

# 3D printing workshop 2

By Friend

# Workshops

1. Find a model, getting printing profile, slicing, removing item from bed, safety
2. Area explanation, safety, removing support, cleaning bed, changing filament, swapping extruder head, troubleshooting
3. Blender basics, stitching models together

# If there's a word you don't understand in the slide, let me know and I'll add it here

- Purging: pushing old filament out of nozzle as completely as you can, so it doesn't mix with the new filament in the print
- Skirt/brim: types of bed adhesion helper
- PEI sheet: a special sheet glued to the heated glass bed, it helps with adhesion

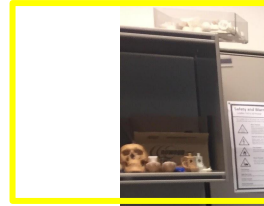
# Tools

- Located at bench
- Both hand tools and safety tools



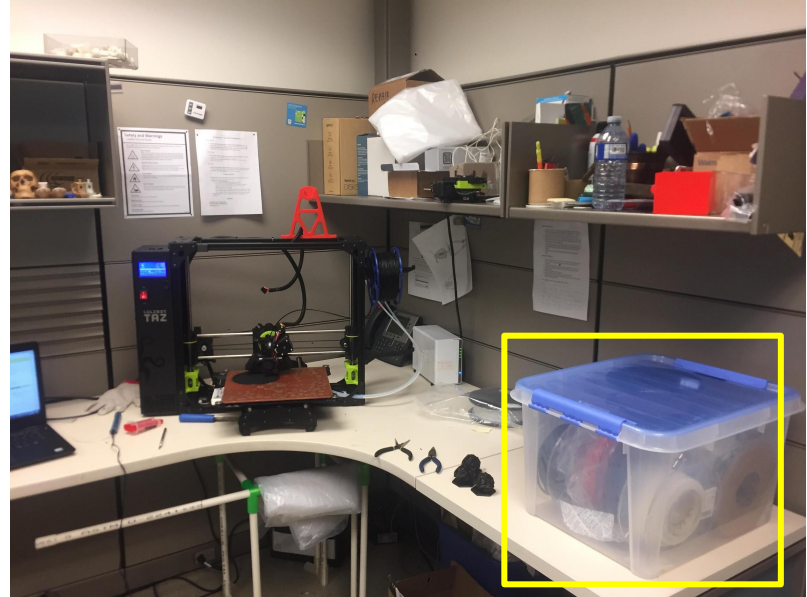
# Friend's stuff

- I have some snacks and clean clothes in there
- If you're stay late and get hungry, feel free to take something; just tell me afterwards
  - Don't take my ice cream in the fridge though
- If you spill water/chemical on yourself, feel free to take my shirt; just tell me afterwards
  - There is: 1 t-shirt, 1 pair of socks, 1 boxers, 1 small towel
  - Wash it before you return too please



# Filaments

- Hive's current use filaments stored in here
- Has loads of humidity sucking packs (I don't know the formal name), so put filaments back in there once you're done with it
- If you ever buy your own filament, feel free to ask me for a storage bag



# Safety sheets

- Simplified safety guide is in [github.com/rprakitpong/HIVE-3Dprinters](https://github.com/rprakitpong/HIVE-3Dprinters) under "HIVE-3Dprinters" -> "Taz 6" -> "Documentations" -> "Maintenance" -> "Info sheets" -> "Super simplified safety sheet pdf.pdf"
- Also located above the printer



# Trash

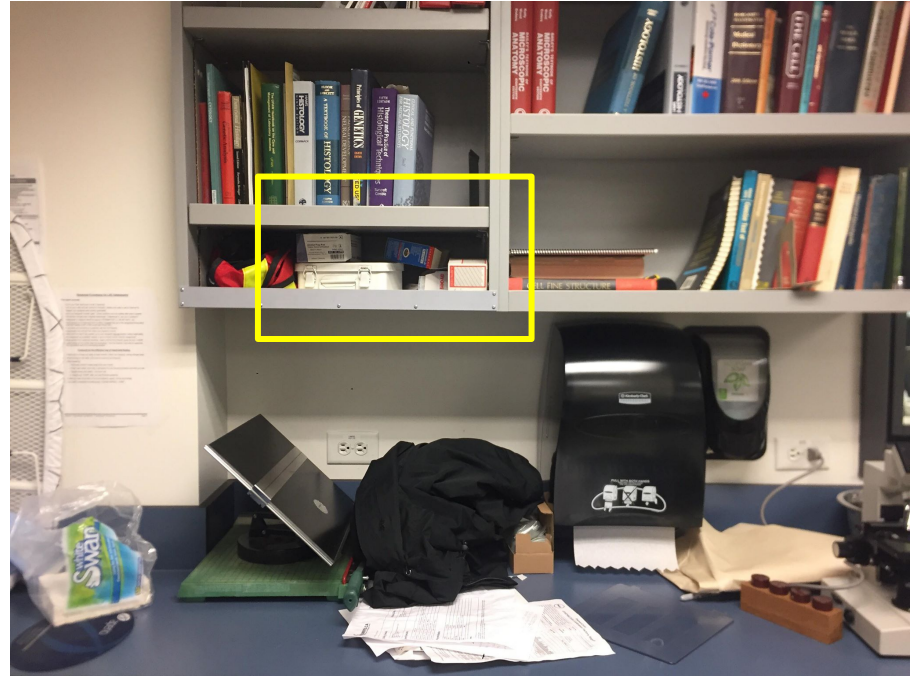
- If it's 3d printed trash, put it into recycling bin (yellow highlight)
- Otherwise, normal bin (green highlight)





# First aid stuff

- There's band aid and alcohol wipes if you ever cut yourself



# Safety

- Key points:
  - If you have something sharp in one hand, put gloves in the other
  - Don't directly touch hot stuff
  - Don't hesitate to call me if there's any issues
    - My number: 778-927-7563

# Laptop

- Password is the same as all other laptops
  - If you don't know, ask around
- There's Cura Lulzbot with all the settings already loaded
- It's a bit slow though

# Removing support

- You should have your prints from workshop 1 where the supports need to be removed
- Use pliers and cutters to pull out support material
- It's a skill you'll eventually get better at
- If dual extruder and you use soluble support: if HIPS, put it in limonene and close the lid, wait for a day for HIPS to get gooey and easy to remove

# Cleaning bed

- Normally, you don't have to do this
- Mix 20% isopropyl alcohol, 80% water in a cup (there's a plastic cup on the bench), use paper towel to wipe solution on the bed, then wipe again with water
- Use P1500 sandpaper (on bench) to sand the bed, then wipe with water
- These two steps are interchangeable

# Changing filament

- Heat nozzle to around 160C
  - 160C generally works with most plastic types
  - Home screen -> "Temperature" -> "Nozzle" -> Scroll to 160C
  - You've learned how to navigate the LCD so I won't go into the detail here
- When it reaches temperature, lift idler retainer as shown so nothing clamps the filament

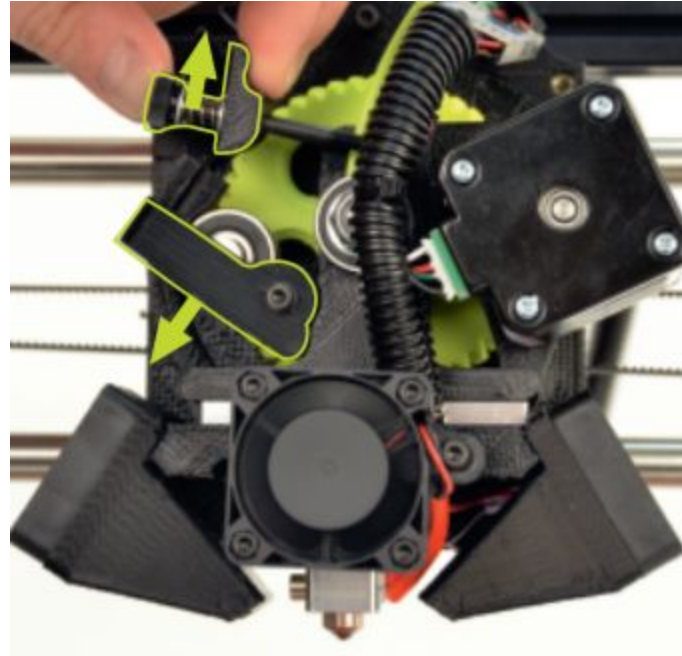


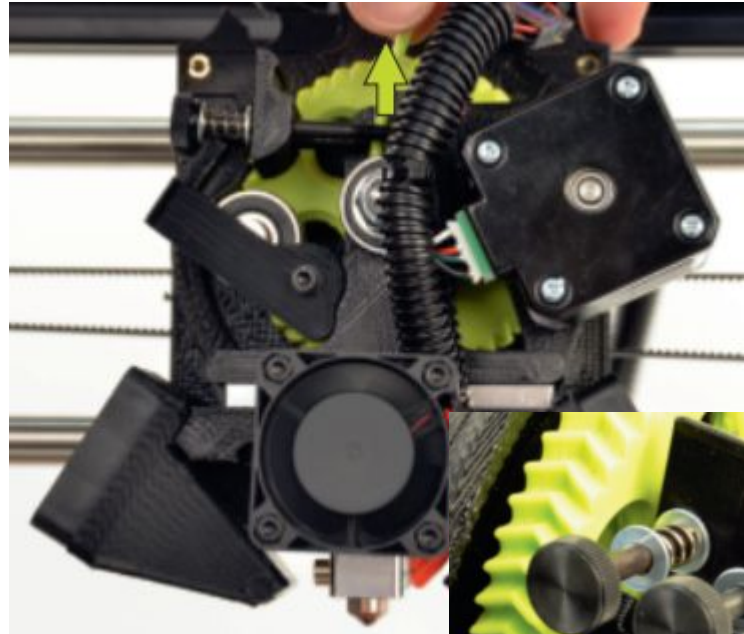
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# Changing filament

- Pull out filament, then put your desired filament in
- Make sure it goes through the feed hole

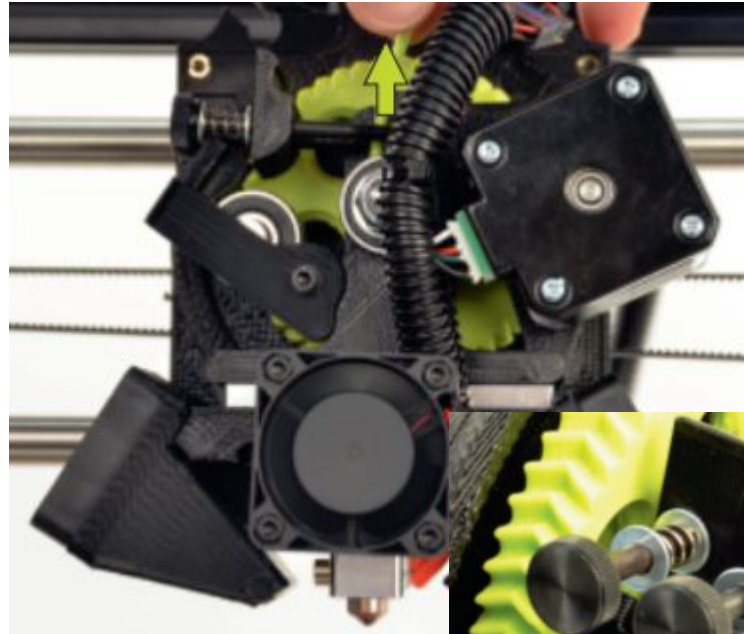
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# Changing filament

- Once it feels stuck, stop pushing and reclamp the idler
  - Official guide uses higher temperature, make you push out new filament to the very end, push out some of the old filament
  - Good practice, but completely unnecessary and a bit wasteful
    - Purging happens through skirt/brim at start of print anyways



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# Swapping extruder

- To switch extruder, you have to swap the physical extruder head, and flash the firmware
- I'll demonstrate
- For written procedure, this is a good guide: [ohai.lulzbot.com/project/lulzbot-taz-dual-extruder-tool-head-v3-install/](https://ohai.lulzbot.com/project/lulzbot-taz-dual-extruder-tool-head-v3-install/); key steps are:
  - 8-11: swap physical extruder head
  - 14-15: install new printer, flash firmware
  - 20, 23: remove old filament and insert new filament

# Troubleshooting

- Simply: if it sounds weird, if it vibrates, if something pops off, turn off the printer (red power switch)
- Common ways it can go wrong
  - Forgot to remove/replace z-calibration button when switching between single and dual extruder
  - Going to low when calibrating, bending the bed
  - Bed temperature too high, PEI sheet warp
    - Shouldn't happen if you stick to settings on github repo