

Teacher Resources: 3-D Pens

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STEMbound Contact Information

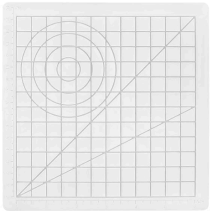
If anything seems missing or damaged, please contact us as soon as possible. Thank you!

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>

3-D Pen Equipment Checklist

Item	Picture	Quantity
3-D Pens		15 Pens
PLA filament		Colors may vary
3D Design plates		15 mats
Silicon finger protectors		Varies 4 sizes available
Charging packs		15 battery packs

Recommended Set Up Instructions

A 3-D Pen informational overview can be found here: [MYNT3D: Professional 3D Pen Tutorial](#)

3-D Pens are very easy to set up and use. Plug the 3-D pen into an outlet or a power pack. Press the feed button to start heating your instrument. This should take about a minute. Then press the feed button two times to turn the pen on. Insert the filament by feeding it through the hole near the power cord. You can use the speed button slide to speed the feeding process up or down.

Care and Maintenance of the 3-D Pens:

- The MYNT3D Pen has a user manual you can access here: <https://tinyurl.com/2k98f9d2>

FAQ

Does the 3-D pen get too hot? The tip of the pen will get hot, however, there are controls on the side of the pen to adjust the temperature. The 3-D pen has a safety feature and will turn off after 2-min of inactivity.

How hot does the pen need to be to work? With the ABS filament that comes with the pen, it should be set at 210. If you choose to purchase or are given PLA filament, it should be set to 175.

How do I change colors? Bring your 3-D pen to temperature. Press and hold the withdraw button until the filament is free. Make sure the new filament is cut correctly, with a straight cut, not a slanted cut.

How do I trouble shoot the 3-D Pen?

Troubleshooting 3-D Pen	
Problem	Solution
My pen won't heat up	Make sure you press the feed button to begin heating. Make sure the power cable is connected securely and the display is on. If the display does not turn on, try an alternate AC to USB adapter if available. If heating mode begins but the current temperature does not rise, the nozzle may need to be replaced. Contact STEMbound at tech.mobile@sourcewell-mn.gov to make them aware of this need.
Unclogging a pen	A good first step is to increase the heat slightly to melt the clog. Some other steps to try are: ▪ Break up stuck filament with a needle. ▪ Do the atomic cold pull method. ▪ Drive cleaning or nylon filament through the 3D pen. ▪ Remove and clean the surface of the nozzle. ▪ Use a solvent to clean the nozzle
Nozzle is pushing out	Reverse the filament so that the nozzle doesn't clog. Clogging can cause the screw tab to break and that requires a nozzle replacement.

Filament is stuck in pen	This can be fixed by STEMbound consultants
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How can I get support? Have you heard of our Partnership in Planning option? A STEMbound II consultant will work with you to plan and implement this device in a way that fits in with the curriculum you are already teaching. Use the contact information above to reach out to us.

Extension Resources

If you are new to 3-D pens, it may seem a bit daunting. But it's not! You can do a lot with 3-D pens. Check out some of these ideas:

- Start with drawing simple 2-D shapes
- Have your students learn how to layer and then air-draw
- Math: Have your students create 3-D shapes
- Science: Create atomic molecules you can display/hang in the classroom
- Social Studies: Historical monuments, architectural designs or structures could be created
- Art: Sculptures and 3-D drawings
- Manufacturing and Design: Create a product, such as, jewelry, game pieces, or other inventions
- Use this 3-D Printing introductory unit: <https://tinyurl.com/4nb3y7c9>
 - Introduce students to the concepts and use the 3-D Pen
 - The next step could be requesting the 3-D Makerbot printer. For more information check out our website: <https://tinyurl.com/3wabtwn>
- There are lots of other great resources out there!