

# Maker Hub

## Staff/Volunteer Manual



V 3.1

*Now with Merit Badges!*

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# Introduction

## About this Manual:

*This Manual builds on the information in the VISITOR INFORMATION, which is available on the Maker Hub Website. New Volunteers should familiarize themselves with the Maker Hub Website AND this Staff/Volunteer Manual.*

## Welcome

Hi There!

You're probably holding this book because you've joined the Georgetown Maker Hub's awesome Staff and Volunteer Community. Congratulations! And thank you! It is thanks to YOU that the Maker Hub is a fun, productive space where everyone is welcome to learn and make together.

This handbook contains (almost) everything you need to know to be a productive part of this exclusive community. Most of this we'll have covered during your orientation, but it's here if you need a reminder.

If this is your personal copy, feel free to use the blank pages in the back to take notes, sketch ideas, or draw funny pictures.

# Your Role

*as a Maker Hub Staff, Volunteer, or Maker Neighbor, or Authorized Staff/Faculty*



## **A Maker Hub Staff/Volunteer is:**

### **1. Welcoming**

- Making sure that everyone that walks in the door feels like they belong is our #1 goal.

### **2. Helpful**

We're eager to help our visitors learn how to use our tools. We help them "DIY, not DIFY."

### **3. Alert**

Whatever we're doing, we stay aware of everything else going on in the space, always ready to step up when needed.

### **4. Proactive**

Rather than waiting to be told, we take initiative and seek out opportunities to help, learn, and create to make the Maker Hub more awesome.

### **5. Responsive**

There's lots going on, so we check our emails for updates and respond in a timely manner.

## Responsibilities During Your Shift

*These items are PRIORITY ORDER. Eg, if you are helping someone learn, but a new visitor walks in, you excuse yourself from the person you're helping and greet the new person.*

1. Ensuring everyone is following all safety rules
2. Greeting **all** visitors when they enter the Maker Hub
3. Helping visitors learn how to use equipment
4. Answering the incoming Libraryh3lp chat requests
5. Keeping the space clean and organized
6. Working on assigned tasks
7. Learning how to use new tools and earning Merit Badges

*Please don't work on purely personal projects during your shift, it distracts from the other work that needs to be done. If you have a project you want to pursue that you think could benefit the Maker Hub, talk to the Maker Hub Manager about making it an "assigned task."*

# Learning New Tools: Some Thoughts and Ideas

1. Everyone was once a first-time visitor to the Maker Hub. The key to success in the Maker Hub is to dive in, ask questions, and explore the space.
2. NOTE: If you're not busy, and you see someone working with a tool you're unfamiliar with, **ask if you can follow along!**
3. Open every drawer, look in every box. You never know what you'll find!
4. Check out the website pages for workstations and equipment for ideas for project, tutorials, and links to external communities and resources
5. Get a Maker Buddy: Pair up with another volunteer, run through tutorials and learn new skills together.
6. Try the "Maker Matcher" feature of the app: It pairs volunteers with specific skills with volunteers who need to learn that skill.



# Maker Hub Staff/Volunteer Agreement

*The Maker Hub Staff/Volunteer Agreement is a document that must be read, understood, and signed by all Maker Hub Staff, Volunteers, Authorized Faculty and Maker Neighbors. It states that:*

1. I have received the Maker Hub Monitor Orientation, and will abide by guidelines enumerated there.
2. I will not override, bypass, or defeat Maker Hub security policies and systems, including but not limited to:
  - a. Disabling locks
  - b. Sharing personal key codes
  - c. Propping or taping open doors after hours
  - d. Tampering with security cameras
3. I understand and will comply with emergency procedures
4. I will not remove items from the Maker Hub without permission
5. I will report any equipment damage, or missing equipment
6. I understand that after hours, I am responsible for the actions of any non-monitors also in the Maker Hub at that time, and will ensure that non-monitors are not left unsupervised (by Maker Hub Monitors).
7. I won't remain in the Maker Hub when the Library is closed.
8. I understand that surveillance cameras are in use in the Maker Hub, are accessible to Maker Hub Manager and the GNMC Director, and may be used for both live viewing of the Maker Hub and Idea Lab, and for recording of activity in the Maker Hub and Idea Lab.

# **Your Responsibilities**

# Your Keycode

1. Your access code opens the door to the IdeaLab, and both Maker Hub doors.
2. It is assigned upon your staff/volunteer orientation
3. Your Code is unique to you, and **MUST NOT BE SHARED, EVER.**
4. If you suspect that someone else has obtained your code, please let the Maker Hub Manager or Operations Coordinator know. You will be given a new code and your old one deactivated. No disciplinary action will be taken.
5. However, if someone intentionally uses a code not assigned to them to gain access to the Maker Hub, disciplinary action will be taken, as this is considered a violation of the student honor code.
6. Protect yourself, your friends, and the Maker Hub by carefully protecting your access code. Don't write it down, store it on your phone in your email or notepad app.

## Mandatory All-Staff Meetings

All-Staff meetings are your opportunity to share feedback on how the Maker Hub is being run, ideas for changes, project ideas, and get organized on new initiatives. We also cover new policies, equipment, and app features.

All-staff meetings are important for staying up-to-date, and are required for all Maker Hub staff and volunteers.

There are always 2 sessions of every monthly all-staff. If you can't make either, you are **required** to contact the Maker Hub Manager to make alternate arrangements.

# Attendance

*Whether staff or volunteer, we count on you to keep the Maker Hub running and successful! We make plans based on the specific skills of the people on the schedule, so please make every effort to show up on time and ready to help!*

1. If you can't make your shift, you need to provide 2 weeks advance notice, or you are responsible for finding a sub.
2. Sub rules:
  - a. Subs can't already be working that shift.
  - b. You can't sub for two people at the same time.
  - c. Staff can sub for staff, but not for volunteers.
  - d. Volunteers can sub for staff OR volunteers.
  - e. When you've confirmed a sub, inform the manager VIA EMAIL, BEFORE the start of the shift.
  - f. Last-minute subs are OK, but a big inconvenience for planning. Please keep this to a minimum.
  - g. Talk to the Manager or Operations Coordinator if you need an exception.
  - h. No Ghosting!
  - i. Frequent violation in these rules will result in a discussion about whether this position is right for you.
3. *We use Google Calendar for managing shifts, subs, holidays, etc. If you have a calendar invite for a shift, it means we're expecting you. If not, then you are not expected to work.*

# Emails

1. Our volunteer and staff community is so large (yay!) that we can't follow up with everyone individually with updates, requests for information, etc.
2. Check your emails, and respond to requests in a timely manner.
3. Rule of thumb: By the time you show up for your next shift, be up-to-date on all emails and requests.
4. We will do our best not to overdo it with emails/announcements, etc.

# **Working at the Maker Hub**

# Maker Hub “Role Tags”

*To keep the Maker Hub running smoothly, it's useful for staff and volunteers to take ownership of specific roles, represented by large Badges for your apron. Whenever the Maker Hub is open, each of these Role Tags should be worn by someone. One person can wear more than one, and responsibility for the Roles can be passed around whenever necessary. IE, if you're wearing the Greeter Tag, but need to focus on helping someone, pass the Greeter Tag (“Tag, you're it!”) to someone else. But all four tags below should be in play whenever we are open. Tags are stored on the mobile wall by the entrance.*

## **The Greeter**

- The Greeter makes sure that every person that walks into the Maker Hub gets welcomed, whether it is their first or fiftieth visit to the Maker Hub. The greeter also makes sure that the visitor signs in, and gets the safety orientation if necessary. The greeter also fields any initial questions and passes them along to whomever is available to help them.
- Even if the Greeter is working on other things, they are keeping an eye on the doors for new visitors.

## **The Groundskeeper**

- The Groundskeeper makes sure that the Maker Hub stays clean and organized. They are responsible for getting tools put away, sweeping and vacuuming, helping visitors set up project boxes, and in general keeping the place ready for the next project.
- The groundskeeper doesn't do all this work themselves, but encourages other staff, volunteers, and visitors to pitch in.

## **The Storyteller**

- The Storyteller helps tell the stories of the Maker Hub. They ask people what they're working on, takes pictures, shares on our social media channels, and livestreams on facebook.
- The Storyteller should see to it that at least two posts are made each time we're open.

## **The Chat Master**

- The Chat Master is responsible for making sure every incoming chat request gets addressed in a timely manner

# Opening Checklist

1. Clean up
2. Prop open front door and Idea Lab door if there is not a meeting going on in the Idea Lab
3. Turn on the Lights
4. If after 5pm, turn on the stereo, and select a playlist. If it's before 5pm, turn the stereo on, but DON'T select a playlist.
5. Turn on the large slideshow monitor
6. Log in to the Chat System
7. Switch out one set of Arlo Camera Batteries

# Closing Checklist

1. Clean up
2. Turn off the lights
3. Turn off the stereo, by pressing B3 on the Jukebox
4. Turn off the large slideshow monitor
5. Log OFF the Chat System
6. Turn off any equipment that's been left running, except for 3D printers
7. Make sure BOTH MAKER HUB DOORS ARE FULLY CLOSED AND LOCKED!



## **At the Start of Your Shift**

1. Sign in, as “Staff/Volunteer Shift”
2. Put on your apron
3. Put on any Role Badges that aren’t currently being worn.  
Check with other staff to make sure Badges are evenly distributed.
4. Check for staff emails and updates
5. Clean up
6. Check in with other staff on shift, see if anyone needs anything
7. Check the app for any assigned tasks

## **At the End of Your Shift**

1. Put Away your apron
2. Let other volunteers/staff know that you are leaving
3. Make sure any Badges you were wearing have been passed on, if the Maker Hub is still open.

# Welcoming our Visitors

*The most important space in the maker hub is the first three feet past the door. That's where a new visitor decides that the Maker Hub is a place for them. The most important piece of equipment in the Maker Hub is our staff and volunteers' hearts. It's those welcoming hearts that create a community of creative people making together*

## Welcoming Every Visitor; the script

EVERY visitor to the Maker Hub gets greeted with [“Welcome to the Maker Hub, is this your first time?”](#)

If you're a regular, and a new volunteer asks you if it's your first time, THANK THEM for being awesome. It can feel embarrassing to be a new Greeter, so let's help them out.

**If they say “No”:**

[“Great! Just sign in, and let me know if you need anything.”](#)

**If they say “Yes”:**

[“Awesome! We've just need to do a quick safety orientation, have you sign our waiver, register for our swipe system, swipe in, and then I can help you with whatever you need.”](#)

Go through the Onboarding process

**Make sure that every visitor swipes in EVERY TIME**

## Onboarding New Visitors

1. Do the Safety Orientation
2. Have them Sign the safety waiver
  - a. Blank safety waivers are in the back of the “Safety Waiver” folder on the welcome table.
  - b. If we are out of safety waivers, more can be printed from the “Safety Waiver Print Station.”
  - c. File the safety waiver alphabetically by last name
3. Register them for the swipe system via the Maker Hub App

# The Safety Orientation

*The initial visitor safety orientation is usually our visitor's first introduction to the Maker Hub. It's where we establish the principles and community spirit that make the place so great.*

## **1. Read the rules posted on the wall**

- a. Make sure the visitor is paying attention. No texting, chatting with friends etc.
- b. Don't rush.
- c. Make sure you are heard. Try repeating the rules in your own words, making a joke, etc.
- d. Remember: YOU are in charge.

## **2. Show them the stations that require additional safety orientation**

- a. 3D printers
- b. Vinyl Cutters
- c. Sewing Machine, Embroidery Machine, Serger
- d. Woodworking tools (hand saws, hammers, etc)
- e. Power Tools (Dremel, Drills, Jigsaw, Drill Press, etc)
- f. Soldering Stations

# Cleaning

*“Your mother doesn’t work here.”*

*“Time to leave? Time to clean!”*

- I. A clean Maker Hub is EVERYONE’S responsibility.
- II. A clean space will look like it’s ready for someone to use.
- III. Cleaning up includes
  - A. Sweeping and vacuuming the floor
  - B. Clearing off ALL tables and workbenches
  - C. Straightening up storage bins, notepads & pencils, etc
  - D. Personal projects are in project boxes
  - E. Garbage and recycling are taken out.
  - F. All tools are put away, or at least in the “reshelve areas”
  - G. HOT tools go in the “Cool Down Stations”
- IV. When you clean, check the ENTIRE space for messes, not just the spaces you were in that day. This includes checking the woodshop for sawdust.

# Organizing

- I. **READ THE LABELS**
  - A. The Maker Hub is pretty well labelled, and we make every effort to keep our labelling accurate and up-to-date. Spend time reading the Labels, and respect them. This will help you learn what goes where, and important rules for using the equipment.
- II. **Putting Tools Away**
  - A. Tools will have a spot of color on them that corresponds to their workstation.
  - B. Workstations will be labelled with either the name of the tool, or a picture of the tool where it should be stored.
  - C. If you don't know where a tool goes, put it on one of the "restock bins"
- III. **Putting Away Consumables/Scraps**
  - A. Conscientious organization and reuse of scrap materials is how we keep costs down and the Maker Hub free for everyone.
- IV. **Laser Cutter Consumables**
  - A. Always use the SMALLEST scraps possible for your job.
  - B. Return scraps to the shelves:
    1. With the WIDEST ends facing OUT
    2. Whole pieces go in the leftmost shelves,
    3. Mostly whole pieces with some holes in them go in the shelves to the right.
    4. 18" tall scraps go in the lower shelves.
    5. Smaller scraps go in the appropriately labelled drawers or bins
- V. **"Restock Bins"**
  - A. Restock Bins are labeled "If you don't know where it goes, put it here." Kind of like the reshelve rack in a clothing store.
  - B. When you are cleaning up and you come across a tool or other item, and you don't know where to put it, put it in the Restock Bins.
  - C. Each day, check the Restock Bins for items, and put away those items that you know.

## What to Do When There's Nothing to Do

- Check the app, or Trello for assigned tasks
- Check for UNASSIGNED tasks that you can take on
- Clean up and organize
- Find an unfamiliar tool and teach yourself how to use it
- Put on the Documentarian Role Pin and share some pictures
- Open drawers, check in boxes and shelves, learn about the space
- Cruise the Maker Hub website to learn about our resources
- Use the app to submit ideas for new features, purchase requests, etc.

# Swiping In

- I. It's very important that all visitors to the Maker Hub swipe in. Don't be shy about asking visitors if they've signed in if you're not sure.
- II. Sign in data is very important. Please fill out all the data, as accurately as possible
- III. EVERYONE SIGNS IN. ALWAYS.**
  - A. If you are on shift, SIGN IN
  - B. If you are NOT on shift, SIGN IN
  - C. If you are coming in just to pick something up, SIGN IN
  - D. If you are just dropping in to visit a friend, SIGN IN
  - E. If it's not open hours, SIGN IN
  - F. If it's late at night, SIGN IN
  - G. If it's early in the morning, SIGN IN
  - H. If you step out for an hour or more, SIGN IN
- IV. It's always ok to ask a visitor "did you get a chance to sign in?" If they say "yes i did," then you say "great, thanks!"
- V. To use the card-swiping system, new visitors need to be registered with their GUID number (the number on their GUID card). The registration system is on the Maker Hub Staff App.
- VI. If a visitor does not want to register, or there is a large group forming a bottleneck, it's equally fine for them to use the tablet to sign in without swiping their card.

# The Chat System

*Rather than making an app for visitors to help them make reservations, find people to help with tools, etc, we use a chat system that privileges person-to-person contact over asking our visitors to learn how to use an app.*

The Chat System is available only during Maker Hub Open Hours

**Login: gt-makerhuman PW: REDACTED**

## The Chat System consists of two parts:

1. Visitor Facing: on the Maker Hub website is a LibChat interface that encourages the GU community to use it to connect with on-shift Maker Hub Volunteers and Staff, for help with:
  - a. Making equipment reservations
  - b. Finding experts on specific tools and making appointments for consultations
  - c. Getting pointers to online resources and tools
2. Staff-facing: In the Maker Hub is the “Chat Kiosk,” a station with a computer and a speaker loud enough to be heard throughout the space.
  - a. The “Chat Master” is responsible for making sure that every incoming chat request is responded to in a timely manner

## Requests that are likely to come through the Chat System, and how to handle them

1. **Easy Questions:** Questions that you know the answer to, like our hours, what equipment is available, etc. Answer them, yay!
2. **Hard Questions:** Questions you DON'T know the answer to. It's ok to say “sorry I don't know the answer, try again later,” or “let me find someone who knows the answer and get back to you.” If that happens, you can
  - a. Get their email address
  - b. Send the question to someone who knows the answer, along with the email address of the person who asked.
  - c. **TODO: develop a feature to send these questions to Trello**
3. **Requests for specific help with a tool:** If someone wants help with a specific tool, use the “find a maker” feature on the app to find out when the next person with that skill will be available. Let the person know when they can drop in to get help.
4. **Request a scheduled consultation:** if the person wants to schedule a time with a specific Maker Hub staff/volunteer, get their contact information, and email it to that staff/volunteer so they can make arrangements for a scheduled consultation.  
[TODO: develop an app feature for setting up these consultation requests.]
5. **Request equipment reservation.** If the person needs to be registered in our system, do that in the app. Once they are registered, use the app to make an equipment reservation for them.



# Your Apron

*“This is my apron. There are many like it, but this one is mine.”*

- I. Staff and volunteers wear aprons during their shift to identify themselves to visitors and other staff/volunteers.
- II. Upon your orientation, you will select your apron from the Maker Hub’s supply, or will learn how to make your own.
- III. Your apron is yours to customize and modify as you are inspired. It’s a great way to show off your making skills as you learn. Some ideas include:
  - A. Embroidering your name or other graphics with the embroidery machine
  - B. Laser-etching the canvas
  - C. Designing and building wearable circuits to make your apron smart
  - D. 3D printing apron accessories
  - E. Custom buttons
  - F. And whatever else you can come up with. Go nuts.
- IV. Your apron is also where you’ll show off your Merit Badges.
- V. When you finish your time as a staff/volunteer, you are encouraged to leave your apron for future generations.

# The Maker Hub App

*The Maker Hub App is a mobile-optimized website designed to facilitate interaction between staff/volunteers and visitors. During Orientation you will be given access to the app, and explained the basic functions. A couple things to note are:*

- Once you've loaded this app in your phone's browser, please add it as an icon on your home screen, so it will look more like a "real" app. This will make it much easier to access.
- This app is NOT designed for the Visitors to use themselves. Please don't share the link to the app with visitors, as it won't do them much good, and we're never sure the app is bug-free :).
- We are always adding new features to the app. Currently some of the most important features are:
  - Request a new feature/bug report
  - New user registration. Every volunteer NEEDS to know how to use the app to do this at least
  - Equipment reservation. Equipment reservation is ONLY done through the app
  - Safety Orientations. Safety information for all equipment is on the app.
- Are you interested in learning how to develop mobile apps? The Maker Hub Mobile App is very modular, which means it's easy to add new features. Talk to the Maker Hub Manager or Operations Coordinator to learn more.

# **Policies and Procedures**

## DIY, not DIFY

The Maker Hub is a space where anyone can learn how to use the tools to make what they want, aka “DIY.”

“DIT” - “Do it Together” is great too.

It’s NOT a space where they can have someone else do it for them, aka “DIFY.”

### Some suggestions for promoting DIY:

- Make it positive: “I’m happy to show you how to use the 3D printer, so you can come in and run your prints whenever you want.”
- When showing a visitor how to use some software, always let them “drive.” Never touch the computer yourself. This takes longer, but pays off in the end.
- If they really want someone to Do It For Them:
  - Refer them to fabrication services like Shapeways for 3D fabrication
  - It’s OK for staff/volunteers to get paid for helping, if they are doing it on their own time, and at their own discretion. See section on “Getting paid for work.”

# Access to the Maker Hub

## After Hours

*Staff and volunteers are welcome to use the Maker Hub whenever the library is open, with the following caveats:*

1. You must not be in the Hub alone after 8pm.
2. You may bring in non-staff/volunteers with you, but you are responsible for their actions, enforcing all rules, signing them in, and may not leave them alone in the Maker Hub for any amount of time.
3. If non-staff/volunteers you don't know drop in to use the Maker Hub during non-open hours, it is up to you whether you allow them in or not. If you do, you are responsible for them, and all the normal rules apply.

# Creating Your Own Events and Workshops

*We encourage staff, volunteers, and even our visitors to create their own events to share their skills, form project groups to tackle design challenges, or create mini-communities of interest.*

## Some random ideas for events

- Knitting Circle
- Design Challenge teams
- One-off or recurring skill shares
- Show and tell
- Bringing in outside experts to talk about business models
- Group problem solving sessions

## To create your event

1. Discuss with the Maker Hub manager, or contact [makerhub@georgetown.edu](mailto:makerhub@georgetown.edu) to discuss your idea and get help planning it.
2. Look at the Public events calendar to make sure there aren't any conflicting events.
3. Decide if you want to reserve the IdeaLab as well, and check the IdeaLab calendar for conflicting reservations.
4. Create your own event on Google Calendar.
5. Include:
  - a. Date and time
  - b. Location: Maker Hub, IdeaLab, or both
  - c. Who is running the workshop
  - d. Description
  - e. Descriptive Title
  - f. At least one image
  - g. Maximum number of attendees
6. Share it with Maker Hub Manager or Operations Coordinator. If you want them to reserve the IdeaLab, make that clear.
7. Manager or Ops Coord will copy this event to the Maker Hub public calendar.
8. Once it is on the public calendar, you'll be invited to it. Use this link to promote and share the event, on the facebook page, social media, and through your own networks.

## Getting Paid for Independent Work

*The Maker Hub does not have a rule against staff/volunteers getting paid to do work for, train, or tutor visitors in return for payment, trade, or other considerations.*

### **Please Note:**

1. Such work must be done during your own time, not during your shift
2. Arrangements are between you and the client, and do not involve the Maker Hub
3. All rules for use of the space, equipment reservation, etc apply. Do not monopolize the equipment or consumables
4. If you are getting paid for work that involves Maker Hub consumables, you are responsible for paying to replace them.
5. Equal respect and consideration must be given to all other users of the space.
6. The Idea Lab and Maker Hub cannot be reserved for for-profit activities.

## Charging for Materials

1. See “Charging For Materials” in the Visitor Manual or Website
2. The charge system is on the Maker Hub App under “Charging Expenses”
3. It is also available at <http://tinurl.com/gumh-charge>

## Equipment Reservations

1. See “Equipment Reservations” in Visitor Manual or Website
2. Reservable equipment is labelled “Reservation Required,” and is listed in the Maker Hub App under “Equipment reservations”
3. Staff and volunteers take care of reserving equipment for visitors.
4. Reservations can only be deleted directly from the google calendar.

## Project Boxes

1. See “Project Boxes” in the Visitor Manual or Website
2. Visitors can keep consumables and low-cost electronics components (a raspberry Pi, arduino, etc) in their project box without charge.
3. Make sure the visitor labels the box with their NAME, NetID, AND the current term (fall 2018, Spring 2019, etc)
4. Make sure they understand that boxes will be emptied at the end of the semester if they are not updated.
5. Register their project box in the Maker Hub app (feature not yet implemented).
6. The Maker Hub Manager reserves the right to look through project boxes if hoarding or theft is suspected.

## Protection of Minors

Occasionally we have minors in the space for workshops, tours, or other activities. Therefore, all Maker Hub staff are required to complete the Protection of Minors form each year.



## **Fire Extinguisher Training**

To ensure the safety of the Maker Hub and Library in the event of a fire, it's important that as many Maker Hub staff and volunteers as possible are trained in the proper use of the Maker Hub's Fire Extinguishers. This training is offered by the office of Safety and Environmental Management, and sessions can be arranged for groups of trainees on an as-needed basis.

## **Equipment Training**

1. Review the "Equipment Training Levels" in the Visitor Manual or Website.
2. Be prepared to answer visitor questions on what is required to gain authorization for the various tools.
3. When a visitor has completed the necessary steps for authorization, update their information in the Maker Hub App

# **Cool Stuff in the Maker Hub**

# The Jukebox

- I. The Jukebox is how we play music in the Maker Hub.
- II. Please don't bypass the jukebox and plug the speakers into the iMac or your own device. That's cheating.
- III. No music before 5pm on Weekdays. Let's be good neighbors.
- IV. Spare quarters are kept in a cup next to the jukebox
- V. To get the quarters out of the jukebox, turn the key on the side and pull the outer shell off. Slide the coin collection drawer out from the lower right.
- VI. The Jukebox is set up to play spotify playlists. If you want to add your own music:
  - A. Make a spotify playlist
  - B. Share the link with user donundeen. He'll add the code to the software, and tell you what jukebox code it is assigned to.
  - C. Open the jukebox up, using the key on the left-hand side.
  - D. Get a jukebox label insert from the coin collection drawer, fill out your playlist name, and insert it into the appropriate slot in the jukebox.
  - E. Close up the jukebox and try out your code!
- VII. With our setup, it's pretty easy to create other types of devices to control the jukebox audio player. What about an apron button that loads your playlist? Or fast forwards to the next song? Let's make it!
- VIII. You can also make the Jukebox control other things. Maybe it could activate a robot, or flashing lights?
- IX. The code for the jukebox is at [github.com/donundeen/seeburgjukebox](https://github.com/donundeen/seeburgjukebox)

## Display Screens

- I. Troubleshooting - See Technical Manual
- II. The Display screens are also configured to flash messages for important events in the Maker Hub, such as
  - A. Doorbell ringing
  - B. Entry Detection
  - C. Messages sent to the chat system
  - D. Other important announcements
- III. Interested in building your own display screen, or making a new app for the Maker Hub? Talk to the Maker Hub Manager.

## The Security Cameras

- I. There are 4 of them, and 5 sets of rechargeable batteries
- II. 1 set of batteries is always in the recharger
- III. At the start of each day, move the red marker one step forward, and change the batteries of the camera with the number underneath the marker.
- IV. Cam 4 is not in use, skip it.

## The Doorbell

The Maker Hub Doorbell is an Internet-of-Things (IoT) device developed in the Maker Hub. Pressing the button sends a signal to [adafruit.io](https://adafruit.io), a IoT switchboard. This signal can then be listened to by devices anywhere in the world. In this case, the display screens in the Maker Hub are configured to flash “DOORBELL” whenever someone pushes the doorbell. Also, the stereo will play the super-cool “Doorbell” song. So if you see the signs flashing DOORBELL or hear the Doorbell Song, someone is at the back door trying to get in.

# **Additional Resources**

## Maker Hub Digital Tools for Staff/Volunteers

See “Online resources” in the volunteer handbook or on the website for visitor-facing digital tools and resources.

### The Maker Hub Staff Shared Drive

[tinyurl.com/mh-staff-docs](https://tinyurl.com/mh-staff-docs)

This folder is shared with all Maker Hub staff and volunteers.

There’s a lot in there; review the “STAFF CONTENTS” file for an overview of the important parts.

### Maker Hub GroupMe

The GroupMe is used by many Maker Hub volunteers and staff to share high-priority information and arrange for subs.

Ask a current volunteer or staff person to invite you to the GroupMe group.

### Maker Hub Github account

[github.com/GeorgetownMakerHubOrg](https://github.com/GeorgetownMakerHubOrg)

### Maker Hub on Thingiverse

[thingiverse.com/gtmakerhub](https://thingiverse.com/gtmakerhub)

### Trello Task Management

Here’s where we keep track of tasks we need done in the space. If you are looking for something to do, you can check the Trello board for tasks already assigned to you, or pick an unassigned task to work on.

### Maker Hub Slack Space

Please join our active Slack space, where you can keep track of all the conversations going on about the space, keep up with changes, and find out about cool opportunities!

### Reservation Calendar

Displays all current equipment reservations. Visible on display screens in the Maker Hub. Available on the App, organized by equipment  
Available on the Maker Hub website

### Public Events Calendar

Displays information about events in the Maker Hub  
Visible on display screens in the Maker Hub  
Available on the Maker Hub website

### The Skill Calendar

Shows availability of different kinds of help in the Maker Hub  
Based on staff schedules and our listing of each staff’s skills  
Visible on the website and display screens in the Maker Hub

# Social Media - Share it!

*For the Maker Hub to succeed, it's super important that we share our stories! Please help us out by photographing, videoing, and documenting your awesomes on your favorite social media platforms.*

**Facebook :** facebook.com/groups/gumakerhub

**Google Group:** [tinyurl.com/mh-google-group](https://tinyurl.com/mh-google-group)

**Twitter:** The Maker Hub Twitter has merged with the Library's, so @gtownlibrary in your posts, and add tag us #gumakerhub

**Instagram:** Post pictures of things going on in the space, @gumakerhub. Want to be a Maker Hub Influencer? Ask the Manager for the Instagram login!

**The Gelardin Showcase:** [tinyurl.com/gnmc-showcase](https://tinyurl.com/gnmc-showcase)

The Gelardin Showcase is a web feature showing off projects made with resources from the GNMC and/or Maker Hub. All Georgetown students are welcome to apply, and there are prizes for the best submissions. Just a short description and a few pictures or video is all you need.



# QUIZ

**Q: Upon entry, I DON'T need to swipe if (circle all that apply):**

- 1) It's after hours
- 2) I just stepped out for a bathroom/phone/smoke break
- 3) I'm just dropping in to pick something up
- 4) I'm in a hurry
- 5) I'm not making anything

**Q: After safety, the most important part of your job is:**

**Q: "Time to leave, time to \_\_\_\_\_"**

**Q: When someone comes into the Maker Hub, we say:**

**Q: If I can't make a shift, I need to (circle all that apply)**

- 1) Find a sub
- 2) Have a good excuse
- 3) Send the Manager and Operations Coordinator an email in advance
- 4) Ghost

**Q: The "I Helped Someone" Form is important because:**

**Q: It's ok for me to be alone in the Maker Hub after 8pm, if I'm just**

**Studying:**

- a) True
- b) False

**Q: If I see a tool left out that no one is using, I should:**

- 1) Leave it alone if I don't know where it goes
- 2) Leave it alone if I didn't use it
- 3) Do my best to put it back where it came from, or put it on the reshelving cart.
- 4) Sell it on eBay

**Q: Garbage gets taken out (circle all that apply)**

- 1) At the start of my shift
- 2) At the end of my shift
- 3) At opening
- 4) At closing
- 5) That's somebody else's job

**Q: The four Role Pins are:**

**Q: Making is**

- 1) Awesome
- 2) Lame

# Merit Badges

*Merit Badges are our system for helping our staff and volunteers learn new skills and track who is available to help our visitors learn how to use the equipment*

Merit badges are small buttons with icons for different pieces of equipment. Merit badges are also tracked through the Maker Hub App

## **You earn the badge by:**

1. Reading and understanding the Safety Rules for that equipment.
2. Completing a specified task: The task tells you WHAT to do, not HOW to do it. You are encouraged to find someone who already has the Badge to help you with on yours. Make sure you understand the basic setup of the machine.
  - a. The tasks for earning a merit badge are listed in this book app, posted in Trello, and/or printed around the space. Sometimes a substitute task may be assigned by the Operations Coordinator or Manager.
3. Teaching someone else: This is the most important part. You don't earn the badge until you've taught someone else. You can teach another staff/volunteer, or a friend, classmate, etc.

# Merit Badge: Button Maker

*Make something cute as a button.*

## Your Task:

Interview a friend about their interests.  
Make a button from the scrap material  
based on what you learned.



## Getting Started

- Find someone with the Button Making skill to help you
- Gather materials: scissors, scrap magazines, button-making supplies
- Skim the web page with info about the button maker
- Review the button-making instructions

## Keep in Mind:

- Be careful that the top button piece isn't actually two stuck together
- If the button maker jams up, drop it on the ground from 6 inches up, that should clear it. Then finish making the button.
- Make sure to put your tools away, and clean up your scrap paper when done. put usable scraps back in the scrap material bin. Throw away small scraps.

*Take a picture with your button and share it on our social media: @gtownlibrary #gumakerhub*

**Now, teach someone else how to make a button!**

# Merit Badge: 3D Printing

## *Make a 3D mashup gift*

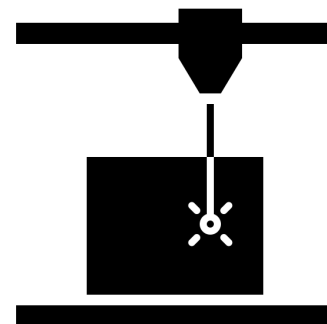
- Find a person with the 3D printing skill to help you
- Review the “What you need to know” and Safety information for FDM 3D printers
- Find 1 object on thingiverse.com that a friend would like
- Make sure the stl file size is < 15M
- Modify it using tinkercad.com. Some ideas include:
  - add a ring to hang it from a necklace, review mirror, zipper pull, etc
  - add a hook
  - Add a pen/pencil clip
  - combine another thingiverse object with it
- 3D Print it and give it to your friend!
- Take a picture of them with it and share it on our social media: @gtownlibrary #gumakerhub



# Merit Badge: Laser Cutter

*Make a Pencil box for a friend*

- Use <http://makeabox.io> to design the box. Enter the value .0077 for “Kerf Width” (that’s the width of the laser beam itself). Decide whether to use .25” or .125” material.
- Use Photoshop to modify the picture, and then Adobe Illustrator to add it to the box design. Add a picture your friend would like to one side of the box (you can also use Inkscape, or Affinity Designer instead of Illustrator)
- Using Adobe Illustrator (or Inkscape or Affinity Designer), add text to another side of the box
- Using Illustrator (or alternatives), design a large hole into the top of the box for pens and pencils to go.
  - Try making it a funny shape.
- Do any other crazy stuff you want
- Have an authorized laser cutter operator run the job for you (you may need to make a reservation for the laser cutter if it’s busy)
- Assemble the box. You might need to use the black rubber mallet to pound it together tight (common with .25” material) . Or you might need to use wood glue if it seems a little loose (common with .125” material).
- Give it to your friend, take a picture of them with it and share it on our social media: @gtownlibrary #gumakerhub



Created by Toke Frello  
from Noun Project

# Merit Badge: Book Binding

*You're BOUND to like this task*

- Find someone with the Bookbinding Merit Badge to help you.
- Get a copy of the Maker Hub Volunteer Handbook, or make your own journal.
- Ideas for your own journal:
  - Blank, lined, graph, or other special format
  - Collection of pictures with a special friend (it makes a great gift!)
  - Collection of poetry or famous quotes
  - All the notes from your favorite class
- If printing your own journal, use double-sided booklet printing, starting from a 8.5"x13" (folio) page size. IE, when you create your document, set the page size to 8.5x13 (folio), not 8.5x11.
- Use saddle-stitching to bind the book
- Round the non-bound corners.
- Take a picture with it and share it on our social media: @gtownlibrary #gumakerhub

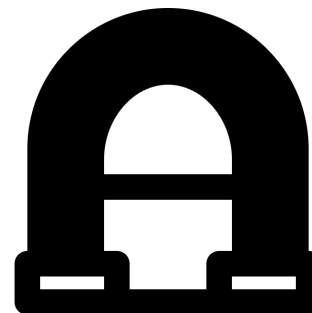


Created by Iris Vidal  
from Noun Project

# Merit Badge: Jukebox

*Share your sweet jams*

- Make a Spotify Playlist
- Share it and extract the playlist URL
- Send URL to [makerhub@georgetown.edu](mailto:makerhub@georgetown.edu), wait a response with the keycode for your playlist
- Unlock and open the jukebox
- Take out the change drawer, empty the quarters into the yellow container, and get a title card insert
- Write the name of your playlist on the card. Make sure it will line up with your playlist's keycode on the jukebox (ie, if it goes on the top or bottom of the card)
- Insert the card into the slot
- Close and lock the jukebox
- Teach someone else



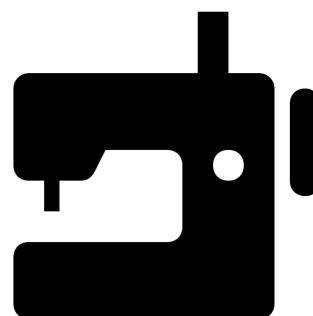
Created by Ben Davis  
from Noun Project



# Merit Badge: Sewing

*This merit badge is sew cool!*

- Find someone with the sewing merit badge to help get you started
- Review the “What you need to know” information, and Safety Information for the Sewing Machine

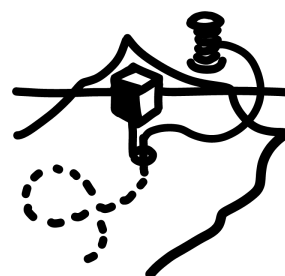


Created by Creative Stall  
from Noun Project

- If you're a volunteer, make an apron for yourself
- Otherwise, make an apron or tote bag for a friend. (see also the digital embroidery merit badge for more things to do with your sewn item)
- Use scrap fabric from our collection. Consider adding buttons, zippers, etc.
- Give it to your friend, and share the pics on social media! @gtownlibrary #gumakerhub

# Merit Badge: Digital Embroidery

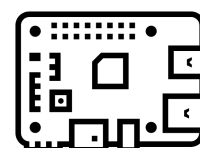
- Find someone with the digital embroidery merit badge to help
- Review the “What you need to know” information, and the Safety Information for the Sewing Machine and Digital Embroidery Machine
- Find a GIF a friend would like, and use SewArt or Hatch to turn it into an embroidery pattern
  - Make sure the gif isn’t too complicated, or with too many different colors.
- Use one of the two digital embroidery machines to embroider it onto a t-shirt, handkerchief, or tote bag.
- Give it to your friend.
- Share a pic on the socials! @gtownlibrary #gumakerhub



# Merit Badge: Raspberry Pi

## *Make a Digital Signage Screen*

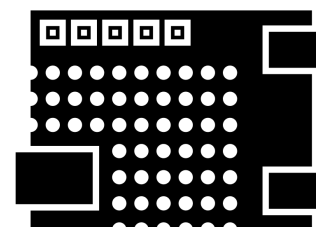
- Find someone with the Raspberry Pi Merit Badge to help you
- Install the Chilipie raspberry pi image, according to the instructions here: <https://github.com/futurice/chilipie-kiosk>
- Clone the code at <https://github.com/GeorgetownMakerHubOrg/lenstable>
- Create your own google slides document, make it readable by everyone.
- Select File->publish to the web->Embed->publish
  - Copy the long string of characters in the src url, that's the file ID .
- Modify the html in index\_idealab\_entry.html to point to your new google slides presentation
  - Change the file ID in the frame src to the file ID of your presentation.
- Configure the Pi to boot to your new index.html file
- Get an old LCD screen and strip off the plastic housing.
- Look at laser cut files in : <https://drive.google.com/drive/folders/0B6U7KOesduWUa010TnYxc0pTZFU>
  - "Maker Hub Master Folder/Projects/rPiDisplayScreen"
- Pick the one that's the right size for your screen.
- Laser Cut it in .25" MDF.
- Assemble the box around your screen. Make sure to attach the power and video cables before you put it all together.
- Put the Pi in a 3D printed case, attach it to the back of the screen
- Take a picture with your project, and share it on social media! @gtownlibrary #gumakerhub



# Merit Badge: Arduino

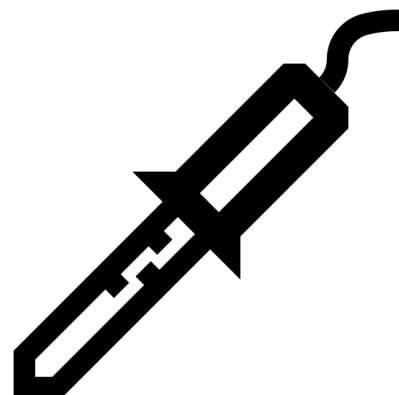
## *Make an IOT Button*

- Find someone with the Arduino Merit Badge to help you.
- Use an upcycled button, an LED, and a Feather Huzzah Arduino board
- Attach the LED and the button to it.
- Create an account on io.adafruit.com,
- Create a “button pressed” and a “light on” feeds
- Program the arduino so that pressing the button sends a signal to io.adafruit.com, and that when it receives an “on” message from “light on”, the LED lights up, and it turns off when it receives a “light off” message
- Extra: Laser-cut or 3D print a cool box or housing for your project.
- Extra: find someone else who’s done this project. Reconfigure your devices so that pressing your button turns their light on, and vice versa.
- Take a picture with your project, and share it on social media! @gtownlibrary #gumakerhub



# Merit Badge: Soldering

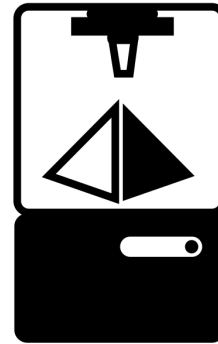
- Find someone with the soldering merit badge to help you
- Review the “What you need to know” information for the electronics station, and the safety information for the soldering irons
- Practice soldering on some scrap PCBs first.
- Assemble one of the simple kits in the Maker Hub, the Sound to Light Unit, or Weevil Eye Kit
- Take a picture with your project, and share it on social media! @gtownlibrary #gumakerhub



Created by Arthur Shlain  
from Noun Project

# Merit Badge: SLA 3D Printer

- Prerequisite: 3D Printing Merit Badge
- Find someone with the SLA 3D printer merit badge to help you.
- Review the “What you need to know” information for the 3D printing station
- Before you start:
  - Review the process for changing the resin and build tank
  - Review the process for how to clean and cure objects
  - Learn how to clean the printer and build plate
- Make an object for a friend, using same guidelines from regular 3D printing Merit Badge
- Note: Make sure not to leave your object sitting in the printer once it’s done. Take it out and clean it
- Take a picture with your project, and share it on social media! @gtownlibrary #gumakerhub



Created by Michael Sjørup Christiansen  
from the Noun Project

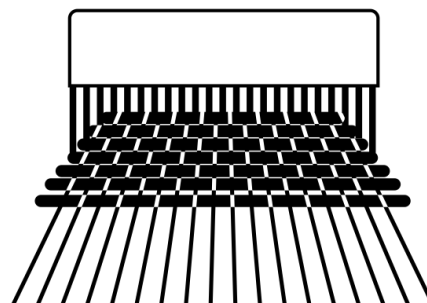
# Merit Badge: Loom

*This task is iloominating*

- Find someone with the loom merit badge to help you.
- Review the instructions posted on the loom
- Weave on the loom until the bobbin (the thread in the shuttlecock) runs out.

Follow the specified pedal pattern

- Find some suitable yarn and wind the yarn onto a new bobbin
- Replace the bobbin in the shuttlecock
- Take a picture of your progress, and share it on social media! @gtownlibrary #gumakerhub



Created by Claire Jones  
from Noun Project

**Master Level:** When the project is done, figure out how to set up a new project on the loom.

# NOTES



# NOTES

# NOTES

