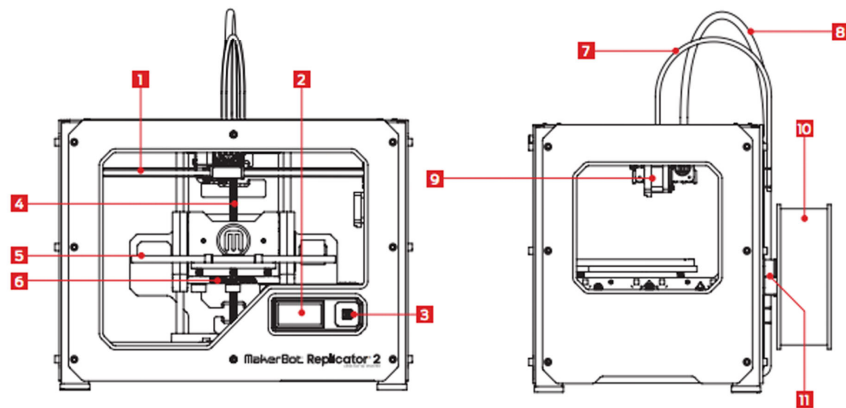


3D PRINTING BASICS

MAKERBOT DIAGRAM:

- [1] GANTRY SYSTEM
- [2] LCD PANEL
- [3] KEY PAD
- [4] THREADED Z-AXIS ROD
- [5] BUILD PLATE
- [6] BUILD PLATFORM
- [7] FILAMENT GUIDE TUBE
- [8] EXTRUDER CABLE
- [9] EXTRUDER
- [10] FILAMENT SPOOL
- [11] SPOOL HOLDER



HOW IT WORKS:

The MakerBot Replicator 2 makes solid, three-dimensional objects out of melted MakerBot PLA Filament. Your 3D design files are translated into instructions for the MakerBot Replicator 2 and sent to the machine via SD card. Then the MakerBot Replicator 2 heats the MakerBot PLA Filament and squeezes it out through a nozzle to make a solid object layer by layer. This method is called Fused Filament Fabrication [FFF].

FINDING DESIGNS:

There are many places online you can find free 3D objects & designs that have been shared by creators from all over the web. **THINGIVERSE.COM** is a great place to start. Once you find something you want to make, you can click “download this thing” and save it for printing or customizing.

MAKING DESIGNS:

Free 3D modeling Software:

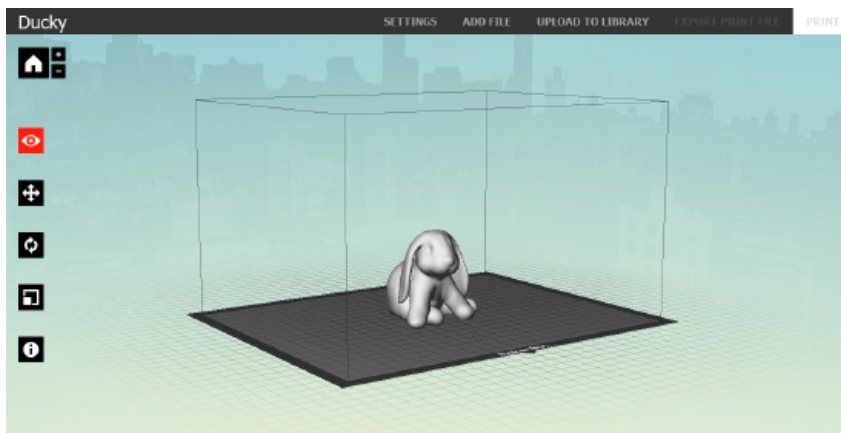
Sketch-Up

Blender

Tinkercad (Tinkercad.com) is a great user-friendly alternative to more technical modeling software. It has a simple, user-friendly interface and is entirely browser based so you don't have to install anything. Tinkercad also features lessons to help get you started.

Remember, your 3D objects need to be saved as **.stl** or **.obj** to be opened in Makerbot Desktop.

PREPARING OBJECTS FOR PRINTING ON MAKERBOT:



To add a model from outside MakerBot Desktop: click **Add File**. Navigate to the location of any STL, OBJ, or Thing file and select the file to add a model to the build plate.

View Options



Click the Home button to reset MakerBot Desktop to the default view of the build plate.

Click the Plus and Minus buttons to zoom in and out. You can also zoom using a track pad or the scroll wheel on your mouse.



Click the View button or press the V key to enter View mode.

- In view mode, click and drag with your mouse to rotate the build plate.
- In view mode, hold the Shift key and click and drag with your mouse to pan.
- Click the View button again to open the Change View submenu and access preset views.

Model Options



Click the Move button or press the M key to enter Move mode.

- In Move mode, click and drag with your mouse to move your model around on the build plate.
- In Move mode, hold down the Shift key and click and drag with your mouse to move your model up and down along the Z-axis.
- Click the Move button again to open the Change Position submenu and center your object or move it by a specific distance along the X-, Y-, or Z-axis.



Click the Turn button or press the T key to enter Turn mode.

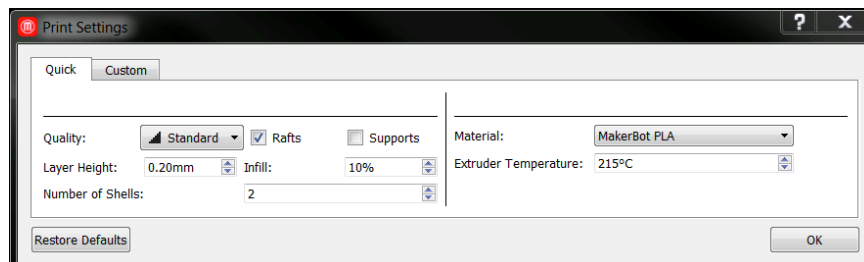
- In Turn mode, click and drag with your mouse to rotate your model around the z-axis.
- Click the turn button again to open the Change Rotationsubmenu and lay your object flat or rotate it by a specific number of degrees around the X-, Y-, or Z-axis.



Click the Scale button or press the S key to enter Scale mode.

- In Scale mode, click and drag with your mouse to shrink or enlarge your model.
- Click the Scale button again to open the Change Dimensions submenu and scale your object by a specific amount along the X-, Y-, or Z-axis.

In addition to making decisions about the item's size and position, you can adjust more advanced settings like resolution, thickness, infill, print speed and temperature. Click on "**Settings**" to change these details.



Exporting a Print File: To print via SD card, first make sure the correct MakerBot 3D printer is selected in the Devices menu. Then click **Export Print File**. Your model will be sliced and exported. Print files exported for most earlier MakerBot 3D printers should have a .x3g file extension.

For more help and info about this specific machine, go to: Makerbot.com/support. Underneath "Browse by product" click on the **Replicator 2 Desktop 3D Printer**.