

Teacher Resources: MakerBot Replicator+ 3D Printer

Table of Contents

STEMbound Contact Information.....	2
Equipment Checklist.....	3
Recommended Set Up Instructions.....	4
FAQ.....	4
Extension Resources.....	5

STEMbound Contact Information



If anything seems missing or damaged, please contact us as soon as possible. Thank you!

Contact	Contact Information
STEMbound Team	Email: STEMbound@sourcewell-mn.gov

Website Quick Links		
STEMbound Home Page	Equipment Check-out Library	Consultant-led Learning
	Equipment Request	Consultant-led Request
STEM Network	Partnership in Planning Request	Professional Learning

You can access the above links and more at: <https://mn.sourcewell.org/education/STEMbound>

Equipment Checklist

Item	Picture	Quantity
MakerBot Replicator+ 3D Printer	 A black MakerBot Replicator+ 3D printer with a red filament being printed on a white base. The printer has a transparent front door and a control panel on top.	1 Printer
3D Printing supplies	 A clear plastic storage bin with a purple handle. A blue label is attached to the front. The label reads: 'MakerBot Rental #1', 'Box 1 of 1', and lists contents: 'Computer and Charger', 'Power Cord', 'USB Connector', '3 Rolls of Filament', 'Filament Snipper Tool', and '6 Silica Packets'. Inside the bin, various items are visible, including a green filament spool and a white power cord.	1 Large tote <ul style="list-style-type: none">▪ Computer▪ Computer charger▪ Printer power cord▪ USB connector▪ 3 rolls of filament▪ Filament snipper tool▪ 6 silica packets
Transportation Cart		1 Cart (style may vary)



Recommended Set Up Instructions

- Plug printer and computer into wall outlet.
- Connect computer and printer using connection cord.
- Turn computer and printer on.
- **NEVER** use a screwdriver or other scraping tools to remove print from build plate. Doing so will cause damage.
- **The printer is to always remain on the cart.**

Loading/Removing Filament

- On the MakerBot select “Filament”.
- Select either “unload” or “load”.
- Unloading- the printer will heat up and will reverse the filament out of the extruder.
- Loading -when the extruder is heated to its final temperature, insert the filament into the top of the extruder. When the filament is being extruded through the bottom, press the knob to stop extrusion.

Removing Prints

- Remove build plate from printer.
- Once the build plate is removed from the printer you may bend the plate to remove the print.
- **NEVER** use a screwdriver or other scraping tools to remove print from build plate. Doing so will cause damage.

Printing

- Open MakerBot Print
- In Project Panel select “Add Models”
- Find and select file
- Adjust print as desired.
- Select “Print”

FAQ

How do I connect to the printer? You can use any size of USB Stick, Ethernet cable, or through a USB cable connected to your computer. We send a USB connection cord with the printer.

Does the MakerBot require leveling? Yes, but the build-plate leveling process is faster and more precise than it has been. It uses assisted leveling, which is displayed on the LCD screen. The assisted leveling feature will walk you through the process of turning two knobs underneath the build plate while sensors in the Smart Extruder calibrate the proper positioning.

How do I adjust my Z-axis? On your printer, navigate to the printer panel and select settings. Then select utilities. Next select calibration. Then you will select Z calibrate offset. It will prompt you to unload filament if you have not already done so.

What are the silica packets for? Printer filament absorbs moisture when exposed to air. Overtime, this damages the filament and must be cut off before loading a printer. The user can lose a lot of filament due to air exposure. We ask that if you change colors or have extra filament, you place several silica packets in the bag the filament came in. This will reduce the amount of damaged filament.

How do I trouble shoot the MakerBot?

Troubleshooting MakerBot Replicator+	
Problem	Solution
Computer won't connect with Printer	Unplug and reconnect the connection cord
Extruder Jam	There is most likely a piece of filament stuck in the extruder. Call for support
Print stuck to build plate	Try bending the build plate slightly to free your object. If you still find pieces on the plate, take a thin metal craft spatula and carefully work the blade under your project. When the blade is mostly under the object, twist the handle slightly and the object should come free.
Nozzle is scraping against build plate	You'll want to fix this right away, so no clogs happen. Here are a couple of things to try: <ul style="list-style-type: none"> Make sure you're running the latest version of MakerBot Print Change the starting height of the build plate by manually adjusting the Z-axis offset
Object is Peeling, Curling, or lifting off the build plate	Watch the first few layers to ensure that there aren't any adhesion issues early on in your prints. If there are issues, here are some things to try/consider: If you are printing in a cold or drafty area, this can affect the print as well. Ensure that your build plate is clean. Adjust your Z-axis.

Extension Resources

There are many great resources out there, but here are a few you might want to check out first:

- MakerBot's content connected lessons: tinyurl.com/2p92xp2a
- MakerBot in the Classroom – An Introduction to 3D Printing and Design: tinyurl.com/sjzy29j5
- Kathy Schrock's Guide to Everything – 3D Printing in the Classroom - www.schrockguide.net/3d-printing.html
- Have you considered our 3-D pens? This is another option for creating 3-D projects. [STEMbound Request Link](#)