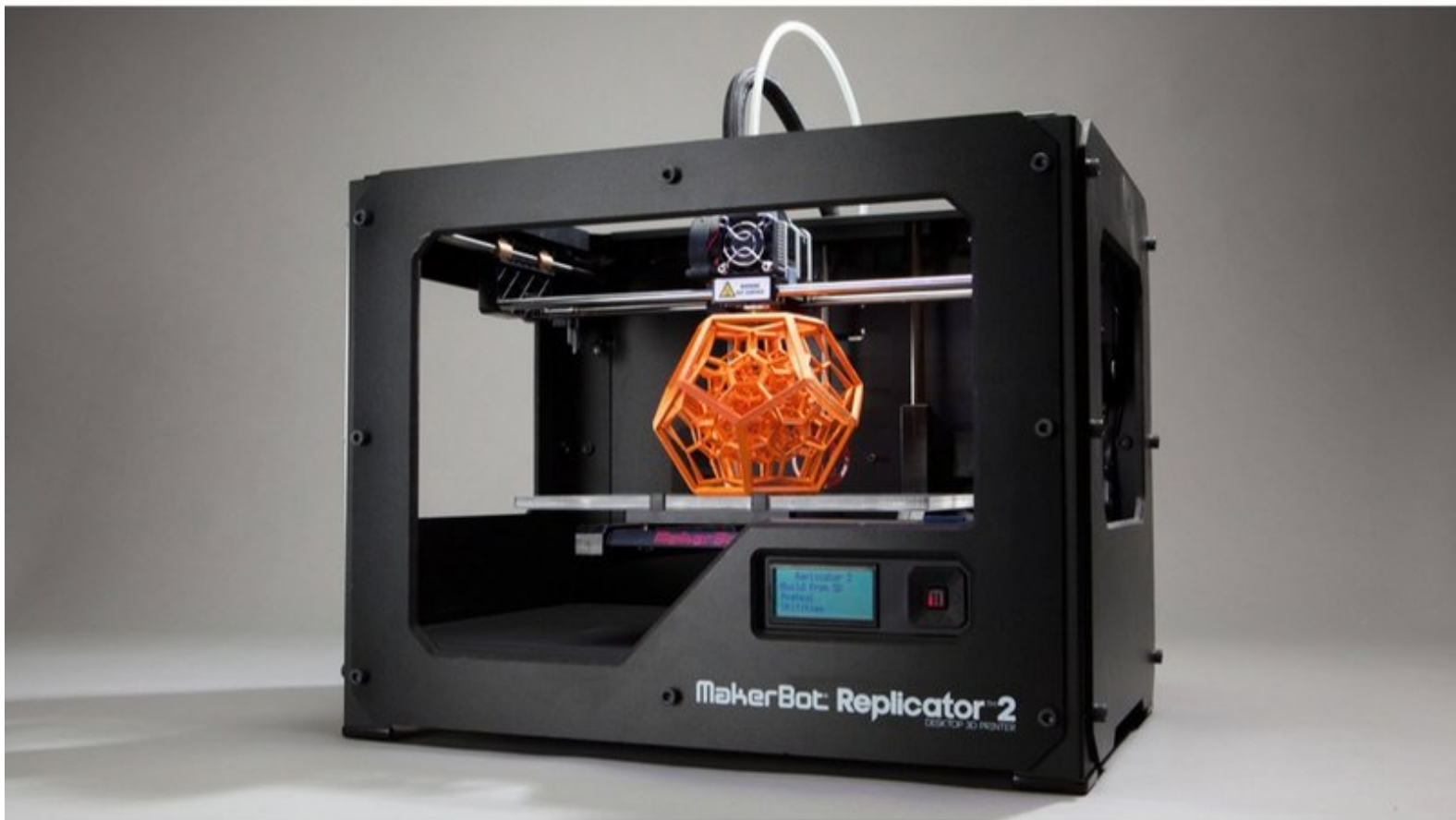# How to Use a 3D printer

How to use the 3D Printer at the ECPL
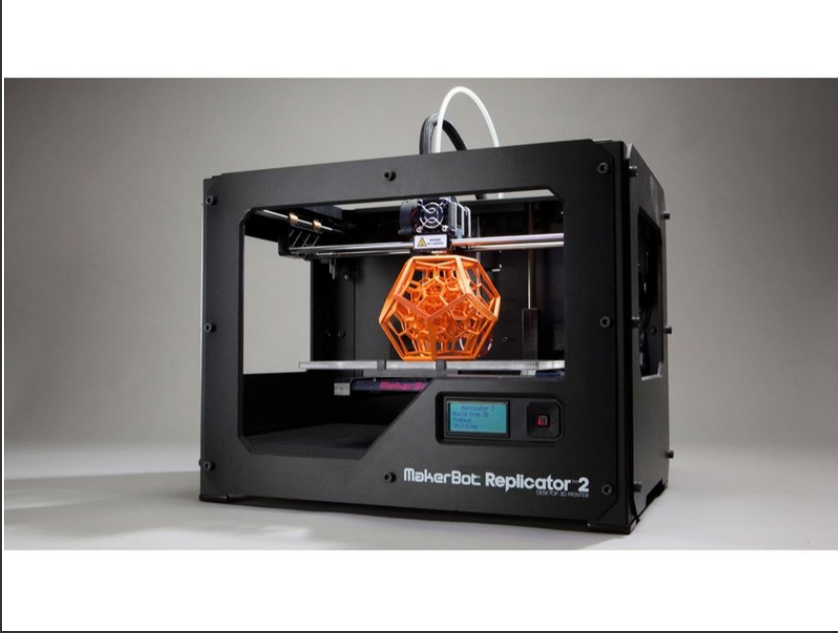
Written By: Jason Swearingen

INTRODUCTION

You've created an amazing object on the Maker Bot software, and now it's time to print your objects. Follow these steps before you load your file into the 3D printer.

## Step 1 — Before You Turn on the MarkerBot Replicator

- Make sure the filament is full

- Pick the side you want to extrude from (You will need to input this information when you prepare your file)

- *(i)* It doesn't matter which side you pick to extrude from.

- Use the spray cleaner and paper towels to clean any leftover oil from the platform (Oil buildup may cause the plastic to stick)
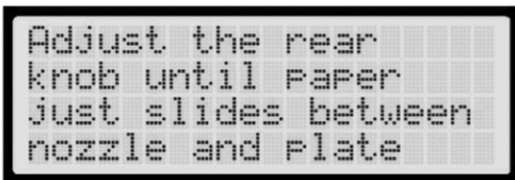
Step 2 — Control Panel
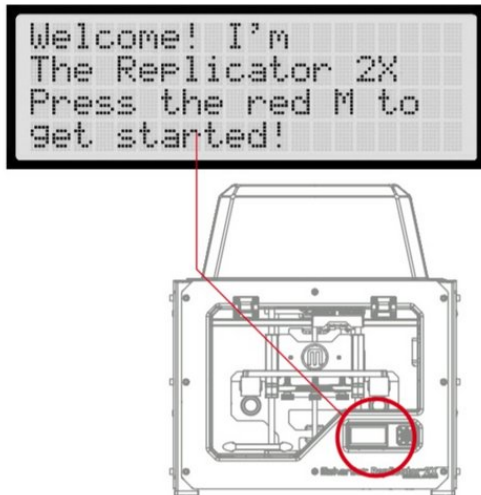
- Press the menu button and scroll through the options

- Click the **Utilities** option under the option box

- Select **Level Build Plate** option

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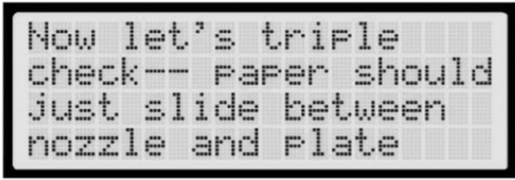
Step 3 — Level The Plate
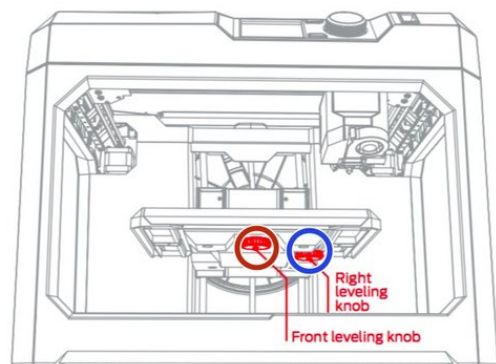
- The plate on the maker bot must be made perfectly level

- Turn the front leveling knob to change the angle from front to back

- Turn the right knob to change the angle from left to right

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Step 4 — After You Level the Plate

- Press the "**Begin Set-up**" button on the control panel to start the process of making sure the plate is level

- Slip a business card between the extruder and the plate, as extruder pauses at the four waypoints on the plate

- ⓘ Make sure there is just enough space between the extruder and the plate to slip in a business card

## Step 5 — Smart Extruder: this is where the filament goes
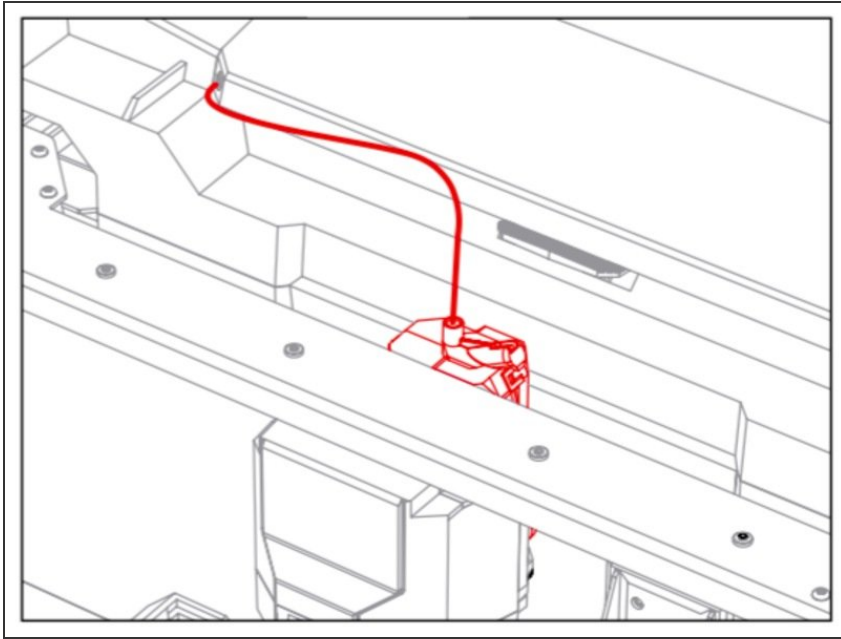
⚠️ **Stop!** If the filament does not look like the picture on the left, go to the help desk and an ECPL librarian will assist you with loading the Smart Extruder

- On the control panel select **Start Extrusion**

- Once you see filament start to come out of the tip, select **Stop Extrusion** on the control panel

⚠️ The plastic will be hot so wait 20 sec, then remove it from the build plate

Step 6 — Making a Test Object
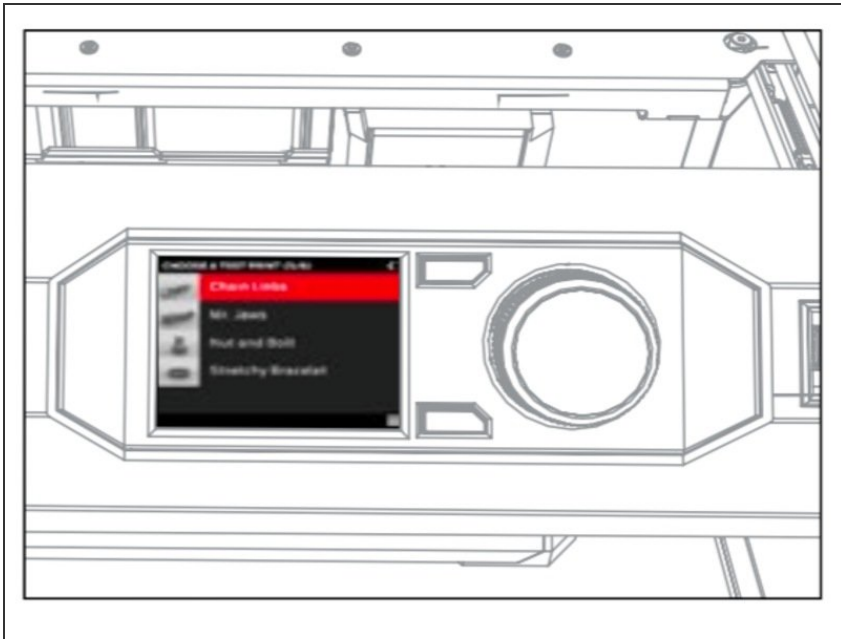
📌 Before you make your object, you should run a test object to make sure the 3D printer is set up correctly

● Use the dial and select **Test File 1** for a dragon and **Test File 2** for a street cone

● Push the dial and you will be taken to a file info page

● Select **Print**

● When the print is done, you should have a 1/2" plastic dragon or pyramid

● Let the object cool before removing it

Step 7 — Check the Test Object
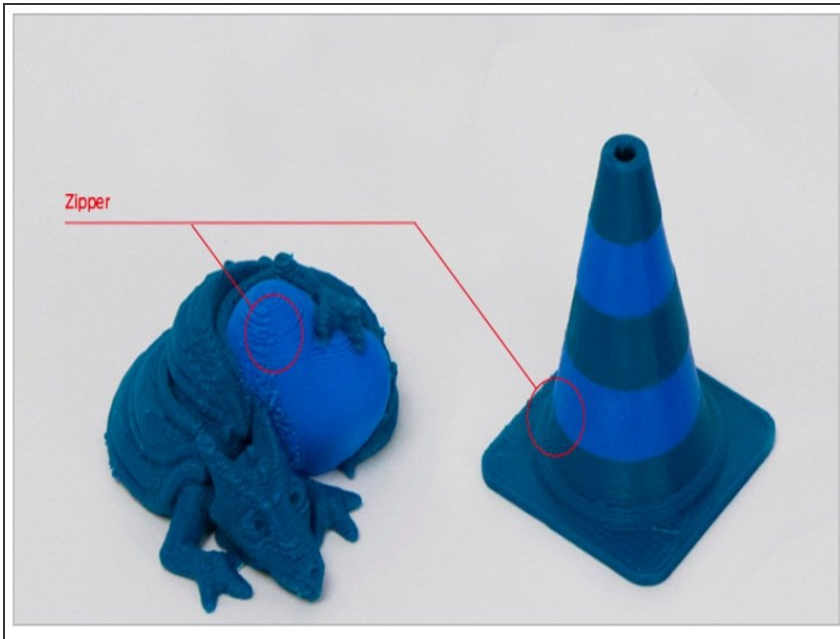
- (i) Your test object should look like one of the two items on the left

- Notice the details of the object, if something does not look right, you should repeat the setup before you print off your design

- If the test object looks perfect then it is time to print off your design

Step 8 — Insert Your File
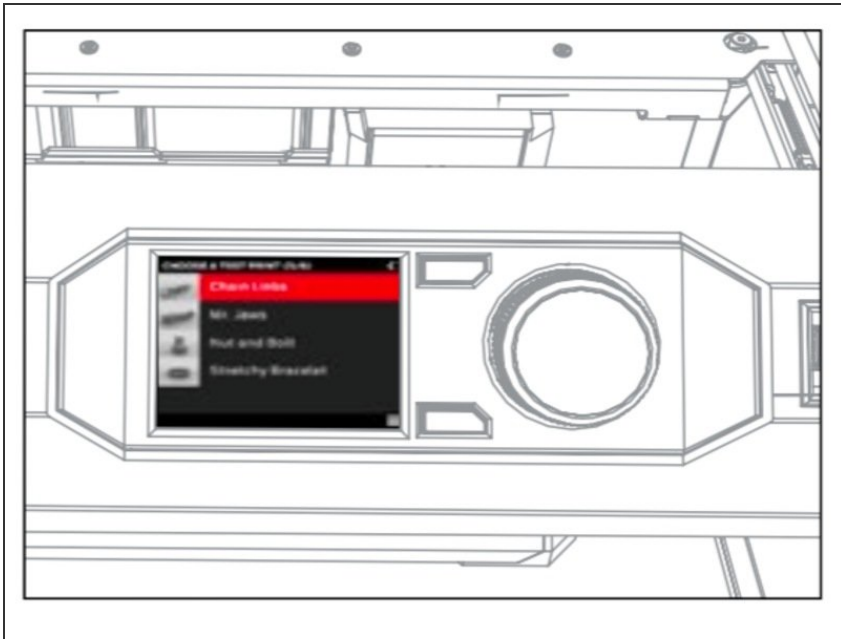
- ⓘ If the test objects are perfect, then you can upload your file with your object into the machine

- Insert a thumb drive that has the **.makerbot** file you want printed into the USB port on the right of the Control Panel

- Select **Upload File** on the LCD Panel

- The LCD panel will display all compatible files on the thumb drive

- Select the file that you want to upload to the MakerBot

- Repeat step 6 selecting the .**makerbot** file you want to print

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Step 9 — When Your Object Is Complete

⚠ Wait until the object has cooled before you remove it from the plate (1-2 minutes is usually enough time)

● When the object has cooled remove it from the 3D printer and admire it deeply

To reassemble your device, follow these instructions in reverse order.