
- `-chat`: Prints commands with the leading '/'

## Rotation

Rotation is currently only implemented with the Triangular Prism\*. The default orientation is the 'print' South to North while facing the end showing the triangle. This will rotate the fill to from West to East.

- `-rotate`: Turns the shape generation by 90 degrees clockwise.

## Protips

- `Server.properties`: `max-tick-time=#00...00` – this allows for massive lag
- Windows CMD: `Alt+Space, E, P` – Pastes the buffer to the command line
- Windows CMD: `Alt+Space, E, S, Enter` – Copy the command line to the clipboard
- Always output **shapes with circles** to FILE!
- Use a server to start a single player world as to use the command line
- When you mess up: find and replace all ID's with 'air' to 'delete' the blocks

## Command Line Execution Examples

**Nether Brick Cone having a diameter of 10, and height of 5 @ <286,3,-277>:**

```
MFG -m double_stone_slab:6 -s 8 -x 286 -y 3 -z -277 -height 5 -width 10 -nf -nhw -console
```

**Quartz Cylinder (diameter of 5, height of 50 @ <286,7,-277>) with a file:**

```
MFG -m minecraft:quartz_block -s 6 -x 286 -y 7 -z -277 -h 50 -w 5 -console -O -nhw
```

**Brick Diamond having a width of 10@ <276,14,-267> (center at 286,25,-277):**

```
MFG -m minecraft:brick_block -s 7 -x 276 -y 14 -z -267 -w 20 -hw -wh 1 -console -nf
```

**Glowstone 'Rectangle', manually hollowed out (width of 21/19@ <276,24,-267>:**

```
MFG -m glowstone -s 2 -x 276 -y 24 -z -267 -w 21 -d 21 -h 1 -console -nf -nhw  
MFG -m air -s 2 -x 277 -y 24 -z -268 -w 19 -d 19 -h 1 -console -nf -nhw
```

**Glowstone Tri-Prism having a depth of 3@ <281,22,-276>:**

MFG -m glowstone -s 3 -x 281 -y 22 -z -276 -w 10 -d 3 -console -nf -nhw

**Glowstone Tri-Prism having a depth of 1@ <281,22,-277>:**

MFG -m glowstone -s 3 -x 286 -y 22 -z -282 -w 10 -d 1 -console -nf -nhw -rotate

**Lava Sphere having a diameter of 100@ <0,100,0> with a default file:**

MFG -m glass -s 5 -x 286 -y 105 -z -277 -w 100 -hw -wh 1 -console -O *Just open the file, find an replace 'air' with lava.*

**Diamond Pyramid having a width of 50@ <0,100,0> with a default file:**

MFG -m diamond\_block -s 4 -x 261 -y 191 -z -252 -w 50 -nhw -console -O

**Because, Science:**

/fill 286 155 -277 286 155 -277 beacon