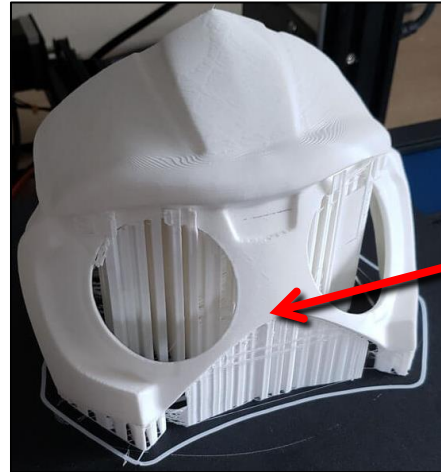
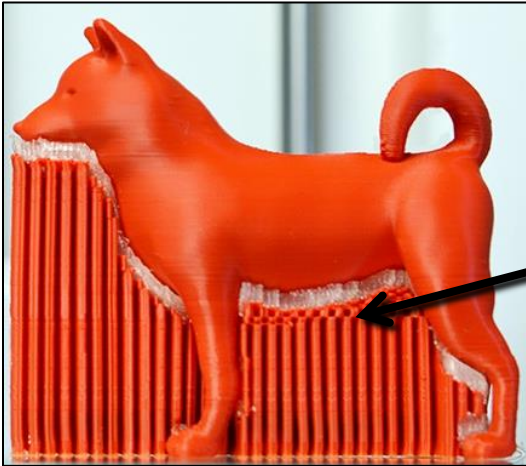


How to Remove 3D Printed Supports

1. Many 3D models require supports to print properly, particularly for angles $<45^\circ$. Staff does not remove the support material on 3D printed objects.
 - a. Adults should remove the supports for children due to safety reasons.

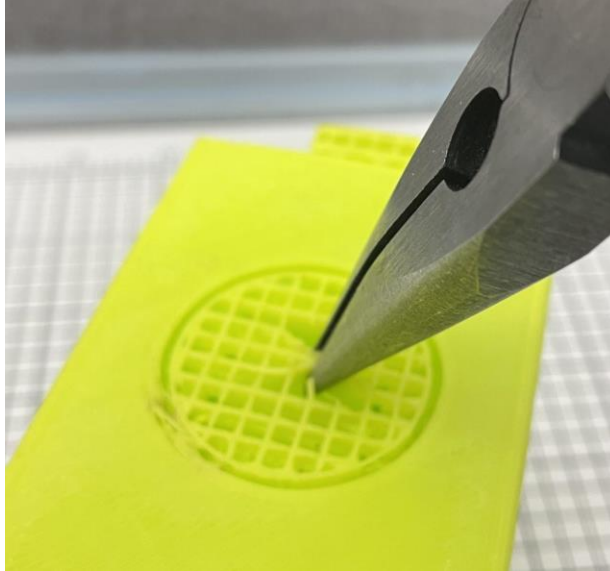


2. Supports can be removed using:
 - a. **Needle nose pliers and wire clippers** (pinch and twist off supports)
 - b. **Cuticle trimmers or nail clippers** (clip off excess material)
 - c. **Files, emery boards, or sand paper** (smooth away rough spots)



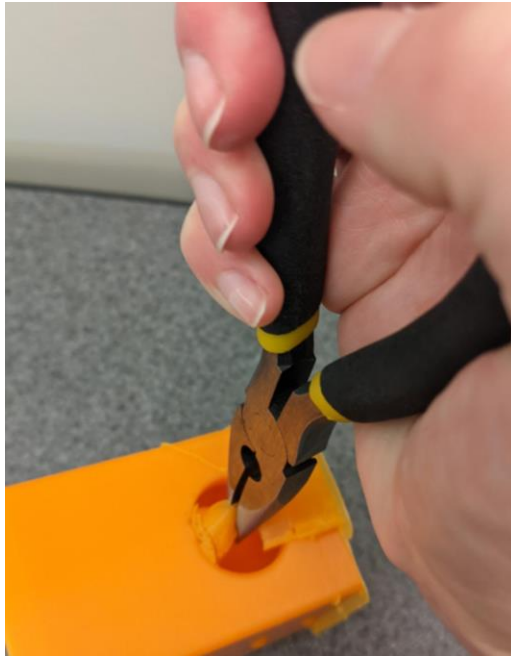


3. Identify section of support to grab with needle nose pliers.
 - a. Sections with space between supports are best for gripping.



i.

4. Firmly grasp it.
 - a. A solid grip with the pliers can do most of the work for you. You may need to use smaller or larger pliers depending on the area you are trying to remove.



i.

5. For larger areas: use a quick flicking motion with your wrist. Pinch and twist.
 - a. This can often remove large sections in one go.
 - b. Grab further away from the pivot point to maximize mechanical advantage.
 - c. Be careful, as sometimes the plastic can be a little sharp.
6. For smaller areas or detail areas with supports, it is best to remove supports with nippers instead of pliers.



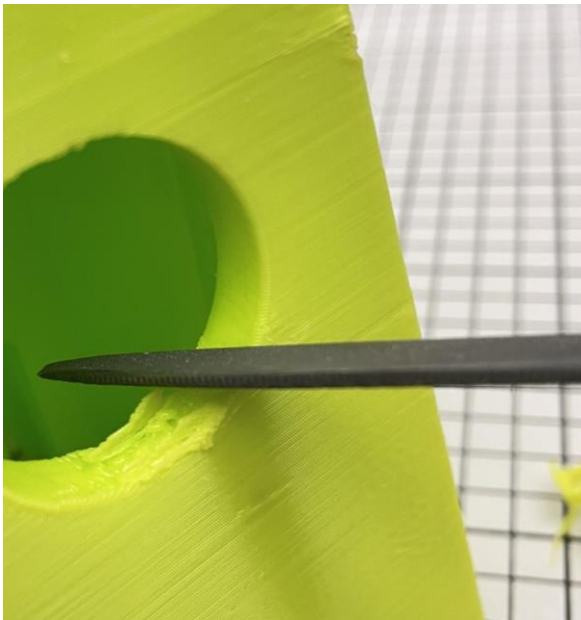
7. Remove any smaller remaining chunks with wire nippers, cuticle trimmers, or nail clippers.



a.

8. Consider sanding for an even smoother finish.

- a. A rasp, dremel, or simple sandpaper can be useful here.



b.

9. Post Processing:

- a. PLA and PETG plastics (both used at Loveland Public Library) adhere well with super glue (cyanoacrylate) or epoxy. Gorilla glue, Elmer's glue, or glue rubber does not adhere.
- b. Use a heat gun to shape and/or warp the plastic as desired.
- c. Spray paint or model paint adheres best; if using acrylic, consider a primer.